

DELTA-MENDOTA CANAL UNIT

**ENVIRONMENTAL ASSESSMENT
LONG-TERM CONTRACT RENEWAL**

**Attachment C
Water Needs Assessments**

February 2005

Water Needs Assessment

BANTA-CARBONA ID

Contractor ID: 201840

Delta

Contractor's Water Supply Sources and Quantities (acre-feet)

Date: 2/22/2005 2:04:44 P

Timeframe	Surface Water Supply					Groundwater Supply				Total Supply		
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsf. / Rlm / Recycle In	Trsf. / Out	District	Private		Safe Yield	Recharge
1989	22,355	21,023	0	29,248	S. Joaquin	0	7,150	0	0	11	0	43,121
2025 Future	25,000	25,000	0	30,000	S. Joaquin	0	8,250	0	230	230	0	46,750

Maximum Productive Acres: 14,893

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1989	46,032	75	9,143	6,200	49,185	49,603	15,130	15,501	3.25	3.20	1,200	50,385
2025	44,408	85	6,200	6,200	44,950	44,950	15,500	15,500	2.90	2.90	970	45,920

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)	
	Population	Per Capita Demand (gpcpd)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Total Demand (acre-feet)	Loss Unacc. / Distr. (acre-feet)				Calc Urban Per Capita Dmd (gpcpd)
1989	28	29	31	32	33	34	35	36	37	38	39	7,264
2025												-830

* Represents Maximum Contract Amount

Notes: Year 2025 includes average local supply and transfers out of 5,000 AF to the City of Tracy and 3,250 AF intra-division transfer.

Water Needs Assessment

BROADVIEW WD

Contractor ID: 201850

Delta

Contractor's Water Supply Sources and Quantities (acre-feet)

Date: 2/22/2005 2:04:44 P

Timeframe	Surface Water Supply					Groundwater Supply				Total Supply		
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trnsfr / Rtm / Recycle In	Trnsfr / Out	District	Private		Safe Yield	Recharge
1989	19,394	32,975	0	0	0	0	8,104	0	0	11	0	24,871
2025	27,000	27,000	0	0	0	0	1,900	0	0	12	0	25,100

Maximum Productive Acres: 8,725

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Effective Precip (acre-feet)	Reference Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1989	20,596	75	810	2,606	2,606	26,381	23,452	8,696	8,686	3.03	2.70	360	26,741
2025	23,355	85	2,700	2,700	2,700	24,300	24,300	9,000	9,000	2.70	2.70	800	25,100

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Total Demand (acre-feet)				
	Population	Per Capita Demand (gpcd)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Unacc. / Distr. (acre-feet)	Ref Urban Per Capita Dmd (gpcd)			Calc Urban Per Capita Dmd (gpcd)	Total M&I Demand (acre-feet)		
1989	28	29	31	32	31	32	34	35	36	37	38	39	1,870	
2025														0

* Represents Maximum Contract Amount

Notes: In order to limit this to an assessment of ag water needs, M&I water in the amount of 20 AF is shown as transfer out in year 2025. Transfers in year 2025 limited by amount of water available.

Water Needs Assessment

COELHO FAMILY TRUST

Contractor ID: 202130

Delta

Contractor's Water Supply Sources and Quantities (acre-feet)

Date: 2/22/2005 2:04:44 P

Timeframe	Surface Water Supply				Groundwater Supply				Total Supply			
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsfir / Rtm / Recycle In	Trsfir / Out	District		Private	Safe Yield	Recharge
1999	2,080	2,080	1,336	0	6	0	0	0	1,336	11	0	4,752
2025	2,080	2,000	1,336	0	6	0	0	0	3,334	12	0	6,670

Contractor's Agricultural Water Demands

Maximum Productive Acres: 1,823

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1999	7,331	80	593	302	8,423	2,923	2,250	1,008	3.74	2.90	337	8,760
2025	6,030	85	675	675	6,300	6,300	2,250	2,250	2.80	2.80	337	6,637

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Non-residential Water Demand				Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)				
	Population	Per Capita Demand (gpcd)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Unacc. / Distr. (acre-feet)	Loss			Calc Urban Per Capita Dmd (gpcd)	Total M&I Demand (acre-feet)		
1999	28	29	31	32	31	32	34	35	36	37	38	39	4,008	-33
2025														

