Del Puerto Water District
Water Management Plan
2020 Criteria

Draft-July 27, 2021

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. Prior to 2018, the District's contractual entitlement is its sole source of supply, providing up to 140,210 AF/Y when hydrology and operational considerations make allowances possible. The use of this contractual supply is governed by Reclamation Law, water code requirements and place-of-use restrictions associated with the Bureau of Reclamation's State-issued water rights permits, Reclamation Law as amended by the Reclamation Reform Act of 1982, the Central Valley Project Improvement Act, the Clean Water Act, and the Endangered Species Act. The latter of these laws (CVPIA/CWA/ESA), and particularly the 2019 Biological Opinion for the Reinitiation of Consultation on the Coordinated Operations of the CVP and SWMP issued under ESA, have rendered the District's CVP Water Service contract highly unreliable as a source of supply. As such, the District has been compelled to seek alternate sources to meet the needs of its Landowners and water users. Completed in 2018, the Modesto portion of the North Valley Regional Recycled Water Program (NVRRWP) provides the District with a reliable supply of approximately 20,000 AF/Y. On September 28, 2020, DPWD completed the process to convert the District's long-term CVP Water Service Contract to a Permanent Repayment Contract pursuant to section 4011 of the WIIN Act. Paying off the remaining debt owed to the Bureau for construction of the CVP facilities and DPWD ensures the 140,210 AF/Y of CVP water will be available to customers when hydrology and pumping restrictions make allocations possible.

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)*: 2020
Current size (acres): 43,815 *Pre-consolidation acreage

2. Current size, population, and irrigated acres

The District currently serves 43,815 irrigable acres with agricultural water supplies, and provides Incidental M&I deliveries totaling <1AF/month (avg). No urban population is served. The difference between the irrigated acreage and charged acreage is the ground fallowed by customers for economic or water supply reasons.

	2020
Size (acres)	43,815
Population served	N/A
Irrigated acres	33,684

3. Water supplies received in current year

The Current Year (2020) Water Supplies received are as follows:

Water Source	*AF*
Federal urban water (Tbl 1)	0
Federal agricultural water (Tbl 1)	14,021
State water (Tbl 1)	0
Other Wholesaler (define) (Tbl 1)	0
Local surface water (Tbl 1)	0
Upslope drain water (Tbl 1)	0
District ground water (Tbl 2)	727
Banked water (Tbl 1)	13,837
Transferred water (Tbl 6)	18,660
Recycled water (Tbl 3)	17,758
Other (define) (Tbl 1)	0
Total	65,003

4. Annual entitlement under each right and/or contract

Prior to 2018, the District's sole source of supply was its USBR Contractual entitlement. The District's contract and NVRRWP supply alone will not meet District demands in most years so the supply must be augmented by single and multi-year transfer agreements.

	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-LTR1-P	Shortage Provisions/ Pumping Restrictions.
Other AF/Y	1634 AF to 6113 AF	5 yr. Exchange Contractor Transfer	19-WC-20-5476	Quantity available varies with the current years' allocation, per the agreement.
Other AF/Y	Variable	YCWA Transfer	14-06-200-922-LTR1-P	Quantity available varies based on available supply.
Other AF/Y	Variable	GWD	16-WC-20-4840	Quantity available varies based on available supply.
Other AF/Y	Variable	Volta	16-WC-20-4844	Quantity available varies based on available supply.

5. Anticipated land-use changes

Land use changes within the District are limited to the conversion of lands from agricultural to municipal and industrial uses, and potentially solar utility developments. Under current guidelines (Exhibit A), all lands converted are detached from the District and relegated to the responsible annexing agency for water service. Although certain District acreage has been detached under the City of Patterson's General Plan and West Patterson Business Park Expansion, development is slow to occur and the District has entered into Out-of-Boundary water service contracts with those Landowners electing to continue production on the detached lands. The result is minimal reductions in the District's irrigable acreage on an annual basis.

6. Cropping patterns (Agricultural only)

Note: Del Puerto's previous plan year (2015) was submitted in WY2018.

