Section 1: Description of the District

District Name: **Tranquillity Irrigation District**

A. History

Tranquillity Irrigation District (TID) was formed January 22, 1918, as a public agency designed to serve the local community with water. It is the second oldest such agency in Fresno County. A Board of Directors elected from the community at-large governs the District. TID encompasses approximately 10,750 acres in the west central portion of Fresno County in California's Central San Joaquin Valley. District farmland has historically produced a variety of commodities including cotton (pima and acala), canning tomatoes, alfalfa (seed and hay), sugar beets, small grains, and almonds. The principal community is the unincorporated town of Tranquillity, which is within the District boundary. See Appendix E for TID vicinity and location maps.

The District is geographically adjacent to the Fresno Slough, an historic northern flood outlet of the Kings River. Fresno Slough was also a flooded backwater (swamp) of the San Joaquin River. As a result, the District has historic riparian water right claims to water from both the Kings and San Joaquin Rivers. However, almost from the very beginning, those claims were constantly disputed by other water users. Finally, in the 1950's the United States Bureau of Reclamation (USBR) constructed the Central Valley Project (CVP), which includes the Delta-Mendota Canal (DMC) that terminates at the Mendota Pool. The Mendota Pool provided a storage reservoir at the confluence of the Fresno Slough and San Joaquin River, which allowed the United States to settle the water rights related disputes of various diverters around the Mendota Pool. Ultimately, TID signed a contract with the United States in 1963 that memorialized the solution. TID received a quantity of "water rights settlement" water and the opportunity to purchase supplemental or "contract" water in order to meet the total needs of the District's agricultural water users. The District then settled with some Kings River water users by establishing an agreement allowing the Districts Kings River water rights to be used for the most efficient operation of that river. In exchange, the Kings River water users assist the District with the cost of its "contract" water from the United States.

Today, the DMC discharges water into the Mendota Pool, and some of this supply flows south into the Fresno Slough. The District then lifts its allocation of CVP water from the Fresno Slough into its own distribution system. The TID distribution system includes approximately 42 miles of unlined canals, 5 miles of pipeline, two major lift-pump stations, and a series of secondary lifts. The entire system is metered, which includes water diverted by the District and deliveries to farm turnouts. The system also is automated, which facilitates efficient operation. In addition to surface water, the District owns five groundwater wells, which are operated to provide for peaking during periods of high demand, and water supply reliability to supplement decreased CVP surface water allocations, which have been frequent since 1992. In 1992, the CVP was required to provide water for new demands, such as environmental requirements for endangered fish species in the Sacramento-San Joaquin River Delta. Providing CVP water for these new demands has reduced water allocation for south of Delta CVP water users and has placed pressure on other water sources.

TID land has been designated by the USBR as a drainage problem area. The shallow groundwater table is generally 15 feet or deeper beneath District land and subsurface drainage systems have not been constructed. Crops are grown without impact from shallow groundwater. The District has installed monitoring wells to track the elevation of this shallow groundwater table and to determine if lateral subsurface drainage flows from upland areas are impacting District land. To date shallow groundwater has not affected irrigation practices or crop production in the District.

The District also maintains the domestic water system for the local community as well as the community park. The demand for these urban water uses is provided by groundwater pumping. Water rights and CVP contract waters are used solely for irrigation.

1. Provide date District formed: **Jan 22, 1918** *Date of first Reclamation contract*: **Dec 1963** *Original size (acres)*: **10,750** *Current date (date of data entered)*: **February 2005**

2. Provide size, population, and irrigated acres.

Size (square miles)	16.8
Population served	NA
Irrigated acres	9,589

Note: 2003 data.

3. Provide water supplies received.

Water Source	2003
Federal urban water	0
Federal agricultural water	5,634
State water	0
Local/other	0
Local surface water (riparian)	20,200
Upslope drain water	0
District ground water	2,151
Transferred water	0
Reclaimed water	0
Other (define)	0
Total	27,985

4. Provide annual entitlement under each right and/or contract.

	AF	Source	Contract #	Contract Restrictions
Urban AF/Yield (AF/Y)	NA			
Agriculture AF/Y	13,800	USBR	14-06-200-701-A-LTR1	None
Other AF/Y	20,200	Riparian	14-06-200-701-A	None

5. Describe anticipated land- use changes(i.e., agricultural to municipal, etc.).
The historic use of TID land has been for the production of irrigated agricultural crops and that use is protected and supported by the current exclusive agriculture (AE) zoning designation. Land use changes would require action by the Fresno County Board of Supervisors or a change to the Land Use Element of the Fresno County General Plan. The actions necessary to allow land use changes in TID are not anticipated.

