Plan Document

Del Puerto Water District
Water Management Plan
2008 Criteria

Final – July 5, 2011

Index

Section 1: Description of the District

District Name: Del Puerto Water District

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A. History

DPWD was organized on March 24, 1947 to contract for and administer delivery of water supplies to landowners within its geographical boundaries as part of the Bureau of Reclamation's development of the Central Valley Project. On March 1, 1995, the District was reorganized through a formal consolidation with ten other local, similarly contracted water Districts. The District's contractual entitlement is its sole source of supply. Over the years, the use of this contractual supply has been governed by Reclamation Law, water code requirements and place-of-use restrictions associated with the Bureau of Reclamation's State-issued permit and, more recently, Reclamation Law as amended by the Reclamation Reform Act of 1982, the Central Valley Project Improvement Act, the water shortage provisions of its contract, legal and administrative rulings, the Clean Water Act and Endangered Species Act.

1. Date district formed: March 24, 1947 *Date of first Reclamation contract:* June 10, 1953
Original size (acres): 3,195 Irrigable Acres* *Current year (last complete calendar year)*: 2008
Current size (acres): 45,229 *Pre-consolidation acreage

2. Current size, population, and irrigated acres

The District currently serves 45,229 irrigable acres with agricultural water supplies, and provides Incidental M&I deliveries totaling 3AF/month (avg). No urban population is served.

	2008
Size (acres)	45,229
Population served	N/A
Irrigated acres	38,489

3. Water supplies received in current year

The Current Year (2008) Water Supplies received are as follows:

Water Source	*AF*
Federal urban water (Tbl 1)	34
Federal agricultural water (Tbl 1)	40,629
State water (Tbl 1)	
Other Wholesaler (define) (Tbl 1)	
Local surface water (Tbl 1)	
Upslope drain water (Tbl 1)	
District ground water (Tbl 2)	
Banked water (Tbl 1)	
Transferred water (Tbl 6)	26,181
Recycled water (Tbl 3)	
Other (define) (Tbl 1)	
Total	66,844

4. Annual entitlement under each right and/or contract

The District's sole source of supply is its USBR Contractual entitlement, which must be supplemented by single and multi-year transfer agreements to provide adequate supply.

	AF	*Source*	*Contract #*	*Contract Restrictions*
Reclamation Urban AF/Y	N/A	N/A	N/A	N/A
Reclamation Agriculture AF/Y	140,210	USBR	14-06-200-922-LTRI	Shortage Provisions/ Pumping Restrictions
Other AF/Y	3,017 AF to 27,152 AF	CVC Contractors	June 1, 2006	Quantity available varies with the current years' allocation, per the agreement.
Other AF/Y	2,631 AF to 5,262 AF	5 yr. Exchange Contractor Transfer	June 23, 2006	Quantity available varies with the current years' allocation, per the agreement.

5. Anticipated land-use changes

Land use charges within the District are limited to the conversion of lands from agricultural to municipal and industrial uses. Under current guidelines (Exhibit A), all lands converted to municipal use are detached from the District and relegated to the responsible annexing agency for water service. Although certain District acreage has been identified for conversion under the City of Patterson's General Plan, this transition is slow to develop and causes only minimal reductions in the District's irrigable acreage on an annual basis.

6. Cropping patterns (Agricultural only)

Note: Del Puerto's previous plan year (1998) was submitted in WY2004. This was Del Puerto's "original plan".

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

Original Plan (N/A)		*Previous Plan (1998)*		*Current Plan (2008)*	
Crop Name	*Acres*	*Crop Name*	*Acres*	*Crop Name*	*Acres*
		Almonds	11,802	Almonds	14,707
		Tomatoes	5,922	Tomatoes	3,409
		Beans	4,968	Beans	2,420
		Apricots	4,169	Apricots	2,690
		Walnuts	2,540	Oats	3,042
		Alfalfa	2,015		
Other (<5%)		*Other (<5%)*	7,150	*Other (<5%)*	12,221
Total		*Total*	38,566	*Total*	38,489

(See Planner, Chapter 2, Appendix A for list of crop names)

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

Original Plan (N/A)		*Previous Plan (1998)*		*Current Plan*	
Irrigation Method	*Acres*	*Irrigation Method*	*Acres*	*Irrigation Method*	*Acres*
		Furrow	14,982	Furrow	6,998
		Flood	4,482	Flood	1,215
		Sprinkler	5,873	Sprinkler	15,278
		Drip/Micro	13,229	Drip/Micro	10,144
				Multiple Methods	3,326
				Not Being Irrigated	1,528
Other		*Other*		*Other*	
Total		*Total*	38,566	*Total*	38,489

(See Planner, Chapter 2, Appendix A for list of irrigation system types)

B. Location and Facilities

All District deliveries are made "canalside" from the Delta-Mendota Canal through turnouts installed and owned by the Bureau of Reclamation, licensed for District use, and operated and maintained by the San Luis Delta-Mendota Water Authority under a service agreement with the United States Bureau of Reclamation. While the District does not currently own, operate or maintain any delivery systems, it does own and maintain the equipment used to "sub-meter" individual users at multi-user turnouts. (See Attachment a - District Map)

1. Incoming flow locations and measurement methods

Location Name	*Physical Location*	*Type of Measurement Device*	*Accuracy*
DMC	Turnouts 18.05L to 68.03L – 144 locations total	Propeller Meters	± 6%

2. Current year Agricultural Conveyance System

Miles Unlined - Canal	*Miles Lined - Canal*	*Miles Piped*	*Miles - Other*
N/A	N/A	N/A	N/A

3. Current year Urban Distribution System

Miles AC Pipe	*Miles Steel Pipe*	*Miles Cast Iron Pipe*	*Miles - Other*
N/A	N/A	N/A	N/A

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

Name	*Type*	*Capacity (AF)*	*Distribution or Spill*
N/A	N/A	N/A	N/A

5. Outflow locations and measurement methods (Agricultural only)

See Section 2, Part F, Item No.1.

6. Description of the agricultural spill recovery system

N/A – The District has no operational spills.

7. Agricultural delivery system operation (check all that apply)

Agricultural water deliveries are accomplished through a combined "On-request" and "On-demand" system, leading to the highest level of management efficiency for both the District and the on-farm water users. By policy, all canal-side gates have locking devices maintained by the San Luis Delta-Mendota Water Authority, and all pump panel boxes are required to have an operational locking device maintained by the user. In order to have a canal-side gate unlocked, users are required to place water orders indicating the location, start time, flow rate and estimated schedule for completion. Once the District has approved the order and requested the gate be unlocked by SLDMWA personnel, a user may operate the gate himself within established parameters. Weekly flow readings taken randomly by SLDMWA personnel are compared with the posted orders, and any "mis-matched" orders are rectified with the user. Also by policy, users are required to report flow changes and shut-offs at the time of occurrence.

On-demand	*Scheduled*	*Rotation*	*Other (describe)*
			See above

8. Restrictions on water source(s)

Prior to the 2008 water year, the only restrictions experienced by the District were those related to chronic shortages of contract allocation. Now, due largely to legal restrictions placed on the pumping operations at Jones and Banks pumping plants, the District is subject to demand rationing if the pumping capabilities and San Luis Reservoir drawdown requirements cannot be combined to meet South of the Delta demand.

Source	*Restriction*	*Cause of Restriction*	*Effect on Operations*
USBR	Contact Allocation Shortages	Contractual Limitation	Increased land fallowing/ increased groundwater pumping/ higher per unit delivery costs/ shift in cropping patterns/ economic hardship for users and local communities
USBR	Delivery Rationing	Restricted pumping capabilities at Jones Pumping Plant	Increased groundwater pumping/deficit irrigation/crop loss and permanent crop damage

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

The District is currently pursuing a feasibility study on the importation of recycled water for use on agricultural crops within District boundaries. As part of this potential project, pipeline and pump station facilities may be required to transport water to District users.