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

Original Plan (1998)		*Previous Plan (2015)*		*Current Plan (2020)*	
Crop Name	*Acres*	*Crop Name*	*Acres*	*Crop Name*	*Acres*
Almonds	11,802	Almonds	16,082	Almonds	21,185
Tomatoes	5,922	Tomatoes	1,898	Tomatoes	1,567
Beans	4,968	Beans	1,258	Cherries	1,611
Apricots	4,169	Apricots	2,500	Apricots	1,790
Walnuts	2,540	Wheat	1,610	Wheat	1,153
Alfalfa	2,015	Walnuts	1,649	Walnuts	1,146
Other (<5%)	7,150	*Other (<5%)*	6,531	*Other (<5%)*	5,232
Total	38,566	*Total*	31,528	*Total*	33,684

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

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

Original Plan (1998)		*Previous Plan (2015)*		*Current Plan (2020)*	
Irrigation Method	*Acres*	*Irrigation Method*	*Acres*	*Irrigation Method*	*Acres*
Furrow	14,982	Furrow	6,143	Furrow	4,426
Flood	4,482	Flood	921	Flood	
Sprinkler	5,873	Sprinkler	17,896	Sprinkler	14,125
Drip/Micro	13,229	Drip/Micro	5,977	Drip/Micro	14,190
		Multiple Methods		Multiple Methods	
		Not Being Irrigated	591	Not Being Irrigated	943
Other		*Other*		*Other*	
Total	38,566	*Total*	31,528	*Total*	33,684

(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 – 146 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*
OCRRP	Recharge Basin	3,000 AF	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 (SLDMWA), 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 48 hours in advance 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 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)

For over two decades, the District has experienced chronic shortages of contract allocation largely due to regulatory restrictions and environmental and other demands placed on operation of the CVP. In more recent years, these restrictions have resulted in demand rationing when pumping capacity at Jones Pumping Plant and San Luis Reservoir drawdown requirements could not 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 capacities at Jones Pumping Plant	Increased groundwater pumping/deficit irrigation/crop loss and permanent crop damage
USBR	SWRCB WCQP-Phase II and/or Voluntary Agreements	Decreased water quantity available for pumping at Jones Pumping Plant	Increased land fallowing/ increased groundwater pumping/ higher per unit delivery costs/ shift in cropping patterns/ economic hardship for users and local communities/ Increased potential for subsidence

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

Continued restrictions on the District's water sources drive the District's planning efforts with respect to changes to facilities and operations.

The District, in partnership with CCID, is in the design phase of the Orestimba Creek Recharge and Recovery Program (OCRRP) Expansion, a 60-acre expansion of the successful 20-acre pilot groundwater recharge facility near Orestimba Creek in Newman, CA. If successful, the facility will be expanded to implement a larger groundwater recharge program which will improve groundwater quality in the area and offset the groundwater pumping growers have relied upon to manage through times of drought and insufficient CVP allocations. (*Exhibit J – White Paper on Orestimba Creek Recharge and Recover Project Expansion)*

Additionally, in partnership with the San Joaquin River Exchange Contractors Water Authority (SJRECWA), the District continues to forward environmental feasibility and design of the Del Puerto Canyon Reservoir (DPCR) project. The proposed DPCR Program involves the construction and operation of a reservoir in lower Del Puerto Canyon to provide approximately 82,000 acre-feet (AF) of new off-stream storage. The reservoir will be located in the Diablo Range foothills in western Stanislaus County, California, west of Interstate-5. The proposed facilities will provide locally owned and controlled storage for the Project Partners and other potential project beneficiaries served by the Central Valley Project. Water would be stored in the reservoir when supply is available from the Delta-Mendota Canal (DMC) and delivered to farms within the region in San Joaquin, Stanislaus, Merced, Fresno, and Madera Counties, as well as for environmental uses. (*Exhibit I – Del Puerto Canyon Reservoir Fact Sheet)*

In addition to the above-mentioned District led-projects, the District is also pursuing other potential opportunities to develop storage and/or supplemental supply opportunities in order to stabilize its water supply portfolio across all year types. Specific projects being considered are the Los Vaqueros Reservoir Expansion Project and the B.F. Sisk Dam Raise at San Luis Reservoir.

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 north-easterly 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.	2.58	2.25	1.72	0.64	0.44	0.04	0.00	0.01	0.24	0.61	1.27	1.83	11.63
Avg Temp.	47	52	58	63	70	76	80	79	75	67	56	48	64
Max. Temp.	56	64	70	77	85	93	97	95	91	82	67	57	78
Min. Temp	38	40	43	46	52	57	61	59	56	49	42	37	48
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 NCDC 6168 *Data period: Year* 1951 *to Year* 2020

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. Additionally, in 1994, the State of California purchased 450 acres of District land to protect and preserve a native California Sycamore grove that comprises approximately 50 acres. Areas in the District have also been shown to be potential habitat for several special-status species plants and animals protected under the State and Federal Endangered Species Acts including 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
Garzas 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. The Sycamore grove traditionally relies on natural runoff through Orestimba Creek and is not viewed as dependent on District water supplies. 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. Due to increases vandalism/theft, public access has been discouraged, however, primarily through the use of signage and gates.

