

Water Management Plan with Addendums for Agricultural Water Management Plan

Prepared for:

U.S. Department of the Interior, Bureau of Reclamation
Mid-Pacific Regional Office
2800 Cottage Way, MP-410
Sacramento, California 95825

and

California Department of Water Resources
1416 9th Street
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EST.

1920

MADERA

IRRIGATION DISTRICT

Prepared by:

Madera Irrigation District
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Adopted on: March 16, 2026

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Section 1 Description of the District

District Name: Madera Irrigation District

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1. HISTORY

Historical use of surface irrigation water in portions of what is now Madera Irrigation District (MID or District) began in the early 1870's. In 1872, Isaac Friedlander obtained water rights on the Fresno River to provide irrigation water to agricultural lands near and to the southwest of what is now the City of Madera. Friedlander augmented these rights with what is called the Big Creek Diversion wherein waters were diverted from the Merced River watershed to the Fresno River watershed. In conjunction with W.S. Chapman in 1875, Friedlander also diverted water from the San Joaquin River watershed to the Fresno River watershed via the "Soquel Diversion". The Madera Canal and Irrigation Company (MC&I) was organized in 1888 with an area of 280,000 acres as the successor to Friedlander and Chapman and several of their successor companies. The MC&I Company had plans to obtain a water supply by constructions of a dam on the San Joaquin River near Friant. These plans were not realized because of litigation resulting from opposition on the part of downstream water users, and the district was dissolved in 1896.

The Madera Irrigation District totaling approximately 352,000 acres was formed in 1920. The formation was the effort of a 40-member committee organized to bring water to the Madera area. In 1920, the District purchased gravel pit lands to supply aggregate for construction of the proposed Friant Dam. The District performed studies, passed a bond issue, and filed for water rights with the purpose of constructing Friant Dam and a distribution system. Extensive litigation with Miller & Lux continued to barricade the project for many years. The District ultimately cancelled the bond issue and excluded some 179,500 acres of the original District. The District was then reduced to about 172,500 acres. The District, next, negotiated with the State Water Authority for several years hoping to obtain a cooperative venture for the construction of Friant Dam. This proved to be fruitless.

On May 24, 1939, MID contracted with the Bureau of Reclamation (Bureau), and in exchange for certain property and interests in water filings on the San Joaquin River, the District was granted a water supply under conditions stipulated, of not to exceed 270,000-acre feet per year for a District area of 172,500 acres. In 1949, a tract of 46,500 acres was excluded from the District to permit the formation of the Chowchilla Water District, and subsequent exclusions reduced the District to a gross area of 112,500 acres, with a net irrigated area of approximately 100,000 acres. Deliveries of Central Valley Project (CVP) water to the District were made annually under temporary contracts from 1944 until 1951, when a permanent contract was entered into with the United States. The contract provides for 85,000 acre feet of Class 1 and 186,000 acre feet of Class 2 water. In 1951, the District entered into a contract with the United States for the construction of a distribution system by the Bureau at a cost of \$8,320,000. Construction by the Bureau

under this contract was completed in March 1955. Due to rising construction costs, the original \$8,320,000 constructed canals for approximately one half of the District.

In 1959, the District entered into a second construction contract of \$5,177,000 with the Bureau of Reclamation to extend the distribution system to serve the majority of the District. Construction of the Hidden Dam on the Fresno River was completed in 1972 and opened for public use in 1975. The District’s contract with the Bureau called for the District to annex up to 15,000 acres for the 24,000-acre feet projected average yield for new water generated from the project through Fresno River regulation. Over the years, the District’s size has had many fluctuations, and is currently approximately 139,665 acres in size.

1. *Date district formed:* 1920
Original size (acres): 352,000

Date of first Reclamation contract: 1939
Current year: 2025

2. *Current size, population, and irrigated acres*

<i>Year</i>	2025
<i>Size (acres)</i>	139,665
<i>Population served (urban connections)</i>	See Section 1, G.2.
<i>Irrigated acres served</i>	108,968

3. *Water supplies received in 2019/2025*

<i>Water Source</i>	<i>AF</i>
<i>Federal urban water</i>	0
<i>Federal agricultural water</i>	108,901
<i>State water</i>	0
<i>Other wholesaler (define)</i>	0
<i>Local surface water</i>	0
<i>Upslope drain water</i>	0
<i>District groundwater</i>	0
<i>Banked water</i>	0
<i>Transferred water into District</i>	7,211
<i>Wheeled water</i>	0
<i>Recycled water</i>	0
<i>Other – Hensley Lake, Big Creek, & other prior water rights</i>	42,660
<i>Other – Soquel</i>	8,900
<i>Total</i>	167,672

4. Annual entitlement under each right and/or contract

<i>Contract</i>	<i>AF/Y</i>	<i>Source</i>	<i>Contract #</i>	<i>Availability</i>
Friant Division-USBR Class I	85,000	Federal	I75r-2891D	As available
Friant- USBR Class II	186,000	Federal	I75r-2891D	As available
Hidden Unit-USBR	Varies (Contract for 24,000)	Federal	14-06-200-4020E	Fluctuates, annual yield
Other (Pre-1914)	Varies	Prior rights		Fluctuates, annual yield

5. Anticipated land-use changes. For Ag contractors, also include changes in irrigated acres.
None

6. Cropping patterns (Agricultural only)

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

<i>Crop Name</i>	<i>2007 Acres</i>	<i>2012 Acres</i>	<i>2019 Acres</i>	<i>2025 Acres</i>
Almonds	25,693	30,497	56,877	58,081
Cotton	N/A	137	N/A	N/A
Field Crops	4,098	119	307	440
Fruit Trees	5,374	4,969	1,404	4,849
Grains	N/A	4,049	2,818	959
Grapes	45,512	43,121	29,210	24,844
Grasses	8,521	372	751	N/A
Pistachios	2,830	7,704	10,219	12,163
Other (<5%)	2,049	8,235	6,002	2,490
<i>Total</i>	94,077	99,203	107,588	103,826

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

<i>Irrigation Method</i>	<i>2007 Acres</i>	<i>2012 Acres</i>	<i>2019 Acres*</i>	<i>2025 Acres*</i>
Drip	23,347	74,217	20,447	90,673
Micro-Spray	19,470	N/A	64,926	N/A
Sprinkler	750	137	700	698
Furrow	N/A	N/A	N/A	N/A
Border Strip	N/A	N/A	3,569	159
Dry-land	N/A	N/A	N/A	3,133
Surface	50,510	24,849	17,916	13,026
Other	N/A	N/A	N/A	N/A
<i>Total</i>	94,077	99,203	107,558	107,690

*Assumed irrigation method by crop type.

B. LOCATION AND FACILITIES

See Attachment A for maps containing the following: incoming flow locations, turnouts (internal flow), and outflow (spill) points, conveyance system, storage facilities, operational loss recovery system, district wells and lift pumps, water quality monitoring locations, and groundwater facilities.

1. Incoming flow locations and measurement methods

<i>I.D.</i>	<i>Location Name</i>	<i>Type of Measurement</i>	<i>Accuracy*</i>	<i>Latitude GPS Coordinate</i>	<i>Longitude GPS Coordinate</i>
I-1	Madera Canal	Parshall Flume	±3-5%	37.122998	-120.081433
I-2	Madera Canal	Weir	±3-5%	37.075156	-119.989547
I-3	Island Tract	Pressure Transducer	±2%	37.011742	-119.995572
I-4	Franchi Dam	Rubicon Flume Gate	±2.5%	36.984478	-120.025723
I-5	Madera Canal 6.2	Parshall Flume	±3-5%	36.964943	-119.779461

* Accuracies are estimated and have not been field tested.

2. Current year Agricultural Conveyance System

<i>Miles Unlined Canal</i>	<i>Miles Clay-lined Canal</i>	<i>Miles Piped</i>	<i>Miles Creeks/rivers</i>
80	220	150	50

3. Current year Urban Distribution System

None

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

<i>No.</i>	<i>Basin Name</i>	<i>Capacity (ac-ft)</i>	<i>Owner</i>	<i>MID Facility Connection</i>
1	MID Basin #1 (32.2)	80	MID	
2	MID Basin #2 (Airport)	90	MID	
3	MID Basin #3 (Russell)	140	MID	
4	MID Basin #4 (Burgess)	60	MID	
5	MID Basin #5 (Beeman)	20	MID	
6	MID Basin #6 (Madera Lake)	2300	MID	
7	MID Basin #7 (Allende)	70	MID	
8	MID Basin #8 (Campbell)	130	MID	
9	MID Basin #9 (Basila)	192	MID	
10	MID Basin #10 (Lilles)	109	MID	
11	Ellis	51	County	24.2
12	Berry Home Ranch	35	City	24.2-14.2
13	Absire	79	City	Hospital
14	Basila	30	City	Cody
15	Elm	30	City	
16	Golf Course	12	City	Airport
17	Moesian	90	City	Hospital
18	Prosperi	160	City	Cody Lat.
19	Stadium	109	City	Main I

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

The District has, at times, agreements with Gravelly Ford Water District to provide water through the MID system. Remaining flow that exits the District can be made available for prior rights, customer use, and/or groundwater recharge.

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

<i>Scheduled</i>	<i>Rotation</i>	<i>Other (describe)</i>
Yes	Yes	Yes, see below

MID has an “on-demand” delivery system. Flows within the District canals are changed daily to reflect water use demands by District growers. Each year the District’s Board of Directors adopts a Crop Water Distribution Policy, Attachment L.

This, in conjunction with Attachment B, the Madera Irrigation District Rules and Regulations for Distribution of Water and Maintenance of Canals and Pipelines (MID Rules and Regulations), establishes the delivery system operation for each year. If demand exceeds capacity of the system or to increase operational efficiency, the distribution system may be operated on a restricted basis which means that new water starts may not be made until a shut-off occurs. When the system is running in a capacity mode, there is a maximum 7-day run time on each turnout. The District will maintain a priority list for starts during such periods and starts will follow a first come first serve basis. Water Users need to be aware that water may be available earlier than a start request date and time. This water would be first offered to the Water User at the top of the priority list. If the Water User is unable to take the water at that time, then the water will be offered to the next Water User in line. The District cannot hold the water in the system to accommodate a start order. Water availability will be determined by the current water volume in the system.

7. *Restrictions on water source(s)*

<i>Source</i>	<i>Restriction</i>	<i>Cause of Restriction</i>	<i>Effect on Operations</i>
Hensley Lake	Does not allow for any storage in May through November	Flood control parameters	District must operate around this restriction
Millerton Lake	Amount of water allocations	Reservoir operations	Class I and II amounts unknown until USBR announcement

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

The District operates an irrigation system of approximately 300 miles of open canals and 150 miles of pipelines. The majority of the District’s conveyance infrastructure was constructed over 60 years ago and is likely reaching the end of its design life. In 2018, the District retained a consultant to conduct a Risk Assessment and Capital Improvement Project (CIP) list based on a risk evaluation of infrastructure throughout the District.

In 2019, the District narrowed the list to 32-Capital Improvement Projects to be completed over a 10 year timeframe with estimated funding requirements needed for each project. The District has already completed five (5) of the 32 CIP listed in-house with District staff and is planning to complete two (2) additional CIP’s in 2021. The District has consultants currently designing two (2) additional CIP projects that will be completed in the future.

The District has utilized grant funding over the last several years and has completed 34 Rubicon sites that control and monitor flow and 20 SDR Recorder sites that monitor flow. The Rubicon sites are brought into the SCADA system using 450 MHz radios and are in the process of upgrading from serial to Ethernet communication. The District SDR Recorder sites are brought into the SCADA system using 900 MHz radios, which add additional cost and malware monitoring with updates. Once the District has completed an evaluation of its current SCADA sites the District will look for additional grant funding for future SCADA improvements.

C. TOPOGRAPHY AND SOILS

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

Lands in the District are gently sloping from the northeast to the southwest with a fall of approximately five feet per mile. The District is generally divided into two major areas; the first area contains the recent alluvial fans and flood plains, the second area contains the older alluvial fans and terraces. The soils of the recent alluvial fans and flood plains cover the area from the Fresno River south to the San Joaquin River and consist of the Pachappa-Grangeville and the Hanford-Tujunga soil associations.

These soils are categorized as Classes A and B soils and generally exhibit high surface and subsurface permeability. The soils of the older alluvial fans and terraces cover the ten mile wide area from the Fresno River north to the District’s northern boundary. The predominant soil association for this northern area is the San Joaquin-Madera. These soils are generally Classes C and D.

2. District soil association map (Agricultural only)

See Attachment A-3, District Soils Map

<i>Soil Association</i>	<i>Estimated Acres¹</i>	<i>Effect of Water Operations and Management</i>
Cometa sandy loams	7,523	Deep soil ripping required for effective irrigation of permanent crops.
Grangeville fine sandy loam	7,672	None
Hanford (Ripperdan) fine sandy loam	18,478	None
Hanford fine sandy loam	8,417	None
Pachappa fine sandy loam	9,176	None
San Joaquin sandy loams	18,340	Deep soil ripping required for effective irrigation of permanent crops.
Tujunga loamy sand	10,338	None
Other	49,236	None

¹ Source: USDA Natural Resources Conservation Service (NRCS) web soil survey

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

There are no limitations resulting from soil problems.

D. CLIMATE

1. General climate of the district service area.

MID is centrally located on the eastern edge of the San Joaquin Valley. The San Joaquin Valley is bound by the Sierra Nevada Mountains to the east and by the Coast Range to the west. The climate of the District is dry with mild winters and hot summers. The average annual rainfall is 10.67 inches. Ninety percent of the annual precipitation falls within the six-month period of November through April. The area is generally

isolated from marine effects of the coast, and the average daily maximum temperature in July is 97 degrees Fahrenheit (°F) with highs occasionally reaching 112°F. In summer, nighttime temperatures are generally 30-35°F lower than daytime temperatures. Humidity readings during this period are also low, usually 15-20%. This is contrasted with humidity readings near 50% during the morning hours of December and January. During foggy periods, humidity readings exceed 90% and typically reach 100% in the late evening and early morning hours. Inversion layers accompanied by “Tule Fog” are not uncommon during the winter months. The average winter temperatures vary from the high 30’s to low 40’s at night, and low 50’s during the day. During the periods of inversion, the temperatures vary about 5°F between day and night with the highest temperatures in high 30’s to low 40’s. Minimum readings occasionally drop below freezing during infrequent periods each year. Frost occurs nearly every year beginning in late November to extending through the middle of March.

Weather data shown below is from <http://www.cimis.water.ca.gov/> for period January 1999 through December 2018. After 2018, the CIMIS Station was removed, the property owner developed the pasture ground, the District currently uses the National Weather Service Data <https://www.weather.gov/wrh/climate?wfo=hnx>.

Precipitation is in inches (in) and temperature is in degrees Fahrenheit (°F).

	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Annual</i>
<i>Avg Precip.</i>	1.16	1.44	1.75	0.78	0.31	0.10	0.01	0.01	0.07	0.33	1.00	1.66	8.62
<i>Avg Temp.</i>	48	51	55	61	68	76	81	79	75	65	54	47	63
<i>Max. Temp.</i>	58	63	68	75	84	93	98	97	92	80	67	57	81
<i>Min. Temp</i>	28	30	33	37	43	49	55	55	49	39	32	28	26

Weather station ID Madera
ET Station ID 145

Data period: Year 2006 *to Year* 2025
Average annual frost-free days: 320-340

2. *Impact of microclimates on water management within the service area.*
 No known microclimates exist with the District.

E. NATURAL AND CULTURAL RESOURCES

1. *Natural resource areas within the service area*
 None that are managed by the District.

2. *Description of district management of these resources in the past or present*
 None that are managed by the District.

3. *Recreational and/or cultural resources areas within the service area*
 None that are managed by the District.

F. OPERATING RULES AND REGULATIONS

1. *Operating rules and regulations*
 See Attachment B, MID Rules and Regulations

2. *Water allocation policy (Agricultural only)*

See Attachment B, MID Rules and Regulations, Sections 5.04 and 9.01, and Attachment L, 2025 Crop Water Distribution Policy.

In summary – MID has an “on-demand” delivery system. Flows within the District canals are changed daily to reflect water use demands by District growers. Each year the District’s Board of Directors adopts a Crop Water Distribution Policy, Attachment L. This, in conjunction with Attachment B, the MID Rules and Regulations for Distribution of Water and Maintenance of Canals and Pipelines, establishes the delivery system operation for each year. If the demand exceeds capacity of the system or, for reasons determined by the District, to increase operational efficiency the distribution system may be operated on a restricted basis which means that new water starts may not be made until a shut-off occurs. When the system is running in a capacity mode, there is a maximum 7-day run time on each turnout. The District will maintain a priority list for starts during such periods and starts will follow a first come first serve basis.

Water Users need to be aware that water may be available earlier than a start request date and time. This water would be first offered to the Water User at the top of the priority list. If the Water User is unable to take the water at that time, then the water will be offered to the next Water User in line. The District cannot hold the water in the system to accommodate a start order. Water availability will be determined by the current water volume in the system.

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

See Attachment B, MID Rules and Regulations, refer to Sections 5 and 10.01.

In summary – The District’s Operations Department shall be notified not less than three (3) days in advance of the time requested for a water order start or to make a flow change. Orders for termination of delivery will be accepted no later than 12:00 p.m. the day preceding requested shut-off. In the event water delivery to a Water User is terminated without a request, or less than 24 hours after shut-off is requested, billing for water use will be calculated as if delivery had continued for the full 24-hour period unless such water can be delivered to another Water User who has ordered water, this will be determined as the District’s sole discretion.

No water changes or shut-offs will be made after 12:00 p.m. unless previously agreed to by the Canal Operator. The District reserves the right to refuse service if any unreasonably large or small quantity of water is ordered.

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

See Attachment B, MID Rules and Regulations, refer to Section 16.

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

See Attachment B, MID Rules and Regulations, refer to Section 5.04. The transfer of District supplied water by Water Users is prohibited.

G. WATER MEASUREMENT, PRICING, AND BILLING

1. *Agricultural Customers*

Refer to BMP A.1. Information on water measurement for agricultural contractors is completed under BMP A.1 on pages 18-22.

2. Urban Customers

MID does not directly serve urban customers. MID has an “Amended and Restated Water Supply Agreement” with Tesoro Viejo Development Inc. and Tesoro Viejo Master Mutual Water Company dated May 30, 2018. Tesoro Viejo Development, Inc. is the developer of the Tesoro Viejo Project (Project), a multiple use project located within the District. The Project, when fully constructed, will include up to 5,190 dwelling units and approximately three million square feet for commercial, retail, office, public institutional, and light industrial use. Tesoro Viejo Master Mutual Water Company is the provider of water and wastewater and recycled water service for the Project’s municipal, industrial, and agricultural needs.

3. Agricultural and Urban Rates

a. Current year agricultural and /or urban water charges - including rate structures and billing frequency See Attachment L, 2025 Crop Water Distribution Policy for an example. Crop Water Distribution Policy is updated periodically. Customers are billed on a monthly basis.

<i>Charges 2025</i>			
<i>Charge Type</i>	<i>Charge Units</i>	<i>Units billed during year (acre feet)</i>	<i>\$ collected (\$ times units)</i>
Regular	Varied, \$98 per acre-foot	104,550	\$7,977,912
Subordinate	Varied, \$196 per acre-foot	27,541	\$4,551,694
Operational Management Water	Varied, \$95.00 per acre-foot	9,988	\$ 876,580
Tesoro Viejo Water	\$700.00 per acre foot	99	\$ 69,300
Wheeling Fees	0	0	0
Standby	\$15.00 per acre	108,000	\$1,620,000
Assessment	See schedule below		\$6,215,812

<i>Category</i>	<i>District Assessments 2025</i>	<i>9D (Proposition 218) Assessments 2025</i>
1 – Industrial and commercial	\$22.18/acre	\$39.21/acre
2 – Ag, eligible to receive water	\$18.40/acre	\$32.53/acre
3 – Ag, no District service	\$14.16/acre	\$25.03/acre
4 – Rivers, creeks, and roads	\$4.24/acre	\$7.51/acre
7 – Non-Irrigated Program	\$18.40/acre	\$32.53/acre
City	\$0.80/sq.ft.	0

b. Annual charges collected from customers

Assessment Fee Schedule

See Attachment N, MID Category Definitions.

c. Describe the contractor’s record management system

All individual meter readings are entered daily into an iPad application by Canal Operators. This information is transferred into the District’s billing software, Storm Version 2.05 Water Accounting & Management System. Office staff reviews the data for errors. Statements detailing water usage

and billing are mailed to the Water User monthly. Records are retained for current year plus five (5) years per the District's Record Retention Policy and Schedule.

H. WATER SHORTAGE ALLOCATION POLICIES

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

See Attachment E, District Water Shortage Plan, and Attachment M, San Joaquin Valley Groundwater Basin (DWR).

The District has an "on-demand" delivery system and water deliveries are made on a first-come, first-serve basis. In dry years, a 7-day rotation period for water deliveries is enacted by the Board of Directors to reduce the potential for spill and expand the number of landowners serviced. In water short years, groundwater pumping by individual landowners makes up any surface water supply deficiency.

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

See Attachment B, MID Rules and Regulations, Section 10.

In summary – Water Users wasting water, either willfully, carelessly or on account of defective or inadequate on-farm systems or structures, or because of inadequate preparation of the land for irrigation, may be refused further services immediately. Service will not be continued until the condition or practice is remedied. Early shut-offs by the District to prevent waste and/or unreasonable use by the Water User will result in additional water charges. Waste, pollution, or other improper use of water shall be reported by the District to the appropriate authorities.

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.

The District is actively working with local, state, and federal regulatory agencies to promote best water management practices including the following:

1. Aquatic Pesticides Application Plan (APAP) - Water Quality Order No. 2013-0002-DWQ for National Pollutant Discharge Elimination System (NPDES)
2. SBx7-7 Agricultural Water Measurement Regulation
3. Sustainable Groundwater Management Act (SGMA)

The District also works cooperatively with permitting agencies including, but not limited to, Madera County, California Department of Fish and Wildlife (CDFW), and Army Corps. of Engineers (ACOE) on various projects, grants, and other maintenance and operations activities.

Section 2 Inventory of Water Resources

A. SURFACE WATER SUPPLY

1. *Surface water supplies in acre feet, imported and originating within the service area, by month.*
See Section 5, Water Inventory Tables, Table 1

2. *Amount of water delivered to the District by each of the District sources for the last 10 years.*
See Section 5, Water Inventory Tables, Table 8.

B. GROUNDWATER SUPPLY

The complete source of information related to groundwater for the Madera Irrigation District is located with the Madera Subbasin Joint Groundwater Sustainability Plan (GSP). The Madera Subbasin Joint GSP can be found at www.maderacountywater.com.

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

See Section 5, Water Inventory Tables, Table 2. None, MID does not deliver groundwater, individual landowners within the District have their own groundwater wells.

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

<i>Name</i>	<i>Size (Square Miles)</i>	<i>Useable Capacity (AF)</i>	<i>Safe Yield</i>
San Joaquin Valley Groundwater Basin Madera Subbasin ¹	614	18,500,000 to a depth of 300 feet	unknown
Madera Subbasin	543		0.5 AF/AC

¹Source: Attachment M, San Joaquin Valley Groundwater Basin (DWR), Bulletin 118

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

The District does not operate any wells for water delivery, wells within the District are privately owned. MID does own and operate a number of recharge basins, see Attachment A-1.

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

Information necessary to adequately describe groundwater conjunctive use programs includes:

- a. *Determination of the groundwater quality (i.e., is the groundwater quality adequate for direct use or is blending required?).*

For detailed information refer to Madera Subbasin Joint GSP, located at www.maderacountywater.com

USBR testing from 1959-1989 determined excellent groundwater quality meeting secondary drinking water standards. In more recent years, some areas have experienced localized water quality issues.

- b. *The amount of groundwater storage capacity currently available and how much additional storage could be available by extracting groundwater for use.*

For detailed information refer to Madera Subbasin Joint GSP, located at www.maderacountywater.com

c. *The location of existing and potential recharge sites (spreading basins, in-stream, or injection wells) and identification of the soil types and resulting recharge rates.*

The District has many existing recharge basins throughout the District as listed in Section 1, B.4. The District also has participated in the development of the Groundwater Recharge Assessment Tool (GRAT) to assist in the identification and prioritization of recharge areas within the District. This tool takes into account many factors including soil types, land use, and system capacity. See Attachment A-5 for recharge basin locations.

d. *Determination of hydraulic continuity between the possible recharge and extraction areas.*

The District is a conjunctive use irrigation district of surface water and groundwater. Since the surface water supply is insufficient to provide all water demand for the irrigated lands in the District, groundwater sources are utilized to supplement the surface water supplies. Seepage through recharge basins and open channel canals are sources of groundwater recharge. Therefore, there is hydraulic continuity between recharge and extraction areas.

e. *Identification of possible sources of recharge water and the quantities, qualities, and period of availability for each source.*

The District has multiple sources of water from the District's water rights. The timing and availability of water varies by year and year type. The District recharges groundwater through its basins and open channel canals from operations. On average, the District losses are approximately 30% of its water supply of which the majority is canal and basin seepage. The recharged groundwater can be pumped by landowners at any time.

Further details are included in the Madera Subbasin Joint GSP.

f. *For districts without district-owned wells, describe how the district receives compensation from the beneficiaries of the recharged groundwater.*

The District does not own any wells for water delivery. The District does not receive direct compensation from beneficiaries of the recharged groundwater, landowners within the District pay land-based assessments.

5. *Groundwater Management Plan*

See the Madera Subbasin Joint GSP located at www.maderacountywater.com.

The District submitted the Madera Subbasin Joint GSP to DWR in October 2020. The District is working cooperatively with Madera County, City of Madera, Gravelly Ford Water District, Root Creek Water District, Madera Water District and New Stone Water District within the Madera Subbasin.

6. *Groundwater Banking Plan*

There is no groundwater banking within the District.

C. OTHER WATER SUPPLIES

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

MID holds Pre-1914 water rights. Historical use of surface irrigation water in portions of what is now Madera Irrigation District (MID or District) began in the early 1870's. In 1872, Isaac Friedlander obtained water rights on the Fresno River to provide irrigation water to agricultural lands near and to the southwest of what is now the City of Madera. Friedlander augmented these rights with what is called the Big Creek Diversion wherein waters were diverted from the Merced River watershed to the Fresno River watershed. In conjunction with W.S. Chapman in 1875, Friedlander also diverted water from the San Joaquin River watershed to the

Fresno River watershed via the “Soquel Diversion”. The Madera Canal and Irrigation Company (MC&I) was organized in 1888 with an area of 280,000 acres as the successor to Friedlander and Chapman and several of their successor companies. The MC&I Company had plans to obtain a water supply by constructions of a dam on the San Joaquin River near Friant. These plans were not realized because of litigation resulting from opposition on the part of downstream water users, and the district was dissolved in 1896. MC&I, along with the water rights, was purchased by MID.