C. Topography and Soils

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

The District is located on the western edge of the San Joaquin Valley in San Joaquin, Stanislaus, and Merced Counties. District lands parallel both sides of the Delta Mendota Canal for approximately 50 miles, averaging 2 miles in width, from DMC milepost 18.05L in the north to milepost 68.03L in the south. The Coast Range Mountains to the west of District boundaries are comprised of alluvial fans formed by many creeks (drainages) exiting the mountains and draining toward the San Joaquin River. Some of the major surface creeks, or drainage areas, include Hospital Creek, Lonetree Creek, Kern Creek, Ingram Creek, Del Puerto Creek, Salado Creek, Orestimba Creek, Mustang Creek, Quinto Creek, and Romero Creek. District elevations range from 100 to 400 feet with gently rolling alluvial fans becoming less pronounced and sloping towards the eastern boundary of the District.

The alluvial fans are comprised of many soil types ranging from coarse sand and gravel to finer silt and clay. The soils are generally a deep, permeable, moderate to well drained, medium textured, clay loam

low in salts with good moisture holding capacity. Because District lands are located relatively high on these alluvial fans there are no known salinity, water table constraints, or high or low infiltration rates.

The principal subsurface geological feature of District lands is the 30-60 foot thick Corcoran Clay formation that underlies most of the area at a depth of 150 feet to 200 feet below sea level and divides the ground water system into two major aquifers – a confined aquifer below and an unconfined system above. Except in areas near underground streambeds, groundwater yields are relatively small and groundwater quality is often relatively high in salts.

Varied elevations and soil types throughout the District, along with persistent water shortages, have lead to installation of state-of-the-art irrigation systems designed for specific locations depending on slope, soil type and cropping patterns. These systems may include variable speed pumps, drip irrigation for trees as well as vegetable crops, micro sprinklers and various filtration equipment.

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

Primary District Soil Classifications (from Attachment B)

Soil Association	*Est. Acres*	*Effect on Water Operations and Management*
Vernalis Series Class I	9,634	Well drained moderately permeable, high water holding capacity.
Woo/Stanislaus series Class I	1,161	Well drained, medium to slow permeability, high water holding capacity
El Solyo Class I	1,394	Well drained, medium to slow permeability, high water holding capacity
Zacharias Series Class I	10,044	Well drained, medium to slow permeability, high water holding capacity
El Solyo Series Class I	1,394	Well drained, slow permeable, high water holding capacity
Capay Series Class II	12,674	Moderately drained, slow permeability, high water holding capacity
Damluis Series Class II	6,698	Well drained, moderate permeability, high water holding capacity

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

Soil Problem	*Estimated Acres*	*Effect on Water Operations and Management*
Salinity	N/A	
High-water table	N/A	
High or low infiltration rates	N/A	
Other (define)	N/A	

D. Climate

1. General climate of the district service area

	Jan	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Annual*
Avg Precip.	2.4	2	1.6	.8	.3	.04	.01	.02	.22	.47	1.3	1.7	11.05
Avg Temp.	46	51	55	60	67	74	78	76	72	65	53	46	62
Max. Temp.	55	63	69	76	84	92	97	94	90	81	66	56	77
Min. Temp	36	40	42	45	50	55	59	58	55	49	41	36	47
ETo	1.6	2.2	3.6	5.1	6.8	7.8	8.7	7.8	5.7	4.0	2.1	1.6	57.06

Weather station ID 046168 *Data period: Year* 1948 *to Year* 2005

Average wind velocity 6 mph *Average annual frost-free days:* 270-290

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

Not applicable.

E. Natural and Cultural Resources

The few natural resources within District boundaries include ephemeral streams that flow primarily through open natural channels into neighboring water districts before entering the San Joaquin River. The State of California and purchased 450 acres of District land to protect and preserve a native California Sycamore grove that comprises approximately 50 acres. Several special-status species plants and animals protected under the State and Federal Endangered Species Acts that may occur within the District include the San Joaquin kit fox, giant garter snake, Swainson's hawk and elderberry shrubs.

1. Natural resource areas within the service area

Name	*Est. Acres*	*Description*
Lone Tree Creek	N/A	Enters District from west-Open channel into BCID Lateral
Hospital Creek	N/A	Enters District from west-Open channel to San Joaquin River
Ingram Creek	N/A	Enters District from west-Open channel into WSID
Del Puerto Creek	N/A	Enters District from west-Open channel to San Joaquin River
Salado Creek	N/A	Enters District from west-Open channel through District-Pipelined to San Joaquin River

Crow Creek	N/A	Enters District from west-Pipelined to Orestimba Creek
Orestimba Creek	N/A	Enters district from west-Open channel to San Joaquin River
Arzas Creek	N/A	Enters District from west-Drains into CCID
Quinto Creek	N/A	Enters District from west-Drains into CCID
Romero Creek	N/A	Enters District from west-Drains into CCID
California Sycamore Grove	±50 acres	Native grove located along Orestimba Creek east and west of I-5

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

Landowners adjacent to the various stream beds provide routine maintenance to protect against seasonal flooding. The Sycamore grove and adjacent lands are managed by the California Department of Water Resources and have historically been leased out for grazing purposes. While the Sycamore grove traditionally relies on natural runoff through Orestimba Creek and is not viewed as dependant on District water supplies, the District has agreed to provide water supplies on an as-needed basis, as available basis. Efforts to manage and protect special-status plants and animal species is accomplished in part by the requirement that certain repairs or modifications to District facilities, particularly those conducted on federal rights-of-way, are required to submit biological assessments for these special-status species to the Bureau of Reclamation for approval prior to commencing repairs or modifications.

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

Name	*Estimated Acres*	*Description*
Walking, biking, bird watching, painting, photography	N/A	Delta Mendota Canal/California Aqueduct
Fishing	N/A	Delta Mendota Canal/California Aqueduct
Delta Mendota Canal	N/A	50+ Years Old, National Register of Historic Places

While there are no known archaeological sites within the District of cultural significance, the Delta-Mendota Canal falls under the guidelines of the National Historic Preservation Act (NHPA) which requires the canal to be listed in the National Register of Historic Places (NRHP). The NHPA requires that any repair or modification to NHRP's be reviewed by the Bureau of Reclamation and the State Historic Preservation Office (SHPO) to identify historic or cultural effects that the proposed repair or modification could have on the facility.

Recreational activities are limited to public access that is allowed on the Delta Mendota Canal or the California Aqueduct and their rights-of-ways. This would include fishing, biking, walking, and other leisure activities.

F. Operating Rules and Regulations

1. *Operating rules and regulations*

See Attached Exhibit B – Del Puerto Water District Rules and Regulations for Water Service.

2. *Water allocation policy (Agricultural only)*

The District allocates its contract supply on an equal-share-per-irrigable-acre basis. A user may elect to reduce his/her allocation based on anticipated needs, which then establishes the final "allocation" to his/her account for the rest of the water year. Un-requested allocations are placed into a District "Bank" for remarketing purposes with the District. In the event that the available remarketable supplies exceed in-District demand, these supplies may be made available for transfer to other CVP Districts in the area. (See p. 1-2 of the District's Rules and Regulations for Water Service)

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

Water orders placed by 11 a.m. daily (and by 11 a.m. on Fridays for Saturday and Sunday deliveries) are approved and processed for the following day. Water orders received after 11 a.m. may be delayed an additional day. Actual lead time to begin irrigation may be less if the turnout is all ready "unlocked", and certain situations utilizing automated systems or off-peak electrical service may be given permission to remain unlocked continuously as long as weekly schedules are updated with District Staff. Shut off is on demand for all users but is required to be called in to the District. (See p. 3 of the District's Rules and Regulations for Water Service)

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

All drainage systems are owned, operated and/or maintained by individual water users and remain their responsibility. The District, however, maintains a cooperative stance among downslope districts with regard to any problems arising from drainage leaving District boundaries and has adopted a policy that sets a standard of no greater than 900 mg/l of Total Suspended Solids for surface drain water leaving the District and entering another district's distribution system. (See attached "Supplement to Rules and Regulations for Water Service")

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

The District's Board annually reviews and adopts a surface water transfer policy for its supplies allocated under District Contract. Water management type transfers are allowed between parcels of land within the District and to parcels of land in other CVP-contracted Districts, provided that the supply being transferred is associated with lands that are within the same user's landholdings, and provided that the landholder currently receives water service in the District. User transfers to other Districts are limited to their current year's allocated supply. (See attached Exhibit C - 2008-09 Surface Water Transfer Policy)