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 CVP supply on an equal-share-per-irrigable-acre basis, which currently provides 3.2 AF/AC, subject to shortages in the contract allocation. The District further allocates water supplies developed by the NVRRWP, which is currently 6 in/AC to all irrigable acreage. 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. Reduced allocations are placed into a District "Bank" for remarketing purposes within the District. In the unlikely 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, or preferably placed into storage for future use by District Landowners. (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 must be placed by 11 a.m. daily (and by 11 a.m. on Fridays for Saturday and Sunday deliveries) a minimum of two days prior to the requested start date. 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 already "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 relationship with 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 has and adopted an annual surface water transfer policy for supplies allocated under the District's Contract. Water management type transfers are allowed between parcels of land within the District, parcels of land in other CVP-contracted Districts, and parcels of land in the SWP- contracted Oak Flat Water District, provided that the supply being transferred is associated with lands that are within the same customers landholdings, and provided that the landholder currently receives water service in the District. Transfers to other Districts are limited to a customer's current year's CVP allocation, subject to certain other terms and conditions. (See attached Exhibit C - Surface Water Transfer Policy 2020)

G. Water Measurement, Pricing, and Billing

1. Agricultural Customers

The District primarily serves an agricultural customer base.

a. The District currently serves 137 farms

b. The District currently has 146 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 293 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	146	+/- 6%	15	2	12
Propeller meter-DPWD	138	+/- 6%	30	1	12
Flumes					
Venturi					
Metered gates					
Acoustic doppler	3	+/- 6%	30	2	12
Magnetic	6	+/- 2%	30	NA	NA
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. They are billed by the acre foot of water used.

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 limit as set by Prop 218 election in 2010 allows the District to charge up to $51.00/acre. For water year 2020, the Water Availability Charge was set by the Board of Directors at $45.00/acre. Budgeted Operating costs for the 2020 water year were $94.51/acre, but the Board of Directors decided to subsidize the Water Availability Charge with reserve funds and prior year unspent budget to lessen the financial impact of decreased water supply. 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. Supplemental supply rates are set to recover all component costs of the rate-type delivered. For 2020, rate types billed were as follows: (Exhibit D - 2020-2021 Water Rate Sheet)

1. Prior to Contract Conversion in October: $106.00/AF for non-full cost supplies, $141.00/AF for Ag Full cost supplies, $166.00/AF for Limited Full cost supplies, and $275.00/AF for M&I.
2. After Contract Conversion in October: $61.00/AF for all CVP supplies.
3. 2020-2021 Additional Supplies delivered during 2020 were billed at rates of $275.00/AF for standard additional supplies and $225.00/AF for 1751 AF of returned NVRRWP supplies.
4. Rescheduled Supplies were billed at different rates depending on the year and type of water that was purchased.

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)*
$45.00	$/Acre	42,903 AC	$1,930,635.00

Volumetric charges			
Charges ($ unit)	*Charge units ($/AF), ($/HCF), etc.*	*Units billed during year (AF, HCF) etc.*	*$ collected ($ times units)*
$94.97	$/AF	5,975	$567,443.90
$23.00	$/AF	2,365	$54,395.00
$34.27	$/AF	816	$27,964.32
$225.00	$/AF	18,633	$4,192,425.00
$275.00	$/AF	12,965	$3,565,375.00
$225.00	$/AF	1,751	$393,975.00
$275.00	$/AF	3	$825.00
$9.03	$/AF	13,697	$123,683.90
$118.38	$/AF	12,775	$1,512,305.00
$106.00	$/AF	4,206	$445,836.00
$141.00	$/AF	198	$27,918.00
$166.00	$/AF	10	$1,660.00
$61.00	$/AF	2,962	$180,682.00
$235.00	$/AF	1,683	$395,505.00

(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 bi-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 SLDMWA readings, are translated into customer use statements and distributed among District water users based on both SLDMWA and District subsidiary meter readings. These 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 account 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, as limited by the quantity requested by each customer. (See Attached Exhibit F – 2020-21 Additional Supplies Request Form) In the event a customer requesting additional supplies also wishes to transfer any portion of their CVP allocation to another District, they are first required to "declare" such

transfer, and the corresponding acreage is eliminated from the pro-ration of available additional supplies until all "In-District" needs are met first.