See Section 5, Water Inventory Tables, Table 1.

D. SOURCE WATER QUALITY MONITORING PRACTICES

1. Potable Water Quality (Urban only)

See Attachment H – District Annual Potable Water Quality Report.

None.

2. Agricultural water quality concerns: Yes X No _____

Refer to the Madera Subbasin Joint GSP for information on water quality and water quality monitoring.

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

The District has adopted the Aquatic Pesticides Application Plan (APAP) which includes water quality testing in accordance with the Water Quality Order No. 2013-0002-DWQ for National Pollutant Discharge Elimination System (NPDES). Implementation funding of the APAP is provided by the District. Additionally, a water quality monitoring program is outlined in the Madera Subbasin Joint GSP. See Attachment O-1, APAP.

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

Refer to the APAP, Attachment O-1 and the APAP Annual Report, Attachment O-2

<i>Analyses Performed</i>	<i>Frequency</i>	<i>Concentration Range</i>	<i>Average</i>

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

Refer to the Madera Subbasin Joint GSP.

<i>Analyses Performed</i>	<i>Frequency</i>	<i>Concentration Range</i>	<i>Average</i>

E. WATER USES WITHIN THE DISTRICT

1. Agricultural

See Section 5, Water Inventory Tables, Table 5 - Crop Water Needs

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

<i>Irrigation Method</i>	<i>2007 Acres</i>	<i>2012 Acres</i>	<i>2019 Acres</i>	<i>2025 Acres*</i>
Drip	23,347	74,217	20,447	90,673
Micro-Spray	19,470	N/A	64,926	N/A
Sprinkler	750	137	700	698

Furrow	N/A	N/A	N/A	N/A
Border Strip	N/A	N/A	3,569	159
Dry-land	N/A	N/A	N/A	3,133
Surface	50,510	24,849	17,916	13,026
Other	N/A	N/A	N/A	N/A
<i>Total</i>	94,077	99,203	107,558	107,690

*Assumed irrigation method by crop type.

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

MID does not directly serve urban customers. Through the Tesoro Viejo Agreement, MID supplied 99 acre-feet in 2025.

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

None.

5. *Groundwater recharge in current year*

<i>Recharge Area</i>	<i>Method of Recharge</i>	<i>AF</i>	<i>Method of Retrieval</i>
See Section 1, B.4	Gravity	8,006	The District does not perform groundwater retrieval
	<i>Total</i>	8,006	

The District recharges groundwater in various basins within the District that are owned by MID. MID also has cooperation agreements with the City of Madera and Madera County for joint-use recharge basins (see Section 1, B.4). The District does not retrieve groundwater for water delivery.

6a. *Transfers and exchanges into the service area in current year (2025)*

<i>From Whom</i>	<i>To Whom</i>	<i>AF</i>	<i>Use</i>
Fresno Irrigation District	MID	5,950	Irrigation
Delano Irrigation District	MID	1,261	Irrigation
	<i>Total</i>	7,211	

6b. *Transfers and exchanges out of the service area in current year (2025)*

<i>From Whom</i>	<i>To Whom</i>	<i>AF</i>	<i>Use</i>
MID	Pixley Irrigation District	7,000	Irrigation
MID	Westlands WD	747	Irrigation
MID	Delano Irrigation District	1,261	Irrigation
	<i>Total</i>	9,008	

7. *Wheeling, or other transactions in and out of the district boundaries (2025)*

<i>From Whom</i>	<i>To Whom</i>	<i>AF</i>	<i>Use</i>
None			

8. *Other uses of water*

None.

F. OUTFLOW FROM THE DISTRICT (AGRICULTURAL ONLY)

See Attachment A-1, District Facilities Map for the location of surface and subsurface outflow points, outflow measurement points, and outflow water-quality testing locations.

The District does not currently operate any surface or subsurface return (by pumping) for any water that leaves the District.

1. *Surface and subsurface drain/outflow - January 1, 2025 through December 31, 2025 includes flood releases.*¹ Surface drain/outflow includes urban and rural storm runoff.

<i>Outflow point</i>	<i>Location description</i>	<i>AF¹</i>	<i>Type of measurement</i>	<i>Accuracy (%)</i>	<i>% of total outflow</i>	<i>Acres drained</i>
O-1	Avenue 17 & Road 15	2,944	Recorder #2	5%-10%	13%	unknown
O-2	Avenue 15 & Road 16	16,470	Recorder #4	5%-10%	72%	unknown
O-3	Avenue 9 & Road 22	1,274	Recorder #10	5%-10%	5%	unknown
O-4	Avenue 5 & Road 23	1,027	Recorder #11	5%-10%	4%	unknown
O-5	Avenue 6 & Road 29 1/2	882	Recorder #9	5%-10%	6%	unknown

<i>Outflow Point</i>	<i>Where the outflow goes (drain, river, or other location)</i>	<i>Type Reuse (if known)</i>
O-1	Berenda Creek	Groundwater recharge, contracted, customer use
O-2	Fresno River	Groundwater recharge, contracted, customer use, prior rights
O-3	Cottonwood Creek	Groundwater recharge, contracted, customer use
O-4	San Joaquin River	Groundwater recharge, contracted, customer use
O-5	San Joaquin River	Groundwater recharge, contracted, customer use

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

The District has adopted the APAP which includes water quality testing in accordance with the Water Quality Order No. 2013-0002-DWQ for NPDES. Implementation funding of the APAP is provided by the District. See Attachment O-1 and O-2.

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

The APAP water quality testing began during the 2013 irrigation season. See Attachment O-1 and O-2.

Outflow (subsurface drainage) Quality Testing Program

None.

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.*

The District has adopted the APAP which includes water quality testing in accordance with the Water

Quality Order No. 2013-0002-DWQ for NPDES. See Attachment O-1 and O-2.

Districts included in the drainage problem area, as identified in “A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley (September 1990),” should also complete Water Inventory Table 7 and Addendum C (include in plan as Attachment J)

G. WATER ACCOUNTING (INVENTORY)

See Section 5, Water Inventory Tables.

Section 3 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) 1010
 - b. Number of delivery points serving more than one farm 159
 - c. Number of measured delivery points (meters and measurement devices) 1010
 - d. Percentage of delivered water that was measured at a delivery point 99%
 - e. Total number of delivery points not billed by quantity 2
 - f. Delivery point measurement device table

<i>Measurement Type</i>	<i>Number</i>	<i>Accuracy¹ (+/- %)</i>	<i>Reading Frequency (Days)</i>	<i>Calibration Frequency (Months)</i>	<i>Maintenance Frequency (Months)</i>
<i>Orifices</i>	0	-	-	-	-
<i>Propeller meter</i>	856	±5%-10%	Daily ²	As needed	12
<i>Weirs</i>	0	-	-	-	-
<i>Flumes</i>	0	-	-	-	-
<i>Venturi</i>	0	-	-	-	-
<i>Metered gates</i>	0	-	-	-	-
<i>Acoustic doppler</i>	0	-	-	-	-
<i>Mag meters</i>	154	±2%-5%	Daily ²	As needed	As needed
<i>Total</i>	1010	-	-	-	-

¹ Documentation verifying the accuracy of measurement devices must be submitted with Plan and included in Attachment C.

² During irrigation water delivery

All meters are routinely checked for accuracy by the District’s Meter Technician. Should a grower contest the accuracy of the meter, the Meter Technician will make a comparison test with the control meter first and then request a current meter check by the Engineering Technician. Should the grower still be unsatisfied, the meter will be sent to the manufacturer for calibration. If the calibration test proves the meter is inaccurate, the District will pay all costs and adjust the grower’s water account accordingly. If the meter calibration test proves the meter to be accurate, the grower will be charged the cost of the calibration test.

The Meter Technician currently conducts pump tests on two (2) delivery points; these were excluded from the table above because no device is installed. For improved accuracy and consistency, the District is transitioning to inline propeller or mag meters instead of rated pump tests when feasible.

The District has two (2) delivery points that are not currently billed based on quantity delivered, they are billed a flat-rate. These are small parcels which utilize small quantities of water, if any. These locations will require reconstruction in order to comply with the accuracy requirements of subdivision (a) of Section 531.10. Approximate costs of meter improvements are included in Section 3.C.

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

District Name: Madera Irrigation District

Contact Name: Thomas Greci

Title: General Manager

Telephone: 559-673-3514

E-mail: tgreci@madera-id.org

Web Address: www.madera-id.org

The water conservation coordinator plans, organizes, and directs activities within the District. The water conservation coordinator oversees tasks associated with District operations, maintenance, and engineering programs, including a variety of special projects. Minimum qualifications are a Bachelor of Science Degree from an accredited college or university in Civil Engineering, or related field, and registration with the State of California as a Professional Engineer.

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.

a. *On-Farm Evaluations*

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

On-farm irrigation and drainage system evaluations using a mobile lab type assessment are available through the Natural Resources Conservation Service (NRCS), Cal Poly San Luis Obispo Irrigation Training & Research Center (ITRC), and Center for Irrigation Technology at CSU, Fresno. Growers may schedule these evaluations by these organization directly or by contacting the District office and the District will assist. Additionally, the District utilizes many methods of communication for landowners regarding opportunities; these methods include email, direct mailing, press releases, newsletters, Facebook, Twitter, and Constant Contact distribution.

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

The District provides timely information to landowners and the public regarding the availability of water deliveries. The District utilizes many methods of communication for landowners including email, direct mailing, press releases, newsletters, Facebook, Twitter, and Constant Contact email distribution. The Madera County Ag Commissioner also provides this information as a service to all growers.

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

A CIMIS weather station was installed in the District and was maintained by District personnel until 2018 when the CIMIS station was removed per the landowner. CIMIS data is still utilized from Station #7 Firebaugh/Telles in Fresno County but within Central San Joaquin Valley and is available for daily ET and current weather information. The Fresno Bee publishes crop evapotranspiration data for most crops grown in the area.

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

Historically, MID has had very good surface water quality with the water supply coming from Sierra Nevada snowmelt. The District currently has water quality monitoring programs for the APAP. Detailed water quantity and quality information is available in the Madera Subbasin Joint GSP, which is available at www.maderacounty.com.

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

The District utilizes many methods for outreach and education for landowners. These include brochures, emails, direct mailing, press releases, newsletters, Facebook, Twitter, and Constant Contact distribution. See Attachment I, for examples.

e. *Other*

None

4. *Pricing structure - based at least in part on quantity delivered*

Adopt a water pricing structure based on the measured quantity delivered

Each year, MID’s Board of Directors sets an acre-foot crop water price based on a number of factors including the quantity of water projected and the District’s operational costs for that year. The District charges its growers by the quantity of water delivered to their turnout. The charges are based on an acre-foot measurement obtained daily by the Canal Operators. The Board’s goal is to set pricing to encourage the use of surface water, when available, to reduce the strain on the groundwater aquifer. See Section 1.G. and Section 3.B.4 for additional pricing structure details. See Attachment L for Example Crop Water Distribution Policy.

5. *Evaluate and improve efficiencies of district pumps*

Describe the program to evaluate and improve the efficiencies of the contractor’s pumps.

The District owns a total of seven lift pumps in five different locations. In two locations, there are two pumps in redundancy to better accommodate varying surface flows. However, only one pump is operated at a given time. Pumps are inspected and serviced yearly by the District’s Meter Technician. When routine maintenance and repairs cannot be completed by District staff, the District will contract with a local pump company.

<i>I.D.</i>	<i>Lift pumps</i>	<i>Surveyed last year</i>	<i>Surveyed current year</i>	<i>Projected next year</i>	<i>Latitude GPS Coordinate</i>	<i>Longitude GPS Coordinate</i>
P-1	32.2 Basin	Yes	Yes	Yes	37.040422	-120.165689
P-2	Island Tract A	Yes	Yes	Yes	37.011672	-119.995539
P-3	Island Tract B	No	No	No	37.011672	-119.995556
P-4	Airport A	Yes	Yes	Yes	36.996353	-120.128344
P-5	Airport B	No	No	No	36.996344	-120.128347
P-6	Section 8 Lateral North	Yes	Yes	Yes	36.894800	-120.165219
P-7	Cottonwood Creek Lateral	Yes	Yes	Yes	36.869439	-120.128303

B. EXEMPTIBLE BMPS FOR AGRICULTURAL CONTRACTORS

(See Planner, Section 2, Addendum B for examples of exemptible conditions)

1. Facilitate alternative land use

<i>Drainage Characteristic</i>	<i>Acreage</i>	<i>Potential Alternate Uses</i>
<i>High water table (<5 feet)</i>	None	
<i>Poor drainage</i>	None	
<i>Groundwater Selenium concentration > 50 ppb</i>	None	
<i>Poor productivity</i>	None	

Describe how the contractor encourages customers to participate in these programs.

2. Facilitate use of available recycled urban wastewater

<i>Sources of Recycled Urban Wastewater</i>	<i>AF/Y Available</i>	<i>AF/Y Currently Used in District</i>
None		

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

<i>Program</i>	<i>Description</i>
Local agency/organization partnerships	The District encourages and directs landowners to available resources/organizations.

MID encourages growers to improve on-farm irrigation systems by providing industry resources to landowners and the public. MID provides information on programs offered by such entities as the Natural Resources Conservation Service (NRCS) and Resource Conservation District (RCD).

4. Incentive pricing

Describe incentive rate structure and purpose.

Madera Irrigation District is a conjunctive use district. The goal of the water pricing policy adopted by the Board of Directors on a periodic basis is to cover the cost of District operations while maximizing the use of surface water within the District. The water delivery season and pricing procedures of the District are established on an, at minimum, annual basis by the Board of Directors. The Crop Water Distribution Policy in Attachment L establishes the water cost of water. The monthly billing statement for each Water User shows the water usage, price of water, payment terms, and delinquency conditions. See Attachment D, District Sample Bill.

The District’s pricing schedules are consistent with the adopted conjunctive use management goals. The District uses two methods to achieve this objective:

1. The comparison of District costs of both the fixed and variable nature
2. Wet year versus dry year variations in pricing

These methods are described below:

1. The District adjusts the surface water per acre-foot costs to cover the costs of District operations and operate under a balanced budget while competing with grower’s groundwater pumping costs and encouraging the use of surface water. The passage of Proposition 218 placed restrictions and limitations on the flexibility of year-to-year adjustments for land based charges. This pricing structure, in concert with the wet year/dry price variation described below, encourages growers to optimize both surface and groundwater resources.

2. The District takes into account the available quantities of the various water supplies and the costs associated with each water supply. Typically, the blended supply costs decrease as the water supply allocation increases. A decrease in surface water costs during wet years creates an incentive for growers to use surface water in lieu of groundwater, thereby reducing overdraft. The District’s “Subordinate” lands also receive a surface water supply during wet years which further enhances the groundwater conditions. The District does attempt to purchase outside water supplies for Subordinates in dry years to combat the area’s groundwater overdraft. This wet/dry year scenario pricing structure is documented by a water price of \$0-\$25 per acre foot in recent wet years to \$110 per acre foot in 2020, a dry year.

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

<i>Canal/Lateral (Reach)</i>	<i>Type of Improvement</i>	<i>Number of Miles in Reach</i>	<i>Estimated Seepage (AF/Y)</i>	<i>Accomplished/Planned Date</i>
Berenda Creek	Unlined ¹	5.2	unknown	none
Cottonwood Creek	Unlined ¹	10.1	unknown	none
Dry Creek	Unlined ¹	21.4	unknown	none
Fresno River	Unlined ¹	12.2	unknown	none
Lateral 24.2	Lined ²	11.2	unknown	none
Lateral 32.2	Lined ²	15.0	unknown	none
Lateral 6.2	Lined ²	22.3	unknown	none
MC&I Main	Unlined	16.7	unknown	none

¹ Natural channel

² Lined with impervious clay soil

b. *Construct/line regulatory reservoirs*

The District recently purchased two parcels totaling almost 70 acres. The District’s Operations Department is currently evaluating the use of these as recharge and/or regulating reservoirs. The District is also partnering with other local agencies on basin development.

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

See Attachment J, District Agricultural Water Order Form.

Currently the District requires a 24-hour shutoff notice, however the District does try to accommodate and remain flexible for deliveries when feasible and when it would not result in a waste of water.

7. *Construct and operate district spill and tail water recovery systems*
Describe facilities that resulted in reduced spill and tail water.

Refer to Section 2, F.1 for District spill locations. The District has very minimal operational spill during the irrigation season. Spill is reduced by using regulating and recharges reservoirs and basins such as Lake Madera, the Lateral 32.2 Basin, and other basins listed in Section 1, B.4. Spill is minimized in dry years by a 7-day rotation period for water deliveries to allow for downstream users to pick up the water if early shut offs occur. Currently, all spill out of the District is contracted, made available for customer use, or used for groundwater recharge.

8. *Plan to measure outflow.*

Total # of outflow (surface) locations/points 5

Total # of outflow (subsurface) locations/points 0

Total # of measured outflow points 5

Percentage of total outflow (volume) measured during report year 100%

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

Priority	Outflow Point	Location	Estimated cost (in \$1,000s)				
			Year 1	Year 2	Year 3	Year 4	Year 5
1	O-3	Avenue 9 & Road 22	none	none	none	none	none
2	O-5	Avenue 6 & Road 29 1/2	none	none	none	none	none
3	O-1	Avenue 17 & Road 15	none	none	none	none	none
4	O-2	Avenue 15 & Road 16	none	none	none	none	none
5	O-4	Avenue 5 & Road 23	none	none	none	none	none

All points are currently measured by the District.

9. *Optimize conjunctive use of surface and groundwater*

Describe the potential for increasing conjunctive use of surface and groundwater.

MID is a conjunctive use District. Water is served on an “on-demand” basis and is not allocated to growers or acres. MID growers use a combination of surface water, when available, and groundwater from private wells. MID encourages surface water use, when it is available, by pricing its water competitively and educating growers on the benefit of utilizing surface water.

A majority of MID water is delivered through open canals which allows for recharge throughout the District. MID also owns and controls a number of basins that are used for recharge and regulation. This recharge and regulation greatly counter the groundwater overdraft in the Madera Subbasin.

District growers must supplement the District water supply with groundwater during certain times of the year. Pre-irrigation needs are met primarily with groundwater, summer irrigations with surface water, and fall irrigations with a combination of both. The District works to time its irrigation season when there are peak crop demands to reduce the strain on Madera’s groundwater aquifer.

MID is currently implementing additional storage and recharge capacity for flexibility in new and existing basins. MID is also working with other agencies in the Madera Subbasin to develop joint projects to combat groundwater decline and increase surface water reliability. The District's groundwater management program is discussed in the Madera Subbasin Joint GSP.

10. Automate distribution and/or drainage system structures

Identify locations where automation would increase delivery flexibility and reduce spill and losses. Describe program to achieve these benefits and estimate the annual water savings.

The Madera Canal, which is MID's main service canal from Friant Dam, has automation and SCADA. The Madera Canal is managed by the Madera-Chowchilla Water and Power Authority (MCWPA), which MID is a partner of. MID installed its first SCADA controlled automated gate in 2012 at the head of its MC&I system at Franchi Dam. MID has also installed electronic sensors, without SCADA, throughout the District to measure flow and spills.

Under the 2011 USBR Field Services grant, three new Rubicon Flume Gates with supervisory control and data acquisition (SCADA) capabilities was installed on the Lateral 24.2 at the head, on the Main I at the head, and on the Main II at the Bishel Weir.

Under the 2013 USBR WaterSMART grant, 4 existing flow monitoring locations were retrofitted with SCADA capabilities. Additionally, the District purchased and install 16 new flume meters, slip meters, or flume gates with SCADA capabilities. One existing pump station was connected with SCADA.

Under the 2016 USBR WaterSMART grant, the District purchase and install 13 new flume meters, slip meters, or flume gates with SCADA capabilities. The grant funding provided the necessary SCADA equipment at the MID office, computer software, and MID staff training. The locations are shown in the table on the following page.

The District installed its first SCADA site in 2012 with the 2011 USBR Field Services Grant, since the first installation, the District has been steadily increasing its SCADA sites. The District currently maintains 34 Rubicon SCADA sites that measure and control canal flows and an additional 20 SDR Recorder SCADA sites that monitor flow. In addition, the District has incorporated two lift pump sites into the SCADA system. As the number of SCADA sites have increased so has the District's reliance on the automated SCADA system. The District will continue to utilize grant funding in the future and increase its number of SCADA sites, which benefits the District's Best Management Practices.

Priority	Location	Nearest Cross Street	Status	Device
1	Franchi Dam	Hwy 145 & Fresno River	Existing	Flume Gate
2	Lateral 24.2 Head	Ave. 20 ½ & Rd. 26	Existing	Flume Gate
3	Main I Head	Ave. 15 ½ & Rd. 28 ½	Existing	Flume Gate
4	Main II @ Bishel Weir	Ave. 11 ½ & Rd. 28 ¾	Existing	Flume Gate
5	Roberts Head	G St. N. of Hwy 145	Existing	Slip Meter
6	Lateral 6.2-14.0	Ave. 9 ½ & Rd. 31 ½	Existing	Slip Meter
7	Lateral 24.2-8.9 Head	Ave. 19 ½ & Rd. 25 ½	Existing	Slip Meter
8	Lateral 24.2-9.0 Head	Ave. 19 & Rd. 25 ½	Existing	Slip Meter
9	Lateral 24.2-13.2 Head	Cleveland Ave. & Hwy 99	Existing	Flume Meter
10	Lateral 24.2-17.0 Head	Ave. 15 & Rd. 22 ½	Existing	Slip Meter
11	Lateral 24.2-17.0-2.3 Head	Ave. 14 ½ & Rd. 20 ½	Existing	Flume Meter
12	Lateral 24.2-19.5 Head	Ave. 12 ½ & Rd. 22 ½	Existing	Slip Meter
13	Lateral 32.2-9.9 Head	Ave. 21 ½ & Rd. 20	Existing	Flume Gate
14	Lateral 32.2-13.2 Head	Ave. 19 & Rd. 21	Existing	Flume Meter
15	Lateral 32.2-9.9W-0.1 Head	Ave. 21 ½ & Rd. 19 ¾	Existing	Flume Meter
16	Lateral 32.2-9.9W-1.0 Head	Ave. 21 ½ & Rd. 19	Existing	Flume Meter
17	Lateral 32.2-9.9W-1.5 Head	Ave. 21 ½ & Rd. 18 ½	Existing	Flume Meter
18	Lateral 32.2-9.9W-2.0 Head	Ave. 21 ½ & Rd. 18	Existing	Flume Meter
19	Main II Head	Ave. 13 & Rd. 29 ½	Existing	Flume Gate
20	Lateral 32.2 @ Basin	Ave. 20 & Rd. 21	Existing	Flume Gate
21	Cody Head	Ave. 13 & Rd. 25	Existing	Slip Meter
22	Cottonwood Creek Head	Ave. 10 & Rd. 23	Existing	Slip Meter
23	Lateral 6.2-14.5 Head	Ave. 9 ½ & Rd. 31	Existing	Slip Meter
24	Lateral 6.2-15.9 Head	Ave. 8 & Rd. 31	Existing	Slip Meter
25	Lateral 6.2-16.9 Head	Ave. 7 ½ & Rd. 30 ½	Existing	Slip Meter
26	Lateral 6.2-18.4 Head	Ave. 6 ½ & Rd. 29 ¾	Existing	Slip Meter
27	Lateral 6.2 Ext. Head	Ave. 5 ¾ & Rd. 29 ¾	Existing	Flume Gate
28	Lateral 32.2-9.9-6.5	Ave. 17 & Rd. 18	Existing	Slip Meter
29	Mordecai Head	Ave. 10 & Rd. 25 ¼	Existing	Slip Meter
30	Hargrove Head	Ave. 10 & Rd. 24 ½	Existing	Slip Meter
31	Ripperdan Head	Ave. 10 ¾ & Rd. 28	Existing	Slip Meter
32	Lateral 6.2-9.2-5.0	Ave. 8 & Rd. 34	Existing	Slip Meter
33	Hughes Head	Ave. 11 ½ & Rd. 28 ¾	Existing	Slip Meter
34	6.2-14.0 Down Stream	Ave 10 1/2 & Rd 31 1/2	Existing	Flume Gate

11. Facilitate or promote water customer pump testing and evaluation

See Attachment I, Notices of District Education Programs and Services Available to Customers. The District promotes pump testing and evaluation available through various organizations including Cal Poly San Luis Obispo Irrigation Training & Research Center (ITRC), Center for Irrigation Technology at CSU, Fresno, and PG&E. The District provides pump testing for discharge flow rate, but not for pump efficiency. Growers are encouraged by the District to have pump tests done on a yearly basis. The District requires all new pump installations from District canals to have inline or magnetic flow meters.

12. Mapping

<i>GIS maps</i>	<i>Estimated cost (in \$1,000s)¹</i>				
	<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>	<i>Year 4</i>	<i>Year 5</i>
<i>Layer 1 – Distribution system</i>	3	3	3	3	3
<i>Layer 2 – Drainage system</i>	0	0	0	0	0
<i>Layer 3 – Groundwater information</i>	15	1	15	1	15
<i>Layer 4 – Soils map</i>	0	0	0	0	0
<i>Layer 5 – Natural & cultural resources</i>	0	0	0	0	0
<i>Layer 6 – Problem areas</i>	0	0	0	0	0
<i>Total</i>	18	18	18	1	18

¹ Costs are approximate and subject to change.

The District has been working for many years on its mapping system. The current mapping system includes the latest information for many of these layers, thus only periodic updates are anticipated in the next five (5) years.