* Represents Maximum Contract Amount

Notes:

Water Needs Assessment

CONTRA COSTA WD

Contractor ID: 201820

Delta

Contractor's Water Supply Sources and Quantities (acre-feet)

Date: 2/22/2005 2:04:44 P

Timeframe	Surface Water Supply						Groundwater Supply				Total Supply	
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsfir / Rlm / Recycle In	Trsfir / Out	District	Private	Safe Yield		Recharge
1989	123,657	133,224	0	8,000	6	0	0	960	2,040	11	0	144,224
2025	195,000	195,000	0	8,200	E Contra Costa ID	0	0	960	2,040	12	0	206,200

Contractor's Agricultural Water Demands

Maximum Productive Acres: 15,751

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1989	2,889	75	0	596	3,852	2,384	1,100	1,192	3.50	2.00	0	3,852
2025												

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Total Demand (acre-feet)	Per Capita Demand (gpcd)	Population	Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)
	Per Capita Demand (gpcd)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Total Demand (acre-feet)							
1989	185.1	50,000	32	50,000	13,666	31	32	33	34	301.0	338.7	370,000	140,372	144,224	0
2025	220.4	57,000	32	57,000	10,000	269.0	269.0	269.0	269.0	325.7	325.7	566,000	207,200	207,200	1,000

* Represents Maximum Contract Amount

Notes: In 2025, Local supply is existing water sales agreement with East Contra Costa Irrigation District. This sale of water is available in any year. Mallard Slough water is available only when quality and hydrologic conditions are suitable. In 2025 100 acre-feet was incorporated into the Commercial and Institutional Demand section to account for agricultural deliveries at the FY 2003 level of usage.

Water Needs Assessment

DEL PUERTO WD

Contractor ID: 201890

Delta

Contractor's Water Supply Sources and Quantities (acre-feet)

Date: 2/22/2005 2:04:44 P

Timeframe	Surface Water Supply						Groundwater Supply				Total Supply	
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsfir / Rtm / Recycle In	Trsfir / Out	District	Private	Safe Yield		Recharge
1989	2	3	4	5	6	7	8	9	10	11	12	13
2025	11,866	128,395	0	0	0	0	0	0	0	0	0	128,395
	140,210	140,210	0	0	0	0	0	0	3,000	3,000	3,000	140,210

Contractor's Agricultural Water Demands

Maximum Productive Acres: 43,525

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	USBR Net		Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
					Calculated Net Crop Water Req (acre-feet)	Crop Water Req (acre-feet)					
1989	111,545	75	8,164	12,107	137,841	141,250	40,819	3.38	3.50	6,420	144,261
2025	131,341	85	13,425	13,425	138,725	138,725	44,750	3.10	3.10	4,010	142,735

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Total Demand (acre-feet)	Per Capita Demand (gpcd)	Total M&I Demand (acre-feet)	Unmet Demand (acre-feet)
	Population	Per Capita Demand (gpcd)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Unacc. / Distr. (acre-feet)	Total Demand (acre-feet)					
1989	28	29	31	32	31	32	34	35	36	37	38	39	15,866
2025	28	29	31	32	31	32	34	35	36	37	38	39	15,866

* Represents Maximum Contract Amount

Notes: Conveyance losses estimated at 5% of surface deliveries. These losses assumed to recharge gw, limited by the amount of gw pumping.

Water Needs Assessment

JAMES ID

Contractor ID: 201950

Delta

Contractor's Water Supply Sources and Quantities (acre-feet)

Date: 2/22/2005 2:04:44 P

Timeframe	Surface Water Supply				Groundwater Supply				Total Supply			
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsf / Rtm / Recycle In	Trsf / R / Out	District		Private	Safe Yield	Recharge
1996C Plan/Revised	35,300	35,300	0	35,116	Kings R/riprn	2,054	0	7,235	7,517	11	12,534	74,688
2025	35,300	35,300	0	9,700	Kings R/riprn	0	0	12,000	300	11	12,534	44,766

