

ARVIN-EDISON WATER STORAGE DISTRICT

**WATER MANAGEMENT PLAN  
UPDATE**

(PREPARED UNDER THE USBR MID-PACIFIC REGION  
2011 STANDARD CRITERIA)

SEPTEMBER 2013  
AMENDED OCTOBER 2015

# *Table of Contents*

ARVIN-EDISON WATER STORAGE DISTRICT  
WATER MANAGEMENT PLAN

# Table of Contents

	<u>Page</u>
<b>Section I – Description of the District</b>	
A. History	1-1
B. Location and Facilities	1-3
C. Topography and Soils	1-4
D. Climate	1-5
E. Natural and Cultural Resources	1-6
F. Operating Rules and Regulations	1-6
G. Water Measurement, Pricing and Billing	1-7
H. Water Shortage Allocation Policies	1-8
I. Evaluate Policies of Regulatory Agencies Affecting the Contractor and Identify Policies that Inhibit Good Water Management	1-9
<b>Section II – Inventory of Water Resources</b>	
A. Surface Water Supply	2-1
B. Groundwater Supply	2-1
C. Other Water Supplies	2-2
D. Source Water Quality Monitoring Practices	2-2
E. Water Uses Within the District	2-3
F. Outflow from the District (Agricultural only)	2-4
G. Water Accounting (Inventory)	2-6
<b>Section III – Best Management Practices (BMPs) for Agricultural Contractors</b>	
A. Critical Agricultural BMPs	
1. Measure the volume of water delivered	3-1
2. Designate a water conservation coordinator	3-2
3. Provide or support the availability of water management services to water users	3-2
4. Pricing structure	3-3
5. Evaluate and improve efficiencies of District pumps	3-3
B. Exemptible BMPs for Agricultural Contractors	
1. Facilitate alternative land use	3-4
2. Facilitate the use of available recycled urban wastewater	3-4
3. Facilitate the financing of capital improvements for on-farm irrigation systems	3-4
4. Incentive pricing	3-4
5. Line or pipe ditches and canals; construct/line regulating reservoirs	3-5
6. Increase flexibility in water ordering by, and delivery to, water users	3-5
7. Construct and operate District spill and tailwater recovery systems	3-5
8. Plan to measure outflow	3-6
9. Optimize conjunctive use of surface and groundwater	3-6
10. Automate distribution and/or drainage system structures	3-6
11. Facilitate or promote water customer pump testing and evaluation	3-6
12. Mapping	3-6
C. Provide a 3-Year Budget for Implementing BMPs	
1. Amount actually spent during current year	3-7
2. Projected budget summary for the next year	3-7
3. Projected budget summary for 3 <sup>rd</sup> year	3-8

## Section IV – Best Management Practices for Urban Contractors

### Section V - District Water Inventory Tables

#### A. Ag Tables

1. Table 1 - Surface Water Supply	5-1
2. Table 2 - Ground Water Supply	5-2
3. Table 3 - Total Water Supply	5-3
4. Table 4 - Agricultural Distribution System	5-4
5. Table 5 - Crop Water Needs	5-5
6. Table 6 - District Water Inventory	5-6
7. Table 7 - Influence on Ground Water and Saline Sink	5-7
8. Table 8 - Annual Water Quantities Delivered Under Each Right or Contract	5-8
9. Data Set	
1. Imported Surface Water by Source – AF	5-9
2. Project Operations Summary – 1966 to 2011	5-10
3. 2011 Water Year Gross Spreading – AF	5-11

#### B. Urban Tables (not applicable to AEWS)

### Attachments

#### Attachment A1 – Board Resolution Adopting the Plan

1. Approving a Water Management Plan Update
2. Certification
3. Approving a Water Management Plan - Amended
4. Certification

#### Attachment A - District Maps

1. District Map
2. District-owned Groundwater Well Location Map
3. Edison Unit Map
4. Arvin Unit Map
5. Caliente Unit Map
6. Tejon Unit Map
7. White Wolf Unit Map
8. Mettler Unit Map
9. District Soils Maps
  - a. Northeastern Kern General Soils Map
  - b. Southeastern Kern General Soils Map
  - c. Northwestern Kern General Soils Map
  - d. Northwestern Kern Legend
10. Balancing Reservoir
11. North Canal Spreading Basin and Well Field
12. Sycamore Spreading Basin and Well Field
13. Tejon Spreading Basin and Well Field

#### Attachment B - District Rules and Regulations and Water Service Contract

1. Rules and Regulations for Distribution of Water
2. Landowner Contract for Agricultural Water Service (general/template)

#### Attachment C - Measurement Device Documentation

1. Engineering Report on Existing Measurement Devices

#### Attachment D – Water Rates, District Sample Bill and Historical Rates

1. 2011 and 2010 Water Rates

2. Sample Water Bill
  3. History of Water Costs and Assessments-Table
  4. History of Water Costs and Assessments-Graph
- Attachment E - District Water Shortage Statement (see Attachment B1, Page 15)
- Attachment F - Groundwater Management Plan (text only)
- Attachment G - Groundwater Banking Plan (refer to GMP – Attachment F)
- Attachment H - District Water Quality Information
1. Canal Water Quality Summary – March 2011 to February 2012
  2. Summary Notes
  3. Well Water Quality
  4. Aqueduct Pump-in Proposal
- Attachment I - Notices of District Education Programs and Services Available to Customers
1. North West Kern Resource Conservation District Plan 2011 Annual Report
  2. Yearly Memberships and Contributions through 2011
  3. List of Vendors for Pump Testing
- Attachment J - District Water Order Form
1. Sample Water Order Form
- Attachment K – Drainage Problem Report
1. Drainage Statement
- Attachment L - Climate Data
1. Monthly CIMIS Data
  2. Summary of Climatological Observations for November 2011
  3. Historical Climatological Data (2007-2011) – Graph
  4. Precipitation “Office” (Table)
  5. Historical Precipitation by Year at District Office – Graph
  6. Precipitation “Sycamore”
  7. Precipitation “Tejon”
  8. Friant Water Authority San Joaquin River & Associated Water Data
- Attachment M - Summary of Land Use
1. 2011 Land Use Survey
- Attachment N - Water Requirements
1. Assessment of Reasonable Water Requirements by JMLord
- Attachment O – “State of California SBx7-7 Requirements for Additional Documentation on Agricultural Water Management Plans”
1. Legal Certification and Apportionment Required for Water Measurement
  2. Engineer Certification and Apportionment Required for Water Measurement
  3. Description of Water Measurement Best Professional Practices
  4. Documentation of Water Measurement Conversion to Volume
  5. Device Corrective Action Plan Required for Water Measurement
- Attachment P – Conservation Coordinator
1. Job Description for Staff Engineer
- Attachment Q – Changes or Additions to Facilities and Operations
1. Major Projects Completed Since 1992
- Attachment R – Combined Turnout Agreement and Consent to Easement
- Attachment S – Drought Management Plan

*SECTION I*

*Description of District*

## Section I: Description of the District

District Name: Arvin-Edison Water Storage District

Contact Name: Jeevan Muhar

Title: Staff Engineer

Telephone: (661) 854-5573

E-mail: arvined@aewsd.org / jmuhar@aewsd.org

Web Address: n/a

### A. History

1. Date district formed: 1942      Date of first Reclamation contract: 1962  
 Original size (acres): 129,988      Current year (last complete calendar year): 2011
2. Current size, population, and irrigated acres

<i>Data Year</i>	<i>2011</i>
<i>Size (acres)</i>	<i>131,660</i>
<i>Population served (urban connections)</i>	<i>0</i>
<i>Irrigated acres</i>	<i>112,617</i>

3. Water supplies received in current year

<i>Water Source</i>	<i>AF</i>
<i>Federal urban water (Tbl 1)</i>	<i>0</i>
<i>Federal agricultural water (Tbl 1)</i>	<i>143,937</i>
<i>State water (Tbl 1)</i>	<i>0</i>
<i>Other Wholesaler (define) (Tbl 1)</i>	<i>0</i>
<i>Local surface water (Tbl 1)</i>	<i>0</i>
<i>Upslope drain water (Tbl 1)</i>	<i>0</i>
<i>District groundwater (Tbl 2)</i>	<i>164</i>
<i>Banked water (Tbl 1)</i>	<i>0</i>
<i>Transferred water (Tbl 1)</i>	<i>91,174</i>
<i>Recycled water (Tbl 3)</i>	<i>0</i>
<i>Other (define) (Tbl 1)</i>	<i>0</i>
<i>Total</i>	<i>235,275</i>

4. Annual entitlement under each right and/or contract

	AF	Source	Contract #	Availability period(s)
Reclamation Urban AF/Y	0			
Reclamation Agriculture AF/Y Class 1	40,000	Friant-CVP	14-06-200-229AD	Jan. – Dec.
Other AF/Y Class 2	311,675	Friant-CVP	14-06-200-229AD	Jan. – Dec.

District's sole water contract is from the CVP Friant Division.

5. Anticipated land-use changes. For Ag contractors, also include changes in irrigated acres.

Minor urbanization and conversion to high value (permanent) crops.

6. Cropping patterns (Agricultural only)

List of current crops (crops with 5% or less of total acreage) can be combined in the 'Other' category.

Previous Plan (1998)		Previous Plan (2005)		Current Plan (2011)	
<u>Crop Name</u>	<u>Acres</u>	<u>Crop Name</u>	<u>Acres</u>	<u>Crop Name</u>	<u>Acres</u>
Grapes	28,447	Grapes	29,566	Grapes	29,239
Potatoes	19,807	Potatoes	16,150	Potatoes	13,283
Oranges	12,007	Oranges/Tang.	14,042	Oranges	12,758
Cotton	7,764	Wheat	6,773	Wheat	7,026
		Carrots	5,469	Carrots	11,469
				Almonds	6,070
Other (<5%)	45,969	Other (<5%)	39,620	Other (<5%)	32,772
<i>Total</i>	113,994	<i>Total</i>	111,620	<i>Total</i>	112,617

7. Major irrigation methods (by acreage) (Agricultural only)

Previous Plan (1998)		Previous Plan (2005)		Current Plan (2011)	
<u>Irrigation Method</u>	<u>Acres</u>	<u>Irrigation Method</u>	<u>Acres</u>	<u>Irrigation Method</u>	<u>Acres</u>
Gravity	21,557	Gravity	17,035	Gravity	9,378
Sprinkler	49,502	Sprinkler	44,241	Sprinkler	48,538
Drip	23,645	Drip	24,674	Drip	34,597
Micro	10,623	Micro	17,005	Micro	20,104
Other		Other		Other	
<i>Total</i>	105,327	<i>Total</i>	102,955	<i>Total</i>	112,617

Additional District history information can be found in Attachment F (Groundwater Management Plan)

## B. Location and Facilities

See Attachment A for maps containing the following: incoming flow locations, turnouts (internal flow), and outflow location, conveyance system (including lift pumps), storage facilities, (including operational spill recovery), and groundwater banking facilities, (District wells and spreading basins).

### 1. Incoming flow locations and measurement methods.

<u>Location Name</u>	<u>Physical Location</u>	<u>Type of Measurement Device</u>	<u>Accuracy</u>
FKC	Friant Kern Canal Turnout	Parshall Flume	± 3-5%
CVC	A-E Turnout	Propeller meters	± 2%
KR	Kern River Carrier Canal	Rated meter gate	± 2-3%
AETO	Intertie Pumping Plant and Pipeline	Acoustic meter	± 0.5%

*The above accuracy figures are reported by the manufacturer and/or USBR's Water Measurement Manual. Additional information regarding accuracy is in Attachment C (Measurement Device Documentation).*

### 2. Current year Agricultural Conveyance System

<u>Miles Unlined - Canal</u>	<u>Miles Lined - Canal</u>	<u>Miles Piped</u>	<u>Miles - Other</u>
0	45	170	0

### 3 Current year Urban Distribution System

<u>Miles AC Pipe</u>	<u>Miles Steel Pipe</u>	<u>Miles Cast Iron Pipe</u>	<u>Miles - Other</u>
n/a	n/a	n/a	n/a

### 4. Storage facilities (tanks, reservoirs, regulating reservoirs)

<u>Name</u>	<u>Type</u>	<u>Capacity (AF)</u>	<u>Distribution or Spill</u>
Wasteway	Reservoir	1,300	Emergency Storage
Balancing Reservoir	Reservoir	225	Distribution
Spillway	Reservoir	225	Distribution

### 5. Description of the agricultural spill recovery system and outflow points

A 1,300 acre-foot Wasteway Basin for emergency storage in case of extended power outage at Forrest Frick Pumping Plant, allows delivery of 1,000 cfs by gravity into the basin with an inflatable dam, but the recovery system needs to be replaced with new pumping equipment. A 225 acre-foot Balancing Reservoir (also recharge basin) allows for canal mismatches at the canal headworks with a 100 cfs pump-in and nearly 200-250 cfs gravity outflow return capacity into the canal system (depending on head conditions). A 225 acre-

foot Spillway Basin allows for canal mismatches at the canal terminus with a 260 cfs gravity spillway into and an 80 cfs pumped return capacity into the canal system.

6. *Agricultural delivery system operation (check all that apply)*

<u>Scheduled</u>	<u>Rotation</u>	<u>Other (describe)</u>
X		

7. *Restrictions on water source(s)*

<u>Source</u>	<u>Restriction</u>	<u>Cause of Restriction</u>	<u>Effect on Operations</u>
Friant-Kern	Availability of water	Supply, contract	Prorate/limited use
District Wells	Pumping capacity	Equipment, water levels	Prorate/limited use

8. *Proposed changes or additions to facilities and operations for the next five (5) years*

Upgrade and rehabilitation of the Forrest Frick Pumping Plant, upgrade of 50 year old distribution system pumps, motors, and plants, District well replacements, temporary/in-lieu water service area expansion, Sycamore and Tejon Check Structure replacements, additional reverse flow capabilities, canal liner raising and/or replacements (as needed), pipeline replacements (as needed) and water order/delivery policy review (increase flexibility for water users).

Please see Attachment Q – Major Projects Completed Since 1992

**C. Topography and Soils**

1. *Topography of the district and its impact on water operations and management*

Most of the District is gently sloping alluvial fans and flood plains with some moderately sloping fans at the East and North ends of the District. Drip or Micro irrigation systems, which are better suited to these sloping areas to reduce runoff, have been instituted by many water users.

Additional topographic and soils information is in Attachment F (Groundwater Management Plan).

2. *District soil association map (Agricultural only)*

Additional information can be found in Attachment A (District Soils Maps).

<u>Soil Association</u>	<u>Estimated Acres</u>	<u>Effect on Water Operations and Management</u>
Hesperia-Arvin-Whitewolf	55,000	Frequent irrigation and flood control
Chanac-Pleito-Badlands	15,000	Runoff from moderately steep slopes
Delano-Chanac	20,000	Leaching fraction from slight salt accumulation
Panoche-Milham-Kimberlina	25,000	Leaching fraction from slight salt accumulation
Calicreek-Whitewolf	5,000	Frequent irrigations and flood control
Delano-Pleito-Hesperia	10,000	None

3. *Agricultural limitations resulting from soil problems (Agricultural only)*

<u>Soil Problem</u>	<u>Estimated Acres</u>	<u>Effect on Water Operations and Management</u>
Slight salt accumulation	45,000	Increases water requirement
Flooding	60,000	Damage to farmland and equipment
Soil blowing	60,000	Damages pumps and crops, fills canal

**D. Climate**

1. *General climate of the district service area*

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Annual</u>
<i>Avg Precip.</i>	1.31	2.06	1.02	.93	.45	.04	.03	.01	.11	.37	.74	.45	8.52
<i>Avg Temp.</i>	47	52	57	61	69	77	83	81	75	64	53	47	64
<i>Max. Temp.</i>	75	83	92	96	104	107	112	111	106	99	87	79	77
<i>Min. Temp</i>	22	28	31	32	32	48	53	55	48	32	24	19	51
<i>ETo</i>	1.22	2.20	3.66	5.67	7.44	8.15	8.67	7.81	5.67	4.03	2.13	1.22	57.87

*Weather Station ID*            CIMIS 125            *Data period: Year* 1995 *to Year* 2011  
*ET Station ID*                 CIMIS 125            *Average annual frost-free days:* 310  
*Average wind velocity*       3.6 mph

Additional climate information can be found in Attachment F (Groundwater Management Plan).

2. *Impact of microclimates on water management within the service area*

Localized freezing temperatures can damage citrus – growers/water users can request water for frost protection, and in addition, on windy days they request additional water to prevent crops from drying out and being sand blasted on an as-needed basis (policy flexibility).

Additional information is in Attachment F (Groundwater Management Plan).

## E. Natural and Cultural Resources

### 1. Natural resource areas within the service area

<i>Name</i>	<i>Estimated Acres</i>	<i>Description</i>
Sand Ridge Preserve	400	Sandy ridge with Bakersfield Cactus

### 2. Description of district management of these resources in the past or present

None

### 3. Recreational and/or cultural resources areas within the service area

<u>Name</u>	<u>Estimated Acres</u>	<u>Description</u>
Sycamore Canyon	200	Golf course

There are no cultural resources (specifically listed on the National Register of Historic Places) within the District.

## F. Operating Rules and Regulations

### 1. Operating rules and regulations

See Attachment B1, “Rules and Regulations for the Distribution of Water”

### 2. Water allocation policy (Agricultural only)

See Attachment B1 for additional information. Division III: Distribution of Water - Section 1; Surface Water Service Area (Page 8); Division IV: Ordering, Delivery, and Use of Water - Section 1; Annual Applications (Page 13) Division IV: Ordering, Delivery, and Use of Water – Section 9; Proration of Water Delivery (Page 15).

Summary – water is allocated by contracted acreage via annual applications.

### 3. Official and actual lead times necessary for water orders and shut-off (Agricultural only)

See Attachment B1 for additional information (Division IV: Ordering, Delivery, and Use of Water - Section 4; Water Service Orders (Page 14); Division IV: Ordering, Delivery, and Use of Water – Section 5; Delivery Change (Page 14); Division IV: Ordering, Delivery, and Use of Water – Section 6; Emergency Turn Offs (Page 14)).

Summary – water orders must be placed before 9:00 a.m. the day before the change is requested; however, exceptions to the rules may be granted.

### 4. Policies regarding return flows (surface and subsurface drainage from farms) and outflow (Agricultural only)

See Attachment B1 for additional information. Division IV: Ordering, Delivery, and Use of Water - Section 11; Waste of Water (Page 15).

Summary – water is to remain on farm and no surface drainage is allowed. Subsurface drainage is not an issue in the District because the soils are well drained.

5. *Policies on water transfers by the district and its customers*

Water transfers by the District are consistent with and pursuant to Article 10 (Sales, Transfers, And Exchanges of Water) of the “Contract Between the United States and Arvin-Edison Water Storage District Providing for Project Water Service from Friant Division and for Facilities Repayment.”

See Attachment B1 (Rules and Regulations for Distribution of Water) and B2 (Contract for Agricultural Water Service) for additional information on water transfer policy by its customers.

**B1:** Division IV: Ordering, Delivery, and Use of Water – Section 10, Use of Other Water Supplies (Page 15).

**B2:** Pursuant to Article 7 (Lien and Assignment) of the District contracts with each landowner. “....*such water and right to water are of direct benefit to said land; the covenants of Landowner to pay for said water and for said right to water, and other obligations of Landowner under this Contract, shall run with and bind said land....*”

Subject to board approval, the landowner is allowed to transfer water title from one parcel to another parcel if the circumstances allow for such (no harm to others).

Summary – water transfers by the District occurs pursuant to its water supply contract and annual water transfer(s) by its customers are not allowed.

**G. Water Measurement, Pricing, and Billing**

**1. Agricultural Customers**

See Section III Best Management Practices for additional information on water measurement, pricing, and billing.

Required documentation verifying the accuracy of measurement devices is included as Attachment C (Measurement Device Documentation).

**2. Urban Customers**

- a. *Total number of connections* n/a
- b. *Total number of metered connections* n/a
- c. *Total number of connections not billed by quantity* n/a

- d. *Percentage of water that was measured at delivery point*           n/a
- e. *Percentage of delivered water that was billed by quantity*           n/a
- f. *Measurement device table*           n/a

**3. Agricultural and Urban Rates**

- a. *Current year agricultural and/or urban water charges - including rate structures and billing frequency*

See Attachment D (Water Rates, District Sample Bills and Historical Rates) for current year rate ordinance, sample bill, and historic rates.

- b. *Annual charges collected from agricultural customers*

<u>Fixed Charges</u>			
<u>Charges (\$ unit)</u>	<u>Charge units \$/acre</u>	<u>Units billed during year (acres)</u>	<u>\$ collected (\$ times units)</u>
GP	\$55.69		
GA	\$ 3.48		
GA & GP	\$59.17	Total Collected	\$6,663,000

<u>Volumetric Charges</u>			
<u>Charges (\$ unit)</u>	<u>Charge units \$/AF</u>	<u>Units billed during year AF</u>	<u>\$ collected (\$ times units)</u>
Water	\$68.00		
Energy 1 <sup>st</sup> lift	\$26.00		
Energy Subsequent lift(s)	\$14.00		
	Varies \$94-\$164/AF	131,267	\$14,564,000

- a. *Describe the contractor's record management system*

Meters are read at the end of each month, verified by Watermaster(s) with respect to orders for accuracy and forwarded to accounts receivable.

For additional information please refer to Attachment C (Measurement Device Documentation).

**H. Water Shortage Allocation Policies**

- 1. *Current year water shortage policies or shortage response plan - specifying how reduced water supplies are allocated*

See Attachment B1 for additional information. Division IV: Ordering, Delivery, and Use of Water – Section 9; Proration of Water Delivery (Page 15).

Summary – shortage/reductions are based on prorated share of contracted acreage. However, the District continues to evaluate long-term policies and procedures during deficit periods.

2. *Current year policies that address wasteful use of water and enforcement methods*

See Attachment B1 for additional information. Division IV: Ordering, Delivery, and Use of Water – Section 11; Waste of Water (Page 15).

**I. Evaluate Policies of Regulatory Agencies Affecting the Contractor and Identify Policies that Inhibit Good Water Management.**

*Discuss possible modifications to policies and solutions for improved water management*

1. District will investigate opportunities to mitigate and compensate for San Joaquin River Restoration Program impacts of lost water (approximately 30k to 40k AF/Year) including recirculation plans and Title 3 funds (groundwater recharge/banking projects).
2. District continues to address ongoing water quality issues related to its water supplies.
3. District has also reviewed its temporary water service policies to relax certain requirements so as to increase surface water usage and thus decrease groundwater extractions.
4. District has had discussions with landowners regarding adjusting its water ordering and delivery practices so as to provide more flexibility to the water user (similar to a “faucet” in urban/domestic connections).

*SECTION II*

*Inventory of Water Resources*

## Section II: Inventory of Water Resources

### A. Surface Water Supply

1. *Surface water supplies in acre feet, imported and originating within the service area, by month (Table 1).*

See Section V: Water Inventory Tables - Table 1 (Surface Water Supply)

The District has only one contract for surface water, which is the CVP Friant Division Contract. All other import sources are affected by exchanges, transfers, and limited ad hoc purchases.

2. *Amount of water delivered to the district by each of the district sources for the last 10 years*

See Section V: Water Inventory Tables - Table 8 (Annual Water Quantities Delivered).

Data set used for preparing Plan Tables is included in Section V or referenced in other Attachments.

### B. Groundwater Supply

1. *Groundwater extracted by the district and delivered, by month (Table 2)*

See Section V: Water Inventory Tables - Table 2 (Groundwater Supply)

2. *Groundwater basin(s) that underlies the service area*

<u>Name</u>	<u>Size (Square Miles)</u>	<u>Usable Capacity (AF)</u>	<u>Safe Yield (AF/Y)</u>
Kern Sub-Basin of Tulare Lake	205	5.5 million AF	228,000

3. *Map of district-operated wells and managed groundwater recharge areas*

See Attachment A (District Maps) for additional information

4. *Description of conjunctive use of surface and groundwater*

The District evaluates surface water use and groundwater use on a daily basis. The District is expanding its temporary water service in areas that currently utilizes groundwater.

5. *Groundwater Management Plan*

See Attachment F (Groundwater Management Plan) for additional information.

6. *Groundwater Banking Plan*

See Attachment F (Groundwater Management Plan) for additional information.

**C. Other Water Supplies**

1. *“Other” water used as part of the water supply*

District has no “other” water supplies other than those acquired by exchanges.

**D. Source Water Quality Monitoring Practices**

1. *Agricultural Water Quality*

See Attachment H (District Water Quality Information) for additional information.

Water quality testing includes: monthly canal sampling, annual groundwater sampling (summer), Title 22 and Constituent of Concerns (COC) sampling of District wells (and at times canal samples) for the California Department of Water Resources Pump-in Program.

2. *Agricultural water quality concerns:*      Yes      X        No          

Boron, Nitrate, Sodium, TDS/EC (salts), and pH are concerns to the District.

3. *Description of the agricultural water quality testing program and the role of each participant, including the district, in the program*

District tests for irrigation suitability and COC of source waters and Title 22/COC for District owned wells (and manifolds and canal water) at selected locations.

4. *Current water quality monitoring programs for surface water by source (Agricultural only)*

<u>Analyses Performed</u>	<u>Frequency</u>	<u>Concentration Range</u>	<u>Average</u>
Irrigation analyses	Monthly at selected canal locations		

*Current water quality monitoring programs for groundwater by source (Agricultural only)*

<u>Analyses Performed</u>	<u>Frequency</u>	<u>Concentration Range</u>	<u>Average</u>
COCs	Annually at well startup for well discharges into the canal		
Title 22	Every 3 years when groundwater is in use		
Irrigation Analyses	A-E wells and selected farm wells annually		

## E. Water Uses within the District

### 1. Agricultural

See Section V: Water Inventory Tables - Table 5 (Crop Water Needs).

### 2. Types of irrigation systems used for each crop in current year

<u>Crop name</u>	<u>Total Acres</u>	<u>Level Basin - acres</u>	<u>Furrow - acres</u>	<u>Sprinkler - acres</u>	<u>Low Volume - acres</u>	<u>Multiple methods - acres</u>
Vineyard	29,239	0	6,109	84	23,046	
Oranges	12,758	0	104	40	12,614	
Potatoes	13,283	0	73	13,170	40	
Carrots	11,469	0	0	11,469	0	
Wheat	7,026	0	0	6,972	54	
Almonds	6,070	0	0	546	5,524	
Tomatoes	4,682	0	1,475	179	3,028	
Other	28,090	136	1,481	16,078	10,395	
TOTAL	112,617	136	9,242	48,538	54,701	

### 3. Urban use by customer type in current year

<u>Customer Type</u>	<u>Number of Connections</u>	<u>AF</u>
Single-family	0	0
Multi-family		
Commercial		
Industrial		
Institutional		
Landscape irrigation		
Wholesale		
Recycled		
Golf Course (Irrigation)	1	579
Other (specify)		
Unaccounted for		
Total	1	579

### 4. Urban Wastewater Collection/Treatment Systems serving the service area

Not applicable

5. Groundwater recharge in current year (Table 6)

<u>Recharge Area</u>	<u>Method of Recharge</u>	<u>AF</u>	<u>Method of Retrieval</u>
N. Canal and Res.	Infiltration	12,644	Extraction Wells
Sycamore Ponds	Infiltration	33,137	Extraction Wells
Tejon Ponds	Infiltration	<u>33,971</u>	Extraction Wells
	Total	<u>79,752</u>	

6a. Transfers and exchanges **into** the service area in current year

<u>From Whom</u>	<u>To Whom</u>	<u>AF</u>	<u>Use</u>
Fresno County	Arvin-Edison WSD	2,400	Ag demand
Metropolitan Water District	Arvin-Edison WSD	55,374	Recharge
Kern-Tulare	Arvin-Edison WSD	10,250	Ag demand
Delano-Earlimart ID	Arvin-Edison WSD	4,150	Ag demand
Orange Cove ID	Arvin-Edison WSD	10,000	Ag demand
Lindmore ID	Arvin-Edison WSD	7,000	Ag demand
Porterville ID	Arvin-Edison WSD	<u>2,000</u>	Ag demand
	Total	<u>91,174</u>	

6b. Transfers and exchanges **out** of the service area in current year

<u>From Whom</u>	<u>To Whom</u>	<u>AF</u>	<u>Use (M&amp;I)</u>
Arvin-Edison WSD	Metropolitan WD	13,752	Banking return
	Total	<u>13,752</u>	

7. Wheeling, or other transactions in and out of the district boundaries

<u>From Whom</u>	<u>To Whom</u>	<u>AF</u>	<u>Use</u>
		0	
	Total	0	

8. Other uses of water

<u>Other Uses</u>	<u>AF</u>
None	

**F. Outflow from the District (Agricultural only)**

See Attachment A (District Maps), for the location of the only surface outflow point (Intertie Pumping Plant and Pipeline).

1. Surface drain/outflow

<u>Outflow point</u>	<u>Location description</u>	<u>AF</u>	<u>Type of measurement</u>	<u>Accuracy (%)</u>	<u>% of total outflow</u>	<u>Acres drained</u>
AETO (surface)	A-E Canal/Intertie Pipeline	13,752	Acoustic meter	±0.5	100	n/a

<u>Outflow point</u>	<u>Where the outflow goes (drain, river or other location)</u>	<u>Type Reuse (if known)</u>
AETO	Into the California Aqueduct	M&I

2. Description of the Outflow (surface and subsurface) water quality testing program and the role of each participant in the program

COC and Title 22 Analyses completed as needed.

See Attachment H (District Water Quality Information) for additional information. As previously mentioned, no subsurface outflow is occurring.

3. Outflow (surface drainage & spill) Quality Testing Program

<u>Analyses Performed</u>	<u>Frequency</u>	<u>Concentration Range</u>	<u>Average</u>	<u>Reuse limitation?</u>
COC	Monthly during Pump-in	See Attachment H	-	None

Outflow (subsurface drainage) Quality Testing Program

<u>Analyses Performed</u>	<u>Frequency</u>	<u>Concentration Range</u>	<u>Average</u>	<u>Reuse limitation?</u>
N/A				

4. Provide a brief discussion of the District's involvement in Central Valley Regional Water Quality Control Board programs or requirements for remediating or monitoring any contaminants that would significantly degrade water quality in the receiving surface waters.

District is involved and monitors both the CVSALTS and Irrigated Lands Regulatory Programs. In addition, the District participates in Water Quality Policy Committee meetings involving the Friant-Kern Canal and the Cross Valley Canal.

## **G. Water Accounting (Inventory)**

See Section V (Water Inventory Tables) for additional information.

Urban Water Accounting Tables are not applicable to the District.

*SECTION III*

*BMP's for AG CONTRACTORS*

## Section III: Best Management Practices (BMPs) for Agricultural Contractors

### A. Critical Agricultural BMPs

1. Measure the volume of water delivered by the district to each turnout with devices that are operated and maintained to a reasonable degree of accuracy, under most conditions, to +/- 6%

- a. Number of delivery points (turnouts and connections) 466
- b. Number of delivery points serving more than one farm 36\*
- c. Number of measured delivery points (meters and measurement devices) 466
- d. Percentage of delivered water that was measured at a delivery point 100
- e. Total number of delivery points not billed by quantity 0
- f. Delivery point measurement device table

<u>Measurement Type</u>	<u>Number</u>	<u>Accuracy** (+/- %)</u>	<u>Reading Frequency (Days)</u>	<u>Calibration Frequency (Months)</u>	<u>Maintenance Frequency (Months)</u>
Orifices					
Propeller meter (with totalizer)	466	2%			
Weirs					
Flumes					
Venturi					
Metered gates					
Acoustic doppler					
Other (define)					
<b>Total</b>	<b>466</b>				

\*Reflects the total number of farms/parcels under contract for long-term water service that take delivery of water through a single turnout, of which turnout also serves additional farms/parcels. A "Combined Turnout Agreement and Consent to Easement" document (Attachment R) provides additional details of administering such delivery of water from a single turnout. The total delivery through a single turnout is the responsibility of a single agent appointed to the District. The appropriate split of monthly water use is then the responsibility of each signatory to the Combined Turnout Agreement (CTA). In the past, signatories have tracked and split the total water usage (and associated payment due to the District) based on various methods including but not limited to acreage, crops, rotation, etc. The parcels/farms under a CTA follow the exact same rules and regulations as other long-term water service parcels/farms with dedicated turnouts.

\*\*See Attachment C (Measurement Device Documentation) for additional information regarding verifying the accuracy of measurement devices.

2. *Designate a water conservation coordinator to develop and implement the Plan and develop progress reports*

Name: Jeevan Muhar Title: Staff Engineer

Address: 20401 Bear Mountain Blvd. Mailing: P.O. Box 175, Arvin, CA 93203-0175

Telephone: (661) 854-5573 E-mail: jmuhar@aewsd.org

*Provide the job description and minimum qualifications*

See Attachment P (Conservation Coordinator) for additional information.

3. *Provide or support the availability of water management services to water users*

See Attachment I (Notices of District Education Programs and Services Available to Customers) and Attachment L (Climate Data) for additional information.

Also the District provided funding to the following: North West Kern Resources Conservation District, Water Education Foundation, Teachers Ag Seminar, Family Farm Alliance, Kern County Farm Bureau, Water Association of Kern County and Association of California Water Agencies.

**a. On-Farm Evaluations**

1) *On farm irrigation and drainage system evaluations using a mobile lab type assessment*

	<u>Total in district</u>	<u># surveyed last year</u>	<u># surveyed in current year</u>	<u># projected for next year</u>	<u># projected 2<sup>nd</sup> yr in future</u>
<i>Irrigated acres</i>	112,617	1,101	654	700	700
<i>Number of farms/parcels</i>	711	10	6	7	7

2) *Timely field and crop-specific water delivery information to the water user*

Water use information is recorded and billed on a monthly basis. More frequent information can be provided upon request.

**b. Real-time and normal irrigation scheduling and crop ET information**

See Attachment L for examples of the below information:

CIMIS weather station

<http://www.cimis.water.ca.gov/cimis/myCimis.jsp>

Weekly Friant Water Authority Water Data Report

<http://friantwater.org/watersupply/07312013/WeeklyWaterReport.pdf>

**c. Surface, ground, and drainage water quantity and quality data provided to water users**

District manages multiple water sources of varying water quality, which customers are keenly aware of. Some customers will request this information during specific soil and/or water amendments to their farming operations. Surface water quality (see Attachment H) and quantity information is provided to water users upon request.

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

<u>Program</u>	<u>Co-Funders (If Any)</u>	<u>Yearly Targets</u>
Irrigation Evaluations	Other Water Districts	700 acres
Irrigation Education	Other Water Districts	Reach water users

See Attachment I (Notices of District Education Programs and Services Available to Customers) for a sample of materials and notices.

**e. Other**

Other information provided by various public agencies.

**4. Pricing structure - based at least in part on quantity delivered**  
*Adopt a water pricing structure based on the measured quantity delivered*

Pricing includes “standby” and “water use” (that includes a water and energy lift component) charges (by volume) in addition to a District-wide assessment (by acreage). District prices water use by volume (per acre-foot) and bills on a monthly basis.

See Attachment B1 (Rules and Regulations for Distribution of Water) Division III: Distribution of Water - Section 2.

**5. Evaluate and improve efficiencies of District pumps**

	<u>Total in district</u>	<u># surveyed last year</u>	<u># surveyed in current year</u>	<u># projected for next year</u>
<i>Wells</i>	76	0	0	0
<i>Lift pumps</i>	174	60	150	60

Pumps and motors are checked daily when running and maintenance issues are noted and repairs or replacements are performed on an as needed basis. More efficient wells are started first.

In 2011, 34 pumps and 23 motors were repaired and/or replaced.

## B. Exemptible BMPs for Agricultural Contractors

### 1. Facilitate alternative land use

<u>Drainage Characteristic</u>	<u>Acreage</u>	<u>Potential Alternate Uses</u>
High water table (<5 feet)	0	
Poor drainage	0	
Groundwater Selenium concentration > 50 ppb	0	
Poor productivity	0	

All District lands suitable for irrigation, and therefore, this program is not applicable in AEWS.

### 2. Facilitate use of available recycled urban wastewater

<u>Sources of Recycled Urban Waste Water</u>	<u>AF/Y Available</u>	<u>AF/Y</u> <u>Currently Used in District</u>
None		

Recycled water in the area (produced carrot water and oilfield water) is of poor quality and not utilized by the District.

### 3. Facilitate the financing of capital improvements for on-farm irrigation systems.

<u>Program</u>	<u>Description</u>
USDA cost share programs	Cost share for approved practices

Customers, upon request, are made aware of EQUIP and AWEPP programs, which provide financial and technical assistance.

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/>

### 4. Incentive pricing

The District's 9D Repayment Contract with USBR does not have Tiered Pricing provisions. However, the District has the ability to implement tiered pricing with its customers but it is currently not in effect. District has considered potential surcharges for water use over a certain threshold.

In addition, it shall be noted that yearly pricing of surface water is set equal the estimated cost of groundwater pumping (to encourage conjunctive use of groundwater). The District encourages use of surface water especially during wet hydrologic periods.

5. a) *Line or pipe ditches and canals*

<u>Canal/Lateral (Reach)</u>	<u>Type of Improvement</u>	<u>Number of Miles in Reach</u>	<u>Estimated Seepage (AF/Y)</u>	<u>Accomplished/Planned Date</u>
All canals are lined, however liner repairs are a continuing O&M project, if necessary.				

Please see Attachment Q – Majors Projects Completed Since 1992

b) *Construct/line regulatory reservoirs*

<u>Reservoir Name</u>	<u>Location</u>	<u>Describe improved operational flexibility and AF savings</u>
N/A		

Since the District overlies useable groundwater, it is not desired to line them.

The District tracks infiltration and accounts for the water as recharge after considering evaporation losses. The District continues to evaluate the need to conduct studies for additional storage sites.

Please see Attachment Q – Major Projects Completed Since 1992

6. *Increase flexibility in water ordering by, and delivery to, water users*

District continues to investigate opportunities and improve operational flexibility to its delivery system. District also continues to upgrade and expand on its SCADA Automation Systems.

District occasionally meets with landowners/water users to discuss District policies to increase flexibility in orders/delivery means (similar to a “faucet” in urban/domestic connections).

Please see Attachment Q – Major Projects Completed Since 1992

7. *Construct and operate district spill and tailwater recovery systems*

<u>Distribution System Lateral</u>	<u>Annual Spill (AF/Y)</u>	<u>Quantity Recovered and reused (AF/Y)</u>
None		
Total		

<u>Drainage System Lateral</u>	<u>Annual Drainage Outflow (AF/Y)</u>	<u>Quantity Recovered and reused (AF/Y)</u>
None		
Total		

*Describe facilities that resulted in reduced spill and tailwater*

District's Wasteway Basin, Balancing Reservoir and Spillway Basin are all able to regulate canal imbalances (net spill) and thus able to recover and reuse the water.

Please see Attachment Q – Major Projects Completed Since 1992

8. *Plan to measure outflow*

Total # of outflow (surface) locations/points	<u>1</u>
Total # of outflow (subsurface) locations/points	<u>0</u>
Total # of measured outflow points	<u>1</u>
Percentage of total outflow (volume) measured during report year	<u>100</u>

*Identify locations, prioritize, determine best measurement method/cost, submit funding proposal*

<u>Location &amp; Priority</u>	<u>Estimated cost (in \$1,000s)</u>				
	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
AETO already has an acoustic meter	N/A				

9. *Optimize conjunctive use of surface and groundwater*

District has practiced conjunctive activities since 1966 (first year of deliveries) and continues such practices to-date. The District will be expanding its temporary water service area to reduce overall groundwater extractions within its boundaries.

10. *Automate distribution and/or drainage system structures*

District is considering upgrading and/or expanding its automated system and providing additional on-farm flexibility including replacement of original radial check gate structures and additional storage sites/reservoirs. District is continuing to upgrade and expand SCADA Automation Systems.

11. *Facilitate or promote water customer pump testing and evaluation*

See Attachment I (Notices of District Education Programs and Services Available to Customers) for additional information.

12. *Mapping*

<u>GIS maps</u>	<u>Estimated cost (in \$1,000s)</u>				
	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 5</u>	<u>Year 6</u>
<i>Layer 1 – Distribution system</i>			1	1	
<i>Layer 2 – Drainage system</i>					
<i>Suggested layers :topo map, facilities</i>		1	1	1	1

Layer 3 – Groundwater information		1	1	1	1
Layer 4 – Soils map			1	1	1
Layer 5 – Natural & cultural resources					
Layer 6 – Problem areas		1	1	1	1

District currently uses GIS mapping for various proposes, some of which are contained in this Plan.