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

Due to chronic shortages to its contract supply and extremely costly supplemental supply, the District has neither seen reason for nor found it necessary to institute or implement a formal policy against "wasteful use" of water by its customers. Section VII of the District's Rules and Regulations for Water Service, however 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 Sub-basin and the Delta-Mendota Sub-basin. During the establishment of the multi-agency DM-II GSA (DPWD and Oak Flat Water District), the portion of DPWD that was located with the Tracy Sub-basin was rezoned to be included in the Delta-Mendota Sub-basin so the GSA would be managing all of the land within the GSA's boundaries under the same GSP.

The DM-II GSA which is in turn part of the Northern and Central Delta-Mendota Region GSP group. The Northern and Central GSP group submitted their GSP in conjunction with the other 5 GSP groups that make up the Delta- Mendota Subbasin in January 2020. The Delta-Mendota Subbasin is located in the northwestern portion of the San Joaquin Valley Groundwater Basin within the southern portion of the Central Valley. The Subbasin is bounded on the west by the Tertiary and older marine sediments of the Coast Range, on the north generally by the San Joaquin-Stanislaus County line, on the east generally by the San Joaquin River and Fresno Slough, and on the south by the Tranquillity Irrigation District boundary near the community of San Joaquin. Surface waters culminate from the Fresno, Merced, Tuolumne, and Stanislaus rivers into the San Joaquin River, which drains toward the Sacramento-San Joaquin Delta.

A two-aquifer system is created by the Corcoran Clay layer and is generally pervasive throughout the Subbasin, creating a semi-confined aquifer above the Corcoran Clay layer (Upper Aquifer) and confined aquifer below the Corcoran Clay (Lower Aquifer). The Corcoran Clay layer largely inhibits vertical flow between aquifers, except in areas where the Corcoran Clay layer is thin or wells perforated in both principal aquifers provides a conduit for vertical flow.

As part of the GSP development, the water budget data from all of the participating GSA's resulted in a calculated Upper Aquifer Sustainable Yield estimate ranging from 325,000 AF to 480,000 AF, demonstrating the Subbasin's Upper Aquifer sustainable yield estimated without implementing any projects and management actions (low end of range) and how the Subbasin's Upper Aquifer sustainable yield will be impacted by implementing projects and management actions (high end of range). Based on an analysis of available data and an initial assumption of lower aquifer sustainable yield equivalent to approximately 0.35 acre-feet per acre the GSA estimates a sustainable yield of 230,000 to 250,000 AF, with historic conditions suggesting a range from 250,000 to 300,000 AF. The Coordination Committee recommended a slightly more conservative sustainable yield value of one-third (0.33) an acre-foot per acre for the Delta-Mendota Subbasin. Using this more conservative value, the estimated sustainable yield is approximately 250,000 acre-feet per year over the approximately 750,000-acre subbasin. It should be noted that sustainable management of the Lower Aquifer is governed by significant and unreasonable subsidence rather than sustainable yield. Sustainable yield is not uniform throughout the Subbasin, and it will be the responsibility of each GSA in the Subbasin to manage Lower Aquifer pumping to prevent significant and unreasonable subsidence.

3. District Facilities

As mentioned in Section 1.B, the District does not operate any facilities as all deliveries are made from the DMC. The District does utilize one groundwater recharge facility outlined in section 2.B.6.

4. Conjunctive Use

Groundwater is used when and where surface water is unavailable to meet demands. Additionally, non-project water from private wells that meet certain water quality requirements may be 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. The District estimates that farmers in the District pump on average 30,000 AF/Y from the District to supplement their irrigation demands. However, groundwater in many areas of the District is unreliable and/or lacks the quality requirements for cropping. The District's OCRRP will also provide some additional groundwater supplies in critical years. DPWD anticipates having as much as 7,500 AF available during dry and critical years for extraction and use throughout the District.