Maximum Productive Acres: 22,443

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1996	61,726	75	411	6,943	81,753	69,429	23,350	23,143	3.50	3.00	2,432	84,185
2025	55,775	85	6,900	6,900	57,500	57,500	23,000	23,000	2.50	2.50	2,432	59,932

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Ref Urban Per Capita Dmd (gpcd)	Calc Urban Per Capita Dmd (gpcd)	Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)
	Population	Per Capita Demand (gpcd)	Total Demand (acre-feet)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)							
1996	28	29	30	31	32	33	34	35	36	37	38	39	84,185	9,497
2025	28	29	30	31	32	33	34	35	36	37	38	39	59,932	15,166

* Represents Maximum Contract Amount

Notes: In WC Plan, convey. includes 100 AF envim use, recharge includes 9,534 convey loss component. In 2025, local supply = 10 year avg Kings R + riparian water, same conveyance loss/recharge split assumed as in 1996.

Water Needs Assessment

MERCY SPRINGS WD

Contractor ID: 201980

Delta

Contractor's Water Supply Sources and Quantities (acre-feet)

Date: 2/22/2005 2:04:44 P

Timeframe	Surface Water Supply					Groundwater Supply					Total Supply	
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsfir / Rlm / Recycle In	Trsfir / Out	District	Private	Safe Yield		Recharge
1989 WC Plan	9,766	13,850	0	0	6	550	4,084	0	0	11	0	10,316
2025	7,040	7,040	0	0	0	0	0	0	0	0	0	7,040

Contractor's Agricultural Water Demands

Maximum Productive Acres: 3,042

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1989	7,697	75	515	755	9,576	10,571	2,345	2,517	4.08	4.20	488	10,064
2025	14,853	85	1,017	1,017	16,277	16,277	3,391	3,391	4.80	4.80	488	16,765

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)			
	Population	Per Capita Demand (gpcd)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Unacc. / Distr. (acre-feet)	Ref Urban Per Capita Dmd (gpcd)					
1989	28	29	31	32	33	33	34	35	36	37	38	39	-252
2025	28	29	31	32	33	33	34	35	36	37	38	39	9,725

* Represents Maximum Contract Amount

Notes: The contract supply was reduced in 2025 due to contract reassignment. Transfers out reduced to 0 in 2025. District has no conveyance system. Convey losses estimated at 5% from farm convey. systems.

Water Needs Assessment

PACHECO WD-DMC

Contractor ID: 202020

Delta

Contractor's Water Supply Sources and Quantities (acre-feet)

Date: 2/22/2005 2:04:44 P

Timeframe	Surface Water Supply						Groundwater Supply				Total Supply	
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trnsfr / Rlm / Recycle In	Trnsfr / Out	District	Private	Safe Yield		Recharge
1	2	3	4	5	6	7	8	9	10	11	12	13
1989 WC Plan	9,384	9,362	0	4,400	CCID			0	0		0	13,762
1993 WC Plan	10,080	2,644	0	3,181	CCID		0	95	1,075		0	6,995
2025	10,080	10,080	0	4,399	CCID		0	2,849	0		0	11,630

Maximum Productive Acres: 3,964

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1989	8,564	75	830	1,022	10,312	8,853	4,024	3,405	2.56	2.60	1,534	11,846
1993	8,339	75	2,032	1,043	8,409	8,340	3,972	3,475	2.12	2.40	1,235	9,644
2025	10,166	85	1,215	1,215	10,530	10,530	4,050	4,050	2.60	2.60	1,100	11,630

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Total Demand	Unmet Demand (acre-feet)	
	Population	Per Capita Demand (gpcd)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)	Ref Urban Per Capita Dmd (gpcd)	Calc Urban Per Capita Dmd (gpcd)				Total M&I Demand (acre-feet)
1989	28	29	31	32	33	34	35	36	37	38	39	-1,916
1993												2,649
2025												0

* Represents Maximum Contract Amount

Notes: In 2025, 12 AF of urban water transferred out in order to limit analysis to assessment of agricultural water needs. In 2025, no gw pumping assumed because of poor water quality.