### C. Provide a 3-Year Budget for Implementing BMPs

#### 1. Amount actually spent during current year.

Year <u>2011</u> or <u>Year 1</u>		<i>Actual Expenditure</i>	<i>Staff Hours</i>
<i>BMP #</i>	<i>BMP Name</i>	<i>(not including staff time)</i>	
<b>A</b> 1	Measurement	\$70,000	80
2	Conservation staff	\$5,000	160
3	On-farm evaluation /water delivery info	\$6,000	40
	Irrigation Scheduling	\$0	750
	Water quality	\$19,000	300
	Agricultural Education Program	\$17,250	80
4	Quantity pricing	\$0	480
5	Contractor's pumps	\$200,000	500
<b>B</b> 1	Alternative land use	\$0	0
2	Urban recycled water use	\$0	0
3	Financing of on-farm improvements	\$0	0
4	Incentive pricing	\$0	0
5	Line or pipe canals/install reservoirs	\$50,000	120
6	Increase delivery flexibility	\$50,000	120
7	District spill/tailwater recovery systems	\$0	0
8	Measure outflow	\$0	40
9	Optimize conjunctive use	\$50,000	80
10	Automate canal structures	\$100,000	40
11	Customer pump testing	\$0	0
12	Mapping	\$0	100
	<i>Total</i>	<i>\$567,250</i>	<i>2,890</i>

#### 2. Projected budget summary for the next year.

Year <u>2012</u> or <u>Year 2</u>		<i>Budgeted Expenditure</i>	<i>Staff Hours</i>
<i>BMP #</i>	<i>BMP Name</i>	<i>(not including staff time)</i>	
<b>A</b> 1	Measurement	\$70,000	80
2	Conservation staff	\$1,000	379
3	On-farm evaluations/water delivery info	\$6,000	1
	Irrigation Scheduling	\$0	0
	Water quality	\$45,000	330
	Agricultural Education Program	\$6,000	0
4	Quantity pricing	\$0	200
5	Contractor's pumps	\$200,000	500

	2x		
<b>B</b>	1	Alternative land use	\$0 0
	2	Urban recycled water use	\$0 0
	3	Financing of on-farm improvements	\$0 0
	4	Incentive pricing	\$0 0
	5	Line or pipe canals/install reservoirs	\$50,000 200
	6	Increase delivery flexibility	\$50,000 200
	7	District spill/tailwater recovery systems	\$0 0
	8	Measure outflow	\$0 0
	9	Optimize conjunctive use	\$300,000 480
	10	Automate canal structures	\$50,000 160
	11	Customer pump testing	\$0 0
	12	Mapping	\$4,000 80
		<i>Total</i>	<u>\$782,000 2610</u>

3. Projected budget summary for 3<sup>rd</sup> year.

Year	2013 or Year 3		Budgeted Expenditure	
BMP #	BMP Name		(not including staff time)	Staff Hours
<b>A</b>	1	Measurement	\$70,000	180
	2	Conservation staff	\$1,000	180
	3	On-farm evaluations/water delivery info	\$6,000	1
		Irrigation Scheduling	\$0	0
		Water quality	\$40,000	350
		Agricultural Education Program	\$6,000	0
	4	Quantity pricing	\$0	200
	5	Contractor's pumps	\$200,000	500
<b>B</b>	1	Alternative land use	\$0	0
	2	Urban recycled water use	\$0	0
	3	Financing of on-farm improvements	\$0	0
	4	Incentive pricing	\$0	0
	5	Line or pipe canals/install reservoirs	\$50,000	200
	6	Increase delivery flexibility	\$50,000	200
	7	District spill/tailwater recovery systems	\$0	0
	8	Measure outflow	\$0	0
	9	Optimize conjunctive use	\$300,000	480
	10	Automate canal structures	\$50,000	160
	11	Customer pump testing	\$0	0
	12	Mapping	\$4,000	80
		<i>Total</i>	<u>\$777,000</u>	<u>2531</u>

*SECTION V - DISTRICT WATER  
INVENTORY TABLES*

## *A. Ag Tables*

**Table 1**

**Surface Water Supply**

<b>2011 Month</b>	<b>Federal Ag Water (acre-feet)</b>	<b>Federal non- Ag Water. (acre-feet)</b>	<b>State Water (acre-feet)</b>	<b>Local Water (CVC) (acre-feet)</b>	<b>Other (Kern River) (acre-feet)</b>	<b>Transfers into District (acre-feet)</b>	<b>Upslope Drain (acre-feet)</b>	<b>Total (acre-feet)</b>
March	12,143	0	0	0	0	0	0	12,143
April	23,286	0	0	0	0	0	0	23,286
May	31,507	0	0	0	0	527	0	32,034
June	30,341	0	0	0	0	0	0	30,341
July	23,144	0	0	0	0	5,883	0	29,027
August	0	0	0	0	0	28,473	0	28,473
September	1,863	0	0	0	0	23,091	0	24,954
October	1,571	0	0	0	0	15,020	0	16,591
November	1,526	0	0	0	0	9,762	0	11,288
December	1,119	0	0	0	0	8,363	0	9,482
January 2012	7,865	0	0	0	0	55	0	7,920
February	9,572	0	0	0	0	0	0	9,572
<b>TOTAL</b>	<b>143,937</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>91,174</b>	<b>0</b>	<b>235,111</b>

District's sole water contract is from the CVP Friant Division

\*Transfers also include net exchanges and is a combination of Federal, State, Local, and Other water.

**Table 2**

***Ground Water Supply***

<b>2011 Month</b>	<b>District (acre-feet)</b>	<b>Private Ag *(acre-feet)</b>
March	3	8,300
April	0	13,900
May	0	14,900
June	3	19,800
July	0	23,200
August	0	28,400
September	158	22,300
October	0	17,200
November	0	13,800
December	0	6,500
January 2012	0	9,100
February	0	10,039
<b>TOTAL</b>	<b>164</b>	<b>187,439</b>

\*Estimated. Private groundwater use estimated from total crop water use in JM Lord Report (Attachment N) minus total Surface Water Deliveries.

**Table 3**

***District Total Water Supply***

<b>2011 Month</b>	<b>Surface Water (acre-feet)</b>	<b>Ground Water (acre-feet)</b>	<b>Total (acre-feet)</b>
March	12,143	3	12,146
April	23,286	0	23,286
May	32,034	0	32,034
June	30,341	3	30,344
July	29,027	0	29,027
August	28,473	0	28,473
September	24,954	158	25,112
October	16,591	0	16,591
November	11,288	0	11,288
December	9,482	0	9,482
January 2012	7,920	0	7,920
February	9,572	0	9,572
<b>TOTAL</b>	<b>235,111</b>	<b>164</b>	<b>235,275</b>

Note: includes water that was spread for groundwater recharge and/or banking.

Table 4

**Agricultural Distribution System**

Facility	Length (feet)	Width (feet)	Surface Area (square feet)	Precipitation (acre-feet)	Evaporation (acre-feet)	Spillage (acre-feet)	Seepage* (acre-feet)	Total (acre-feet)
Intake Canal	76,625	42	3,194,020	37.7	374.9	0	0	(337)
North Canal	66,249	50	3,312,450	39.1	388.8	0	0	(350)
South Canal	89,930	30	2,686,883	31.7	315.4	0	0	(284)
Spreading Basins	varies	varies	58,860,000	694.8	3,909.9	0	0	(3,215)
District Laterals	0	0	0			0	0	0
Arvin	15,800	0	0			0	0	0
Edison	128,900	0	0			0	0	0
Caliente	237,600	0	0			0	0	0
Tejon	116,200	0	0			0	0	0
Whitewolf	111,000	0	0			0	0	0
Mettler	132,000	0	0			0	0	0
<b>TOTAL</b>			68,053,352	803.3	4,989.1	0	0	(4,186)

\* Seepage is not lost to Arvin-Edison, it contributes to the groundwater aquifer.

Data from as-builts.

2011 Precipitation Worksheet*					2011 Evaporation Worksheet				
	inches precip	ft precip	acres	AF/Year		inches evap	ft evap	acres	AF/YEAR
Mar	2.10	0.18	1,562.29	273.40	Mar	3.44	0.29	1,562.29	447.86
Apr	0.20	0.02	1,562.29	26.04	Apr	5.62	0.47	1,562.29	731.67
May	0.70	0.06	1,562.29	91.13	May	7.26	0.61	1,562.29	945.19
Jun	0.03	0.00	1,562.29	3.91	Jun	8.53	0.71	1,562.29	1,110.53
Jul	0.00	0.00	1,562.29	0.00	Jul	9.21	0.77	1,105.00	848.09
Aug	0.00	0.00	1,562.29	0.00	Aug	8.60	0.72	805.00	576.92
Sept	0.03	0.00	1,562.29	3.91	Sept	6.12	0.51	211.00	107.61
Oct	0.97	0.08	1,562.29	126.29	Oct	3.82	0.32	211.00	67.17
Nov	0.93	0.08	1,562.29	121.08	Nov	2.01	0.17	211.00	35.34
Dec	0.10	0.01	1,562.29	13.02	Dec	1.80	0.15	211.00	31.65
Jan	0.56	0.05	1,562.29	72.91	Jan	2.05	0.17	211.00	36.05
Feb	0.55	0.05	1,562.29	71.60	Feb	2.90	0.24	211.00	50.99
<b>TOTAL</b>	<b>6.17</b>	<b>0.51</b>	<b>1,562.29</b>	<b>803.28</b>	<b>TOTAL</b>	<b>61.36</b>	<b>5.11</b>		<b>4,989</b>

\* Data recorded at Arvin-Edison WSD office. (See Attachment L)

Evaporation acres are less because spreading basins are dry part of the year.

Table 5

**Crop Water Needs**

2011 Crop Name	Area (crop acres)	Crop ET (AF/Ac)	Leaching Requirement (AF/Ac)	Operational Component (AF/Ac)	Effective Precipitation (AF/Ac)	Appl. Crop Water Use (acre-feet)
Vineyard (Grapes)	29,239	2.13	0.04	0.65	0.04	81,227
Oranges	12,758	3.25	0.06	0.65	0.04	49,923
Potatoes				0.65		
Spring	11,290	1.62	0.03	0.65	0.04	25,448
Fall	1,993	1.31	0.02	0.65	0.04	3,865
Carrots				0.65		
Spring	1,826	1.56	0.05	0.65	0.04	4,041
Fall	9,643	1.26	0.04	0.65	0.04	18,361
Wheat	7,026	1.83	0.01	0.65	0.04	17,178
Almonds	6,070	3.34	0.07	0.65	0.04	24,353
Tomatoes	4,682	2.11	0.02	0.65	0.04	12,829
Onions and Garlic	3,795	2.32	0.06	0.65	0.04	11,324
Cherries	3,037	3.95	0.08	0.65	0.04	14,074
Misc Citrus	2,341	2.67	0.05	0.65	0.04	7,789
Melons	1,795	1.44	0.02	0.65	0.04	3,709
Peppers	1,701	2.03	0.04	0.65	0.04	4,552
Cotton	1,375	2.63	0.01	0.65	0.04	4,463
Peach/Nectarine	1,180	3.25	0.06	0.65	0.04	4,616
Other	12,866	2.25	0.04	0.65	0.04	37,273
Crop Acres	112,617					325,024 *

\* Crop water use calculations based on JM Lord report (see Attachment N).

Total Irrigated Acres 112,617

**Table 6**

**2011 District Water Inventory**

Water Supply	Table 3		235,275
Riparian ET	(Distribution and Drain)	minus	0
Groundwater recharge	(intentional - ponds, injection)	minus	79,752
Seepage	Table 4	minus	0
Evaporation - Precipitation	Table 4	minus	4,186
Spillage	Table 4	minus	0
Transfers out of District		minus	13,752
Water Available for sale to customers			137,585
<hr/>			
Actual Agricultural Water Sales	2011	From District Sales Records	137,585
Private Groundwater	Table 2	plus	187,439
Crop Water Needs	Table 5	minus	325,024
Drainwater outflow	(tail and tile, not recycled)	minus	0
Percolation from Agricultural Land	(calculated)		(0)
Unaccounted for Water	(calculated)		0

**Table 7**

***District Influence on Groundwater and Saline Sink***

**2011**

Agric Land Deep Perc + Seepage + Recharge - Groundwater Pumping = District Influence on Groundwater	79,588
Estimated actual change in ground water storage (including natural recharge)	140,628 *
Irrigated Acres (from Table 5)	112,617
Irrigated acres over a perched water table	0
Irrigated acres draining to a saline sink	0
Portion of percolation from agri seeping to a perched water table	0
Portion of percolation from agri seeping to a saline sink	0
Portion of On-Farm Drain water flowing to a perched water table/saline sink	0
Portion of Dist. Sys. seep/leaks/spills to perched water table/saline sink	0
Total (AF) flowing to a perched water table and saline sink	0

\*From Annual P&P Report Summary of District-wide Hydrologic Balance

**Table 8**

***Annual Water Quantities Delivered Under Each Right or Contract***

<b>Year</b>	<b>Federal Ag Water (acre-feet)</b>	<b>Federal non-Ag Water. (acre-feet)</b>	<b>State Water (acre-feet)</b>	<b>Local Water (CVC) (acre-feet)</b>	<b>Other (Kern River) (acre-feet)</b>	<b>Transfers into District (acre-feet)</b>	<b>Upslope Drain (acre-feet)</b>	<b>Total (acre-feet)</b>
2002	42,561	0	0	0	0	56,440	0	99,001
2003	91,801	0	0	0	0	79,414	0	171,215
2004	60,845	0	0	0	0	47,659	0	108,504
2005	220,860	0	0	0	0	32,585	0	253,445
2006	145,999	0	0	0	0	73,594	0	219,593
2007	15,462	0	0	0	0	32,237	0	47,699
2008	25,177	0	0	0	0	38,740	0	63,917
2009	111,816	0	0	0	0	22,016	0	133,832
2010	176,249	0	0	0	0	104,145	0	280,394
2011	143,937	0	0	0	0	91,174	0	235,111
Total	1,034,707	0	0	0	0	578,004	0	1,612,711
Average	103,471	0	0	0	0	54,092	0	161,271

District's sole water contract is from the CVP Friant Division.

\*Transfers also include net exchanges and is a combination of Federal, State, Local and Other water.

**Table 8*****Annual Water Quantities Delivered Under Each Right or Contract***

<b>Year</b>	<b>Federal Ag Water (acre-feet)</b>	<b>Federal non- Ag Water. (acre-feet)</b>	<b>State Water (acre-feet)</b>	<b>Local Water (acre-feet)</b>	<b>Other (Kern (acre-feet)</b>	<b>Transfers into (acre-feet)</b>	<b>Upslope Drain (acre-feet)</b>	<b>Total (acre-feet)</b>
2002	42,561	0	2,772	50,821	2,847	0	0	99,001
2003	91,801	0	15,396	64,018	0	0	0	171,215
2004	60,845	0	6,604	40,714	341	0	0	108,504
2005	222,589	0	5,143	15,565	10,148	0	0	253,445
2006	145,999	0	9,151	49,719	14,724	0	0	219,593
2007	15,462	0	0	31,937	300	0	0	47,699
2008	25,177	0	156	23,629	14,955	0	0	63,917
2009	111,816	0	1,280	980	19,756	0	0	133,832
2010	176,249	0	30,154	73,991	0	0	0	280,394
2011	171,536	0	27,326	36,249	0	63,575	0	298,686
Total	1,064,035	0	97,982	387,623	63,071	63,575	0	1,676,286
Average	106,404	0	9,798	38,762	6,307	0	0	167,629

**ARVIN-EDISON WATER STORAGE DISTRICT  
IMPORTED SURFACE WATER BY SOURCE - AF**

WATER YEAR	FRIANT-KERN CANAL				KERN RIVER (4)	CALIFORNIA AQUEDUCT		FARM WELLS (5)	TOTAL RECEIVED
	CLASS I (1)	CLASS II (2)	OTHER (3)	TOTAL		CVC	INTERTIE		
1966	39,008	0	0	39,008	0	0	0	0	39,008
1967	26,884	56,967	0	83,851	0	0	0	0	83,851
1968	37,720	5,417	0	43,137	17,878	0	0	0	61,015
1969	17,884	181,055	0	198,939	1,057	0	0	0	199,996
1970	43,000	86,796	0	129,796	1,968	0	0	0	131,764
1971	43,933	102,820	0	146,753	0	0	0	0	146,753
1972	40,067	12,053	0	52,120	1,300	0	0	0	53,420
1973	46,996	130,609	0	177,605	3,985	0	0	0	181,590
1974	32,732	148,490	0	181,222	18,623	0	0	0	199,845
1975	35,666	146,076	0	181,742	17,325	3,597	0	0	202,664
1976	10,501	1,688	0	12,189	0	96,588	0	0	108,777
1977	2,351	0	0	2,351	400	28,812	0	0	31,563
1978	51,834	109,469	0	161,303	7,688	13,925	0	0	182,916
1979	19,268	82,701	0	101,969	0	123,973	0	0	225,942
1980	61,676	153,088	0	214,764	9,329	0	0	0	224,093
1981	21,607	8,246	0	29,853	696	141,590	0	0	172,139
1982	26,930	207,074	0	234,004	0	0	0	0	234,004
1983	45,818	120,398	0	166,216	16,109	0	0	0	182,325
1984	20,191	20,779	0	40,970	17,621	108,041	0	0	166,632
1985	22,449	0	0	22,449	5,645	130,117	0	0	158,211
1986	13,695	180,968	0	194,663	15,513	3,948	0	0	214,124
1987	11,742	0	0	11,742	0	114,222	0	0	125,964
1988	3,575	0	0	3,575	2,495	108,087	0	0	114,157
1989	920	81	0	1,001	0	118,679	0	0	119,680
1990	4,864	0	0	4,864	0	55,378	0	0	60,242
1991	17,510	0	0	17,510	0	19,285	0	0	36,795
1992	17,106	6,181	0	23,287	2,035	39,436	0	1,284	66,042
1993	40,000	150,734	0	190,734	8,821	61,292	0	0	260,847
1994	18,364	19,275	0	37,639	1,200	50,963	0	0	89,802
1995	1,213	215,171	32,685	249,069	9,802	23,696	0	0	282,567
1996	18,865	103,193	49,969	172,027	47,323	12,481	0	0	231,831
1997	33,265	117,410	25,990	176,665	68,772	12,795	0	0	258,232
1998	22,746	401	96,859	120,006	81,548	11,643	0	0	213,197
1999	9,960	37,473	22,078	69,511	37,588	144,243	0	0	251,342
2000	15,741	77,126	13,978	106,845	1,973	148,389	0	0	257,207
2001	24,028	6,038	2,720	32,786	662	13,602	0	156	47,206
2002	29,335	12,370	856	42,561	2,847	50,821	2,772	0	99,001
2003	33,743	57,788	270	91,801	0	64,018	15,396	0	171,215
2004	33,304	27,541	0	60,845	341	40,714	6,604	0	108,504
2005	46,673	122,927	52,989	222,589	10,148	15,565	5,143	0	253,445
2006	23,381	80,584	42,034	145,999	14,724	49,719	9,151	0	219,593
2007	15,462	0	0	15,462	300	31,937	0	0	47,699
2008	14,906	10,271	0	25,177	14,955	23,629	156	0	63,917
2009	52,727	59,089	0	111,816	19,756	980	1,280	0	133,832
2010	39,460	115,272	21,517	176,249	0	73,991	30,154	0	280,394
2011	45,624	105,674	20,238	171,536	0	36,249	27,326	0	235,111
<b>TOTAL</b>	<b>1,234,724</b>	<b>3,079,293</b>	<b>382,183</b>	<b>4,696,200</b>	<b>460,427</b>	<b>1,972,405</b>	<b>97,982</b>	<b>1,440</b>	<b>7,228,454</b>
<b>AVG</b>	<b>26,842</b>	<b>66,941</b>	<b>8,308</b>	<b>102,091</b>	<b>10,009</b>	<b>42,878</b>	<b>2,130</b>	<b>31</b>	<b>157,140</b>
<b>PERCENT</b>		<b>65%</b>			<b>6%</b>	<b>27%</b>	<b>1%</b>	<b>0%</b>	<b>100%</b>

NOTES: THE WATER YEAR IS MARCH THROUGH FEBRUARY OF THE FOLLOWING YEAR

(1) DISTRICT'S FRIANT-KERN CLASS 1 SUPPLY PLUS CLASS 1 PURCHASES TAKEN IN-DISTRICT

(2) FRIANT-KERN CLASS 2 SUPPLY TAKEN IN-DISTRICT

(3) OTHER FRIANT-KERN SUPPLIES SUCH AS SECTION 215 AND FLOOD RELEASE PLUS PURCHASES AND EXCHANGES.

(4) CONSISTS PRIMARILY OF REREGULATED F-K SUPPLIES DELIVERED BY EXCHANGE PLUS  
MINOR QUANTITIES OF PURCHASES OF KERN RIVER SUPPLY (<3,000 AF/YR AVERAGE)

(5) RESULT OF DISTRICT'S WELL WATER PURCHASE PROGRAM

ARVIN-EDISON WATER STORAGE DISTRICT  
**PROJECT OPERATIONS SUMMARY - 1966 TO 2011**

(Values in acre-feet)

Water Year (1)	Imported Water Supply (2)	Deliveries to Water Users (3)	Underground Storage							Exports (11)	Losses and Metering Inaccuracy (12)
			Gross Spreading (4)	Evaporation (5)	Net Percolation (6)	In-Lieu Percolation (7)	Extractions (8)	Change (9)	Cumulative (10)		
1966	39,008	0	42,137	735	41,402		0	41,402	41,402	0	-3,129
1967	83,851	17,867	64,903	1,239	63,664		0	63,664	105,066	0	1,081
1968	61,015	63,940	5,550	93	5,457		11,374	-5,917	99,149	0	2,899
1969	199,996	95,251	110,844	3,016	107,828		447	107,381	206,530	0	-5,652
1970	131,764	104,210	28,565	572	27,993		85	27,908	234,438	0	-926
1971	146,753	100,625	45,425	1,208	44,217		32	44,185	278,623	0	735
1972	53,420	104,626	309	3	306		52,659	-52,353	226,270	0	1,144
1973	181,590	119,128	65,824	2,018	63,806		769	63,037	289,307	0	-2,593
1974	199,845	133,996	66,121	1,885	64,236		1,725	62,511	351,818	0	1,453
1975	202,664	138,599	69,557	1,928	67,629		3,642	63,987	415,805	0	-1,850
1976	108,777	148,374	5,290	45	5,245		49,875	-44,630	371,175	0	4,988
1977	31,563	107,067	0	0	0		81,979	-81,979	289,196	0	6,475
1978	182,916	123,040	62,603	1,959	60,644		2,922	57,722	346,918	0	195
1979	225,942	148,438	74,613	1,815	72,798		308	72,490	419,408	0	3,199
1980	224,093	154,104	76,532	2,219	74,313		27	74,286	493,694	0	-6,516
1981	172,139	152,673	20,649	432	20,217		14,599	5,618	499,312	0	13,416
1982	234,004	137,517	90,150	2,794	87,356		12	87,344	586,656	0	6,349
1983	182,325	135,762	50,038	2,154	47,884		6,560	41,324	627,980	0	3,085
1984	166,632	148,175	16,428	347	16,081		9,321	6,760	634,740	0	11,350
1985	158,211	141,865	10,156	263	9,893		11,892	-1,999	632,741	0	18,082
1986	214,124	139,176	73,268	3,174	70,094		5,660	64,434	697,175	0	7,340
1987	125,964	140,339	2,156	149	2,007		24,332	-22,325	674,850	0	7,801
1988	114,157	139,541	2,907	152	2,755		33,742	-30,987	643,863	0	5,451
1989	119,680	148,095	6,066	159	5,907		36,278	-30,371	613,492	0	1,797
1990	60,242	149,969	2,403	62	2,341		99,152	-96,811	516,681	0	7,022
1991	36,795	113,312	173	3	170		80,544	-80,374	436,307	0	3,854
1992	66,042	132,682	9,469	216	9,253		84,483	-75,230	361,077	0	8,374
1993	260,847	130,681	122,917	2,516	120,401		6,595	113,806	474,883	0	13,844
1994	89,802	137,277	13,031	192	12,839		75,279	-62,440	412,443	0	14,773
1995	282,567	135,481	112,971	3,745	109,226		1,095	108,131	520,574	0	35,210
1996	231,831	147,303	57,539	3,433	54,106		0	54,106	574,680	0	26,989
1997	258,232	149,338	73,403	2,409	70,994		0	70,994	645,674	0	35,491
1998	213,197	114,123	82,360	4,904	77,456		681	76,775	722,449	0	17,395
1999	251,342	151,376	87,179	6,639	80,540		1,049	79,491	801,940	0	13,836
2000	257,207	143,549	101,950	4,552	97,398		5,427	91,971	893,911	0	17,135
2001	47,206	153,343	2,737	180	2,557		117,608	-115,051	778,860	0	8,734
2002	99,001	148,054	9,090	326	8,764		80,519	-71,755	707,105	11,483	10,893
2003	171,215	132,943	43,180	1,408	41,772		16,650	25,122	732,227	897	10,845
2004	108,504	143,662	31,669	265	31,404		100,125	-68,721	663,506	25,512	7,786
2005	253,445	139,033	105,723	3,917	101,806		174	101,632	765,138	0	8,863
2006	219,593	134,226	73,565	1,845	71,720		1,287	70,433	835,571	0	13,089
2007	47,699	149,678	4,603	143	4,460		152,184	-147,724	687,847	38,698	6,904
2008	63,917	149,181	3,463	163	3,300		139,929	-136,629	551,218	40,329	10,873
2009	133,832	135,122	46,945	953	45,992		111,878	-65,886	485,332	55,118	8,525
2010	280,394	128,235	133,409	3,127	130,282	331	2,723	127,890	613,222	17,701	3,772
2011	235,111	137,585	79,752	4,896	74,856	6,318	164	81,010	694,232	13,752	4,186
	7,228,454	5,898,561	2,187,622	74,253	2,113,369	6,649	1,425,786	694,232		189,738	364,567

NOTES:

- (1) Water Year - March through February of the following year
- (2) Total imported supply - all sources
- (3) Metered deliveries to turnouts, includes in-lieu spreading
- (4) Measured deliveries to spreading basins
- (5) Calculated from wetted area and measured pan evaporation
- (6) Col 4 - Col 5

- (7) In-lieu spreading accounting beginning November 2010 (9D contract)
- (8) Metered wellfield production plus farm wells (1992 & 2001)
- (9) Col 6 + Col 7 - Col 8
- (10) Accumulated Col 9
- (11) Exports from District for banking programs
- (12) Col 2 + Col 7 - Col 3 - Col 4 - Col 10

**ARVIN-EDISON WATER STORAGE DISTRICT  
2011 WATER YEAR GROSS SPREADING - AF**

MONTH	N1	NCSW GRAVITY	NCSW PRESSURE	SYCAMORE	TEJON GRAVITY	TEJON PRESSURE	SUBTOTAL	IN-LIEU	TOTAL
MAR-11	321	325	523	3,065	1,181	2,417	7,832	81	7,913
APR	671	393	473	2,885	1,121	2,177	7,720	431	8,151
MAY	471	432	434	3,090	1,033	2,206	7,666	734	8,400
JUN	328	499	470	2,937	1,056	2,052	7,342	840	8,182
JUL	381	473	518	2,973	1,080	2,193	7,618	777	8,395
AUG	299	460	534	3,066	1,016	2,241	7,616	1,073	8,689
SEP	286	393	535	3,511	999	2,180	7,904	959	8,863
OCT	227	338	407	3,126	1,049	2,382	7,529	428	7,957
NOV	159	212	294	2,638	904	1,723	5,930	297	6,227
DEC	197	204	278	2,324	800	1,229	5,032	252	5,284
JAN-12	130	182	271	2,049	611	1,082	4,325	142	4,467
FEB	131	193	202	1,473	424	815	3,238	304	3,542
<b>TOTAL</b>	<b>3,601</b>	<b>4,104</b>	<b>4,939</b>	<b>33,137</b>	<b>11,274</b>	<b>22,697</b>	<b>79,752</b>	<b>6,318</b>	<b>86,070</b>
<b>RATIO</b>	<b>4.2%</b>	<b>4.8%</b>	<b>5.7%</b>	<b>38.5%</b>	<b>13.1%</b>	<b>26.4%</b>	<b>92.7%</b>	<b>7.3%</b>	<b>100%</b>
<b>RATIO</b>	<b>14.7%</b>			<b>38.5%</b>	<b>39.5%</b>		<b>92.7%</b>	<b>7.3%</b>	<b>100%</b>

<b>TOTAL PRESSURE</b>	<b>3,601</b>		<b>4,939</b>			<b>22,697</b>			<b>31,237</b>
	<b>12%</b>		<b>16%</b>			<b>73%</b>			<b>100%</b>

# *ATTACHMENTS*

*ATTACHMENT A1 – Board  
Resolution Adopting the Plan*

BEFORE THE BOARD OF DIRECTORS OF THE  
ARVIN-EDISON WATER STORAGE DISTRICT

IN THE MATTER OF:

RESOLUTION NO. 13-22

APPROVING A WATER MANAGEMENT PLAN

WHEREAS, the District prepared a "Water Management Plan" pursuant to the United States Department of the Interior Bureau of Reclamation (USBR) and the Board has approved such plan on September 9, 2008; and

WHEREAS, the Arvin-Edison Water Storage District has a federal water service Contract No. 14-06-200-229AD dated November 1, 2010, and has, therefore, prepared pursuant to Section 27 (Water Conservation) a Water Management Plan, which requires Contractors to re-evaluate and re-submit their plans every five (5) years; and

WHEREAS, District staff and consultants prepared a "Water Management Plan" pursuant to the USBR's 2011 Standard Criteria; and

WHEREAS, said Water Management Plan will satisfy the requirements of the Agricultural Water Management Planning Act (Water Code Section 10800, sometimes referred to as SBx7-7) upon USBR's acknowledging the adequacy of the Plan.

NOW, THEREFORE, BE IT RESOLVED that this Board of Directors has approved the "Water Management Plan" and directs that a copy of same, together with this resolution be forwarded to the USBR.

All the foregoing being on motion of Director, Giumarra seconded by Director, Valpredo and authorized by the following vote, to wit:

AYES: Directors' Camp, Giumarra, Frick, Pascoe, Lehr, and Valpredo.

NOES: None

ABSTAIN: None

ABSENT: Directors' Moore, Fanucchi, and Johnston.

I HEREBY CERTIFY that the foregoing resolution is the resolution of said District as duly passed and adopted by said Board of Directors on the 10<sup>th</sup> day of September 2013.

WITNESS my hand and seal of said Board of Directors this 10<sup>th</sup> day of September 2013.



  
\_\_\_\_\_  
DAVID A. NIXON, Assistant Secretary-Treasurer  
of the Board of Directors

**ARVIN-EDISON WATER STORAGE DISTRICT**  
**CERTIFICATE OF ASSISTANT SECRETARY-TREASURER**  
**OF THE BOARD OF DIRECTORS**

I, DAVID A. NIXON, Assistant Secretary-Treasurer of the Board of Directors of Arvin-Edison Water Storage District, hereby certify that the foregoing is a full, true, and correct original copy of Resolution No. 13-22, APPROVING A WATER MANAGEMENT PLAN. I further certify that the original resolution has not been amended; modified, or rescinded in any manner since the date of its adoption.

In Witness Whereof, I have executed this Certificate and affixed the Seal of Arvin-Edison Water Storage District hereto this 26<sup>th</sup> day of September 2013.



  
\_\_\_\_\_  
David A. Nixon, Assistant Secretary-Treasurer  
Of the Board of Directors

BEFORE THE BOARD OF DIRECTORS OF THE  
ARVIN-EDISON WATER STORAGE DISTRICT

IN THE MATTER OF:

RESOLUTION NO. 15-27

APPROVING AN AMENDMENT TO THE CURRENT WATER MANAGEMENT PLAN  
TO INCORPORATE A "DROUGHT MANAGEMENT PLAN"

WHEREAS, the Arvin-Edison Water Storage District (District) staff has historically and previously prepared a Water Management Plan (or sometimes referred to as a Water Conversation Plan) pursuant to the United States Department of the Interior Bureau of Reclamation (USBR) and/or State of California requirements and this Board has approved such plans in the past; and

WHEREAS, the District has a federal water service Contract No. 14-06-200-229AD dated November 1, 2010, and has, therefore, prepared pursuant to Section 27 (Water Conservation) a Water Management Plan, which requires the District to re-evaluate and re-submit their plans every five (5) years; and

WHEREAS, District staff and consultants prepared a Water Management Plan pursuant to the USBR's 2011 Standard Criteria, which was approved and adopted by Resolution No. 13-22 on September 10, 2013; and

WHEREAS, USBR informed the District that it's Water Management Plan was deemed adequate and officially complete on February 18, 2014; and

WHEREAS, pursuant to California Governor Edmund G. Brown's Executive Order B-29-15 dated April 1, 2015 directing agricultural water suppliers to include in their Water Management Plan a detailed "Drought Management Plan" that describes the actions and measures the supplier will take to manage water demand during drought; and

WHEREAS, District staff and consultants prepared a "Drought Management Plan" pursuant to Department of Water Resources guidelines and that said "Drought Management Plan" shall be incorporated as an attachment to the current Water Management Plan.

NOW, THEREFORE, BE IT RESOLVED that this Board of Directors has approved the "Drought Management Plan" and directs that a copy of same, together with this resolution be forwarded to others as requested.

All the foregoing being on motion of Director, Pascoe seconded by Director, Moore and authorized by the following vote, to wit:

AYES: Directors' Camp, Giumarra, Moore, Pascoe, Lehr, Martinez, and Frick.

NOES: None

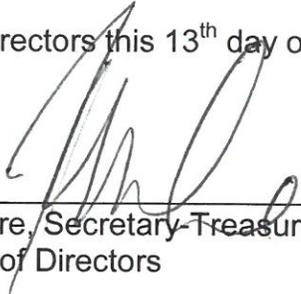
ABSTAIN: None

ABSENT: Directors' Johnston and Fanucchi.

I HEREBY CERTIFY that the foregoing resolution is the resolution of said District as duly passed and adopted by said Board of Directors on the 13<sup>th</sup> day of October 2015.

WITNESS my hand and seal of said Board of Directors this 13<sup>th</sup> day of October 2015.



  
\_\_\_\_\_  
John C. Moore, Secretary-Treasurer  
of the Board of Directors

**ARVIN-EDISON WATER STORAGE DISTRICT**  
**CERTIFICATE OF ASSISTANT SECRETARY-TREASURER**  
**OF THE BOARD OF DIRECTORS**

I, DAVID A. NIXON, Assistant Secretary-Treasurer of the Board of Directors of Arvin-Edison Water Storage District, hereby certify that the foregoing is a full, true, and correct original copy of Resolution No. 15-27, APPROVING AN AMENDMENT TO THE CURRENT WATER MANAGEMENT PLAN TO INCORPORATE A "DROUGHT MANAGEMENT PLAN." I further certify that the original resolution has not been amended; modified, or rescinded in any manner since the date of its adoption.

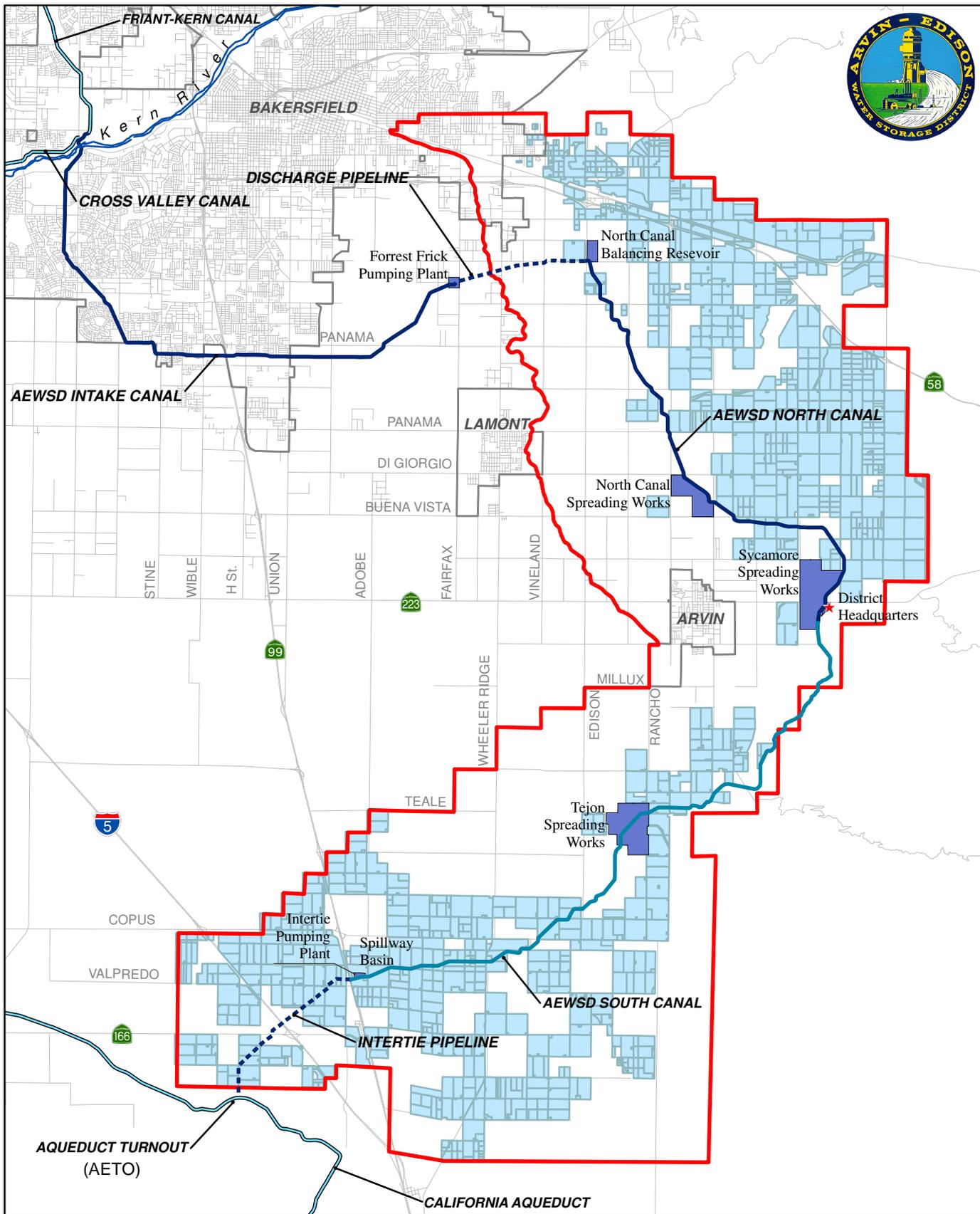
In Witness Whereof, I have executed this Certificate and affixed the Seal of Arvin-Edison Water Storage District hereto this 6<sup>th</sup> day of November 2015.