6. Cropping patterns.
TID lands are predominately used for the production of irrigated field, row and forage crops. Crops occupying 5 percent or more of the acreage included cotton, sugar beets and canning tomatoes. Other crops grown during 2003 included alfalfa (207 acres), almonds (42 acres), wheat (196 acres), vegetable seed (24 acres), pasture (5 acres), and corn (249 acres).

List crops with 5 percent or more of total acreage.

Crop	Acres
Cotton	7,416
Sugar Beets	800
Tomatoes	650
Other	723

Note: 93 acres were fallow/idle during 2003.

7. List major irrigation methods (by acreage).

Irrigation Method	Acres
Level basin, 1/8 mile	7,640
Graded surface, 1/8 mile	1,907
Trickle, surface	42
All other	0
Total	

Most of TID is irrigated using dead level basins with short length of water run, usually 1/8 mile long. It's estimated that about 80 percent of the District is irrigated using that approach. Surface trickle irrigation is used for the almond plantings. Sprinklers and gated pipe may be used during pre-irrigation. TID turnouts provide large flows, generally 7 to 14 cfs, which allows for rapid flooding of small fields. This approach maximizes on-farm irrigation efficiency in the District.

B. Location and Facilities

1. 2001 Agricultural Conveyance System

Incoming Locations	Type of Measurement Device	Accuracy
Mendota Pool	Hour Meter – Pitot tube	+/- 2 percent

Miles Unlined - Canal	Miles Lined - Canal	Miles Piped	Miles - Other
42	None	5	None

A map showing the location of District facilities is included in a pocket in the back of this conservation plan (Attachment L).

2. 2001 Urban Distribution System. **NA**

3. List storage facilities. **None**

4. Describe agricultural spill recovery system.
The TID conveyance/distribution system is managed to avoid operational spills. Irrigation tail water is confined to the irrigated land and water users typically irrigate using dead level fields or graded fields with blocked ends. On occasion, some water users will recycle tail water using temporary portable pumps. These pumps collect tail water from a temporary sump and pump the water back to the head of the irrigation run for reuse.

5. Describe delivery system operation.
TID water users place water orders with the District office a minimum of 24 hours in advance. District staff verify water orders in the field. The water users operate the farm turnouts and start and stop deliveries based on the approved water order. Water users are not required to provide a shut-off notice to the District. Ditch tenders operate the TID conveyance/distribution facilities and confirm that farm turnouts are being operated in accordance with the water order. The total annual water supply is allocated to the total acreage requesting water deliveries with each acre receiving an equal share of the supply. Water users are required to prevent surface drainage flows to adjacent parcels.

6. Describe restrictions on the contractor's water source(s).

Restriction	Cause of Restriction	Effect on District Operations
Reduced Mendota Pool delivery	Silt accumulation in Pool area	Delivery restriction

7. Describe proposed changes or additions to contractor's facilities and operations for the next 5 years.
TID has considered the construction of a storage reservoir to mitigate the affect on District operations from reduced Mendota Pool water deliveries. The storage reservoir also would provide energy conservation (off-peak pumping). The facility has been designed with a preliminary site located in the southern part of the District. The facility has not been constructed

due to the unavailability of funding. Also, the facility would only provide a small economic benefit since all water would need to be lifted for storage. TID does not have any immediate plan to move forward with the construction of this proposed facility.

C. Topography and Soils

The NRCS is preparing a soil survey of Western Fresno County that includes the TID area. Preliminary mapping and soil data were obtained from the NRCS and used to characterize soil conditions in TID. The general soils map showing soil associations, map showing soil mapping units, and the descriptions of NRCS soil series soils occurring in TID are included in Attachment F.

1. Describe topography of the District.

The NRCS soil survey data indicates that soil slope ranges from 0 to 1 percent. Based on topographic mapping, the direction of fall is predominately from north to south at about 1 foot per mile. The total fall in that direction is about 14 feet from the northern to southern TID boundaries. From east to west the District is relatively flat with little slope. The topography results in the need for a series of lift pumps in the TID conveyance/distribution system to provide water service to higher elevation lands.

2. Describe District soil associations.

Two soil associations occur in TID, which are generally described as follows:

1) Soils on Basin Floor and Flood Plain: Tachi-Armona-Wekota Association. This association is characterized by very deep, nearly level, very poorly drained and poorly drained, saline-sodic soils formed in alluvium from igneous and/or sedimentary rocks on the west side of the San Joaquin River and Fresno Slough. Soils in this Association that occur in TID include Alta Slough, Gepford, Tachi and Lillis series soils.