Water Needs Assessment

PATTERSON WD

Contractor ID: 202040

Delta

Contractor's Water Supply Sources and Quantities (acre-feet)

Date: 2/22/2005 2:04:44 P

Timeframe	Surface Water Supply						Groundwater Supply			Total Supply		
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsfir / Rlm / Recycle In	Trsfir / Out	District	Private		Safe Yield	Recharge
1989 IWC Plan	2	3	0	25,483	S. Joaquin	0	2,400	535	4,000	5,000	5,000	43,046
2025	13,055	20,428	0	23,000	S. Joaquin	0	1,000	535	2,000	5,000	5,000	36,035
	16,500	16,500	0									

Contractor's Agricultural Water Demands

Maximum Productive Acres: 12,056

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	USBR Net Crop Water Req (acre-feet)	Calculated Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1989	37,557	75	2,804	1,768	22,393	46,337	13,469	5,893	3.44	3.80	725	47,062
2025	48,680	85	4,040	4,040	52,517	52,517	13,466	13,466	3.90	3.90	725	53,242

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Total Demand (acre-feet)	Per Capita Demand (gpcd)	Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)
	Population	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Total Demand (acre-feet)	Unacc. Distr. (acre-feet)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Total Demand (acre-feet)						
1989	28	31	32	33	34	35	36	37	38	39	0	0	47,062	4,016
2025	28	31	32	33	34	35	36	37	38	39	0	0	53,242	17,207

* Represents Maximum Contract Amount

Notes: Operational spills of 5,334 AF in 1989 assumed to be from local supply and to recharge gw in the amount of 5,000 AF; the rest shown as conveyance loss. In 2025, 1000 AF M&I supply is treated as transfer out.

Water Needs Assessment

PLAINVIEW WATER DISTRICT

Contractor ID: 202050

Delta

Contractor's Water Supply Sources and Quantities (acre-feet)

Date: 2/22/2005 2:04:44 P

Timeframe	Surface Water Supply				Groundwater Supply				Total Supply			
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsfir / Rtm / Recycle In	Trsfir / Out	District		Private	Safe Yield	Recharge
1989 W/C Plan	18,964	18,351	0	0	0	0	1,636	0	0	0	0	16,715
2025	20,600	20,600	0	0	0	0	12,100	0	0	0	0	8,500

Contractor's Agricultural Water Demands

Maximum Productive Acres: 5,647

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1989	16,449	75	2,114	2,209	19,113	18,223	5,594	5,522	3.42	3.30	0	19,113
2025	7,980	85	1,184	1,184	7,995	7,995	2,961	2,961	2.70	2.70	0	7,995

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Total Demand (acre-feet)	Per Capita Demand (gpcd)	Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)	
	Population	Per Capita Demand (gpcd)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Unacc. / Distr. (acre-feet)	Ref Urban Per Capita Dmd (gpcd)							Calc Urban Per Capita Dmd (gpcd)
1989	28	29	31	32	31	32	34	35	0	0	0	37	38	39	2,398
2025	0	0.0	800	0	800	0	0	0	0.0	0.0	0	800	8,795	295	295

* Represents Maximum Contract Amount

Notes: Ten-year historic average Transfer out is 3,400 acre feet. In 2025, 800 acre feet of this amount is included under industrial demand. The remaining 3,100 acre feet is included in the 2025 transfers out amount. Also include in the 2025 transfer out amount is 9,500 of M&I water based on estimate that 3,800 acres will be incorporated into the city of Tracy with an average use of 2.5 AF/AC.

Water Needs Assessment

SAN LUIS WD-DMC

Contractor ID: 202100

Delta

Contractor's Water Supply Sources and Quantities (acre-feet)

Date: 2/22/2005 2:04:44 P

Timeframe	Surface Water Supply						Groundwater Supply			Total Supply		
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsf / Rtm / Recycle In	Trsf / Out	District	Private		Safe Yield	Recharge
1	2	3	4	5	6	7	8	9	10	11	12	13
1989 WC Plan	120,261	106,092	0	0	0	13,038	1,864	0	10,000	0	0	127,266
1998 WC Plan	125,080	70,409	0	0	0	4,458	2,894	0	10,000	0	0	81,973
2025	125,080	125,080	0	0	0	0	4,894	0	5,000	0	0	125,186