  
\_\_\_\_\_  
David A. Nixon, Assistant Secretary-Treasurer  
Of the Board of Directors

*ATTACHMENT A*

*District Maps*



0 1 2 3 Miles  
1 inch equals 3 miles

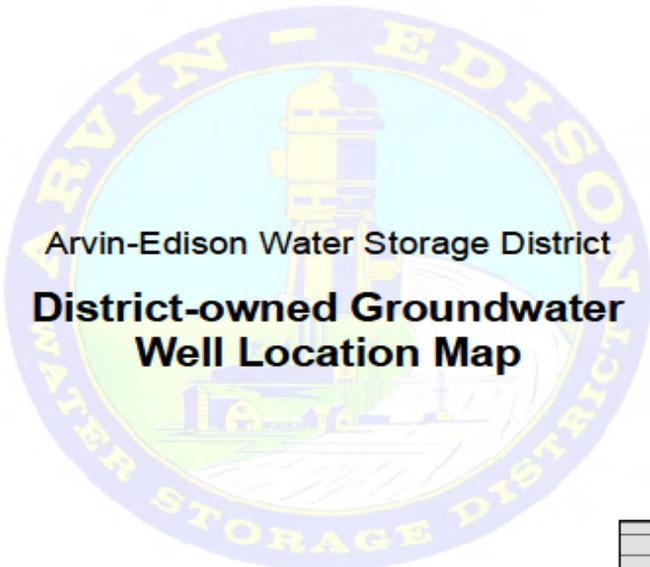
**PROVOST & PRITCHARD**  
EST. 1969  
ENGINEERING GROUP  
An Employee Owned Company

286 W. Cromwell Ave.  
Fresno, CA 93711-6162  
(559) 449-2700

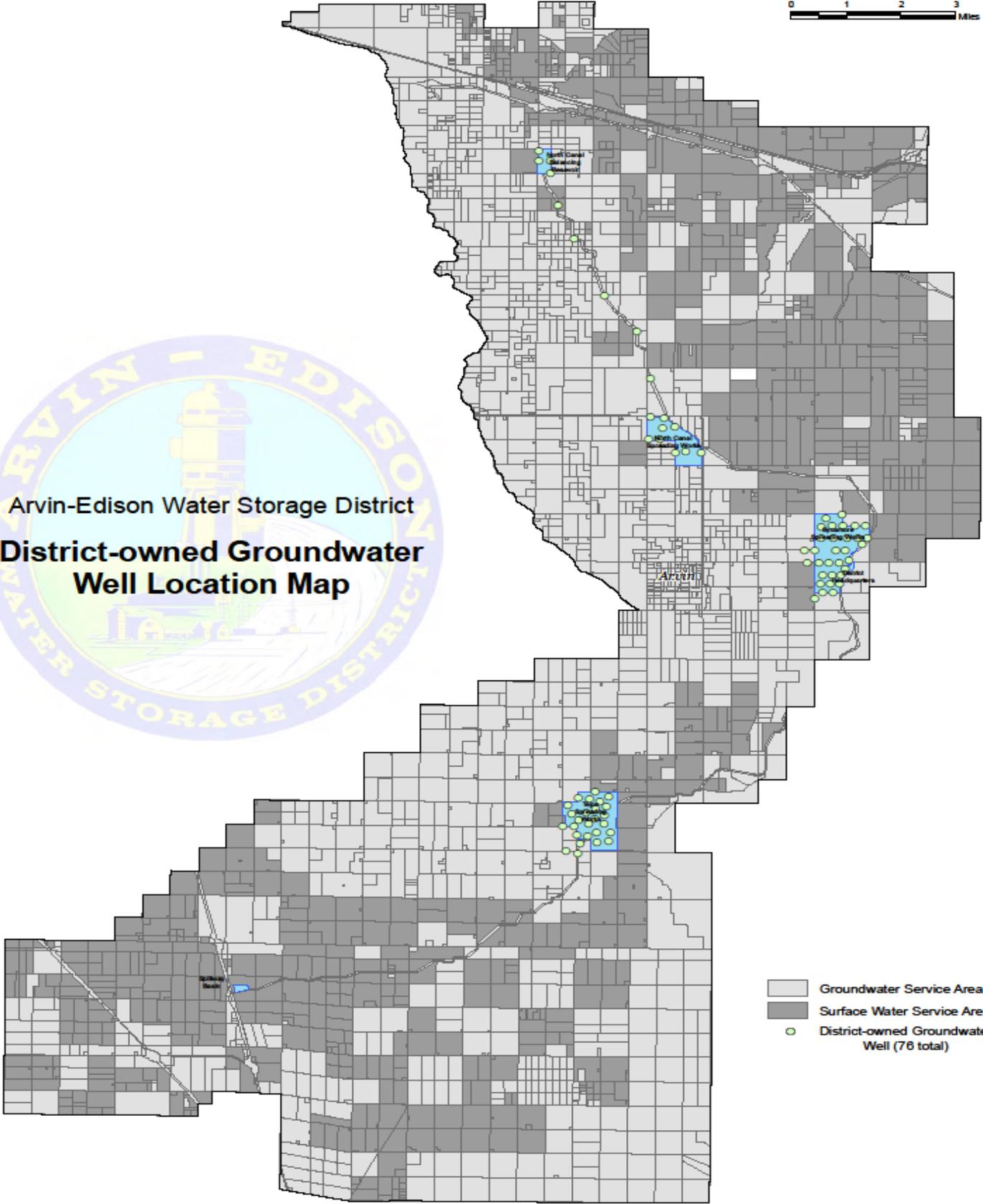
**Legend**

- AEWSD Facilities
- AEWSD Boundary
- Surface Water Service Area
- Urban Area

**Figure 1**  
Arvin-Edison W.S.D.  
Facilities Location Map



**Arvin-Edison Water Storage District  
District-owned Groundwater  
Well Location Map**



-  Groundwater Service Area
-  Surface Water Service Area
-  District-owned Groundwater Well (76 total)

# General Soil Map

Soil Survey of Kern County, Northeastern Part and Southeastern Part of Tulare County, California

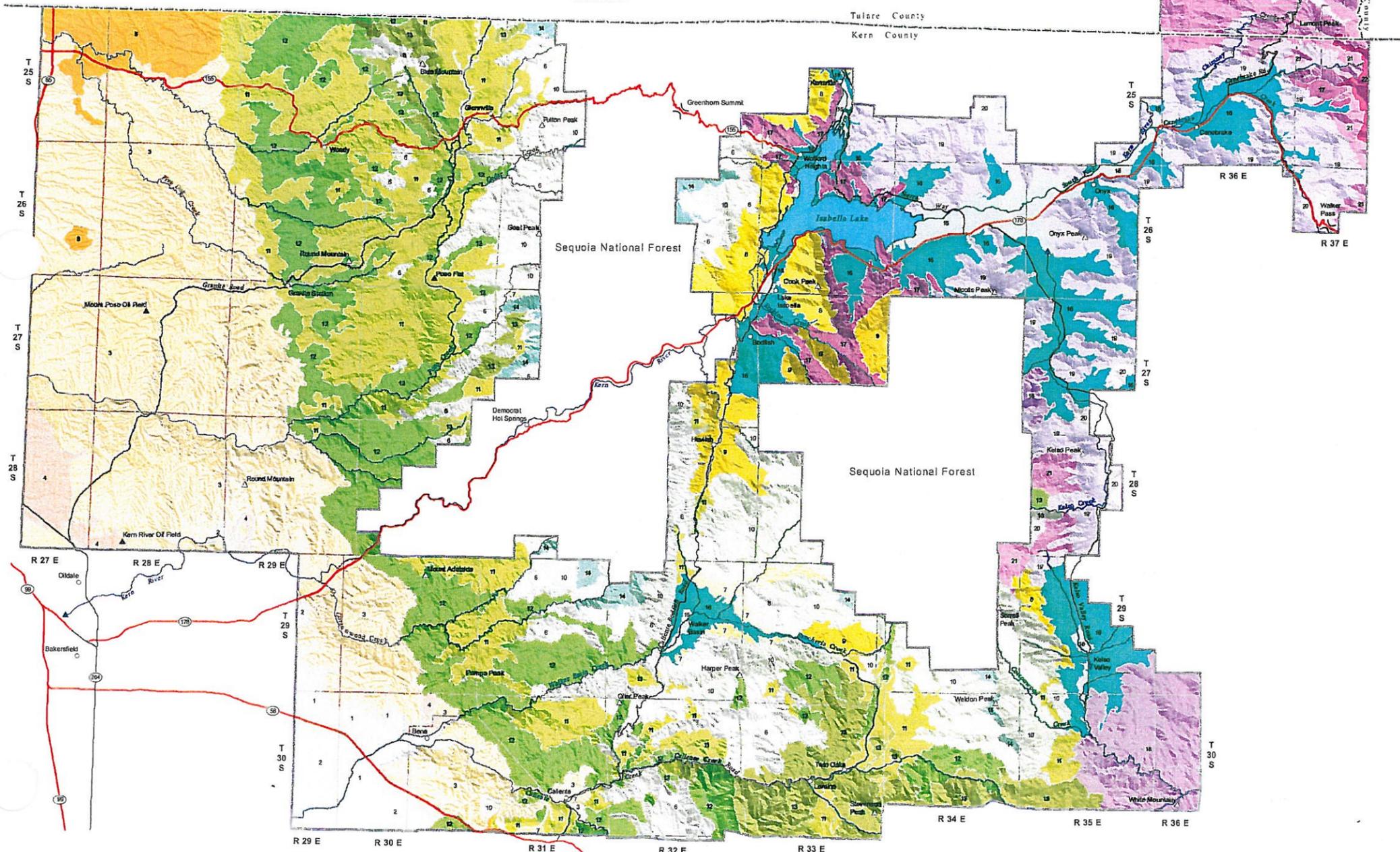
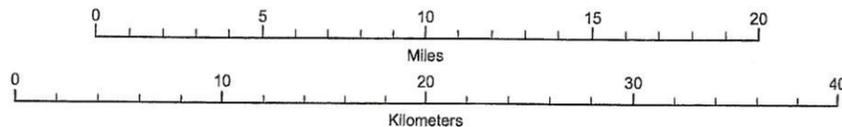
## National Cooperative Soil Survey Partners

United States Department of Agriculture  
Natural Resources Conservation Service

United States Department of the Interior  
Bureau of Land Management

State of California  
Department of Conservation

Regents of the University of California  
Agriculture and Natural Resources  
(Agricultural Experiment Station)



## Soil Legend \*

### SOILS ON FLOOD PLAINS, ALLUVIAL FANS, STREAM TERRACES AND FAN REMNANTS OF THE SOUTHEASTERN SAN JOAQUIN VALLEY

- 1 Calicreek-Whitewolf
- 2 Delano-Pleito-Hesperia

### SOILS ON ALLUVIAL FANS, STREAM TERRACES AND FAN REMNANTS OF THE SOUTHEASTERN SAN JOAQUIN VALLEY

- 3 Chanac-Pleito
- 4 Premier-Haplodurids-Delano
- 5 Delvar-Pleito-Centerville

### SOILS ON HILLSLOPES, MOUNTAIN SLOPES, FLOOD PLAINS, STREAM TERRACES, ALLUVIAL FANS AND FAN REMNANTS ON THE WESTERN AND CENTRAL SLOPES OF THE SOUTHERN SIERRA NEVADA AND GREENHORN RANGES

- 6 Tweedy-Tunis
- 7 Havala-Steuber
- 8 Kernville-Faycreek-Rock outcrop
- 9 Hyte-Erskine-Sorrell
- 10 Tollhouse-Sorrell-Rock outcrop
- 11 Arujo-Walong
- 12 Walong-Vista
- 13 Strahle-Tweedy-Sesame
- 14 Edmundston-Tollhouse-Sorrell

### SOILS ON MOUNTAIN VALLEYS, FLOOD PLAINS, DEPRESSIONS, STREAM TERRACES, INSET FANS, FAN APRONS, ALLUVIAL FANS, FAN PIEDMONTS AND FAN REMNANTS OF THE EASTERN SLOPES OF THE SOUTHERN SIERRA NEVADA RANGE PRIMARILY NEAR ISABELLA LAKE IN SOUTH FORK VALLEY

- 15 Kernfork-Kelval
- 16 Inyo-Chollawell

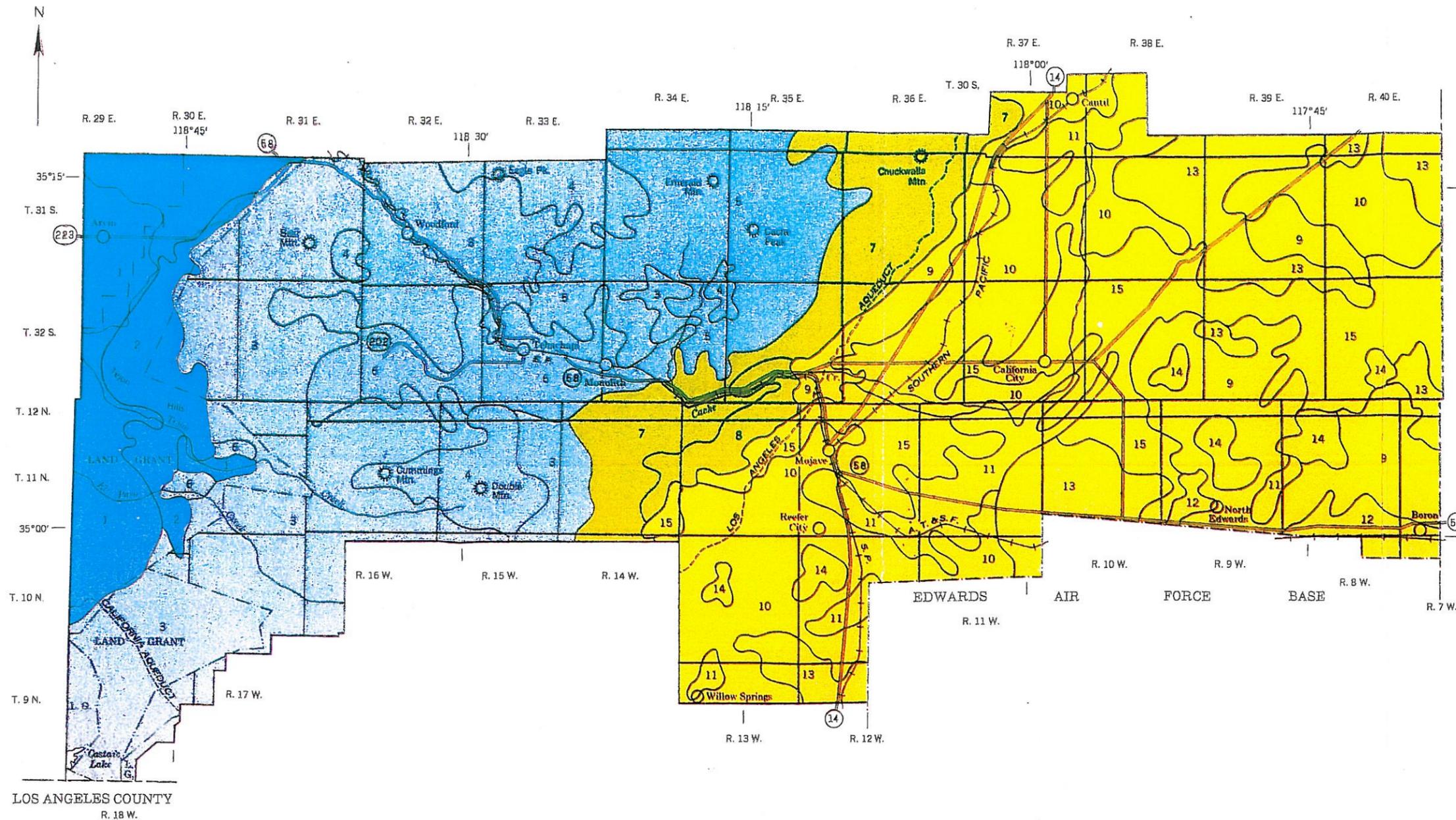
### SOILS ON HILLSLOPES AND MOUNTAIN SLOPES OF THE EASTERN SLOPES OF THE SOUTHERN SIERRA NEVADA RANGE

- 17 Stineway-Kiscove
- 18 Hoffman-Tips
- 19 Xyno-Canebrake
- 20 Sacatar-Wortley
- 21 Canebrake-Scodie-Deadfoot
- 22 Tunawee-Kenypeak

\* The units on this legend are described in the text under the heading "General Soil Map Units."



Scale: 1:170,000



**MAP UNITS**

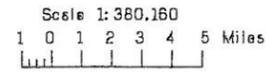
- SOILS ON ALLUVIAL FANS, FLOOD PLAINS, AND TERRACES ON THE EASTERN EDGE OF THE SAN JOAQUIN VALLEY**
- 1** Hesperia-Arvin-Whitwolf: Very deep, nearly level to moderately sloping, well drained and somewhat excessively drained soils; on alluvial fans, flood plains, and stream terraces
  - 2** Chanac-Pleito-Badlands: Very deep, gently sloping to steep, well drained soils on old dissected terraces; and Badlands
- SOILS ON UPLANDS AND IN VALLEYS OF THE SIERRA NEVADA AND TEHACHAPI MOUNTAINS**
- 3** Walong-Anaverde-Edmundston: Very deep to moderately deep, hilly to very steep, well drained soils underlain by weathered granite or schist; on mountainous uplands
  - 4** Edmundston-Tollhouse-Godde: Deep and shallow, steep to very steep, well drained and somewhat excessively drained soils underlain by weathered granite; on mountainous uplands
  - 5** Tweedy-Rock outcrop-Edmundston: Rock outcrop and deep and moderately deep, steep and very steep, well drained soils underlain by weathered granite or schist; on mountainous uplands
  - 6** Steuber-Tehachapi-Havala: Very deep, nearly level to hilly, well drained soils; on alluvial fans, stream flood plains, and terraces of the mountain valleys
- SOILS ON THE EASTERN FOOT SLOPES OF THE SIERRA NEVADA AND TEHACHAPI MOUNTAINS**
- 7** Rock outcrop-Jawbone-Xeric Torriorthents: Rock outcrop and shallow, hilly to very steep, well drained and somewhat excessively drained soils; on mountainous uplands
  - 8** Pajuela-Whitwolf: Very deep, nearly level to steep, somewhat excessively drained soils; on old stream terraces, alluvial fans, and flood plains
- SOILS OF THE MOJAVE DESERT**
- 9** Cajon-Arizo-Alko: Very deep and shallow, nearly level to strongly sloping, well drained and excessively drained soils; on alluvial fans, alluvial plains, and old terraces
  - 10** Cajon: Very deep, nearly level to strongly sloping, somewhat excessively drained soils; on alluvial fans and plains
  - 11** Rosamond-DeStazo: Very deep, nearly level to moderately sloping, well drained soils; on flood plains and in basins
  - 12** Norob-Neuralia: Very deep and deep, nearly level and gently sloping, well drained soils; on alluvial fans and plains
  - 13** Randsburg-Muroc: Shallow, gently sloping to strongly sloping, well drained soils; on low pediments
  - 14** Torriorthents-Rock outcrop: Shallow and very shallow, very steep, well drained soils and Rock outcrop; on mountainous ridges
  - 15** Garlock-Neuralia: Very deep and deep, nearly level to moderately sloping, well drained soils; on old stream terraces, alluvial fans, and alluvial plains

LOS ANGELES COUNTY  
R. 18 W.

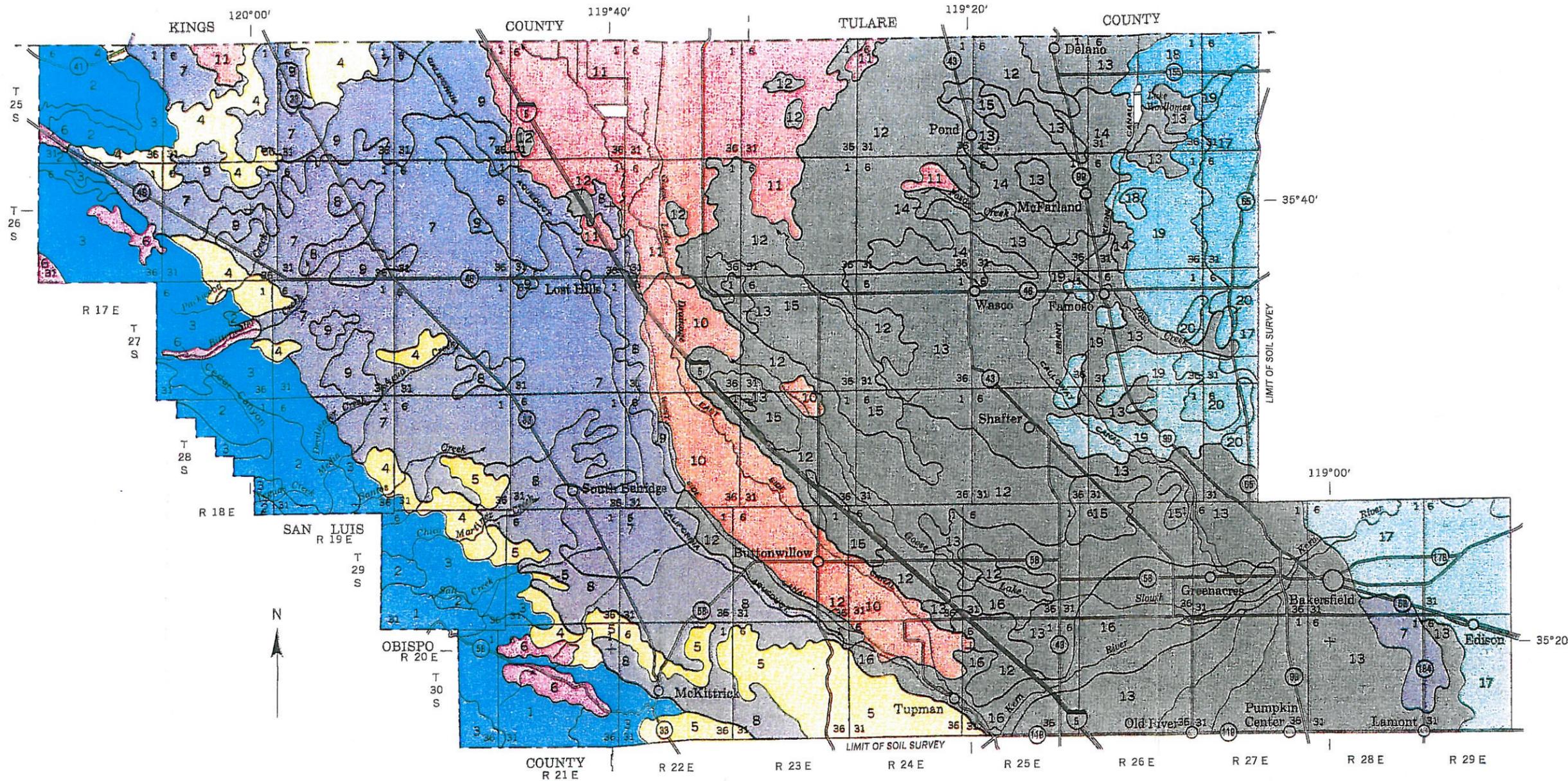
SAN BERNARDINO COUNTY

U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
UNIVERSITY OF CALIFORNIA AGRICULTURAL EXPERIMENT STATION

**GENERAL SOIL MAP**  
KERN COUNTY, CALIFORNIA,  
SOUTHEASTERN PART



*Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.*

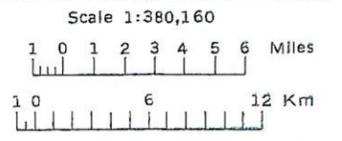


Each area outlined on this map consists of more than one kind of soil.-The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 UNIVERSITY OF CALIFORNIA  
 CALIFORNIA AGRICULTURAL EXPERIMENT STATION  
**GENERAL SOIL MAP**  
 KERN COUNTY, CALIFORNIA  
 NORTHWESTERN PART



# LEGEND

## SOILS ON HILLS AND MOUNTAINS OF THE TEMBLOR AND DIABLO RANGES

1

Aramburu-Reward: Moderately deep and deep, hilly to very steep, well drained shaly loam and very shaly clay loam

2

Aido-Ayar-Hillbrick: Shallow to deep, rolling to very steep, well drained clay, silty clay, and sandy loam

3

Hillbrick-Kilmer-Mendi: Shallow to deep, gently rolling to very steep, well drained sandy loam and loam

## SOILS ON THE FOOTHILLS OF THE TEMBLOR AND DIABLO RANGES

4

Kettleman-Bitterwater-Delgado: Shallow to deep, rolling to very steep, somewhat excessively drained and well drained soils underlain by weathered sandstone or shale

5

Elkhills: Deep, rolling to steep, well drained soils that formed in mixed, stratified alluvium

## SOILS IN THE MOUNTAIN VALLEYS OF THE TEMBLOR RANGE

6

Pottinger-Polonio: Deep, undulating to rolling, well drained soils; on alluvial fans and terraces

## SOILS MAINLY ON ALLUVIAL FANS, ALLUVIAL PLAINS, AND TERRACES IN THE WESTERN PART OF THE SAN JOAQUIN VALLEY

7

Panoche-Milham-Kimberlina: Deep, nearly level to moderately sloping, well drained clay loam, sandy loam, and fine sandy loam; on alluvial fans, alluvial plains, and terraces

8

Kimberlina: Deep, nearly level to moderately sloping, well drained fine sandy loam; on recent alluvial fans and alluvial plains

9

Twisselman-Yribarren-Panoche: Deep, nearly level to gently rolling, well drained clay, loam, and clay loam; on alluvial fans

## SOILS MAINLY IN BASINS OF THE SAN JOAQUIN VALLEY

10

Lokern-Buttonwillow: Deep, nearly level, somewhat poorly drained clay

11

Nahrub-Lethent-Twisselman: Deep, nearly level, well drained to somewhat poorly drained clay and silt loam

## SOILS MAINLY ON ALLUVIAL FANS, ALLUVIAL PLAINS, BASIN RIMS, AND FLOOD PLAINS IN THE EASTERN PART OF THE SAN JOAQUIN VALLEY

12

Garces-Panoche: Deep, nearly level, saline-alkali, well drained silt loam and clay loam; on basin rims, alluvial fans, and alluvial plains

13

Kimberlina-Wasco: Deep, nearly level, well drained fine sandy loam and sandy loam; on alluvial fans and alluvial plains

14

McFarland: Deep, nearly level, well drained loam; on alluvial fans and flood plains

15

Milham: Deep, nearly level, well drained sandy loam; on old alluvial fans and alluvial plains

16

Cajon-Westhaven: Deep, nearly level and gently sloping, well drained and somewhat excessively drained loamy sand and fine sandy loam; on flood plains and alluvial fans

## SOILS ON TERRACES IN THE EASTERN PART OF THE SAN JOAQUIN VALLEY

17

Delano-Chanac: Deep, nearly level to hilly, well drained sandy loam and clay loam

18

Exeter: Moderately deep, nearly level to gently rolling, well drained sandy loam that has a cemented layer

19

Delano-Lewkalb-Driver: Deep, nearly level to moderately sloping, well drained sandy loam and coarse sandy loam

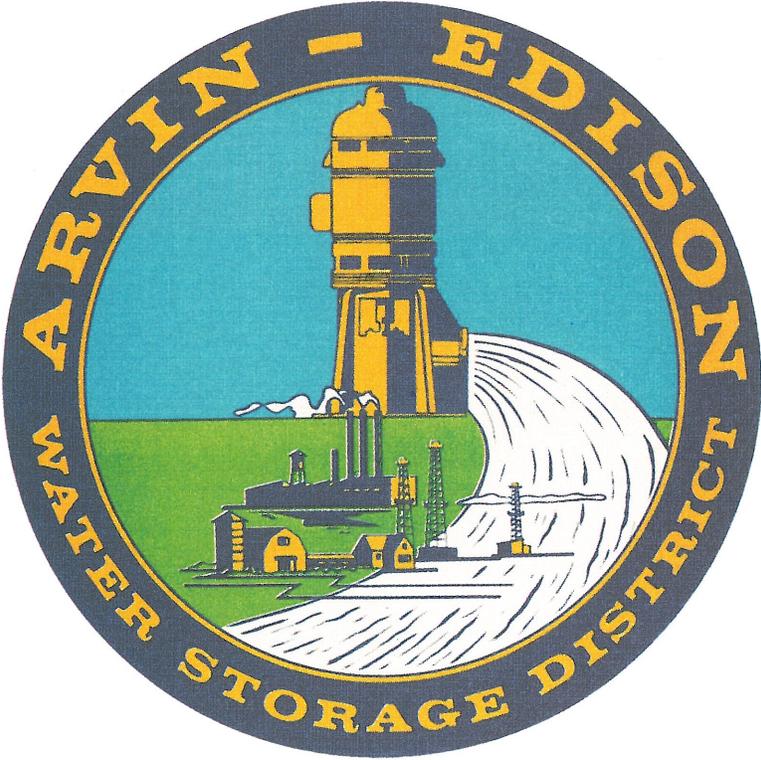
20

Premier: Deep, undulating to hilly, well drained coarse sandy loam

***ATTACHMENT B1***

***Rules & Regulations for  
Distribution of Water***

# Rules and Regulations for Distribution of Water



Arvin, California

**RULES AND REGULATIONS  
FOR DISTRIBUTION OF WATER  
ARVIN-EDISON WATER STORAGE DISTRICT**

---

**AS ORIGINALLY ADOPTED BY RESOLUTION NO. 68-16, January 2, 1968**

**AS AMENDED AND RESTATED BY RESOLUTION NO. 11-17, June 14, 2011**

20401 Bear Mountain Boulevard

Mailing Address: P.O. Box 175  
Arvin, California 93203-0175  
arvined@aewsd.org

Telephone Numbers:

District Office .....	(661) 854-5573
District Fax .....	(661) 854-5213
Watermaster/Dispatcher .....	(661) 854-4433
Forrest Frick Pumping Plant .....	(661) 366-7721
Tejon Pumping Plant .....	(661) 854-2378
North Canal Spreading Works .....	(661) 854-5579
Intertie Pump Plant .....	(661) 858-2348
CIMIS.....	(661) 634-3404

# ARVIN-EDISON WATER STORAGE DISTRICT

## OFFICERS AND DIRECTORS

Director, Division 1 ..... Ronald R. Lehr  
Director, Division 2 ..... Jeffrey G. Giumarra  
Director, Division 3 ..... President, Howard R. Frick  
Director, Division 4 ..... Donald M. Johnston  
Director, Division 5 ..... Secretary-Treasurer, John C. Moore  
Director, Division 6 ..... Vice President, Edwin A. Camp  
Director, Division 7 ..... Charles Fanucchi  
Director, Division 8 ..... Donald J. Valpredo  
Director, Division 9 ..... Kevin E. Pascoe

## STAFF

Engineer-Manager.... Steven C. Collup  
Assistant Manager..... David A. Nixon  
Staff Engineer ..... Jeevan S. Muhar  
General Superintendent ..... Christopher P. Krauter  
Watermaster..... Perry L. Hyatt  
Watermaster..... Nicolas J. Carbajal

## TABLE OF CONTENTS

### DIVISION I: GENERAL

Section	Page
1. Purpose .....	1
2. Definitions.....	1
3. Interpretation-Federal Contracts.....	1
4. Enforcement of Rules and Regulations .....	1
5. Effective Date and Changes.....	1
6. Severability of Provisions-Captions .....	2

### DIVISION II: GENERAL PROJECT ADMINISTRATION

Section	Page
1. Engineer-Manager and District Employees .....	2
a. Engineer-Manager .....	2
b. District Employees .....	2
c. Appeal of Decision of Engineer-Manager .....	2
d. Right of Access.....	2
2. Equipment and Records .....	2
a. Equipment.....	2
b. Records .....	3
3. Ownership, Notices, Representatives, and Appointment of Agents.....	3
a. Land Ownership-Address of Landowners .....	3
b. Representatives.....	3
c. Appointment of General Agent.....	3
d. Eligibility Under Reclamation Law.....	4
4. Transfers of Land-Assumptions and Encumbrances .....	4
a. Transfer of Title to Land.....	4
(1) District Records.....	4
(2) Transfers Affecting Water Service Contract - Assumption Agreements .....	4
b. Warranty of Title .....	4
c. Request for Notice .....	4
5. Segregation of Lien for Delinquent Toll or Charge - Partial Redemption .....	5
6. Liability of District.....	6
7. Actions Against District.....	6
8. Liability of Water User .....	6
9. Groundwater Storage and Preservation of Pumping Rights .....	7
10. Encroachment on District Right-of-Way.....	8
11. Modification of the System .....	8

## DIVISION III: DISTRIBUTION OF WATER

Section	Page
1. Surface Water Service Area .....	8
a. Additions of Lands to Surface Water Service Area .....	8
b. Exclusion of Lands from Surface Water Service Area .....	9
2. Water Service .....	9
a. Water User.....	9
b. Operating Agent.....	9
(1) Appointment.....	9
(2) Term of Agency-Revocation.....	10
c. Payment for Water Service .....	10
d. Determination of Charges .....	11
e. Tiered Water Pricing .....	11
f. Delinquencies .....	11
g. Carry Over Prohibited .....	12
3. Temporary Water Service for Special Purposes.....	12
4. Temporary Water Service for Agricultural Uses.....	12

## DIVISION IV: ORDERING, DELIVERY, AND USE OF WATER

Section	Page
1. Annual Applications for Contract Water Service .....	13
2. Revised Annual Applications for Contract Water Service .....	13
3. Continuous Delivery .....	13
4. Water Service Orders .....	14
5. Delivery Change Within the Same Lateral.....	14
6. Emergency Turn Offs... ..	14
7. Unauthorized Adjustments of Flow .....	14
8. Interruptions in Service.....	15
9. Proration of Water Delivery .....	15
a. System Deficiency .....	15
b. Water Shortage .....	15
10. Use of Other Water Supplies.....	15
11. Waste of Water.....	15
12. Farm Turnouts-Connections.....	15
13. Combined Turnouts .....	16
a. Combined Turnout Agreement and Consent to Easement .....	16
b. Rate of Delivery .....	16
14. Delivery of Municipal, Industrial, and Domestic Water.....	16
15. Condition of Water.....	16
16. Section 592 of the Penal Code of the State of California.....	16

**DIVISION V: POLICIES AND PROCEDURES FOR ESTABLISHING, FIXING AND COLLECTION OF CHARGES AUTHORIZED BY SECTIONS 43006 AND 47180 OF THE WATER CODE FOR GENERAL ADMINISTRATION AND GENERAL PROJECT SERVICES RENDERED BY THE ARVIN-EDISON WATER STORAGE DISTRICT**

<b>Section</b>	<b>Page</b>
1. Policies .....	17
a. General Administrative Service Charge .....	17
b. General Project Service Charge .....	17
2. Procedures .....	18

# ARVIN-EDISON WATER STORAGE DISTRICT

## RULES AND REGULATIONS FOR DISTRIBUTION OF WATER

EFFECTIVE JUNE 14, 2011

### DIVISION I: GENERAL

1. **Purpose:** These Rules and Regulations are established by the Board of Directors of the Arvin-Edison Water Storage District pursuant to the requirements of Division 14 of the California Water Code, specifically section 43003 of said Water Code, and, in furtherance of District's Adopted Project, in order to provide for the most economical and efficient distribution and use of water within the District and establish procedures for fixing tolls and charges authorized by sections 43006 and 47180 et seq., of the California Water Code. These Rules and Regulations are the Rules and Regulations mentioned in the Water Service Contracts between the District and various landowners within District's Surface Water Service Area.

2. **Definitions:** Terms and expressions employed in these Rules and Regulations are as defined in the Water Service Contracts executed by the District and its landowners with the exception of certain terms or expressions used herein which do not appear in said Contracts, but which terms or expressions are defined or explained at the point where they are introduced into these Rules and Regulations.

3. **Interpretation - Federal Contracts:** These Rules and Regulations are in implementation of the contract effective November 1, 2010 between Arvin-Edison Water Storage District and the United States of America regarding water delivery, and any other contracts which may be entered into between Arvin-Edison Water Storage District and Water Users for water service; and any amendment to the foregoing.

4. **Enforcement of Rules and Regulations:** The Engineer-Manager of the District is authorized to perform all acts necessary and proper to enforce these Rules and Regulations. **Failure of a Water User to comply with any of the Rules and Regulations shall be sufficient cause for the termination of water service, and water service will not again be furnished to such Water User until full compliance has been made with all requirements as herein set forth;** PROVIDED, HOWEVER, that Water User shall in no way be relieved of any responsibility for payment of any charges or obligations by reason of such termination of water service. When it is practicable to do so, advance notice of any such termination of water service will be furnished to Water User. In no event shall any liability accrue against District or any of its officers, agents, or employees for damage, direct or indirect, arising from such terminations of water service. Non-enforcement of any provision of these Rules and Regulations does not constitute a waiver of the District's right of enforcement at any time.

5. **Effective Date and Changes:** These Rules and Regulations, as amended, shall become effective June 14, 2011 and may be added to, amended, or repealed at any time by resolution of the Board of Directors of the District and such additions, amendments, or repeals shall become effective upon adoption or as otherwise specified by the Board of Directors.

**6. Severability of Provisions - Captions:** If any provisions of these Rules and Regulations, or the application thereof to any person or circumstances are held invalid, the remainder of these Rules and Regulations and the application of their provisions to other persons or circumstances shall not be affected thereby.

Captions accompanying these Rules and Regulations are for convenience or reference and do not form a part thereof.

## **DIVISION II: GENERAL PROJECT ADMINISTRATION**

### **1. Engineer-Manager and District Employees:**

**a. Engineer-Manager:** The Engineer-Manager is the person appointed by the Board of Directors to manage, pursuant to the Board's direction, the affairs of the District. The District's distribution system is under the exclusive management and control of the Engineer-Manager. Except as provided in Division IV, Section 6 hereof (relating to emergency turn-offs), no person other than the Engineer-Manager or District employees designated by him shall turn on, turn off, or otherwise adjust, manipulate, or use any of the District's facilities; provided, however, the Engineer-Manager may provide written authority for water users to turn on, turn off or otherwise adjust facilities under specified conditions, which authority may be withdrawn at any time.

**b. District Employees:** The Engineer-Manager shall supervise the activities of all District employees in connection with the operation and maintenance of the Distribution System and all other activities of the District. The Engineer-Manager shall designate the authority of each of the employees of the District. Any controversy between a Water User and a District employee that cannot be settled directly shall be appealed to the Engineer-Manager.

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

**d. Right of Access:** Persons employed by the District and/or authorized by the Engineer-Manager shall have access at all times to all lands and District water distribution facilities within the District for the purpose of conducting District business. Except in cases of emergency or where otherwise considered impractical by the Engineer-Manager, the person in possession of the land shall first be contacted before entering landowner's property. Nothing herein contained shall affect any District easement or right-of-way.

### **2. Equipment and Records:**

**a. Equipment:** No property of the District, including tools, machinery, equipment, vehicles, and the like shall be used for purposes other than District business. No property of the District, including tools, machinery, equipment, vehicles, and the like shall

be borrowed or loaned for any purpose without the expressed authorization of the Engineer-Manager.

**b. Records:** All records of the District that are retained consistent with its policies shall be maintained at the District office or an offsite storage location. Such records are for the exclusive use of the District and shall be made available for use for other purposes only as provided in the provisions of Chapter 3.5, Division 7, Title 1 (commencing with Section 6250, of the California Government Code), subject to policies of the District adopted from time to time.

**3. Ownership, Notices, Representatives, and Appointment of Agents:** For administration of these Rules and Regulations and District's Water Service Contracts, it is necessary that certain matters (including, but not limited to, matters regarding applications for water service; ordering, delivery, and use of water; and giving notice to Water Users) shall be authorized in writing by the Water User. For convenience of Water Users and District and without releasing a Water User's land from any obligations under their Water Service Contract or these Rules and Regulations, District will provide water service pursuant to the following determinations and authorizations:

**a. Land Ownership - Address of Landowners:** In all respects where materially relevant to the administration of these Rules and Regulations, except as provided in Division II, Section 4a(1) hereof (relating to transfer of title and District records), owner of land means the person(s) or entity shown on the Kern County Assessment Roll, last equalized, at the time in question and as determined in accordance with the Water Code, sections 39051 through 39054, inclusive. Addresses of landowners will be determined in a like manner.

Except as provided in Division II, Section 4a(1), if title to land has been transferred and the change of interest does not appear on said Assessment Roll, it is the duty of the Transferee to present proper proof of title to the District.

**b. Representatives:** Anyone acting in any representative capacity for a Water User shall furnish evidence to the satisfaction of the District of his/her authority to so act and bind the lands of Water User. Such representatives include guardians; conservators; administrators; executors; trustees; partnerships, including limited partnerships; attorneys-in-fact; and the like.

**c. Appointment of General Agent:** Where Water User consists of more than one owner (undivided ownership), except a husband and wife living at the same address, or when Water User is an entity (e.g., partnership, limited liability company, corporation, public agency, etc.) Water User shall, by written instrument, file with the District and appoint a general agent for the purpose of performing any and all acts to be done by Water User (except permanent assignment of rights) and for receiving all notices, billings, and refunds from District for charges incurred by reason thereof. In case of husband and wife living at the same address, in absence of written notification to the contrary it is to be presumed that either has such authority to act for the other. Appointment of such agent shall be made on forms furnished by District and executed and filed in a manner satisfactory to District. Forms will stay in force until revoked or superseded. Failure to appoint such an agent may result in discontinuance of water service delivery until an agent has been appointed.

**d. Eligibility Under Reclamation Law:** As a result of the District entering into a "Contract Between the United States and Arvin-Edison Water Storage District Providing for Project Water Service From Friant Division and for Facilities Repayment," dated November 1, 2010, and repaying in full the Repayment Obligation thereunder, the District is no longer subject to the acreage limitation, reporting, and full cost pricing provisions of the Reclamation Reform Act of 1982, and accordingly Article 8 of the Water Service Contract is moot and no longer applicable.

**4. Transfers of Land - Assumptions and Encumbrances:**

**a. Transfer of Title to Land:**

**(1) District Records:** Notwithstanding any transfer or change of ownership, District shall be entitled to administer these Rules and Regulations and Water Service Contracts in reliance upon and in accordance with matters on file at the District office only (regardless of the knowledge of any agent, servant, or employee to the District acquired in any other manner) including such matters as determining landownership, addresses, authorizations, appointments, designations, refunds, and the like. Such matters are continuing representations upon which the District is entitled to rely unless and until the District has received actual written notice of a change or revocation.

**(2) Transfers Affecting Water Service Contract - Assumption Agreements:** Without limiting the provisions of Article 7 of the Water Service Contracts, when title to land affected by a Water Service Contract is transferred or such lands are the subject of a contract of sale, District will be under no obligation to deliver water to such lands until the new landowner has provided satisfactory evidence of transfer of title or the contract of sale and thereafter promptly executes an Assumption Agreement; provided, however, service will continue to be made to any Operating Agent that has been previously appointed as provided in Division III, Section 2b hereof, until said appointment is otherwise revoked. Such Assumption Agreements shall be on forms provided by the District, executed and completed in a manner satisfactory to the District. In the event of such transfer of ownership as to a portion of the lands described in an Exhibit "A" to a Water Service Contract, and in the absence of written instructions from the affected landowners, agreements will be prepared so as to allocate the rights and obligations under said Water Service Contract on an acreage basis. (See Division IV, Section 13 hereof for Combined Turnouts). The District may decline to approve such Assumption Agreement and discontinue water service if such conveyance of a portion of the lands described in Exhibit "A" results in a parcel in separate ownership of less than five (5) acres.

**b. Warranty of Title:** The execution by the District of any Assumption Agreement shall be without any warranty of title on the part of the District and shall not be interpreted as any representation, expressed or implied, by or on behalf of District, that such assignment, transfer, or disposal is free and clear of outstanding encumbrances.

**c. Request for Notice:** Without attempting to establish or in any manner affect the rights of any person arising from a deed of trust, any person or entity having any interest in a deed of trust on property subject to a Water Service Contract may file with the District a written request for notice of failure to make the payments required by such Water Service Contract or a request for notice of any specified act that the District may be requested to

undertake or to consent to under the Water Service Contract or these Rules and Regulations that such person alleges will detrimentally affect his/her interest, including, but not limited to, a request for exclusion from the Surface Water Service Area, a request for assignment of rights under Water Service Contract, or a request for permission to utilize water on lands other than those described in Exhibit "A" to a Water Service Contract.

Upon receipt of such notice, District shall give such person or entity written notice of default or of any request that it take such action as is set forth in the request for notice at least fifteen (15) days prior to foreclosure proceedings or prior to such other specified act by the District, unless such person or entity has given written consent to the requested action. In addition to setting forth the matter as to which notice by the District is requested, the request for notice shall set forth a legal description of the land affected, the name of the current owner of the fee, the name and address where the requested notice is to be sent, and a copy of the deed of trust showing the recording information.

Any notice from the District shall be effective when deposited in the mail, postage prepaid, directed to the address shown in the notice. Provided, however, District may disregard any request for notice which has not been re-filed within fifteen (15) days of a written demand; therefore, by the District mailed in the same manner and with the same effect as hereinabove provided for the notice by the District. Provided further; however, nothing herein provided shall render District liable to any person or entity under any circumstances.