2) Soils on Fan Skirts: Tranquillity-Ciervo, saline-sodic Calflax Association. This association is characterized by very deep, nearly level, somewhat poorly and moderately well drained, saline-sodic soils formed in alluvium from calcareous sedimentary rock on the western edge of the basin floor. Soils in this Association that occur in TID include Tranquillity and Calflax series soils.

Soil Association	Est. Acres	Effect on Water Operations and Management
Tachi-Armona-Wekota	10,153	None
Tranquillity-Ciervo, saline-sodic Calflax	597	None

3. Describe limitations resulting from soil problems. **None**

Soil Problem	Estimated Acres	Effect on Water Operations and Management
NA		

Soils mapped by the NRCS have potential limitations such as restricted permeability and native salinity and sodicity. These issues have been addressed by soil reclamation, and ongoing soil and

irrigation management approaches. The TID irrigation conveyance/distribution system was designed with consideration for these potential limitations and they do not have an effect on TID water system operation and management.

D. Climate

1. Describe the general climate of the District.
The TID area is characterized by a warm desert climate. Temperatures during summer often exceed 100 degrees F with winter temperature usually 32 degrees F or higher. The growing season is long with most precipitation occurring during winter. The highest precipitation occurs during January with about 90 percent of the total precipitation occurring between November and April. Precipitation is rare during the summer and usually associated with infrequent tropical storms. Prevailing winds are from the northwest and usually less than 10 miles per hour.

Provide National Weather Service (or other source).

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg. Precip.	1.5	1.2	1.0	.52	.27	.10	.01	0.0	.02	.32	.73	.92	6.92
Avg. Temp.	46	51	55	61	67	74	80	78	74	65	54	46	63
Max. Temp.	55	63	68	76	84	91	98	95	90	80	67	55	77
Min. Temp.	37	40	42	46	51	52	63	62	58	50	42	36	49

Above data taken from: **Five Points, CA; 1978 to 2003**

Predominant wind direction: **Northwest @ 3-7 mph**

Average annual frost-free days: **350**

2. Impact of any microclimates on water management within the District.
Microclimates do not exist within TID.

E. Natural and Cultural Resources

1. Provide the name of the natural resources area within the District.

Name	Estimated Acres	Description
None		

2. Describe management of these resources in the past or present by the District. **NA**

3. Provide the name of the recreational and/or cultural resources area.

Name	Estimated Acres	Description
None		

F. Operating Rules and Regulations

1. Attach a copy of the contractor's operating rules and regulations.
Rules and Regulations of Tranquillity Irrigation District are included in Attachment G.

2. Describe contractor's agricultural water allocation policy.
Water is allocated based on the total water supply divided by the total acreage requesting water for the upcoming irrigation season. Each irrigated acre receives an equal water share. The basis for water allocation is described in Rules 8 and 13 of the attached District rules and regulations.

3. Describe official and actual lead times necessary for water orders and shut-off.
District rules and regulations require a minimum of 48 hours advance notice for water orders, but the actual District operations in practice require 24 hours advance notice. Actual times may vary depending on canal conditions, and/or field emergencies that require alternative schedules. The procedures for delivery water are described in Rule 12 of the attached District rules and regulations. The District attempts to accommodate water user needs in an effort to maximize the flexibility of the water ordering and delivery process in order to efficiently operate District conveyance/distribution facilities and maximized on-farm irrigation efficiency.

4. Describe contractor's policies regarding surface and subsurface drainage from farms.
Water users are required to construct and maintain adequate surface drainage facilities to control tail water and prevent surface drainage from entering adjacent parcels. Water users are not allowed to receive deliveries in amounts that exceed their ability for economic and beneficial use without waste. The operation and maintenance requirements for private ditches and laterals are described in Rule 4 of the attached District rules and regulations. The production of agricultural crops on District land is not affected by shallow groundwater and subsurface drainage systems have not been constructed.

5. Describe contractor's policies on water transfers by the contractor and its customers.
Transfers of allocated water within the District are permitted during times of water shortage with advance notice provided by August 15. The District may refuse these transfers should the transfer result in potential re-scheduling or re-allocation impacts, or conflict with contractual commitments. Incoming water transfers are permitted with written application to the District and compliance with USBR guidelines. Outgoing water transfers are not permitted until all internal water demands are met and the water is declared surplus to those demands. Outgoing transfers must comply with all District rules and regulations, and state and federal law. The transfer of water is described in Rules 14 and 17 of the attached District rules and regulations.