G. Water Measurement, Pricing, and Billing

1. Agricultural Customers

The District primarily serves an agricultural customer base.

a. The District currently serves 144 farms

b. The District currently has 144 metered turnouts along the Delta-Mendota Canal, each with Bureau owned/maintained metering devices.

c. The turnouts noted in item (b) serve to measure supplies leaving the District distribution system – in this case the Delta-Mendota canal - and many serve more than one farm distribution system(s). In the case of the latter, the multiple users are further sub-metered at each farm location with District owned/maintained metering devices. There are a total of 147 District subsidiary meters.

d. There are a total of 291 measured delivery points within the District.

e. 100% of the District's delivered water is measured at a delivery point.

f. *Delivery point measurement device table (Agricultural only)*

Measurement Type	*Number*	*Accuracy (+/- %)*	*Reading Frequency (Days)*	*Calibration Frequency (Months)*	*Maintenance Frequency (Months)*
Orifices					
Propeller meter-DMC	144	+/- 6%	15	2	12
Propeller meter-DPWD	145	+/- 6%	30	1	12
Flumes					
Venturi					
Metered gates					
Acoustic doppler	2	+/- 6%	15	2	12
Other (define)					
Total	291				

2. *Urban Customers*

The District does not currently serve any urban users, and delivers incidental M&I supplies to only one customer for landscape purposes.

a. *Total number of connections* 1

b. *Total number of metered connections* 1

c. *Total number of connections not billed by quantity* N/A

d. *Percentage of water that was measured at delivery point* 100%

e. *Percentage of delivered water that was billed by quantity* 100%

f. *Measurement device table*

Meter Size and Type	*Number*	*Accuracy (+/-percentage)*	*Reading Frequency (Days)*	*Calibration Frequency (Months)*	*Maintenance Frequency (Months)*
5/8-3/4"					
1"					
1 ½"					
2"					
3"					
4"					
6" (Propeller)	1	+/- 6%	15	2	12
8"					
10"					
Compound					
Turbo					
Total	1				

3. *Agriculture and Urban Customers*

a. The District recovers its operating expenses through annual acreage assessments on irrigable lands within the District, which are designated as Water Availability Charges. The current rate as set by Prop 218 election in 2006 allows the District to charge up to $17.50/acre. For water year 2008, the Water Availability Charge was set by the Board at $15.00/acre. Volumetric water charges are billed monthly based on metered usage to each customer, at rates structured to recover the appropriate Bureau of Reclamation and San Luis-Delta-Mendota Water Authority Rates, as well as costs associated with self-funded, federally-owned delivery improvements. For 2008, rate types billed were as follows:

1. Current year water rates are $45/AF for non-full cost supplies, $60/AF for Ag Full cost supplies, and $62/AF for LTD Full cost supplies. (See Attached Exhibit D – 2008-09 Water Rate Sheet)
2. Deliveries of 2007 Supplies Rescheduled into 2008 were billed at 2007 Rates of $43/AF for non-full cost supplies, $53/AF for Ag Full cost supplies, and $60.00 for LTD Full cost supplies.
3. Additional Supplies delivered during 2008 were billed at rates of $163/AF, $173/AF, $200/AF and $210/AF, depending on the source cost of the supply, and the RRA eligibility status of the lands the water was delivered to i.e. non-full cost or full cost.

b. *Annual charges collected from customers (current year data)*

Fixed Charges			
Charges ($ unit)	*Charge units ($/acre), ($/customer) etc.*	*Units billed during year (acres, customer) etc.*	*$ collected ($ times units)*
$15.00	$/Acre	43,827 AC	$657,405.00

Volumetric charges			
Charges ($ unit)	*Charge units ($/AF), ($/HCF), etc.*	*Units billed during year (AF, HCF) etc.*	*$ collected ($ times units)*
$9.93	$/AF(Transferred In)	70	$695.10
$43.00	$/AF	11,969	$514,667.00
$45.00	$/AF	28,396	$1,277,820.00
$53.00	$/AF	1,218	$64,544.00
$55.00	$/AF	7,268	$399,740.00
$60.00	$/AF	7	$420.00
$62.00	$/AF	647	$40,114.00
$163.00	$/AF	330	$53.790.00
$173.00	$/AF	16	$2,768.00
$200.00	$/AF	6,113	$1,222,600.00
$210.00	$/AF	249	$52,290.00

(See Attached Exhibit E - District Sample Bill)

c. Water-use data accounting procedures

For delivery points at which water leaves the District facilities, meters are read weekly. Subsidiary meters are read at month-end to coincide with the month-end readings performed by the SLDMWA, or randomly as necessary. Charges to the District, based on Authority readings, are translated into customer use statements and distributed among District water users based on both SLDMWA and District subsidiary meter readings. These individual water use statements summarizing use by farm location and supply type are then used as the basis for the corresponding invoices generated for each customer detailing water charges and account balance information. The billing statements and water use statements, along with any documentation required to support the measured use at a multi-user delivery point, are mailed to customers by the 7th day of each month. While the monthly use information only summarizes the current year-to-date, customers may request and receive computerized copies of use history back to the 1995 water year within 24-hours.

H. Water Shortage Allocation Policies

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

As per the District's Rules and Regulations for Water Service, the District utilizes an "equal-share-per-irrigable-acre" allocation method to allocate its available contract supply, which effectively apportions shortages in the same manner. Due to chronic shortage conditions, the District annually develops and administers a pool of supplemental supplies, which is offered to all landowners/water users in the District and which, if necessary, is pro-rated based on an "equal-share-per-irrigable-acre" among those requesting such supplies. (See Attached Exhibit F - 2008-2009 Additional Supplies Request Form)

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

The District has neither seen reason for nor found it necessary to institute or implement a formal policy against "wasteful use" of water, however, Section VII of the District's Rules and Regulations for Water Service does establish that customers "....shall not use water in a wasteful manner." Such prohibition is understood and the District maintains the right to cease deliveries in the event any such unlikely instance occurs.

Section 2: Inventory of Water Resources

A. Surface Water Supply

1. *Acre-foot amounts of surface water delivered to the water purveyor by each of the purveyor's sources*

See 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 Water Inventory Tables, Table 8

B. Ground Water Supply

1. *Acre-foot amounts of ground water pumped and delivered by the district*

The District has no wells.

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

Name	*Size (Square Miles)*	*Usable Capacity (AF)*	*Safe Yield (AF/Y)*
San Joaquin Basin	13,500	80,000,000	unknown

California DWR Bulletin 118 has identified that the District is in two sub-basins of the San Joaquin Valley Groundwater Basin. These are the Tracy Subbasin and the Delta-Mendota Subbasin. The Tracy Subbasin has a surface area of 1,170 sq. mi. with no published groundwater values. The Delta-Mendota Subbasin has a surface area of 1,120 sq. mi. with an estimated storage capacity of 30,400,000 AF to a depth of 300 feet.

3. *District Facilities*

There are no District operated wells or recharge areas.

4. *Conjunctive Use*

Groundwater is used when and where surface water is unable to meet demands (as available). Non-project water from private wells is introduced into the DMC under the auspices of the District's Warren Act Contract and redelivered to lands commonly held by the individuals that pump the supply. However, groundwater is spotty in many areas of the District and/or lacks the quality requirements for cropping.

5. *Ground Water Management Plan*

A groundwater management plan to provide compliance with the Groundwater Management Act AB3030 was developed and implemented in 1997 was updated in 2007 to comply with California SB 1938. The District is currently coordinating with other local agencies participating in the plan to bring it into compliance with recently adopted SB 6 water code requirements. (See Attachment C - Groundwater Management Plan)

6. *Groundwater Banking*

There is no groundwater banking available within the District, and there are no known banking facilities in our area. The geology of our basis is not suitable because groundwater is spotty and in some cases lacks the quality required for cropping.

C. Other Water Supplies

1. *"Other" water used as part of the water supply*

None.