#### **5. Segregation of Lien for Delinquent Toll or Charge - Partial Redemption:**

a. For purposes of payment of delinquent tolls and charges, including Water Service Contract charges, the owner(s) (excluding owners of undivided interests) of any separately described portion of a tract of land subject to a lien established pursuant to Section 47183 of the Water Code, other than the owner(s) named in the delinquent list recorded pursuant to Section 47183 of the Water Code, may, with the consent of all the owners of said tract of land, request the Board to direct the District Treasurer, or the County Treasurer, as the case may be, to segregate said lien ratably in accordance with the acreage of the respective tracts; to accept payment of said segregated amounts in satisfaction of said respective segregated liens; and, upon receipt of payment, to issue a recordable satisfaction of such lien or to delete said parcel from the notice of sale provided for in Section 46730 et seq., of the Water Code, or to cancel the sale as to said parcel, as the case may be.

If the Board finds that the respective tracts are adequate security for the segregated amounts and that such segregation is not detrimental to the best interest of the District, it shall enter such order which shall become effective upon payment of the sum due.

b. For like purposes, any Transferee (excluding undivided owners) of any separately described portion of a tract of land for which the District holds a certificate of sale issued pursuant to Section 46759.5 et seq., of the Water Code, other than the owner named in the delinquent list recorded pursuant to Section 47183 of the Water Code by reason of which said certificate or deed was issued, may, with the consent of all of the owners of said tract of land, request the Board to direct the District Treasurer or County Treasurer, as the case may be, to segregate the amount for which the property was sold to District ratably in accordance with the acreage of the respective tracts, to compute the amount required for

redemption pursuant to Section 46786 of the Water Code on the basis of said segregated sale price, to accept such sum found to be due, and to issue a certificate of partial redemption describing the portion redeemed. If the Board finds that the respective tracts are adequate security for the segregated amounts and that such segregation is not detrimental to the best interests of the District, it shall enter such order which shall become effective upon payment of the sum due.

**6. Liability of District:** As provided in Article 2 Section (g) of the Water Service Contracts and in connection with all water service provided pursuant to these Rules and Regulations, District will not be responsible for the control, carriage, handling, use, disposal, or distribution of water delivered to Water Users or Contractors hereunder outside the facilities then being operated and maintained by District.

As provided in Article 2 Section (j) of the Water Service Contract, and in connection with all water service provided pursuant to these Rules and Regulations, in no event shall any liability accrue against District or any of its officers, agents, or employees for any damage, direct or indirect, arising from temporary discontinuance or reduction of water deliveries.

As further provided in Article 2 Section (k) of the Water Service Contract, and in connection with all water service provided pursuant to these Rules and Regulations, in no event shall any liability accrue against the District or any of its officers, agents, or employees, for any damage, direct or indirect, arising from a shortage on account of problems in deliveries, drought, or any other cause whatsoever.

**7. Actions Against District:** Nothing contained in these Rules and Regulations constitute any waiver by District or estop it from asserting any defenses or immunities from liability as provided in Division 3.6 of Title 1 of the Government Code. In connection with any such matters, one may wish to seek the advice of an attorney of their choice.

**8. Liability of Water User:** As provided in Article 2 Section (g) of the Water Service Contract and by acceptance of surface water service provided pursuant to these Rules and Regulations, Water User and/or Contractor does thereby agree to indemnify and to assume the defense of and hold harmless the District and its officers, agents, and employees from any loss, damage, liability, claims, or causes of action of every nature whatsoever, for damage to or destruction of property, including the District's property, or for injury to or death of persons, in any manner arising out of or incidental to the control, carriage, handling, use, disposal, or distribution of water outside District's Distribution System. No persons will be allowed to drain irrigation water or tail water upon or permit water to drain upon District-owned property except as authorized in writing by the District Engineer-Manager and any person doing so will be subject to fine and damages; will be in violation of these Rules and Regulations; and water service may be terminated until such violation ceases.

It is the duty of the Water User to furnish sufficient protection for the individual farm turnout or any other District facility to prevent damage. In the event that damage occurs, the expense of District personnel and/or contractors for the repair of such damage will be borne by Water User and no water will be furnished through the affected turnout until such repairs are made and the charges therefore are paid to the District.

Consistent with the provisions of Article 2 of the Water Service Contract, water delivery may be discontinued by the District for any Water User who permits water delivered by District to escape beyond the boundary of the lands described in said contract whether willfully, carelessly, or on account of defective or inadequate ditches, pipelines, or other facilities, or inadequate tail water facilities, or inadequately prepared land or improper management, and said water delivery will not be resumed until such conditions are corrected.

**9. Groundwater Storage and Preservation of Pumping Rights:** In order that no Water User be prejudiced by utilizing Project Water in lieu of exercising whatever rights he or she may have to pump groundwater, and in recognition of the anticipated benefit to the District's underground water supply arising from the implementation of the District's project, the Board of Directors has adopted the following policies:

**a.** All Water Service Contracts with the District for water service include a paragraph (Article 2 Section (e)) which is quoted following:

"In the interest of preserving to Landowner<sup>1</sup> his rights to pump groundwater for use on his lands which will be served with water under this Contract, it is agreed that, during all years that District delivers water to Landowner, to the extent that Landowner shall reduce his pumping of groundwater and shall make use of water so delivered to him by District, Landowner's said use of water so delivered to him by the District shall be deemed the same as if he had pumped from the underground a quantity of water equal to the quantity of water so delivered to him by District. Landowner also agrees to recognize and be bound by the pumping rights similarly preserved to other Landowners in District pursuant to water service contracts heretofore and hereafter executed. It is further agreed that, as a result of District's spreading of water and percolation thereof to underground storage, either by direct recharge ponds or through deliveries in lieu of Landowners pumping groundwater, District shall have the exclusive right to use of the underground storage for (i) spreading and recovery of water in connection with supplying water to Landowner and to all other Landowners who shall heretofore or hereafter execute contracts with District for water service; (ii) providing stored water to third parties which have contracted with the District or (iii) for any other lawful purpose."

**b.** That, to the extent District may pump water from underground supplies for furnishing to Water Users, District shall be deemed to be exercising said Water Users' rights to pump water from underground water supplies; PROVIDED, HOWEVER, that nothing herein contained shall prevent or hinder any Water User from exercising their rights to pump groundwater.

**c.** Consistent with Article 2 Section (d) of the Water Service Contract it is declared that without obligating District to assume any responsibility therefore and without limiting or detracting from the obligations assumed by Water Users in this regard, District shall have the right to the use of all seepage and return flow resulting from Project Water which escapes, percolates, or is discharged beyond Water User's recovery facilities, if any, and nothing contained in said Water Service Contract or contained herein shall be

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<sup>1</sup> In municipal and industrial contracts, Landowners are sometimes called "Contractors."

construed as an abandonment or relinquishment by District of the right to the recapture, use, and benefit of all such water and any use made of any resultant benefit to groundwater conditions is made with its consent, which consent is revocable at any time, and such use is not to be considered a use adverse to such right to the continued exercise of right to pump and utilize groundwater, nor shall any such use under any circumstances create an estoppel in asserting any such right at any time.

**10. Encroachment on District Right-of-Way:** Without limiting rights otherwise reserved, a permit for encroachment shall be required before any fences, pipelines, or other encroachments will be permitted upon District's property. An encroachment permit form approved by the Board of Directors will be furnished by District and must first be approved by the Engineer-Manager before any construction begins. The work shall be constructed to the District's specifications at the sole expense of the applicant and maintained under supervision of, and to the satisfaction of, the District. Under no circumstance shall any facilities be constructed or permanent crops be planted which prevent access to District facilities for repair of such facilities.

**11. Modification of the System:** If a modification to District's Distribution System is made at the request of a Water User, and for his/her benefit, including, but not limited to, construction of a turnout, the costs thereof, including reasonable charges for engineering performed by District and overhead, shall be paid in advance by such Water User. The advance payment shall be determined by the estimate of the Engineer-Manager. Within thirty (30) days after submittal of final accounting, Water User shall pay or District will refund the difference between said estimated costs and the actual costs of the modification. All modifications to the Distribution System shall be made in accordance with District specifications and subject to District's approval. The construction of such facilities shall be done by or at the direction of District and shall become the property of District.

### **DIVISION III: DISTRIBUTION OF WATER**

**1. Surface Water Service Area:** Surface Water Service Area means that certain area of land within the District to which surface water service is available pursuant to an Water Service Contract with the District, said area having been selected pursuant to criteria adopted by the Board. Said area of land consists of all those parcels of real property described in Exhibit "A" to said Water Service Contracts. Lands within the Surface Water Service Area are shown on a map on file at the District office designated as "Surface Water Service Area" as amended from time to time. In the case of a conflict between the lands described in Exhibit "A" to said Water Service Contracts and said map, the description contained in said Exhibits shall govern. The originals of said contracts are on file at the District office and recorded in the Official Records of Kern County. Said contracts are uniform in nature differing as to whether the service to be provided is for agricultural or municipal, industrial and domestic purposes.

**a. Addition of lands to Surface Water Service Area:** Lands may be added to the Surface Water Service Area only if the following conditions are met:

(1) An application for addition to the Surface Water Service Area is filed with the Board by the owner or owners of the lands described in said application;

(2) The Board determines that water service is available for said lands and

such addition is feasible and in the best interest of, or not detrimental to, District and its landowners;

(3) The owner or owners of said lands execute a Water Service Contract with the District in the form established by the Board including such special conditions as it may reasonably require, and pay such charges as the Board finds equitable and just.

**b. Exclusion of Lands from Surface Water Service Area:** Lands may be excluded from the Surface Water Service Area only if the following conditions are met:

(1) An application for exclusion is filed with the Board by the owner or owners of the lands described in said application. Such application shall state that the applicant understands that if exclusion is granted, he/she must waive any right(s) the lands may have had to surface water service under existing policies.

(2) The Board determines that water service for said lands has been requested by other lands in the District, subject to such conditions of service as the Board may reasonably require, and that the exclusion is feasible and in the best interest of, or not detrimental to, the District and its landowners.

(3) All documents necessary to effect the transfer have been properly executed and that payment of such charges as the Board finds equitable and just has been made or provided for.

**2. Water Service:** Contract Water Service is water service available only to lands within District's Surface Water Service Area pursuant to District's form of Water Service Contract and only to lands described at Exhibit "A" of said contract; provided, however, a Water User may deliver water from a particular turnout to other lands in the Surface Water Service Area which are designated in the annual application filed pursuant to Division IV, Section 1 as part of Water Users Farming Unit Operations. A Farming Unit Operation shall consist of lands owned, leased or managed, or a combination thereof, by a common Water User, for which the Water User is otherwise authorized to act pursuant to these Rules and Regulations.

**a. Water User** means the owner of land described in Exhibit "A" of a fully executed Water Service Contract or their representative or agent as appointed pursuant to Division II, Section 3c (relating to General Agents) or Division III, Section 2b (relates to Operating Agents) hereof.

**b. Operating Agent:**

(1) **Appointment:** Water User may by written instrument filed with the District, appoint an Operating Agent, and authorize said Agent to apply for such water service as is or may be available for the turnout(s) designated in the appointment, order such water, and Water User may designate the Operating Agent as the person to receive the billings, notices, and refunds due in connection with service to such turnout(s). Such authorization must be made on forms provided by the District, and executed and completed in a manner satisfactory to the District. The authorization shall remain in effect, and District may rely thereon until the same is revoked as provided for below or superseded by subsequent filing of a like document.

**(2) Term of Agency - Revocation:** The appointment of such agent shall be binding upon and shall inure to the benefit of Water User, their respective heirs, executors, administrators, successors, and assigns, and each and every one of them, or any person or entity claiming any interest in the lands affected by said Water Service Contract by, through, or under any Water User and to the District and its successors and assigns. The power and authority of such agent shall continue until Water User or, in the case of undivided ownership, a majority of Water Users (determined on an acreage basis, or ownership interest in the case of an undivided interest), shall have filed with the District a written revocation of said agency executed in the same form as the appointment, or a superseding appointment is filed with the District. Said agency is revoked by death of the agent, or his/her incapacity to act, or by his/her renunciation by written notice of resignation filed with the District.

**c. Payment for Water Service:** Under conditions of Contract Water Service, Water User shall pay the “Standby” Charge and the “Water Use” Charge as provided in the Water Service Contract. These charges shall be annually fixed by the Board and shall be due by and delinquent as shown on the following schedule:

**Standby Charge and Water Use Charge Payment Schedule**

<b>Payments</b>	<b>Month</b>	<b>Billed</b>	<b>Due</b>	<b>Delinquent</b>
1	March	04/05	04/10	05/10
2	April	05/05	05/10	06/10
3	May	06/05	06/10	07/10
4	June	07/05	07/10	08/10
5	July	08/05	08/10	09/10
6	August	09/05	09/10	10/10
7	September	10/05	10/10	11/10
8	October	11/05	11/10	12/10
9	November	12/05	12/10	01/10
10	December	01/05	01/10	02/10
11	January	02/05	02/10	03/10
12	February	03/05	03/10	04/10

Note: The Standby Charge may be prorated over the first nine (9) payments; or provided the Board may annually determine that it be paid with the 12<sup>th</sup> payment and the “Standby” Charge be waived to the extent Water User has paid “Water Use” Charges totaling for the Water Year an amount at least equal to the “Standby” Charge.

A statement indicating the balance of Water User's account for both the Standby Charge and the Water Use Charges will be mailed approximately the fifth day of each month and shall be due and payable by the tenth day of the month, and delinquent one month thereafter. A penalty of ten percent (10%) and interest at the rate of one percent (1%) per month will be assessed on the delinquent date.

The **Standby Charge** may be paid in full at the beginning of the water year or paid in nine (9) installments as defined above in the Standby Charge payment schedule; provided the Board may annually determine that it be paid with the 12<sup>th</sup> payment, and the Standby Charge be waived to the extent Water User has paid Water Use Charges totaling

for the Water Year an amount at least equal to the Standby Charge. The Standby Charge provided in the Water Service Contract is a per acre charge and is due the District regardless of the quantity of water used under a Water Service Contract. Water User will be notified prior to the beginning of a Water Year as to the amount of the Standby Charge as provided in the Water Service Contract.

The **Water Use Charge(s)** as provided in the Water Service Contract shall be billed based on the quantity of water used the previous month. The amount of the Water Use Charge shall consist of a **water component** plus an **energy component** for the District's energy cost for each pump lift, including Forrest Frick Pumping Plant and groundwater pumping, there being one to six pumping lifts as identified in Exhibit "A" of each Water User's contract by turnout. Water User will be notified prior to the beginning of a Water Year as to the amount of the Water Use Charge as provided in the Water Service Contract.

**d. Determination of Charges:** The amount of the per acre **Standby Charge** and the amount of the per acre-foot **Water Use Charge** shall be fixed each year by the Board of Directors and determined as follows:

The sum of the **Water Use Charge** and to the extent applicable the **Standby Charge** shall approximate the average total per acre-foot cost of producing groundwater within the District (including capital recovery, operations, maintenance, repair, standby power, and energy costs).

The per acre-foot **Water Use Charge** further consists of a **Water Component** and an **Energy Component**. The **Energy Component** is a variable charge and shall approximate the average energy cost to the District of each additional pump plant lift required for the delivery of water including Forrest Frick Pumping Plant and Groundwater Pumping. The Water Component shall provide for all or a portion of the cost of the water.

**e. Tiered Water Pricing:** Tiered water pricing charges will be determined and fixed by the Board and may be imposed in addition to the Water Use Charge in any year the Board determines that in order to meet the demands of the Water Users in the Surface Water Service Area the District will be pumping significant quantities of water from its well fields or in lieu thereof will be purchasing additional quantities of water from sources other than its contract with the United States. During such a year, notice of the applicability of tiered water pricing will be mailed to each water user, which notice may not be given until after March 1 because of uncertain water supplies.

**f. Delinquencies:**

(1) No water order or application for water for any person or entity who is delinquent in payment of District charges or District assessments, will be honored until such delinquent charges, or assessments, or sums are paid in full.

(2) If the installment or payment is not received in the **District office** by 5:00 p.m. on the date in which it becomes delinquent (or when the delinquent date falls on a weekend or District-observed holiday, by 5:00 p.m., the next regularly scheduled workday) as defined in Division III, Section 2c, hereof, delivery of water service shall be discontinued without notice and no further water service deliveries will be made until all delinquencies,

including penalties, and interest, have been paid.

(3) Thirty (30) days after each installment or payment becomes due it shall become delinquent and a penalty of ten percent (10%) of the amount of the installment or payment will be assessed. In addition, said delinquent installment or payment shall be subject to interest at the rate of twelve percent (12%) per annum from the date of the delinquency until all installment or payments are current as defined in Division III, Section 2c.

(4) In the event a Water User is delinquent on any Standby or Water Use Charges as of April 10 of each calendar year, for the prior Water Year, action will be commenced by the District to collect all charges due in accordance with the provisions of the Water Service Contract and Sections 47181 to 47185, inclusive, of the Water Code. Provided, however, the District may initiate such action prior to such date as to any delinquency.

(5) A trustee or beneficiary under deed of trust that has recorded a notice of default of land that is delinquent in payment of water service tolls and charges may deposit the amount of such tolls and charges with the District as are necessary to keep the lands current.

**g. Carry Over Prohibited:** Water made available in a particular year may not be carried over for use in the following Water Year, regardless of the reason why the water was not used or available for use during that Water Year.

**3. Temporary Water Service for Special Purposes:** Temporary Water Service for Special Purposes is water service made available on an interruptible and non-dependable basis for uses not directed to agricultural uses, within or outside of the Surface Water Service Area. Such water may be made available at the discretion of the Engineer-Manager on a short-term basis only, and District reserves the right to discontinue such service at any time. Persons wishing such service must either make arrangements with a Water User for use of turnout facilities or with District if water is to be taken directly from District's canal or other facility; file with District a form of contract entitled "Arvin-Edison Water Storage District Contract for Temporary Water Service for Special Purposes"; and make such payments or deposit such funds as are set forth in said form of contract pursuant to policy established by the Board from time to time.

**4. Temporary Water Service For Agricultural Uses:** Temporary Water Service for Agricultural Uses is water service made available for agricultural use on an interruptible and non-dependable basis to lands outside the Surface Water Service Area. In the event that the Board determines that temporary water service for a given period or water year is in the best interest of the District, the Board may authorize such service and set charges. Such temporary water service shall be made available only to lands having an independent alternative source of water and no crop is to be planted which will be dependent upon the continued delivery of the temporary water. In order that land located outside the Surface Water Service Area is to be eligible for temporary water service, the landowner shall have executed an agreement establishing a covenant running with the land, in a form provided by the District, wherein the landowner expressly acknowledged that the affected lands have no right to Contract Water Service from the District. Provisions for payment of charges

resulting from the sale of such temporary water service shall be the same as the "Water Use" Charge(s) as described in Division III Section 2 hereof. Such temporary water service may be made available to eligible land through an existing farm turnout or through a temporary farm turnout to be installed by the District at landowner's expense and used to serve temporary water or directly from District's Distribution Facilities canals through pumps and metering devices installed to District's specifications and at landowner's expense, which facilities shall be operated solely by District personnel; provided that District facilities are able to deliver the extra water and the delivery of such water does not interfere with water service deliveries to Water Users within the Surface Water Service Area. It is the responsibility of the party requesting such temporary water service, if a facility to deliver water to his/her lands is not in place, to make arrangements with a Water User for the use of an existing farm turnout or to pay, in advance, the cost of installing a connection from a District facility to the desired point of delivery. The District is under no obligation to continue such temporary water service and delivery of temporary water may be terminated by District at any time. An annual agreement setting forth the conditions contained herein must be entered into by and between District and Temporary Water User prior to commencement of the delivery of such temporary water service. Such agreement shall be in a form furnished by the District, and executed and filed in a manner satisfactory to District.

#### **DIVISION IV: ORDERING, DELIVERY, AND USE OF WATER**

**1. Annual Application(s) for Contract Water Service:** In order to obtain delivery of Contract Water Service each year, Water User must complete, sign, and file with the District no later than February 1 of each year, an "Annual Application for Contract Water Service" covering lands described in Exhibit "A" of the Water Service Contract and designating any Farming Unit Operation for the following year. **Water service will not be made available to any such land until this document necessary to meet eligibility requirements is filed.** As provided in Section 3(b) of the Water Service Contract and Division IV, Section 9 of these Rules and Regulations, the District will schedule water deliveries and deliver water to Water Users as nearly in accordance with their requests as is practicable and District's determinations with regard to scheduling of water deliveries shall be conclusive.

The application will be sent to Water Users on or about December 1<sup>st</sup> of the preceding year. Water User shall include the following information:

- a. Landowner's name and address.
- b. Turnout Number(s).
- c. The name of the person or persons who have the authority to place water orders throughout the year.
- d. The total estimated water requirement for the Water Year.

**2. Revised Annual Applications for Contract Water Service:** Revised Annual Applications for Contract Water Service may be filed at any time, but water will be delivered pursuant to such revised applications only if the Engineer-Manager determines that it is practicable and feasible to do so and District does not assume any obligations for the delivery of water according to such revised applications.

**3. Continuous Delivery:** Water delivered shall be initiated at approximately 8:00 a.m., and will run continuously day and night until the amount of water ordered for the period has been delivered and no water order will be accepted for less than a 24-hour period.

**4. Water Service Orders:** Orders to turn on or to turn off water or orders to increase or decrease the rate of water delivery shall be made at the District office in person or by telephone by Water User or the person he/she designates in writing in accordance with Division IV, Section 1c hereof. Such orders shall be made in accordance with the following schedule:

**Orders Received Prior to**

**9:00 a.m.**

on Monday shall be for Tuesday;  
on Tuesday shall be for Wednesday;  
on Wednesday shall be for Thursday;  
on Thursday shall be for Friday;  
on Friday shall be for Saturday;  
on Saturday shall be for Sunday;

**Orders Received After**

**9:00 a.m.**

on Monday shall be for Wednesday;  
on Tuesday shall be for Thursday;  
on Wednesday shall be for Friday;  
on Thursday shall be for Saturday;  
on Friday shall be for Sunday;  
on Saturday shall be for Monday;

Futhermore, water orders placed after 5:00 p.m. on Saturday, or on Sunday, will be for Tuesday.

Except in emergencies, water flow shall not be turned on, turned off, increased, or decreased after 9:00 a.m., on the day scheduled.

For the purpose of properly scheduling District's activities, it is desirable that Water User give the District a turn off order at the same time that a turn on order is given.

**5. Delivery Change Within the Same Lateral:** Once water is ordered changes of delivery point within the service area of the same lateral may be made on a less than 24-hour notice, but the Engineer-Manager, as communicated through the Watermaster, will make the decision as whether or not to waive the 24-hour notice.

**6. Emergency Turn Offs:** Water User or the District may in an emergency turn off the supply of water at Water User's turnout. If Water User effects such emergency turn off, he must notify the District office immediately. Water User and anyone effecting such an emergency turn off does thereby agree to assume the defense of and hold harmless the District and its officers, agents, and employees from any and all loss, damage, liability, claims, or causes of action of every nature whatsoever for damage to or destruction of property, including District's property, or for injury to or death of persons, in any manner arising out of or incidental to such emergency turn off. If District effects such emergency turn off, the Water User will be notified as soon as possible as provided in Section 2(j) of the Water Service Contract. In no event shall any liability accrue against District or any of its officers, agents, or employees for any damage, direct or indirect, arising from such temporary discontinuance or reduction of water deliveries.

**7. Unauthorized Adjustments of Flow:** When District meter readings show substantial variation from the ordered flow indicating that the flow has been altered by a Water User, a warning shall be sent to the Water User and if the variations continue, the turnout may be locked by District personnel or service otherwise discontinued until the matter is satisfactorily resolved.

**8. Interruptions in Service:** Consistent with Article 2 Section (i) of the Water Service Contract, temporary shutdowns may be made by District to make improvements and repairs. Except in an emergency, all affected Water Users will be notified prior to making such temporary shutdowns. District shall not be liable for damage, which may result from interruptions in service.

**9. Proration of Water Delivery:**

**a. System Deficiency:** Consistent with the design and operational objectives of District's distribution facilities and giving consideration to requests for water service from all Water Users, as provided in Section 3(b) of the Water Service Contracts and Division IV, Section 1 of these Rules and Regulations, the District will schedule water deliveries and deliver water to Water User as nearly in accord with Water User's requests as is practicable, and District's determinations with regard to such scheduling of water deliveries shall be final and conclusive; however, when total daily orders exceed the delivery capacity of a lateral, water orders will be taken and water delivered on a basis as determined by the Engineer-Manager on a day-to-day basis by dividing the available lateral or system capacity by the total Water Service Contract acreage served by that lateral or system and ordering water that day.

**b. Water Shortage:** Pursuant to powers granted by Section 43004 of the California Water Code and Article 2(l) of the Water Service Contracts, water will be apportioned within the District, in the event of a shortage, to each Water User upon the basis of the ratio of each Water User's acreage as listed in Exhibit "A" of each contract to the total acreage subject to the District's contracts for agricultural water service.

**10. Use of Other Water Supplies:** Subject to approval by the Engineer-Manager, a Water User may use water furnished by District concurrently with water from other sources, provided that Water User can demonstrate that the delivery of water furnished by District is less than or equal to the amount of water applied on land eligible for water service within the same period, less the reasonable incidental losses.

**11. Waste of Water:** Water service delivery will be discontinued to any Water User found to be wasting water, either willfully or carelessly, due to defective or inadequate ditches, pipelines or other facilities, inadequately prepared land, improper management, or for any other reason. Water service delivery will not be resumed until the conditions causing the waste have been corrected.

**12. Farm Turnouts - Connections:** Except as provided in Division II, Section 11 (relating to modification of the system), water delivery will be made only through a District-owned and operated turnout, and the connection from said turnout to the individual Water User's system shall be subject to approval by the Engineer-Manager or his designee. Plans for any subsequent revisions to said connection shall be submitted to the District for approval, in writing, by the Engineer-Manager or his designee. Failure to obtain such approval in the manner provided may result in discontinuance of delivery of water service to the turnout until such approval is obtained.

All deliveries from District's facilities shall be made in a manner so as to prevent water from Water User's system from entering the District's facilities and all normal precautions shall be taken to prevent damage to District's facilities resulting from operation of the Water User's system. District will not install any additional turnouts in its distribution system except as provided in Division II, Section 11 hereof.

**13. Combined Turnouts:** Combined turnout means any farm turnout serving more than one Water User. If for any reason (including matters resulting from a transfer into separate ownership of a portion of the lands described in Exhibit "A" to an Water Service Contract as being served by a particular farm turnout and where all the affected land will continue to be served by the designated turnout), the lands of two or more Water Users are to be served by a single turnout, such turnout is a combined turnout and the following rules shall apply:

**a. Combined Turnout Agreement and Consent to Easement:** Water service will be furnished through a combined turnout only upon execution of a "Combined Turnout Agreement and Consent to Easement" by each Water User to be served through the combined turnout. Such agreement shall be on forms provided by the District and executed and completed in a manner satisfactory to District. District shall be under no obligation to deliver water to a Water User through a combined turnout until such agreement has been executed and filed with the District. Combined turnout agreements remain in effect unless terminated by all affected parties.

**b. Rate of Delivery:** The "Rate of Delivery" for a combined turnout as shown in Exhibit "A" of Water Service Contract(s) and/or Assumption Agreement(s) is a combined rate of delivery for the turnout. Therefore, when the combined water service delivery requests of Water Users exceed the delivery capacity of the turnout, the Engineer-Manager may prorate water service delivery to conform to such delivery capacity.

**14. Delivery of Municipal, Industrial, and Domestic Water:** No deliveries of water for municipal, industrial, and domestic uses will be made except pursuant to a Water Service Contract between District and a public entity or other entity having necessary legal and financial capability to furnish such service.

The basic rules and regulations governing the delivery of irrigation water shall apply also to the delivery by the District of municipal, industrial, and domestic water, and the term "Water User" as used herein shall also refer to users of said municipal, industrial, and domestic water. Since water shortages and interruptions in delivery may occur, the users of municipal, industrial, and domestic water must have secondary sources of supply or adequate storage for temporary use.

**15. Condition of Water:** Water furnished by the District is in a raw, untreated condition, and, as a result, is considered to be unfit for human consumption without treatment.

**16. Section 592 of the Penal Code of the State of California:** Attention is directed to the provisions of Section 592 of the California Penal Code as follows:

**"Canals, ditches, flumes or reservoirs**

a) Every person who shall, without authority of the owner or managing agent, and with intent to defraud, take water from any canal, ditch,

flume, or reservoir used for the purpose of holding or conveying water for manufacturing, agricultural, mining, irrigating, generation of power, or domestic uses is guilty of a misdemeanor.

- b) If the total retail value of all the water taken is more than nine hundred fifty dollars (\$950), or if the defendant has previously been convicted of an offense under this section or any former section that would be an offense under this section, or of an offense under the laws of another state or of the United States that would have been an offense under this section if committed in this state, then the violation is punishable by imprisonment in the county jail for not more than one year, or in the state prison."

**DIVISION V: POLICIES AND PROCEDURES FOR ESTABLISHING, FIXING AND COLLECTION OF CHARGES AUTHORIZED BY SECTIONS 43006 AND 47180 OF THE WATER CODE FOR GENERAL ADMINISTRATION AND GENERAL PROJECT SERVICES RENDERED BY THE ARVIN-EDISON WATER STORAGE DISTRICT**

1. **Policies:** Under present Project conditions and as declared by Board Resolution Nos. 73-15 and 73-23, it is necessary that the following charges be established, namely;

a. **General Administrative Service Charge:** Being the amount of money necessary to be raised by District to provide for and to recover such of District's costs of salaries, services, supplies, and other expenses as are applicable to the general administration of the affairs of District, plus a reasonable percentage not to exceed fifteen (15) percent for delinquency and the percentage necessary to cover cost of collection.

Said charge shall be fixed annually in such amount as to reflect that portion of the costs of such District services as reflect the benefits to lands within District by reason of being in an organized District, which is operating the Project and importing supplemental water.

In order that such charges be collected from all persons receiving the benefit thereof and that such charges be collected in proportion, as nearly as practicable, to such services rendered, said charge shall be fixed at an equal rate per acre upon each acre of assessable land within the District; EXCEPTING, that a minimum rate per parcel shall be established for tracts of land less than one acre in area and further EXCEPTING those lands within both this District and the Wheeler Ridge-Maricopa Water Storage District, which are receiving contract water service from said latter District, as provided in Board Resolution No. 73-4.

b. **General Project Service Charge:** Being the amount of money necessary to be raised by District to provide for and to recover such of District's costs, plus a reasonable percentage not to exceed fifteen (15) percent for delinquencies and the percentage necessary to cover costs of collection, incurred by reason of federal contracts and operation of District's Adopted Project, in excess of the General Administrative Service Charge and such tolls and charges as are to be collected for surface water service as provided in District's Water Service Contracts.

Said charge shall be fixed annually in such amount as to reflect that portion of the costs of such District services as reflect that portion of Project services and benefits arising to certain lands within District as a consequence of the federal contracts and operation of District's Adopted Project, designed to provide an assured water supply on a long-term basis by the importation of supplemental water. Such general Project services and benefits accrue to all lands using or having the potential to use surface water service by reason of a Water Service Contract with the District and to all other lands relying upon groundwater in connection with the development thereof, which lands, as a consequence of District's operation will be in a long-term stabilized water basin.

In order that such charges be collected from all persons receiving the benefit thereof, and that such charges be collected in proportion, as nearly as practicable to the services rendered, the charges shall be fixed at an equal rate per acre upon each acre of such assessable land; EXCEPTING, that a minimum rate per parcel shall be established for tracts of land less than one acre in area and further EXCEPTING lands within both this District and the Wheeler Ridge-Maricopa Water Storage District which are receiving contract water service from said latter District and further EXCEPTING that the charge for other lands located within the boundaries of both Districts shall not exceed the higher of a charge established by either said District reflecting similar benefits and services reflected in this charge as provided in Board Resolution No. 73-4.

**2. Procedures:** The following procedures are established for fixing and collecting the foregoing charges, namely:

**a.** Until such time as these Rules and Regulations are changed as provided in Subparagraph **e** hereof, at the regular meeting in April or at such other time as may be announced at said meeting, the Board shall consider, determine, and by resolution fix the amount of such charges for the current Water Year. In compliance with Section 47980 of the Water Code, said resolution shall fix the total amount of each such charge; the total amount to be collected by reason of such charges, the percentage for delinquency and cost of collection attributable to such charges; the minimum charge for parcels less than one acre in area; declare the facts necessary to compute the charges to be applied to the lands within both this District and the Wheeler Ridge-Maricopa Water Storage District as required by the provisions of Board Resolution No. 73-4 or any amendments thereto; set the time and place of hearing of objections to the roll as provided in Subparagraph **c** hereof, and determine the newspaper or papers in which notice shall be published.

**b.** In accordance with the provisions of Section 47980(b) of the Water Code, the District Treasurer shall prepare a roll setting forth the assessee parcels and assessee names for each parcel of assessable land in the District, determined in accordance with the provisions of Chapter 3, Part 1, Division 14 (Commencing with Section 39050) of the Water Code and matters on file in District's records; the acreage assessed to each such assessee according to District's records; the classification of each such tract of land and prepare plat maps in accordance with said roll.

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

c. Said roll, plat maps, and preliminary rates shall be filed with the District Secretary and be available for public inspection at the District office. The District Secretary shall forthwith give notice of filing of said roll, which notice shall set forth the preliminary rates per acre, the minimum charge for parcels less than one acre and the charge applicable to those lands in both said Districts and declare the time and place set by the Board when the Board will meet and hear any objections to the charges established for said respective tracts of land in accordance with the matters set forth in said roll. Said notice shall be published once a week for two successive weeks, as provided in Section 39057 of the Water Code and by depositing in the mail a copy of said notice directed to each holder of title to lands within the District at their last known address as set forth in said roll. The first publication shall be at least three weeks (21 days) prior to the date of said hearing, and mailing shall be completed at least 10 days prior to said hearing date.

d. At the time and place for hearing of objections the Board shall consider such objections and make such corrections to the roll as are necessary and proper. Upon conclusion of the hearing, the Board shall adopt said roll as finally fixed and determined; make such changes in the preliminary rates per acre necessitated thereby; order the Treasurer to certify said roll; declare that said charges be collected by the County of Kern pursuant to the provisions of Article 4, Part 9, Chapter 13, Division 14 (commencing with Section 47980) of the Water Code and determine the District account at the county to which said funds shall be deposited when collected.

On or before July 15 and no later than August 10, the Secretary shall file with the County Auditor certified copies of said final roll, the resolution fixing charges, and the resolution adopting said roll, fixing the rates per acre, and ordering collection by the County. Said Secretary shall notify the County Tax Collector of said filing of the roll, and furnish them certified copies of said resolution.

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

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

*ATTACHMENT C*

*Measurement Device*

*Documentation*

**ARVIN-EDISON WATER STORAGE DISTRICT  
ENGINEER REPORT ON EXISTING MEASUREMENT DEVICES**

The District owns and operates approximately 466 measurement devices (turnout with meter) to record volumetric deliveries to its customers. There are four (4) typical measurement devices, each containing a propeller flow meter (Exhibit A). From time to time, water users may request additional measurement devices and accordingly the list of turnouts expands accordingly. There are also times when measurement devices are removed for a variety of reasons. Currently, there are approximately 381 active measurement devices/turnouts that take delivery of water on a routine basis.

**DESIGN CONSIDERATIONS**

All measurement devices were recently visited to ensure they were correctly installed (Exhibit B).

UNIT	MODEL TYPE			
	VF	ML	OF	LP
EDISON	64	6	0	0
ARVIN	61	6	0	1
CALIENTE	95	0	0	0
TEJON	77	0	1	0
WHITE WOLF	70	0	0	0
METTLER	56	1	0	0
GRAVITY	5	15	3	5
TOTAL	428	28	4	6
% OF EACH	92%	6%	1%	1%

- VF - Vertical Flow Tube
- ML - Mainline Tube (horizontal)
- OF - Open Flow (vertical)
- LP - Saddle (horizontal)

The VF measurement devices, which accounts for 92% of devices in the District, has built-in minimum upstream and downstream “straight-pipe” diameters (within the meter tube) and thus it is inherit with the stated manufacturer accuracy ( $\pm 2\%$ ).

It shall also be noted that the all of the District measurement devices are either connected to a pressurized pipeline system or have a minimum head pressure from the canal water surface elevation and thus each pipeline/device maintains a full pipe to ensure metering accuracy. All District turnouts, pursuant to its water service contract, must have a minimum outlet pressure. The remaining “gravity” deliveries (or from canal/open channel), which also incorporate water user facilities (a lift pump and

discharge piping) were originally designed and installed to District standards that ensure a full pipe at measurement device locations (Exhibit C).

Of the remaining non-VF devices installations, the upstream and downstream “straight-pipe” diameters were verified to be sufficient to meet manufacturer recommendations for accurate metering. In addition it has always been District policy to ensure that installation of any new measurement device meet manufacturer recommendations regarding minimum upstream and downstream “straight-pipe” diameters. Given such, upon recent inspections it was no surprise that the non-VF devices exhibited sound engineering design and were properly installed.

## **OPERATIONS AND MAINTENANCE PROTOCOL**

The District, since inception and first deliveries in 1967, has implemented Operations and Maintenance (O&M) procedures to ensure the measurement devices are maintained, operated, inspected, and monitored on a routine basis.

The Unit Chief (Operations staff) will read and inspect each measurement device *daily* when in use (change in flow or an on/off request) onto a “Daily Water Order Change Sheet” (Exhibit D). Upon taking the field totalizer reading, the Unit Chief will then transcribe the totalizer reading onto the turnout’s “Meter Card” (Exhibit E), which is located at Headquarters/Dispatch Office.

In addition to the daily protocol, the Unit Chief will also read each and every measurement device *monthly*, regardless of water use on a “Monthly Turnout Meter Reading Sheet” (Exhibit F). Upon taking the field totalizer reading at months’ end, the Unit Chief will then transcribe the totalizer reading onto the turnouts “Meter Card”. At this time, the “Meter Card” is also reviewed with respect to past (daily) readings as well as cross referenced to water orders placed with the Watermaster (quality control).

Once the “Meter Cards” have been summarized by the Watermaster, they are turned into the Accounts Receivable staff, which then generates an “Invoice” (Exhibit G) based on actual volumetric water delivered during the previous month.

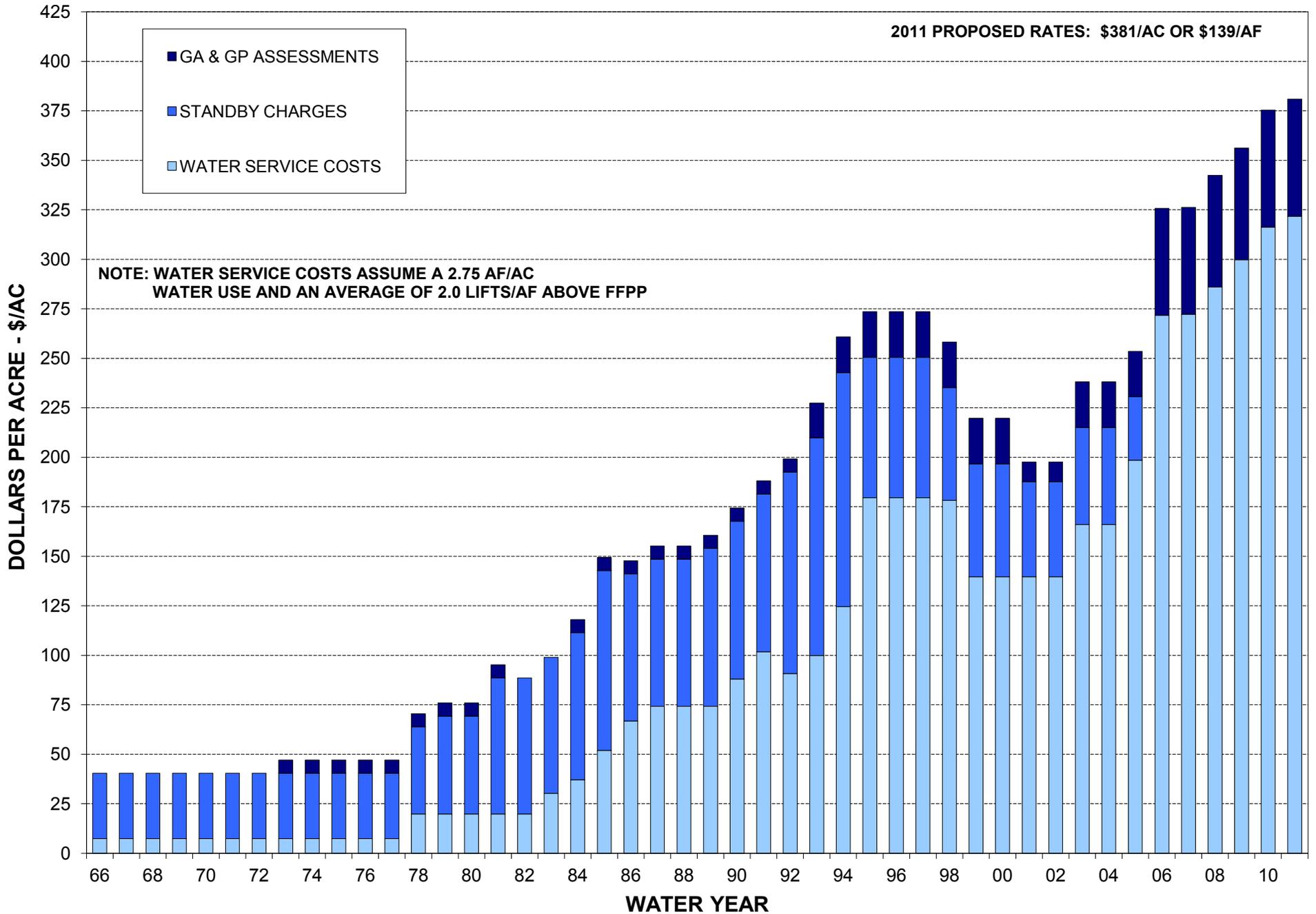
As a quality control and quality assurance protocol, multiple actions may be taken to verify the metering accuracy and associated water usage. The “Invoice” includes a unit rate (acre-feet per acre), which can be referenced to the cropped acreage and subsequently estimated based on typical industry standards/requirements for similar crops. Periodically, the District may also consider a water use review for customers based on high usage and/or by random selection. At times, water users/customers may also prompt a review of measurement devices due to various issues.