G. Water Measurement, Pricing, and Billing

Agricultural Customers

1. Provide total number of customers: **32**

2. Provide total number of 100 percent measured customers: **32**

3. Provide total number of customer turnouts: **240**

4. Provide total number of measured turnouts: **240**

5. Provide percentage of water delivered that was measured at customer turnouts: **100**

6. Complete measurement device table.

Measurement Type	Number	Accuracy (+/-percentage)	Reading Frequency (Days)	Calibration Frequency (Months)	Maintenance Frequency (Months)
Orifices	None				
Propeller	240	+/- 2	Daily	As required*	Annual
Weirs	None				
Flumes	None				
Venturi	None				
Metered gates	None				
Total	240				

*Note: Meter calibration and/or repair is performed when meters malfunction or ditch tenders observe erroneous readings or foggy site glasses. All meters are factory calibrated and sealed.

Urban Customers

TID does not provide USBR contract or riparian water for urban use.

7. Provide total number of customers: **NA**

8. Provide total number of 100 percent measured customers: **NA**

9. Provide total number of connections: **NA**

10. Provide total number of measured connections: **NA**

11. Provide percentage of potable water supplied that was measured when delivered to a customer*:* **NA**

12. Complete measurement device table. **NA**

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"					
8"					
10"					
Compound					
Turbo					
Total					

Agriculture and Urban Customers

13. Describe contractor's current year agriculture water charges.
The 2003 water rate was $45.00 per acre-foot with an additional $7.50 per acre assessed for operation and maintenance. Water users are billed each month based on metered water use. A sample water bill and water service order are included in Attachment H. TID charges for water, materials and services are described in Rule 10 of the attached District rules and regulations.

14. Describe contractor's water-use data accounting procedures.
Ditch tenders generally visit each meter daily to clock meters and collect meter reading data. Meter data is collected using data loggers and downloaded into an electronic data-base used to track and summarize water use data for each turnout for water billing purposes. TID uses a custom water data management (WDM) software system developed specifically for the District. Water use data are compiled on a monthly basis and monthly summaries are prepared for each board report. These electronic data have been compiled since 1997 and are available at the District office for water user inspection. Water use records (hard copy) since mid-1970 to 1996 are stored in a warehouse. TID values the usefulness of understanding historic water use to facilitate ongoing water conservation efforts and makes both electronic and archived water use records available to water users at any time.

H. Water Shortage Allocation Policies

1. Attach contractor's current year water shortage policies.
In the event of anticipated or actual water shortages, the District prorates the available water supply among the water users with each acre receiving an equal share. The District may reduce the length of run time, the amount of water delivered during each run and the amount of water delivered during the shortage period. District water shortage policies are described in Rule 13 of the attached District rules and regulations.

2. Attach contractor's current year policies that address wasteful use of water.
TID policies allow the District to suspend water service to a water user should water waste occur. The policy also provides for a 10 percent surcharge on delivered water should over use occur and the District board can require a water user to replace wasted or over used water at a 3 to 1 ratio. District policies regarding the wasteful use of water are described in Rules 4, 12 and 13 of the attached District rules and regulations.

Section 2: Inventory of Water Resources

A. Surface Water Supply

1. Acre-foot amounts of surface water delivered to the contractor by each of the contractor's sources.
(Enter in Table 1)
The agricultural tables are included in Attachment I. Total surface deliveries to TID during 2003 were 25,834 acre-feet.

Amount of water received under each right and/or contract for the last 10 years.
(Enter in Table 8)

B. Ground Water Supply

1. Acre-foot amounts of ground water pumped and delivered by the contractor.
(Enter in Table 2)
TID pumped 2,151 acre-feet of groundwater during 2003.

2. Ground-water basin(s) that underlies the District.

Name	Size (Square Mile)	Usable Capacity (AF)	Safe Yield (AF/Y)
San Joaquin Basin (5-22-07)		4,000	2,500

3. Contractor-operated wells and managed ground water recharge areas.
TID operates 5 groundwater wells used to provide supplemental water to augment surface deliveries from contract and riparian water supplies. These wells also are used to balance flow with demand. The District does not operate or actively manage groundwater recharge facilities. The unlined canal water conveyance/distribution system serves to provide limited recharge to the underlying groundwater basin. The location of the 5 District wells is shown on the TID facility map.

4. If there is conjunctive use of surface and ground water, describe it.
The groundwater basin is recharged in part by seepage from the unlined canal system. Groundwater is pumped by the 5 TID wells, which are used for peaking, to provide supplemental water, and balance flow.