D. Source Water Quality Monitoring Practices

1. *Potable water quality concerns:* *Yes* _____ *No* X

The District delivers an incidental amount (2-3 AF/mo.) of non-potable water for landscape use as mandated by a previous Stanislaus County LAFCO order. No urban water quality reporting is required.

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

In years when surface supplies delivered through the Delta-Mendota Canal are not adequate, water users will use groundwater wells that have elevated levels of salinity and boron. In order to minimize the crop risk when using these wells, it is sometimes necessary to blend this water with the surface water supply available from the Delta-Mendota Canal.

3. Water quality testing program and participant roles

The District is a member of the Westside-San Joaquin River Watershed Coalition, which provides waste discharge coverage under the Irrigated Lands Program administered by the Regional Water Quality Control Board. Surface water delivered into the District by the Delta-Mendota Canal is tested monthly by the Coalition at locations centrally located within the District. The water quality analyses' performed include EC, TDS and pH. The District also reviews monthly water quality reports on TDS and EC that are available on the Bureau of Reclamations Central Valley Operations web site. (See Attachment D)

Groundwater has been tested throughout the District per quality standards set by the Bureau of Reclamation (BoR) which, if met, allow non-project water to be pumped into the Delta Mendota Canal for credit and/or transport. Analysis' performed include Total Dissolved Solids (TDS), Boron, Selenium, Mercury, and Arsenic. The frequency of the tests performed depends on BoR requirements or the well owners' interest.

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

Analyses Performed	*Frequency*	*Concentration Range*	*Average*
Total Dissolved Solids (TDS)	Monthly	100-500 mg/L	250 mg/L
Electrical Conductivity (EC)	Monthly	200-800	400 ug/cm
pH	Monthly	7.0-8.0	7.8

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

Analyses Performed	*Frequency*	*Concentration Range*	*Average*
TDS	Varies	500-2500 mg/L	1200 mg/L
Boron	Varies	200-1,000 ug/L	500 ug/L
Selenium	Varies	0-30 ug/L	5 ug/L
Mercury	Varies	0-2 ug/L	None detected
Arsenic	Varies	0-10 ug/L	2.0 ug/L

E. Water Uses within the District

1. Agricultural
See Water Inventory Tables, Table 5 - Crop Water Needs

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

Crop name	*Total Acres*	*Level Basin - acres*	*Furrow - acres*	*Sprinkler - acres*	*Low Volume - acres*	*Multiple methods - acres*
Alfalfa Hay	1,651	512	594	545		
Almonds	14,707			9,094	5,613	
Apples	53				53	
Apricots	2,690			1,587	1,103	
Barley	391	83	80			
Beans	2,420		1,732			688
Broccoli	596			445	151	
Corn (Silage)	560	40	505	15		
Cotton: Lint	64		64			
Grapefruit	46			10	36	
Grapes, Wine	368				368	
Greens	277		149	128		
Irrigated Pasture	378	378				
Lemons & Limes	31			31		
Melons	815		815			815
Oats	3,042		1,300			442
Olives	22				22	
Oranges/Citrus	350			111	239	
Other (Cherries, Persimmons, Pluots)	595	10		280	305	
Other (beets, etc)	305			75	63	167
Other Hay	298	41	257			
Peaches	727			610	117	
Pistachios	24				24	
Plums	10			10		
Squash	240			89	151	
Strawberries	1		1			
Tomatoes	3,409				1,639	1,770
Total Nursery	132			132		
Walnuts	1,727			1,500		227
Wheat	1,675		1,254	421		
Misc Crops	885	151	247	195	260	32
Total	***38,489***					

3. Urban use by customer type in current year

Customer Type	*Number of Connections*	*AF*
Single-family	N/A	
Multi-family	N/A	
Commercial	N/A	
Industrial	N/A	
Institutional	N/A	

Customer Type	*Number of Connections*	*AF*
Landscape irrigation	1	19
Wholesale	N/A	
Recycled	N/A	
Other (dust control @ landfill)	N/A	15
Other (specify)	N/A	
Other (specify)	N/A	
Unaccounted for	N/A	
Total	1	34

4. Urban Wastewater Collection/Treatment Systems serving the service area – current year

N/A

5. Ground water recharge/management in current year (Table 6)

N/A

6. Transfers and exchanges into or out of the service area in current year (Table 6)
These transfers are also listed below in Item No. 7, however they are categorized in this table

From Whom	*To Whom*	*AF*	*Use*
District Landowners	Self in Other Districts	7,312	Ag Operations
DPWD – Pool	WWD	2,800	Supplemental Supplies Pool Management
DPWD – Pool	SLWD	400	Supplemental Supplies Pool Management

7. Trades, wheeling, wet/dry year exchanges, banking or other transactions in current year (Table 6)

A portion of the water supply in Table 6 is comprised of 13,495 AF of Rescheduled Water from the 2007-08 water year. Rescheduling is a very valuable water management tool utilized by the District to the maximum extent possible to ameliorate the disparity between the timing of crop demands and allocation notifications, as well as to provide a constant supplement to the likelihood of a shortage in a future water year. Transfers are also utilized as a water management tool, however, all of the District transfers are of the agriculture-to-agriculture type and primarily serve to supplement chronic contract allocation shortages. In 2008, the District transferred "in" a total of 26,181 AF and transferred 10,512 AF "out" to other federally-served districts as part of its water operations.

From Whom	*To Whom*	*AF*	*Use*
SJRECWA	Del Puerto Water District	4,623	Ag
SJRECWA / Merced ID / VAMP Exch.	Del Puerto Water District	668	Ag
Byron Bethany ID	Del Puerto Water District	70	Ag

CVC –Lower Tule / Pixley ID's	Del Puerto Water District	17,962	Ag
Yuba County Water Agency	Del Puerto Water District	2,858	Ag
Del Puerto Water District	San Luis Water District	3,320	Ag
Del Puerto Water District	Westlands Water District	6,926	Ag
Del Puerto Water District	Byron Bethany ID	266	Ag

8. Other uses of water in current year

Other Uses	*AF*
N/A	

F. Outflow from the District (Agricultural only)

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 Appendix B (include in plan as Attachment L)

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

1. Surface and subsurface drain/outflow in current year

The District has neither subsurface drainage nor operational spills. The District does have the ability to discharge outflows into the numerous creeks listed in the natural resource section, as well as to down-slope water districts and county storm drains, all of which eventually drain into the San Joaquin River. Due to the installation of high efficiency irrigation systems throughout the District, however, there is little or no outflow from a majority of District lands.

The outflow points represent furrow irrigated vegetable crops such as tomatoes, beans, and broccoli. With the use of proper water management techniques it is estimated that 50% of irrigation water runoff can be eliminated. Practices such as the use of gated pipe, sprinklers, land leveling, shortening furrow runs, and PAM greatly control how water is applied to vegetable crops and how it moves down the furrow.

The District has no measurement devices at the outflow points listed below. Using an average vegetable crop ET of 2.3 acre feet per acre with an irrigation efficiency of 80% estimated per acre outflow would be .48 acre feet per acre of outflow. This is reflected in the chart below:

Outflow point	*Location description*	*AF*	*Type of measurement*	*Accuracy (%)*	*% of total outflow*	*Acres drained*
Marshall Road Drain	Intersection of Hwy 33 and Marshall Road	971	Estimate		25%	2,023
Crow	One Mile South of Hwy 33	904	Estimate		23%	1,885

Creek	on Eastin Road, drains into Orestimba Creek					
Delta Mendota Canal (DMC)	Land Upslope of the Canal, Field drains entering DMC	717	Estimate		18%	1,494
Spanish Land Grant	Intersection of Ike Crow Road and Hwy 33, Drains to San Joaquin River	488	Estimate		16%	1,017
Downslope Water Districts	Fields that drain into Central California Irrigation District and West Stanislaus Irrigation District	718	Estimate		18%	1,496

Outflow point	*Where the outflow goes (drain, river or other location)*	*Type Reuse (if known)*
Marshall Road Drain	San Joaquin River and Marshall Road Drain Reuse Reservoir	Agriculture and San Joaquin River beneficial uses
Field Drains	Downstream/slope water districts & water users	Agriculture
Crow Creek Drain	Orestimba Creek to the San Joaquin River	San Joaquin River beneficial uses

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

Del Puerto Water District participates in the Westside San Joaquin River Watershed Coalition (Coalition), which was formed under the umbrella of the San Joaquin Valley Drainage Authority (SJVDA) to participate as a coalition group in the Regional Boards' Irrigated Lands Waiver Program. The Coalition provides data collection, report preparation and communication with the Regional Board. Decision-making, such as setting of budgets and policy direction, is accomplished through regular public meetings of an appointed SJVDA Steering Committee. District staff currently chairs this committee. (See Attachment D – Water Quality Monitoring Report)

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

Analysis performed and water quality findings for surface drainage are summarized in Attachment D. The District has no subsurface drainage.