If a Unit Chief or water user suspects that there is a problem with a measurement device, the Operations Foreman is notified and the device is investigated. The Operations Foreman inspects the device to determine whether repair or replacement is needed. When warranted the device will be replaced and it is subsequently tracked to document the change including notifications to appropriate staff (Exhibit H).

Upon device inspection, various issues could be the cause for metering device inaccuracy and/or difficulty reading, including but not limited, to the below checklist:

- Plastic bag around impeller
- Tumbleweed around impeller
- Wood in impeller
- Bearing failure (sand)
- Impeller "O" ring failure
- Sensor failure
- Foggy lens due to head "O" ring failure
- Burnt digit(s)
- Battery failure
- Totalizer indicator failure
- Gear failure on mechanical meters
- Lens replacement – keep moisture out
- Reprogram for calibration

# HISTORY OF WATER COSTS AND ASSESSMENTS



*ATTACHMENT E*

*District Water Shortage  
Statement*

*(See Attachment B1, Page 15)*

*ATTACHMENT H*

*District Water Quality  
Information*

**ARVIN-EDISON WATER STORAGE DISTRICT  
WATER SUPPLY WATER QUALITY SUMMARY**

	Date	Flow cfs	Import Source	Calcium		Magnesium		Sodium		Bicarbonate		Chloride		Nitrate		TDS mg/l	pH	EC umhos/cm	Hardness mg/l	SAR	Gypsum lbs/AF	Boron mg/l
				mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l							
<b>Intake Canal</b>	02/08/12	190	F-K(57%)/CVC(43%)	13.0	0.65	8.6	0.70	41.0	1.77	64	2.04	59.0	1.66	2.40	0.04	180	7.8	359	69	2.2	1	0.10
	01/10/12	210	F-K(100%)	2.4	0.12	0.6	0.05	2.4	0.10	24	0.76	1.2	0.03	0.09	0.00	20	7.3	31	8	0.4	54	0.01
	12/08/11	165	F-K(100%)	2.4	0.12	0.6	0.05	2.4	0.10	24	0.76	1.2	0.03	2.40	0.04	20	7.3	31	8	0.4	54	0.01
	11/09/11	90	CVC(78%)/F-K(22%)	15.0	0.75	7.3	0.60	27.0	1.16	69	2.20	29.0	0.81	1.70	0.03	140	7.9	272	67	1.4	1	0.12
	10/10/11	110	CVC(100%)	13.0	0.65	6.0	0.50	19.0	0.82	73	2.32	20.0	0.56	0.09	0.00	110	8.0	210	58	1.1	10	0.08
	09/12/11	300	F-K(100%)	1.9	0.10	0.4	0.04	1.7	0.07	13	0.41	0.6	0.02	0.44	0.01	12	7.1	23	7	0.3	19	0.01
	08/09/11	410	CVC(57%)/F-K(43%)	8.6	0.43	4.4	0.36	14.0	0.60	47	1.50	15.0	0.42	0.54	0.01	76	8.1	148	40	1.0	1	0.06
	07/08/11	540	CVC(60%)/F-K(40%)	8.6	0.43	4.6	0.38	15.0	0.65	42	1.34	16.0	0.45	0.06	0.00	77	7.9	155	40	1.0	1	0.06
	06/09/11	550	F-K(100%)	1.8	0.09	0.4	0.03	1.8	0.08	11	0.35	0.6	0.02	0.14	0.00	11	7.0	21	6	0.3	15	0.01
	05/09/11	180	F-K(100%)	2.8	0.14	0.6	0.05	2.6	0.11	17	0.54	0.9	0.03	0.70	0.01	17	7.3	32	10	0.4	21	0.01
	04/07/11	315	F-K(100%)	3.8	0.19	0.9	0.07	3.6	0.16	31	0.99	1.5	0.04	0.06	0.00	27	7.5	46	13	0.4	54	0.02
	03/07/11	250	F-K(100%)	4.4	0.22	1.0	0.08	4.7	0.20	32	1.02	2.0	0.06	0.06	0.00	30	7.5	51	15	0.5	54	0.03
	<b>Average</b>			<b>6.5</b>	<b>0.32</b>	<b>2.9</b>	<b>0.24</b>	<b>11.3</b>	<b>0.49</b>	<b>37</b>	<b>1.19</b>	<b>12.3</b>	<b>0.34</b>	<b>0.72</b>	<b>0.01</b>	<b>60</b>	<b>7.6</b>	<b>115</b>	<b>28</b>	<b>0.8</b>	<b>24</b>	<b>0.04</b>
<b>North Canal</b>	02/08/12	75	F-K(57%)/CVC(43%)	12.0	0.60	7.4	0.61	35.0	1.51	62	1.97	48.0	1.35	1.80	0.03	160	7.8	310	61	2.0	1	0.09
	01/10/12	90	F-K(100%)	2.5	0.13	0.6	0.05	2.3	0.10	23	0.73	1.2	0.03	0.09	0.00	19	7.3	32	9	0.4	49	0.02
	12/08/11	10	F-K(100%)	2.5	0.13	0.6	0.05	2.3	0.10	23	0.73	1.2	0.03	1.60	0.03	19	7.3	32	9	0.4	49	0.02
	11/09/11	15	CVC(78%)/F-K(22%)	17.0	0.85	9.0	0.74	33.0	1.42	67	2.13	39.0	1.10	1.50	0.02	170	8.9	336	80	1.6	1	0.14
	10/10/11	15	CVC(100%)	13.0	0.65	6.5	0.53	20.0	0.86	73	2.32	21.0	0.59	0.11	0.00	110	8.1	215	60	1.1	1	0.09
	09/12/11	60	F-K(100%)	5.8	0.29	2.6	0.21	7.7	0.33	33	1.05	6.3	0.18	0.53	0.01	44	7.8	91	25	0.7	1	0.03
	08/09/11	90	CVC(57%)/F-K(43%)	9.1	0.46	4.5	0.37	16.0	0.69	52	1.66	16.0	0.45	0.38	0.01	83	8.0	168	41	1.1	7	0.08
	07/08/11	255	CVC(60%)/F-K(40%)	12.0	0.60	6.2	0.51	22.0	0.95	61	1.94	27.0	0.76	0.06	0.00	110	8.2	235	56	1.3	1	0.09
	06/09/11	400	F-K(100%)	2.0	0.10	0.4	0.03	2.0	0.09	13	0.41	0.6	0.02	0.06	0.00	13	7.1	22	7	0.3	19	0.01
	05/09/11	0	F-K(100%)	2.7	0.14	0.6	0.05	2.5	0.11	17	0.54	1.0	0.03	0.06	0.00	17	7.3	33	9	0.4	22	0.01
	04/07/11	180	F-K(100%)	4.1	0.21	0.9	0.08	3.6	0.16	30	0.96	2.0	0.06	0.06	0.00	27	7.7	49	14	0.4	48	0.02
	03/07/11	120	F-K(100%)	4.6	0.23	1.0	0.08	4.7	0.20	37	1.18	2.0	0.06	0.06	0.00	32	7.5	53	15	0.5	71	0.02
	<b>Average</b>			<b>7.3</b>	<b>0.36</b>	<b>3.4</b>	<b>0.27</b>	<b>12.6</b>	<b>0.54</b>	<b>41</b>	<b>1.30</b>	<b>13.8</b>	<b>0.39</b>	<b>0.53</b>	<b>0.01</b>	<b>67</b>	<b>7.7</b>	<b>131</b>	<b>32</b>	<b>0.8</b>	<b>23</b>	<b>0.05</b>
<b>South Canal</b>	02/08/12	40	F-K(57%)/CVC(43%)	15.0	0.75	9.2	0.75	44.0	1.90	70	2.23	64.0	1.80	2.90	0.05	200	7.8	384	74	2.2	1	0.11
	01/10/12	60	F-K(100%)	2.5	0.13	0.6	0.05	2.3	0.10	22	0.70	1.2	0.03	0.09	0.00	19	7.3	30	9	0.3	44	0.02
	12/08/11	0	F-K(100%)	2.5	0.13	0.6	0.05	2.3	0.10	22	0.70	1.2	0.03	0.38	0.01	19	7.3	30	9	0.3	44	0.02
	11/09/11	0	AQ(100%)	17.0	0.85	8.4	0.69	30.0	1.29	49	1.56	34.0	0.96	0.93	0.02	160	9.3	306	76	1.5	1	0.13
	10/10/11	0	AQ(100%)	11.0	0.55	5.3	0.43	17.0	0.73	56	1.78	16.0	0.45	0.69	0.01	94	8.4	178	50	1.0	9	0.08
	09/12/11	10	AQ(100%)	14.0	0.70	7.3	0.60	20.0	0.86	73	2.32	21.0	0.59	0.55	0.01	120	8.5	238	65	1.1	1	0.08
	08/09/11	20	AQ(86%)/CVC(8%)/F-K(6%)	9.2	0.46	4.7	0.39	16.0	0.69	49	1.56	16.0	0.45	0.09	0.00	82	7.9	169	42	1.0	1	0.09
	07/08/11	130	AQ(84%)/CVC(10%)/F-K(6%)	8.9	0.45	4.5	0.37	16.0	0.69	45	1.43	19.0	0.53	0.06	0.00	82	8.0	172	41	1.1	1	0.06
	06/09/11	275	F-K(72%)/AQ(28%)	2.0	0.10	0.4	0.03	2.0	0.09	13	0.41	0.5	0.01	0.06	0.00	12	7.2	21	7	0.3	18	0.01
	05/09/11	0	F-K(100%)	2.7	0.14	0.5	0.04	2.5	0.11	23	0.73	1.0	0.03	0.06	0.00	20	7.4	31	9	0.4	46	0.01
	04/07/11	110	F-K(100%)	4.2	0.21	0.9	0.07	3.6	0.16	32	1.02	2.1	0.06	0.06	0.00	28	7.7	51	14	0.4	54	0.02
	03/07/11	30	F-K(100%)	4.5	0.23	1.0	0.08	4.6	0.20	34	1.08	2.0	0.06	0.06	0.00	31	7.5	52	15	0.5	60	0.03
	<b>Average</b>			<b>7.8</b>	<b>0.39</b>	<b>3.6</b>	<b>0.30</b>	<b>13.4</b>	<b>0.58</b>	<b>41</b>	<b>1.30</b>	<b>14.8</b>	<b>0.42</b>	<b>0.49</b>	<b>0.01</b>	<b>72</b>	<b>7.9</b>	<b>138</b>	<b>34</b>	<b>0.9</b>	<b>23</b>	<b>0.05</b>

## ARVIN-EDISON WATER STORAGE DISTRICT WATER SUPPLY WATER QUALITY SUMMARY

	Date	Flow <sup>1</sup> cfs	Import Source	Calcium		Magnesium		Sodium		Bicarbonate		Chloride		Nitrate		TDS mg/l	pH	EC umhos/cm	Hardness mg/l	SAR	Gypsum lbs/AF	Boron mg/l
				mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l							
Intertie Pipeline	02/08/12	0	F-K(57%)/CVC(43%)	18.0	0.90	8.9	0.73	42.0	1.81	67	2.13	61.0	1.71	2.90	0.05	200	8.7	389	82	2.0	1	0.11
	01/10/12	0	F-K(100%)	4.5	0.23	1.7	0.14	5.8	0.25	40	1.27	4.9	0.14	0.19	0.00	41	7.8	70	18	0.6	71	0.03
	12/08/11	75	AQ(100%)	18.0	0.90	9.5	0.78	35.0	1.51	83	2.64	44.0	1.24	2.50	0.04	180	8.1	355	83	1.7	1	0.14
	11/09/11	45	AQ(100%)	13.0	0.65	6.7	0.55	21.0	0.91	75	2.39	21.0	0.59	2.00	0.03	120	8.0	224	61	1.2	3	0.09
	10/10/11	120	AQ(100%)	14.0	0.70	7.3	0.60	20.0	0.86	78	2.48	21.0	0.59	1.60	0.03	120	7.9	239	65	1.1	1	0.08
	09/12/11	60	AQ(100%)	13.0	0.65	7.1	0.58	23.0	0.99	67	2.13	26.0	0.73	1.20	0.02	120	7.9	238	62	1.2	1	0.10
	08/09/11	120	AQ(100%)	15.0	0.75	8.9	0.73	32.0	1.38	70	2.23	42.0	1.18	2.00	0.03	160	8.0	313	75	1.6	1	0.11
	07/08/11	50	AQ(100%)	21.0	1.05	0.9	0.07	7.7	0.33	5	0.16	5.1	0.14	1.40	0.02	75	10.0	151	55	0.5	1	0.03
	06/09/11	0	F-K(100%)	2.8	0.14	0.6	0.05	2.6	0.11	17	0.54	0.9	0.03	0.06	0.00	17	7.3	32	10	0.4	21	0.01
	05/09/11	120	AQ(100%)	9.3	0.47	3.7	0.30	12.0	0.52	51	1.62	9.1	0.26	0.06	0.00	73	7.8	146	38	0.9	16	0.07
	04/07/11	0	F-K(100%)	5.4	0.27	1.1	0.09	4.7	0.20	39	1.24	2.0	0.06	0.06	0.00	35	7.6	57	18	0.5	65	0.03
	03/07/11	0	F-K(75%)/CVC(25%)	3.4	0.17	0.7	0.06	3.6	0.16	21	0.67	1.9	0.05	0.06	0.00	21	7.5	40	12	0.5	26	0.03
	<b>Average</b>				<b>11.5</b>	<b>0.57</b>	<b>4.8</b>	<b>0.39</b>	<b>17.5</b>	<b>0.75</b>	<b>51</b>	<b>1.63</b>	<b>19.9</b>	<b>0.56</b>	<b>1.17</b>	<b>0.02</b>	<b>97</b>	<b>8.1</b>	<b>188</b>	<b>48</b>	<b>1.0</b>	<b>17</b>

Water Supply Water Quality Note: <sup>1</sup> This flow rate is reverse flow into the District. Where the reported value is ND, the method detection limit is entered.

ND: NONE DETECTED.  
NA: NOT AVAILABLE OR NOT TESTED.

mg/l: MILLIGRAMS PER LITER; SAME AS PARTS PER MILLION (ppm).  
me/l: MILLEQUIVALENTS PER LITER; SAME AS EQUIVALENTS PER MILLION (epm).

INTAKE: SAMPLE TAKEN AT COTTONWOOD RD. SOUTH OF PANAMA LANE.  
NORTH: SAMPLE TAKEN DOWNSTREAM OF SYCAMORE CHECK GATE.  
SOUTH: SAMPLE TAKEN DOWNSTREAM OF TEJON CHECK GATE.  
INTERTIE: TERMINUS OF SOUTH CANAL (S93 FOREBAY).

SODIUM: FOR SURFACE IRRIGATION: SAR < 3 IS GOOD. FOR SPRINKLER IRRIGATION: SODIUM < 3 me/l IS GOOD.

NITRATE: NITRATE IN WATER SLIGHTLY REDUCES FERTILIZER REQUIREMENT.

BICARBONATE: BICARBONATE < 1.5 me/l IS SATISFACTORY FOR OVERHEAD SPRINKLERS.

CHLORIDE: FOR SURFACE IRRIGATION CHLORIDE < 4 me/l IS GOOD.

TDS: TDS < 450 IS ACCEPTABLE FOR UNRESTRICTED USE.

GYPSUM: AMOUNT OF CALCIUM SULFATE IN POUNDS PER ACRE-FOOT OF WATER APPLIED. INCREASES WATER PERMEABILITY AND HELPS CORRECT EXCESS SODIUM. INCREASES CLAY FLOCCULATION FOR INCREASING PERMEABILITY.

pH: A MEASURE OF ACIDITY. A pH < 7 IS ACIDIC, pH = 7 IS NEUTRAL, pH > 7 IS BASIC. NORMAL RANGE IS 6.5 - 8.4. A pH > 8 MAY NEED TO BE BUFFERED FOR PESTICIDE APPLICATION. AFFECTS NUTRIENT AVAILABILITY.

EC: ELECTRICAL CONDUCTIVITY. A MEASURE OF WATER SALINITY; SOIL - IN MILLIMHOS PER CENTIMETER (mmho/cm); WATER - MORE OFTEN, IN MICROMHOS PER CENTIMETER (umhos/cm). EC < 700 (umhos/cm) HAS NO RESTRICTIONS FOR AGRICULTURAL USE. EC < 200 (umhos/cm) CAN REDUCE INFILTRATION RATE.

HARDNESS: HARD WATER, INDICATING CALCIUM AND MAGNESIUM, IS BENEFICIAL FOR AGRICULTURE.

SAR: SODIUM ADSORPTION RATIO. A RATIO OF SODIUM TO CALCIUM AND MAGNESIUM. EVALUATE WITH EC.  
SAR = 0 - 3 AND EC > 400 ACCEPTABLE  
SAR = 3 - 6 AND EC > 900 ACCEPTABLE

BORON: BORON < 0.50 mg/l IS SATISFACTORY FOR ALL CROPS. EXCESSIVE BORON IS PHYTOTOXIC (BURNS) TO PLANTS.

Arvin-Edison Water Storage District  
Well Water Quality Data

	Date	Well #	Calcium		Magnesium		Sodium		Bicarbonate		Chloride		Nitrate	TDS	pH	EC	Hardness	SAR	Gypsum		Boron	SO4		
			mg/l	meq/L	mg/l	meq/L	mg/l	meq/L	mg/l	meq/L	mg/l	meq/L							#100%gyp/hr/100gal/min	Tons/AF			mg/l	mg/l
			Average		Maximum		Average		Maximum		Average								Maximum				Average	
NORTH	5/30/12	AEN-1	95.0	4.75	19.0	1.56	58.0	2.47	220.0	3.61	53.0	1.5	25.0	520.0	7.8	825.0	310.0	1.4	0.0	0.0	0.18	150		
	5/30/12	AEN-2	150.0	7.50	36.0	2.95	74.0	3.15	210.0	3.44	76.0	2.1	95.0	830.0	7.7	1240.0	520.0	1.4	0.0	0.0	0.23	290		
	5/30/12	AEN-3	120.0	6.00	28.0	2.30	65.0	2.76	270.0	4.43	67.0	1.9	79.0	640.0	7.8	1010.0	410.0	1.4	0.0	0.0	0.25	140		
	5/25/12	AEN-4	88.0	4.40	29.0	2.38	60.0	2.55	200.0	3.28	52.0	1.5	49.0	570.0	7.8	920.0	340.0	1.4	0.0	0.0	0.33	180		
	5/25/12	AEN-5	86.0	4.30	21.0	1.72	60.0	2.55	260.0	4.26	46.0	1.3	48.0	510.0	7.9	852.0	300.0	1.5	0.0	0.0	0.28	110		
	5/25/12	AEN-6	44.0	2.20	5.7	0.47	86.0	3.66	180.0	2.95	59.0	1.7	12.0	380.0	8.1	666.0	130.0	3.2	1.0	54.0	0.76	79		
	5/25/12	AEN-7	23.0	1.15	2.3	0.19	80.0	3.40	140.0	2.30	33.0	0.9	1.4	280.0	8.4	493.0	68.0	4.2	4.6	248.4	0.57	62		
	5/24/12	AEN-8	48.0	2.40	7.6	0.62	69.0	2.93	180.0	2.95	45.0	1.3	0.7	350.0	7.9	624.0	150.0	2.4	0.0	0.0	0.67	88		
	5/24/12	AEN-9	33.0	1.65	3.2	0.26	88.0	3.74	170.0	2.79	45.0	1.3	18.0	340.0	7.8	602.0	97.0	3.9	3.6	194.4	0.41	65		
	5/24/12	AEN-10	12.0	0.60	0.6	0.05	81.0	3.44	110.0	1.80	33.0	0.9	9.9	240.0	8.5	444.0	32.0	6.2	5.4	291.6	0.48	47		
	5/24/12	AEN-11	27.0	1.35	4.1	0.34	71.0	3.02	150.0	2.46	36.0	1.0	0.4	270.0	7.9	503.0	84.0	3.4	3.5	189.0	0.95	56		
	5/24/12	AEN-12	13.0	0.65	1.2	0.10	69.0	2.93	120.0	1.97	26.0	0.7	2.9	210.0	8.3	400.0	38.0	4.9	5.3	286.2	0.61	41		
	5/24/12	AEN-13	33.0	1.65	6.2	0.51	69.0	2.93	170.0	2.79	42.0	1.2	0.2	290.0	7.7	534.0	110.0	2.9	2.8	151.2	1.50	51		
				<b>59.4</b>	<b>3.0</b>	<b>12.6</b>	<b>1.0</b>	<b>71.5</b>	<b>3.0</b>	<b>183.1</b>	<b>3.0</b>	<b>47.2</b>	<b>1.3</b>	<b>26.3</b>	<b>417.7</b>	<b>8.0</b>	<b>701.0</b>	<b>199.2</b>	<b>2.9</b>	<b>2.0</b>	<b>108.8</b>	<b>0.6</b>	<b>105</b>	
			<b>150.0</b>	<b>7.5</b>	<b>36.0</b>	<b>3.0</b>	<b>88.0</b>	<b>3.7</b>	<b>270.0</b>	<b>4.4</b>	<b>76.0</b>	<b>2.1</b>	<b>95.0</b>	<b>830.0</b>	<b>8.5</b>	<b>1240.0</b>	<b>520.0</b>	<b>6.2</b>	<b>5.4</b>	<b>291.6</b>	<b>1.5</b>	<b>290</b>		
SYCAMORE	5/23/12	AE-04	26.0	1.3	5.90	0.48	28.0	1.19	130.0	2.13	15.0	0.4	12.0	170	8.1	307	89	1.30	1.7	91.8	0.06	15		
	5/23/12	AE-05	22.0	1.1	5.00	0.41	27.0	1.15	120.0	1.97	16.0	0.4	8.1	150	8.2	278	75	1.40	2.1	113.4	0.06	13		
	5/23/12	AE-08	24.0	1.2	5.70	0.47	31.0	1.32	130.0	2.13	13.0	0.4	10.0	170	8.1	305	84	1.40	2.2	118.8	0.07	17		
	5/23/12	AE-09	21.0	1.05	5.20	0.43	37.0	1.57	130.0	2.13	14.0	0.4	11.0	180	8.2	315	75	1.90	3.0	162.0	0.10	19		
	5/25/12	AE-12	16.0	0.8	3.80	0.31	45.0	1.91	120.0	1.97	14.0	0.4	8.0	170	8.4	318	56	2.60	4.0	216.0	0.22	18		
	5/23/12	AE-13	15.0	0.75	3.50	0.29	38.0	1.62	110.0	1.80	17.0	0.5	4.9	150	8.4	276	51	2.30	3.9	210.6	0.17	16		
	5/25/12	AE-14	20.0	1	3.90	0.32	45.0	1.91	110.0	1.80	24.0	0.7	4.5	180	8.4	353	66	2.40	2.5	135.0	0.29	26		
	5/30/12	AE-18	19.0	0.95	4.60	0.38	42.0	1.79	100.0	1.64	26.0	0.7	3.3	180	8.3	337	68	2.20	1.5	81.0	0.37	28		
	5/25/12	AE-20	22.0	1.1	5.20	0.43	24.0	1.02	110.0	1.80	14.0	0.4	6.2	140	8.2	270	77	1.20	1.0	54.0	0.06	10		
	5/23/12	AE-22	22.0	1.1	4.20	0.34	32.0	1.36	120.0	1.97	19.0	0.5	7.6	160	8.2	294	71	1.60	2.2	118.8	0.08	17		
	5/23/12	AE-23	23.0	1.15	4.60	0.38	30.0	1.28	120.0	1.97	20.0	0.6	10.0	170	8.1	299	76	1.50	1.7	91.8	0.07	18		
	5/23/12	AE-24	21.0	1.05	4.50	0.37	28.0	1.19	100.0	1.64	18.0	0.5	7.4	140	8.1	272	70	1.40	1.1	59.4	0.08	14		
	5/23/12	AE-25	24.0	1.2	4.90	0.40	29.0	1.23	120.0	1.97	19.0	0.5	9.0	170	8.1	299	81	1.40	1.7	91.8	0.09	18		
	5/23/12	AE-26	21.0	1.05	4.20	0.34	36.0	1.53	120.0	1.97	21.0	0.6	6.0	170	8.2	309	70	1.80	2.7	145.8	0.23	21		
	5/25/12	AE-29	24.0	1.2	5.10	0.42	46.0	1.96	110.0	1.80	30.0	0.8	2.6	200	8.2	382	80	2.30	1.2	64.8	0.45	34		
	5/25/12	AE-31	20.0	1	4.90	0.40	66.0	2.81	130.0	2.13	36.0	1.0	0.8	250	8.3	457	70	3.40	3.4	183.6	1.30	47		
	5/25/12	AE-32	17.0	0.85	4.30	0.35	63.0	2.68	110.0	1.80	35.0	1.0	5.1	230	8.4	424	61	3.50	3.1	167.4	0.92	39		
	5/25/12	AE-36	17.0	0.85	3.60	0.30	70.0	2.98	140.0	2.30	39.0	1.1	0.2	240	8.4	442	57	4.00	5.2	280.8	1.30	32		
	5/25/12	AE-37	18.0	0.9	4.30	0.35	70.0	2.98	140.0	2.30	40.0	1.1	0.3	250	8.3	462	62	3.90	4.9	264.6	1.40	37		
				<b>20.6</b>	<b>1.0</b>	<b>4.6</b>	<b>0.4</b>	<b>41.4</b>	<b>1.8</b>	<b>119.5</b>	<b>2.0</b>	<b>22.6</b>	<b>0.6</b>	<b>6.2</b>	<b>182.6</b>	<b>8.2</b>	<b>336.8</b>	<b>70.5</b>	<b>2.2</b>	<b>2.6</b>	<b>139.5</b>	<b>0.4</b>	<b>23</b>	
			<b>26.0</b>	<b>1.3</b>	<b>5.9</b>	<b>0.5</b>	<b>70.0</b>	<b>3.0</b>	<b>140.0</b>	<b>2.3</b>	<b>40.0</b>	<b>1.1</b>	<b>12.0</b>	<b>250.0</b>	<b>8.4</b>	<b>462.0</b>	<b>89.0</b>	<b>4.0</b>	<b>5.2</b>	<b>280.8</b>	<b>1.4</b>	<b>47</b>		
Tejon	5/24/12	AE-72	36.0	1.8	13.0	1.07	34.0	1.45	150.0	2.46	43.0	1.2	8.5	230.0	8.1	452.0	140.0	1.2	0.0	0.0	0.10	22		
	5/30/12	AE-73	32.0	1.6	11.0	0.90	31.0	1.32	140.0	2.30	29.0	0.8	8.2	200.0	8.1	380.0	130.0	1.2	0.0	0.0	0.10	18		
	5/24/12	AE-86	25.0	1.25	9.2	0.75	31.0	1.32	140.0	2.30	16.0	0.4	9.6	180.0	7.8	350.0	100.0	1.3	0.9	48.6	0.12	19		
	5/24/12	AE-87	44.0	2.2	16.0	1.31	41.0	1.74	190.0	3.12	25.0	0.7	24.0	290.0	8.1	525.0	170.0	1.4	0.0	0.0	0.17	42		
	5/24/12	AE-88	81.0	4.05	23.0	1.89	41.0	1.74	180.0	2.95	60.0	1.7	87.0	460.0	8.0	793.0	300.0	1.0	0.0	0.0	0.17	77		
	5/30/12	AE-89	44.0	2.2	14.0	1.15	37.0	1.57	180.0	2.95	20.0	0.6	20.0	270.0	8.1	471.0	170.0	1.2	0.0	0.0	0.16	38		
	5/24/12	AE-92	31.0	1.55	8.9	0.73	33.0	1.40	120.0	1.97	26.0	0.7	22.0	210.0	8.1	394.0	110.0	1.4	0.0	0.0	0.11	29		
	5/24/12	AE-93	25.0	1.25	7.9	0.65	33.0	1.40	130.0	2.13	18.0	0.5	13.0	180.0	8.1	344.0	96.0	1.5	0.6	34.6	0.10	20		
	5/24/12	AE-94	39.0	1.95	14.0	1.15	39.0	1.66	170.0	2.79	35.0	1.0	16.0	260.0	8.1	490.0	150.0	1.4	0.0	0.0	0.11	35		
	5/24/12	AE-95	18.0	0.9	6.3	0.52	30.0	1.28	99.0	1.62	23.0	0.6	5.1	150.0	8.3	291.0	72.0	1.5	0.8	44.8	0.09	14		
				<b>37.5</b>	<b>1.9</b>	<b>12.3</b>	<b>1.0</b>	<b>35.0</b>	<b>1.5</b>	<b>149.9</b>	<b>2.5</b>	<b>29.5</b>	<b>0.8</b>	<b>21.3</b>	<b>243.0</b>	<b>8.1</b>	<b>449.0</b>	<b>143.8</b>	<b>1.3</b>	<b>0.2</b>	<b>12.8</b>	<b>0.1</b>	<b>31</b>	
			<b>81.0</b>	<b>4.1</b>	<b>23.0</b>	<b>1.9</b>	<b>41.0</b>	<b>1.7</b>	<b>190.0</b>	<b>3.1</b>	<b>60.0</b>	<b>1.7</b>	<b>87.0</b>	<b>460.0</b>	<b>8.3</b>	<b>793.0</b>	<b>300.0</b>	<b>1.5</b>	<b>0.9</b>	<b>48.6</b>	<b>0.2</b>	<b>77</b>		

DATE: September 3, 2008

TO: Mr. Curtis Creel, Water Resources Manager  
Kern County Water Agency  
P.O. Box 58  
Bakersfield, CA 93302-0058

FROM: Jeevan Muhar, District Engineer   
Arvin-Edison Water Storage District  
P.O. Box 175  
Arvin, CA 93203

SUBJECT: Aqueduct Pump-in Proposal 2008/2009

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The Arvin-Edison Water Storage District (“Arvin”) proposes to pump certain Non-Project water supplies from groundwater wells into the California Aqueduct by delivery into the Arvin North and South Canals and through the Intertie Pipeline to the Arvin Aqueduct Turnout. This memorandum is submitted consistent with the “*Implementation Procedures for the Review of Water Quality from Non-Project Water Introduced Into the State Water Project*”. Furthermore, we believe this action to be a continuation of the Pump-in programs of 2004/2005 and 2007/2008, for which Title 22 analyses (2007) and Constituents of Concern (COCs) analyses were performed. It shall be noted that Section 11 (Water Quality Monitoring) has endured the greatest change from previous Pump-in proposals.

### **Overview**

- I. The Arvin Pump-in component consists primarily of groundwater, and Arvin would like to schedule for return to MWD up to 40,000 acre-feet of previously banked SWP supply under its AE/MWD Water Management Program, and pursuant to the Point-of-Delivery and Turnout Agreements between Arvin, Kern County Water Agency (KCWA) and Department of Water Resources (DWR). Daily average Pump-in rates are expected to range from 10 cubic feet per second (cfs) to 175 cfs. During low flow periods there may be times of zero flow.
- II. All of the Arvin wells and/or manifolds were tested for COCs during the 2007 Pump-in program, and representative well manifolds were tested for all of the Title 22 constituents in the summer of 2007. Ongoing testing for COCs and Title 22 is planned for 2008 and 2010, respectively. Nearly all of the wells met Title 22 and water quality standards with the exception of a few northerly wells, all of which are located in the North Canal Wellfield area. Some of those wells had higher nitrate, TDS and arsenic concentrations. However, most of these North Canal wells are expected to be used to meet irrigation demands in the Northern portion of the District and have a negligible effect on the quality of the water delivered to the California Aqueduct. The wells will be operated so as to meet Title 22 water quality requirements at the Aqueduct Turn-in location.
- III. Some water quality constituents (arsenic, chromium, and nitrate) in Arvin wells have concentrations higher than the average ambient (“background”) Aqueduct conditions, but

these concentrations are **not** expected to increase the Aqueduct “background” levels above the limits or guidelines set by the Pump-in Facilitation Group. Conversely, some water quality constituents are (DOC, TDS, and sulfate) expected to lower the average background Aqueduct conditions.

### **Project Proponent and Description**

**1. Contacts:** Steven C. Collup, Engineer-Manager  
Arvin-Edison Water Storage District  
20401 Bear Mountain Blvd.  
P.O. Box 175  
Arvin, CA 93203-0175  
Voice: 661.854.5573  
Fax: 661-854-5213  
Email: scollup@aol.com

Jeevan Muhar, District Engineer  
Arvin-Edison Water Storage District  
20401 Bear Mountain Blvd.  
P.O. Box 175  
Arvin, CA 93203-0175  
Voice: 661.854.5573  
Fax: 661.854.5213  
Email: jmuhar@aewsd.org

- 2. Location:** The Arvin-Edison Water Storage District, located in the Southeast end of the San Joaquin Valley, extends from East Bakersfield through the Arvin area continuing southwest to the Mettler area. Arvin’s Intertie Pipeline Turnout on the California Aqueduct is located in Reach 14C, at Mile Post 277, just upstream of the Teerink Pumping Plant Forebay and downstream of Buena Vista Pumping Plant (Exhibit A).
- 3. Water sources:** Arvin groundwater wells are identified by Arvin’s internal well numbers as well as discharge point stationing as shown in Exhibit B. Introduced well water would be delivered via the Arvin canal system and Intertie Pipeline to the California Aqueduct just upstream of the Teerink Pumping Plant.
- 4. Inflow operations summary:** Groundwater within Arvin-Edison, while generally meeting Title 22 standards for drinking water, in some cases, has higher concentrations of nitrate, chromium, and arsenic than the ambient Aqueduct condition. However, as previously mentioned the concentration increase will not exceed the limits or guidelines set by the Pump-in Facilitation Group. Slight increases in these constituents will be offset by improvements in DOC, TDS, and sulfate levels. During periods of Aqueduct Pump-in, Arvin will operate its wellfields selectively so mitigate any adverse water quality impacts to the Aqueduct.

Arvin’s distribution system and groundwater flows have been modeled on a first-order of approximation basis for the historic annual operating conditions, as summarized in Arvin’s

Blending Model, results for which (June 2008) are summarized in Exhibit C.

During 2007, testing results indicated Title 22 standards were met, increases to ambient concentrations from some constituents were negligible, and most constituent concentrations from the Pump-in were below ambient Aqueduct conditions. Under nearly all foreseeable operational scenarios, it is anticipated that water from the northerly wells will be utilized preferentially by irrigation demand in the northern immediate area, and the higher water quality of the southerly wells will have the greatest influence on incident water quality into the Aqueduct.

5. **Facility details:** Arvin's sole input into the Aqueduct utilizes the Intertie Pipeline and Aqueduct/Turnout facilities. All inflow into the Arvin Canal is measured by propeller meters, parshall flumes or rated gates in accordance with accepted measurement standards. A more complete description of facilities can be provided upon request.
6. **Potential impacts and/or benefits to downstream users:** The results of the Arvin-Edison 2007 Pump-in demonstrated the combined effect of the program on the COCs at the introduction into the Aqueduct. Based upon those results, the most likely effects are:

Arsenic:	slight increases but less than the approved maximum limits
Bromide:	negligible effect
DOC:	reductions
Chromium:	slight increases
Nitrate:	slight increases, occasional slight reductions
TDS:	slight reductions
Sulfate:	reductions
Uranium:	negligible effects

Most recent COC analyses are summarized in Exhibit D.

7. **Water quality data:** Existing Title 22 water quality test data is summarized in Exhibit E.
8. **Anticipated water quality changes within the SWP:** Refer to KCWA blending model.
9. **Other relevant environmental issues:** Groundwater overdraft has been dramatically mitigated by the District's Project. Groundwater levels in the District have stabilized substantially since the late 1960s. Representative well hydrographs are available upon request.

Endangered species have been documented along the California Aqueduct. Prior construction within the Aqueduct right-of-way was performed using DWR and Department of Fish and Game (DFG) approved take avoidance measures, and, though not anticipated, any new activities will be similarly performed. No additional construction is anticipated at this time. Most lands adjacent to Arvin's Canal are intensively farmed and provide no suitable habitat for endangered species. No incidental take of endangered species will occur as a result of the Pump-in activities.

**10. Scheduled delivery rates:** Deliveries to the Aqueduct are expected to range from a low of 10 cfs (summer/peak irrigation season) to a high of 175 cfs (winter) depending on the season and in-District demands. Arvin anticipates daily deliveries and monthly schedules through weekly blending models, which are submitted to the KCWA.

**11. Water Quality Monitoring**

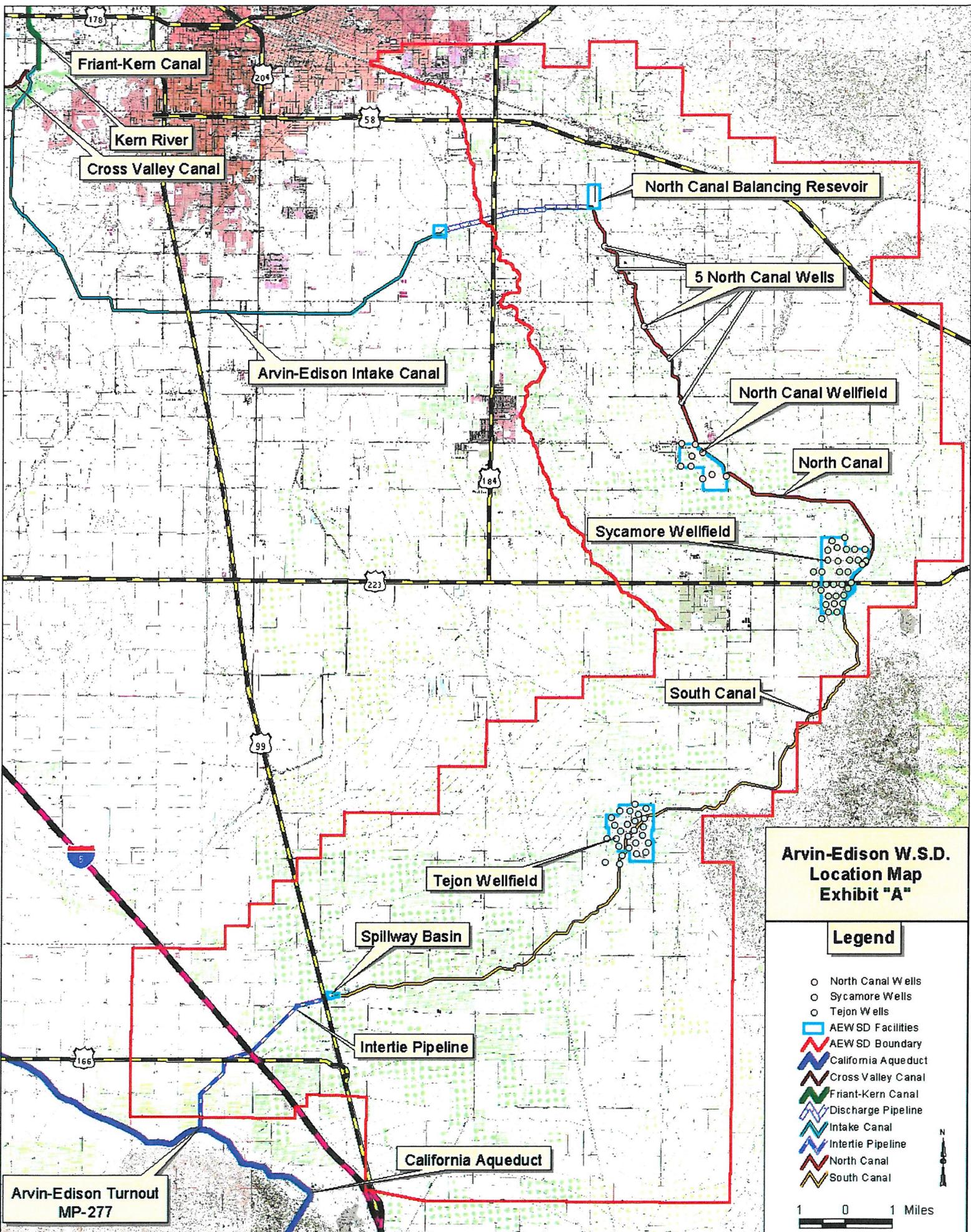
Changes were made to the District water quality monitoring program as a result of the Pump-in Facilitation Group meeting on August 19, 2008. Table A below reflects the new requirements. There are 55 wells that were previously tested for COCs and 17 wells that were tested for Title 22. The Title 22 testing remains the same (every 3 years), but during Pump-in the COCs will now be tested once a year at each well discharge point into the Arvin Canal and Arvin will continue to test monthly at the Intertie Pipeline forebay prior to the Aqueduct discharge.

**Table A. Water Quality Monitoring Program**

Location	Number of Wells	Tests
N. Canal and N. Canal Wellfield	6 wells + 1 manifold of 3 wells (9 wells total)	Constituents of Concern <sup>1</sup>
N. Canal Spreading Works	5 wells manifolded together	Title 22 <sup>2</sup>
Sycamore Wellfield	6 wells + 5 manifolds for 20 wells (26 wells total)	Constituents of Concern <sup>1</sup>
Sycamore Wellfield	3 wells manifolded together 4 wells manifolded together	Title 22 <sup>2</sup> Title 22 <sup>2</sup>
Tejon Wellfield	8 wells + 3 manifolds for 12 wells (20 wells total)	Constituents of Concern <sup>1</sup>
Tejon Wellfield	5 wells manifolded together	Title 22 <sup>2</sup>
End of Canal	Canal Sample prior to Aqueduct	Title 22 <sup>2</sup>
End of Canal	Canal Sample prior to Aqueduct	Constituents of Concern Monthly

<sup>1</sup> Constituents of Concern are tested -once a year during Pump-in, unless otherwise noted.