5. For managed ground-water basins, attach a copy of the management plan.
TID is not in a critical over-drafted basin and has not prepared a groundwater management plan.

6. For participation in ground-water banking, attach a description of the banking plan.
TID is a partner in the McMullin Grade Recharge Project and the KRCD is the lead. Proposition 13 funding was received for purposes of preparing a technical feasibility study to assess alternative sites and select the optimum location. The percolation tests at the selected site are presently in process. TID will provide the financing for a lift pump station at a site along the Fresno Slough that will pump Kings River flood water to the facility.

C. Other Water Supplies

1. Acre-foot amounts of "Other" water used as part of the contractor's water supply**. None.**

D. Source Water Quality Monitoring Practices

1. Water quality problems. **None**

2. Urban contractors . **NA**

3. Agricultural contractors concerns: *Yes:* *No: XX*

4. Current water quality monitoring programs for surface water.

Analyses Performed	Frequency Range	Conc. Range	Average
Total Dissolved Solids	Continuous – Check 21	470-555 ppm	500 ppm
Ag Suitability	Monthly-Lateral 7 & James ID Boosters		

A continuous strip chart recorder monitors EC_w of water deliveries from the Mendota Pool. Additional water samples are generally collected monthly from Lateral 7 and the James ID booster pump station and analyzed for constituents associated with agricultural suitability. TID also collects water samples from their 5 wells every three years. Copies of water quality analyses are included in Attachment J.

5. Agricultural Districts - Current year total dissolve solid range for surface water and ground water.

Surface water: 470-555 ppm *Ground water*: 800-1,000 ppm

E. Water Uses Within the District

1. Agricultural

Complete Table 5 Agriculture

Estimated net crop water demand during 2003 was 21,422 acre-feet.

2. Urban **NA**

Customer Type	Number of Connections	Year ____ Use (AF)
Single-family		
Multi-family		
Commercial		
Industrial		
Institutional		
Landscape irrigation		
Wholesale		
Reclaimed		
Other (specify)		
Unaccounted for		
Total		

3. Urban Waste Water Collection and Treatment Systems serving the entire contractor service area.

Treatment Plant	Treatment Level (1, 2, 3)	Year 2003 (AF)	Disposal to
Tranquillity PUD	1 - disinfected	200 (est.)	Land disposal per RWQCB permit
	Total	200	
Total discharged to ocean	Saline sink	0	

Note: treated wastewater is not available for use by TID.

4. Urban recycled waste water. **NA**

Treatment Plant	Treatment Level (2, 3)	Year ____ (AF)	Types of Users
	Total		

5. Ground-water recharge/management/banking.
Contractor operated ground-water recharge areas (as identified in Section 2,B).

Recharge Area	Method of Recharge	Year _____ (AF)	Year _____ (AF)	Year _____ (AF)
None				
	Total			

6. Transfers and exchanges.

Transfers into or out of the District.

From Whom	To Whom	Year	(AF)	Use
TID	Blue Sky Farms	2003	4,650	Irrigation

7. Trades, wheeling, or other transactions. **None during 2003.**

From Whom	To Whom	Year	(AF)	Use
NA				

8. Any other uses of water.

Other Uses	Year	AF
None		

F. Irrigation Drainage from the District.

1. Surface and subsurface drain/return flows. **NA**

Drain Location	Type of Use	Year ____ (AF)
None		
	Total	

2. Drainage Water Quality Testing Program **NA**

Analyses Performed	Concentration Range	Frequency Range	Average
None			

3. Contractor's role in the current year Drainage Testing Program.
None. The District monitors TDS in surface and groundwater used solely for agricultural purposes.

4. Any usage limitation resulting from the drainage water quality. **NA**

Constituent	Usage Limitation
None	

G. Water Accounting (Inventory)
Tables 1 through 8 are included in Attachment I.

Note: Completing Tables 1 through 8 satisfies all the water accounting data. If you have completed Tables 1 through 8, skip to the next section.

1. Contractor Water Supplies Quantified

a. Surface water supplies, imported, and originating within the District, by month (Table 1).

b. Ground water extracted by the District, by month (Table 2).

c. Effective precipitation by crop (Ag Table 5).

d. Estimated annual ground water extracted by non-District parties (Ag Table 2).

e. Recycled urban waste water, by month (Table 3).

f. Other supplies, by month (Table 3).