Analyses Performed	*Frequency*	*Concentration Range*	*Average*	*Reuse limitation?*
See Attachment D				

Outflow (subsurface drainage) Quality Testing Program

Analyses Performed	*Frequency*	*Concentration Range*	*Average*	*Reuse limitation?*
N/A				

4. *Discussion of 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 participates fully in the Regional Board's Irrigated Lands Program through the Westside San Joaquin River Watershed Coalition, is actively involved in the monitoring of contaminants of concern and promotes implementation by its landowners and water users of those Best Management Practices identified to help improve the quality of its drain waters.

G. Water Accounting (Inventory)

1. Water Supplies Quantified

a. Surface water supplies, imported and originating within the service area, by month (Table 1)
b. Ground water extracted by the district, by month (Table 2)
c. Effective precipitation by crop (Table 5) **NOTE: For purposes of this report, effective precipitation is interpreted as annual rainfall during the growing season (March-October). Average rainfall during this time in 2008 was 3.46 inches, or .28 AF/acre.**
d. Estimated annual ground water extracted by non-district parties (Table 2)
e. Recycled urban wastewater, by month (Table 3)
f. Other supplies, by month (Table 1)

2. Water Used Quantified

a. Agricultural conveyance losses, including seepage, evaporation, and operational spills in canal systems (Table 4) or
Urban leaks, breaks and flushing/fire uses in piped systems (Table 4)
b. Consumptive use by riparian vegetation or environmental use (Table 6)
c. Applied irrigation water - crop ET, water used for leaching/cultural practices (e.g., frost protection, soil reclamation, etc.) (Table 5) **NOTE: Salt buildup is not a problem within the District due to high quality surface water deliveries and well-drained soils, thus there are no culturally practiced leaching requirements at this time. Increased use of groundwater sources with higher EC's could eventually lead to salt buildup and requirements for leaching as a practice.**
d. Urban water use (Table 6)
e. Ground water recharge (Table 6)
f. Water exchanges and transfers and out-of-district banking (Table 6)

g. *Estimated deep percolation within the service area (Table 6)*
h. *Flows to perched water table or saline sink (Table 7)*
i. *Outflow water leaving the district (Table 6)*
j. *Other*

3. *Overall Water Inventory*
   a. *Table 6*

H. Assess Quantifiable Objectives:

Identify the Quantifiable Objectives that apply to the District (Planner, chapter 10) and provide a short narrative describing past, present and future plans that address the CALFED Water Use Efficiency Program goals identified for the District.

QO #	*QO Description*	*Past, Present & Future Plans*
87	Decrease flows to salt sinks to increase the water supply for beneficial uses/All affected lands	NA
74	Provide flow to improve ecosystem conditions/Delta	
75	Provide flow to improve ecosystem conditions/Sacramento River below Keswick	NA
90	Provide long-term diversion flexibility to increase the water supply for beneficial uses/Salt affected soils	NA
91	Provide short-term diversion flexibility to make water available to EWA in a timely manner/All suitable lands	NA
77	Reduce group A pesticides (aldrin, dieldrin, chlordane, endrin, heptachlor, heptachlor epoxide, hexachlorocyclohexane [including lidane], endosulfan and toxaphene) to enhance and maintain beneficial uses of water./Delta	Reduction of irrigation drainwater flows into grassland and marshes, through the use of high efficiency irrigation systems, tailwater ponds and tailwater return systems.
93	Reduce group A pesticides (aldrin, dieldrin, chlordane, endrin, heptachlor, heptachlor epoxide, hexachlorocyclohexane [including lidane], endosulfan and toxaphene) to enhance and maintain beneficial uses of water./San Joaquin River	Participation in the Westside San Joaquin River Watershed Coalition complying with RWQCB Irrigated Lands Program
78	Reduce native constituents (selenium, boron, molybdenum, organic carbon) to enhance and maintain beneficial uses of water./Delta	Reduction of irrigation drainwater flows into grassland and marshes, through the use of high efficiency irrigation systems, tailwater ponds and tailwater return

		systems A
95	Reduce native constituents (selenium, boron, molybdenum, organic carbon) to enhance and maintain beneficial uses of water./Grassland Marshes	Reduction of irrigation drainwater flows into grassland and marshes, through the use of high efficiency irrigation systems, tailwater ponds and tailwater return systems.
96	Reduce native constituents (selenium, boron, molybdenum, organic carbon) to enhance and maintain beneficial uses of water./Mud & Salt Slough	Reduction of irrigation drainwater flows into grassland and marshes, through the use of high efficiency irrigation systems, tailwater ponds and tailwater return systems
79	Reduce native constituents (selenium, boron, molybdenum, organic carbon) to enhance and maintain beneficial uses of water./San Joaquin River	Reduction of irrigation drainwater flows into grassland and marshes, through the use of high efficiency irrigation systems, tailwater ponds and tailwater return systems
81	Reduce nutrients to enhance and maintain beneficial uses of water/Delta	Reduction of irrigation drainwater flows into grassland and marshes, through the use of high efficiency irrigation systems, tailwater ponds and tailwater return systems
97	Reduce pesticides to enhance and maintain beneficial uses of water/Mud Slough	Participation in the Westside San Joaquin River Watershed Coalition complying with RWQCB Irrigated Lands Program and reduction of irrigation drainwater flows.
100	Reduce pesticides to enhance and maintain beneficial uses of water/Orestimba Creek	Participation in the Westside San Joaquin River Watershed Coalition complying with RWQCB Irrigated Lands Program and reduction of irrigation drainwater flows
83	Reduce pesticides to enhance and maintain beneficial uses of water/Sacramento Slough	NA
99	Reduce pesticides to enhance and maintain beneficial uses of water/Salt Slough	Participation in the Westside San Joaquin River Watershed Coalition complying with RWQCB Irrigated Lands Program and reduction of irrigation drainwater flows
82	Reduce pesticides to enhance and maintain beneficial uses of water/San Joaquin River	Participation in the Westside San Joaquin River Watershed Coalition complying with RWQCB Irrigated Lands Program and reduction of irrigation drainwater flows
84	Reduce pesticides to enhance and maintain beneficial uses of water/Delta	Participation in the Westside San Joaquin River Watershed Coalition complying with RWQCB Irrigated Lands Program and reduction of irrigation drainwater flows
102	Reduce pesticides to enhance and maintain beneficial uses of water/Grassland Marshes	Participation in the Westside San Joaquin River Watershed Coalition complying with RWQCB Irrigated Lands Program and reduction of irrigation drainwater flows
103	Reduce pesticides to enhance and maintain beneficial uses of water/Mud & Salt Slough	Participation in the Westside San Joaquin River Watershed Coalition complying with

		RWQCB Irrigated Lands Program and reduction of irrigation drainwater flows
104	Reduce pesticides to enhance and maintain beneficial uses of water/San Joaquin River	Participation in the Westside San Joaquin River Watershed Coalition complying with RWQCB Irrigated Lands Program and reduction of irrigation drainwater flows
86	Reduce temperatures to enhance and maintain aquatic species populations./Delta	NA

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%*

Number of turnouts that are unmeasured or do not meet the standards listed above: 0

Number of measurement devices installed last year: 4*

Number of measurement devices installed this year: 4*

Number of measurement devices to be installed next year: 5+*

*All turnouts use propeller meters that totalize in acre feet and measure real-time flow in cubic feet per second (cfs) or gallons per minute (gpm). There are sub-metering requirements that need to be met on an annual basis depending on parcel splits and ownership/water user changes.