C. PROVIDE A 3-YEAR BUDGET FOR IMPLEMENTING BMPS

1. Amount actually spent during current year.

<i>Year 2025 or Year 1</i>	<i>Actual Expenditures¹</i>	<i>Staff Hours</i>
<i>BMP # BMP Name</i>	<i>(not including staff time)</i>	
<i>A 1 Measurement</i>	\$135,000	N/A
<i> 2 Conservation staff²</i>	\$98,000	N/A
<i> 3 On-farm evaluation / water delivery info</i>	\$0	N/A
<i> Irrigation scheduling</i>	\$0	N/A
<i> Water quality</i>	\$20,000	N/A
<i> Agricultural education program</i>	\$0	N/A
<i> 4 Quantity pricing</i>	\$0	N/A
<i> 5 Contractor’s pumps</i>	\$0	N/A
<i>B 1 Alternative land use</i>	\$0	N/A
<i> 2 Urban recycled water use</i>	\$0	N/A
<i> 3 Financing of on-farm improvements</i>	\$0	N/A

4 Incentive pricing	\$0	N/A
5 Line or pipe canals/install reservoirs	\$563,000	N/A
6 Increase delivery flexibility	\$0	N/A
7 District spill/tail water recovery systems	\$0	N/A
8 Measure outflow	\$0	N/A
9 Optimize conjunctive use	\$0	N/A
10 Automate canal structures	\$130,000	N/A
11 Customer pump testing	\$0	N/A
12 Mapping	\$14,000	N/A
<i>Total</i>	\$960,000	N/A

¹ Costs are approximate

² Paid by MID

2. Projected budget summary for the next year.

Year 2026 or <u>Year 2</u>	<i>Projected Expenditures¹</i>		
<u>BMP #</u>	<u>BMP Name</u>	<u>(not including staff time)</u>	<u>Staff Hours</u>
A	1 Measurement	\$150,000	N/A
	2 Conservation staff ²	\$85,000	N/A
	3 On-farm evaluation / water delivery info	\$0	N/A
	Irrigation scheduling	\$0	N/A
	Water quality	\$25,000	N/A
	Agricultural education program	\$0	N/A
	4 Quantity pricing	\$0	N/A
	5 Contractor's pumps	\$0	N/A
B	1 Alternative land use	\$0	N/A
	2 Urban recycled water use	\$0	N/A
	3 Financing of on-farm improvements	\$0	N/A
	4 Incentive pricing	\$0	N/A
	5 Line or pipe canals/install reservoirs	\$877,000	N/A
	6 Increase delivery flexibility	\$0	N/A
	7 District spill/tail water recovery systems	\$0	N/A
	8 Measure outflow	\$0	N/A
	9 Optimize conjunctive use	\$0	N/A
	10 Automate canal structures	\$0	N/A
	11 Customer pump testing	\$0	N/A
	12 Mapping	\$16,000	N/A
	<i>Total</i>	\$1,153,000	N/A

¹ Costs are approximate and subject to change.

² Paid by MID

3. Projected budget summary for 2027 year.

Year 2027 or <u>Year 3</u>		Projected Expenditures ¹	
BMP #	BMP Name	(not including staff time)	Staff Hours
A	1 Measurement	\$170,000	N/A
	2 Conservation staff ²	\$93,500	N/A
	3 On-farm evaluation / water delivery info	\$0	N/A
	Irrigation scheduling	\$0	N/A
	Water quality	\$27,500	N/A
	Agricultural education program	\$0	N/A
4	Quantity pricing	\$0	N/A
5	Contractor's pumps	\$0	N/A
B	1 Alternative land use	\$0	N/A
	2 Urban recycled water use	\$0	N/A
	3 Financing of on-farm improvements	\$0	N/A
	4 Incentive pricing	\$0	N/A
	5 Line or pipe canals/install reservoirs	\$920,850	N/A
	6 Increase delivery flexibility	\$0	N/A
	7 District spill/tail water recovery systems	\$0	N/A
	8 Measure outflow	\$0	N/A
	9 Optimize conjunctive use	\$0	N/A
	10 Automate canal structures	\$0	N/A
	11 Customer pump testing	\$0	N/A
	12 Mapping	\$20,000	N/A
<i>Total</i>		\$1,231,850	N/A

¹ Costs are approximate and subject to change.

² Paid by MID

Section 4 Best Management Practices (BMPs) for Urban Contractors

A. URBAN BMPS

MID does not directly serve urban customers. MID has an “Amended and Restated Water Supply Agreement” with Tesoro Viejo Development Inc. and Tesoro Viejo Master Mutual Water Company dated May 30, 2018. Tesoro Viejo Development, Inc. is the developer of the Tesoro Viejo Project (“Project”), a multiple use project located within the District. The Project, when fully constructed, will include up to 5,190 dwelling units and approximately three million square feet for commercial, retail, office, public institutional, and light industrial use. Tesoro Viejo Master Mutual Water Company is the provider of water and wastewater and recycled water service for the Project's municipal, industrial, and agricultural needs.

Section 5 District Water Inventory Tables

Table 1 – Surface Water Supply

Table 2 – Groundwater Supply

Table 3 – Total Water Supply

Table 4 – Agricultural Distribution System

Table 5 – Crop Water Needs

Table 6 – 2025 District Water Inventory

Table 7 – Influence on Groundwater and Saline Sink

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

Table 1

Surface Water Supply

2025¹	Federal Ag Water²	Federal non-Ag Water.	State Water	Local Water (define)³	Other Water (define)⁴	Transfers into District	Upslope Drain Water	Total⁵
Month	(acre-feet)	(acre-feet)	(acre-feet)	(acre-feet)	(acre-feet)	(acre-feet)	(acre-feet)	(acre-feet)
January (2026)	14,662	-	-	0	968	-	-	15,630
February (2026)	2850	-	-	0	100	-	-	2,950
March (2025)	0	-	-	0	20	-	-	20
April (2025)	3,753	-	-	1,286	30	-	-	5,069
May (2025)	22,126	-	-	11,874	3,002	-	-	37,002
June (2025)	26,087	-	-	12,347	2,006	-	-	40,440
July (2025)	20,833	-	-	11,578	1,526	5,950	-	39,887
August (2025)	17,329	-	-	5,575	1,140	1,261	-	25,305
September (2025)	1,261	-	-	0	64	-	-	1,325
October (2025)	0	-	-	0	40	-	-	40
November (2025)	0	-	-	0	3	-	-	3
December (2025)	0	-	-	0	1	-	-	1
TOTAL	108,901	-	-	42,660	8,900	7,211	-	167,672

1 Based on Water Year

2 Includes Friant Supplies

3 Includes Hidden Supplies

4 Includes Soquel

5 Numbers are based off of MID's water schedule and are usable supplies

Table 2

Groundwater Supply

2025	District Groundwater	Private Ag. Groundwater
Month	(acre-feet)	(acre-feet)
Method		
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0
TOTAL	0	0

*MID does not deliver groundwater supplies. Landowners within MID own and operate individual groundwater wells.

Table 3

Total Water Supply

2025¹ Month	Surface Water Total² (acre-feet)	District Groundwater (acre-feet)	Recycled M&I Wastewater (acre-feet)	Total District Water Supply (acre-feet)
Method				
January	15,630	0	0	15,630
February	2,950	0	0	2,950
March	20	0	0	20
April	5,069	0	0	5,069
May	37,002	0	0	37,002
June	40,440	0	0	40,440
July	39,887	0	0	39,887
August	25,305	0	0	25,305
September	1,325	0	0	1,325
October	40	0	0	40
November	3	0	0	3
December	1	0	0	1
TOTAL	167,672	0	0	167,672

1 2025 Water Year
2 Reference Table 1

Table 4

Agricultural Distribution System

2025 Canal, Pipeline, Lateral, Reservoir	Length (feet)	Width (feet)	Surface Area (square feet)	Precipitation³ (acre-feet)	Evaporation³ (acre-feet)	Spillage¹ (acre- feet)	Seepage² (acre- feet)	Total (acre- feet)
Berenda Creek	27,280	25	682,000	0.0	0.0	1,259	1,569	(2,827)
Cottonwood Creek	53,320	30	1,599,600	0.0	0.0	1,893	3,679	(5,572)
Dry Creek	112,992	40	4,519,680	0.0	0.0	2,734	10,395	(13,129)
Fresno River	64,416	100	6,441,600	0.0	0.0	1,266	14,816	(16,082)
Lateral 24.2	58,898	32	1,884,736	0.0	0.0	226	4,335	(4,561)
Lateral 32.2	79,148	30	2,374,440	0.0	0.0	0	5,461	(5,461)
Lateral 6.2	117,931	36	4,245,516	0.0	0.0	691	9,765	(10,455)
MC&I Main	88,176	40	3,527,040	0.0	0.0	0	8,112	(8,112)
TOTAL	602,161	333	25,274,612	0.0	0.0	8,068	58,132	(66,200)

¹ Spillage includes urban and rural storm runoff. Operational issues with some recorders during the season.

² Seepage is estimated at approximately 30% of flow.

³ Precipitation and Evaporation numbers were not available for the Distribution System area.

Table 5

Crop Water Needs

2025 Crop Name	Area (crop acres)	Crop ET_c (AF/Ac)	Leaching Requirement (AF/Ac)	Cultural Practices (AF/Ac)	Effective Precipitation (AF/Ac)	Appl. Crop Water Use (acre-feet)
Almonds	58,081	3.4	0.0	0.0	0.74	154,495
Field Crops	440	2.5	0.0	0.0	0.68	801
Fruit Trees	4,849	3.3	0.0	0.0	0.73	12,462
Grains	959	0.7	0.0	0.0	0.64	58
Grapes	24,844	2.2	0.0	0.0	0.73	36,521
Grasses	0	2.3	0.0	0.0	0.68	0
Pistachios	12,163	2.6	0.0	0.0	0.73	22,745
Other (<5%)	2,490	2.1	0.0	0.0	0.69	3,511
Crop Acres	103,826					230,592

Total Irrig. Acres 103,826 (If this number is larger than your known total, it may be due to double cropping)

Table 6

2025 District Water Inventory

Water Supply ¹	Table 3		167,672
Riparian ET	(Distribution and Drain)	minus	0
Groundwater recharge	(intentional - ponds, injection)	minus	8,006
Seepage	Table 4	minus	58,132
Evaporation - Precipitation	Table 4	minus	0
Spillage	Table 4	minus	6,802
Transfers out of District (net-included Transfers In)		minus	2,009
Water Available for sale to customers			92,723
<hr/>			
Actual Agricultural Water Sales	From District Sales Records ²		156,813
Private Groundwater	Table 2	plus	0
Crop Water Needs	Table 5	minus	230,592
Drainwater outflow	(tail and tile, not recycled)	minus	0
Percolation from Agricultural Land	(calculated)		0
Unaccounted for Water ³	(calculated)		-73,779

1 Table 3 accounts for some "spillage" outside of the District, thus, "spillage" is reduced.

2 Water billing summary for in-District use.

3 As MID is a conjunctive use district, private groundwater pumping accounts for the difference in crop water use and surface water supply

Table 7

Influence on Groundwater and Saline Sink

2019

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

*Not Applicable to MID

Table 8

Annual Water Quantities Delivered Under Each Right or Contract⁵

Year¹	Federal Ag Water² (acre-feet)	Federal non-Ag Water (acre-feet)	State Water (acre-feet)	Local Water (define)³ (acre-feet)	Other Water (define)⁴ (acre-feet)	Transfers into District (acre-feet)	Upslope Drain Water (acre-feet)	Total (acre-feet)
2010	122,313	-	-	72,939	12,588	7,646	-	215,486
2011	144,685	-	-	48,001	10,000	-	-	202,686
2012	65,055	-	-	24,000	6,266	6,000	-	101,321
2013	43,104	-	-	27,268	5,334	22,739	-	98,445
2014	13,233	-	-	2,721	2,096	710	-	18,760
2015	454	-	-	1,684	1,115	6,511	-	9,764
2016	89,362	-	-	36,257	11,262	1,652	-	138,533
2017	141,648	-	-	92,277	10,520	-	-	244,445
2018	94,084	-	-	37,797	8,215	5,899	-	145,995
2019	172,686	-	-	46,727	15,805	3,325	-	238,543
2020	54,325	-	-	25,745	6,909	-	-	86,979
2021	19,079	-	-	17,883	3,218	369	-	40,549
2022	55,730	-	-	34,321	5,305	-	-	95,356
2023	200,464	-	-	103,428	17,059	-	-	320,951
2024	137,271	-	-	45,140	12,949	6,283	-	201,643
2025	108,901	-	-	42,660	8,900	7,211	-	167,672
Total	1,015,758	-	-	467,620	98,633	54,851	-	1,636,862
Average	78,135	-	-	35,971	13,893	10,266	-	125,912

1 Based on Water Year

2 Includes Friant Supplies

3 Includes Hidden Supplies

4 Includes Soquel

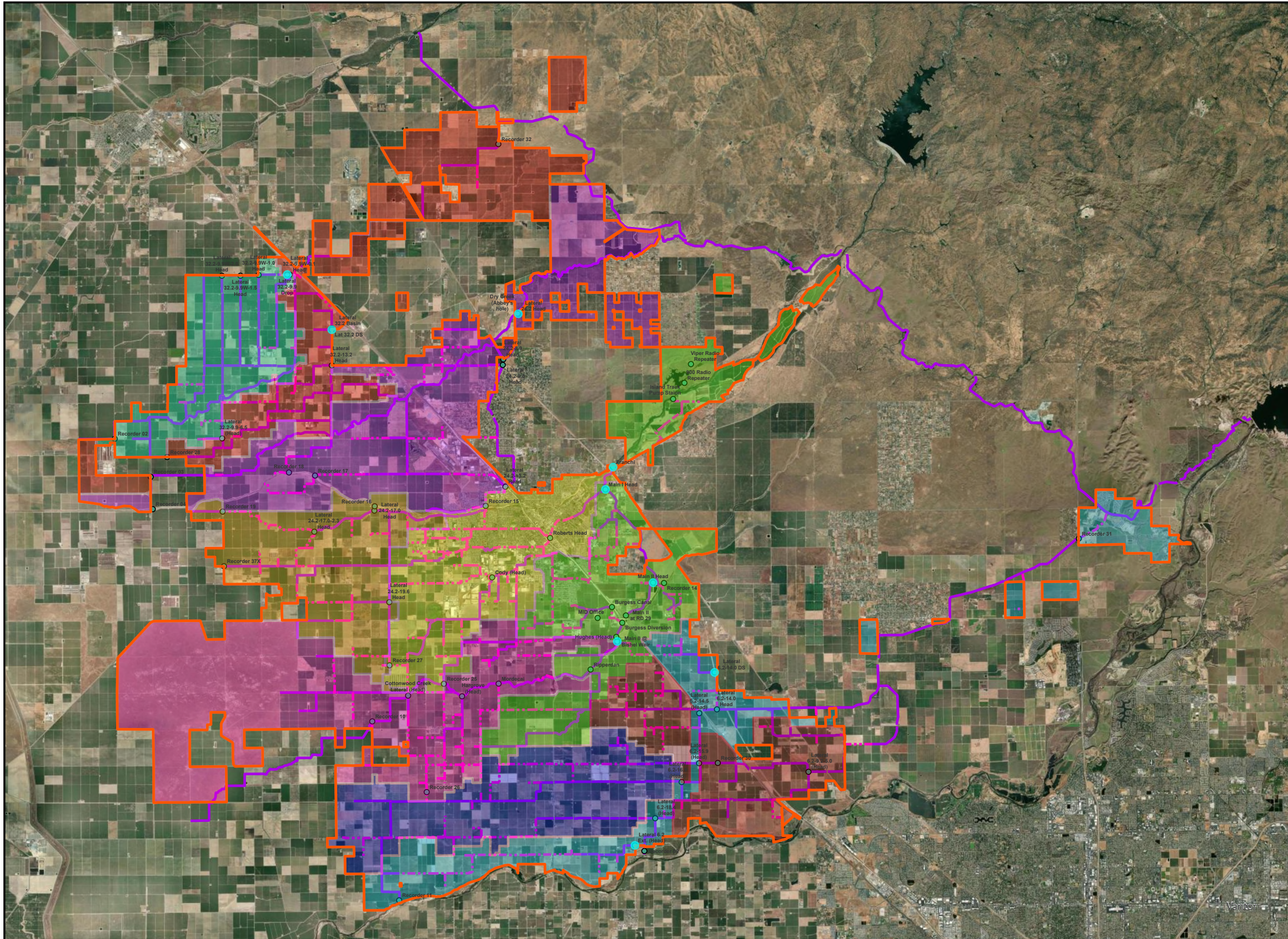
5 Numbers based off of MID's water schedule, not delivery numbers

Attachment A: District Maps

- A-1 MID Facilities Map*
- A-2 MID Distribution Map*
- A-3 Soils Map*
- A-4 Public Water Systems*
- A-5 Recharge Basin Map*

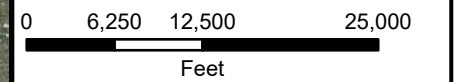
Madera Irrigation District Facilities (Attachment A)

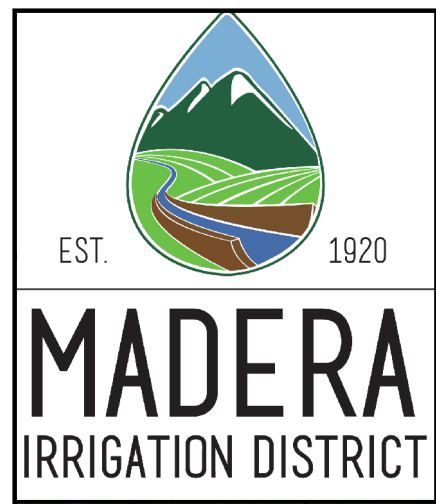
- District 1
- District 2
- District 3
- District 4
- District 5
- District 6
- District 7
- District 8
- District 9
- District 10
- SCADA Sites
- Canal
- Pipe
- Madera I.D. Boundary



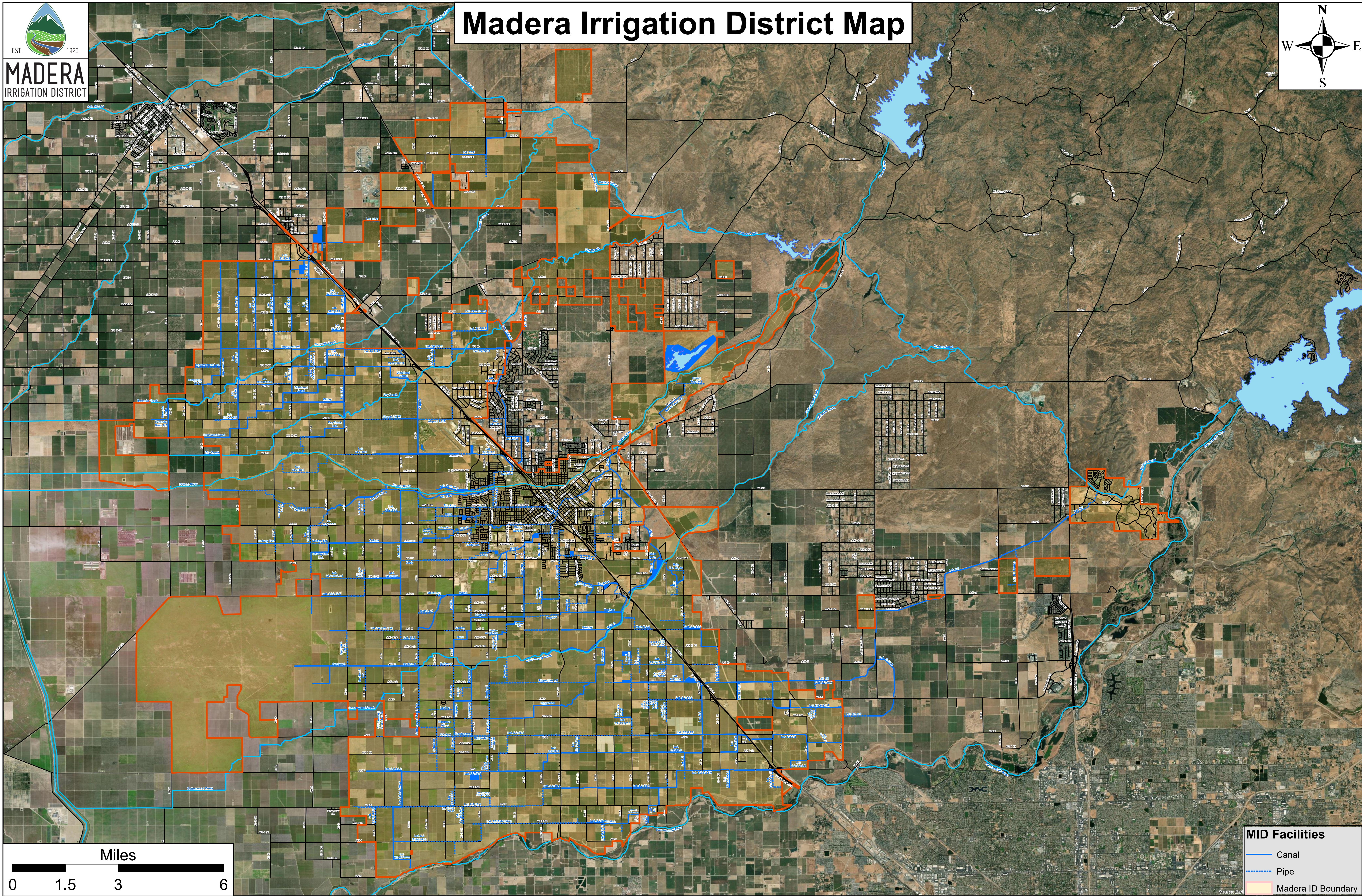
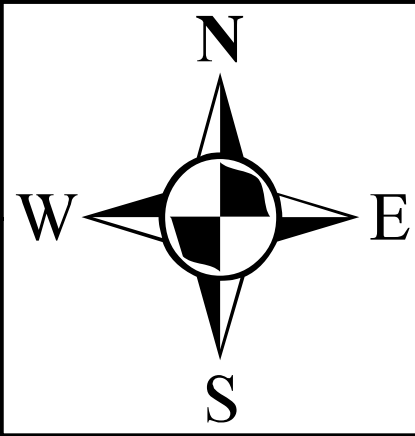
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03/2026

Author:
Engineering
Department



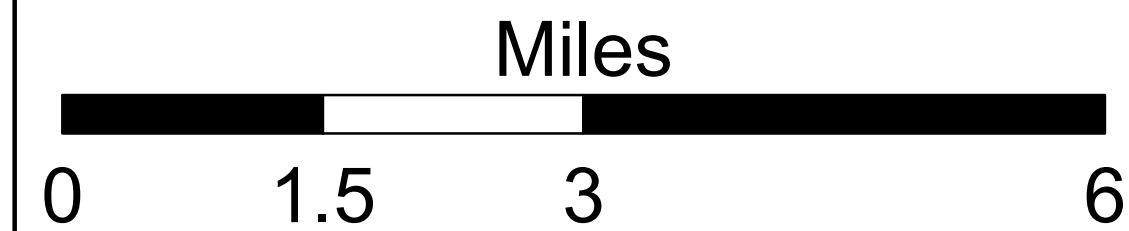


Madera Irrigation District Map









MID Facilities

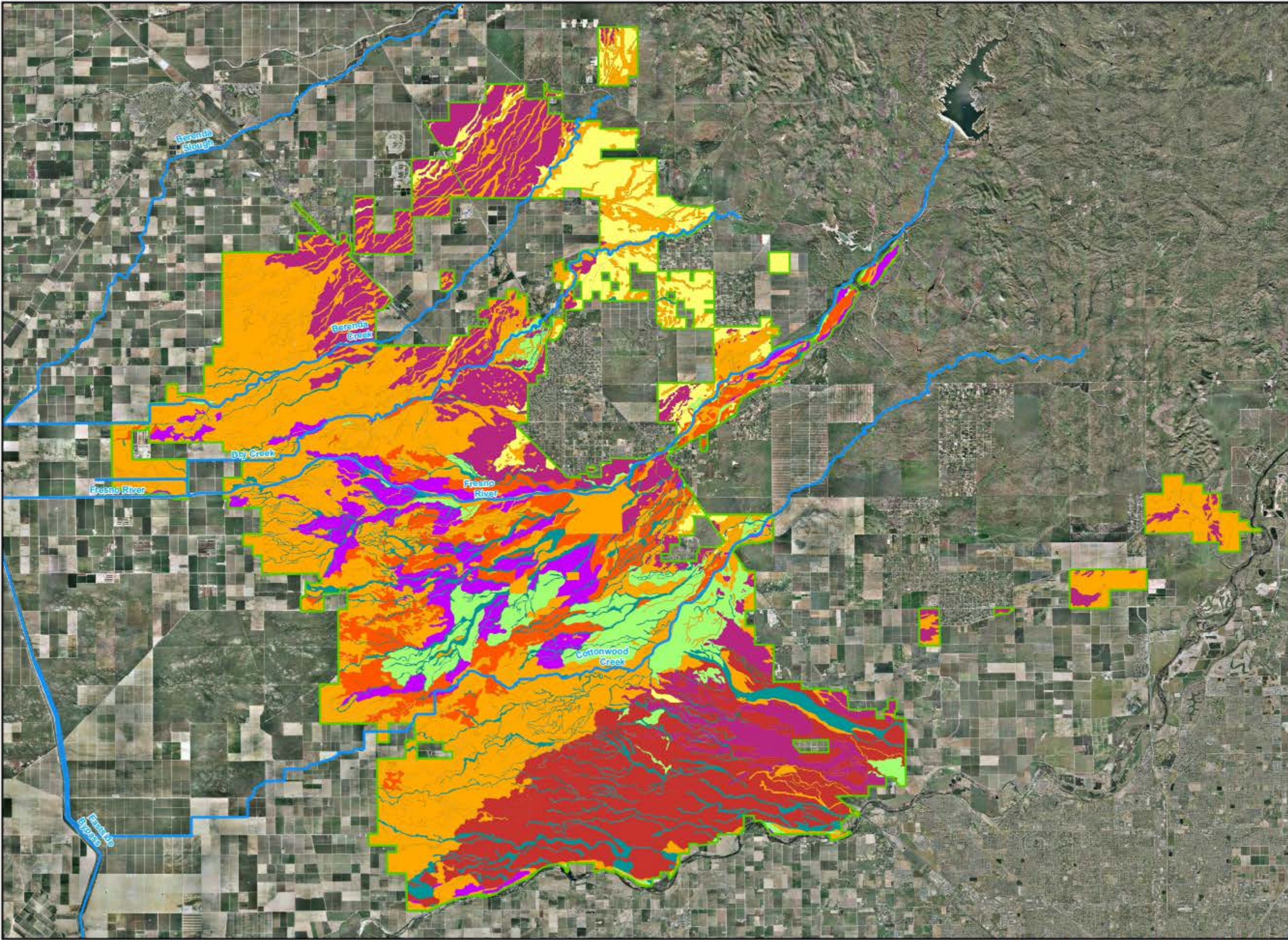
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- Pipe
- Madera ID Boundary



Madera I.D. Soil Classification (NRCS)

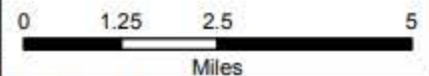
Legend

-  Rivers and Creeks
-  Madera ID
-  Cometa sandy loams
-  Grangeville fine sandy loam
-  Hanford (ripperdan) fine sandy loam
-  Hanford fine sandy loam
-  Pachappa fine sandy loam
-  San Joaquin sandy loams
-  Tujunga loamy sand
-  Other Values <5%














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03/2026

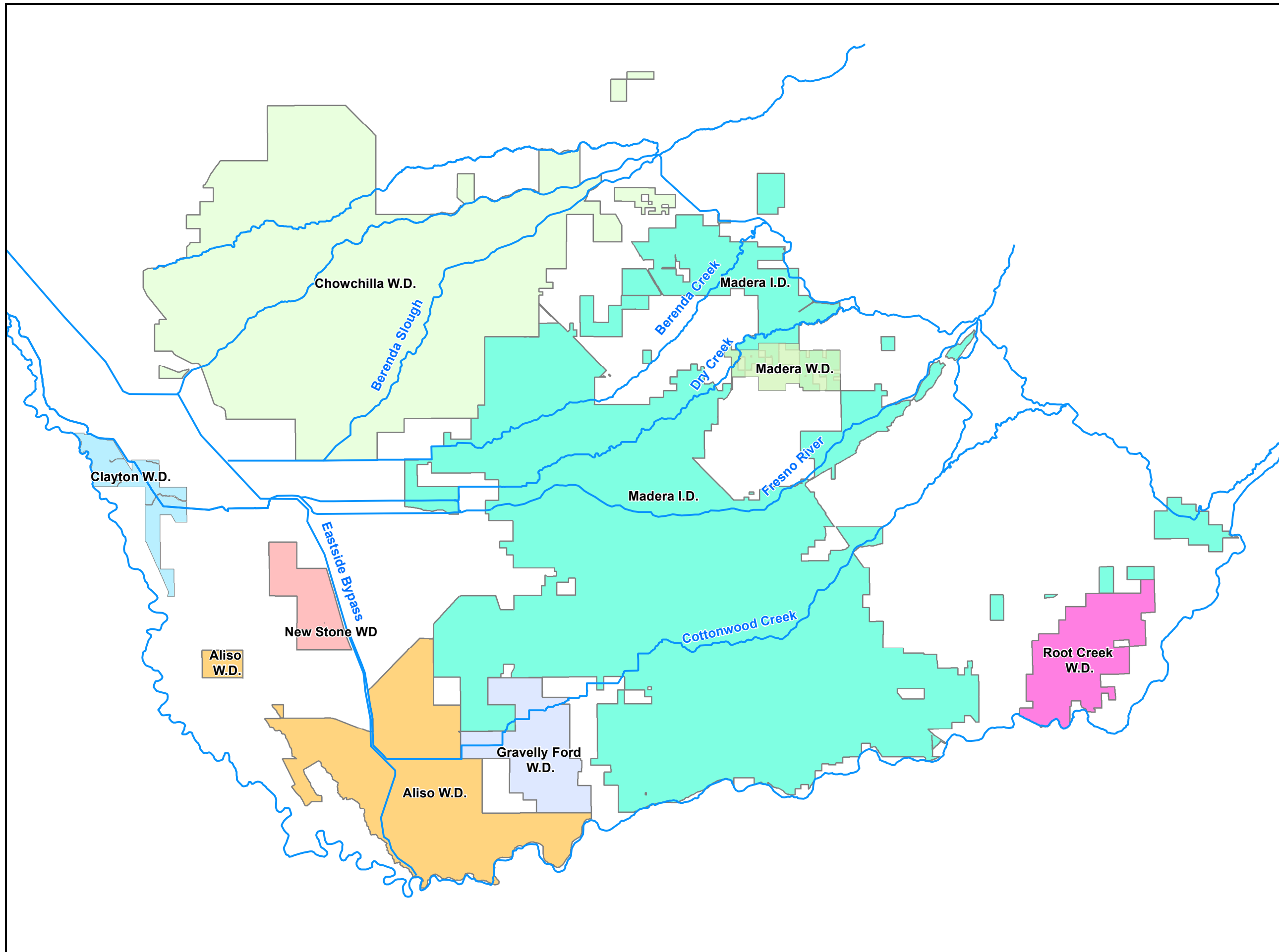
Author:
Engineering
Department



Madera County Public Water Districts

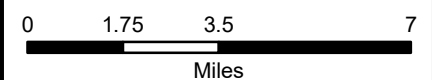
Legend

-  Waterways
-  Canal
-  Pipe
-  Madera I.D.
-  Chowchilla W.D.
-  Gravelly Ford W.D.
-  Madera_WD
-  Aliso W.D.
-  Clayton W.D.
-  New Stone W.D.
-  Root Creek W.D.