5. Ground Water Management Plan

In January of 2015, a suite of laws collectively known as the Sustainable Groundwater Management Act (SGMA) was passed by the California Legislature. In response, the Delta-Mendota Subbasin began the process of forming GSA's and started work on completing a GSP. DPWD is part of the DM-II GSA which is in turn part of the Northern and Central Delta-Mendota Region GSP group. The Northern and Central GSP group submitted their GSP in conjunction with the other 5 GSP groups that make up the Delta-Mendota Subbasin in January 2020. The Delta-Mendota Subbasin is located in the northwestern portion of the San Joaquin Valley Groundwater Basin within the southern portion of the Central Valley. The Subbasin is bounded on the west by the Tertiary and older marine sediments of the Coast Range, on the north generally by the San Joaquin-Stanislaus County line, on the east generally by the San Joaquin River and Fresno Slough, and on the south by the Tranquillity Irrigation District boundary near the community of San Joaquin. Surface waters culminate from the Fresno, Merced, Tuolumne, and Stanislaus rivers into the San Joaquin River, which drains toward the Sacramento-San Joaquin Delta.

The resulting GSP's developed a water budget that indicated current change in groundwater storage, and change in groundwater storage if District initiated projects and management actions are implemented with the goal being sustainability by 2040. The projected water budget was evaluated under climate change conditions (e.g., climate change factors were applied), as well as climate change conditions with the addition of future projects and management actions. Under the immediate climate scenario prescribed by DWR, the estimated change in groundwater storage would continue to decline by 42,000 AFY in the Upper Aquifer and 6,000 AFY in the Lower Aquifer. With the addition of projects and management actions, the negative trend in change in groundwater storage is reversed where it is estimated to decline by 4,000 AFY in the Upper Aquifer and increase by 3,000 AFY in the Lower Aquifer. These values are considered to be within a reasonable level of error given the quality of data available for the analyses.

6. Groundwater Banking

The District currently operates a 20-acre pilot groundwater recharge basin, the OCRRP. The facility takes water from an existing delivery pipeline into a conveyance ditch which delivers water to two 10-acre recharge basins. An extraction well on site can recover some of the stored water and deliver it to CCID's main canal utilizing existing drainage pipelines. The District is in the design process of an expansion project to increase to a total of 80-acres of recharge basins and up to 8 recovery wells, as well as take delivery of some flood flows from the adjacent Orestimba Creek. It is estimated the District will be able to store and/or recover up to 7,500 AF/Y from the fully developed facility.

C. Other Water Supplies

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

In 2018, the Del Puerto Water District (DPWD), in cooperation with the City of Modesto and the City of Turlock completed Phase II of the North Valley Regional Recycled Water Program (NVRRWP). NVRRWP's primary objective is to use treated recycled water from the Cities of Turlock and Modesto for use by customers within DPWD and South of Delta CVPIA designated Wildlife Refuges. Water is delivered via a new pipeline to the DMC, then via the DMC to turnouts serving DPWD and the Refuges. The NVRRWP helps provide a more reliable and resilient water supply for agriculture and the

environment. The project currently deliveries as much as 20,000 AF/Y to DPWD and as much as 7,500 AF/Y to the Refuges.

D. Source Water Quality Monitoring Practices

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

The District has in the past delivered an incidental amount (2-3 AF/mo.) of non-potable water to one landowner for landscape use as mandated by a previous Stanislaus County LAFCO order, for which no urban water quality reporting is required. Due to drought conditions, no deliveries for this use were made in recent years, and the landowner is researching the possibility of recycled water service from the City of Patterson when a connection becomes available.

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 nitrates. 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 Long-Term Irrigated Lands Regulatory Program (ILRP) 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, toxicity, heavy metals, 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) In 2021, as a result of the new State Water Resources Control Board General Order, all District parcels enrolled in the ILRP with drinking water wells on the parcel will be required to sample those wells for Nitrates and report those results to the State Board and any users of drinking water on that parcel.

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. The standards are based on a modified Title 22 including 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	450 mg/L
Electrical Conductivity (EC)	Monthly	200-800	720 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	0-15 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*
Alfalfa Hay	16			16	
Almonds	21,185			16,720	4465
Apricots	1790		66	1214	510
Beans	678		663		45
Broccoli	223			83	140
Cabbage	2		2		
Cantaloupe	151		151		
Carrots	2		2		
Cauliflower	2		2		
Cherries	1611			1151	460
Compost	84			84	
Corn, Sweet	414		414		
Corn, Silage	25		25		
Garlic	147		147		
Grapes, Wine	637				637
Leeks	2		2		
Lemons	88			48	40
Lettuce	2		2		
Mandarins	288			256	32
Melons	47		47		
Nursery	402			202	200
Onions	2		2		
Oranges/Tang.	26			21	5
Oats	304				
Olives	561			319	242
Peaches	106			106	
Persimmons	29			29	