Types of Measurement Devices Being Installed	*Accuracy*	*Total Installed During Current Year*
Propeller meters	+/- 6%	2+
Doppler meters	+/- 6%	3+

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

Name: Anthea Hansen *Title:* Assistant Manager

Address: P.O. Box 1596 Patterson, CA 95363

Telephone: (209)892-4470 *E-mail:* ahansen@delpuertowd.org

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

a. On-Farm Evaluations

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

The District works in conjunction with the San Luis Delta-Mendota Water Authority to sponsor/promote mobile lab services for on-farm irrigation and drainage evaluations. In addition, the District promotes the availability of drainage pond-sizing calculation worksheets and implementation funding available through the Westside San Joaquin Watershed Coalition. Users are made aware of these services through newsletters and mailers.

	Total in district	*# surveyed last year*	*# surveyed in current year*	*# projected for next year*	*# projected 2nd yr in future*
Irrigated acres	36,869	180	0	320	320
Number of farms	145	2	0	4	4

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

The District provides customers with documented monthly water use statements detailing water use by turnout within ten (10) days after the end of the month following delivery. Throughout the year, meters are read weekly by the SLDMWA and flow timings are performed on those running at the time of reading, thereby making the latest water use information available to users upon request. While the vast majority of these meters measure field specific crop water use, data from meters measuring water to more than one crop can be combined with water order information (if provided by crop) to closely estimate crop-specific water use.

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

Real-time and normal irrigation scheduling is accomplished using CIMIS data, crop ET information and soil moisture content readings from field instruments used in field. The West Stanislaus Resource Conservation operates a CIMIS station in Patterson which is central to the District. This station is designed to provide District users with precise weather and crop ET information.

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

Data on surface water delivered through the Delta Mendota Canal is available through the State Department of Water Resources (DWR), Bureau of Reclamation (BOR) and the San Luis Delta-Mendota Water Authority (SLDMWA).

The District operates no groundwater pumping facilities. Data on the quantity and quality of wells participating in the District-administered program that allows for the storage of privately developed groundwater supplies in federal facilities is provided to the participants and maintained in District files for archival and general information purposes. The District also obtains some information regarding the quantity of groundwater supplies being utilized by District users through a request for information regarding the crop acres have been irrigated or supplemented with ground water contained in their required annual crop report to the District.

In 1996, the District adopted and became part of a regional AB3030 Groundwater Management Plan for the Northern Agencies in the Delta-Mendota Canal Service Area and a Portion of San Joaquin County. The plan is coordinated through the SLDMWA by way of a Program Activity Agreement. The program has identified various wells throughout the region and measures groundwater levels twice a year at identified wells. From this database a monitoring network is being developed to provide information on sustainable wells.

The District does not measure drain water quantity leaving its lands and should be noted that there has been a significant reduction in acreage with drain water due to drip and micro irrigation systems installed in fields. Drain water leaving District lands upslope form the Delta-Mendota Canal is returned to the canal for downstream agricultural reuse.

The District participates in the Westside San Joaquin River Watershed Coalition to comply with the Conditional Waiver of Waste Discharge regulations. Monthly water samples are tested for general physical, metals, pesticides, and toxicity. The results are reported to the Regional Water Quality Control Board semi-annually and to landowners via a Quarterly Coalition Newsletter.

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

The District maintains an extensive library of water management materials and videos which are available to water users, staff and the public upon request.

The District also publishes a quarterly newsletter that is mailed to all water users in the District. It is intended to provide information both of general interest and regarding District water conservation and management programs. (See Attached Exhibit G - "Del Puerto Digest")

The District holds an annual water users' meeting to inform users of District activities and programs as well as the technical assistance offered by local, state and federal agencies such as the U.S.D.A., the University of California Cooperative Extension and the West Stanislaus Resource Conservation District.

The General Manager maintains an active schedule of public speaking and involvement throughout the community.

Program	*Co-Funders (If Any)*	*Yearly Targets*
Quarterly Newsletter	None	Information Source
Conservation & Management Library	USBR	Information Source
Annual Water Users' Meeting	None	Information Dissemination
Public Outreach	None	Information Dissemination

See Exhibit H for samples of provided materials and notices

e. other

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

The District has historically billed all delivered water by quantity delivered, with supplemental supplies delivered at much higher rates to reflect the costs of the active transfer market.

5. Evaluate and describe the need for changes in policies of the institutions to which the district is subject

On behalf of its customers, the District supports all efforts aimed at improving water supply reliability and enhancing water management opportunities. Many of these efforts are coordinated through the San Luis & Delta-Mendota Water Authority, the Central Valley Project Water Association, the Association of California Water Agencies, the Delta-Mendota Canal Contractor's Authority and the Westside San Joaquin River Watershed Coalition. Through these agencies and on its own, the District is significantly involved in a wide range of policy discussions ranging from local land use planning to State-wide water supply planning. Of particular interest are policy level discussions with the Bureau of Reclamation regarding rate-setting, financial and water accounting, transfer and rescheduling guidelines, Warren Act Contracting, and water supply operations and allocation procedures among others.

6. Evaluate and improve efficiencies of district pumps

N/A – The District has no pumps

B. Exemptible BMPs for Agricultural Contractors

(See Planner, Chapter 2, Appendix C for examples of exemptible conditions)

1. Facilitate alternative land use

Drainage Characteristic	*Acreage*	*Potential Alternate Uses*
High water table (<5 feet)		
Poor drainage		
Ground water Selenium concentration > 50 ppb		
Poor productivity	±4000	Dry-land farming, grazing and/or habitat

In response to ongoing water supply allocation shortages, the District facilitated an effort between certain of its landowners to permanently retire specific less productive lands in order to utilize the water supply in more productive areas. Alternative uses on these retired lands currently include dry land farming, grazing, and/or habitat mitigation. In addition to this permanent program, annual efforts of a similar nature are undertaken by growers who seek to utilize their limited surface supplies on the most productive land available, while temporarily fallowing any lands that may be less productive.

2. *Facilitate use of available recycled urban wastewater that otherwise would not be used beneficially, meets all health and safety criteria, and does not cause harm to crops or soils*

The District is currently pursuing a feasibility study on the use of recycled water produced by the cities of Modesto and Turlock, California. This study will identify and evaluate any legal and institutional issues associated with the proposed project, analyze alternatives and identify a recommended delivery system, identify all environmental, permitting, design, construction, operations, maintenance, and financing requirements, as well as determine the approximate costs and assess the financial feasibility of the project.

Sources of Recycled Urban Waste Water	*AF/Y Available*	*AF/Y Currently Used in District*
North Valley Regional Recycled Water Project (Modesto/Turlock) Phase I	31,252 AF	0
North Valley Regional Recycled Water Project (Modesto/Turlock) Phase II	15,682 AF	0

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

The District currently facilitates landowner water management best practices by promoting and coordinating a low interest loan programs whereby customers can purchase and install high-efficiency irrigation and/or drainage return systems. The recently finalized SRF Loan program funded 81 projects throughout the District, funding the installation of $4 million worth of drip, micro, and sprinkler systems. This program was replaced in 2007 by the Agricultural Drain Loan Program, which thus far has funded 31 projects worth over $3.3 million. (Note: Due to the State of California's current fiscal crisis, the remaining $1.6 million in available program funding for the ADLP is currently frozen). (See Attached Exhibit I – Notice of Irrigation System Improvement Program)

Funding source Programs	*How provide assistance*
Proposition 13 Drainage Grants	$500,000.00 Grants
State Revolving Fund Loan Program	$4,000,000.00 Low Interest Loans
Agricultural Drain Loan Program	$5,000,000.00 Low Interest Loans

4. *Incentive pricing*

While the District has adopted policies that ensure that "excess" supplies over base crop requirements are sold at rates that include greater-than-cost components, because of inadequate supplies available to meet in-District needs, these policies have become somewhat "moot". By default, incentive pricing occurs as a result of the District's on-going need to access supplemental supplies at greatly increased costs, thereby resulting in a *de facto* "tiered rate" structure for any water supplies required in excess of the current year's contract allocation.