<sup>2</sup> Title 22 tests occur every 3 years or if beyond 3 years, at startup (5 locations).



*ATTACHMENT K*

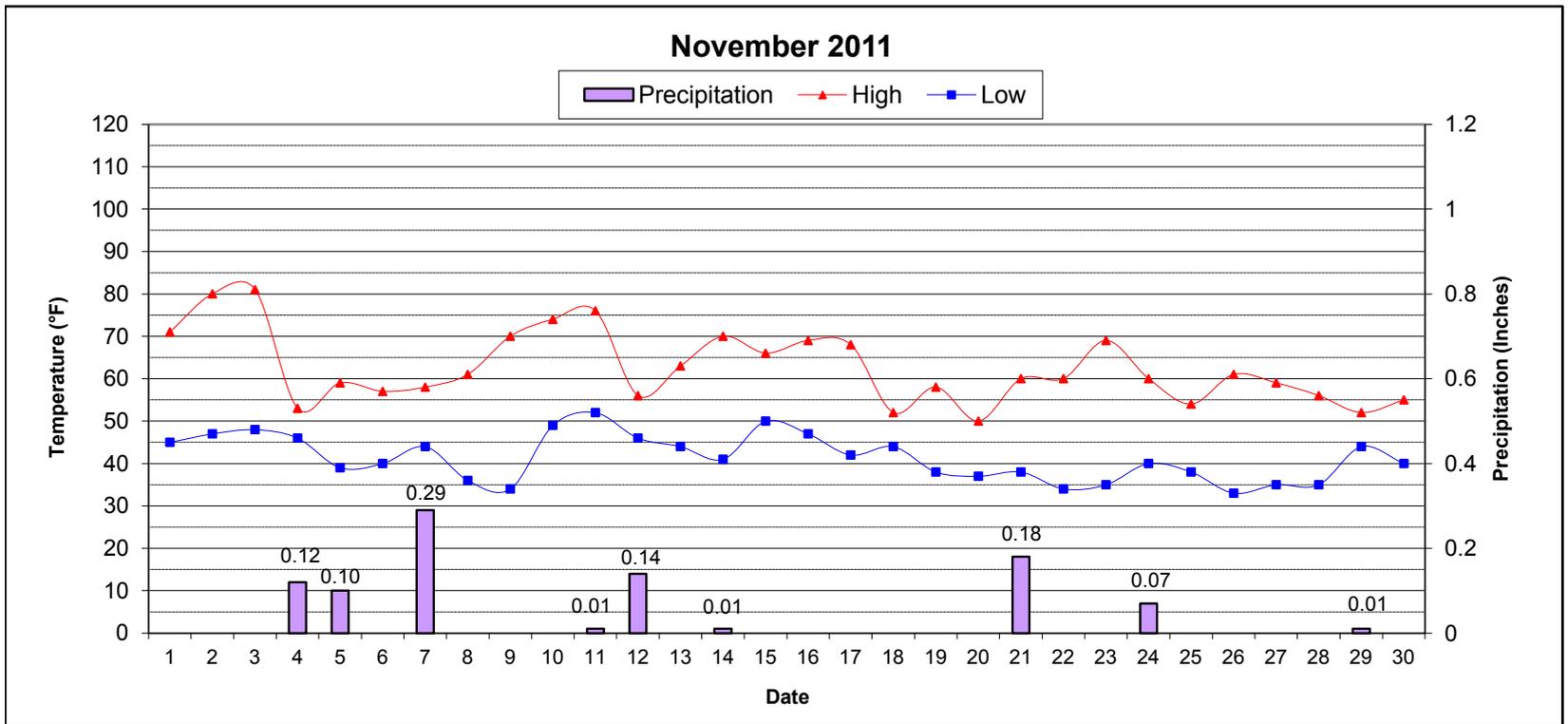
*Drainage Problem Report*

The vast majority of soils within the Arvin-Edison Water Storage District are well drained or somewhat excessively drained, so no drainage report is required. Also, Arvin-Edison Water Storage District is not on the list of districts that have drainage problems.

*ATTACHMENT L*

*Climate Data*

## ARVIN-EDISON WATER STORAGE DISTRICT SUMMARY OF CLIMATOLOGICAL OBSERVATIONS



PRECIPITATION	OFFICE (1)		SYCAMORE (2)		TEJON (3)	
	INCHES	% OF AVG.	INCHES	% OF AVG.	INCHES	% OF AVG.
AVG. MONTHLY	0.87		0.90		0.80	
AVG. YEAR TO DATE	1.64		1.66		1.46	
CURRENT MONTH	0.93		0.89		0.78	
CUMULATIVE (7/1 - 6/30)	1.93	118%	1.83	110%	1.55	106%

TEMPERATURE	(°F)	DATE	TIME
MAXIMUM TEMPERATURE	81	11/03/11	3:00 PM
AVERAGE MAXIMUM TEMPERATURE	63		
# DAYS THIS MONTH ABOVE 100 °F	0		
MINIMUM TEMPERATURE	33	11/26/11	6:00 AM
AVERAGE MINIMUM TEMPERATURE	41		
# DAYS THIS MONTH BELOW 32 °F	0		

WIND	M.P.H.	DATE	TIME	DIRECTION
MAXIMUM WIND SPEED	24	11/10/11	2:30 AM	SW
AVERAGE WIND SPEED	3.6			
AVERAGE WIND SPEED @ 8:00 AM	2.9			

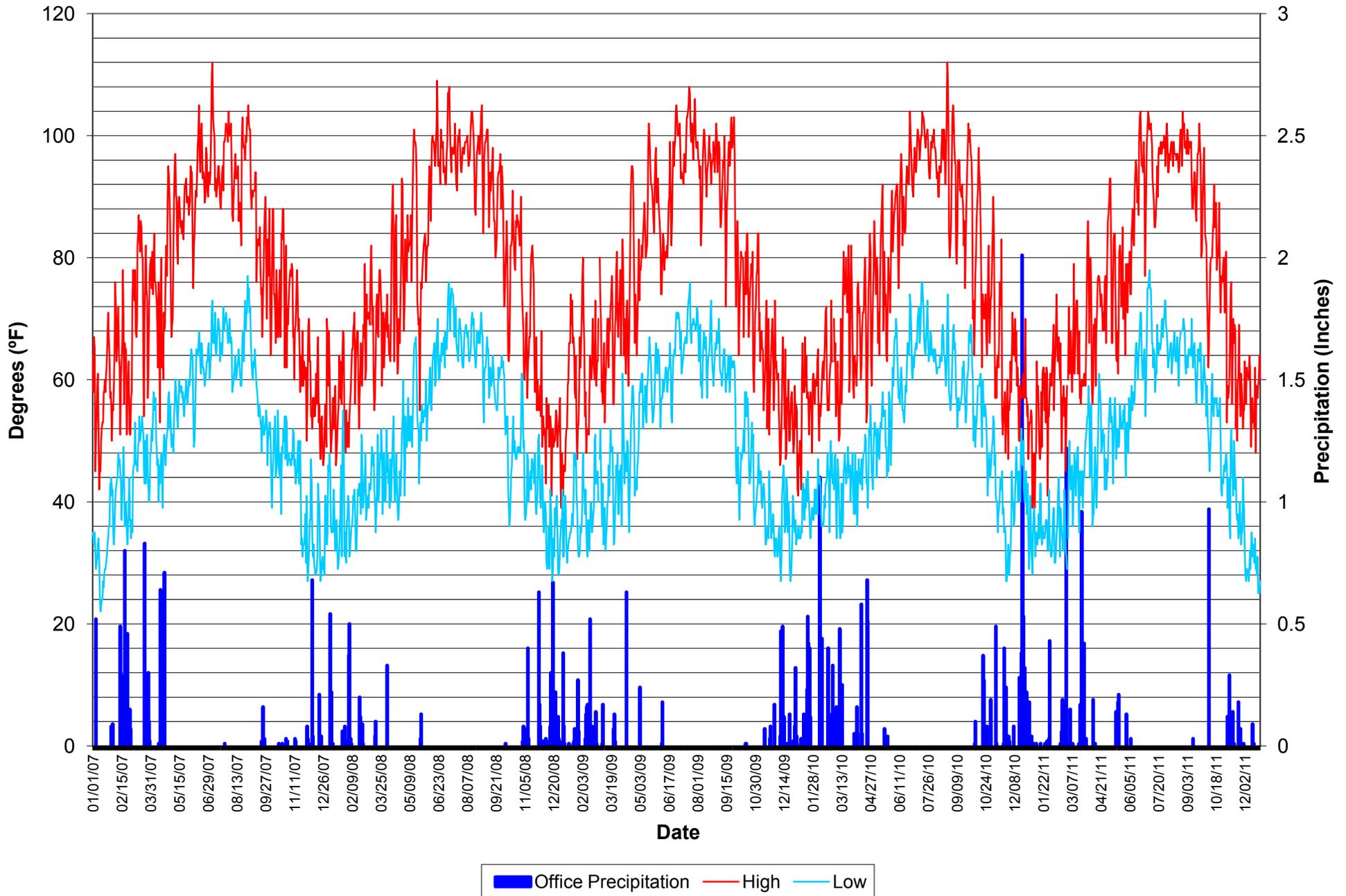
BAROMETRIC PRESSURE	IN. HG	DATE	TIME
AVERAGE PRESSURE @ 8:00 AM	29.90		
MAXIMUM PRESSURE	30.15	11/26/11	3:00 AM
MINIMUM PRESSURE	29.43	11/03/11	3:00 PM

**NOTES**

(1) 1975 to Present  
 (2) 1968 to Present  
 (3) 1967 to Present

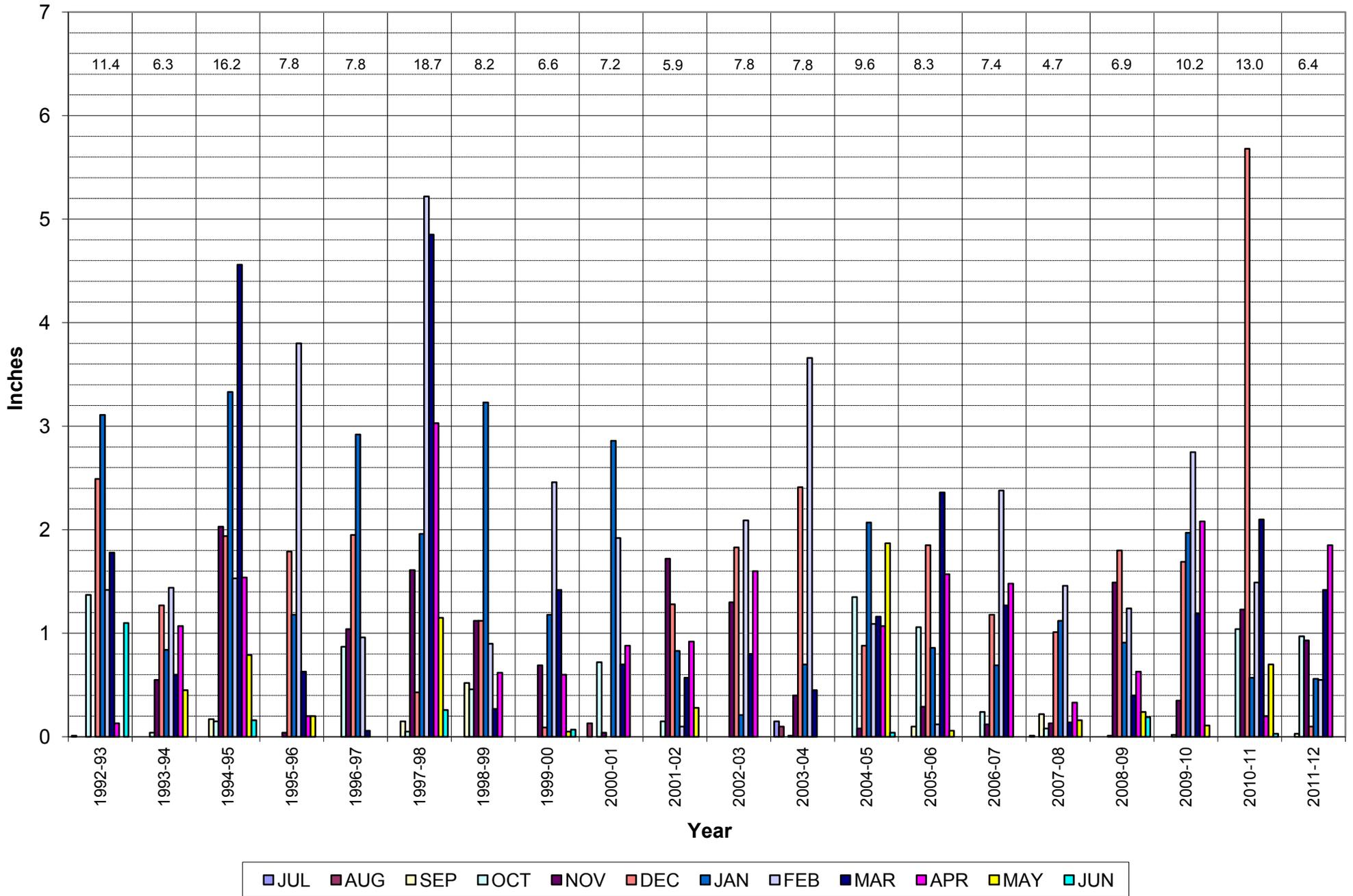
# Arvin-Edison Water Storage District

## Daily Climatological Data (2007 - 2011)



Arvin-Edison Water Storage District  
**Historical Precipitation by Year**  
**District Office**

Precipitation Year Culmulative Totals (Inches)



*ATTACHMENT O*

*Additional Documentation*

ATTACHMENT 1

LEGAL CERTIFICATION AND APPORTIONMENT REQUIRED FOR WATER MEASUREMENT

Arvin-Edison Water Storage District (AEWSD or District) has the legal access necessary to install, measure, maintain, operate and monitor a measurement device at each and every farm-gate/turnout.

The District's Rules and Regulations provide the necessary legal right of access (Division II (1) (d)). In addition, the District's distribution system has legal right of way and encroachment documents for all facilities', including each turnout.

**Therefore, no additional information is required of AEWSD for this section.**

ATTACHMENT 2

ENGINEER CERTIFICATION AND APPORTIONMENT REQUIRED FOR WATER  
MEASUREMENT

Arvin-Edison Water Storage District (AEWSD or District) measures water volume (in acre-feet) at each and every farm-gate/turnout.

**Therefore, no additional information is required of AEWSD for this section.**

### ATTACHMENT 3

#### DESCRIPTION OF WATER MEASUREMENT BEST PROFESSIONAL PRACTICES

Arvin-Edison Water Storage District (AEWSD or District) measures water volume (in acre-feet) at each and every farm-gate/turnout.

##### COLLECTION:

District staff manually reads each and every farm-gate/turnout which has a volumetric totalizer. Upon taking the reading, the value is transcribed to its daily paperwork, which is then transferred to meter cards which are housed at Headquarters' in the Watermaster's office. At the end of the month, the meter cards are used for billing/invoice purposes.

##### FREQUENCY:

For each farm-gate/turnout that request a change in flow, a meter read is taken manually by AEWSD staff.

At the end of each month, each and every farm-gate/turnout meter read is taken manually by AEWSD staff.

Upon a discrepancy or "missing/incorrect digit" or general informational purposes the meter may be read on a case-by-case or instance basis.

##### METHOD OF DETERMINING IRRIGATED ACRES:

The District's Engineering Department collects both Spring data, from April through July, and Fall data, in October and November, through field observations covering the entire 131,600 acre boundary. The data is collected and entered in an ArcGIS geodatabase, with aerial photography, by cropped field, in order to produce maps and summarize data.

Land Use Classes were categorized according to the State of California's Department of Water Resources (DWR) "Standard Land Use Legend" updated in September 2005. The DWR Standard Land Use Legend categorizes land use into four major classes: Agricultural, Semi-Agricultural, Urban, and Native. These classes are subdivided by crop type, land use and irrigation method.

##### QUALITY CONTROL AND QUALITY ASSURANCE PROCEDURES:

For meter reads, each meter reading is verified by Watermaster orders and also cross referenced with typical or historical water usage.

ATTACHMENT 4

DOCUMENTATION OF WATER MEASUREMENT CONVERSION TO VOLUME

Arvin-Edison Water Storage District (AEWSD or District) measures water volume (in acre-feet) at each and every farm-gate/turnout.

**Therefore, no additional information is required of AEWSD for this section.**

ATTACHMENT 5

DEVICE CORRECTIVE ACTION PLAN REQUIRED FOR WATER MEASUREMENT

All existing Arvin-Edison Water Storage District (AEWSD or District) measurement devices at each and every farm-gate/turnout are of plus or minus 2% accuracy based on manufacturer specifications.

In addition, given AEWSD's historical practices of reading/inspecting daily during use and at a minimum monthly regardless of use, replacement of nearly 5% of devices on an annual basis and as well as other miscellaneous quality control steps (water use review, water user input, cross references to other meters, etc.) a corrective action plan is not necessary.

**Therefore, no additional information is required of AEWSD for this section.**

*ATTACHMENT P*

*Conservation Coordinator*

## **ARVIN-EDISON WATER STORAGE DISTRICT**

**JOB TITLE: STAFF ENGINEER**

### **PRIMARY RESPONSIBILITIES**

Under supervision of the Engineer-Manager and Assistant Manager, supervises the Engineering Department.

### **TYPICAL TASKS**

Apply thorough knowledge and skill in engineering, mathematics, communication, and computer applications to analyze and comprehend simple to complex water management programs, technical and regulatory data, rules, reports, text, and engineering problems, particularly in the areas of hydraulics and hydrology. Gather and analyze system performance and hydrologic field data. Prepare engineering drawings and written reports. Develop and implement accurate judgments, recommendations, and work plans to solve complex problems. Communicate effectively with employees and customers on these matters in oral and written forms. Perform and supervise others in the performance of drafting, GIS, engineering computations, field data collections and analysis, and design and inspection of engineering construction projects. Operate and maintain typical engineering equipment (computers; survey instruments; flow, pressure, and level recorders; etc.). Function effectively in indoor and outdoor rural and urban settings, including construction projects. Learn new technical and regulatory subjects.

Specific duties include but are not limited to the following:

- Assist in the administration of water supply and power contracts.
- Assist in the preparation and administration of annual budgets for the District.
- Assist with the development of Capital Improvement Budget for major construction projects and development of District facilities.
- Participate in project planning, development and execution within District and coordinate with various District consultants as needed and directed by management.
- Provide consultation for Board members and District management regarding engineering issues and problems.
- Perform, prepare, and implement specific analyses and studies, groundwater management plans, annual and 5-year update water conservation/management plans (including knowledge of best management practices), engineering evaluations and review District records in preparation for various programs or assignments including, but not limited to, facility management, mapping, groundwater measurements, pump testing, irrigation evaluations, land use/crop surveys, assessment of water requirements, cathodic/corrosion protection, weed and aquatic pest control, flow measurement and recording, collect and report climate/weather data, review and analyze water quality, right-of-way encroachment issues, periodic review of Rules and Regulations, promote educational programs or services, as well as operation and maintenance activities.

## **DESIRABLE EDUCATION AND EXPERIENCE QUALIFICATIONS**

**EDUCATION -** Graduation from an accredited engineering curriculum equivalent to that provided by the California State University system with a degree of Bachelor of Science in Civil Engineering or its equivalent.

## **PHYSICAL QUALIFICATIONS AND DEMANDS**

Traverse uneven ground (e.g. farm fields), metal standtank ladders, and pipeline interiors (27-inch or larger) while carrying engineering equipment and hand tools up to 50 pounds in temperatures of 30°-110° F. Make extended trips, in and out of town, operating or riding in a motor vehicle. Effectively handle multiple simultaneous work assignments.

The physical demand described here are representative of those that must be met by an employee to successfully perform the essential functions of this job.

While performing the duties of this job, the employee is regularly required to sit and talk and hear for extended periods of time, and utilize multiple computer keyboards and mice. The employee frequently is required to stand and walk, and occasionally must drive a District vehicle and walk on uneven or wet or slippery ground including ground, which may contain a few easily avoidable obstacles. The employee is required to use the hands to finger, handle, or feel; reach with hands and arms; climb or balance; and stoop, kneel, and occasionally crouch or crawl. The employee must regularly lift and/or move up to 10 pounds, frequently lift and/or move up to 25 pounds, and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision, peripheral vision, and depth perception.

## **ADDITIONAL REQUIREMENTS**

A job related physical exam and drug screening is mandatory as well as a valid, Class C California Driver's License and an acceptable DMV record.

## **WORKING CONDITIONS**

**WAGES -** Set by Board of Directors.

**HOURS -** 8 hour workdays, 80 hours per two-week pay period, 0800 hours to 1630 hours.

**VACATION -** Vacation will be done in accordance with the District's Employment Policy.

Vehicle – District Vehicle provided

Computer and Cell Phone provided

Fair Labor Standard Act – Classification is Exempt

# *ATTACHMENT Q*

*Changes or Additions to  
Facilities and Operations*

ARVIN-EDISON WATER STORAGE DISTRICT  
**MAJOR PROJECTS COMPLETED SINCE 1992**

<u>DATE</u>	<u>PROJECT</u>	<u>DESCRIPTION</u>
Oct-92	FFFP EXPANSION	installation of Unit 7 (20 cfs) and Unit 8 (40 cfs) - trim pumps
Mar-95	TRAVELLING WATER SCREEN	end of canal screens - "twins"
Apr-97	SYCAMORE SPREADING WORKS EXPANSION	additional 200 acres of spreading basins
Apr-98	REINFORCED CONCRETE WEIR STRUCTURES	improve flow measurement at Sycamore & Tejon gravity ponds
May-98	SYCAMORE & TEJON WELLFIELD EXPANSION	constructed 3 wells at Sycamore and 5 wells at Tejon
Jul-98	SECTION 9 BALANCING RESERVOIR	developed 40 acres of 80 acre parcel
Jul-98	SYCAMORE CREEK RESTORATION	flood control improvements
Aug-98	AQUEDUCT TURNOUT CONSTRUCTION	connection to California Aqueduct (MWD Program)
Aug-98	INTERTIE PIPELINE PHASE I	purchase 84" RCP pipeline
Aug-98	TEJON CREEK CHANNEL RESTORATION	flood control improvements
Feb-99	INTERTIE PIPELINE PHASE II	install 4 miles of 84" pipeline, Pump Station and Spillway Basin Expansion
May-99	RADIO COMMUNICATION	HQ tower and SCADA improvements
Jul-99	NORTH CANAL SPREADING WORKS	developed 300 acres and 9 wells of water banking facilities
2000-2002	CANAL LINER REPAIRS	extensive replacement of damaged panels at Intake, North and South Canals
Jan-00	TEJON WELLFIELD DISTRIBUTION PIPELINE	pipelines for new wells (May-98)
Jan-01	FFFP REFURBISHMENT	refurbish unit 4
Sep-01	INTERTIE PIPELINE LINING	repair faulty 84" RCP with 78" steel pipe
Oct-01	NORTH CANAL LEVEE RECONSTRUCTION	repair damages from initial filling of NCSW
Jan-02	INTERTIE PP WELDED STEEL STANDPIPE	additional facility due to pipeline repairs
Jun-04	WASTEWAY OBERMEYER GATE	replace damaged inflatable dam
Jan-05	WASTEWAY RELEVELING	regrade emergency basin and low flow channel
Feb-05	SYCAMORE SPREADING WORKS EXPANSION II	additional 90 acres of spreading basins
Jun-05	FFFP REFURBISHMENT	refurbish units 1 and 2
Aug-05	BALANCING RESERVOIR EXPANSION	develop remaining 40 acres and drill 4 new wells
Oct-06	CVC EXPANSION PROJECT	500 cfs canal expansion with AE share at 100 cfs
Sep-07	SOUTH CANAL EXPANSION PROJECT	reverse flow final 9 miles of South Canal and Spillway Basin expansion
Oct-08	BALANCING RES. ELECTRICAL DISTRIBUTION	primary power service to 4 new wells
Oct-09	INTAKE CANAL CHECK STRUCTURES & TURNOUTS	interconnection facilities to Kern Delta's Stine and Kern Island Main Canals
Sep-10	NORTH CANAL CHECK STRUCTURE	new check structure within canal prism
Dec-12	FFFP REFURBISHMENT	refurbish three 5,500 hp motors
Feb-13	FFFP IMPROVEMENT	upgrade 115 kV substation and breaker

*ATTACHMENT R*

*Combined Turnout Agreement  
and Consent to Easement*

**FOR THE BENEFIT OF THE DISTRICT  
RECORDING REQUESTED BY:**

ARVIN-EDISON WATER STORAGE DISTRICT,  
a California water storage district,  
as official business

**WHEN RECORDED MAIL TO:**

ARVIN-EDISON WATER STORAGE DISTRICT  
P. O. Box 175  
Arvin, California 93203-0175

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**COMBINED TURNOUT NUMBER \_\_\_\_\_**

**COMBINED TURNOUT AGREEMENT AND CONSENT TO EASEMENT**

**WHEREAS**, each of the undersigned parties hereto, as a landowner within the District, has entered into a long-term water service contract with the Arvin-Edison Water Storage District covering the lands in which they own an interest and which lands are a portion of the lands shown on Exhibit "A" attached hereto; and

**WHEREAS**, by reason of the foregoing, each of said parties is known as a water user as defined in said long-term water service contract; and

**WHEREAS**, the parties hereto desire to obtain water service for their properties through a single turnout,

**NOW, THEREFORE, IT IS MUTUALLY AGREED AS FOLLOWS:**

1. The parties to this agreement will accept delivery of water to be made available to their lands by the District pursuant to their respective water service contracts through a combined turnout designated Turnout Number \_\_\_\_\_ the Arvin-Edison Water Storage District System, which combined turnout will serve all the lands described in Exhibit "A" hereto.

2. Each of the parties to this agreement hereby grants to the other parties an easement appurtenant to the lands of the other and within the area to be served by said turnout for reasonable ingress and egress for the purpose of construction, operating, maintaining and repairing any facilities required for the transportation of water from said turnouts to reasonably serve such lands. Said facilities shall be so located as to cause the least inconvenience to the lands subject to said easement and the owner or owners of lands benefited by said easements shall reimburse the owner or owners of the land burdened by said easement for any damage to crops directly arising from the exercise of the rights herein granted. The methods by which repair,

operation and maintenance of any facilities, other than District facilities, jointly used by the water users herein will be accomplished and the means of financing the same is the subject of a separate agreement between said parties and as to which the District is not to be concerned.

3. It is understood that the turnout mentioned herein is for the use and benefit of all of the lands shown on Exhibit "A" hereto. Each of the parties will cooperate with the other with respect to taking of water therefrom and will conduct his operations so as to provide the minimum of interferences with the other parties.

4. Each of the parties to this agreement does hereby appoint \_\_\_\_\_  
\_\_\_\_\_ whose address is \_\_\_\_\_

\_\_\_\_\_ and whose telephone number is \_\_\_\_\_ as their sole Agent to represent all the water users herein mentioned in matters relating to said combined turnout. Said agent shall advise the District each month, in writing, what portion of the lands within Exhibit "A" hereto received water delivered through said combined turnout and the amount of water so applied and the District shall use said monthly report in computing the charges each water user is to pay by reason of their respective water service contracts with the District.

Agent shall have full power and authority to appoint such subagent, as he deems necessary to carry out the terms hereof. Such appointments shall be in writing in such form as District may approve, and be executed in proper form as District may approve. Any subagent's appointment shall terminate by its terms at the end of each water year. Any such appointment may be terminated by the Agent by giving written notice thereof to the District executed in the same manner as the appointment.

Should said Agent for any reason refuse or be unable to perform the matters herein mentioned and upon sale of his interest in the lands mentioned in Exhibit "A" hereto, the water users within said area agree to appoint a successor Agent and shall notify the District, in writing, of such appointment. It is agreed that the District may rely upon any such appointment signed by the numerical majority of the landowners within said service area together with the signature of the individual so appointed as Agent and filed with the District. The written form of appointment shall be upon approval of the District.

Each water user agrees with the other and represents to the District that neither the death or subsequent incapacity to contract of a water user shall terminate this agency.

5. The provisions hereof shall be binding upon and shall inure to the benefit of water users, their respective heirs, executors, administrators, successors and assigns, and each and everyone of them, or any person or entity claiming any interest in the lands set forth in Exhibit "A" hereto, through or under any undersigned water user and to the District, its successors and assigns.

6. The rights hereby established are intended to form a part of the appurtenances to the land as described in Exhibit "A" hereto and the duties hereby established, including, but not limited to, the obligations to pay a share of the crop damage shall run with and bind said lands; PROVIDED, HOWEVER, any water user may also enforce said rights as against the owner of other lands set forth in Exhibit "A" hereto by a personal action without resort to foreclosure of a lien

or pursuing any action against the land. Should an action be brought to enforce any of the rights hereby created, the prevailing party shall recover such attorneys' fees and costs as the Court may establish.

7. This agreement shall remain in effect until the last expiration date of the water service contracts between the undersigned water users and the Arvin-Edison Water Storage District.

APPROVED AND FILED THIS \_\_\_\_\_ day of \_\_\_\_\_, 200\_\_.

**ARVIN-EDISON WATER STORAGE DISTRICT**

**By :** \_\_\_\_\_

(District Seal)

OWNER(S) OF PARCEL 1

\_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

OWNER(S) OF PARCEL 2

\_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_



**EXHIBIT "A"**

(COMBINED TURNOUT SERVICE AREA, TURNOUT NO. \_\_\_\_\_)

**Parcel No. 1**

**OWNER**

**APN**

**DESCRIPTION:**

[NAME]

\_\_\_\_\_

**Parcel No. 2**

**OWNER:**

**APN**

**DESCRIPTION:**

[NAME]

\_\_\_\_\_

# *ATTACHMENT S*

## *Drought Management Plan*

## ARVIN-EDISON WATER STORAGE DISTRICT DROUGHT MANAGEMENT PLAN

California Governor Edmund G. Brown, Jr. issued on April 1, 2015 Executive Order B-29-15, Provision 12 stated: *“Agricultural water suppliers that supply water to more than 25,000 acres shall include in their required 2015 Agricultural Water Management Plans a detailed drought management plan that describes the actions and measures the supplier will take to manage water demand during drought”.*

In addition, the California Department of Water Resources (DWR) required those plans to include quantification of water supplies and demands for 2013, 2014, and 2015 (to the extent data is available), which information is included in Exhibit A. Section 3.2.4 of DWR’s Final Agricultural Water Management Plan Guidebook provided guidance as assistance, which was followed in preparation of this Drought Management Plan.

This Arvin-Edison Water Storage District (AEWSD or District) Drought Management Plan details how the District prepares for droughts, manages water supplies and administers allocations during drought conditions. Some components or actions may require detailed review of conditions, policy changes, and long term capital improvements. Additionally, as conditions change and new technology and knowledge becomes available, opportunities and constraints will change.

A description of the water shortage allocation plan is further described below and as attached herein. In addition, the following components assist AEWSD in planning opportunities including, but not limited to, drought periods:

### WATER BANKING AND WATER REGULATION

The District’s Project, construction of which was initiated in 1964 and completed in 1968, reflects the implementation of a plan for the integrated management of a supplemental imported surface water supply with banked groundwater reserves providing a **true conjunctive use program** for firm deliveries to contract holders in Surface Water Service Areas (SWSA) as well as stabilized groundwater levels in the area.

As part of the conjunctive use and regulation needs, due to an erratic surface water supply, two key District owned, operated and maintained facility components are the spreading basins (about 1,500 acres), and the associated well fields (79 wells) through which water is stored and banked in the underground and later recovered when required. At its peak, the District had nearly 700,000 acre-feet of water stored in the underground set aside for drought years. A graphic displaying the accumulation of

## ARVIN-EDISON WATER STORAGE DISTRICT **DROUGHT MANAGEMENT PLAN**

underground storage amounts of annual water banked and water extracted over the history of the District is included in Exhibit B.

In addition to the traditional groundwater banking activities that assist the District to regulate wet period supplies into dry periods, the District makes maximum use of its water supply during wet periods by use of transfers and exchange agreements involving other districts whereby the partnering agency will receive water in wet periods and return water supplies to the District in dry periods. The District has long term agreements with a group of agencies called “Cross Valley Canal Exchangers”, Metropolitan Water District of Southern California, and Rosedale Rio Bravo Water Storage District for such water management actions to regulate these wet period supplies into dry periods. In addition, the District typically has annual, as-needed, agreements with other local agencies including, but not limited to, it’s neighboring Kern Delta Water District, who shares the same underground aquifer.

A graphic displaying the annual water management programs and water invested or water returned, from both groundwater banking activities and transfers/exchanges in any given year, is included in Exhibit B.

### MONITORING HYDRAULIC LEVELS OR CONDITIONS

Statewide snow-water content (snowpack) conditions and reservoir levels plus forecasts of surface water supply declarations are monitored extensively, at times daily, by both District staff and as provided by other agencies through various sources including, but not limited to, internet based information (e.g. California Data Exchange Center, <http://cdec.water.ca.gov/> and United States Bureau of Reclamation Central Valley Operations Office, <http://www.usbr.gov/mp/cvo/>).

Beginning in September of each year, the District reviews the data and subsequent year forecasts, and compares the information against historical declarations to roughly determine the potential drought affect on the District and its overall operation for the upcoming Water Year (which runs from March 1 to the end of February in the next calendar year). In addition to the research performed by its own staff, the District attends frequent United States Bureau of Reclamation water supply meetings. This process is repeated as updated information becomes available.

The District also monitors water levels in the District owned and operated groundwater wells on a monthly basis when in operation (these wells are also known as “District

## ARVIN-EDISON WATER STORAGE DISTRICT **DROUGHT MANAGEMENT PLAN**

extraction facilities”. In addition, the District performs bi-annual surveys of standing groundwater levels, during both spring and fall, in landowner wells within the District. The bi-annual surveys are used for various purposes including: groundwater depth, groundwater elevation, and annual change contour maps, as well as providing information for the District’s water rate setting process (whereby the District’s average surface water rates for the following year equate to average groundwater pumping cost estimates, so as to efficiently manage the basin and promote conjunctive use of both groundwater and surface water resources). The District actively examines its banked water account during wet or dry periods. It also monitors and manages its surface water “carryover” in reservoirs outside of the district. And, it monitors and manages water transfer and exchange accounts to regulate surface water supplies with water management partners outside of the district. Both of these reduce drought impacts.

### PROCESS FOR DECLARING A WATER SHORTAGE AND IMPLEMENTATION

After review and presentation of all readily available surface and groundwater information by District staff, and following meetings with landowners/water users, the AEWSD Board of Directors officially inform and notify Surface Water Service Area (SWSA) water users by letters, which are both mailed and transmitted electronically (e-mail) to those registered with the District. Example letters to the water users from the District during the 2014 and 2015 water shortage periods are included in Exhibit C.

The District’s Water Management Plan Attachment E (Water Shortage Statement from Rules and Regulations Page 15) describes the apportionment within the District during a water shortage period as follows:

*Pursuant to powers granted by Section 43004 of the California Water Code and Article 2(l) of the Water Service Contracts, water will be apportioned within the District, in the event of a shortage, to each Water User upon the basis of the ratio of each Water User’s acreage as listed in Exhibit "A" of each contract to the total acreage subject to the District’s contracts for agricultural water service.*

### OPERATIONAL ADJUSTMENTS INCLUDING CANAL, RESERVOIR, and GROUNDWATER MANAGEMENT

The District is able to meet the full water demands from the October through March time period solely by the use of groundwater banking facilities (which recover previously

ARVIN-EDISON WATER STORAGE DISTRICT  
**DROUGHT MANAGEMENT PLAN**

recharged/banked water supplies), so no limitations or prorates are placed on water users during that time. However, during the April through September period, during severe drought, the irrigation demand exceeds groundwater bank supplies and surface water supplies must be regulated and imported in the reservoirs and canals that serve the District to meet peak irrigation demands. A general graphical description of the manner in which surface and groundwater supplies are managed within the District to demands is included in Exhibit D. The April through September six month period is then the focus of the prorate allocation, which consist of both available surface water and groundwater extracted by the District and subsequently deliveries are limited/prorated based on all available supplies.

During the prorated period, the District administers turnback/reallocation pools among water users in the District so as to move water allocations to other users at predetermined prices (for both sell and purchase) in order to protect customers from price-gauging. Water users are also allowed to form "Farming Units" in order to collectively manage water supplies amongst those willing to do that.

In addition to the previously banked groundwater that is extracted from District wells for its SWSA water users, the District transports/conveys landowner/water users' own private wells in the District canal or pipeline distribution system to their desired turnouts. Water transfers from one field to another are allowed, as well as transfers from one water user to another.

During the 2014 drought conditions, the District revised its minimum 24 hour delivery rule to allow for more flexibility in water ordering. For example, instead of the typical 24 hour duration, water users were allowed to modify their irrigation request for *less than* 24 hour periods (e.g. 4, 8, or 12-hour sets). Water could be turned on or turned off as it best suited the water users need so long as proper communication protocols were followed. The letter notifying water users for the shift in the 24 hour delivery rule is included in Exhibit E. The rule was extended past the initial six month shortage period (in 2014) and continued to be instituted for the remainder of the year (even outside of the prorate period) and into the 2015 water year.

During drought times and when the District's water supply is from groundwater bank wells (extraction of previously banked supplies), the District staff and its contractors are on-call for immediate well repairs so as to limit downtime and associated loss of water production. The District has also reached agreements with other agencies that allow the District to continue pumping its wells during off-peak or low demand periods and

**ARVIN-EDISON WATER STORAGE DISTRICT  
DROUGHT MANAGEMENT PLAN**

subsequently exchange the well supplies for surface supplies at a later time (regulate the fall supply into a summer peak).

In addition, the District severely limits the use of its unlined reservoirs to eliminate water losses (that actually recharge to underground aquifer). The District has recently upgraded many of its facilities to replace its antiquated radial (undershot) gates with overshot gates that have increased in-canal (lined) storage capabilities, and plans to do more. The District also incorporated reverse flow capabilities (raised canal liner, reverse flow pumps, and check structures) to increase operational flexibility. The recent investments made to increasing storage capability assist in regulating groundwater bank supplies, which are generated at a constant rate and must be regulated to available demand centers.

**DEMAND MANAGEMENT (POLICIES, INCENTIVES, ALLOCATION PLAN TO LOWER FARM WATER USE)**

In addition to the turnback/reallocation pools, that typically move water from non-permanent lands/water users to those with permanent plantings, punitive surcharges are used to discourage water use in excess of a District allocation. An example of such practice was instituted in 2015 during the second consecutive water shortage period and is included in Exhibit F. The AEWS D Board of Director's also have the option to institute tiered prices, if necessary.

**ALTERNATIVE WATER SUPPLIES**

The District has increased its awareness of, and is actively investigating use of, recycled water opportunities from various sources (tertiary treated wastewater from adjoining cities, oilfield wastewater, and food processing wastewater).

**STAGES OF ACTION**

The initial stage is review of water supplies against historical demand patterns followed by an allocation of supplies, if necessary. If hydrologic conditions continue to worsen, allocations may be reduced. Upon a reduced allocation, District implements the various programs as described above (turnback/reallocation pools, landowner pump-ins, and delivery flexibility). The District continues to inform landowners/water users' with letters of any changed condition and/or water supply updates on an as-needed basis.

ARVIN-EDISON WATER STORAGE DISTRICT  
**DROUGHT MANAGEMENT PLAN**

COORDINATION AND COLLABORATION

The District participates in multiple transfers and exchanges with agencies that involves many forums including but not limited to, agencies involved in the operation of Friant-Kern Canal, California Aqueduct, and the Cross Valley Canal. As previously mentioned the District also has multiple long term agreements and annual agreements that deal with specific water management actions.

The District is signatory to many joint power authority (JPA) organizations that hold frequent meetings. AEWSD's JPA affiliations include Friant Water Authority, Power and Water Resources Pooling Authority, Kern Groundwater Authority, and Kern River Watershed Coalition Authority. Other organizations the District is involved in include the Kern Integrated Regional Water Management Plan, Water Association of Kern County, and Association of California Water Agencies.

AFFECT ON REVENUES AND EXPENDITURES

The water shortage periods significantly *increase* the District expenditures based on extensive power requirements (groundwater bank extractions) and associated wellfield repairs. District revenues are *reduced* provided the decrease in water distribution (sold by volume). Therefore, during extended droughts, the District experiences both increases in expenditures and decrease in revenue. However, the District budget incorporates current water and power rates based on 30-year hydrology so as to stabilize long term rates, eliminate peaks/valley from year to year, and limit use of cash reserves. Furthermore, reserves are established and maintained to withstand multiple years of drought.

The District successfully passed a 218 election in 2015 to increase acreage assessments as a result of rising cost of water/power resources, capital improvement projects and new projects that expect to increase water supplies to the District, among other things.

The District is active in pursuing grant funds or low interest loans to the extent feasible for its projects/programs.