Date:
03/2026

Author:
Engineering



Attachment B: MID Rules and Regulations



EST.

1920

MADERA

IRRIGATION DISTRICT

Rules And Regulations

**for
Distribution Of Water
and
Maintenance Of Canals And Pipelines**

ADOPTED MARCH 2, 2023

Madera Irrigation District Operations Office

12152 Road 28¼, Madera, CA 93637
(559) 673-3514 • www.madera-id.org

Office Hours

Monday–Friday 7:00 a.m. to 4:00 p.m.
Saturday–Sunday Office Closed
District Holidays Office Closed
After Hours Call your Canal Operator directly

Please do not leave water orders
through voicemail or text message.

Contacts

Canal
Operator _____

Canal Operator
Phone No. (Cell) _____

Relief Canal
Operator _____

Relief Canal Operator
Phone No. (Cell) _____

Operations
Supervisor _____

Operations Supervisor
Phone No. (Cell) _____

Operations & Maintenance
Manager _____

Operations & Maintenance
Manager Phone No. (Cell) _____

**In Case Of Emergency Call (559) 673-9243 or
(559) 474-1021**

Welcome

Madera Irrigation District (MID) would like to encourage our growers to utilize its high quality, surface water when available. The use of surface water will help reduce the strain on the groundwater aquifer, assisting both the landowners and MID in becoming sustainable.

We look forward to working with each of you throughout the water season and urge you to discuss any questions or concerns with us. You are always welcome to attend our Board Meetings, held the third Tuesday of each month, sign up for our email distribution list, visit our web site www.madera-id.org, or follow us on social media. Thank you in advance for your cooperation and we look forward to serving you now and in the years to come.

Regards,



Thomas Greci, General Manager

Please scan the code below to visit MID's website



www.madera-id.org

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Preamble

These rules are established pursuant to Water Code § 22257 to ensure the orderly, efficient, and equitable distribution, use, and conservation of the District's water resources.

Section 1: Contracts With The United States

- 1.01 Madera Irrigation District (District) water supplies include water received from the federal Central Valley Project (CVP) pursuant to contracts between the United States Bureau of Reclamation (USBR) and the District. All water distributed by the District pursuant to such contracts is subject to certain restrictions, terms, and conditions as required by the provisions of said contracts and the Reclamation Laws of the United States.
- 1.02 Copies of said contracts are on file and available to view at the District office and the provisions therein pertaining to use and distribution of, and payment for, CVP water are binding upon all water users and therefore incorporated by this reference as a part of these Rules and Regulations.

Section 2: Crop Water Applications

- 2.01 The irrigation delivery season shall be established each year by the Board of Directors as part of the annual Crop Water Distribution Policy process. Crop Water Applications shall be filed in the District office on forms provided by the District.

- 2.02 Crop Water Applications for water service shall be completed for each parcel prior to any delivery of water to that parcel. Reporting of any landownership changes must be completed in writing no later than 30 calendar days after close of escrow in order for the parcel to be added and/or deleted on the Crop Water Application. There will be no changes to the Crop Water Application once deliveries have begun without consulting with the Finance Department.
- 2.03 All Crop Water Applications shall state the Madera County assessor's parcel number (APN). Applications must be signed by the owner(s) of record as shown on the District assessment roll. Lessees must also sign the application. Facsimile (FAX) or scanned signatures are acceptable. Farm managers or authorized agents may execute the Crop Water Application in lieu of the landowner of record only if the District has a current Power of Attorney Form from the landowner on file. Power of Attorney Forms are available at the District's office.
- 2.04 The following prerequisites shall be completed each year prior to finalizing the Crop Water Applications:
- (a) Landowners and lessees ("Water User") are responsible for completing all Crop Water Applications associated with the parcels they own or lease.
 - (b) All delinquent crop water charges, assessments, certificates of sale, standby

charges, or any other charges on any and all parcels owned and/or leased by the Water User submitting a Crop Water Application must be paid in full prior to acceptance of the Crop Water Application by the District.

- (c) The Water User shall designate one or more Crop Water Accounts. Those accounts cannot be combined or separated once water deliveries have begun.

- 2.05 Landowners have the sole responsibility for the financial obligations on their property. If the land is leased and the lessee does not pay the water charges in full, the amount owing will be added to and become part of the annual assessment levied on the land. Any unpaid standby or water charges shall be a lien encumbering the parcel to which it was applied and shall become a part of the succeeding year's assessments in addition to any other remedy provided by California State Water Code Section 25806. Letters of nonfinancial responsibility from landowners will not be accepted by the District.

Section 3: Flat Rate Water Users

- 3.01 Water service to any parcel of land consisting of less than six (6.0) acres will be based on a flat rate charge, except as otherwise provided below. The Board of Directors will establish the flat rate charge each year as part of the Crop Water Distribution Policy. Flat Rate Water Users may request installation of a meter box, at their

expense, on a flat rate parcel and become an Original District Water User. The Flat Rate Water User is required to pay the cost of the meter and delivery structure installation. Parcels less than six (6.0) acres where meters have already been installed will remain Original District permanently. Parcels less than six (6.0) acres adjoining an Original District parcel and jointly owned will be billed at the Original District rate.

- 3.02 Flat Rate Water Users must adhere to a fifteen (15) day period between irrigations. Flat Rate Water Users wishing to irrigate on an eight (8) day cycle must pay a second equivalent fee at the time of Crop Water Application.
- 3.03 One-half of the flat rate charge is due and payable at the time of Crop Water Application. The balance will be billed on the last business day of June and will become delinquent the last business day of July. Those Flat Rate Water Users that apply during the second half of the season must pay the total flat rate amount at the time of Crop Water Application.
- 3.04 Flat Rate Water Users may be changed to Original District Water Users at anytime by the District.

Section 4: Subordinate Water Users

- 4.01 Subordinate parcels are those parcels that were annexed to the District at a later date than the Original District lands. These parcels receive crop water during the years the Board of Directors has

declared surplus water or outside purchased water is available. Subordinate parcels are assessed, for the General Assessment, the year following the year of water usage. Standby charges and the 9(d) Benefit Assessment are assessed at the time Original District lands are assessed.

Section 5: Water Ordering Procedures

- 5.01 The first water order of the season must be placed through the District's Operations office at (559) 673-3514. Subsequent orders may be placed with the appropriate Canal Operator.
- 5.02 The District's Operations Department shall be notified not less than three (3) days in advance of the time requested for a water order start or to make a flow change. Orders for termination of delivery will be accepted no later than 12:00 p.m. the day preceding requested shut-off. In the event water delivery to a Water User is terminated without a request, or less than 24 hours after shut-off is requested, billing for water use will be calculated as if delivery had continued for the full 24-hour period unless such water can be delivered to another Water User who has ordered water, this will be determined as the District's sole discretion.
- 5.03 If water is available, it may be delivered earlier than the three (3) day notice period by mutual agreement between the Water User and District providing delivery can be made without waste of

water, without increasing spill, and without interference to current users or users who have previously ordered water.

- 5.04 Water Users are entitled to take delivery of District water supplies onto the land described on their Crop Water Applications. Completion of a Crop Water Application and payment of standby charges or assessments do not result in an allocation of or entitlement to a specific quantity of water. The transfer of District supplied water by Water Users is prohibited.
- 5.05 Water must be used continuously until each irrigation cycle is complete. Established delivery flow rates should be maintained during the irrigation period and changes should be communicated with the Canal Operator.
- 5.06 A minimum delivery flow rate, depending on meter size, may be required by the District at any delivery point when necessary to ensure accurate measurement.
- 5.07 All deliveries through head gate structures shall be controlled by the Canal Operator who may lock these gates.
- 5.08 No water changes or shut-offs will be made after 12:00 p.m. unless previously agreed to by the Canal Operator. The District reserves the right to refuse service if any unreasonably large or small quantity of water is ordered.
- 5.09 If the canal or pipeline is in such condition that a usable amount of water cannot be delivered, delivery will be denied until such condition is

remedied. California State Water Code Section 22257 provides, in part: “A District may refuse to deliver water through a ditch, which is not clean or not in suitable condition to prevent waste of water and may determine through which of two or more available ditches it will deliver water”.

- 5.10 If the demand exceeds capacity of the system or, for reasons determined by the District, to increase operational efficiency the distribution system may be operated on a restricted basis which means that new water starts may not be made until a shut-off occurs. When the system is running in a capacity mode, there is a maximum 7-day run time on each turnout. The District will maintain a priority list for starts during such periods and starts will follow a first come first serve basis.

Water Users need to be aware that water may be available earlier than a start request date and time. This water would be first offered to the Water User at the top of the priority list. If the Water User is unable to take the water at that time, then the water will be offered to the next Water User in line. The District cannot hold the water in the system to accommodate a start order. Water availability will be determined by the current water volume in the system.

Section 6: Charges And Payments

- 6.01 Payments for water use must be received in the District office by the date and time set by the Board of Directors in the Crop Water Distribution

Policy. Postmarks are not acceptable as evidence of timely payment. The District is not responsible for late or lost mail. Failure to pay any water charges will be subject to an interest rate as determined by the Board of Directors in the Crop Water Distribution Policy.

- 6.02 The crop water charges shall be established each year by the Board of Directors as part of the annual Crop Water Distribution Policy and are subject to change at any time. When there is a crop water rate change, pricing changes will occur at the time of the first meter reading following the rate change. For example, if the rate changes on March 1, the meter reading on March 1 will be charged at the new rate. Water charges will not be pro-rated based on the time of the meter reading.
- 6.03 Crop water charges are billed on a monthly basis by account number to the Water User.
- 6.04 Multiple parcels using a common turnout and/or meter that run concurrently will have water use charged based on the Canal Operator's knowledge of water usage for each parcel. The Water Users sharing the turnout and/or meter will be responsible, as a whole, for ensuring the Canal Operator is aware of which parcel is using water. All Water Users sharing the turnout and/or meter will be responsible for the water costs in the event there is a dispute. The District may lien all parcels associated with the shared turnout and/or meter in the event the water costs are not paid. If Water Users would like to request individual turnouts

and/or meters, they may contact the District and have individual turnouts and meters installed at the Water User's expense.

- 6.05 Standby charges are billed on an annual basis with the annual assessments on the County of Madera's property tax bills. Due dates are set by the County of Madera.
- 6.06 Any Water User who believes they have been overcharged, or that their crop water charge contains errors, may contact the District's Operations Department at (559) 673-3514 to attempt to resolve any such issue informally.

If the issue is not resolved informally between the Water User and the Operations Department, the Water User may appeal any crop water charge, or a portion of any crop water charge, on the grounds that the Water User was overcharged, or the crop water charge contains errors, by filing a written request for hearing with the Board Secretary within thirty (30) calendar days of receipt of the water statement. The appeal shall identify: (A) the name of the Water User, (B) the Water User's property (including APN), and (C) the grounds of appeal together with all material facts in support of it. Appeals will be heard by the Board of Directors at the next regular Board of Directors meeting, unless the appeal is received less than seven (7) calendar days prior to the next regular Board of Directors meeting, in which case the appeal shall be heard at the following meeting.

When a hearing is requested, the Board Secretary shall send written notice to the appellant by certified mail, return receipt requested, stating the time and place of the hearing. In the event the appellant refuses to accept receipt of the written notice by certified mail, the hearing will be removed from the Board's agenda, and the appeal will be denied without hearing.

Section 7: Operations And Control Of District Works

- 7.01 All District facilities, including diversion works, canals, head gates, pipelines and other structures, will be operated and maintained by the District. The control and operation of such facilities will be conducted only by the District.

Section 8: Access To Lands

- 8.01 The authorized agents or employees of the District shall have access at all times to all lands receiving water from the District system for the purpose of maintaining or examining the canals and the flow of water therein, inspecting for compliance with applicable state and federal regulations and laws and to determine the acreage and types of crops on irrigable lands within the District.
- 8.02 When the District has an easement for a canal, pipeline or other facility used to transport water across lands not owned by the District, the District has a secondary easement on each side of the canal, pipeline, or facility, and may access that

area for preventative or actual maintenance, repair, cleaning, operation, and control of the canal, pipeline, or facility (California Water Code § 22438 (a)).

Section 9: Basis For Allocation Of Water

- 9.01 In the event that extraordinary water supply circumstance warrant, the Board of Directors may establish terms and conditions for the allocation and distribution of water supplies to prevent undue hardship.

Section 10: Waste Of Water

- 10.01 Water Users wasting water, either willfully, carelessly or on account of defective or inadequate on-farm systems or structures, or because of inadequate preparation of the land for irrigation, may be refused further services immediately. Service will not be continued until the condition or practice is remedied. Early shut-offs by the District to prevent waste and/or unreasonable use by the Water User will result in additional water charges.
- 10.02 Waste, pollution, or other improper use of water shall be reported by the District to the appropriate authorities.

Section 11: Limitations Of Water Elevations

- 11.01 The District shall not be required to raise water to an excessive height in District facilities to provide service to lands, canals, pipelines or other structures of high elevations.
- 11.02 Water Users adding wood or other materials to District facilities to raise water levels will be held liable for the issues and costs these obstructions create including, but not limited to, canal breaks.

Section 12: Pumping From Canals And Streams

- 12.01 All Water Users pumping water from the canals or streams shall be governed in all respects by the Rules and Regulations applicable to Water Users under gravity service.
- 12.02 The District will not be held responsible for any debris which may accumulate in stream or canal flow which may tend to decrease the full operative capacity of, or cause damage to, pumps, filter systems, irrigation systems, or pipelines.
- 12.03 Pumps from canals or streams should have automatic shut-off to protect the pump in the event there are low flows in the canal or stream. The District is not liable for damage to pumps due to low flows, trash, or other foreign objects in the canal or stream. Pumps from canals must also have automatic restart controls to ensure the pumps restart following any power outage.

Section 13: Obstruction Of Canals, Use Of Canals And Right-Of-Ways, And Tampering With And Damage To District Facilities

- 13.01 No person shall enter upon any lands owned, operated or under the control of the District without the express, written permission of the District. No gates or other obstructions across roads and canal banks used by the District shall be installed unless first approved by the District in writing and in accordance with District Standard Specifications. The installation of gates that benefit both the District and the landowner may be subject to cost sharing by the District in accordance with District policies.
- 13.02 Trash, rubbish, debris, fences, equipment, structures, and crops, including vines and trees, or any other thing that actually or potentially interferes with the District's ability to access, operate, or maintain the distribution system, shall be deemed to be an obstruction, and upon notification from the District, the Water User shall immediately remove said obstruction(s). If the obstruction is not removed within a reasonable time, as determined by the District, the District will remove the obstruction and bill the Water User for any costs incurred by the District.
- 13.03 The Water User shall be responsible for keeping turnouts free of trash and debris to ensure adequate water delivery. The District will not be responsible for any damage to machinery,

equipment, motor vehicles or other personal property that is either operated or stored on District right-of-ways.

- 13.04 Any Water User, his or her authorized agent or employee, or any other person who may use the right-of-way or other property of the District for movement of vehicles or machinery, whether authorized or not, shall be responsible to the District for any damage to the District property. If it is necessary for the District to repair such damage, the Water User must pay the costs of said repairs.
- 13.05 Any person entering upon District property does so at his or her own risk and any person using any canal right-of-way for any purpose assumes all risk of doing so and by use accepts responsibility for any damage to District property and for any damage to private property.
- 13.06 Under no circumstances shall the Water User modify a District structure. If such modifications are made, the District shall remove the installation and bill the Water User for any costs incurred.
- 13.07 The canals that have been built by the USBR are under the care, control, and operation of the District. Any person who travels the operating roads without authorization or in any manner interferes with, tampers with, or damages any of the facilities is subject to prosecution.
- 13.08 The District will not be responsible for any loss or damage resulting from open canal or drainage cuts made by the Water User.

- 13.09 No swimming or water-related recreational use of District facilities are permitted.

Section 14: Encroachment Of District's Right-Of-Way And Property

- 14.01 No trees, vines, shrubs, corrals, fences, or any other type of encroachment shall be planted or placed in, on, over, or across any District conduit or any District right-of-way except pursuant to an Encroachment Permit or a License Agreement issued by the District. An Encroachment Permit or License Agreement must be obtained before any trees, crossings, fences, structures, access use, or other encroachments maybe installed upon the District's right-of-ways or facilities. Application for an Encroachment Permit or License Agreement must be made at the District office and shall include payment of a filing fee. It is the District's sole discretion to authorize these permits and agreements.
- 14.02 Any and all encroachments must be approved by the District. All construction must adhere to the District's Standard Specifications and will be done at the sole expense of the landowner and maintained under the supervision and to the satisfaction of the District.
- 14.03 If an Encroachment Permit is granted, the landowner shall be solely responsible for, and shall indemnify and hold the District harmless from, any and all liability for injuries to persons or

damage to property caused by or resulting in any manner from the landowners' exercise of the rights and privileges given in the Encroachment Permit.

- 14.04 All Encroachment Permits are subject to the conditions and specifications delineated on each individual permit.
- 14.05 Issuance of an Encroachment Permit in no way grants a permanent right. If the District determines at any future date that said works or access do, in fact, interfere with its operations, the said works shall be removed at the request of the District. The District's canal or other right-of-way shall be restored to its original condition, at the sole expense of the landowner.
- 14.06 Granting of an Encroachment Permit in no way surrenders or subordinates the Madera Irrigation District's control or supervision over the encroachment and right-of-ways involved.

Section 15: Tampering With Water Controls And Water Theft

- 15.01 No person, other than District employees, shall change, alter, or disturb any valve, gate, weir board, pump or other device used by the District to control the flow of water. Violation of this rule is a criminal act punishable by fine or imprisonment or both.
- 15.02 No person, other than District employees, shall knowingly acquire or attempt to acquire

possession, or knowingly use or attempt to use, any water owned by the District or under its possession and control, except in accordance with these Rules and Regulations and in accordance with any regulation, policy, or order duly adopted by the District. No person shall transfer, sell, or resell District water, including but not limited to water received directly from the District, reclaimed water, and/or recycled water.

- 15.03 District employees are not “water cops”. If a District employee suspects water theft is occurring, the District will immediately call and report the matter to the Madera County Sheriff’s Department. Water theft includes, but is not limited to, any unauthorized taking of District water without a Crop Water Application and/or intentionally disabling or altering District flow meters.
- 15.04 Section 592 of the California Penal Code states:
- (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 and 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.

- 15.05 Any violation may be referred to the Madera County Sheriff's Department and District Attorney for appropriate legal action.

Section 16: Discharges Into District Facilities

- 16.01 All discharges of water into District conveyance or other facilities from any source, including, but not limited to, storm water, irrigation tailwater and filter system flushing, are prohibited unless such discharges have been permitted or otherwise approved by the District in writing.
- 16.02 All discharges of water into District conveyance or other facilities shall only be permitted if they are in compliance with all District, local, state and federal criteria, standards, regulation or laws pertaining to water quality or other pertinent factors.
- 16.03 All permitted discharges of water into District conveyance or other facilities are subject to immediate termination if such termination is necessary to comply with any District, local, state, or federal criteria, standards, regulation or laws.
- 16.04 Water Users who use their on-farm delivery systems to deliver groundwater are responsible

for preventing leakage back into District canals. District canal gates are designed to control flow leaving the canal, not prevent the back flow of water into the canal. Water users may need to install a hub-end or pressure gate to prevent back flow into District canals.

- 16.05 Water Users using agricultural chemicals or other substances in the vicinity of District water conveyance and delivery facilities shall take appropriate actions necessary to prevent over-spray, spillage or any other form of discharge that could contaminate District water supplies. Chemicals and contaminants including grease and oil leaks from irrigation pumps and equipment shall not be added into District facilities due to potential damage to meters and meter boxes and safety of District staff. Chemicals should only be added at landowner owned and operated facilities.
- 16.06 The District shall hold anyone who knowingly or negligently allows any pollutants to be discharged into the District facilities liable for all damages caused by pollutants and the cost of cleanup of all impacted areas.

Section 17: Liability For Damages

- 17.01 Failure to deliver water due to supply or canal capacity may occur from time to time based on the quantity available to the District, either from the USBR or from the District's other sources. In no event shall any liability accrue against the District, or any of its officers, agents or employees for any

damage arising directly or indirectly from the District's failure, refusal or inability to deliver water due to deficiency of water supply, miscalculations in estimating needs, drought, or any other causes.

- 17.02 Any claim for damages allegedly resulting from the District's acts or omissions of its employees requires that a verified claim giving full particulars on date, occurrence, area, crop, extent of damage, etc. be filed by the claimant pursuant to the California Government Tort Claims Act with the General Manager at the District office on a form provided by the District. Claim forms are available at the District office.
- 17.03 The District reserves the right to stop the flow in any channel, pipeline, stream, canal, or any other District facility at any time the District may determine such action to be necessary.
- 17.04 The District will not be liable for any damages to third persons caused by the use of its facilities, equipment, right-of-ways or property by persons other than District employees.

Section 18: Modification; Severance

- 18.01 All of these Rules and Regulations are subject to change as deemed necessary by the Board of Directors.
- 18.02 If any of these Rules or Regulations or any portion thereof is for any reason held to be invalid, unlawful, unconstitutional, or unenforceable in application as to any person or circumstances, the

remainder of these Rules and Regulations shall not be affected and shall be valid and enforceable to the fullest extent permitted by law.

Section 19: Penalty For Non-Compliance

- 19.01 Failure or refusal of any Water User to comply with any of these rules or applicable regulations (“Rules and Regulations”) shall be sufficient grounds for terminating delivery of District water to the lands of such Water User, and water shall not again be furnished until the Water User is in full compliance with all rules and regulations, or as otherwise determined by the Board.
- 19.02 The District reserves the right to use all available legal remedies in connection with the enforcement of these Rules and Regulations.



Attachment C: Measurement Device Documentation

MADERA IRRIGATION DISTRICT

SBx7-7 SUPPLEMENT REPORT

SUBMITTED TO:

**CALIFORNIA DEPARTMENT OF WATER RESOURCES
DIVISION OF STATEWIDE INTEGRATED WATER MANAGEMENT
WATER USE AND EFFICIENCY BRANCH**

DECEMBER 18, 2013

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ATTACHMENTS

- 1 – Proposed Schedule
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1 – INTRODUCTION / BACKGROUND

Purpose of Supplement Report

The Madera Irrigation District (District) is a U.S. Bureau of Reclamation (USBR) water supply contractor that receives water from the Friant Division of the Central Valley Project (CVP). The USBR requires all contractors to prepare a water management plan (WMP) in accordance with criteria established by USBR. The District most recently prepared an updated 5-year plan for 2012. The District prepares annual updates each year in compliance with USBR criteria. A copy of the District's 2012 USBR WMP is attached to this report (Attachment 2). Annual updates are available online at <http://usbr.agwatercouncil.org>.

Water Code §10828 allows agricultural water suppliers subject to the USBR CVPIA/RRA water management plan process to submit their USBR plan for compliance with Senate Bill x7-7 (SBx7-7) provided that: 1) the USBR water management plan has been adopted by the agricultural water supplier and submitted to the USBR within the previous four years, and 2) the USBR has accepted the water management plan as adequate. DWR will accept USBR water management plans that have been accepted as adequate by the USBR within the previous four years but no earlier than January 1, 2009 to satisfy the requirement for preparation of a 2012 AWMP. Agricultural water suppliers that submit their USBR plan must also submit additional documentation to the Department of Water Resources (DWR) for compliance with the SBx7-7 Agricultural Water Measurement Regulations.