Pistachios	233				233
Pluots	2		2		
Pomelo	2		2		
Potatoes	2		2		
Rangeland	639				
Squash	4		4		
Sugar Beets	4		4		
Tomatoes, Can	1565		1565		
Tomatoes, Fresh	2		2		
Walnuts	1146		121	846	179
Watermelon	78		78		
Wheat	1153		1153		
Worms	30			30	
Total	***33,684***				

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	
Landscape irrigation	1	0
Wholesale	N/A	
Recycled	N/A	
Other (dust control @ landfill)	N/A	0
Other (specify)	N/A	
Other (specify)	N/A	
Unaccounted for	N/A	
Total	1	0

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

N/A

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

Recharge Area	*Method of Recharge*	*AF*	*Method of Retrieval*
20 Acres	Percolation	0	Pump
	Total	0	

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*
Rescheduled 2019 CVP	DPWD	12,346	Ag
DPWD	Rescheduled to 2021	15,941	Ag
Grasslands Water District	DPWD	388	Ag
Central California ID	DPWD	2109	Ag
SJRECWA	DPWD	5938	Ag
YCWA	DPWD	3171	Ag
Volta	DPWD	198	Ag
PID	DPWD	1683	Ag
LTRID	DPWD	1500	Ag
AEWSD	DPWD	4000	Ag
BBID	DPWD	6	Ag
SLCC	DPWD	250	Ag
NVRRWP	DPWD	19,046	Ag
DPWD	BBID	35	Ag
DPWD	PWD	1455	Ag
DPWD	SLWD	7385	Ag
DPWD	WWD	4300	Ag

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

Table 6 includes both Rescheduled Water as well as current year transfers in or out of the District. Rescheduled water is comprised of multiple sources, often including contract supply, stored non-project supply, and stored transfer supply. Rescheduling, a very valuable water management tool utilized by the District, is used 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 out are also utilized as a water management tool by the District on behalf of its Landowners who hold land in other South-of-the-Delta CVP Districts. All of the District transfers are normally of the agriculture-to-agriculture type and primarily serve to supplement chronic contract allocation shortages.

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's growers do 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.

District outflow could be generated by 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	146	Estimate		8%	317
Orestimba Creek	Intersection of Eastin and Orestimba Creek	585	Estimate		33%	1271
Delta Mendota Canal (DMC)	Land Upslope of the Canal, Field drains entering DMC	150	Estimate		8%	325
Spanish Land Grant	Intersection of Ike Crow Road and Hwy 33, Drains to San Joaquin River	254	Estimate		14%	552
Downslope Water Districts	Fields that drain into Central California Irrigation District, West Stanislaus Irrigation District, and Patterson Irrigation District	658	Estimate		37%	1430

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 Reservoir	Agriculture and San Joaquin River beneficial uses
Field Drains	Downstream/downslope water districts & water users	Agriculture

Orestimba 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 Regulatory 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 – 2021 Surface Water Annual 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 Regulatory 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 2020 was 3.08 inches, or 0.26 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*

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: 12*

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%	7
Magnetic meters	+/- 2%	5

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

Name: Adam Scheuber *Title:* Deputy General Manager – Water Resources

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

Telephone: (209)892-4470 *E-mail:* ascheuber@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 has worked in the past in conjunction with the San Luis & Delta-Mendota Water Authority to sponsor/promote mobile lab services for on-farm irrigation and drainage evaluations. None were performed in the previous year due to lack of funds and interest. However, with increased water supply from the NVRRWP and increasing costs of supplemental supplies, the District plans on utilizing District staff to continue the program. 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	33,684	0	0	180	320
Number of farms	137	0	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, or within 24 hours for specific delivery requests. 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. The District has plans to implement a real-time data gathering network to collect water use data and provide it to growers via an online service.

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 District 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.

DPWD has also completed the 1st phase of upgrading the District flowmeters to a real-time monitoring network. The 1st phase allows customers to view their water use in real-time to make more accurate decisions regarding their water use. The District plans to continue to expand the project to upgrade all of the District meters into this program.

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 currently operates no groundwater pumping facilities. The District will be managing groundwater extractions from the OCRRP when that project is constructed. 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.

The monitoring network established in the Northern and Central Delta-Mendota GSP included several wells in the DPWD area for depth to groundwater and water quality. The depth to groundwater is being measured by the SLDMWA as part of monitoring programs such as CASEGM and the DMC Pump-In Program. The wells are monitored monthly and this data is made available to the well owners as requested. The water quality sampling is performed annually by DPWD staff and shared similarly. DPWD also samples all wells participating in the DMC Pump-In Program monthly.