ARVIN-EDISON WATER STORAGE DISTRICT  
**DROUGHT MANAGEMENT PLAN**

**EXHIBIT A**

2013, 2014 and 2015 Supply and Demand Table

**ARVIN-EDISON WATER STORAGE DISTRICT  
DROUGHT MANAGEMENT PLAN**

		2013	2014	2015
<b>Supply</b>	Surface Import	43,756	45,956	48,219
	AE Wells	161,352	134,717	114,975
	Farm Wells	0	6,303	11,326
	<b>Total</b>	<b>205,108</b>	<b>186,976</b>	<b>174,520</b>

<b>Demand</b>	Water Users	161,605	127,991	112,163
	Gross Spreading	4,010	3,507	279
	MWD Return	38,549	52,028	56,950
	Losses	944	3,449	5,128
	<b>Total</b>	<b>205,108</b>	<b>186,975</b>	<b>174,520</b>

Notes:

Based on Water Year (Mar 1 through Feb)

Losses include minor seepage, metering inaccuracies

2013 had no prorated restrictions

2014 had 6-month, Apr through Sep, restriction of 1.9 af/ac

2015 had 6-month, Apr through Sep, restriction of 1.3 af/ac

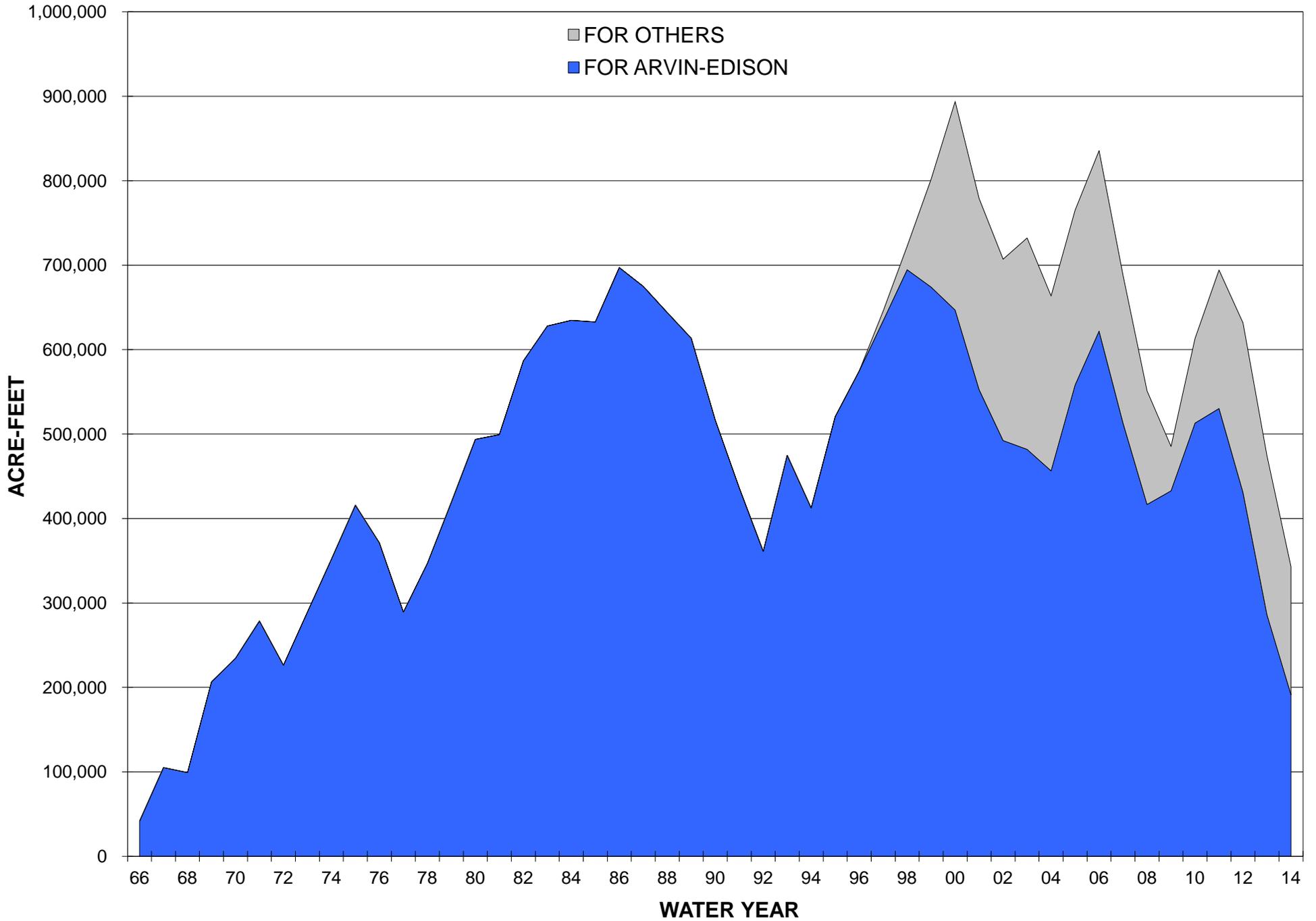
2015 is estimated

ARVIN-EDISON WATER STORAGE DISTRICT  
**DROUGHT MANAGEMENT PLAN**

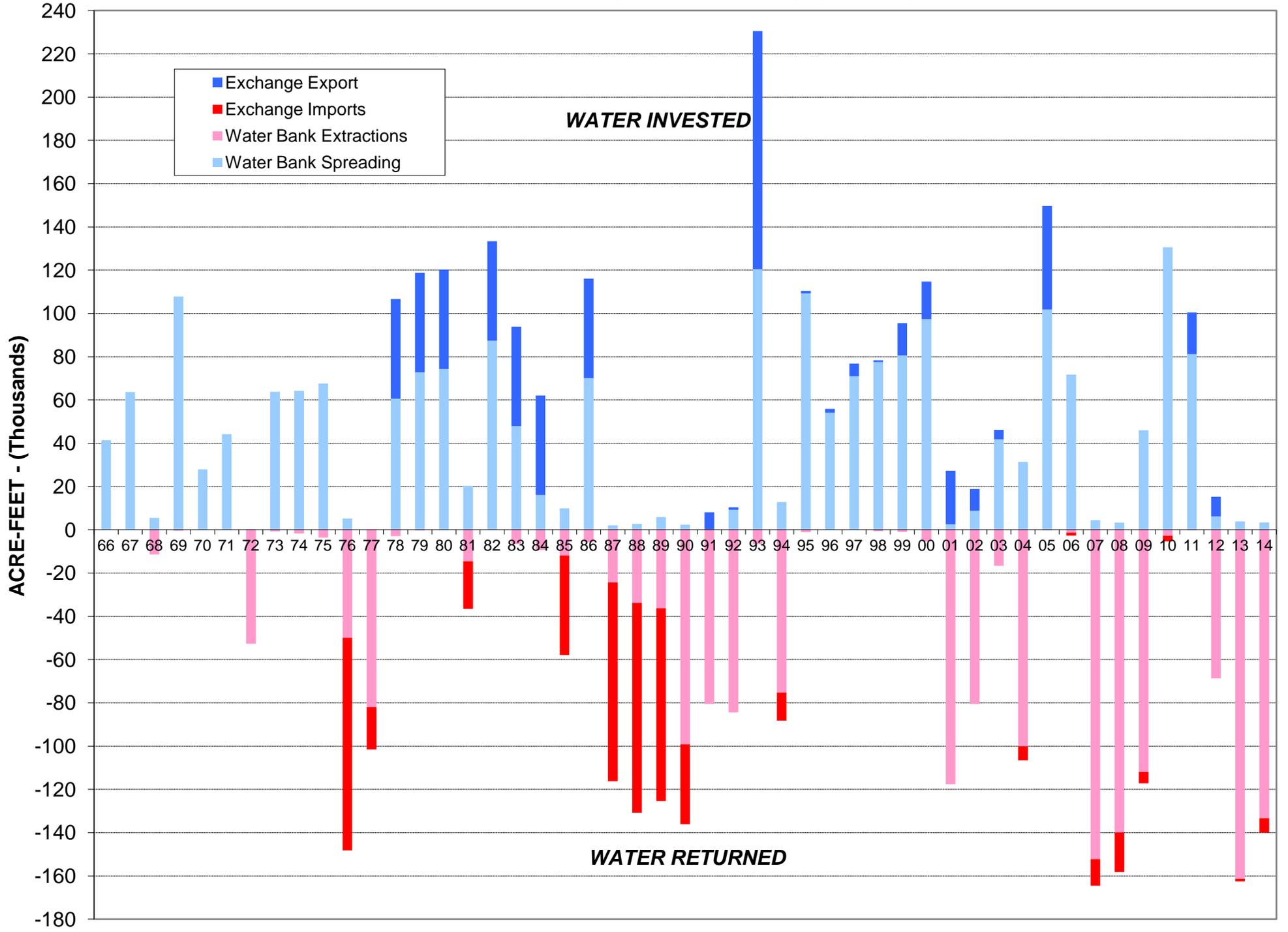
**EXHIBIT B**

Water Banking and Water Regulation

ARVIN-EDISON WATER STORAGE DISTRICT  
**ACCUMULATION OF UNDERGROUND STORAGE**



# ARVIN-EDISON WATER STORAGE DISTRICT WATER MANAGEMENT PROGRAMS



ARVIN-EDISON WATER STORAGE DISTRICT  
**DROUGHT MANAGEMENT PLAN**

**EXHIBIT C**

2014 and 2015 Letters to Landowners/Water Users



# ARVIN-EDISON WATER STORAGE DISTRICT

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January 22, 2014

## **DIRECTORS**

Edwin A. Camp  
President  
Jeffrey G. Giumarra  
Vice President  
John C. Moore  
Secretary/Treasurer  
Howard R. Frick  
Ronald R. Lehr  
Dennis B. Johnston  
Charles Fanucchi  
Donald Valpredo  
Kevin E. Pascoe

## **STAFF**

Steven C. Collup  
Engineer-Manager  
David A. Nixon  
Assistant Manager  
Jeevan S. Muhar  
Staff Engineer  
Christ P. Krauter  
General Superintendent

## **Subject: Water Supply Update**

Dear Landowner/Water User:

### **2013 Water Year Wrap Up**

The Arvin-Edison Water Storage District (District) has nearly completed deliveries for the 2013 Water Year (ends February 28, 2014). Our success in weathering yet another dry year came from, in large part, extensive use of our water bank supplies (which has taken its toll on wellfield equipment and pumping levels), water management programs with others, as well as attributed to efficient operations by District personnel. During the 2013 Water Year, the District expects a net reduction of 137,000 acre-feet (af) to its banking reserves as a result of meeting an irrigation demand of approximately 155,000 af, including losses.

As you are aware, and have seen in the media, there were dramatic water shortages in 2013 throughout California affecting primarily west-side water agencies in both the Central Valley Project (CVP) (20% allocation) and State Water Project (SWP) (35% allocation) that contract for northern California water supplies that must be conveyed through the Delta and California Aqueduct. The dry hydrology was also compounded by judicial and legislative restrictions that dictate water going to the ocean rather than to farms and cities.

While the District's Friant CVP supply derives from a watershed source different than the west-side CVP and SWP contracts (San Joaquin River and Millerton Lake), the entire State will none-the-less face another challenging year in 2014, as reflected by the Governor's drought emergency declaration last week, if the current dry conditions continue.

### **2014 Water Year Preliminary Estimate**

While any meaningful water supply forecast for the 2014 Friant supply will not be available until mid-February (the District's water year begins March 1), the District has modeled potential 2014 operations assuming the driest-year scenario experienced in the last 47 years (1977 conditions), since the District began operations, and thoroughly reviewed the District's water delivery capabilities under that scenario. The model for this driest-year scenario considered our water bank reserves, projected well field performance, return of water from programs with other agencies, and the amount of carryover water that can be utilized next year.

Other considerations include the challenge to schedule all these supplies during the peak irrigation season (typically April to September) when District demand exceeds instantaneous District wellfield capacity, as well as the impact to financial reserves to cover the nearly \$6 million in incremental power costs incurred when District wellfields are maximized during dry years. (Note: The District has already purchased its power supplies for next year).

Operating under a “driest-year scenario,” and barring unforeseen circumstances beyond the District’s control, **there remains the potential for the District to make full deliveries to water users in 2014.** However, we are now half-way through the snow accumulation season, and if current weather conditions persist, 2014 could prove to be drier than the driest-year scenario previously experienced. In the case of a zero water supply declaration on the Friant-Kern system, District farmers would be relegated to those District supplies consisting of carryover supplies, return water from partners, and groundwater banking supplies. **If that is the case, District supplies would equate to approximately 2.75 af/acre for the entire year, with a secondary prorate within the year of approximately 2.00 af/ac for the six month period of April through September.**

Regardless of the final water supplies, success will be contingent on the cooperation of water users and strict adherence to District policies.

It is clear at this point that water supplies will be scarce in 2014, and water users may wish to reconsider their farming practices for 2014 in light of the risk of prorated supplies. The District will update the landowners/water users in about a month and if dry conditions persist, the District will more specifically outline a portfolio of drought year programs that may be implemented such as prorates, turn back pool, well pump-in programs, etc., to augment supplies.

### **Enforcement of Policies**

The District’s success in 2014 to deliver supplies will also be affected by on-farm irrigation practices. As the District’s “Rules and Regulations” specify, it is imperative that water users’ water orders correspond to their *actual* daily demands, and they maintain their water demand for the full 24-hour period for which they have ordered. Any deviation from these conditions introduces error into daily District operations; and subsequently, causes “over-prescribing” of what small amount of surface water supply that may be available to the District as well as causing us to “shut off” valuable well supplies so as to balance the District’s system, of which such groundwater supplies are then lost for the year. **The District will diligently enforce these rules so as to mitigate this impact.**

**In addition, the Board has requested staff to more diligently police irrigation deliveries to ensure water is going only to lands with long-term water service contracts.** This will include additional staff efforts to ensure that District water is delivered solely to lands under long-term contract (not temporary water contracts), and through the turnouts specifically cited in those long-term contracts. Any deviance to this requirement manifests itself in high acre-feet per acre (af/ac) water use rates, which is shown on your monthly billing statements. By going through this process, we hope to eliminate illegal water use including potential deliveries to non-contract lands, if any exists. **Therefore, please be advised that water users with high af/ac totals on their monthly bills can expect to be contacted by the District for contract clarification and possible enforcement measures. Please also note that illegal use may be charged at market rates, in order to replace those supplies, plus other normal and customary District charges.**

If you have any doubt as to which lands are under contract please contact the District immediately. It is also imperative that each water user use prudent irrigation practices to conserve water to the extent possible.

### **Topics for Landowner Meetings in 2014**

In order to prepare for 2015 and beyond, during 2014 the District will hold a series of landowner/water user meetings and workshops to discuss and receive input on many water supply topics such as those listed below:

**Dwindling Surface Water Supplies:** If water supply deficiencies continue, the District may have to frequently prorate supplies and the District Board is contemplating how best to equitably manage water supplies into the future. It is anticipated that, with the growing population in California, and amid ever expanding environmental demands for water, surface water supplies will grow scarcer over time. For future planning, it is also necessary to consider recently enacted legislation, settling 18 years of litigation with environmental groups that mandates water to be diverted below Friant Dam to restore a 60-year old dry San Joaquin River channel for a salmon run rather than continue the historic deliveries to farmers. This San Joaquin River Restoration legislation directly impacts the District by creating a potential surface water deficit averaging 30,000 af per year.

**Water Bank Supplies:** Even with 2014 presumed a dry year, the District will still have approximately 200,000 af in its water bank inventory beginning in 2015 (from in-District groundwater recharge programs), but groundwater well performance will be greatly reduced due to declining pumping levels and certain water quality constituents could become an issue. Consequently, the Board is discussing how best to manage a dwindling reserve of water bank supplies until hydrology allows us to recharge our groundwater basin, and so as to meet future extended drought conditions. It should be noted that aquifer recharge takes many above normal water years to replace the amount we have withdrawn in the just the last few years.

**Maximum Water Use Cap:** The question of whether a cap or threshold should be put on water use is also a topic for discussion. The District-wide average use today is approximately 2.9 af/yr annually, but water use varies dramatically farm-to-farm due to cropping patterns as well as irrigation methods and an equitable method of capping water use must be established that allows water users and landowners the maximum flexibility to farm. Furthermore, if water use limits need to be set for surface water users, we may also want to discuss and consider how best to cooperate with groundwater users so as to conjunctively manage and operate the District in a sustainable and equitable manner for both.

**Tiered Pricing:** Another topic being explored involves tiered pricing, so that incremental water use beyond specific thresholds will incur incrementally higher costs. The purpose for tiered pricing would be to provide both an incentive to reduce water use, and to collect rates more reflective of high dry-year water costs that are directly associated with these higher water use rates while at the same time recognizing that different crops have different needs in this regard.

**Annual Prorates:** As surface water supplies dwindle and competition to purchase supplemental water increases, eventually the District could be faced with the need to prorate farmers to the available supply for the year. A district-wide prorate could take many forms from annual prorates in acre-feet per year to a daily prorate of gallons per minute per acre so as to match well-field production. One practice in the past was to prorate deliveries only during the six-month peak irrigation season of April through September. As mentioned above, District-wide prorates would

need to be discussed with both surface water and groundwater users if an equitable and sustainable practice were to be developed.

**Pump-in Programs:** As a part of dry year operations, the Board may allow landowners to pump into the District's canal for either a sale to the District to firm up its supply or so as to convey the supplies on behalf of the landowner. A pump-in program has several cost, communication/supply management and water quality issues that would need to be resolved in advance. Landowners may also want to activate idle wells to assist with dealing with the dwindling surface water supplies.

Discussions continue on these complex topics and it is anticipated a series of landowner meetings would be held to gather input from the water users, both in the groundwater service area and the surface water service area. We anticipate these meetings will take place in 2014, and we hope that you will participate in the process and share your ideas. Until that time, feel free to contact the District with any questions or comments you may have.

In closing, the District is asking all landowners/water users to continue planning and implementing on-farm conservation measures in order to use water wisely/efficiently in the coming year and beyond.

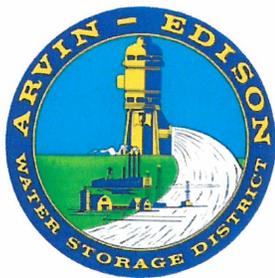
Sincerely,



Steve Collup  
Engineer-Manager

cc: Board of Directors  
Ernest Conant, Esq.  
All District Employees

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# ARVIN-EDISON WATER STORAGE DISTRICT

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February 14, 2014

## Subject: 2014 Water Supply Update

### DIRECTORS

Edwin A. Camp  
President  
Jeffrey G. Giumarra  
Vice President  
John C. Moore  
Secretary/Treasurer  
Howard R. Frick  
Ronald R. Lehr  
Dennis B. Johnston  
Charles Fanucchi  
Donald Valpredo  
Kevin E. Pascoe

### STAFF

Steven C. Collup  
Engineer-Manager  
David A. Nixon  
Assistant Manager  
Jeevan S. Muhar  
Staff Engineer  
Christopher P. Krauter  
General Superintendent

Dear Landowner/Water User:

As a follow up to our January 22, 2014 letter regarding the 2014 Water Supply Update, the Arvin-Edison Water Storage District (District) Board of Directors, pursuant to the District's Rules and Regulations, Article 9b (Proration of Water Delivery: Water Shortage), approved a draft Drought Allocation Program for water users for 2014 (attached).

In summary, the water shortage period is for the 6-month peak irrigation period of April through September (Prorate Period) when surface supplies are necessary to supplement District supplied groundwater to provide full deliveries. For the remaining months of our water year (months of March, and October through February 2015), the irrigation demand can typically be met within the District's instantaneous well production from water bank facilities, and therefore, no prorate is required during the off peak months at this time.

**The prorate amount currently being considered for the Prorate Period is 1.90 acre-feet per acre (AF/AC).** Note that the historical usage for the Prorate Period is 2.13 AF/AC. Landowners/water users will be allowed to combine their turnouts, contracts, and Prorate Period allocation into farming units. The total Prorate Period allocation can be moved around within those farming units. Initial schedules for the use of Prorate Period water will be required and a return pool will be administered by the District to reallocate water from those that don't need their full Prorate Period supplies to those water users that request more. If a schedule is not submitted the District will assume you do not plan to irrigate this year and your allocated amount will be made available to others through administration of the return pool.

The Board is also considering, among other things, a pump-in program to convey landowner well water to those contract lands still suffering from a water supply deficit.

More specific details of the 2014 Drought Allocation Program are attached.

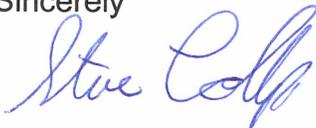
The District has also reserved the District's Boardroom (20401 Bear Mountain Blvd.) for water user/landowner meetings to discuss the draft Drought Allocation Program on February 19<sup>th</sup>, 20<sup>th</sup>, 21<sup>st</sup>, 25<sup>th</sup>, and 28<sup>th</sup>. The District will offer both a 9:00 a.m. and 1:00 p.m. meeting each day, if needed. Meetings are expected to last 90 minutes or less. Limited seating is available so please call and reserve a spot for your attendance. We will cancel any meetings to which we do not receive sufficient reservations. When you call to RSVP, please leave a phone number and email address so that we can notify you of any change in meeting dates and times.

**Landowner/Water User**  
**February 14, 2014**  
**Page 2**

Although the Prorate Period affects District water users in the surface water service area, the Board strongly suggests that groundwater users also attend as the District's sustainability into the future will be discussed, and is strongly contingent upon cooperation among both District water users and groundwater lands. The District has had a successful history to-date largely in part due to the equitable nature of water supply and costs between District surface water users and groundwater lands.

The District looks forward to receiving your input, and we are confident, we can successfully navigate this year by working together.

Sincerely



Steve Collup  
Engineer-Manager

Enclosure

cc: Board of Directors  
All Employees

**DRAFT**  
**ARVIN-EDISON WATER STORAGE DISTRICT**  
**2014 DROUGHT ALLOCATION PROGRAM**

- (1) **Water Shortage/Prorate Allocation.** District Landowners/Water Users (Water Users) will be subject to water shortage/prorate for only the 6-month peak irrigation period of April through September inclusive (Prorate Period). Unless conditions change significantly, there is no need to prorate deliveries during the other six months of the water year. By March 1, 2014, Water Users will be notified of their preliminary Prorate Period water allocation, in units of acre-feet per contract acre (AF/AC). **The preliminary prorate estimate at this time is about 1.9 AF/AC.** Such allocation may be used by Water Users through any turnout serving District contract lands, under their ownership or control (Farming Unit), at any time during the Prorate Period, consistent with District Rules and Regulations for Delivery of Water. However, certain deliveries may be subject to additional proration due to the same pumping and pipeline capacity limitations which occur from time to time during normal operations.
  
- (2) **Schedules.** After receiving the preliminary Prorate Period water allocation, each water user shall submit a schedule for the Prorate Period, using only their prorated amount, for each of their contract turnouts, on a form supplied by the District. These schedules will also be the basis of a prorate pool to possibly reallocate water to others during the Prorate Period. Such schedule shall indicate usage by month, amount of water to be returned, if any, and a request for additional water (beyond the prorated amount if additional water is desired). The District must receive the schedule by March 14, 2014. If a schedule is not submitted, it will be assumed you are not irrigating and your contract/turnout allocation will be made available to others in the pool. Water Users may schedule any portion of the water allocation within the Prorate Period but no prorate entitlement may be carried over beyond September 2014. There is no prorate declared after that time so that carryover is moot.

All Prorate Period water allocation returned into the pool will receive a credit/payment of \$200/AF from the District and all additional water allocated from the pool will have an additional charge of \$200/AF above all normal and customary water and energy lift charges.

No individual transfers of Prorate Period water allocation will be allowed. Any and all requests and reallocation of water must go through the District.

- (3) **Initial reallocation.** Water Users requesting additional Prorate Period water allocation, if it becomes available, will receive notification of the reallocation of water by April 1, 2014. Allocation of returned water will also be prorated on a contract acreage basis among those Water Users requesting additional water. All water requested and received by reallocation shall become a part of the Water User's Prorate Period

water allocation and the additional water shall be charged for at a rate of an additional \$200/AF above all normal and customary charges.

- (4) **Subsequent reallocations.** If the total of the March 14, 2014 pool requests for additional water are not satisfied by a sufficient quantity of returned water made available in the initial pool reallocation, the District will continue to receive contributions of return water throughout the Prorate Period until the March 14, 2014 requests are met. It is possible, however, that the requested amounts may never be met.
- (5) In the event that the March 14, 2014 return water requests exceed additional water requests, the District will post, at the District office, the quantity of remaining Prorate Period water and it shall become available for transfer on a first come, first serve basis for the balance of the Prorate Period.
- (6) Additional contributions and requests for water received after March 14, 2014 will be posted at the District office and also be administered on first-in first-out basis. Water credits and charges will remain at \$200/AF.
- (7) **No water to leave District.** The District's long-standing policy of not allowing the transfer of surface water or groundwater to outside of District boundaries will continue to be enforced.

#### **"PUMP-IN" PROGRAM**

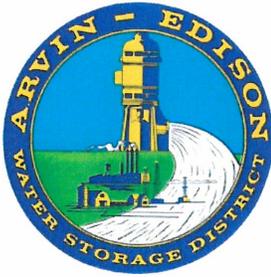
- (1) Individuals with wells may "bank" their groundwater in the District's canal for later delivery by introducing metered groundwater into the District's canal for conveyance and delivery to contract lands within the District. Such water will be conveyed by the District to that landowner's contract lands or contract lands belonging to a landowner they may designate and under conditions outlined herein. If appropriate, the District will require the execution of transfer forms supplied by the District and signed by both parties.
- (2) All delivery of conveyed groundwater will carry the customary Energy Lift Charges, if any, but will not otherwise be charged a conveyance fee. Conveyed groundwater will have a 10% loss factor applied.
- (3) Water may be "banked" and/or withdrawn from the District only during periods when the District is importing surface water (typically same as Prorate Period) and all banked water must be used within the Prorate Period or will be forfeited to the District.

All of the above procedures are subject to amendment as the District Board of Directors determines to be appropriate. These procedures supersede the District's Rules and Regulations for the Distribution of Water for the Prorate Period, and only to the extent these procedures vary from the Rules and Regulations.

**2014 DROUGHT ALLOCATION PROGRAM  
LANDOWNER MEETING AGENDA**

- 1 **Background**
    - District Facilities
    - (8 min) Friant-Kern Allocation
    - Water Management Programs
    - Typical Banking Facilities
    - Underground Storage
    - Crops
    - Overdraft Mitigation
  - 2 **Drought Supplies**
    - (10 min) Irrigation Demand vs Wellfield Capacity
    - 2012 -2014 Groundwater Extractions
    - Groundwater Pumping Levels
    - 2014 Water Supplies
  - 3 **Prorate**
    - (10 min) Confined to Apr - Sep (6 months)
    - no prorate Mar, Oct-Feb
    - prorated on a per acre basis
    - prorate based on volume (af/ac), not flow (gpm/ac)
    - Historical is 2.14 af/ac, 2013 was 2.28 af/ac
    - 2014 prorate set at 1.9 af/ac
    - still may have lateral prorates
    - no water to leave District
    - considering a 7 month, 2.0 af/ac prorate (Mar - Sep)
  - 4 **Farming units**
    - (5 min) May combine contracts into a farming unit
    - Need not be contiguous
    - Need not be same owners
    - May move allocation around the farming unit
    - May move allocation among prorate period
  - 5 **Schedules**
    - need schedule for prorate period
    - (5 min) determine if have water to turn back into a pool
    - determine if would like more water from pool
    - schedules/request due by March 14, 2014
    - no schedule = no irrigation need
  - 6 **Turn Back Pool**
    - No transfers among individuals allowed
    - (13 min) AE buys turn back water (\$200/af?)
    - AE sells turn back water (\$200/af?)
    - pool reallocation on a per acre basis (farming unit)
    - additional sales/requests on a first come basis
  - 7 **Pump-Ins (details to come)**
    - groundwater wells may be pumped into canal
    - (5 min) pump-ins and delivery need not be simultaneous
    - water may be wheeled to contract lands only
    - no cost for wheeling but 10% loss factor applied
    - standard costs for delivery/pumping to turnouts
  - 8 **Calendar**
    - draft water allocation program mailed 2/14
    - (3 min) landowner meetings 2/19, 2/20, 2/21, 2/25, 2/28
    - final program mailed 3/1
    - schedules/requests for pool due 3/14
    - Notice of final allocations by 4/1
  - 9 **Questions**
    - (13 min)
  - 10 **Future Topics**

Sustainability	Tiered Pricing
(8 min) Groundwater metering	In-Lieu Service Area
Banking Reserves	< 24 hr runs
water use cap	annual prorates
- (80 min) total



# ARVIN-EDISON WATER STORAGE DISTRICT

---

February 28, 2014

## DIRECTORS

Edwin A. Camp  
President  
Jeffrey G. Giumarra  
Vice President  
John C. Moore  
Secretary/Treasurer  
Howard R. Frick  
Ronald R. Lehr  
Dennis B. Johnston  
Charles Fanucchi  
Donald Valpredo  
Kevin E. Pascoe

## STAFF

Steven C. Collup  
Engineer-Manager  
David A. Nixon  
Assistant Manager  
Jeevan S. Muhar  
Staff Engineer  
Christopher P. Krauter  
General Superintendent

## **Subject: 2014 Water Supply Update**

Dear Landowner/Water User:

As a follow up to our February 14, 2014 letter regarding the 2014 Water Supply Update, the Arvin-Edison Water Storage District (District) Board of Directors, pursuant to the District's Rules and Regulations, Article 9b (Proration of Water Delivery: Water Shortage), has approved a Final Drought Allocation Program for water users for 2014 (attached). The final program is very similar to that described in the letter sent out February 14, 2014 with a few refinements following several meetings with Landowners/Water Users in February. The Drought Allocation program components are:

1. A 6-Month Prorate Period
2. A voluntary turnback/reallocation pool
3. A Landowner well pump-in program

In summary, the water shortage period is still for the 6-month peak irrigation period of April through September (6-Month Prorate Period) when surface supplies are necessary to supplement District supplied groundwater to provide requested deliveries. For the remaining months of our water year (months of March, and October through February 2015), the irrigation demand can typically be met with the District's instantaneous well production from water bank facilities; and therefore, no prorate is required during the off peak months at this time.

**The prorate amount allocated for the 6-Month Prorate Period is 1.90 acre-feet per acre (AF/AC).** Note that the historical usage for the 6-Month Prorate Period is 2.14 AF/AC. Landowners/Water Users will be allowed to combine their turnouts, contracts, and 6-Month Prorate Period allocation into farming units. The total 6-Month Prorate Period allocation can be moved around within those farming units. Initial schedules for the use of 6-Month Prorate Period water will be required and a turnback/reallocation pool will be administered by the District to reallocate water from those that don't need their full 6-Month Prorate Period supplies to those Water Users that request more.

The Board has also approved a pump-in program to convey landowner well water to those contract lands still suffering from a water supply deficit, or, alternatively, to sell directly to the District.

More specific details of the Final 2014 Drought Allocation Program components are attached.

**Landowner/Water User**  
**February 28, 2014**  
**Page 2**

**Please note that your schedules are due by close of business on March 14, 2014.** Schedules may be submitted by email, fax, or mail but email is requested so as to expedite. If a schedule is not submitted, the District will assume you do not plan to irrigate this year and your 6-Month Prorate Period allocated amount will be forfeited and made available to others.

Please also note that your attached preliminary scheduling form has already been started by the District, but feel free to add or subtract turnouts so as to represent the farming unit for which you are scheduling. An electronic copy of this schedule for your use can be made available upon request.

Please feel free to call the District for further assistance.

Sincerely



Steve Collup  
Engineer-Manager

Enclosures

cc: Board of Directors  
All Employees

**FINAL**  
**ARVIN-EDISON WATER STORAGE DISTRICT**  
**2014 DROUGHT ALLOCATION PROGRAM**

**6-MONTH PRORATE PERIOD**

- (1) **Water Shortage/Prorate Allocation.** District Landowners/Water Users (Water Users) will be subject to water shortage/prorate for only the 6-month peak irrigation period of April through September inclusive (Prorate Period). Unless conditions change significantly, there is no need to prorate deliveries during the other six months of the water year. **Water Users have been notified of their 1.9 acre-feet per contract acre (AF/AC) Prorate Period water allocation.** Such allocation may be used by Water Users through any turnout serving District contract lands, under their ownership or control (Farming Unit), at any time during the Prorate Period, consistent with District Rules and Regulations for Delivery of Water. However, certain deliveries may be subject to additional proration due to the same pumping and pipeline capacity limitations which occur from time to time during normal operations. Water Users will be shutoff at the allocated amount and those who overuse their 6-Month Prorate Period Allocations will be subject to severe penalties including but not limited to the market cost of replacement supplies, which is currently \$1,300/AF.

**TURNBACK/REALLOCATION POOL**

- (2) **Schedules.** Please submit a schedule for the 6-Month Prorate Period on a form supplied by the District. These schedules will also be the basis of a turnback pool to reallocate water to others that requested such during the Prorate Period, if any exist. Such schedule shall indicate usage by month, amount of water to be returned, if any, and a request for additional water (beyond the prorated amount if additional water is desired). The District must receive the schedule by March 14, 2014. If a schedule is not submitted, the Prorate Period allocation will be forfeited and will be made available to others. Water Users may schedule any portion of the water allocation within the Prorate Period but no prorate allocation may be carried over beyond September 2014. There is no prorate declared after that time so that carryover is moot.

All Prorate Period water allocation returned into the pool will receive a credit/payment of \$200/AF from the District and all additional water allocated from the pool will have an additional charge of \$200/AF above all normal and customary water and energy lift charges.

No individual transfers of Prorate Period water allocation will be allowed. Any and all requests and reallocation of water must go through the District.

- (3) **Initial reallocation.** Water Users requesting additional Prorate Period water allocation, if it becomes available, will receive notification of the reallocation of water by April 1, 2014. Allocation of returned water will also be prorated on a contract acreage basis among those Water Users requesting additional water. All water requested and received by reallocation shall become a part of the Water User's Prorate Period water allocation and the additional water shall be charged for at a rate of an additional \$200/AF above all normal and

customary charges. Payment for the additional water shall be due within 14 days of notice. Payments for normal water/lift charges will follow typical protocol.

- (4) **Subsequent reallocations.** If the total of the March 14, 2014 pool requests for additional water are not satisfied by a sufficient quantity of returned water made available in the initial pool reallocation, the District will continue to receive contributions of return water throughout the Prorate Period. It is possible, however, that the requested amounts may never be met.
- (5) In the event that the March 14, 2014 return water requests exceed additional water requests, the District will post, at the District office, the quantity of remaining Prorate Period water and it shall become available for transfer on a first come, first serve basis for the balance of the Prorate Period.
- (6) Additional contributions and requests for water received after March 14, 2014 will be posted at the District office and also be administered on first-in first-out basis. Additional water credits and charges will remain at \$200/AF.
- (7) **No water to leave District.** The District's long-standing policy of not allowing the transfer of surface water or groundwater to outside of District boundaries will continue to be enforced.

#### **PUMP-IN PROGRAM**

- (8) Landowners with wells may "bank" their groundwater in the District's canal for later delivery by introducing metered groundwater into the District's canal for conveyance and delivery to contract lands within the District. Such water will be conveyed by the District to that landowner's contract lands or contract lands belonging to a landowner they may designate and under conditions outlined herein. If appropriate, the District will require the execution of transfer forms supplied by the District and signed by both parties.
- (9) All delivery of conveyed groundwater will carry the customary Energy Lift Charges, if any, but will not otherwise be charged a conveyance fee. Conveyed groundwater will have a 10% loss factor applied.
- (10) Water may be "banked" and/or withdrawn from the District only during periods when the District is importing surface water (typically same as Prorate Period) and all banked water must be used within the Prorate Period or will be forfeited to the District.
- (11) Landowners may also pump-in groundwater for direct sale to the District for \$200/AF. Payment will be made on the basis of 100% of metered deliveries.

All of the above procedures are subject to amendment at any time as the District Board of Directors determines to be appropriate. These procedures supersede the District's Rules and Regulations for the Distribution of Water for the Prorate Period, and only to the extent these procedures vary from the Rules and Regulations.



# ARVIN-EDISON WATER STORAGE DISTRICT

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March 31, 2014

## **DIRECTORS**

Edwin A. Camp  
President  
Jeffrey G. Giumarra  
Vice President  
John C. Moore  
Secretary/Treasurer  
Howard R. Frick  
Ronald R. Lehr  
Dennis B. Johnston  
Charles Fanucchi  
Donald Valpredo  
Kevin E. Pascoe

## **STAFF**

Steven C. Collup  
Engineer-Manager  
David A. Nixon  
Assistant Manager  
Jeevan S. Muhar  
Staff Engineer  
Christopher P. Krauter  
General Superintendent

**Subject: 2014 Water Supply Update**

Dear Landowner/Water User:

This notice is provided as a follow up to our February 28, 2014 letter regarding the 2014 Drought Allocation Program. Recall that the Program consists of three components:

1. A 6-Month Prorate Period Allocation
2. A Voluntary Turnback/Reallocation Pool
3. A Landowner Well Pump-in Program

Items one and two have been initiated. The District has received six-month schedules from all water users with requests to turn-back water (approximately 1,400 af) as well as requests for additional water (approximately 6,400 af). Subsequently, those requesting additional water have had their prorate amounts increased from 1.90 af/ac to 1.98 af/ac. If your prorate amount has been changed either by turn-back or additional allocation, your new schedule is enclosed. Schedules for landowners with no changes are the same as previously submitted. Those receiving additional water can expect invoices under separate cover at \$200/af additional costs. Those who turned in water should expect payment in about 30 days. If you have any questions about the final schedules please contact David Nixon at (661) 854-5573.

The Board has also approved a pump-in program to convey landowner well water to those contract lands still suffering from a water supply deficit, or, alternatively, to sell directly to the District. To-date, only three landowner's wells are pumping into the District's canal. Please contact Jeevan Muhar at (661) 854-5573, if you would like to participate in the program to convey landowner well water and/or sell it to the District at \$200/af.

The District will continue to check in with water users throughout this prorate period, but in the meantime, please feel free to call the District for further assistance.

Sincerely

Steve Collup  
Engineer-Manager

Enclosures

cc: Board of Directors

SCC:sj\AEWSD\landownersCorresp\2014\Landowner.Water.User.wtr.supply.program.letter.update.03.31.14.doc



# ARVIN-EDISON WATER STORAGE DISTRICT

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July 15, 2014

**Subject: 2014 Drought Year Update**

**DIRECTORS**

Edwin A. Camp  
President  
Jeffrey G. Giumarra  
Vice President  
John C. Moore  
Secretary/Treasurer  
Howard R. Frick  
Ronald R. Lehr  
Dennis B. Johnston  
Charles Fanucchi  
Donald Valpredo  
Kevin E. Pascoe

**STAFF**

Steven C. Collup  
Engineer-Manager  
David A. Nixon  
Assistant Manager  
Jeevan S. Muhar  
Staff Engineer  
Christopher P. Krauter  
General Superintendent

Dear Landowner/Water User:

The District has now completed three (3) months (which is half way) of the 2014 6-Month Drought Allocation Program. As you will recall, the Program consisted of several components one of which was a voluntary turnback / reallocation pool whereby Farming Units were given the opportunity to turn back water into a pool or to purchase additional water beyond the prorate allocation. The District did receive requests from farming units to turn-back water (approximately 1,000 af) as well as requests for additional water (approximately 6,400 af) and subsequently those farming units requesting additional water had their prorate amounts increased from 1.90 af/ac to 1.98 af/ac as a result of the original turn back pool.

Since administration of the original pool, District staff has continued to receive inquiries from those with surplus water as well as those requesting more supplies, all for the six-month April through September period. Subsequently, the District Board, at their July 8, 2014 Board of Directors' meeting, approved administration of a second round of the turn back/reallocation pool process.

This second pool will operate similar to the original pool in that request for additional water will be prorated on a per acre basis and the incremental cost of the water will remain at \$200/af. For those farming units interested in either selling water from their current allocation (i.e. 1.90 af/ac or 1.98 af/ac allocation), or those interested in purchasing additional water, please respond by Monday, July 28, 2014.

To assist in your planning process a summary of your six-month supply is attached, including those supplies allocated initially and those modified per the first pool process. The spreadsheet also has actual usage by turnout and farming unit for April, May, and June. Recall that unused six-month prorate supplies will be extinguished (October 1, 2014) as the prorate period ends at that time; however, landowners will continue to be responsible for all costs associated with those supplies, used or not.

If you have any questions please call Dave Nixon at (661) 854-5573

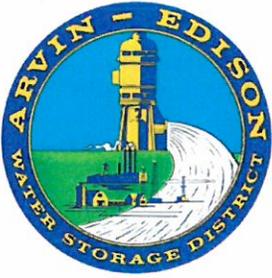
Sincerely

Steve Collup  
Engineer-Manager

Enclosure

cc: Board of Directors

SCC:s\AEWSD\landownersCorresp\2014\Landowner.Water.User.wtr.supply.program.letter.update.07.09.14.doc



# ARVIN-EDISON WATER STORAGE DISTRICT

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August 25, 2014

## DIRECTORS

Edwin A. Camp  
President  
Jeffrey G. Giumarra  
Vice President  
John C. Moore  
Secretary/Treasurer  
Howard R. Frick  
Ronald R. Lehr  
Dennis B. Johnston  
Charles Fanucchi  
Donald Valpredo  
Kevin E. Pascoe

## STAFF

Steven C. Collup  
Engineer-Manager  
David A. Nixon  
Assistant Manager  
Jeevan S. Muhar  
Staff Engineer  
Christopher P. Krauter  
General Superintendent

**Subject: 2014 Drought Year Update:  
Third Turnback Reallocation Pool**

Dear Landowner/Water User:

The District has now completed approximately five (5) months of the 2014 6-Month Drought Allocation Program. As you will recall, the District has administered two turnback/reallocation pools, whereby Farming Units were given the opportunity to turnback water into a pool or purchase additional water. These two pools have reallocated 2,778 acre-feet to those farming units desiring more than their original 1.9 af/ac (6 month prorated amount).