Structure of incentive pricing	*Related goal*

Supplemental Supply Costs	More efficient water use at the farm level

5. a) Line or pipe ditches and canals

N/A – No delivery system

Canal/Lateral (Reach)	*Type of Improvement*	*Number of Miles in Reach*	*Estimated Seepage (AF/Y)*	*Accomplished/ Planned Date*

b) Construct regulatory reservoirs

N/A – No delivery system regulatory reservoirs

Reservoir Name	*Annual Spill in Section (AF/Y)*	*Estimated Spill Recovery (AF/Y)*	*Accomplished/ Planned Date*

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

Because growers in the District have the ability to begin and/or end irrigation cycles on short notice (i.e. same day), maximum irrigation efficiency is available to growers through the District's water ordering/delivery system. (See Attached Exhibit J - Contractor "Agricultural Water Order Form")

7. Construct and operate district spill and tailwater recovery systems

The District has no operational spills. While there are no District-managed tailwater recovery systems, there are numerous tailwater systems operated by individual landowners. Many of these systems have been constructed through grant and financing programs sponsored by the District. The District has also participated with neighboring Water Districts in the development of the Marshall Road Drain Project. This project reduces direct discharges into the San Joaquin River and allows for improved water management by recycling this water back to the local irrigation supply. There are also numerous parcels of land that either drain into delivery laterals of downslope Water Districts for reuse, as well as lands that drain into the Delta Mendota Canal allowing for reuse.

Distribution System Lateral	*Annual Spill (AF/Y)*	*Quantity Recovered and reused (AF/Y)*
Total		

Drainage System Lateral	*Annual Drainage Outflow (AF/Y)*	*Quantity Recovered and reused (AF/Y)*
Marshall Road Drain	971	971
Private Tailwater Recovery Systems	1,208	1,208
Delta Mendota Canal	717	717
Drainage into downslope districts	718	718
Total	3,614	3,614

8. Plan to measure outflow

Total # of outflow (surface) locations/points 8
Total # of outflow (subsurface) locations/points N/A
Total # of measured outflow points 0
Percentage of total outflow (volume) measured during report year N/A

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

Location & Priority	*Estimated cost (in $1,000s)*				
	2009	*2010*	*2011*	*2012*	*2013*
Plan is being developed					

9. Optimize conjunctive use of surface and ground water

Groundwater is used when and where surface water is unable to meet demands (as available). Non-project water from private wells is introduced into the DMC under the auspices of the District's Warren Act Contract and redelivered to lands commonly held by the individuals that pump the supply. However, groundwater is spotty in many areas of the District and/or lacks the quality requirements for cropping.

10. Automate canal structures

N/A – The District does not operate or maintain a delivery system.

11. Facilitate or promote water customer pump testing and evaluation

The District participates with the SLDMWA to provide 50% cost sharing for irrigation system pump testing and efficiency analysis. This service is available to all water users within the District at no cost to the customer.

12. Mapping

The District is currently engaged with a GIS consulting firm to develop a database of District parcel data that will result in a GIS-based wall map of the entire District. The cost of this effort is estimated to be

$7,000. It is anticipated that future GIS-based mapping efforts could be pursued in relation to groundwater and soils information.

GIS maps	*Estimated cost (in $1,000s)*				
	2009	*2010*	*2011*	*2012*	*2013*
Layer 1 – Distribution system-Turnout Locations	$0	$4,933	$2,067		
Layer 2 – Drainage system				$1,500	
Suggested layers:					
Layer 3 – Ground water information					$1,500
Layer 4 – Soils map					
Layer 5 – Natural & cultural resources					
Layer 6 – Problem areas					

C. Provide a 3-Year Budget for Implementing BMPs

1. Amount actually spent during current year.

BMP #		*BMP Name*	*Actual Expenditure (not including staff time)*	*Staff Hours*
A	*1*	*Measurement*	*$10,000*	*1040*
	2	*Conservation staff*	*$0*	*150*
	3	*On-farm evaluation /water delivery info*	*$0*	*0*
		Irrigation Scheduling	*$0*	*0*
		Water quality	*$99,938*	*260*
		Agricultural Education Program	*$2,645*	*100*
	4	*Quantity pricing*	*$0*	*250*
	5	*Policy changes*	*$0*	*350*
	6	*Contractor's pumps*	*$0*	*0*
B	*1*	*Alternative land use*	*$0*	*0*
	2	*Urban recycled water use*	*$0*	*20*
	3	*Financing of on-farm improvements*	*$459,760*	*150*
	4	*Incentive pricing*	*$0*	*500*
	5	*Line or pipe canals/install reservoirs*	*$0*	*0*
	6	*Increase delivery flexibility*	*$0*	*200*
	7	*District spill/tailwater recovery systems*	*$0*	*0*
	8	*Measure outflow*	*$0*	*240*
	9	*Optimize conjunctive use*	*$0*	*0*
	10	*Automate canal structures*	*$0*	*0*
	11	*Customer pump testing*	*$0*	*0*
	12	*Mapping*	*$0*	*0*
		Total	*$572,343*	*3260*

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

BMP	#	BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours
A	1	Measurement	$10,000	1040
	2	Conservation staff	$0	150
	3	On-farm evaluations/water delivery info	$800	0
		Irrigation Scheduling	$0	0
		Water quality	$64,931	260
		Agricultural Education Program	$4,846	100
	4	Quantity pricing	$0	250
	5	Policy changes	$0	350
	6	Contractor's pumps	$0	0
B	1	Alternative land use	$0	0
	2	Urban recycled water use	$0	40
	3	Financing of on-farm improvements	$0	150
	4	Incentive pricing	$0	500
	5	Line or pipe canals/install reservoirs	$0	0
	6	Increase delivery flexibility	$0	200
	7	District spill/tailwater recovery systems	$0	0
	8	Measure outflow	$0	240
	9	Optimize conjunctive use	$0	0
	10	Automate canal structures	$0	0
	11	Customer pump testing	$0	0
	12	Mapping	$0	0
		Total	$80,577	3280

3. *Projected budget summary for 3rd year.*

BMP	#	BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours
A	1	Measurement	$10,000	1040
	2	Conservation staff	$0	150
	3	On-farm evaluations/water delivery info	$800	0
		Irrigation Scheduling	$0	0
		Water quality	$80,071	260
		Agricultural Education Program	$0	100
	4	Quantity pricing	$0	250
	5	Policy changes	$0	350
	6	Contractor's pumps	$0	0
B	1	Alternative land use	$0	0
	2	Urban recycled water use	$44,244	400
	3	Financing of on-farm improvements	$0	150
	4	Incentive pricing	$0	500
	5	Line or pipe canals/install reservoirs	$0	0
	6	Increase delivery flexibility	$0	200
	7	District spill/tailwater recovery systems	$0	0
	8	Measure outflow	$0	240

9	*Optimize conjunctive use*	*$0*	*0*
10	*Automate canal structures*	*$0*	*0*
11	*Customer pump testing*	*$0*	*0*
12	*Mapping*	*$0*	*0*
	Total	*$135,115*	*3640*

Section 4: Best Management Practices for Urban Contractors

(Due to the adoption of revised BMPs in December 2008, this section will be updated in Spring 2009.)