The District does not measure drain water quantity leaving its lands, but it is noteworthy 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 re-use.

The District participates in the Westside San Joaquin River Watershed Coalition to comply with the ILRP. 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 provides periodic user updates of available assistance programs. 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*
Conservation & Management Library	USBR	Information Source
Annual Water Users' Meeting	None	Information Dissemination
Public Outreach	None	Information Dissemination
District Website	None	Information Dissemination

See Exhibit G 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 water by quantity delivered, with supplemental supplies charged at much higher rates to reflect the costs of the active transfer market.

5. 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. In 2020, the District added an additional 90 acres of permanently retired lands within its boundaries and added 292 acres of excess land back into the District as a result of the District's 9D Contract Conversion process.

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 completed construction of Phase II of the NVRRWP in March of 2020 and is currently receiving deliveries from both the Cities of Modesto and Turlock as part of the program. This program will generate roughly 20,000 AF per year for DPWD and provide an additional 7500 AF per year for the Refuge Water Supply Program. Both of these amounts will increase as the cities grow in population based on their master plans.

Sources of Recycled Urban Waste Water	*AF/Y Available*	*AF/Y Currently Used in District*
North Valley Regional Recycled Water Program (Modesto/Turlock) Initial Quantities	20,000 AF	20,000

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

The District has in the past facilitated landowner water management best practices by promoting and coordinating low interest loan programs whereby customers can purchase and install high-efficiency irrigation and/or drainage return systems. The most recently finalized Agricultural Drain Loan Program, which funded 52 projects worth $5 million was completed in 2015. The District continues to pursue similar programs for District Customers.

Funding source Programs	*How provide assistance*
None at this time	NA

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	Maximized 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

Growers in the District greatly benefit from the on-demand delivery capabilities of the DMC. They have the capabilities to order a turnout opened within 48 hours, and once it's open, they are able to operate that turnout as needed. For example, they could shut off during the day and run during the evening to take advantage of off-peak electrical pricing. Because growers in the District have the ability to begin and/or end irrigation cycles on short notice, maximum irrigation efficiency is available to growers through the District's water ordering/delivery system. (See Attached Exhibit H - 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	146	146
Spanish Land Grant Drain	254	254
Private Tailwater Recovery Systems	604	604
Delta-Mendota Canal	150	150
Drainage into downslope districts	658	658
Total	1812	1812

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)*				
	2021	*2022*	*2023*	*2024*	*2025*
Plan is being developed					

9. Optimize conjunctive use of surface and ground water

Groundwater is used when and where surface water is unavailable to meet demands. Additionally, non-project water from private wells that meet certain water quality requirements may be 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. The District's OCRRP will also provide some additional groundwater supplies in critical years. DPWD anticipates having as much as 7,500 AF available during dry and critical years for extraction and use throughout the District. However, groundwater in many areas of the District is unreliable 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 has participated 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. Due to lack of funds and interest from District customers, the program has been inactive for several years.

12. Mapping

The District Purchased GIS software and now has maps of District boundaries, facilities, parcels, and preliminary well locations. As a part of SGMA implementation, the District will continue to refine the mapping relating to private wells within the District. All mapping will be performed by District staff.

GIS maps	*Estimated cost (in $1,000s)*				
	2021	*2022*	*2023*	*2024*	*2025*
Layer 1 – Distribution system-Turnout Locations	.5	.5	.5	.5	.5
Layer 2 – Drainage system					
Suggested layers:					
Layer 3 – Ground water information					
Layer 4 – Soils map					
Layer 5 – Natural & cultural resources					
Layer 6 – Problem areas					

C. Provide a 5-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*	*$9,151*	*1500*
	2	*Conservation staff*	*$0*	*150*
	3	*On-farm evaluation /water delivery info*	*$0*	*80*
		Irrigation Scheduling	*$108,233*	*400*
		Water quality	*$294,164*	*300*
		Agricultural Education Program	*$0*	*80*
	4	*Quantity pricing*	*$0*	*600*
	5	*Contractor's pumps*	*$0*	*0*
B	*1*	*Alternative land use*	*$0*	*20*
	2	*Urban recycled water use*	*$8,500*	*400*
	3	*Financing of on-farm improvements*	*$0*	*60*
	4	*Incentive pricing*	*$0*	*200*
	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*	*$60,276*	*400*
	10	*Automate canal structures*	*$0*	*0*
	11	*Customer pump testing*	*$0*	*0*
	12	*Mapping*	*$0*	*80*
		Total	*$480,324*	*4710*