Contractor's Agricultural Water Demands

Maximum Productive Acres: 50,523

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated Net Crop Water Req (acre-feet)	USBR Crop Water Req (acre-feet)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1	15	16	17	18	20	21	22	23	24	25	26	27	28
1989	128,994	75	9,289	13,385	129,389	44,764	44,617	3.57	2.90	442	160,049		
1998	104,656	75	33,107	13,050	117,450	47,924	43,500	1.99	2.70	1,906	97,305		
2025	112,883	85	13,050	13,050	117,450	43,500	43,500	2.70	2.70	1,906	119,356		

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Total Demand (acre-feet)	Per Capita Demand (gpcd)	Total M&I Demand (acre-feet)	Unmet Demand (acre-feet)
	Population	Per Capita Demand	Industrial	Commercial/Instit.	Industrial	Commercial/Instit.	Unacc. Distr.	Loss					
1	28	29	30	31	32	33	34	35	36	37	38	39	40
1989	0	0.0	0	0	0	0	0	0	0.0	0.0	0	160,049	32,783
1998	0	0.0	0	0	0	0	0	0	0	0	0	97,305	15,332
2025	0	0.0	0	0	0	0	0	0.0	0.0	0.0	0	119,356	-5,830

* Represents Maximum Contract Amount

Notes: Historic transfers out include M&I deliveries. Drainage water of 3,785 for 1989 and 2,621 for 1998 not included. In 2025, 2000 AF M&I water use included in transfers out due to increase in development of I-5 businesses.

Water Needs Assessment

THE WEST SIDE ID

Contractor ID: 202120

Delta

Contractor's Water Supply Sources and Quantities (acre-feet)

Date: 2/22/2005 2:04:44 P

Timeframe	Surface Water Supply					Groundwater Supply				Total Supply		
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsfir / Rtm / Recycle In	Trsfir / Out	District	Private		Safe Yield	Recharge
1	2	3	4	5	6	7	8	9	10	11	12	13
1989 WC Plan	7,927	7,500	0	19,823	S. Joaquin	600	0	0	0	0	0	27,923
2025	7,500	7,500	0	22,046	S. Joaquin	600	6,300	0	0	0	0	23,846

Contractor's Agricultural Water Demands

Maximum Productive Acres: 6,080

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1989	25,240	75	3,056	3,133	29,579	28,199	7,871	7,833	3.76	3.60	1,026	30,605
2025	19,965	85	2,560	2,560	20,477	20,477	6,399	6,399	3.20	3.20	1,575	22,052

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)
	Population	Per Capita Demand (gpcd)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)	Ref Urban Per Capita Dmd (gpcd)	Calc Urban Per Capita Dmd (gpcd)			
1	28	29	31	32	33	34	35	36	37	38	39
1989	28	29	31	32	33	34	35	36	37	38	39
2025	28	29	31	32	33	34	35	36	37	38	39

* Represents Maximum Contract Amount

Notes: transfers in = transfer + upslope drain. Transfers out for 2025 based on historical average of 1,300 acre feet plus anticipated 5,000 transfer to the City of Tracy. Conveyance losses assumed to be a 5%.

Water Needs Assessment

TRACY, CITY OF

Contractor ID: 202135

Delta

Contractor's Water Supply Sources and Quantities (acre-feet)

Date: 2/22/2005 2:04:44 P

Timeframe	Surface Water Supply				Groundwater Supply				Total Supply			
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsfir / Recycle In	Trsfir / Out	District		Private	Safe Yield	Recharge
1995	10,000	0	0	0	6	7	8	9	10	11	12	13
2025	10,000	10,000	0	0	0	32,500	0	5,000	0	0	0	5,000

Maximum Productive Acres: 3,962

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1995												
2025												

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Total Demand	Unmet Demand (acre-feet)				
	Population	Per Capita Demand (gpcd)	Industrial (acre-feet)	Comm. / Instit. (acre-feet)	Industrial (acre-feet)	Comm. / Instit. (acre-feet)	Per Capita Dmd (gpcd)	Ref Urban Per Capita Dmd (gpcd)				Calc Urban Per Capita Dmd (gpcd)	Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	
1995	46,000	242.3	0	0	0	0	0	301.0	242.3	36	37	38	39	7,487	-1,500
2025	160,000	256.7	0	0	0	0	269.0	256.7	256.7	36	37	38	39	12,487	46,000

* Represents Maximum Contract Amount

Notes: In 2025, transfers in = 10,000 ac-ft (So. San Joaquin ID), 3,000 ac-ft (Widren), 5,000 ac-ft (Banta Carbona), 5,000 ac-ft (The West Side) and 9,500 ac-ft (Plain View). Many of these transfers are uncertain.