This Supplement Report serves as the additional documentation that must be submitted to DWR along with the District's 2012 USBR WMP to comply with the Agricultural Water Measurement Regulations of SBx7-7. SBx7-7 was passed in November 2009 as part of the Delta and Water Reform Legislation package and mandates water conservation, measurement and reporting activities for urban and agricultural water suppliers. SBx7-7 requires agricultural water suppliers to prepare agricultural water management plans and implement Efficient Water Management Practices (EWMP), including water delivery measurement at the field level and volumetric pricing for water that the water supplier delivers to its customers.

The final water measurement regulation prepared by DWR (approved July 11, 2012) requires measurement at the location where the agricultural water supplier transfers control of delivered water to a customer or group of customers. In most cases, the transfer of control occurs at the farm-gate, but the regulation does allow for measurement upstream in a lateral under certain conditions. Regardless of where the measurement is made, the following numeric accuracy standards apply to the volume of delivered water:

- Existing measurement devices shall be certified to be accurate within $\pm 12\%$ by volume.
- New or replacement measurement devices shall be certified to be accurate within $\pm 5\%$ by volume in the laboratory if using a laboratory certification (such as propeller meters) or $\pm 10\%$ by volume in the field if using a device that is non-laboratory certified (such as meter gates).

Note that the required accuracy is by volume. If the measurement device does not totalize the volume delivered, then the water supplier must incorporate flow rate, area and a time factor to calculate the volume delivered and certify the accuracy by volume.

The regulation requires a water supplier to measure water delivery volumes at the individual delivery point or farm-gate, unless measurement is not possible at the farm-gate and must be moved upstream on a lateral because, a) the agricultural water supplier does not have legal access to the delivery points of individual customers (farm-gates) downstream of a point of measurement (such as the lateral head works), or b) the measurement accuracy cannot be met, as approved by an engineer, due to small differentials in water level or large fluctuations in flow rate or velocity that occur during the delivery season at a single farm-gate. If measurement does not occur at the individual farm-gate, the water supplier shall document the criteria used to apportion the volume of water delivered to individual downstream customers.

For existing measurement devices, the regulation provides two options for initial certification of existing accuracy (existing prior to adoption of regulation), and this certification must be submitted to DWR:

- a) Field-testing that is completed on a random and statistically representative sample of the existing measurement device by individuals trained in the use of field-testing equipment, and documented in a report approved by an engineer, with field testing performed for a sample of devices following certain criteria. The sample size recommended by DWR is at least 10% of existing devices, with a minimum of 5, and not to exceed 100 individual devices for any particular device type.
- b) Documentation by field-inspections and analysis completed for every measurement location to demonstrate that the design and installation standards used for its installation meet the $\pm 12\%$ accuracy standard, and that operation and maintenance protocols meet "best professional practices". Field-inspections and analysis protocols shall be performed by trained individuals and documented in a report approved by an engineer.

If an existing water measurement device is determined to be out of compliance, the water supplier shall provide a schedule, budget and finance plan for taking corrective action.

SBx7-7 required a water supplier to implement all required EWMPs, including initial certification of farm-gate volumetric delivery accuracy, by July 31, 2012, an unrealistic deadline considering the water measurement regulation was not finalized until July 11, 2012. As a result, the District is submitting this Supplement Report to document a strategy to confirm measurement accuracy by presenting a schedule, financing plan, and budget to comply with the requirements of SBx7-7 within the next three years.

The District is a conjunctive use district, and water users in the District conjunctively use both surface water from the District and private groundwater to supplement the surface water supply. The District delivery system is used to recharge groundwater and deliver water to the growers. During wet years the District also delivers water to basins to promote groundwater recharge. During dry years the water that was previously stored as groundwater is available to be pumped by growers for irrigation. The District's conjunctive use program is described in detail in the District's AB3030 Groundwater Management Plan.

District Water Measurement

As a CVP contractor, the District already measures water at the individual grower turnout and collects a portion of its revenue based on the quantity of water delivered to its growers. On average, the District collects approximately 60% of its revenue through volumetric charges based on the quantity of water delivered, measured in acre-feet, and billed on a monthly basis. The volumetric rate in 2012 was \$72.50 per acre-foot. The water rate is set each year and is based on a melded rate of the cost of various water supplies to the District.

A small portion of the District growers who have irrigated parcels of less than 6 acres are known as "flat raters". Flat raters are not based on the quantity of water delivered. The rates and estimated water volumes are shown in the Table 1:

Table 1 – 2012 Flat Rate Water Volumes

Parcel Size (Acres)	2012 Flat Rate	2012 Water Volume (Acre Feet)	% of 2012 Total Water Delivery*
0.01 – 1.49	\$308.00	0	0.000%
1.50 – 2.49	\$528.00	77.62	0.070%
2.50 – 3.49	\$716.00	4.23	0.004%
3.50 – 4.49	\$920.00	1.49	0.001%
4.50 – 5.49	\$1,124.00	31.03	0.028%
5.50 – 5.99	\$1,226.00	13.34	0.012%
	Total	127.71	0.116%

* 2012 Total Water Delivery 110,367 acre feet, see Attachment 2 WMP Table 8.

The District has 1,170 total grower turnouts; 1048 are either metered or measured. 684 of the 1,170 turnouts actively received water in 2013. 672 of the 684 active turnouts are either metered or measured. The District uses three different types of measurement devices at the turnout level - propeller meters, magnetic meters (“mag meters”), and rated pump tests. Since the 2012 USBR WMP was prepared, the District has replaced 50 new propeller meters. 632 or approximately 94% of turnouts are measured with propeller meters, 10 or approximately 1.5% of turnouts are measured with mag meters, 30 or approximately 4.5% are measured with rated pump tests. In most cases, the propeller meter is installed in a meter box at least 10 pipe diameters downstream of the turnout structure gate.

Below is a brief explanation of each type of measurement device used by the District:

1. Propeller Meter

This type of meter contains a propeller that protrudes into a pipe connected by a cable or shaft to a meter reading. As the water passes by the propeller, the propeller rotates. The number of revolutions is then calibrated for the pipe size to determine a flow rate, and most propeller meters indicate the flow rate and total volume of water delivered. Propeller meters can be saddle-type meters that attach directly to a pipeline, or an open-flow meter that is installed in a meter box or standpipe. Propeller meters are very common and extensively used. Propeller meters require a certain obstruction-free distance upstream and downstream of the meter to ensure accuracy, and a full pipe at the location of the meter is required. Trash in the water is one of the biggest concerns with propeller meters since any trash that accumulates on the propeller can cause the meter to read inaccurately and can cause significant head loss. Trash screens are installed in front of most turnouts and are routinely cleaned by the ditch tender to prevent meter blockage.

2. Mag Meter

This type of meter works on the physical principle of electromagnetic induction. The magnetic field is applied to the pipe, which results in a potential difference proportional to the flow velocity perpendicular to the flux lines. The digital display on the meter indicates the flow rate as well as volume totalizer. Generally, mag meters are more accurate and require less maintenance than propeller meters because there are no moving parts. However, mag meters are more expensive so they are not as common in the District.

3. Rated Pump

In some locations the District cannot gravity feed surface water to a parcel, and the water user must use a lift pump to deliver water to the field. Some of these locations have mag meters installed on the pump discharge, but where a meter is not

installed, the District uses the "rated pump" to document the amount of water delivered to the grower. The flow rate of each pump has been measured by the District using a C.W.Cox meter to measure the velocity and the District has "rated" the pump with a known delivery flow rate. The flow rate of the pump is multiplied by the time the pump is run to determine the quantity of water delivered for each irrigation. This pump flow rate is checked every few years by the District to verify or refine the "rating" of the pump.

Current Status of Other EWMP Compliance

The District has already implemented the "conditional" EWMPs identified in Water Code §10608.48 that are cost effective and technically feasible. EWMPs already implemented by the District and discussed in the District's 2012 USBR WMP include:

- No. 4: Incentive pricing (*Sec. 3B4*)
- No. 5: Canal lining/piping and regulatory reservoirs (*Sec. 3B5*)
- No. 6: Increase flexibility in water ordering/delivery (*Sec. 3B6*)
- No. 7: Construct and operate spill and tail water recovery systems (*Sec. 3B7*)
- No. 8: Optimize conjunctive use (*Sec. 3B9*)
- No. 9: Automate distribution system structures (*Sec. 3B10*)
- No. 10: Facilitate or promote water user pump testing (*Sec. 3B11*)
- No. 11: Designate a water conservation coordinator (*Sec. 3A2*)
- No. 12: Water management services to customers (*Sec. 3A3*)
- No. 14: Supplier pump efficiency (*Sec. 3A5*)

The EWMPs that do not apply include:

- No. 1: Facilitate alternative land use (*Sec. 3B1*)
- No. 2: Facilitate use of available recycled urban wastewater (*Sec. 3B2*)
 - The City of Madera has been working on a recycled wastewater project that the District, in the future, could participate in once the City's permitting is complete.

The "conditional" EWMPs that were not thoroughly addressed by the District in the 2012 USBR WMP include:

- No. 3: Facilitate the financing of capital improvements for on-farm irrigation systems (*Sec. 3B3*)
 - The District encourages growers to improve on-farm irrigation systems by providing industry resources on the District website:
<http://www.madera-id.org/index.php/information-for-growers>
 - MID will continue to replace antiquated meters for on-farm turnouts. 178 open-flow Badger propeller meters are scheduled for replacement within

the next 3-5 years. The future replacement meters will be paid for by MID or other grant funding if available.

- No. 13: Evaluate the policies of agencies that provide the supplier with water to identify the potential for institutional changes to allow more flexible water deliveries and storage.
 - The District is a USBR CVP contractor and as such, is subject to the water delivery rules and regulations imposed by the USBR. The District has very little ability to impact USBR policies and regulations. The District does stay engaged in issues that affect the District's water supply, such as the San Joaquin River Restoration Settlement, and fights to protect its water supply.

2 – SUPPORTING DOCUMENTATION

Agricultural Water Measurement Regulation Documentation (as applicable)

A. Legal Certification and Apportionment Required for Water Measurement - Lack of Legal Access to Farm-gate

Not applicable - the District has legal access to measure water at the farm-gate.

B. Engineer Certification and Apportionment Required for Water Measurement - Technically Infeasible

Not applicable – the District measures water at each farm-gate with the exception of the flat raters as mentioned above. There are no other turnout locations that are technically infeasible to measure.

C. Description of Water Measurement Best Professional Practices

Description of District Operations

The District has a scheduled demand irrigation delivery system. Water users order water with the District before 2:00 pm for delivery on the following day for the period of time requested. The water user notifies the District of their desired shutoff time before 2:00 pm and shuts off at the requested time on the next day. District ditch tenders oversee all operations. When the ditch tender is unavailable because of system demands, water users are allowed to open and close their own gates at the scheduled time. The water user has been trained by District staff of how far to open the gate for the desired flow rate. Flexibility in start time and shutoff times are explained in detail in the District's Rules and Regulations. Violations of the operating rules and regulations may be cause to suspend water deliveries. A ditch tender coordinates water deliveries every day.

The District has invested a tremendous amount of money in improving the distribution system to allow the District to operate on a scheduled demand system. The District has installed four ITRC Flap Gates to stabilize water levels in the canal system and devices to measure flows in critical sections of the system. The District has three automated flume (overshot) gates with Supervisory Control and Data Acquisition (SCADA) and has plans to install 3 more within the next two years. Also, 14 new automated meters will be installed and connected to the District's SCADA system. The SCADA software allows the District to remotely monitor and control the head of the Big Main system at the Franchi Dam, the Main I Head, and the Main II at Bishel Weir on a real-time basis. The District has also constructed the Lateral 32.2 regulating basin and continues to investigate locations that would improve the efficiency of the District and provide more flexible and consistent deliveries.

A standard turnout consists of a canal gate and an open flow propeller meter installed in a meter box downstream. In locations where pumps are necessary for water delivery and the location is metered, an in-line propeller meter or mag meter is installed on the pump discharge pipe. There is usually more demand for surface water than there is supply, so proper water management is critical.

Collection of Water Measurement Data

The District has a redundant system for collection of water measurement data. Ditch tenders use iPhones as hand held data recorders in the field. All meter readings are entered into an iPhone application which transfers the data into the District's billing software, *Storm Version 2.05 Water Accounting & Management System*. The office staff compares the revolution count to the meter totalizer and adjusts for any errors. Records are submitted daily by the ditch tenders and kept on file for each grower at the District office for a minimum of ten (10) years. *Storm* is a customizable computer program that was specifically developed for use by agricultural districts. *Storm* manages the water measurement data, calculates the volume of water delivered, and prepares monthly invoices for each grower.

Frequency of Measurements

Measurements are recorded at least once a day. At locations where propeller meters and mag meters are used at the farm-gate, the ditch tender records the cumulative meter reading, and the flow rate is verified when the meter reading is taken. At locations where pump tests are used, the ditch tender records the pump start and stop times and applies the pump rate for total volume delivered.

Method for Determining Irrigated Acres

The District has determined the potential irrigable acreage for each parcel using *Storm* and ArcGIS. Non-irrigable acres (i.e. storage yards, roads, etc.) are not included in the total irrigable acreage. The District collects crop information from the Madera County Ag Commissioner each year.

Quality Assurance and Quality Control Procedures

As previously mentioned, the District has quality assurance and quality control (QA/QC) procedures for collecting water measurement data. The ditch tenders enter the data using iPhones and the office staff reviews for inconsistencies and adjusts for any data entry errors.

A range of expected flow rate has been established by the District for each individual turnout. The *Storm* program checks for exceptions if the recorded flow rate is outside the expected range for that turnout and prepares an exception report that is reviewed by District staff for corrective action. *Storm* can also check for exceptions regarding propeller meter readings as noted below.

The District has an online account system for users to view their water usage at each metered location. Water measurement data is posted on the District website within 2 days of measurement, allowing the District water users to track their water use on a nearly real-time basis. Billing information is available by turnout on the website, as well as information from the previous year so growers can compare their water deliveries. This is one of the best means of QA/QC because the growers generally know how much water they are delivering and they do not want to be overcharged.

D. Documentation of Water Measurement Conversion to Volume

The method of converting water measurement to volume utilized by the District depends on the type of water measurement device:

- Propeller Meters – the type of propeller meters used by the District automatically accumulate the volume of water delivered at that location. The District records the flow rate and the cumulative volume meter reading each time a propeller meter is read. If a meter plugs and the accumulation of volume delivered stops in between readings, the recorded flow rate is utilized to estimate the volume delivered over the time frame between readings. The *Storm* software automatically calculates the expected volume that would have been delivered based on the flow rate and time duration, and compares that to the difference in meter readings. Any significant variance is flagged for the District to review and override the meter reading difference if needed.
- Mag Meters – the type of mag meters used by the District automatically accumulate the volume of water delivered at that location. The District records the flow rate and the cumulative volume meter reading each time a mag meter is read.
- Rated Pumps – the volume for the rated pumps is determined by multiplying the standard flow rate for that pump by the time of scheduled delivery. Ditch tenders confirm that on-off times are followed in the field as scheduled.

E. Device Corrective Action Plan Required for Water Measurement

At this time it is unknown what, if any, corrective action the District will need to take to comply with the accuracy requirements of SBx7-7. The final water measurement regulation was adopted so late in the year (July 11, 2012) that the District was unable to evaluate any water measurement devices during the 2012 irrigation season before water deliveries were shut off in September. During the 2013 irrigation season, the SBx7-7 initial supplement report was being drafted. The District has developed the following plan to determine what corrective action may be required:

- The District will field inspect every measurement device within the next three years, averaging over two hundred turnouts per year. A professional engineer

- will develop a work plan for field inspection and analysis of devices, including a check list and protocols for field inspection by District staff.
- A professional engineer will train selected District staff to develop the level of confidence required to perform the field inspection and analysis (e.g., procedures, measurements, identification of measurement device types and features, visual inspection, observations, pictures (if necessary), etc.).
 - District staff will field-inspect and perform analysis of all existing measurement devices in the District utilizing the developed checklist, and prepare a field inspection report. In addition to noting data collection procedures, it is anticipated that District staff will, among other things, identify the specific information for each type of measurement device, such as age and condition, consistency with desired installation parameters, maintenance and replacement procedures, etc.
 - During the irrigation off-season, all meters will be removed from the field and returned to the District's meter room at the MID main office. MID's meter technicians will service, recalibrate, and perform dry bench tests on all open flow propeller meters.

Following the field inspection and analysis each year, a device corrective action plan will be developed for the following year that documents the repair or replacement of devices that require corrective action to meet the accuracy requirements of SBx7-7, and a budget will be developed for implementation by the District during the following winter maintenance season.

It is expected that the majority of the measurement devices currently in use will meet the $\pm 12\%$ accuracy requirement, although it is likely that some devices will be identified that will require corrective action to comply with the accuracy requirements. The District will evaluate the accuracy of the current methodology for rated pumps to determine if propeller meters are required at some locations.

3 – SCHEDULE, FINANCE PLAN, BUDGET

Schedule

The District has developed the attached schedule for inspecting devices and developing a device corrective action plan to comply with SBx7-7 (Attachment 1). Work will begin in 2014 and will be substantially complete by the end of the three year period.

As previously discussed, the District is already in compliance with the “Conditional” EWMPs, many of which are on-going.

Finance Plan

The District’s water measurement program, on-going maintenance and operations (O&M) costs are funded through the District’s water assessments and volumetric charges. Compliance with the “conditional” EWMPs has already been incorporated into the District’s operating budget as discussed in the 2012 WMP. The District’s water measurement improvement program and optimizing conjunctive use make up the majority of the District’s EWMP budget. The District has been implementing these EWMPs on an on-going basis and will continue to do so.

If it is determined that corrective action and installation of a propeller meter is required at a location, the District would pay for the cost of the water meter, and will install and maintain the meter at no cost to the grower.

Budget

The District currently budgets approximately \$30,000 each year for turnout measurement improvements. At this time it is not known how much additional capital will be required to comply with SBx7-7. Each year when the field inspection and analysis is completed on that year’s group of turnouts, a device corrective action plan will be developed that identifies what improvements are required at each turnout and what the estimated cost will be. Specific budgets will be developed each year as part of the device corrective action plan.

MADERA IRRIGATION DISTRICT

SBX7-7 SUPPLEMENT REPORT

ATTACHMENT 1

PROPOSED SCHEDULE

Madera Irrigation District
SBx7-7 Water Measurement Compliance

Proposed Schedule
Device Inspection and Corrective Action Plan Implementation

#	Description	Duration	2013			2014												2015												2016												2017		
			10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3												
Task 1 - Initial SBx7-7 Supplement Report			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
1.1	Preparation of Supplemental Report	Oct - Dec 2013																																										
1.2	Submit Supplement to DWR along with USBR WMP	12/31/2013																																										
Task 2 - Water Measurement Compliance			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
2.1	Develop workplan and field inspection checklist	Jan - Feb 2014																																										
2.2	Field inspect typical devices, refine checklist	Feb - Mar 2014																																										
2.3	Train MID staff for field inspection & analysis	Feb - Mar 2014																																										
2.4	MID staff field inspect turnouts	Oct - Mar																																										
2.5	<i>Typical water devliery season</i>	Mar - Sept																																										
2.6	MID test, recalibrate, repair/replace identified measurement devices	Oct - Mar																																										
2.7	Prepare updated USBR Water Management Plan	9/1/2013 - 11/30/15																																										
2.8	Prepare Corrective Action and Certification Report	10/1/2013 - 11/30/15																																										
2.9	Prepare updated SBx7-7 Supplement Report	11/1/2013 - 12/31/15																																										
2.10	Submit updated USBR WMP and SBx7-7 Supplement	12/31/2015																																										

Attachment D: District Sample Bill



MADERA
IRRIGATION DISTRICT

MADERA IRRIGATION DISTRICT

12152 Road 28 1/4
Madera, CA 93637
(559) 673-3514
Website: Madera-id.org

After Hours Emergency:
(559) 673-9243

WATER STATEMENT

For the Month of	July
Statement Period	7/1/25-7/31/25
Previous Balance	\$21,542.81
Penalty	
Payments/Adjustments	(\$21,542.81)
Current Charges	\$9,459.94
Total Due	\$9,459.94

Water User Name
Water User Address

Account # xxxxx

Canal Name	Canal#/T.O.#	Start Date	Stop Date	Acre Feet	Water Rate	Total
DESMOND	225/12	7/1/2025	7/4/2025	13.25	\$98.00	\$1,298.50
			Water Use for Turnout	13.25		\$1,298.50
24.2	323/10	7/1/2025	7/7/2025	15.08	\$98.00	\$1,477.84
		7/14/2025	7/23/2025	29.37	\$98.00	\$2,878.26
			Water Use for Turnout	44.45		\$4,356.10
24.2-17.0	335/04	7/1/2025	7/1/2025	3.02	\$98.00	\$295.96
		7/6/2025	7/9/2025	7.27	\$98.00	\$712.46
		7/18/2025	7/23/2025	13.43	\$98.00	\$1,316.14
			Water Use for Turnout	23.72		\$2,324.56
24.2-17.0	335/14	7/1/2025	7/6/2025	15.11	\$98.00	\$1,480.78
			Water Use for Turnout	15.11		\$1,480.78

TOTAL BALANCE DUE \$9,459.94

July Acre Feet Use: **96.53** YTD: **314.91**
Original 96.53

PLEASE RETURN THIS PORTION WITH YOUR REMITTANCE

**A PENALTY OF 2% WILL BE ADDED TO THE BALANCE IF PAYMENT IS NOT RECEIVED
BY AUGUST 29, 2025 AT 4:00 P.M. (POSTMARKS NOT ACCEPTED)**

Remit to:

Madera Irrigation District
12152 Road 28 1/4
Madera, CA 93637

July, 2025

Account#	
AMOUNT DUE	\$9,459.94
REMITTANCE AMT: \$	

Attachment E: District Water Shortage Plan

The District is currently working on a District Water Shortage Plan. The District does have policies in place for water shortages as are described in the MID Rules and Regulations, Attachment B. This including operating the distribution system on a restricted basis which means that new water starts may not be made until a shut-off occurs. When the system is running in a capacity mode, there is a maximum 7-day run time on each turnout. The District will maintain a priority list for starts during such periods and starts will follow a first come first serve basis. Water Users need to be aware that water may be available earlier than a start request date and time. This water would be first offered to the Water User at the top of the priority list. If the Water User is unable to take the water at that time, then the water will be offered to the next Water User in line. The District cannot hold the water in the system to accommodate a start order. Water availability will be determined by the current water volume in the system.

When adopted, the plan will be inserted in this Attachment E.

Attachment F: Madera Subbasin Joint Groundwater Sustainability Plan

The entire Madera Subbasin Joint Groundwater Sustainability Plan is available at www.maderacountywater.com

MADERA SUBBASIN

Sustainable Groundwater
Management Act (SGMA)

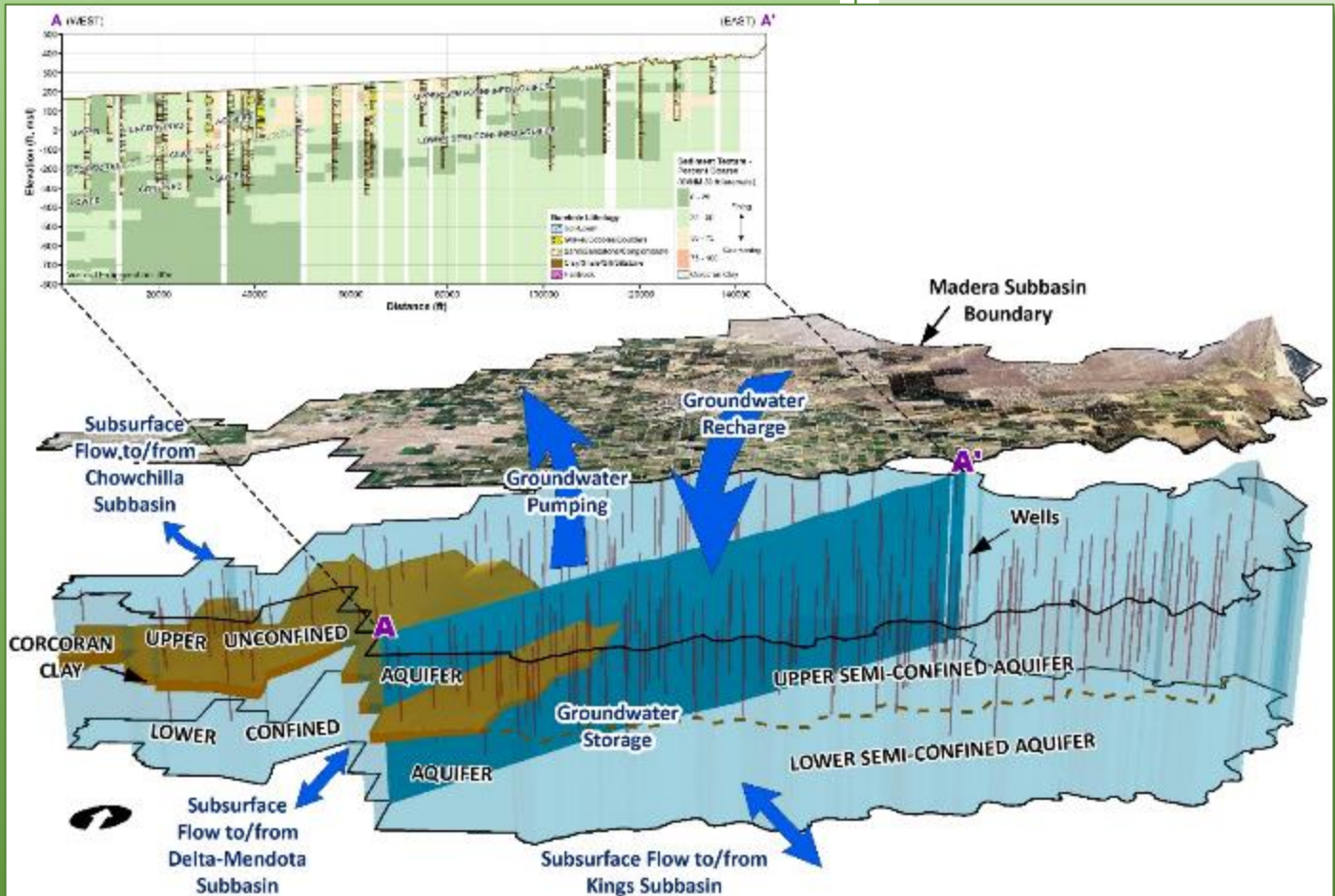
*Joint Groundwater Sustainability
Plan*

January 2020



Prepared by

Dauids Engineering, Inc
Luhdorff & Scalmanini
ERA Economics
Stillwater Sciences and
California State University, Sacramento

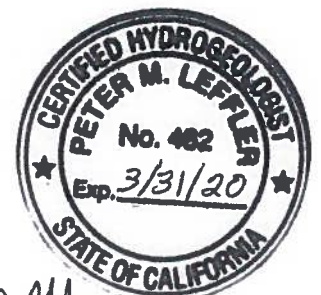


FINAL
Madera Subbasin
Sustainable Groundwater
Management Act
Joint Groundwater Sustainability Plan

January 2020

Prepared For
Madera Subbasin Coordination Committee

Prepared By
Davids Engineering, Inc
Luhdorff & Scalmanini
ERA Economics
Stillwater Sciences and
California State University, Sacramento



Peter Leffler

EXECUTIVE SUMMARY

In September 2014, the California legislature passed the Sustainable Groundwater Management Act (SGMA), establishing new measures for groundwater management and regulation statewide. SGMA provides for local control of groundwater resources while requiring sustainable management of the state's groundwater basins. Under the provisions of SGMA, local agencies must establish governance of their subbasins by forming Groundwater Sustainability Agencies (GSAs) with the authority to develop, adopt, and implement a Groundwater Sustainability Plan (GSP, or Plan) for the subbasin. Under the GSP, GSAs must adequately define and monitor groundwater conditions in the subbasin and establish criteria to maintain or achieve sustainable groundwater management within 20 years of GSP adoption.