2. Water Used Quantified

a. Conveyance losses, including seepage, evaporation, and operational spills (Table 4).

b. Consumptive use by riparian vegetation (Table 6).

c. Applied irrigation water, crop ET, water used for leaching, and cultural practices (e.g., frost protection, soil reclamation, etc.) (Table 5).

d. Water use (Table 6).

e. Ground-water recharge (Table 6).

f. Water exchanges and transfers (Table 6).

g. Estimated deep percolation within the District (Ag Table 7).

h. Flows to perched water table or saline sink (Ag Table 7).

i. Total urban waste water treated and discharged (Urban Table 8).
j. Irrigation spill or drain water leaving the District (Table 6).

k. Other (Table 6).

3. Overall Water Inventory

Section 3: Best Management Practices (BMPs) for Agricultural Contractors

A. Critical BMPs for Agricultural Contractors

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

Total number of customer turnouts that are unmeasured or do not meet the standards listed above: **0**

Number of measurement devices installed last year: **0**

Number of measurement devices installed this year: **0**

Number of measurement devices to be installed next year: **0-10 replacement meters (est.)**

Types of Measurement Devices to be Installed	Accuracy	Total to be Installed During Next Year
Propeller meters	+/- 2 percent	0-10 (estimated) the actual number replaced varies annually.

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

Name: Sarge Green Title: General Manager
Address: 25390 West Silveria Street, Tranquillity, CA 93668
Telephone: 559-698-7225 Fax: 559-698-5105 E-mail: sarge@trqid.com

3. Provide or support the availability of water management services to water users (see Attachment K).

a. On-Farm Evaluations: TID supports Mobile Lab evaluations. These are available throughout the area with services provided by private consultants. Water users are free to select one of these consultants based on their individual preference. The District, upon receiving a request, assists water users in selecting a consultant who provides such services. TID suggests that at least 10 percent of a water users field be evaluated annually. The District continues to notify water users of the availability of mobile lab services in the area.

1) On farm irrigation and drainage system evaluations using a mobile lab type assessment (see Attachment K).

Total number of irrigated acres: **9,589**

Number of irrigated acres to be surveyed per year by on-farm irrigation evaluations: **960 (est.)**

Total number of farms: **32**

Number of farms to be surveyed per year by on-farm irrigation and drainage evaluations: Estimated that 3-7 farms may participate annually.

2) Timely field and crop-specific water-use information to the water user (see Attachment K).

TID participates in the San Luis Delta & Mendota satellite imagery program for soil moisture status in the summer. The District also participates with Westlands Water District in the preparation of crop water use tables, which are posted at the District office. The crop water use data also will be posted on the TID website in the future. Water users generally record and analyze their individual irrigation events. Total irrigation event volumes also are recorded by the ditch tenders and then submitted to the District office for billing purposes. These irrigation application totals are available to each water user upon request. Year-end summary reports, available to water users, show total water user account use by turnout.

b. Normal year and real-time irrigation scheduling and crop ET information (i.e., CIMIS) (see Attachment K).
CIMIS Station #2 at Five Points is near the District. This on-line information can be assessed daily by water users. Information is generally used by water users who have outside consultants making recommendations on water irrigation events and soil moisture levels. TID supports this activity and assists water users with obtaining the information from CIMIS. Local newspapers also report daily ET information for area agriculture.

c. Surface, ground, and drainage water quantity and quality data (see Attachment K).
TID has water quality test results for surface water and the 5 District wells. Those data are available to water users upon request at the District office. Shallow groundwater has been sampled and analyzed periodically, but tailwater is not sampled.

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

Program	Co-Funders (If Any)	Yearly Targets
District Newsletter	None	All District water users
KRCD News	Kings River Conservation District	All District water users
The Westside Resource	Westside RCD	All District water users
Conservation Connection	USBR	All District water users
Watershed News	Panoche/Silver Creek Watershed CRMP	All District water users

Note: Examples of these materials are included in Attachment K.

4. Pricing structure - Adopt a water pricing structure for contractor water users based at least in part on quantity delivered.
Water is billed using a flat rate per acre-foot based on the actual quantity delivered as metered at each turnout.

5. Evaluate the need for changes in policies of the institutions to which the contractor is subject.
TID has not identified changes in USBR policy regarding delivery of contract water to the District.

6. Evaluate and improve efficiencies of contractor's pumps.
TID contracts with a local pump company to provide annual pump and motor maintenance, and repair services. The local company also provides emergency services as required. TID also participates in the pump efficiency program sponsored by the California Irrigation Institute (CIT) and received a rebate during 2003 for a lift station pump.