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

BMP #		*BMP Name*	*Budgeted Expenditure (not including staff time)*	*Staff Hours*
A	*1*	*Measurement*	*$13,000*	*1500*
	2	*Conservation staff*	*$0*	*150*
	3	*On-farm evaluations/water delivery info*	*$500*	*80*
		Irrigation Scheduling	*$0*	*250*
		Water quality	*$266,549*	*300*
		Agricultural Education Program	*$0*	*80*
	4	*Quantity pricing*	*$0*	*600*
	5	*Contractor's pumps*	*$0*	*0*
B	*1*	*Alternative land use*	*$0*	*20*
	2	*Urban recycled water use*	*$3,500*	*400*
	3	*Financing of on-farm improvements*	*$0*	*60*
	4	*Incentive pricing*	*$0*	*200*
	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*	*$193,289*	*400*
	10	*Automate canal structures*	*$0*	*0*
	11	*Customer pump testing*	*$0*	*0*
	12	*Mapping*	*$500*	*80*
		Total	*$476,838*	*4560*

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

BMP #		*BMP Name*	*Budgeted Expenditure (not including staff time)*	*Staff Hours*
A	*1*	*Measurement*	*$13,000*	*1500*
	2	*Conservation staff*	*$0*	*150*
	3	*On-farm evaluations/water delivery info*	*$500*	*80*
		Irrigation Scheduling	*$5,000*	*250*
		Water quality	*$270,000*	*300*
		Agricultural Education Program	*$0*	*80*
	4	*Quantity pricing*	*$0*	*600*
	5	*Contractor's pumps*	*$0*	*0*
B	*1*	*Alternative land use*	*$0*	*20*

	2	*Urban recycled water use*	*$3,500*	*400*
	3	*Financing of on-farm improvements*	*$0*	*60*
	4	*Incentive pricing*	*$0*	*200*
	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*	*$1,000,000*	*600*
	10	*Automate canal structures*	*$0*	*0*
	11	*Customer pump testing*	*$0*	*0*
	12	*Mapping*	*$500*	*80*
		Total	*$1,292,500*	*4760*

4. Projected budget summary for the 4th year.

BMP #		*BMP Name*	*Budgeted Expenditure (not including staff time)*	*Staff Hours*
A	*1*	*Measurement*	*$13,000*	*1500*
	2	*Conservation staff*	*$0*	*150*
	3	*On-farm evaluations/water delivery info*	*$500*	*80*
		Irrigation Scheduling	*$5,000*	*250*
		Water quality	*$275,000*	*300*
		Agricultural Education Program	*$0*	*80*
	4	*Quantity pricing*	*$0*	*600*
	5	*Contractor's pumps*	*$0*	*0*
B	*1*	*Alternative land use*	*$0*	*20*
	2	*Urban recycled water use*	*$3,500*	*400*
	3	*Financing of on-farm improvements*	*$0*	*60*
	4	*Incentive pricing*	*$0*	*200*
	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*	*$1,500,000*	*600*
	10	*Automate canal structures*	*$0*	*0*
	11	*Customer pump testing*	*$0*	*0*
	12	*Mapping*	*$500*	*80*
		Total	*$1,797,500*	*4760*

5. Projected budget summary for the 5th year.

BMP #		*BMP Name*	*Budgeted Expenditure (not including staff time)*	*Staff Hours*
A	*1*	*Measurement*	*$13,000*	*1500*
	2	*Conservation staff*	*$0*	*150*
	3	*On-farm evaluations/water delivery info*	*$500*	*80*
		Irrigation Scheduling	*$5,000*	*250*
		Water quality	*$280,000*	*300*
		Agricultural Education Program	*$0*	*80*
	4	*Quantity pricing*	*$0*	*600*

	5	*Contractor's pumps*	*$0*	*0*
B	1	*Alternative land use*	*$0*	*20*
	2	*Urban recycled water use*	*$3,500*	*400*
	3	*Financing of on-farm improvements*	*$0*	*60*
	4	*Incentive pricing*	*$0*	*200*
	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*	*$200,000*	*600*
	10	*Automate canal structures*	*$0*	*0*
	11	*Customer pump testing*	*$0*	*0*
	12	*Mapping*	*$500*	*80*
		Total	*$502,500*	*4760*

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 2015		Projected Expenditures	
BMP #	BMP Name	(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 2016

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 2017

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