The Madera Subbasin is identified by California Department of Water Resources (DWR) as a critically overdrafted basin. Therefore, the Madera Subbasin GSAs must develop, adopt, and submit a GSP (or GSPs) to DWR for the entire Madera Subbasin by January 31, 2020. The Madera Subbasin is managed by seven GSAs, of which four have developed a joint GSP and three have developed individual GSPs. This Madera Subbasin Joint GSP, together with the three individual GSPs, satisfies the requirements established by SGMA and DWR, and outlines the strategy by which the Madera Subbasin GSAs will achieve sustainable groundwater management by 2040.

A pragmatic approach to achieving sustainable groundwater management requires firm understanding of: (1) historical trends and current groundwater conditions in the subbasin (including, but not limited to, groundwater levels, groundwater extraction, and groundwater quality), and (2) what must change in the future to ensure sustainability without causing undesirable results¹ or negatively affecting beneficial uses and users of groundwater, including groundwater dependent ecosystems.

In developing this GSP, a Hydrogeologic Conceptual Model (HCM) and water budgets were created to first characterize historical and current groundwater conditions in the subbasin, with specific focus on vertical interactions between surface water and groundwater. The historical water budget identified historical trends in surface water availability and groundwater extraction and recharge, while the current water budget identified how current land use and cropping has changed groundwater demand while surface water availability did not change. These water budgets were used to calculate the average annual net recharge from the surface water system, defined as the average annual sum of all groundwater extraction (negative) and groundwater recharge (positive) to and from the surface and root zone overlying the Madera Subbasin.

Projects and management actions were then developed with the goal of bringing the current net recharge into balance. A total of 25 projects and management actions are proposed by GSAs in this GSP. Implementation of many projects has begun prior to GSP submittal (11 projects), while many more will be implemented beginning between 2020-2025 (11 projects and management actions). In wet years, projects will provide direct recharge of surplus surface water and in-lieu recharge from strategic and expanded use of surface water through conveyance and storage efforts. Management actions will reduce groundwater pumping through demand management. These projects and management actions may change over the GSP implementation period (2020-2040) as GSAs practice adaptive management as they

¹ California Water Code (CWC) Section 10721(x) defines undesirable results as one of more of the following effects (summarized): chronic lowering of groundwater levels, significant and unreasonable reduction of groundwater storage, significant and unreasonable seawater intrusion, significant and unreasonable degraded water quality, significant and unreasonable land subsidence, and depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

monitor and learn more about groundwater conditions in the Madera Subbasin. In particular, the volume of groundwater pumping required through demand management may increase or decrease depending on the volume of direct recharge or in-lieu recharge provided by projects.

Importantly, this approach identifies the average annual “shortage” (groundwater extraction in excess of groundwater recharge from the surface water system) of water required to recharge the subbasin and balance the average annual pumping. The projects and management actions were developed to fill this shortage, with a preference for projects to the extent that additional surface water is available. This strategy will achieve sustainable groundwater management without relying on subsurface inflows to bring the subbasin into balance. It is expected that subsurface inflows and outflows will decline as the Madera Subbasin and adjacent subbasins all achieve sustainability.

This GSP has been developed by the Madera Subbasin GSAs through extensive outreach and engagement and considers feedback received from local agencies, agricultural water users, municipal water users, Disadvantaged Community (DAC) members, and other stakeholders in the subbasin. Public meetings and workshops have been hosted throughout GSP development, including monthly GSA meetings, Coordination Committee meetings, County Advisory Committee meetings, Madera Irrigation District Groundwater Committee meetings, Madera County Farm Bureau Water Forum meetings, and Madera County Regional Water Management Group meetings (see Section 2.1.5). The Madera Subbasin GSAs have met together regularly, and have also met multiple times with GSAs in adjacent subbasins, sharing data and information on GSP projects to ensure that this Plan will not interfere with the ability of adjacent subbasins to also achieve sustainable groundwater management.

The following sections in this Executive Summary provide a concise overview of the complete Madera Subbasin GSP.

ES-1 INTRODUCTION

Groundwater serves as an important source of supply for agricultural, municipal, domestic, industrial, and environmental beneficial uses throughout the Madera Subbasin². Agriculture in the Madera Subbasin relies on about 500,000 acre-feet of groundwater annually to produce an array of commodities that contribute to the nearly \$2 billion dollar Madera County agricultural economy.³ Groundwater also supports a large portion of Madera County’s population of over 156,000 people⁴ and related industries. The Madera Subbasin underlies approximately 350,000 acres, all within Madera County. Thus, the sustainable management of groundwater in the Madera Subbasin is important for long-term prosperity within Madera County.

The Sustainable Groundwater Management Act of 2014 (SGMA) provides for local control of groundwater resources while requiring sustainable management of these resources. SGMA requires groundwater basins or subbasins to establish governance by forming local Groundwater Sustainability Agencies (GSAs) with the authority to develop, adopt, and implement a Groundwater Sustainability Plan (GSP or Plan). Under this Plan, GSAs must adequately define and monitor groundwater conditions in the subbasin and establish criteria to maintain or achieve sustainable groundwater management within 20 years of GSP adoption.

² Groundwater basin number 5-022.06, part of the San Joaquin Valley Groundwater Basin, as defined by DWR Bulletin 118 (DWR, 2003) and updated in 2016.

³ According to the Madera County Department of Agricultural Weights and Measures, the gross value of all agricultural production in the County was \$1,973,449,000. (2017 Crop and Livestock Report).

⁴ U.S. Census Bureau, 2017 Estimate

To view the entire Madera Subbasin Joint Groundwater Sustainability Plan, visit www.maderacountywater.com

Attachment G: Groundwater Banking Plan

MID does not participate in groundwater banking activities.

Attachment H: Annual Potable Water Quality Report – Urban

The District does not directly serve urban customers.

Attachment I: Notices of District Education Programs and Services Available to Customers

The District holds and participates in landowner educational programs and provides grower resources. Information is available to landowners and the public through many mediums including email, newsletters, brochures, Facebook, Twitter, and Constant Contact email distribution. Information is also available on the District website, www.madera-id.org.

Phone (559) 673-3514
www.madera-id.org

General Manager
Thomas Greci

**Assistant
General Manager**
Dina Cadenazzi Nolan

Legal Counsel
John P. Kinsey



12152 Road 28 1/4
Madera, CA 93637

Board of Directors

Division 1

David Loquaci

Division 2

Tim DaSilva

Division 3

Brian Davis

Division 4

James Erickson

Division 5

Carl Janzen

PRESS RELEASE

For Immediate Release

October 16, 2024

Contact: Thomas Greci, General Manager, (559) 673-3514

MADERA IRRIGATION DISTRICT PREMIERS OUTREACH VIDEO

Madera Irrigation District (MID or District) released a new outreach video at its Board Meeting held on Tuesday, October 15, 2024. The short three (3) minute video helps explain MID's importance in the past, present, and future related to water, water rights, and the community of Madera. It also gives a glimpse of what Special Districts can achieve for their communities.

“The question is frequently asked, what does Madera Irrigation District do exactly? The goal of the outreach video is to answer that question” stated Jim Erickson, MID Board President.

The District encourages everyone to view and enjoy the video. The video can be found [here](#). For more information on MID, please visit www.madera-id.org.

EQIP - WaterSMART Initiative

Opportunities available in Madera and Fresno Counties



What is EQIP-WaterSMART?

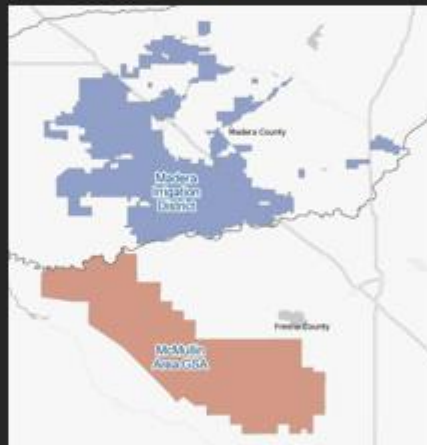
WaterSMART stands for Sustain and Manage America's Resources for Tomorrow and is a program of the Department of Interior's Bureau of Reclamation (USBR).

Through this program, USBR supports water conservation planning and improvement projects by states, tribes, local governments, irrigation or water companies, and other organizations.

In partnership, NRCS offers Environmental Quality Incentives Program (EQIP) funding to improve water conservation and irrigation water use efficiency on eligible farms within the boundaries of a District that has received WaterSMART funding. These farm-scale projects complement the District-wide water conservation projects funded through the USBR. EQIP WaterSMART projects in Madera and Fresno Counties prioritize reducing groundwater withdrawals and improving irrigation efficiency.

Am I eligible?

Farms across Madera and Fresno Counties are eligible for regular EQIP funding. Farmers in WaterSMART boundaries, identified on this map, can compete for the additional funds provided through the WaterSMART Initiative.



How do I apply?

• Fall 2023:
[Submit an application form \(Form 1200\)](#) to your NRCS Service Center
Due date November 3, 2023

• Fall-Winter 2023:
Develop a plan with the NRCS Conservationist

• Early 2024:
Funding decisions announced and contracts awarded

Contact:

Fresno Service Center
559-276-7494

Madera Service Center
559-874-4828

What can I do?

Conservation practices that are eligible for EQIP WaterSMART in California include:

Irrigation Efficiency

- Microirrigation system
- Irrigation ditch lining
- Irrigation pipeline
- Irrigation reservoir
- Irrigation water management

Water Conservation

- Mulching
- Cover crop
- Reduced tillage or No-till
- Well decommissioning
- Windbreaks and Hedgerows
- On-Farm recharge (Madera only)



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California

Natural Resources Conservation Service

nrcs.usda.gov/

Phone (559) 673-3514

www.madera-id.org

General Manager

Thomas Greci

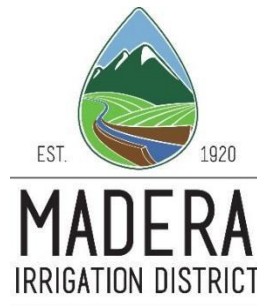
Assistant

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John P. Kinsey



12152 Road 28 1/4
Madera, CA 93637

Board of Directors

Division 1

David Loquaci

Division 2

Rick Cosyns

Division 3

Brian Davis

Division 4

James Erickson

Division 5

Carl Janzen

PRESS RELEASE

For Immediate Release

March 3, 2021

Contact: Thomas Greci, General Manager, (559) 673-3514

MADERA IRRIGATION DISTRICT CONTINUES TO LEAD IN GROUNDWATER SUSTAINABILITY

The Madera Irrigation District (MID or District) is spearheading the way in groundwater management. MID is well ahead of schedule for the goals set forth in its Groundwater Sustainability Plan (GSP), maintaining and enhancing MID's groundwater balance for the benefit of all MID landowners. The GSP outlines projects to be completed within the Madera Subbasin; one key project for MID is the development of additional recharge basins. That project, according to the GSP, was to be implemented in the year 2030. On March 1, 2021, MID acquired two parcels located within the District for this purpose, nine (9) years ahead of schedule. The acquisitions, totaling almost 70 acres, have multiple benefits to the groundwater aquifer and MID's groundwater balance by reducing crop demand and increasing recharge potential.

The parcels were identified for purchase through a successful Request for Proposal (RFP) process in which District landowners could submit their parcels for potential purchase by the District. This concept was a new, innovative approach to parcel acquisition on a willing buyer, willing seller basis that the District developed. "We are excited and pleased about the outcome of the RFP process. This was a creative approach to obtaining parcels and a great success for the District" stated Thomas Greci, General Manager.

Additionally, MID was able to acquire these parcels with no impact to its 2021 Budget. Through diligent fiscal management and budget savings in 2020, MID was able to redirect unspent funds to 2021 capital expenditures which included the purchase of the identified parcels. "MID's Board is proud of the fact that MID can purchase almost 70 acres and enhance our groundwater sustainability, all with no impact to this year's budget and nine years ahead of schedule" stated Jim Erickson, MID Board President.

For more information, please visit the MID website at www.madera-id.org or the office at Madera Irrigation District, 12152 Road 28 ¼, Madera, CA.



PRESS RELEASE

For Immediate Release

May 18, 2021

Contact: Thomas Greci, General Manager, (559) 673-3514
Arnoldo Rodriguez, City Manager, (559) 661-5402

MADERA IRRIGATION DISTRICT AND THE CITY OF MADERA PARTNER ON WATER PROJECT

Groundwater is vital for the community of Madera, particularly in dry years such as 2021. When surface water is limited due to inadequate rainfall and snowpack, Madera is even more heavily reliant on groundwater. To help ensure groundwater sustainability for Madera both now and into the future, projects and programs must be developed and completed. The planned groundwater projects and programs for Madera Irrigation District (MID) and the City of Madera (City) are outlined in the Madera Subbasin Joint Groundwater Sustainability Plan (GSP).

Through partnering efforts, MID and the City are pleased to announce a cooperative groundwater recharge project has recently been constructed at the Madera Municipal Golf Course. This project, which entails a connection between MID's facilities and the water hazard located between Holes #5, #6, and #7, is a result of collaborative efforts between MID and the City. The project not only will allow for groundwater recharge in the water hazard, but will also provide recreational benefits to golfers when the basin is filled.

"MID is excited that this project, which has long been discussed, has come to fruition. It is a win-win-win for the City, MID, and the entire Madera community. We look forward to a year when surface water supplies are sufficient to utilize this new facility" stated Dave Loquaci, MID Board Member.

"The City is proud to partner with MID for this project. Directly advancing the goals of the City and MID by optimizing our groundwater sustainability efforts remains a key priority. We are excited about the direct benefits this project will bring to our community" stated Santos Garcia, Mayor, City of Madera.

For more information on MID, please visit the MID website at www.madera-id.org. For more information on the City of Madera please visit www.madera.gov.



MID Board of Directors and City Council Members next to the newly installed Golf Course Recharge Basin sign. *(from left front row: Council Member Anita Evans, City Mayor Santos Garcia, MID Director Dave Loquaci, MID Director Carl Janzen, City Mayor Pro Tem Artemio Villegas. from back row left: Council Member Jose Rodriguez, MID Director Brian Davis, MID Vice President Rick Cosyns, and MID President Jim Erickson)*

For more information on MID, please visit the MID website at www.madera-id.org. For more information on the City of Madera please visit www.madera.gov.



Photo: City of Madera and MID joint project, successfully recharging groundwater at the Madera Municipal Golf Course

Madera Irrigation District Partners with Stanford University on Groundwater Research and Honoring an Innovative Professor

Madera Irrigation District (MID or District) has partnered with Stanford University on groundwater recharge research. The project involves the assessment of recharge basin performance from both a water quantity and water quality perspective. Stanford University's assistance includes soils analysis, water quality analysis, and grant funding for the installation of multiple monitoring well fields. The goal of this partnership is not only to benefit MID, but to benefit water management agencies across the entire Central Valley of California who share similar challenges.

Leading this pioneering endeavor was Professor Richard "Dick" Luthy. After five decades of dedication to the water profession, Professor Luthy unexpectedly passed away on October 6, 2025. To honor Professor Luthy and his contributions to the water community, MID dedicated one of the recently installed monitoring well fields to him on January 20, 2026. The plaque "honoring his lasting legacy as a mentor, leader, and friend" embodies Professor Luthy as both an expert in his field and a devoted educator.

"It has been an honor to work with Professor Luthy and his team on this project" stated Thomas Greci, MID General Manager. "The information and results from this partnership will be of great value to many agencies in the Central Valley and beyond."



The Madera Irrigation District was joined by Stanford University representatives and Professor Luthy's family for the dedication ceremony on January 20, 2026.



Attachment J: District Agricultural Water Order Form

WATER ORDER

MADERA IRRIGATION DISTRICT

START STOP CHANGE
SWITCH

USER _____

ORDERED BY _____

DATE _____ TIME _____

DITCH _____

T.O. NO. _____

REMARKS _____

DITCHTENDER _____ BY _____

DATE RECEIVED _____ TIME _____

Attachment K: Drainage Problem Area Report

Madera Irrigation District is not identified as a drainage problem area in the report titled “A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley (September 1990).”

Attachment L: Example Crop Water Distribution Policy

**MADERA IRRIGATION DISTRICT
2025 Crop Water Distribution Policy
Approved April 15, 2025**

DISTRICT’S MISSION STATEMENT:

TO OBTAIN AND MANAGE AFFORDABLE SURFACE WATER AND GROUNDWATER SUPPLIES IN A MANNER WHICH WILL ENSURE THE LONG-TERM VIABILITY OF IRRIGATED AGRICULTURE IN THE DISTRICT.

GENERAL INFORMATION:

Operation’s Office Hours:

Monday – Friday	7:00 a.m. – 4:00 p.m.
Saturday, Sunday, Holidays, and After Hours	Contact Canal Operators

Water Orders:

Water Orders Accepted	Immediately
Estimated Date of Deliveries	April 28, 2025 Location Dependent

CROP WATER CHARGES:

Basic Crop Water Charges:

Original District Lands Water	\$98.00 Per Acre Foot
Subordinate Lands Water	\$196.00 Per Acre Foot
Operational Management Water	Not Available
District Conveyance – Lands within District	\$70.00 Per Acre Foot + 15% Losses
District Conveyance – Lands outside District	\$180.00 Per Acre Foot + 15% Losses

Flat Rate Water Charges:

	Total Payment	Down Payment
0.01 acres to 1.49 acres	\$440.00	\$220.00
1.50 acres to 2.49 acres	\$684.00	\$342.00
2.50 acres to 3.49 acres	\$890.00	\$445.00
3.50 acres to 4.49 acres	\$1,112.00	\$556.00
4.50 acres to 5.49 acres	\$1,338.00	\$669.00
5.50 acres to 5.99 acres	\$1,452.00	\$726.00

Flat Rate Water Users payments will be due in accordance with Section 3 of the District’s Rules and Regulations.

PAYMENT FOR CROP WATER:

Payment is due upon receipt of the monthly invoice. Payments must be received in the office by 4:00 p.m. on the last business day of the month and will become delinquent on the following day. Payment due dates are April 30, May 30, June 30, July 31, August 29, and September 30, 2025. Water service will be terminated if payment is not received by 4:00 p.m. on the due date. A 2% penalty will be charged on the unpaid balance without exception. Postmarks are not acceptable as evidence of timely payment. Returned checks will result in a \$30 returned check fee. Thereafter, only cash, cashier’s check, certified check, or money order will be accepted.

***ALL PRICING CHANGES WILL OCCUR AT FIRST METER READING**

San Joaquin Valley Groundwater Basin

Madera Subbasin

- Groundwater Subbasin Number: 5-22.06
- County: Madera
- Surface Area: 394,000 acres (614 square miles)

Basin Boundaries and Hydrology

The San Joaquin Valley is surrounded on the west by the Coast Ranges, on the south by the San Emigdio and Tehachapi Mountains, on the east by the Sierra Nevada and on the north by the Sacramento-San Joaquin Delta and Sacramento Valley. The northern portion of the San Joaquin Valley drains toward the Delta by the San Joaquin River and its tributaries, the Fresno, Merced, Tuolumne, and Stanislaus Rivers. The southern portion of the valley is internally drained by the Kings, Kaweah, Tule, and Kern Rivers that flow into the Tulare drainage basin including the beds of the former Tulare, Buena Vista, and Kern Lakes.

The Madera subbasin consists of lands overlying the alluvium in Madera County. The subbasin is bounded on the south by the San Joaquin River, on the west by the eastern boundary of the Columbia Canal Service area, on the north by the south boundary of the Chowchilla Subbasin, and on the east by the crystalline bedrock of the Sierra Nevada foothills. Major streams in the area include the San Joaquin and Fresno Rivers. Average annual precipitation is 11 inches throughout the majority of the subbasin and 15 inches in the Sierran foothills.

Hydrogeologic Information

The San Joaquin Valley represents the southern portion of the Great Central Valley of California. The San Joaquin Valley is a structural trough up to 200 miles long and 70 miles wide. It is filled with up to 32,000 feet of marine and continental sediments deposited during periodic inundation by the Pacific Ocean and by erosion of the surrounding mountains, respectively. Continental deposits shed from the surrounding mountains form an alluvial wedge that thickens from the valley margins toward the axis of the structural trough. This depositional axis is below to slightly west of the series of rivers, lakes, sloughs, and marshes, which mark the current and historic axis of surface drainage in the San Joaquin Valley.

Water Bearing Formations

Hydrogeologic units in the Madera Subbasin consist of unconsolidated deposits of Pleistocene and Holocene age. These deposits are divided into continental deposit of Tertiary and Quaternary age, and continental deposits of Quaternary age. Continental deposits of Quaternary age include older alluvium, lacustrine and marsh deposits and younger alluvium. The continental deposits of Quaternary age crop out over most of the area and yield probably more than 95 percent of the water pumped from wells.

Although younger alluvium and flood-basin deposits yield small quantities of water to wells, the most important aquifer in the area is the older alluvium. It consists mostly of intercalated lenses of clay, silt, sand, and some gravel.

The lacustrine and marsh deposits (which contain the E-clay) do not crop out in the area but occur within the older alluvium and underlie the western portion of the subbasin at depths ranging between 150 and 300 feet (DWR 1981). These deposits restrict the vertical movement of ground water and divide the water-bearing deposits into confined and unconfined aquifers. Continental deposits of Tertiary and Quaternary age include the Ione Formation which outcrops on the Subbasin's eastern margin. This unit may yield small quantities of water to wells but is not an important aquifer.

The estimated average specific yield of this groundwater subbasin is 10.4 percent (based on DWR San Joaquin District internal data and that of Davis 1959).

Restrictive Structures

Groundwater flow is generally southwestward in the eastern part of the subbasin and to the northwest in the southern portion, away from the recharge area along the San Joaquin River. During 1999, a groundwater mound occurred in the northwest portion of the subbasin with accompanying depressions to the north and south, and a large depression in the subbasin's southeast corner (DWR 2000). Based on current and historical groundwater elevation maps, groundwater barriers do not appear to exist in the subbasin.

Groundwater Level Trends

Changes in groundwater levels are based on annual water level measurements by DWR and cooperators. Water level changes were evaluated by quarter township and computed through a custom DWR computer program using geostatistics (kriging). On average, the subbasin water level has declined nearly 40 feet from 1970 through 2000. The period from 1970 through 1978 showed steep declines totaling about 30 feet. The nine-year period from 1978 to 1987 saw stabilization and rebound of about 25 feet, taking the water levels close to where they were in 1970. 1987 through 1996 again showed steep declines, bottoming out in 1996 at about 45 feet below 1970 levels. Water levels rose about 8 feet from 1996 to 2000. Water levels declines have been more severe in the eastern portion of the subbasin from 1980 to the present, but the western subbasin showed the strongest declines before this time period.

Groundwater Storage

Estimations of the total storage capacity of the subbasin and the amount of water in storage as of 1995 were calculated using an estimated specific yield of 10.4 percent and water levels collected by DWR and cooperators. According to these calculations, the total storage capacity of this subbasin is estimated to be 18,500,000 af to a depth of 300 feet and 40,900,000 af to the base of fresh groundwater. These same calculations give an estimate of 12,600,000 af of groundwater to a depth of 300 feet stored in this subbasin as of 1995 (DWR 1995). According to published literature, the amount of stored groundwater in this subbasin as of 1961 is 24,000,000 af to a depth of ≤ 1000 feet (Williamson 1989)

Groundwater Budget (Type B)

Although a detailed budget was not available for this subbasin, an estimate of groundwater demand was calculated based on the 1990 normalized year and data on land and water use. A subsequent analysis was done by a DWR water budget spreadsheet to estimate overall applied water demands, agricultural groundwater pumpage, urban pumping demand and other extraction data.

Natural recharge was estimated to be 21,000 af. Artificial recharge and subsurface inflow were not determined. Applied water recharge was calculated to be 404,000 af. Annual urban extraction and annual agricultural extraction were estimated as 15,000 af and 551,000 af, respectively. There were no other extractions, and subsurface outflow was not determined.

Groundwater Quality

Characterization. The majority of this subbasin is generally a calcium-sodium bicarbonate type, with sodium bicarbonate and sodium chloride at the western margin of the subbasin along the San Joaquin River (Mitten 1970). TDS values range from 100 to 6,400 mg/L, with a typical range of 200 to 400 mg/L. The Department of Health Services, which monitors Title 22 water quality standards, reports TDS values in 40 wells ranging from 100 to 400 mg/L, with an average value of 215 mg/L. EC values range from 180 to 600 µmhos/cm, with an average value of 251 µmhos/cm (based on 15 wells).

Impairments. There are localized areas of high hardness, iron, nitrate, and chloride. One well is currently undergoing GAC filtration for the removal of EDB/DBCP (Glos 2001).

Water Quality in Public Supply Wells

Constituent Group¹	Number of wells sampled²	Number of wells with a concentration above an MCL³
Inorganics – Primary	44	0
Radiological	44	0
Nitrates	43	1
Pesticides	46	3
VOCs and SVOCs	45	0
Inorganics – Secondary	44	7

¹ A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).

² Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.

³ Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Characteristics

Well yields (gal/min)		
Municipal/Irrigation	Range: 40 – 4,750	Average: 750 – 2,000
Total depths (ft)		
Domestic		
Municipal/Irrigation	Range: 100 - 600	

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
DWR (incl. Cooperators)	Groundwater levels	378 Semi-annually
Department of Health Services (including cooperators)	Title 22 water quality	127 Varies

Basin Management

Groundwater management:	Discussions taking place between purveyors to create draft AB3030 Plan.	
Water agencies		
Public	Gravelly Ford W.D., Madera I.D.; Root Creek W.D.	
Private	None	

References Cited

- California Department of Water Resources (DWR), San Joaquin District. Unpublished Land and Water Use Data.
- _____. Well completion report files.
- _____. 1981. *Depth to Top of Corcoran Clay*. 1:253,440 scale map.
- _____. 1995. Internal computer spreadsheet for 1990 normal computation of net water demand used in preparation of DWR Bulletin 160-93.
- _____. 2000. *Spring 1999, Lines of Equal Elevation of Water in Wells, Unconfined Aquifer*. 1:253,440 scale map sheet.
- Davis, GH, Green, JH, Olmstead, SH, and Brown, DW. 1959. *Ground Water Conditions and Storage Capacity in the San Joaquin Valley, California*. US Geological Survey Water Supply Paper No. 1469. 287p.
- Glos, Kurt., Water Quality Specialist II, City of Madera. 2001. Response to DWR questionnaire. March 14.
- Mitten, HT, LeBlanc, RA, and Bertoldi, GL. 1970. *Geology, Hydrology, and Quality of Water in the Madera Area, San Joaquin Valley, California*. USGS. Open-File Report 6410-03.
- Williamson, Alex K, Prudic, David E, and Swain, Lindsay A. 1989. *Groundwater flow in the Central Valley, California*. US Geological Survey Professional Paper 1401-D. 127 p.

Additional References

California Department of Water Resources (DWR). 1980. Bulletin 118-80, *Ground Water Basins in California*.

_____. 1994. Bulletin 160-93. *California Water Plan Update, Vol. 1*.

Errata

Changes made to the basin description will be noted here.

Attachment N: Category Definitions

MADERA IRRIGATION DISTRICT
Category Definitions
“Exhibit D”

In 1978, the Madera Irrigation District Board of Directors, through Resolution #26-78, established land categories to equalize the assessments within the District to reflect the benefits provided by the District. Within these categories, full cash values were determined by the District Assessor. These values were last updated in 1981 by Resolution #24-81. The Madera Irrigation District Board of Directors re-established the Category Definitions by Resolution No. 2014-BOE1 on September 16, 2014. Definitions for land categories are as follows:

ORIGINAL DISTRICT LANDS

Rural Lands – Category 1: Full cash value per acre: \$940
Assessed value per acre: \$235

These lands are primarily used for commercial and industrial purposes. The size of any parcel may vary from a fraction of an acre and upward and may include an entire parcel or a portion of a parcel. Parking areas, storage areas, ponding areas and other areas directly connected to the industrial or commercial parcel will be included in this category.

Rural Lands – Category 2: Full cash value per acre: \$780
Assessed value per acre: \$195

Land developed for agricultural use where Madera Irrigation District water service is available.

Rural Lands – Category 2A: Full cash value per acre: \$780
Assessed value per acre: \$195

Lands developed for agricultural use where Madera Irrigation District water service is available. The 2A lands are not able to receive water until District delivery obligations have been met with the Category 2 Lands.

Rural Lands – Category 3: Full cash value per acre: \$600
Assessed value per acre: \$150

Lands developed for agricultural use where Madera Irrigation District water service is not available. All lands used exclusively for residential purposes, small and/or large acreage, will be included in Category 3 provided a residence is in existence. This category does not include residential lands within the City of Madera.

Rural Lands – Category 3A: Full cash value per acre: \$600
Assessed value per acre: \$150

Lands developed for agricultural use where Madera Irrigation District water service is not available. All lands used exclusively for residential purposes, small and/or large acreage, will be included in Category 3 provided a residence is in existence. This category does not include residential lands within the City of Madera. In the event that MID service becomes available to this land, it will be classified as Category 2A.

Rural Lands – Category 4: Full cash value per acre: \$180
Assessed value per acre: \$ 45

Lands that are undeveloped, non-irrigated, and vacant. This category includes parcels or portions of parcels in sloughs, riverbeds, borrow pits, County roads not deeded to the County of Madera, and subdivision lots until the subdivision has installed utilities and/or streets. Small parcels from a fraction of an acre or upward which are undeveloped, non-irrigated, and vacant and are located in the City or County of Madera shall be included in this category.

City Lands- Category 5: Unit Rate – First 43,560 square feet: \$.80 per sq. ft., and \$.40 per sq. ft. for the remaining square footage if parcel is one+ acres.

Residential lands within the City of Madera. These lands are assessed on the square footage of the parcel.

Rural Lands – Category 7: Full cash value per acre: \$780
Assessed value per acre: \$195

Lands that were previously Category 2, but have met the criteria set forth by the Board of Directors to become part of the “Non-irrigated Program”. A \$10.00 per acre is charged annually in addition to the assessment charges. If a landowner should desire to no longer participate in the non-irrigated program but at a later date request to enter into the program again, the land will have to lay fallow for three consecutive years before the request will be considered. The landowner will be subject to all fees during that time.

Subordinate District Lands

Subordinate District Lands were annexed into the District after the original District boundary was established. The lands are not charged an annual assessment during the annual assessment process which is in accordance with their Subordinate Annexation Agreement with the District.

Subordinate Lands – Category S2: Full cash value per acre: \$780
(Original) Assessed value per acre: \$195

Land developed for agricultural use where Madera Irrigation District water service is available. These lands receive water during years the Board of Directors has declared surplus District water or when other outside water is available. These lands are assessed for the 9d Benefit Assessment during the annual original District assessment process.

Subordinate Lands – Category S2A: Full cash value per acre: \$780
Assessed value per acre: \$195

They are developed for agricultural use where Madera Irrigation District water service is available. The Category S2A lands are not able to receive water until District delivery obligations have been met with the Category S2 lands. These lands are assessed for the 9d Benefit Assessment during the annual original District assessment process.

Subordinate Lands – Category S3: Full cash value per acre: \$600
(Original) Assessed value per acre: \$150

Lands developed for agricultural use where Madera Irrigation District water service is not available. In the event that MID service becomes available to this land, it will be classified as Category S2. Category S3 are assessed for the 9d Benefit Assessment during the annual original District assessment process.

Subordinate Lands – Category S3A: Full cash value per acre: \$600
Assessed value per acre: \$150

Lands developed for agricultural use but do not have Madera Irrigation District water service available. In the event that MID service becomes available to this land, it will be classified as Category S2A. Category S3A are assessed for the 9d Benefit Assessment during the annual original District assessment process.

Attachment O: Aquatic Pesticides Application Plan

O-1 Aquatic Pesticides Application Plan (APAP)

O-2 APAP Annual Report



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MADERA

IRRIGATION DISTRICT

Aquatic Pesticides Application Plan (APAP)

Water Quality Order

No. 2013-0002-DWQ

Madera Irrigation District
12152 Road 28 ¼
Madera, CA 93637-9119
(559)673-3514 Office
(559)673-0564 Fax

April 12, 2016

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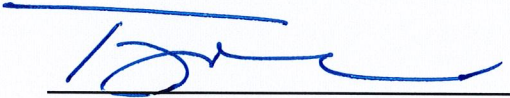
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Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."



Thomas Greci
General Manager
Madera Irrigation District

1. EXECUTIVE SUMMARY

Madera Irrigation District (MID or District) has prepared this Aquatic Pesticides Application Plan (APAP) in accordance with Water Quality Order No. 2013-0002-DWQ (Order) for the Statewide General National Pollutant Discharge Elimination System (NPDES) Permit for Residual Aquatic Pesticide Discharges to Waters of the United States from Algae and Aquatic Weed Control Applications (General Permit # CAG990005).

The purpose of this APAP is to provide detailed information of the use of aquatic pesticides in District facilities to control the growth of aquatic and submerged weeds. This APAP provides a description of the facilities where pesticides will be applied, a description of the targeted weeds, a list of aquatic pesticides used, and other pertinent information as described in Section 5 of the Order. This APAP is intended to be a living document that is revisited and updated on an annual basis to maintain compliance with General Permit # CAG990005 and any amendments.

MID contact person: Ramon (Eddie) Mendez

Email: rmendez@madera-id.org

Phone: (559) 673-3514 Ext. 209

2. DESCRIPTION OF WATER SYSTEM

MID operates and maintains an irrigation water distribution system of approximately 300 miles of open flow canals and 150 miles of pipelines. The MID distribution system consists of the Madera Canal and Irrigation Company (MC&I) distribution system and the United States Bureau of Reclamation (USBR) distribution system. The MC&I and USBR distribution systems are comprised of four primary canal systems, the 6.2, 24.2, 32.2, and the Big Main. All other lateral canals receive water from one or more of the primary canal systems. The Big Main receives water from Hidden Dam by way of the Fresno River or 18.8 by way of the Madera Canal. The 6.2, 24.2, and 32.2 receive water from Friant Dam by way of the Madera Canal. The Madera Canal is operated by the Madera-Chowchilla Water & Power Authority.

Both the MC&I and Bureau distribution systems require the application of aquatic pesticides as a method of weed control. The majority of the open canals that comprise each system require the application of one or more aquatic pesticides. The District also utilizes the Fresno River, Cottonwood Creek, Dry Creek, and Berenda Creek to convey water.

3. DESCRIPTION OF THE TREATMENT AREA

The four primary canal systems, the 6.2, 24.2, 32.2, and the Big Main, are shown on the MID Distribution System Map in Appendix A. The majority of application areas contain portions of open canal and pipeline. All portions of a canal may or may not be treated during the course of the irrigation season depending upon the weed growth and effectiveness of the aquatic pesticide application.

4. TARGETED WEEDS

The District targets a variety of weeds that may be submerged, floating, or emergent/shoreline. Table 1 provides the names and descriptions of the weeds controlled utilizing aquatic pesticides.

TABLE 1: WEEDS TO BE CONTROLLED

Weed Name	Description
Filamentous Algae (Various species)	Algae cells that form threads into a mat-like surface. Algae can be submerged and/or floating
American Pondweed (<i>Potamogeton nodosus</i>)	Perennial plant with oval shaped floating and submerged leaves
Bulrush (<i>Scirpus spp</i>)	Perennial grass-like plant with tall stems and flowers near the tip of the stem
Cattail (<i>Typha spp</i>)	Perennial plant with very long leaves and cigar-shaped flowers
Horned Pondweed (<i>Zannichellia palustris</i>)	Annual plant with long, linear, thread-like submerged leaves
Sago Pondweed (<i>Potamogeton pectinatus</i>)	Perennial plant with very thin filament-like submerged leaves
Spike Rush (<i>Eleocharis spp</i>)	Annual plant, typically short with no leaves and thin sheaths

Failure to adequately control weed growth in District facilities has detrimental effects. Weed growth significantly limits the amount of water that can be conveyed through District facilities. Substantial weed growth also clogs irrigation structures, increasing the risk of flooding and canal breaks. Consistent and effective weed control will not only improve the District's ability to serve its customers, it also provides cleaner water and improves public safety during high flows. Weed growth also causes maintenance issues for farmers when it clogs pumps, filters, and other irrigation equipment. This discourages the use of surface water.

5. AQUATIC PESTICIDES USED AND APPLICATION METHOD

MID uses various aquatic pesticide types for weed abatement. Table 2 provides the names and descriptions of the aquatic pesticides and adjuvants used, along with their respective application methods.

TABLE 2: AQUATIC PESTICIDES USED

Active Ingredient	Aquatic Pesticide	Application Method
Acrolein	Magnacide H	Gas injected into irrigation system
Copper Ethanolamine Complex	Captain Liquid Copper Algaecide	Gravity drip system or metered injection system
Copper Sulfate Pentahydrate	Copper Sulfate	Slug method
Copper Ethylenediamine Complex, Copper Triethanolamine Complex	Nautique	Surface sprayed or injected into irrigation system
Diquat Dibromide	Reward	Surface sprayed
Endothall	Cascade	Surface sprayed or injected into irrigation system
Fluridone	Sonar Genesis	Surface sprayed or injected into irrigation system
Glyphosate	AquaNeat, Rodeo	Surface sprayed
Imazamox	Clearcast	Surface sprayed
Penoxsulam	Galleon SC	Surface sprayed
Phosphatidylcholine, Methylacetic Acid, Alkyl Polyoxyethylene Ether	LI 700 (<i>Adjuvant</i>)	Surface sprayed
Hydroxy Carboxylic Acid, Phosphoric Acid, and Ammonium Sulfate	Quest (<i>Adjuvant</i>)	Surface sprayed

Note: Table 2 will be updated if the District changes aquatic pesticides.

6. AQUATIC PESTICIDE APPLICATION FACTORS

The primary goal is to prevent weed overgrowth whenever possible, which is accomplished through the application of aquatic pesticides. During the irrigation water season, MID facilities are visually inspected. When any type of significant weed growth is identified, it is scheduled for treatment.

The threshold for what is considered significant growth can vary between facilities with different cross sectional areas, lengths, and waterline relative to the canal bank. In general, a location will be scheduled for treatment as soon as small patches of weeds are found throughout a particular canal section. This is typically accomplished in conjunction with targeting weeds while they are still in their juvenile phase. By targeting weeds in this manner, the applicator is able to effectively treat the District facilities and use a smaller quantity of aquatic pesticides.

7. GATES AND CONTROL STRUCTURES MAINTENANCE

Gates and control structures are inspected frequently during the season and at least once in the irrigation off season when there is no running water in the distribution system. The number of locations that are serviced varies each year and is dependent upon weather conditions and the length of the irrigation water season. In urgent cases, the repair/replacement of gates and control structures can be done during the irrigation water season. Where applicable, the District will close gates and/or structures that would unintentionally discharge treated water into adjacent water bodies.

8. EXCEPTION PERIOD

MID does not have a Section 5.3 Policy seasonal exception at this time. The District is currently in the process of obtaining a seasonal exception for the use of Copper by public entities. The desired exception period is from the months of March through October. Once an exception is granted by the State Water Resources Control Board, MID will be allowed to temporarily exceed residual copper limitations.

9. MONITORING PLAN

Aquatic pesticide application in MID facilities is in accordance with the regulations of the United States Environmental Protection Agency (USEPA), California EPA (Cal/EPA), Department of Pesticide Regulation (DPR), and the Madera County Department of Agriculture. The pesticide application log shown in Appendix C will be kept by the applicator for each aquatic pesticide application.

The log will contain a minimum of the following criteria:

- 1) Date and start/stop time
- 2) Location
- 3) Name of applicator
- 4) List of gates or controls structures in the treatment area that may discharge to surface waters, if applicable.
- 5) Time of gate or control structure closure and reopening, if applicable, including calculations used to determine closure and reopening times
- 6) Water temperature
- 7) Flow or level of water body
- 8) Aquatic pesticide application rate and concentration
- 9) Visual monitoring assessment
- 10) Certification that the applicator followed the APAP

Samples shall be collected from a minimum of six application events for each active ingredient in each environmental setting (flowing water and non-flowing water, where applicable) per year, except for glyphosate. In the event that there are less than six application events in a year, samples shall be collected during each application event for each active ingredient in each environmental setting (flowing water and non-flowing water, where applicable).

If the results from six consecutive sampling events show concentrations that are less than the receiving water limitation/trigger for an active ingredient in an environmental setting, sampling shall be reduced to one application per for that active ingredient in that environmental setting. If the yearly sampling event shows exceedance of the limitation/trigger for an active ingredient in an environmental setting, then sampling shall return to six application events for that active ingredient in each environmental setting. For glyphosate, samples shall be collected from one application event from each environmental setting (flowing water and non-flowing water, where applicable) per year. A set of three samples will be collected for each representative location.

- Background Monitoring – Background samples shall be collected upstream at the time of the application event, or they may be collected at the treatment area, just prior (up to 24-hours in advance of application) to the application event.
- Event Monitoring – Event monitoring samples shall be collected immediately downstream of the treatment area in flowing waters or adjacent to the treatment area in non-flowing waters, immediately after the application event or shortly after application, but after sufficient time has elapsed such that treated water will have entered the adjacent or downstream area
- Post-Event Monitoring – Post-event monitoring samples shall be collected within the treatment area within one week after application.

A minimum of the following records shall be kept for each representative sample:

- a) Date and time
- b) Exact place
- c) Name(s) of individual(s) who performed the sampling
- d) Date the analysis was performed
- e) Names(s) of individual(s) who performed the analysis
- f) Analytical techniques or methods used
- g) Results of each analysis

These records are organized in Appendix D.

10. PROCEDURES TO PREVENT SAMPLE CONTAMINATION

Samples shall be collected upstream of potential sources of contamination and will not be in close proximity with application equipment, containers, related vehicles, and protective equipment. Sampling equipment will be thoroughly cleaned before and after each sampling trip, including between samples. Decontamination shall be performed with a detergent that does not leave a residue on sampling equipment, then triple-rinsed with uncontaminated water. The rinse water shall be disposed away from the sampling location.

11. BEST MANAGEMENT PRACTICES (BMPs)

A. SPILL PREVENTION AND CONTAINMENT

District applicators are required to take the necessary precautions ensure the safe handling and transportation of each aquatic pesticide. Application equipment and vehicles are regularly inspected and maintained to identify potential sources or unintended chemical discharges. When applicable, chemicals are mixed at the District's yard prior to visiting the application sites.

In the event of an aquatic pesticide spill District staff will prevent the contaminated water from reaching adjacent water bodies wherever feasible. The use of absorbent granules and pads will be deployed as needed. The District will report spills as required by the local, state, and federal regulations.

B. AQUATIC PESTICIDE APPLICATIONS

All pesticide applicators must either be licensed by the DPR with a valid Qualified Applicator Certificate (QAC) or work under the supervision of someone who is licensed. Qualified applicators will ensure that all equipment is regularly maintained, that application rates are within product label specifications and regulatory requirements, and that only the targeted plants are treated.

Prior to any application of aquatic pesticides, a qualified applicator will visually inspect a site for weed growth. If weed growth has exceeded the acceptable tolerances, the qualified applicator will determine the appropriate weed treatment. The qualified applicator may also determine the weed treatment based upon the site history and anticipated weed growth.

C. STAFF EDUCATION PLAN

In accordance with the State of California Department of Pesticide Regulation, employees with a Qualified Applicator Certificate are required to maintain 20 hours of continuing education every two years for certificate renewal.

D. PUBLIC NOTICE OF APPLICATIONS

Each calendar year, the District shall notify potentially affected farmers and agencies prior to the first application of aquatic pesticides.

The notifications shall contain a minimum of the following information:

- I. Statement of intent to apply aquatic pesticide(s)
- II. Name of pesticide(s)
- III. Purpose of use
- IV. Approximate time period and expected locations of use
- V. Applicable water use restrictions and precautions during treatment
- VI. Contact information for interested persons to obtain additional information

E. FISH KILL PREVENTION MEASURES

MID canals are drained on an annual basis after water deliveries are completed. The canals typically remain dry for at least four months a year. As a result the canals are not suitable habitat for fish, and fish kills within the canals are unlikely. To prevent fish kills in the downstream adjacent water bodies, aquatic pesticide applications will be made as far as possible upstream of the discharge location. In general, it is expected that the residual amounts of aquatic pesticides present in the discharged water is not high enough to cause significant fish kills.

F. WEATHER CONDITIONS

Weather conditions will be checked by the qualified applicator before each aquatic pesticide application. The applicator will apply aquatic pesticide during favorable weather conditions to minimize environmental hazards and allow for the effective treatment of weeds. For example, the applicator will not apply pesticide in rainy or windy conditions to avoid pesticide runoff and overspray outside of the target area.

G. EVALUATION EFFECTIVENESS

The effectiveness of BMPs will be evaluated during the aquatic pesticide applications and at the end of each irrigation water season. The water quality data will be reviewed as part of the evaluation process. If aquatic pesticides are detected, the BMPs will be reviewed and modified as needed. The effectiveness of aquatic pesticides, efficiency of application methods, and field staff organization will also be analyzed annually.

In addition to the aforementioned BMPs the following BMPs are specific to the application.

H. ACROLEIN AND COPPER APPLICATIONS

The acrolein and copper will be applied as far as possible upstream from potential points of discharge into rivers or creeks.

I. DIQUAT DIBROMIDE & GLYPHOSATE APPLICATIONS

The pesticide will be applied only when the wind speed is between 2 and 10 miles per hour. The QAC will setup equipment to produce a large droplet size in order to avoid pesticide drift. An application schedule will be designed to treat small areas at one time, in order to avoid large amounts of decaying vegetation and potential depletion of dissolved oxygen.

12. ALTERNATIVE CONTROL METHODS

I. NO ACTION

Not controlling the weed and algae population within MID canals is not a feasible alternative. The District's ability to deliver agricultural water to farmers will be severely diminished and impacts would be manifested in reducing agricultural production in Madera County. The increased presence of algae in the distribution system will reduce the volume of water that can be delivered and decrease the ability to accurately control water deliveries. Without the ability to control algae growth in MID canals and pipelines, the implementation of highly water efficient irrigation methods employed by farmers within MID will not be possible.

II. PREVENTION

MID regularly maintains its canal system when dry through sloping and dipping the bottom and sides of the channels, which includes sediment removal. As a result some aquatic weeds will generally take longer to return due to the soil disturbance and the removal of sandy deposits. MID is also testing pre-emergent aquatic pesticides in dry canals before the start of the water delivery season. These aquatic pesticides are designed to inhibit the growth of aquatic weeds during the water delivery season. Pre-emergent pesticides will continue to be used in canals when found to be effective.

III. MECHANICAL OR PHYSICAL METHODS

The District utilizes mechanical means, including an excavator and grader/sloper, to remove weeds. However, various areas of the distribution system are not easily accessible or do not provide adequate room for safe equipment operation. The excavator and grader/sloper are necessary equipment for other District maintenance operations and pipeline construction projects. As a result, the equipment is frequently unavailable for daily weed removal. The growth of emergent or shoreline weeds can also be controlled utilizing a tractor with a mower attachment. Mowing is done 3-4 days per week and is limited to locations that are accessible by tractor.

At control structures, trash screens, and road crossings, manual removal of weeds is employed. Manual removal of weeds along canal banks and along the water surface is inefficient and very expensive. In the past the District also made an effort to utilize chaining as a method of weed removal, but this method was too expensive to be implemented District-wide.

IV. CULTURAL METHODS

District applicators monitor weed and algae populations to determine optimum application periods. By making applications during specific weed and algae growth stages, a reduced application rate is required to maintain the population below the desired threshold. Due to the nature of the on demand water distribution system, it is typically not feasible to manage canal water levels as a method of weed or algae control.

V. BIOLOGICAL CONTROL AGENTS

Biological control methods such as fish, goats, and sheep are not feasible for widespread use in or around District canals. Given that the canal system is typically drained for at least four months per year, it does not provide suitable habitat for fish. Goat and sheep grazing for emergent and terrestrial weeds is limited by the lack of fencing limits, vehicle traffic, and high maintenance costs.

VI. ALGAEICIDES AND AQUATIC HERBICIDES

Due to the very limited feasible alternatives mentioned in the previous sections, MID has decided to continue to use aquatic pesticides as a primary method of treating weed and algae populations.

1) APPLICATION METHODS

The district applies aquatic pesticides based on manufacturer recommendations. These methods are typically unobtrusive and require only one or two applicators in a single vehicle along a canal bank. Table 2 includes the application methods used for each aquatic pesticide.

2) DECISION MATRIX

Due to the variety of aquatic pesticides applied, and various factors that influence applications (canal flow, temperature, target weeds etc.) it is not feasible to apply a traditional decision matrix. The site conditions can vary significantly each day, which requires diligent evaluation by district applicators.