District staff continues to receive inquiries from those with surplus water as well as those requesting additional water, for the remaining six-month prorated (April through September) period. Subsequently, the District will administer a third and final turnback/reallocation pool process.

The third pool will operate similar to previous pools in that requests for additional water will be prorated on a per acre basis and the incremental cost of the water will remain at \$200/af. In the event that requests exceed supplies, those will also be prorated on a per acre basis. For those farming units interested in either selling or purchasing additional water, please respond by **Tuesday, September 2, 2014** (form attached). As this is a balanced pool, there is no guarantee those with surplus water will be able to sell all their water into the pool or those requesting additional supplies will receive all that they request.

To assist in your planning process, a summary of your six-month allocation supply is attached, including those supplies allocated initially, and those changes per the first and second pools. The spreadsheet also has actual usage by turnout and farming unit for April, May, June, July and the first 14 days of August. Recall that unused six-month prorated supplies will be extinguished (October 1, 2014) as the prorated period ends; however, landowners will continue to be responsible for all costs associated with the purchase of the additional pool supplies, used or not. Those farming units who purchase additional water in this third pool must make payment to the District within 15 days from the date of the invoice.

If you have any questions, please call David Nixon at (661) 854-5573.

Sincerely

  
Steve Collup  
Engineer-Manager

Enclosures

cc: Board of Directors

SCC:sj\AEWSD\landownersCorresp\2014\Landowner.Water.User.wtr.supply.program.letter.update.08.25.14.doc



# ARVIN-EDISON WATER STORAGE DISTRICT

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September 17, 2014

## **DIRECTORS**

Edwin A. Camp  
President  
Jeffrey G. Giumarra  
Vice President  
John C. Moore  
Secretary/Treasurer  
Howard R. Frick  
Ronald R. Lehr  
Dennis B. Johnston  
Charles Fanucchi  
Donald Valpredo  
Kevin E. Pascoe

## **STAFF**

Steven C. Collup  
Engineer-Manager  
David A. Nixon  
Assistant Manager  
Jeevan S. Muhar  
Staff Engineer  
Christopher P. Krauter  
General Superintendent

**Subject: 2015 Water Supply Update**

Dear Landowner/Water User:

Although we are only half way through Water Year (WY) 2014, the Arvin-Edison Water Storage District (District) Board of Directors has initiated the WY 2015 budget process, which necessitates projecting WY 2015 water year supplies and deliveries. Subsequently, in the event WY 2015 is as dry as WY 2014, the following emergency water management programs will be put into place similar as to those in WY 2014:

- A 6-month, April through September prorate of 1.4 af/ac, **reduced 25%** from the 1.9 af/ac prorate in WY 2014. A prorate may not be required for the remainder of WY 2015.
- These deliveries will reduce District groundwater bank reserves by approximately 85,000 leaving minimal reserves to supplement future years.
- Turnback/Reallocation pools similar to the three (3) pools the District administered in WY 2014, which met ALL requests for additional water with 3,000 af surplus water remaining.
- A Conveyance Program for landowner groundwater wells (4,500 af in WY 2014).
- Relaxation of the 24-hour delivery rule will continue for 2014 and 2015 for those water users in good standing, and so as to give water users the maximum flexibility.

You will be updated as more information is forthcoming over the next several months. **Please complete and return the attached form to receive updates via email.**

Thank you,

Steve Collup  
Engineer-Manager

Enclosure

cc: Board of Directors  
Ernest Conant, Esq.  
All District Employees

SCC:ajAEWSDLandowner.CorrespLandowner.Water.user.wfr.supply.update.WY.2015.09.13.doc



# ARVIN-EDISON WATER STORAGE DISTRICT

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## **DIRECTORS**

Edwin A. Camp  
President  
Jeffrey G. Giumarra  
Vice President  
John C. Moore  
Secretary/Treasurer  
Howard R. Frick  
Ronald R. Lehr  
Dennis B. Johnston  
Charles Fanucchi  
Donald Valpredo  
Kevin E. Pascoe

## **STAFF**

Steven C. Collup  
Engineer-Manager  
David A. Nixon  
Assistant Manager  
Jeevan S. Muhar  
Staff Engineer  
Christopher P. Krauter  
General Superintendent

In order for the District to more timely update landowners/water users we are creating a district-wide **email** list of those who wish to be notified.

Please print clearly and/or legibly and include any email addresses that you wish to receive correspondence from the District:

Name of Farming Unit: \_\_\_\_\_

1. Email: \_\_\_\_\_ Name: \_\_\_\_\_

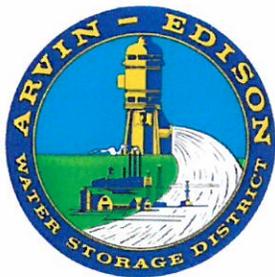
2. Email: \_\_\_\_\_ Name: \_\_\_\_\_

3. Email: \_\_\_\_\_ Name: \_\_\_\_\_

Remember to notify us of any changes as soon as possible. Please mail, fax, or email this form back to the District.

Thanks for your cooperation in this matter.

DAN:sjlAEWSD\Landowner\2014\Farming.Unit.Email.Form.09.14.doc



# ARVIN-EDISON WATER STORAGE DISTRICT

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January 16, 2015  
Via Electronic Mail & U.S. Mail

## **DIRECTORS**

Edwin A. Camp  
President  
Jeffrey G. Giumarra  
Vice President  
John C. Moore  
Secretary/Treasurer  
Howard R. Frick  
Ronald R. Lehr  
Dennis B. Johnston  
Charles Fanucchi  
Donald Valpredo  
Kevin E. Pascoe

## **STAFF**

Steven C. Collup  
Engineer-Manager  
David A. Nixon  
Assistant Manager  
Jeevan S. Muhar  
Staff Engineer  
Christopher P. Krauter  
General Superintendent

## **Subject: 2015 Water Supply Update**

Dear Landowner/Water User:

The United States Department of the Interior Bureau of Reclamation (USBR) will not make a preliminary water supply declaration for water year (WY) 2015 (begins March 1, 2015) until mid-February 2015. Subsequently, the Arvin-Edison Water Storage District (District) must continue to plan in the event WY 2015 is as dry as WY 2014. The following emergency water management programs, similar as to those in WY 2014, continue to be considered:

- A 6-month, April through September prorate of 1.4 af/ac, **reduced 25%** from the 1.9 af/ac prorate in WY 2014. A prorate may not be required for the remainder of WY 2015.
  - Turnback/Reallocation pools similar to the three (3) pools the District administered in WY 2014.
- A Conveyance Program in District canals for landowner groundwater wells.
  - Relaxation of the 24-hour delivery rule will continue in WY 2015 for those water users in good standing, and to also give water users the maximum flexibility.
  - In addition, the Board is considering a new trial program of allowing landowners adjacent to District pipelines to pump groundwater directly into the District's pipeline system. This option may require significant investment by the landowner in piping, control valves, and surge protection. **If you have an interest in the pipeline program please notify the District as soon as possible. Proposals will be considered on a case-by-case basis.**

You will be updated as more information is forthcoming over the next few months.

Thank you,

Steve Collup  
Engineer-Manager

Enclosure

cc: Board of Directors  
Ernest Conant, Esq.  
All District Employees

SCC:\JAEWS\DLandowner.CCrespl.Landowner.Water.user.wtr.supply.update.WY.2015.Jan.15.doc



# ARVIN-EDISON WATER STORAGE DISTRICT

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February 20, 2015

## Subject: 2015 Water Year - Drought Allocation Program

### DIRECTORS

Edwin A. Camp  
President  
Jeffrey G. Giumarra  
Vice President  
John C. Moore  
Secretary/Treasurer  
Howard R. Frick  
Ronald R. Lehr  
Dennis B. Johnston  
Charles Fanucchi  
Donald Valpredo  
Kevin E. Pascoe

### STAFF

Steven C. Collup  
Engineer-Manager  
David A. Nixon  
Assistant Manager  
Jeevan S. Muhar  
Staff Engineer  
Christopher P. Krauter  
General Superintendent

Dear Landowner/Water User:

The Arvin-Edison Water Storage District (District) Board of Directors, pursuant to the District's Rules and Regulations, Article 9b (Proration of Water Delivery: Water Shortage), at the February 10, 2015 Board of Directors meeting approved a Drought Allocation Program for water users for the 2015 Water Year (attached). The 2015 program is very similar to that of 2014 water year Drought Allocation Program, except with less water available, and with the addition of a potential pipeline pump-in program. The Drought Allocation Program components are:

1. A 6-Month Prorate Period
2. Three (3) voluntary turnback/reallocation pools
3. A Landowner well canal pump-in program
4. A Landowner well pipeline pump-in program
5. Relaxation of 24-hour delivery requirement

In summary, the water shortage period is still for the 6-month peak irrigation period of April through September (6-Month Prorate Period) when surface supplies are necessary to supplement District supplied groundwater to provide requested deliveries. For the remaining months of our water year (months of March, and October through February 2016), the irrigation demand can typically be met with the District's instantaneous well production from water bank facilities; and therefore, no prorate is required during the off peak months at this time.

**The prorate amount allocated for the 6-Month Prorate Period is 1.3 acre-feet per acre (AF/AC).** Note that the historical usage for the 6-Month Prorate Period is 2.1 AF/AC and the 2014 6-Month Prorate was 1.9 AF/AC. Landowners/Water Users will be allowed to combine their turnouts, contracts, and 6-Month Prorate Period allocation into farming units. The total 6-Month Prorate Period allocation can be moved around within those farming units. Initial schedules for the use of 6-Month Prorate Period water will be required and three (3) turnback/reallocation pools (March, June, and August) will be administered by the District to reallocate water from those that do not need their full/remaining 6-Month Prorate Period supplies to those Water Users that request more. Please note the greatly increased cost for Pooled water this year (attached).

The Board has also approved a canal pump-in program to convey landowner well water to those contract lands still suffering from a water supply deficit, or, alternatively, to sell directly to the District. On a case-by-case basis, staff will also consider a pipeline pump-in program to convey landowner well water directly into District pipelines in-lieu of the canal.

Finally, as instituted in May 2014, the Flexible Ordering Program, which relaxed the 24-hour delivery rule, will continue into 2015 for those water users in good standing to give water users the maximum flexibility.

More specific details of the Final 2015 Drought Allocation Program components are attached.

**Please note that your schedules are due by close of business on Friday, March 7, 2015.** Schedules may be submitted by email, fax, or mail but email is requested so as to expedite. Note that the schedule has an entry to request contribution to, or delivery from, the first pool. If a schedule is not submitted, the District will assume you do not plan to irrigate this year and your 6-Month Prorate Period allocated amount will be forfeited and made available to others.

Please also note that the District has already started your attached preliminary scheduling form, but feel free to add or subtract turnouts so as to represent the farming unit for which you are scheduling. An electronic copy of this schedule for your use can be made available upon request.

The District is also scheduling landowner meetings for March 12 and 13, at 9:00 a.m. to discuss these programs as well as other issues. Please RSVP as meetings with no attendance will be cancelled.

Lastly, while the District has endeavored to provide you with the most accurate information and expectations, water supplies this year continue to be highly speculative on many fronts, and subsequently, are subject to change.

Please feel free to call the District for further assistance.

Sincerely,



---

Edwin Camp, President



---

Steve Collup, Engineer-Manager

Enclosures

cc: Board of Directors  
All Employees

ARVIN-EDISON WATER STORAGE DISTRICT  
**2015 DROUGHT ALLOCATION PROGRAM**

**6-MONTH PRORATE PERIOD**

- (1) **Water Shortage/Prorate Allocation.** District Landowners/Water Users (Water Users) will be subject to water shortage/prorate for only the 6-month peak irrigation period of April through September inclusive (Prorate Period). Unless conditions change significantly, there is no need to prorate deliveries during the remaining six months of the water year. **The 2015 prorate allocation amount is 1.3 acre-feet per contract acre (AF/AC).** Such allocation may be used by Water Users through any turnout serving District contract lands under their ownership or control (Farming Unit), at any time during the Prorate Period and consistent with District Rules and Regulations for Delivery of Water. For those wanting to add additional contract land into their farming unit, the Operating Agent forms must be completed and/or updated. However, certain deliveries may be still subject to additional daily proration due to the historical pumping and pipeline capacity limitations, which occur from time to time during normal operations. Water Users will be curtailed once they reach their allocated amount and those who overuse their 6-Month Prorate Period Allocations will be subject to severe penalties including but not limited to the market cost of replacement supplies (in excess of \$2,000/af).

**TURNBACK/REALLOCATION POOL**

- (2) **Schedules.** Please submit a schedule for the 6-Month Prorate Period on the form supplied by the District. These schedules will also be the basis of a turnback pool to reallocate water to others that requested such during the Prorate Period, if any exist. Such schedule shall indicate usage by month, amount of water to be returned, if any, and a request for additional water (beyond the prorated amount) if additional water is desired. The District must receive the schedule by Friday, March 7, 2015. If a schedule is not submitted, the Prorate Period allocation will be forfeited and will be made available to others. Water Users may schedule any portion of the water allocation within the Prorate Period but no prorate allocation may be carried over beyond September 2015. There is no prorate declared after that time so that carryover is moot beyond September 2015.

All Prorate Period water allocation returned into the pool will receive a credit/payment from the District and all additional water allocated from the pool will have an additional charge above all normal and customary water and energy lift charges. Similar to the 2014 Program, the District anticipates having three (3) separate reallocation pools, which are expected in March (initial), June, and August. The Credit/payment and charge for each pool will have varying amounts for example \$400/AF, \$300/AF and \$200/AF, respectively. In addition, the District will assess a pump fee of \$75/AF for each pool transaction. For example, a buyer on the initial March pool will pay a total incremental cost of \$475/AF (\$400 to the seller and \$75 to the District), plus all normal and customary water and energy lift charges.

No individual transfers of Prorate Period water allocation will be allowed. Any and all requests and reallocation of water must go through the District.

- (3) **Initial reallocation.** Water Users requesting additional Prorate Period water allocation, if it becomes available, will receive notification of the reallocation of water by March 14, 2015. Allocation of returned water will also be prorated on a contract acreage basis among those Water Users requesting additional water. All water requested and received by reallocation shall become a part of the Water User's Prorate Period water allocation, and the additional water shall be charged for at a rate of an additional \$475/AF above all normal and customary charges. Payment for the additional water shall be due within 14 days of notice. Payments for normal water/lift charges will follow typical protocol.
- (4) **Subsequent reallocations.** After the initial March pool reallocation, the District will administer two additional pools during the Prorate Period, which are anticipated in June and August. All water requested and received by reallocation shall become a part of the Water User's Prorate Period water allocation and the additional water shall be charged at a rate of an additional \$375/AF and \$275/AF, respectively, above all normal and customary charges. It is possible, however, that the requested amounts may never be met.
- (5) In the event that the March 14, 2015 return water requests exceed additional water requests, the District will post, at the District office, the quantity of remaining Prorate Period water and it shall become available for transfer on a first come, first serve basis for the balance of the Prorate Period.
- (6) Additional contributions and requests for water received after the August pool will be posted at the District office and also be administered on first-in first-out basis. Additional water credits and charges will remain at \$275/AF.
- (7) **No water to leave District.** The District's long-standing policy of not allowing the transfer of surface water or groundwater to outside of District boundaries will continue to be enforced.

### **CANAL PUMP-IN PROGRAM**

- (8) Landowners with wells may "bank" their groundwater in the District's canal for later delivery by introducing metered groundwater into the District's canal for conveyance and delivery to contract lands within the District. Such water will be conveyed by the District to that landowner's contract lands or contract lands belonging to a landowner they may designate and under conditions outlined herein. If appropriate, the District will require the execution of an agreement and/or transfer forms supplied by the District and signed by both parties.
- (9) All delivery of conveyed groundwater will carry the customary "Additional" Energy Lift Charges, if any, but the District's typical "Water Component" and "First Lift" Charges will not apply. The District will not otherwise charge a conveyance fee, however conveyed groundwater will have a 10% loss factor applied.
- (10) Water may be "banked" and/or withdrawn from the District only during periods when the District is importing surface water (typically same as

Prorate Period) and all banked water must be used within the Prorate Period or will be forfeited to the District.

- (11) Landowners may also pump-in groundwater for direct sale to the District for \$200/AF. Payment will be made on the basis of 100% of metered deliveries.

### **PIPELINE PUMP-IN PROGRAM**

- (12) On a case-by-case basis, Landowners with wells may “bank” their groundwater in the District’s pipeline distribution system for later delivery by introducing metered groundwater into the District’s pipeline distribution system for conveyance and delivery to contract lands within the District.
- (13) As this program is experimental for 2015, many details remain outstanding including but not limited to the following issues:
  - a) *Hydraulic considerations:* In order to protect District pipeline, the landowner is responsible for surge protection, such as may occur during a well power failure. Typical installation may range from a direct connection with simple valve(s) to large surge protection pressure vessels.
  - b) *Demand considerations:* there is limited ability to “bank” in a closed pipeline system. The pump-in flow would have to match an equal or greater demand of water users within the same pipeline network.
  - c) Water quality considerations: water must be suitable for surrounding neighboring water users and flows may need to be adjusted to provide for a suitable mix of water.

### **FLEXIBLE ORDERING PROGRAM**

- (14) Continuing on a trial basis, this experimental program allows water users to place orders for irrigation runs for less than 24-hour deliveries, and so to best meet the needs of their farming operations. It is imperative, however, the water user accurately communicate to Watermaster the actual delivery rate and duration (start and stop time) for each turnout.
- (15) The District does not have ample field personnel to continue historical practice of locking and unlocking turnouts, and accordingly, all turnouts will be left unlocked (except end-of-line turnouts to prevent damage to District facilities).
- (16) Violations of the communication protocols will be enforced and violators may lose privileges to participate in this program at any time.

All of the above programs/procedures are subject to amendment at any time as the District Board of Directors determines to be appropriate. These procedures supersede the District’s Rules and Regulations for the Distribution of Water for the Prorate Period, and only to the extent these procedures vary from the Rules and Regulations.



# ARVIN-EDISON WATER STORAGE DISTRICT

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March 17, 2015

**Subject: 2015 Water Supply Update**

Dear Landowner/Water User:

This notice is provided as a follow up to our February 20, 2015 letter regarding the 2015 Drought Allocation Program. Recall that the Program consists of four components:

1. A 6-Month Prorate Period Allocation
2. A Voluntary Turnback/Reallocation Pool
3. A Landowner Well Pump-In Program
4. A Landowner Pipeline Pump-In Program

Items one and two have been initiated. The District has received six-month schedules from all water users with requests to turn-back water (approximately 882 af) as well as requests for additional water (approximately 5,470 af). If your prorate amount has been changed either by turn-back or additional allocation, your new schedule is enclosed.

Schedules for landowners with no changes are the same as previously submitted. For those receiving additional water, please find enclosed the invoice for the additional water at \$475/af. This invoice must be paid within fifteen (15) days or your additional water purchase will be forfeited and reallocated. Those who turned in water should expect payment once we have received the funds for the purchase of the additional water. If you have any questions about the final schedules, please contact Assistant Manager David Nixon.

The Board has also approved a pump-in program and pipeline pump-in program to convey landowner well water. Please contact Staff Engineer Jeevan Muhar if you would like to participate in either one of these programs to convey landowner well water and/or sell it to the District at \$200/af.

The District will continue to check in with water users throughout this prorate period, but in the meantime, please feel free to call the District for further assistance.

Sincerely,

Steve Collup  
Engineer-Manager

Enclosures

cc: Board of Directors

SCC:DAN:AJAEWSDLandownersCorresp2015Landowner.Water.User.wtr.supply.program.letter.update.03.17.15.doc



# ARVIN-EDISON WATER STORAGE DISTRICT

June 8, 2015

## **DIRECTORS**

Edwin A. Camp  
President  
Jeffrey G. Giumarra  
Vice President  
John C. Moore  
Secretary/Treasurer  
Howard R. Frick  
Ronald R. Lehr  
Dennis B. Johnston  
Charles Fanucchi  
Donald Valpredo  
Kevin E. Pascoe

## **STAFF**

Steven C. Collup  
Engineer-Manager  
David A. Nixon  
Assistant Manager  
Jeevan S. Muhar  
Staff Engineer  
Christopher P. Krauter  
General Superintendent

**Subject: 2015 Drought Year Update**

Dear Landowner/Water User:

The District has now completed two (2) months of the 2015 6-Month Drought Allocation Program. As you will recall, the Program consisted of several components one of which was a voluntary turnback / reallocation pool whereby Farming Units were given the opportunity to turn back water into a pool or to purchase additional water beyond the prorate allocation. The District in the first reallocation pool did receive requests from farming units to turn-back water (837 af) as well as requests for additional water (5,420 af).

Since administration of the original pool, District staff has continued to receive inquiries from those with surplus water as well as those requesting more supplies, all for the six-month April through September period. Subsequently, the Board, at their May 12, 2015 Board of Directors' meeting, approved administration of the second round of the turn back/reallocation pool process.

This second pool will operate similar to the first pool in that request for additional water will be prorated on a per acre basis and the incremental cost of the water will be at \$375/af and the District will pay \$300/af for those turning back water. For those farming units interested in either selling water from their current allocation, or those interested in purchasing additional water, please respond by Monday, June 15, 2015. The quick turn around is essential for landowners' water supply planning, and late requests can not be honored.

To assist in your planning process a summary of your six-month supply is attached, including those supplies allocated initially and those modified per the first pool process. The spreadsheet also has actual usage by turnout and farming unit for April and May. Recall that six-month prorate supplies remaining unused as of October 1, 2015 will be extinguished as prorate period ends at that time.

If you have any questions please contact David Nixon.

Sincerely

Steve Collup  
Engineer-Manager

Enclosure

cc: Board of Directors

SCC:e\AEWSD\landownersCorresp\2015Landowner.Water.User.wtr.supply.program.letter.update.06.08.15.Final.doc



# ARVIN-EDISON WATER STORAGE DISTRICT

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August 4, 2015

## **DIRECTORS**

Edwin A. Camp  
President  
Jeffrey G. Giumarra  
Vice President  
John C. Moore  
Secretary/Treasurer  
Howard R. Frick  
Ronald R. Lehr  
Dennis B. Johnston  
Charles Fanucchi  
Catalino M. Martinez  
Kevin E. Pascoe

## **STAFF**

Steven C. Collup  
Engineer-Manager  
David A. Nixon  
Assistant Manager  
Jeevan S. Muhar  
Staff Engineer  
Christopher P. Krauter  
General Superintendent

**Subject: 2015 Drought Year Update - Third Turnback Reallocation Pool**

Dear Landowner/Water User:

The District has now completed four (4) months of the 2015 6-Month Drought Allocation Program. As you will recall, the District has administered two turnback/reallocation pools, whereby Farming Units were given the opportunity to turnback water into a pool or purchase additional water. Those pools successfully reallocated 6,371 acre-feet of additional water to those who participated.

District staff continues to receive inquiries from those with surplus water as well as those requesting additional water for the remaining two months of the prorate period. Subsequently, the District will administer a third and final turnback/reallocation pool process.

The third pool will operate similar to previous pools in that request for additional water will be prorated on a per acre basis and the incremental cost of the water will be \$275/af and those water users turning back water into the pool will be paid \$200/af. For those farming units interested in either selling or purchasing additional water, please respond by **Thursday, August 13, 2015** (complete the attached form). As this is a balanced pool, there is no guarantee those with surplus water will be able to sell all their water into the pool or those requesting additional supplies will receive all that they request. Those farming units who purchase additional water in this third pool must make payment to the District within 15 days from the date of the invoice.

To assist in your planning process, a summary of your six-month allocation supply is also attached, including those supplies allocated initially, additions due to well Pump-In Agreements, and the first and second pools. The spreadsheet also has actual usage by turnout and farming unit for April, May, June, and July. The District will make every effort to lock Farming Unit(s) turnouts once they have reached their total prorate period allocation supply, but it is ultimately each Farming Unit(s) responsibility for their usage. Recall, that there are severe financial penalties for those that exceed prorate period allocation supplies.

If you have any questions, please call David Nixon at (661) 854-5573.

Sincerely

Steve Collup  
Engineer-Manager

Enclosures

cc: Board of Directors  
Supervisors/Foremen

SCC:sj\AEWSD\landownersCorresp\2015\Drought.Allocation.Program.third.pool.ltr.08.04.15.doc

**ARVIN-EDISON WATER STORAGE DISTRICT**

**2015 THIRD DROUGHT TURN-BACK REQUEST ALLOCATION POOL**

**TURN-BACK REQUEST**

The undersigned Landowner/Water User, hereinafter '**Farming Unit**', hereby confirms its turn-back to the District up to \_\_\_\_\_ acre-feet of water at a purchase cost of \$ **200.00** /AF from the District. The water is to be removed from the Farming Unit's lands currently receiving water service under the 2015 Drought Allocation Program for the 2015 Water Year pursuant to an Agricultural Water Service Contract with the District.

Under the Turn-Back/Reallocation Pool the water to be turned back will be prorated based upon the amount of water requested from the Pool.

**Respond Due by: 3:30 p.m., Thursday, August 13, 2015**

Dated: \_\_\_\_\_ 2015

**Landowner/Water User/Farming Unit:**

\_\_\_\_\_  
*[Name Farming Unit/Entity]*

By: \_\_\_\_\_  
*[Signature]*

\_\_\_\_\_  
*Print Name*

**ARVIN-EDISON WATER STORAGE DISTRICT**  
**2015 THIRD DROUGHT ALLOCATION POOL**

**POOL REQUEST**

The undersigned Landowner/Water User, hereinafter '**Farming Unit**', hereby confirms its request for an additional \_\_\_\_\_ acre-feet of water from the District. The request will be prorated on a per-acre basis, which is based on the amount of acre feet turned back at a cost of \$ **275.00** /AF. The water purchased will be added to the Farming Unit's lands currently receiving water service under the 2015 Drought Allocation Program for the 2015 Water Year pursuant to Agricultural Water Service Contract with the District.

**Respond Due by: 3:30 p.m., Thursday, August 13, 2015**

Dated: \_\_\_\_\_ 2015

**Landowner/Water User/Farming Unit:**

\_\_\_\_\_  
*[Name Farming Unit/Entity]*

By: \_\_\_\_\_  
*[Signature]*

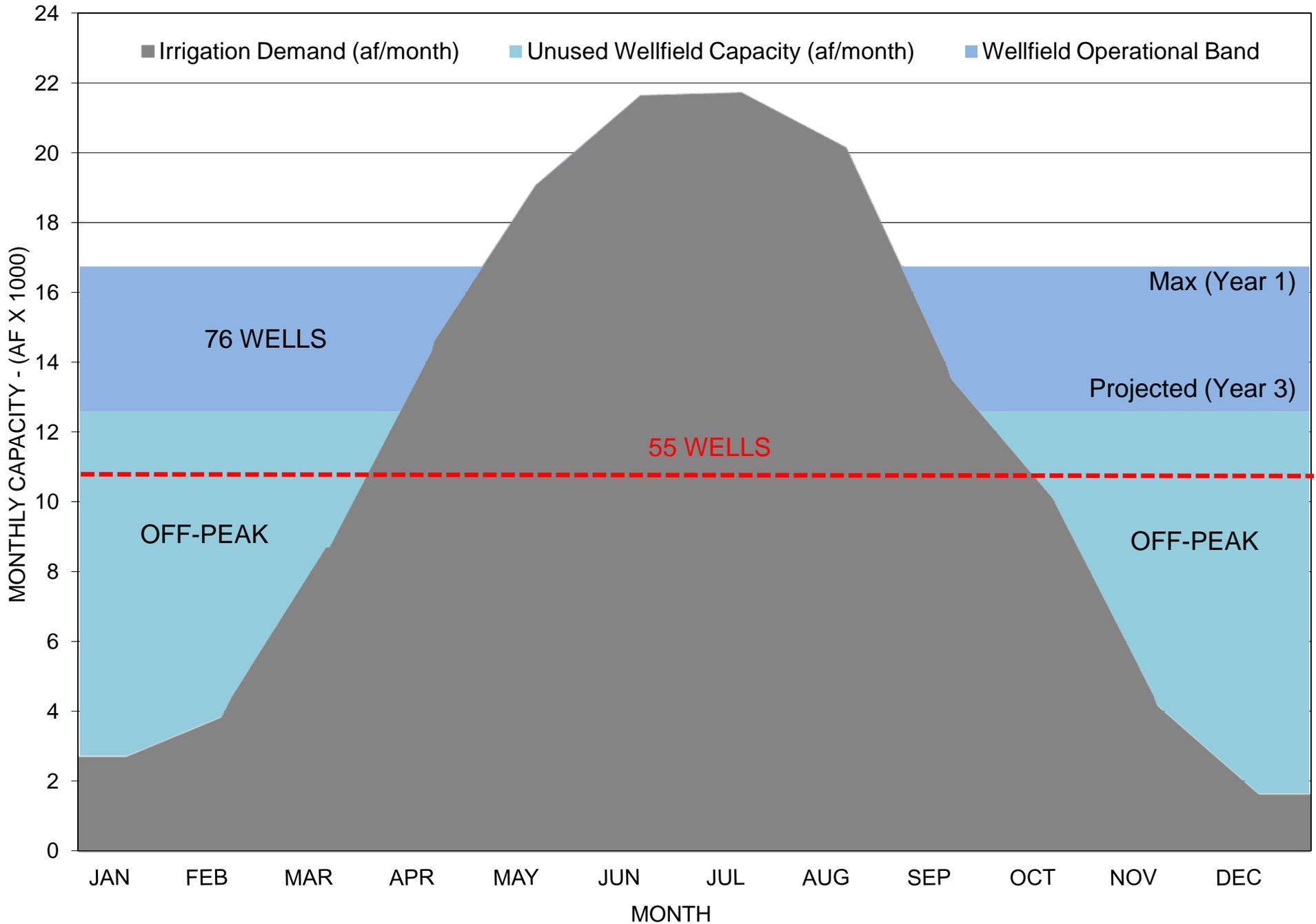
\_\_\_\_\_  
*Print Name*

ARVIN-EDISON WATER STORAGE DISTRICT  
**DROUGHT MANAGEMENT PLAN**

**EXHIBIT D**

Irrigation Demand vs. Water Supply (Wellfield and Import)

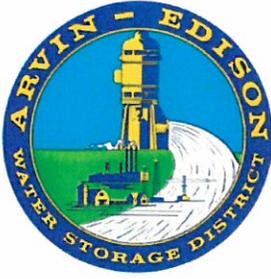
ARVIN-EDISON WATER STORAGE DISTRICT  
**IRRIGATION DEMAND VERSUS WELLFIELD CAPACITY**



ARVIN-EDISON WATER STORAGE DISTRICT  
**DROUGHT MANAGEMENT PLAN**

**EXHIBIT E**

Delivery flexibility with 24-hour rule change



# ARVIN-EDISON WATER STORAGE DISTRICT

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April 21, 2014

## **DIRECTORS**

Edwin A. Camp  
President  
Jeffrey G. Giumarra  
Vice President  
John C. Moore  
Secretary/Treasurer  
Howard R. Frick  
Ronald R. Lehr  
Dennis B. Johnston  
Charles Fanucchi  
Donald Valpredo  
Kevin E. Pascoe

## **STAFF**

Steven C. Collup  
Engineer-Manager  
David A. Nixon  
Assistant Manager  
Jeevan S. Muhar  
Staff Engineer  
Christopher P. Krauter  
General Superintendent

Dear Landowner/Water User

## **Re: Dry Year Update – Temporary Change in Water Order Procedure**

Prior to implementing a drought year water management program for 2014, the District held a series of meetings with landowners and water users to discuss various issues. The responses and feedback we received were very insightful and helped shape the program that is underway this year.

One recurring issue in discussions with water users is the requirement to order and use water on a 24-hour basis as specified in the District's Rules and Regulations. In short, there appears to be a lot of interest in exploring how much flexibility can be given to water users to irrigate on something less than a 24-hour requirement. In other words, can water orders be placed for just 12 hours, 8 hours, 6 hours or less?

Of primary bearing on the issue is the original design of District facilities. The canal, pumping plants, and pipelines were all designed with the goal of delivering a specific amount of water in a 24-hour period. The distribution system was not designed for delivering twice the flow rate in 12 hours, or 4 times the flow rate in 6 hours, etc. Coupled with the design of the distribution system is the District's ability to balance the 45 miles of District canals while making daily deliveries. The District canals were also designed to move a constant flow through the facilities for a full 24-hour period with minimal ability to regulate imbalances throughout the day. The District itself must also order its water supply from the Bureau of Reclamation and others as a constant flow for 24-hours as well as make power purchases for a uniform power use.

Nonetheless, the District has greatly expanded its ability to convey and regulate flows in recent years. Subsequently, we have developed some additional flexibility in our operations. Whether or not this improved regulation capacity is enough to allow for less-than-24-hour irrigation runs in the District remains to be seen. It was also noted by our Board that if the District were ever to consider a change in the water ordering policy that this year, with reduced water supplies and enforced prorates, is the time a more flexible policy that would help farmers maximize their efficiencies with limited water supplies.

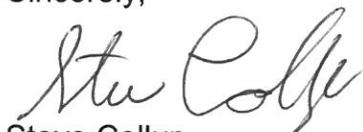
Subsequently, the Board has approved a flexible ordering program on a trial basis. This experimental program will allow water users to place orders for irrigation runs that best meet their farming operations. When an irrigator calls in to place an order, in addition to the date, turnout number, and desired flow rate, the irrigator will also need to **specify the start and stop time** requested. The Watermaster will then convert that to a volume of water to order for you for that day.

We anticipate offering this experimental program through September, coinciding with the end of the 6-month prorate period. There is no guarantee, however, that we can successfully operate for that entire period and we may have to terminate the program earlier. We may find, for example, that allowing less than 24-hour runs might generate more frequent lateral prorates. What is clear however is that our chances of success in this endeavor relies on the ability of water users to accurately order their water and then to operate consistent with their order. In that regard, while the duration of your irrigation run may vary, we ask that you continue to order start times for the morning hours. In addition, please understand by allowing water users this flexibility, District staff will have to monitor and police operations even more closely than before. For example, a turnout with a 4-hour order simply cannot be allowed to run 5 or 6 hours and will be shut off and locked when found. Turnouts being served from end-of-the-line pumping plants may also have more specific requirements. In short, the District will be running close to the wire under this temporary program with little room for error.

We look forward to implementing these new procedures, and to see what lessons we learn from the experimental program. Staff is in the process of adapting our procedures with the goal of initiating the new policy on Thursday, May 1, 2014.

If you have additional questions, please do not hesitate to contact the Watermaster.

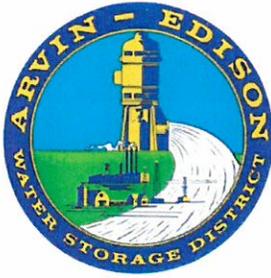
Sincerely,



Steve Collup  
Engineer-Manager

cc: Board of Directors  
Ernest Conant, Esq.

SCC:sj\AEWSDL\andowner.Correspondence\2014\new temporary procedure.wtr.orders.04.14.doc



# ARVIN-EDISON WATER STORAGE DISTRICT

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May 21, 2014

## DIRECTORS

Edwin A. Camp  
President  
Jeffrey G. Giumarra  
Vice President  
John C. Moore  
Secretary/Treasurer  
Howard R. Frick  
Ronald R. Lehr  
Dennis B. Johnston  
Charles Fanucchi  
Donald Valpredo  
Kevin E. Pascoe

## STAFF

Steven C. Collup  
Engineer-Manager  
David A. Nixon  
Assistant Manager  
Jeevan S. Muhar  
Staff Engineer  
Christopher P. Krauter  
General Superintendent

Dear Landowner/Water User:

### Re: Update to Temporary Change in Water Order Procedures

By Letter dated April 21, 2014 Landowners/Water Users were notified that the Board had approved a Flexible Ordering Program on a trial basis beginning May 1 and ending September 30, coinciding with the 6-month prorated period. This experimental program allows water users to place orders for irrigation runs that best meet their farming operations.

The District has been operating under this trial program for three (3) weeks and in order for this program to continue to be successful, we must make some immediate changes to the normal daily operating procedures of our field personnel. It has become obvious with the less than 24-hour runs; the District does not have ample staffing to continue the historical practice of locking and unlocking turnouts as water users go on and off.

Therefore, beginning Monday, May 26, all turnouts with water available during the prorated period will be left unlocked. This will allow our field personnel more time to police and monitor water orders and insure that operations is running in accordance with the orders that were placed for the day. One exception to this

new procedure is that turnouts being served by end-of-the-line pumping plants will still have to be locked and unlocked for the orders that have been placed to prevent damage to District facilities (see attached list of end-of-the-line turnouts).

Unfortunately, the District is still experiencing, on a limited basis, water users that are not running in compliance with their water orders. For this Flexible Ordering Program to be successful, it is imperative that all water users are in compliance with the water order they have placed. So beginning Monday, May 26, if a turnout is found not complying with their water order the turnout will be locked for the remainder of the day. The water user must then call into the Watermaster and explain the reason before they will be allowed to run again. If the same turnout is caught a second time the turnout will be locked, and the water user must make an appointment to meet with either the District's Assistant Manager or Staff Engineer before they will be allowed to run again. Should a turnout be caught a third time not complying, they will no longer be able to participate in the trial program and will have to return to the policy of a minimum 24-hour run.

The District is still very early in the 6-month prorated period and we will continue to make adjustments when necessary to make this Flexible Ordering Program successful.

Should you have any questions, please do not hesitate to contact the Watermaster.

Thank you,

Steve Collup  
Engineer-Manager

Enclosure

cc: All Supervisors/Foreman  
Board of Directors  
Watermaster(s)

DAN:sj|AEWSD\Landowner.Corresp\2014\new temporary procedures.wtr.order.update.05.14.doc

# Arvin-Edison Water Storage District End-of-Line-Turnouts

## North Side

## South Side

N1-P4	E-1
	E-2
	E-3
	E-5
	E-6
	E-7

N8-P4	A-57
	A-58
	A-62
	A-63
	A-69
	A-A

N55-P5	C-77
	C-78
	C-79
	C-85

S32-P1	T-43
	T-45
	T-81

S68-P1	W-39
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N1-P6	E-27
	E-65
	E-80
	E-81
	E-85
	E-86
	E-87
	E-88
	E-96
	E-99

N24-P1	A-34
	A-38
	A-41
	A-42
	A-74
	A-78
	A-79
	A-81
	A-82
	A-B

N55-P8	C-1
	C-4
	C-8

S73-P4	W-1
	W-63

N55-P10	C-12
	C-16

S88-P1	W-29
	W-36
	W-37
	W-72
	W-73
W-74	

N55-P12	C-41
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N55-P13	C-48
	C-58
	C-59

N1-P7	E-84
	E-93

N41-P2	A-30
	A-31
	A-35
	A-36
	A-71
	A-88

N55-P14	C-37
	C-42
	C-90
	C-102

S93-P2	M-1
	M-9
	M-18
	M-26
	M-27
	M-33
	M-57
	M-58

N55-P15	C-81
---------	------

N1-P8	E-4
	E-10
	E-15
	E-16
	E-19
	E-20
	E-22
	E-23

ARVIN-EDISON WATER STORAGE DISTRICT  
**DROUGHT MANAGEMENT PLAN**

**EXHIBIT F**

Surcharge for exceeding water allocation



# ARVIN-EDISON WATER STORAGE DISTRICT

July 17, 2015

## **DIRECTORS**

Edwin A. Camp  
President  
Jeffrey G. Giumarra  
Vice President  
John C. Moore  
Secretary/Treasurer  
Howard R. Frick  
Ronald R. Lehr  
Dennis B. Johnston  
Charles Fanucchi  
Catalino M. Martinez  
Kevin E. Pascoe

## **STAFF**

Steven C. Collup  
Engineer-Manager  
David A. Nixon  
Assistant Manager  
Jeevan S. Muhar  
Staff Engineer  
Christopher P. Krauter  
General Superintendent

## **Subject: 2015 Prorate Period Allocation Schedule Update**

Enclosed please find a 2015 Prorate Period Allocation Schedule for your Farming Unit updated to reflect the period April 1, 2015 through July 15, 2015.

You are reminded that the Board has approved a Third Turnback Reallocation Pool and the forms to participate in this pool will be mailed on or about Thursday, August 6, and will need to be returned/submitted to the District by **Thursday, August 13, 2015.**

The 2015 Prorate Period is from April 1 through September 30, 2015. In order to help insure that farming units will not overrun their Prorate Period allocation and purchases for the benefit of all water users during this critically dry year, the Board approved a "Prorate Period Close Out – Policy." As authorized by the water service contract, this Policy will consist of three Tiers for overuse and will be administered by farming unit(s) as follows:

- A. \$1,000/af surcharge for 0 to 0.1 af/ac of overuse
- B. \$2,000/af surcharge for that portion between 0.1 af/ac <0.2 af/ac of overuse
- C. \$3,000/af surcharge for that portion of >0.2 af/ac of overuse

Example: 160 acre farming unit, overused 50 af beyond their prorated amount plus additional purchases:

A.	160 ac x 0.1 = 16 af	x \$1,000 =	\$16,000 surcharge
B.	16 af	x \$2,000 =	\$32,000 surcharge
C.	18 af	x \$3,000 =	<u>\$54,000 surcharge</u>
Total Penalties	<u>50 af</u>		<u>\$102,000 surcharge</u>

Keep in mind that these surcharges are in addition to the normal and customary charges. If you have any questions, please call David Nixon at (661) 854-5573.

Sincerely,

Steve Collup  
Engineer-Manager

Enclosure

cc: Board of Directors  
David A. Nixon, Assistant Manager  
Jeevan Muhar, Staff Engineer  
Millie Kovacevich, A/R  
Watermaster(s)  
All Supervisors/Foremen

***END OF WATER  
MANAGEMENT PLAN***