B. Exemptible BMPs for Agricultural Contractors

1. Facilitate alternative land use. **NA**

Drainage Characteristic	Acreage	Potential Alternate Use
High water table (<5 feet)	0	
Poor drainage	0	
Ground water Selenium concentration > 50 ppb	0	
Poor productivity	0	

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

Sources of Recycled Urban Waste Water	AF/Y Available	AF/Y Currently Used by Contractor
Tranquillity WWTP	0	0

3. Facilitate the financing of capital improvements for on-farm irrigation systems.
TID does not have an established capital improvement program necessary to fund on-farm improvements. The District assists water users in finding local funding for these types of needs. State and federal funds become available periodically and the District will notify water users of opportunities to apply for funding to finance on-farm irrigation system improvements.

4. Incentive pricing.
Due to the efficient use of surface and groundwater supplies, TID's current water pricing program has been adequate. The current pricing structure promotes in-District transfers and exchanges, which allow for the most efficient use of District water at the farm level. TID supports keeping water within the area for the conjunctive use needs of the District, at reasonable rates. This incentive also keeps prices stable, affords price control, and improves management of the resource. District rates encourage users to determine and apply only the water a crop needs, thus reducing over-irrigation and creating drainage problems. Crop water demand is met with the current surface water supply supplemented by groundwater during high demand periods. Additional incentive pricing to restrict current total water applications could be implemented should water supplies become inadequate and/or it is determined that water users are irrigating inefficiently. TID has determined that the appropriate use of available water supplies has and is being practiced by all District water users.

5. a) Line or pipe ditches and canals-accomplished during last 5 years or planned for next 5 years.
The major project that resulted in the piping of about 5 miles of canals was constructed during 1994. Since 1994, only minor periodic projects needed to improve the efficiency of selected District facilities have been constructed. The District has considered other canal lining and piping projects, but the cost of lining/piping and unavailability of financing has prevented implementation of this option. Further, these potential projects were determined to be uneconomic. TID will continue to pursue funding for canal lining or piping projects for District unlined canals.

Canal/Ditch (Reach)	Type of Improvement	Number of Miles in Reach	Estimated Seepage (AF/Y)	Accomplished/ Planned Date
None				

b) Regulatory reservoirs-accomplished during last 5 years or planned for next 5 years.
None

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

6. Increase flexibility in water ordering by, and delivery to, water users.
TID facilitates flexibility with water orders if the requests are reasonable and the requested water order does not disrupt other water deliveries to any other water user served by the affected canal/lateral.

7. Construct and operate District spill and tailwater recovery systems with measurement.
TID does not need spill and tail water recovery systems since the conveyance/distribution system is operated without operational spills and tail water is retained on each field.

Distribution System Lateral	Annual Spill (AF/Y)	Estimated Potential Spill Recovery (AF/Y)
NA		

Acres where tailwater does drain into distribution system: **0**

Annual tailwater collected (AF/Y): **0**

Acres where tailwater is currently lost: **0**

Estimated potential additional tailwater recovery (AF/Y): **0**
(Measure within 3 years.)

8. Optimize conjunctive use of surface and ground water.
The conjunctive use of surface and groundwater has been improved by the automation of District water delivery facilities. This automation has increased the efficiency of the delivery system, which reduces the need for groundwater pumping for peaking and supply reliability.

9. Automate canal structures.
TID canal facilities are fully automated.

10. Facilitate or promote water customer pump testing and evaluation.
The District promotes the need to maintain pumps and motors in good working order. Kings River Conservation District newsletters, and other educational materials and mailers continuously remind water users of the value associated with annual maintenance. The high cost of energy associated with operating these pumps and motors provides a constant reminder to water users that efficient equipment benefits an operation by reducing operating costs. Local pump companies also make frequent calls on water users and provide educational materials promoting the value of timely pump testing, maintenance and repair.

C. Provide a 3-Year Budget for Expenditures and Staff Effort for BMPs
(Current year and 2 projected years budget for all BMPs.)