Water Needs Assessment

TRANQUILLITY ID

Contractor ID: 202140

Delta

Contractor's Water Supply Sources and Quantities (acre-feet)

Date: 2/22/2005 2:04:45 P

Timeframe	Surface Water Supply				Groundwater Supply				Total Supply			
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsf / R/Trm / Recycle In	Trsf / Out	District		Private	Safe Yield	Recharge
1	2	3	4	5	6	7	8	9	10	11	12	13
1989	7,825	7,825	0	20,200		0	5,975	547	0		0	22,597
1995	13,800	3,694	0	37,973		0	5,100	853	0		4,116	33,304
2025	13,800	13,800	0	20,200	SJR Exchange Water	0	1,000	0	2,600		2,600	33,000

Contractor's Agricultural Water Demands

Maximum Productive Acres: 8,960

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1	15	16	17	18	19	20	21	22	23	24	25	26
1989	25,015	75	2,432	2,590	30,111	25,033	8,631	8,632	3.49	2.90	2,654	32,765
1995	25,587	75	4,514	2,466	28,231	42,739	9,243	8,219	3.05	5.20	3,300	31,531
2025	24,056	85	2,781	2,781	25,029	25,029	9,270	9,270	2.70	2.70	4,200	29,229

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Ref Urban Per Capita Dmd (gpcd)	Calc Urban Per Capita Dmd (gpcd)	Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)
	Population	Per Capita Demand (gpcd)	Total Demand (acre-feet)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)	Per Capita Dmd (gpcd)						
1	28	29	30	31	32	33	34	35	36	37	38	39	39	39
1989	0	0.0	300	0	0	0	0	0.0	0.0	0.0	300	33,065	10,468	
1995	0	0.0	324	0	0	0	0	0.0	0.0	0.0	324	31,855	-1,449	
2025	0	0.0	324	0	0	0	0	0.0	0.0	0.0	324	29,553	-3,447	

* Represents Maximum Contract Amount

Notes:

Water Needs Assessment

WEST STANISLAUS ID

Contractor ID: 202180

Delta

Contractor's Water Supply Sources and Quantities (acre-feet)

Date: 2/22/2005 2:04:45 P

Timeframe	Surface Water Supply					Groundwater Supply				Total Supply		
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsf / Rtm / Recycle In	Trsf / Out	District	Private		Safe Yield	Recharge
1989 WC Plan	51,454	50,000	0	51,610	S.J. River	1,454	15,490	3,692	4,000	11	15,000	80,266
2025	50,000*	50,000	0	45,000	S.J. River	0	3,993	3,692	5,000	12	15,000	84,699

Contractor's Agricultural Water Demands

Maximum Productive Acres: 19,768

Timeframe	Crop Water Requirement (acre-feet)	District Irig. Efficiency (%)	Reference Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1989	66,450	75	897	7,033	87,404	60,952	23,727	23,443	3.68	2.60	2,799	90,203
2025	77,312	85	7,680	7,680	81,920	81,920	25,600	25,600	3.20	3.20	2,779	84,699

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Total Demand (acre-feet)	Unmet Demand (acre-feet)	
	Population	Per Capita Demand (gpcd)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)				Ref Urban Per Capita Dmd (gpcd)
1989	28	29	31	32	33	33	34	35	0	0	0	9,937
2025	28	29	31	32	33	33	34	35	0	0	0	0

* Represents Maximum Contract Amount

Notes: For 1989 and 2025, majority of conveyance losses were from local supplies and used for ground-water recharge. In 2025, transfers out limited to supply available.