A. Urban BMPs

1. *Utilities Operations*
   - *1.1 Operations Practices*
   - *1.2 Pricing*
   - *1.3 Metering*
   - *1.4 Water Loss Control*

2. *Education*
   - *2.1 Public Information Programs*
   - *2.2 School Education*

3. *Residential*

4. *CII*

5. *Landscape*

B. Provide a 3-Year Budget for Expenditures and Staff Effort for BMPs

1. Amount actually spent during current year.

Year 2010 BMP # BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
1. Utilities Operations		
1.1 Operations Practices	$0	0
1.2 Pricing$0	0	
1.3 Metering	$0	0
1.4 Water Loss Control	$0	0
2. Education		
2.1 Public Information Programs	$0	0
2.2 School Education	$0	0
3. Residential	$0	0

4. CII		$0	0
5. Landscape		$0	0
	Total	$0	0

2. *Projected budget summary for 2nd year.*

Year 2011 BMP #	BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
1. Utilities Operations			
1.1 Operations Practices		*$0*	*0*
1.2 Pricing		*$0*	*0*
1.3 Metering		*$0*	*0*
1.4 Water Loss Control		*$0*	*0*
2. Education			
2.1 Public Information Programs		*$0*	*0*
2.2 School Education		*$0*	*0*
3. Residential		*$0*	*0*
4. CII		*$0*	*0*
5. Landscape		*$0*	*0*
	Total	*$0*	*0*

3. *Projected budget summary for 3rd year.*

Year 2012 BMP #	BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
1. Utilities Operations			
1.1 Operations Practices		$0	0
1.2 Pricing$0		0	
1.3 Metering		$0	0
1.4 Water Loss Control		$0	0
2. Education			
2.1 Public Information Programs		$0	0
2.2 School Education		$0	0
3. Residential		$0	0
4. CII		$0	0
5. Landscape		$0	0
	Total	$0	0

Year of Data | 2008 | **Enter data year here**

Table 1

Surface Water Supply

2008 Month Method	Federal Ag Water (acre-feet)	Federal non-Ag Water. (acre-feet)	State Water (acre-feet)	Local Water (acre-feet)	Federal Transfers In (acre-feet)	Upslope Drain (acre-feet)	Total (acre-feet)
January	42	2	0	0	0	0	44
February	397	2	0	0	0	0	399
March	4481	3	0	0	0	0	4,484
April	8502	4	0	0	0	0	8,506
May	5974	3	0	0	3,450	0	9,427
June	10351	3	0	0	0	0	10,354
July	3573	3	0	0	5,449	0	9,025
August	3216	3	0	0	8,479	0	11,698
September	600	3	0	0	5,313	0	5,916
October	3049	4	0	0	2,502	0	5,555
November	407	2	0	0	796	0	1,205
December	37	2	0	0	192	0	231
TOTAL	40,629	34	0	0	26,181	0	66,844

Table 2

Ground Water Supply

2008 Month	Private Groundwater Pumped w/WA Contract (acre-feet)	Private Groundwater *(acre-feet)	District Groundwater *(acre-feet)
Method			
January	0	0	0
February	0	0	0
March	0	1,000	0
April	0	1,000	0
May	235	3,000	0
June	616	8,000	0
July	721	9,000	0
August	746	9,000	0
September	73	1,000	0
October	70	0	0
November	72	0	0
December	74	0	0
TOTAL	2,607	32,000	0

*normally estimated

Table 3

Total Water Supply

2008 Month Method	Surface Water Total (acre-feet)	District Groundwate (acre-feet)	Recycled M&I (acre-feet)	Total District (acre-feet)
January	44	0	0	44
February	399	0	0	399
March	4,484	0	0	4,484
April	8,506	0	0	8,506
May	9,427	0	0	9,427
June	10,354	0	0	10,354
July	9,025	0	0	9,025
August	11,698	0	0	11,698
September	5,916	0	0	5,916
October	5,555	0	0	5,555
November	1,205	0	0	1,205
December	231	0	0	231
TOTAL	66,844	0	0	66,844

*Recycled M&I Wastewater is treated urban wastewater that is used for agriculture.

Table 4

Distribution System

2008 Canal, Pipeline, Lateral, Reservoir	Length (feet)	Width (feet)	Surface Area (square feet)	Precipitatio (acre-feet)	Evaporation (acre-feet)	Spillage (acre-feet)	Seepage (acre-feet)	Total (acre-feet)
N/A	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
TOTAL			0	0	0	0	0	0

Table 5

Crop Water Needs

2008 Crop Name	Area (crop acres)	Crop ET (AF/Ac)	Leaching Requiremen (AF/Ac)	Cultural Practices (AF/Ac)	Effective Precipitatio (AF/Ac)	Appl. Crop Water Use (acre-feet)
Almonds	14,707	3.60	0.00	0.00	0.53	45,150
Tomatoes (Mkt/Ca	3,409	2.30	0.00	0.00	0.55	5,966
Oats	3,042	1.90	0.00	0.00	0.40	4,563
Apricots	2,690	3.60	0.00	0.00	0.56	8,178
Beans (Dry/Mkt)	2,420	1.90	0.00	0.00	0.54	3,291
Walnuts	1,727	4.00	0.00	0.00	0.53	5,993
Wheat	1,675	1.90	0.00	0.00	0.40	2,513
Alfalfa Hay	1,651	4.30	0.00	0.00	0.20	6,769
Peaches	727	3.70	0.00	0.00	0.54	2,297
Cantaloupe, Melon	815	1.80	0.00	0.00	0.60	978
Broccoli	596	1.90	0.00	0.00	0.36	918
Cherries, etc	595	3.60	0.00	0.00	0.55	1,815
Corn (silage)	560	2.80	0.00	0.00	0.55	1,260
Barley (feed)	391	1.90	0.00	0.00	0.40	587
Irrigated Pasture	378	4.40	0.00	0.00	0.50	1,474
Grapes (wine)	368	2.60	0.00	0.00	0.50	773
Oranges/Lemons	544	3.70	0.00	0.25	0.44	1,909
Other Veg	305	1.90	0.00	0.00	0.55	412
Other Hay	298	1.90	0.00	0.00	0.40	447
Greens	277	1.90	0.00	0.00	0.60	360
Squash	240	1.90	0.00	0.00	0.60	312
Nursery	132	2.00	0.00	0.00	0.60	185
Misc	942	2.00	0.00	0.00	0.50	1,413
Crop Acres	38,489					97,562

Total Irrig. Acres 36,869 (If this number is larger than your known total, it may be due to double cropping)

Table 6

2008 District Water Inventory

Water Supply	Table 3		66,844
Riparian ET	(Distribution and Drain)	minus	0
Groundwater recharge	intentional - ponds, injection	minus	0
Seepage	Table 4	minus	0
Evaporation - Precipitation	Table 4	minus	0
Spillage	Table 4	minus	0
Transfers/exchanges/trades/wheel	(into or out of the district)	plus/minus	(10,512)
Non-Agri deliveries	delivered to non-ag customer:	minus	(34)
Water Available for sale to agricultural customers			56,298
Compare the above line with the next line to help find data gaps			
2008 Actual Agricultural Water Sales	From District Sales Records		56,283
Private Groundwater	Table 2	plus	34,607
Crop Water Needs	Table 5	minus	97,562
Drainwater outflow	(tail and tile not recycled)	minus	0
Percolation from Agricultural Land	(calculated)		(6,672)

Table 7

Influence on Groundwater and Saline Sink

2008

Agric Land Deep Perc + Seepage + Recharge - Groundwater Pumping = District Influence	0
Estimated actual change in ground water storage, including natural recharge)	0
Irrigated Acres (from Table 5)	38,489
Irrigated acres over a perched water table	0
Irrigated acres draining to a saline sink	0
Portion of percolation from agri seeping to a perched water table	0
Portion of percolation from agri seeping to a saline sink	0
Portion of On-Farm Drain water flowing to a perched water table/saline sink	0
Portion of Dist. Sys. seep/leaks/spills to perched water table/saline sink	0
Total (AF) flowing to a perched water table and saline sink	0

Table 8

Annual Water Quantities Delivered Under Each Right or Contract

Year	Federal Ag Water (acre-feet)	Federal non-Ag Water. (acre-feet)	State Water (acre-feet)	Local Water (acre-feet)	Federal Transfers In (acre-feet)	Upslope Drain (acre-feet)	Total (acre-feet)
1999	82,726	15	0	0	13,174	0	95,915
2000	56,153	14	0	0	15,003	0	71,170
2001	50,141	16	0	0	17,069	0	67,226
2002	69,335	16	0	0	9,305	0	78,656
2003	74,183	13	0	0	9,020	0	83,216
2004	75,657	27	0	0	10,742	0	86,426
2005	66,601	38	0	0	14,289	0	80,928
2006	73,256	36	0	0	2,602	0	75,894
2007	61,325	45	0	0	21,000	0	82,370
2008	40,629	34	0	0	26,181	0	66,844
Total	650,006	254	0	0	138,385	0	788,645
Average	65,001	25	0	0	13,839	0	78,865