APPENDICES

Appendix A – MID Distribution System








Appendix B – Water Quality Sample Sites

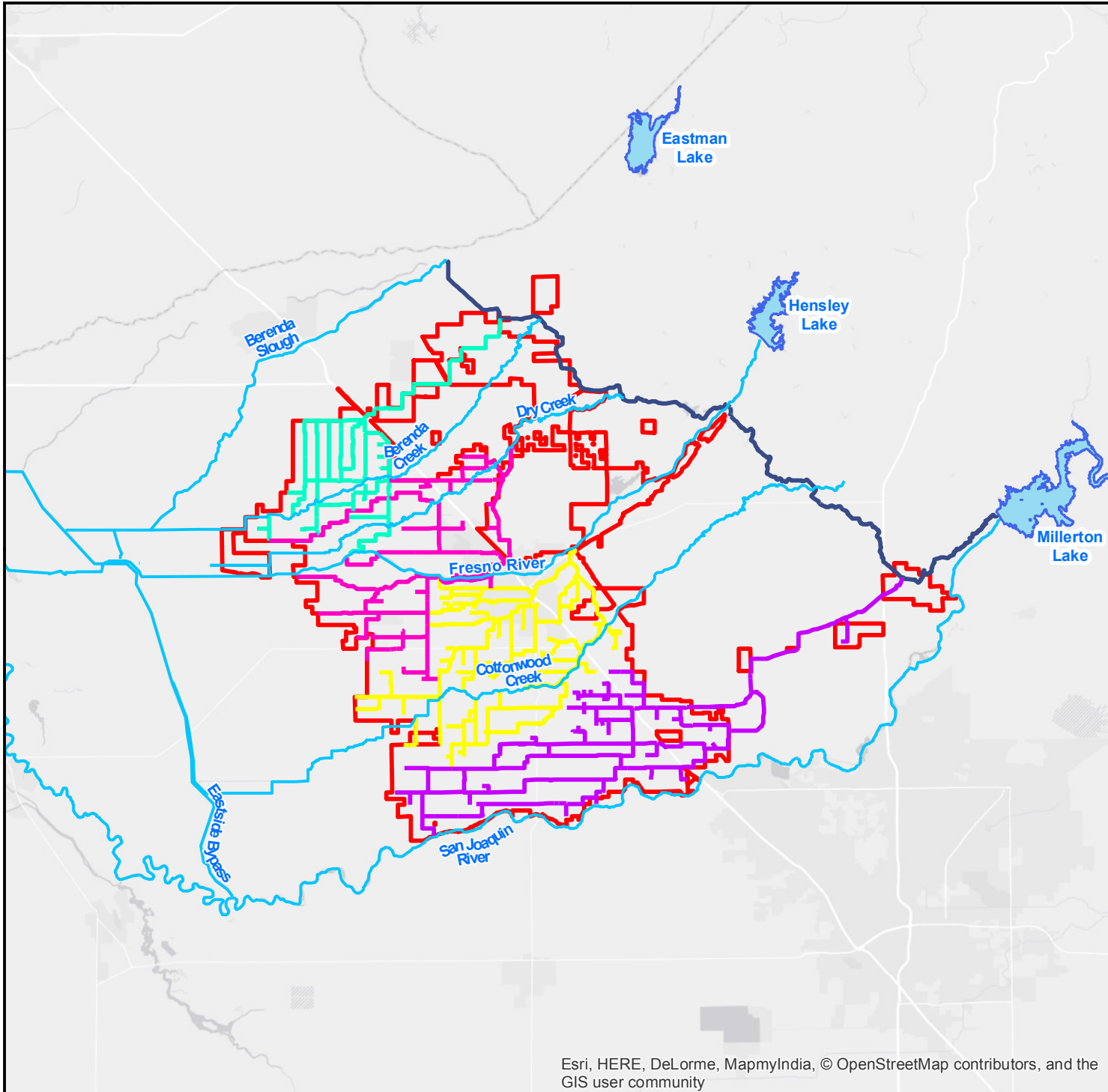
Appendix C– Aquatic Pesticides Application Log

Appendix D – Aquatic Pesticides Field Monitoring & Sampling Form

Appendix E – Sample Public Notice Letter

Madera Irrigation District Distribution System

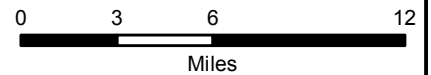
-  Waterways
-  Madera Canal
-  Big Main System
-  32.2 System
-  24.2 System
-  6.2 System
-  Madera ID



MADERA
IRRIGATION DISTRICT

Date: 2026
4/12/2016









Author: Engineering
Ramon E Mendez

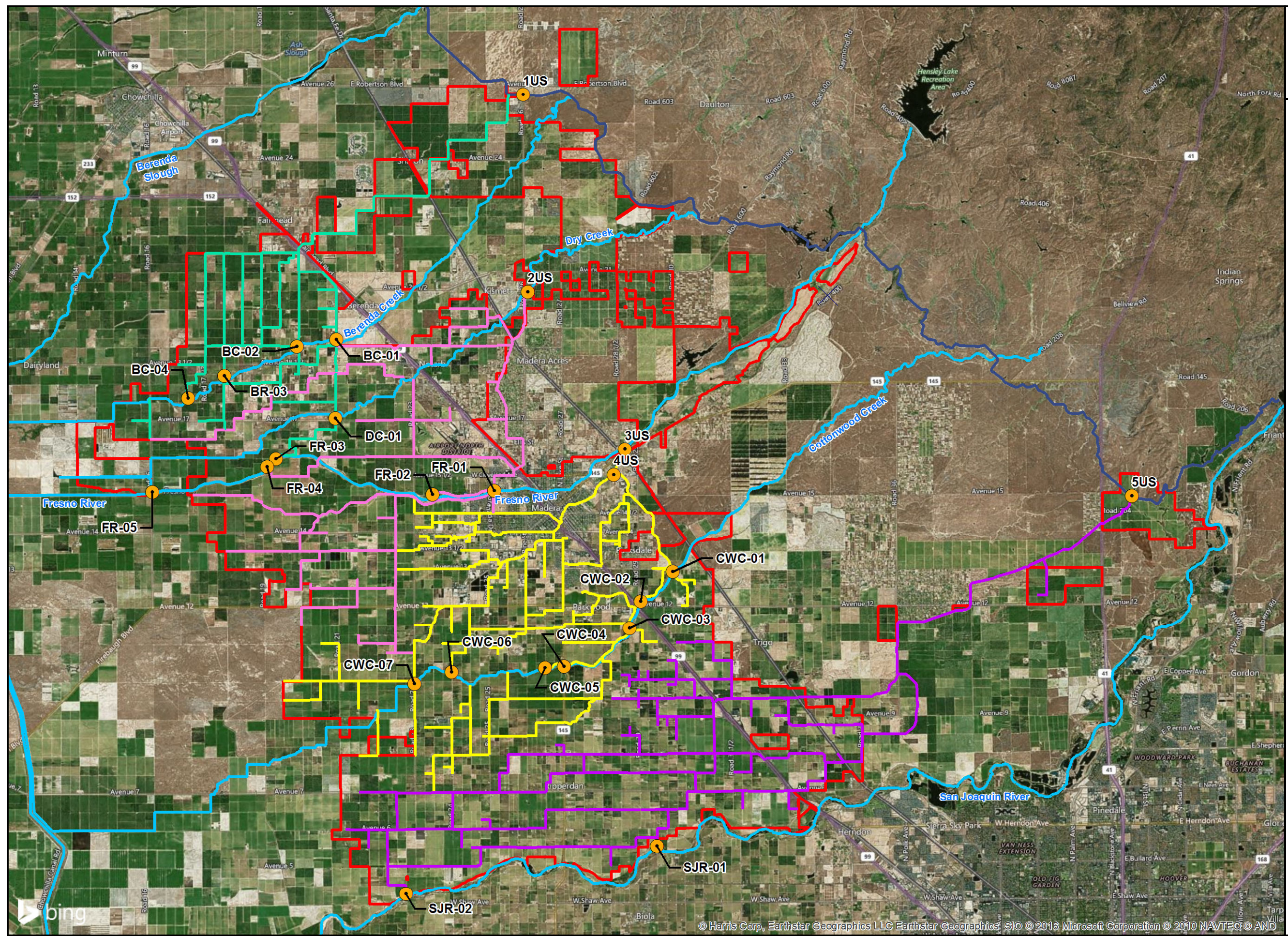


Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

Madera Irrigation District Water Quality Monitoring Locations

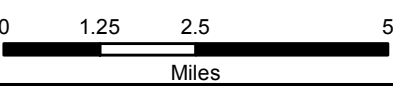
Legend

-  Potential Sample Location
-  Madera I.D.
-  Madera Canal
-  Big Main System
-  32.2 System
-  24.2 System
-  6.2 System
-  Waterways



Date: 2026
4/12/2016

Author: Engineering
Ramon E Mendez



APPENDIX C – AQUATIC PESTICIDES APPLICATION LOG

Aquatic Pesticide Application Log	
To Be Completed for Every Pesticide Application	
General Information	
Date: _____	
Location: _____	
Personnel: _____	
Treatment Information	
Start time: _____	Stop Time: _____
Targeted Weed(s): _____	
Vegetative Growth Stage: _____	
Water Body Type: _____	Weather: _____
Water flow (cfs): _____	Air Temperature (°F): _____
Water Temperature (°F): _____	
Pesticide #1 Used _____	Rate or Concentration: _____
Application Method: _____	
Pesticide #2 Used _____	Rate or Concentration: _____
Application Method: _____	
Adjuvant #1 Used _____	Rate or Concentration: _____
Application Method: _____	
Adjuvant #2 Used _____	Rate or Concentration: _____
Application Method: _____	
<i>I certify that the APAP has been followed.</i>	
Print Name	
_____ Sign Here	

APPENDIX D – AQUATIC PESTICIDES FIELD MONITORING & SAMPLING FORM

Aquatic Pesticide Field Monitoring and Sampling Form				
Sample # 1: Background Monitoring (Up To 24 Hours Before Treatment)				
Date:		Sample Time:		Location:
Aquatic Pesticide Applied:			Temperature (°C)	
Turbidity (NTU):		pH:	Electrical Conductivity: (mho/cm):	
Dissolved Oxygen (mg/L) _____			Color:	None Brown Green Other
Weather: Clear Cloudy Other: _____			Sheen:	Yes No
Notes:				
Employee ID		Print Name		Sign Name
Sample # 2 Event Monitoring				
Date:		Sample Time:		Location:
Aquatic Pesticide Applied:			Temperature (°C)	
Turbidity (NTU):		pH:	Electrical Conductivity: (mho/cm):	
Dissolved Oxygen (mg/L) _____			Color:	None Brown Green Other
Weather: Clear Cloudy Other: _____			Sheen:	Yes No
Notes:				
Employee ID		Print Name		Sign Name
Sample # 3 Post-Event Monitoring				
Date:		Sample Time:		Location:
Aquatic Pesticide Applied:			Temperature (°C)	
Turbidity (NTU):		pH:	Electrical Conductivity: (mho/cm):	
Dissolved Oxygen (mg/L) _____			Color:	None Brown Green Other
Weather: Clear Cloudy Other: _____			Sheen:	Yes No
Notes:				
Employee ID		Print Name		Sign Name

APPENDIX E – SAMPLE PUBLIC NOTICE LETTER

March 1, 2016

Agency Name
Attn: Staff Name
Address Line 1
Address Line 2

Dear *Staff Name*,

Madera Irrigation District (District) intends to apply aquatic pesticides to District facilities for weed control. The approximate period of application will be from (*starting month*) through (*ending month*). The pesticides being applied are as follows:

- Magnacide H
- Captain Liquid Copper Algaecide
- Copper Sulfate
- Nautique
- AquaNeat
- Reward
- LI-700 (Adjuvant)
- Quest (Adjuvant)

All persons should avoid contact with shoreline weeds and irrigation water during this period to avoid potentially harmful effects. The potential pesticide application sites are shown on District facility maps available online at <http://madera-id.org/index.php/district-maps>. Please contact the District with any additional questions.

Sincerely,

Thomas Greci
MID General Manager

cc: Sean Smith, District Engineer
Charles Contreras, Operations and Maintenance Manager

Karen Mogus
Chief Deputy Director, Division of Water Quality
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Patrick Pulupa
Executive Officer
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670

Via email: NPDES_Wastewater@waterboards.ca.gov, CentralValleyFresno@waterboards.ca.gov

RE: 2025 Self-Monitoring Report (SMR) for WATER QUALITY ORDER NO. 2013-0002-DWQ GENERAL PERMIT NO. CAG990005 STATEWIDE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR RESIDUAL AQUATIC PESTICIDE DISCHARGES TO WATERS OF THE UNITED STATES FROM ALGAE AND AQUATIC WEED CONTROL APPLICATIONS

Region 5 Fresno Routing Table:

Regulatory Program/Order	Order 2013-0002-DWQ, NPDES CAG990005 Statewide General Permit for Residual Aquatic Pesticide Discharges from Algae and Aquatic Weed Control Applications
Document Title	Madera Irrigation District 2025 Self-Monitoring Report (SMR)
Program	Weed Control
Discharger Name	Madera Irrigation District
Facility Name	Madera Irrigation District
County	Madera
CIWQS Place ID	783799
WDID	5B20AP00002
Regulatory Measure ID	386405
Case Manager	Hossein Aghazeynali

Dear Ms. Mogus and Mr. Pulupa,

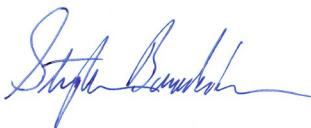
Attached, please find the above-referenced Self-Monitoring Report (SMR).

No violations of the permit occurred in 2025 and no corrective actions were taken or are planned. Because no corrective actions were taken or planned, no schedule for corrective action implementation or planning exists at this time.

Please call me at (530) 757-0941 if you have any questions.

Regards,

Bowman Consulting Group Ltd.



Stephen Burkholder
Principal Biologist

CC: Thomas Greci, Madera Irrigation District; Gurgagn Chand, State Water Resources Control Board

Madera Irrigation District

2025 Self-Monitoring Report (SMR)

**WATER QUALITY ORDER NO. 2013-0002-DWQ
GENERAL PERMIT NO. CAG990005**

**STATEWIDE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
(NPDES) PERMIT FOR RESIDUAL AQUATIC PESTICIDE DISCHARGES TO WATERS
OF THE UNITED STATES FROM ALGAE AND AQUATIC WEED CONTROL
APPLICATIONS**

WDID # 5B20AP00002

Table of Contents

1. Report Certification
2. Executive Summary
3. Summary of Monitoring Data
 - Table 1: Summary of Copper Monitoring Data
 - Table 2: Summary of Endothall Monitoring Data

Limitations

The services used to prepare this document were performed consistent with the agreement with Madera Irrigation District and were rendered in a manner consistent with generally accepted professional consulting principles and practices using the level of care and skill ordinarily exercised by other professional consultants under similar circumstances at the same time the services were performed. No warranty, express or implied, is included. This document is solely for the use of our client. Any use or reliance on this document by a third party is not authorized and is at such party's sole risk.

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1. Report Certification

Certification consistent with the requirements of Water Quality Order No. 2013-0002-DWQ:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Thomas Greci
Professional Engineer (Civil) # 73032
General Manager
Madera Irrigation District

Date: _____

2. Executive Summary

Madera Irrigation District (“District”) made applications of algaecides and aquatic herbicides for the purpose of algae and aquatic vegetation management in 2025. The District was in compliance with the General Permit (“Permit”) and carried out its application and monitoring activities consistent with its approved Aquatic Pesticide Application Plan (APAP).

No applicable receiving water limitation (RWL) exceedances were observed for endothall. There were six (6) exceedances of the hardness-adjusted dissolved copper RWL detected in 2025 in permit-required samples. Of these exceedances, four (4) were detected in compliance samples (e.g., Event or Post). Consistent with the District’s State Implementation Plan (SIP) Section 5.3 Exception, short-term or seasonal exceedances of hardness-adjusted copper RWLs are allowable.

A biological assessment of the District’s project site and receiving waters was conducted to address SIP Section 5.3 Exception requirements. Specifically, an assessment was made as to whether the receiving water beneficial uses were restored to pre-project conditions after the project was complete (i.e., the end of the aquatic herbicide application season). The assessment was conducted by a qualified biologist from Bowman Consulting Group Ltd. Based on pre- and post-project observations, and accounting for seasonal differences, receiving water beneficial uses do not appear to have noticeably changed from pre-project conditions. Taking into consideration these observations, existing or potential beneficial uses of surface waters within the project site, and potential impacts of the project, we conclude that receiving water beneficial uses have been protected and/or restored.

The APAP was followed and proved to be an effective means of complying with the Permit.

3. Monitoring Data Summary

Applications of copper- and endothall-containing algaecides and aquatic herbicides were made to District waterbodies in 2025.

Copper

Two (2) treatments of copper-containing aquatic herbicides and/or algaecides were made to the District’s irrigation conveyance system and monitored in 2025. There were a total of eight (8) exceedances of the hardness-adjusted dissolved copper RWL detected, with six (6) in permit-required samples. Of these exceedances, four (4) were detected in compliance samples and two (2) were detected in background samples. Two (2) additional exceedances were detected in follow-up samples collected to track the concentration of copper after treatment and near the end of the District’s irrigation season.

The District conveys water from Lake Millerton, a reservoir on the San Joaquin River, which has low hardness values. The dissolved copper RWL for all beneficial use designations is dependent on water hardness, see **Table 1** for site specific values. Samples collected from District conveyances in 2025 ranged from 8.0 mg CaCO₃/L to 17 mg CaCO₃/L and averaged 11.4 mg CaCO₃/L (n=8), which is classified as “soft” by EPA standards. Low hardness values result in correspondingly low RWL values for dissolved copper.

Follow-up sample collection for all monitoring locations with exceedances of the hardness-adjusted dissolved copper RWL in Post-application samples is typically scheduled to verify that concentrations had returned to levels below the RWL at the end of the irrigation season. Follow-up sampling conducted at the Lateral 24.2 and Lateral 32.2-9.9 in August showed concentrations of dissolved copper had gone down, but were still above the hardness-adjusted RWL.

District canals only convey water during the irrigation season. The Exception Period identified in Section 8 of the District's APAP from meeting RWLs is between March and October. Typically, Follow-up samples are collected shortly before the District begins drawing down and dewatering its canal system. After the Follow-up samples were collected in August, the District ceased irrigation water deliveries, and dewatered the canal system for winter maintenance. These August Follow-up samples showed dissolved copper above the RWL, but the concentrations had lessened, showing a downward trend. The dissolved copper RWL was very low (e.g., 1.0 ug/L) due to the soft nature of water in District canals. After dewatering the canals, there was no water present in the canal system. Due to the seasonal nature of water presence in the District's conveyances, exceedances of hardness-adjusted dissolved copper RWLs are obligatorily temporary. Where no water is present, there can be no exceedance of an RWL. Consistent with the District's SIP Section 5.3 Exception, short-term or seasonal exceedances of hardness-adjusted dissolved copper RWLs are allowable.

Endothall

In previous years, the District qualified for, and maintained eligibility for, a reduction in monitoring frequency for endothall-containing algaecides and/or aquatic herbicides. Accordingly, one (1) treatment of an endothall-containing herbicide and/or algaecide was sampled in 2025. The receiving water of this application was deemed not to have the MUN beneficial use designation; therefore, the MUN RWL of 100 ug/L for endothall is not applicable. This notwithstanding, no samples analyzed for endothall contained concentrations greater than the laboratory's RL, and all were below the MUN RWL.

A summary of chemical monitoring results appears in the attached **Table 1** and **Table 2**.

Improvements as a result of the use of aquatic herbicides include, but are not limited to, aquatic vegetation and/or algae control, flow improvement, increased channel capacity, reduced irrigation system and structure clogging, improved irrigation and drainage efficiency, and non-native, noxious, or invasive species control. No degradation of water quality was noted in 2025.

Table 1: Summary of Copper Monitoring Data

Sample Date	Sample Time (24:00)	Site Name	Sample Type	Sample Coordinates	pH	SC (uS/cm)	Turbidity (NTU)	Temp. (°C)	DO ^(a) (mg/L)	Dissolved Copper (ug/L)	Hardness (mg CaCO ₃ /L)	Diss. Copper RWL ^(b) (ug/L)
6/11/2025	8:33	24.2	BG	37.027778, -120.079444	8.58	32	3.85	18.34	9.25	6.8	12	1.5
6/12/2025	7:38	24.2	Event	36.910556, -120.137500	7.30	45	45.2	22.56	5.72	5.7	17	2.0
6/17/2025	8:22	24.2	Post	36.966111, -120.137500	7.78	31	2.38	19.19	7.40	4.4	11	1.4
8/12/2025	7:58	24.2	Follow-Up	37.025556, -120.180278	7.74	25	1.29	22.17	6.30	4.0	8.0	1.0
6/18/2025	9:02	32.2-9.9	BG	37.061944, -120.188056	8.03	34	18.3	20.91	7.72	3.6	11	1.4
6/19/2025	8:02	32.2-9.9	Event	36.992778, -120.220000	8.11	36	9.90	24.59	5.97	4.1	13	1.6
6/24/2025	8:26	32.2-9.9	Post	37.031667, -120.220278	8.04	30	7.09	19.45	8.07	7.2	11	1.4
8/12/2025	9:05	32.2-9.9	Follow-Up	37.061667, -120.211389	8.81	20	3.76	22.96	8.07	2.9	8.1	1.0

Notes

(a) - According to the Basin Plan, the objective for DO is a minimum of 5.0 mg/L.

(b) - Receiving Water Limitation (RWL). See Section VI, Table 3 of the Permit.

BG - Background sample collected upstream of application area, or within application area prior to application.

DO - Dissolved oxygen concentration in water sample.

Event - Sample collected downstream of or outside the treatment area immediately after the application event, but after such time that treated water could have left the treatment area. **If "NA" is used in the row of an "Event" sample type, no water was leaving the treatment area.**

NTU - Nephelometric Turbidity Units.

Post - Sample collected within the treatment area, within one week after the application, or when the treatment was deemed complete.

RWL - Receiving Water Limitation.

SC - Specific Conductance - Electrical conductivity normalized to a temperature of 25°C.

Temp. - Temperature

Table 2: Summary of Endothall Monitoring Data

Sample Date	Sample Time (24:00)	Site Name	Sample Type	Sample Coordinates	pH	SC (uS/cm)	Turbidity (NTU)	Temperature (°C)	DO ^(a) (mg/L)	Endothall ^(b) (ug/L)	Endothall RWL ^(c) (ug/L)
5/21/2025	8:53	Main Canal	BG	36.984167, -120.025278	8.31	126	5.37	18.09	7.98	ND (<5.0)	100 ^(d)
5/22/2025	10:50	Main Canal	Event	36.936878, -120.003232	8.49	124	4.76	21.29	8.74	ND (<5.0)	100 ^(d)
5/28/2025	12:30	Main Canal	Post	36.966589, -120.023073	8.36	126	6.69	22.44	7.20	ND (<5.0)	100 ^(d)

Notes

(a) - According to the Basin Plan, the objective for DO is a minimum of 5.0 mg/L.

(b) - ND (< #) - analyte not detected (ND) at or above the indicated Reporting Limit (RL).

(c) - Receiving Water Limitation (RWL). See Section VI, Table 3 of the Permit.

(d) - The RWL is based upon a Municipal and Domestic Supply (MUN) beneficial use designation. The receiving water evaluated did not have a MUN beneficial use. Therefore, the MUN RWL is not applicable.

BG - Background sample collected upstream of application area, or within application area prior to application.

DO - Dissolved oxygen concentration in water sample.

Event - Sample collected downstream of or outside the treatment area immediately after the application event, but after such time that treated water could have left the treatment area. **If "NA" is used in the row of an "Event" sample type, no water was leaving the treatment area.**

ND (<#) - Not detected at or above the indicated Reporting Limit (RL).

NTU - Nephelometric Turbidity Units.

Post - Sample collected within the treatment area, within one week after the application, or when the treatment was deemed complete.

RWL - Receiving Water Limitation.

SC - Specific Conductance - Electrical conductivity normalized to a temperature of 25°C.

Attachment E – Notice of Intent

**WATER QUALITY ORDER NO. 2013-0002-DWQ
 GENERAL PERMIT NO. CAG990005**

**STATEWIDE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
 (NPDES) PERMIT FOR RESIDUAL AQUATIC PESTICIDE DISCHARGES TO WATERS OF
 THE UNITED STATES FROM ALGAE AND AQUATIC WEED CONTROL APPLICATIONS**

I. NOTICE OF INTENT STATUS (see Instructions)

Mark only one item	A. New Applicator	B. Change of Information: WDID#	5B20AP00002
	C. <input type="checkbox"/> Change of ownership or responsibility: WDID#		

II. DISCHARGER INFORMATION

A. Name Madera Irrigation District			
B. Mailing Address 12152 Road 28 1/4			
C. City Madera	D. County Madera	E. State California	F. Zip 93637
G. Contact Person Thomas Greci	H. E-mail address tgreci@madera-id.org	I. Title General Manager	J. Phone 559-673-3514

III. BILLING ADDRESS (Enter Information only if different from Section II above)

A. Name			
B. Mailing Address			
C. City	D. County	E. State	F. Zip
G. E-mail address	H. Title	I. Phone	

IV. RECEIVING WATER INFORMATION

A. Algaecide and aquatic herbicides are used to treat (check all that apply):

1. Canals, ditches, or other constructed conveyance facilities owned and controlled by Discharger.
Name of the conveyance system: MC & I System

2. Canals, ditches, or other constructed conveyance facilities owned and controlled by an entity other than the Discharger.
Owner's name: United States Bureau of Reclamation
Name of the conveyance system: 32.2, 24.2, & 6.2 Systems

3. Directly to river, lake, creek, stream, bay, ocean, etc.
Name of water body: _____

B. Regional Water Quality Control Board(s) where treatment areas are located
(REGION 1, 2, 3, 4, 5, 6, 7, 8, or 9): Region 5
(List all regions where algaecide and aquatic herbicide application is proposed.)

V. ALGAECIDE AND AQUATIC HERBICIDE APPLICATION INFORMATION

A. Target Organisms: _____
Algae, submersed, floating, and emergent aquatic vegetation.

B. Algaecide and Aquatic Herbicide Used: List Name and Active ingredients
Acrolein (Magnicide®)
Copper (Copper Sulfate Crystals, Captain Liquid Copper Algaecide®, Nautique®)
Diquat Dibromide (Reward®)
Endothall (Cascade®)
Fluridone (Sonar Genesis®)
Glyphosate (AquaNeat®, Rodeo®)
Imazamox (Clearcast®)
Penoxsulam (Galleon SC®)
Specific product names may change.

C. Period of Application: Start Date January 1 End Date December 31

D. Types of Adjuvants Used:
Various nonionic surfactant products, including LI-700® and Quest®.

VI. AQUATIC PESTICIDE APPLICATION PLAN

Has an Aquatic Pesticide Application Plan been prepared and is the applicator familiar with its contents?
 Yes No

If not, when will it be prepared? _____

VII. NOTIFICATION

Have potentially affected public and governmental agencies been notified? Yes No

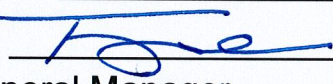
VIII. FEE

Have you included payment of the filing fee (for first-time enrollees only) with this submittal?
 YES NO NA

IX. CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. Additionally, I certify that the provisions of the General Permit, including developing and implementing a monitoring program, will be complied with."

A. Printed Name: Thomas Greci

B. Signature:  Date: 4-20-16

C. Title: General Manager

XI. FOR STATE WATER BOARD STAFF USE ONLY

WDID:	Date NOI Received:	Date NOI Processed:
Case Handler's Initial:	Fee Amount Received: \$	Check #:
<input type="checkbox"/> Lyris List Notification of Posting of APAP	Date _____	Confirmation Sent _____

Addendum 1: Notice of Public Hearing

Public notice was published in the Madera Tribune on March 13 and March 20, 2021

Notice of Public Hearing

Notice is hereby given that the Madera Irrigation District (“MID or District”) will hold a public hearing regarding the 2026 Agricultural Water Management Plan on March 31, 2026 at 2:00 PM in the District office located at 12152 Road 28 1/4, Madera, CA 93637.

Agricultural water agencies in California are required to prepare an Agricultural Water Management Plan (“AWMP”). MID has drafted the AWMP pursuant to the applicable regulatory requirements. MID’s public review draft of the AWMP may be reviewed online at www.madera-id.org

Addendum 2: Notification to Agencies

Phone (559) 673-3514

www.madera-id.org

General Manager

Thomas Greci

Assistant

General Manager

Dina Cadenazzi Nolan

Legal Counsel

John P. Kinsey



Board of Directors

Division 1

David Loquaci

Division 2

Tim DaSilva

Division 3

Brian Davis

Division 4

Brandon Bishel

Division 5

Carl Janzen

March 18, 2026

Stephanie Anagnoson

County of Madera

200 W. Fourth Street, Suite 3100

Madera CA 93637

Dear Ms. Anagnoson,

Pursuant to Water code §10821(a), Madera Irrigation District (“MID” or “District”) is writing to notify your agency that the District will be preparing an Agricultural Water Management Plan (“AWMP”).

The District will hold a public hearing regarding the AWMP on March 31, 2026, at 2:00 p.m. in the District office located at 12152 Road 28 1/4, Madera. Comments may be submitted to rbaldovinos@maderad-id.org.

Sincerely,

Thomas Greci

General Manager

Phone (559) 673-3514

www.madera-id.org

General Manager

Thomas Greci

Assistant

General Manager

Dina Cadenazzi Nolan

Legal Counsel

John P. Kinsey



Board of Directors

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Division 3

Brian Davis

Division 4

Brandon Bishel

Division 5

Carl Janzen

March 18, 2026

Keith Helmuth
City of Madera
428 E. Yosemite Avenue
Madera CA 93637

Dear Mr. Helmuth,

Pursuant to Water code §10821(a), Madera Irrigation District (“MID” or “District”) is writing to notify your agency that the District will be preparing an Agricultural Water Management Plan (“AWMP”).

The District will hold a public hearing regarding the AWMP on March 31, 2026, at 2:00 p.m. in the District office located at 12152 Road 28 1/4, Madera. Comments may be submitted to rbaldovinos@madera-id.org.

Sincerely,

Thomas Greci
General Manager

Addendum 3: Resolution to Adopt the Agricultural Water Management Plan