3-Year Budget and Staff Time Summary

1. Amount actually spent last year.

Year 2004

BMP #	BMP Name	Actual. Budget	Actual. Staff time (hrs)
1	Measurement-meters	$8,000	20
2	Conservation staff – office & staff	$5,000*	100
3	On-farm - support	$1,000*	20
	CIMIS - support	$500*	
	Water quality- lab analysis	$5,000*	0
	Agric. education program -support	$500*	0
4	Quantity pricing	NA	0
5	Policy changes	NA	0
6	Contractors pumps –repair & maint.	$10,000 (Lift 1)	50
1.	Alternative land use	NA	0
2.	Urban recycled water use	NA	0
3.	Facilitate financing on-farm systems-support	$1,000*	0
4.	Incentive pricing	NA	0
5.	Line or pipe canals / install reservoirs	NA	0
6.	Increase delivery flexibility	$10,000*	50
7.	District spill / tailwater system	NA	0
8.	Optimize conj. use – automation upkeep	$1,000*	10
9.	Automate canal structures & upkeep	$5,000*	20
10.	Customer pump testing- support	$500*	0
	TOTAL	**$47,500**	**270**

2. Projected budget and staff time summary for the next 2 years.

Year 2005

BMP #	BMP Name	Est. Budget	Est. Staff time (hrs)
1	Measurement-meters	$8,000	20
2	Conservation staff- office/staff	$3,000*	75
4	On-farm-support	$1,000*	20
	CIMIS- support	$500*	0
	Water quality-lab analysis	$5,000*	0
	Agric. education program-support	$500*	0
4	Quantity pricing	NA	0
5	Policy changes	NA	0
6	Contractors pumps-repair & maint.	$45,000 (Lift 3)	50
1	Alternative land use	NA	0
2	Urban recycled water use	NA	0
3	Facilitate financing on-farm systems-support	$1,000*	0
4	Incentive pricing	NA	0
5	Line or pipe canals / install reservoirs	NA	0
6	Increase delivery flexibility-operators	$5,000*	25
7	District spill / tailwater system	NA	0
8	Optimize conj. use-automation upkeep	$1,000*	0
9	Automate canal structures & upkeep	$5,000*	20
10	Customer pump testing-support	$500*	0
	TOTAL	**$75,500**	**210**

Year 2006-7

BMP #	BMP Name	Est. Budget	Est. Staff time (hrs)
1	Measurement-meters	$6,000	20
2	Conservation staff-office/field	$3,000*	75
5	On-farm-support	$1,000*	20
	CIMIS-support	$500*	0
	Water quality-lab analysis	$5,000*	0
	Agric. education program-support	$500*	0
4	Quantity pricing	NA	0
5	Policy changes	NA	0
6	Contractors pumps-repair & maint.	$355,000 (deep wells)	50
1.	Alternative land use	NA	0
2.	Urban recycled water use	NA	0
3.	Facilitate financing on-farm systems-support	$1,000*	0
4.	Incentive pricing	NA	0
5.	Line or pipe canals / install reservoirs	NA	0
6.	Increase delivery flexibility-operators	$5,000*	50
7.	District spill / tailwater system	NA	0
8.	Optimize conj. use-automation upkeep	$5,000*	10
9.	Automate canal structures & upkeep	$5,000*	0
10.	Customer pump testing-support	$500*	0
	TOTAL	**$387,500**	**225**

* Note: with the exception of #1, Measurement, and #6, Contractor pumps, all other budget expenses are estimates. The District uses an estimate of 5% of total the District budget that is spent for all other BMP's.

Section 4: BMPs for Urban Contractors NA

Section 5: Plan Implementation

Pursuant to water service and settlement contract terms, contractors must report on Plan implementation annually.

Agricultural contractors can complete an annual update by filling in the information for BMPs on the WaterShare web site at www.usbr.gov/mp/watershare/.

Urban contractors can complete an annual update by filling in the information for urban BMPs on the CUWCC website. Contractors who are signatories of the CUWCC are currently submitting annual reports via the CUWCC's *BMP Reporting Database* located on their web site at www.cuwcc.org. Through an agreement with the CUWCC, Reclamation's urban non-signatories may now submit their Annual Reports through the CUWCC's web site using "guest accounts." Urban BMPs are reviewed based on the CUWCC's MOU (amended March 14, 2001).

Section 6: Exemption Process
TID would be exempt from the following BMP's:

1. Facilitate Alternative Land Use - N/A, TID does not have exceptionally high water duties and irrigation does not contribute to significant problems.

2. Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not cause harm to crops or soils - N/A, TID does not have access to a suitable recycled water supply.

5. a) Line or pipe ditches and canals - N/A, the TID canal system provides for conjunctive water use.

7. Construct and operate District spill and tailwater recovery systems - N/A, TID operates an automated canal and pipeline delivery system that does not have delivery constraints, and is managed without operational spills.

9. Automate canal structures - N/A, TID has a completely automated canal system.

Section 7: Regional Criteria

There are no Regional Criteria at this time. If in the future regional criteria are considered, they will be developed as a separate document.

Section 8: Five-Year Plan Revision Procedure

No data required. Refer to Guidebook for explanation.