

Appendix 4F
Cost Estimates

WUGNAME:

Brown County Other
Voluntary Redistribution - Lake Brownwood Water to Northern

STRATEGY:

Brown County

STRATEGY NUMBER:

F06AVolRed

AMOUNT (ac-ft/yr):

300

CONSTRUCTION COSTS

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Transmission pipeline	8 in.	116,000	LF	\$ 20	\$ 2,320,000
Right-of-way easements		53	AC	\$ 2,000	\$ 106,000
Engineering and Contingencies (30%)					\$ 728,000
Subtotal Pipeline					\$ 3,154,000

Pump Station(s) & Ground Storage	Size	Quantity	Unit	Unit Price	Cost
Pump Stations	100 HP	2	EA	\$ 620,000	\$ 1,240,000
Storage tank	0.3 MG	2	EA	\$ 111,000	\$ 222,000
Engineering and Contingencies (35%)					\$ 512,000
Subtotal of Pump Station(s)					\$ 1,974,000

CONSTRUCTION TOTAL					\$ 5,128,000
Permitting and Mitigation					\$ 45,000
Interest During Construction	(6 months)				\$ 111,000
TOTAL COST					\$ 5,284,000

ANNUAL COSTS

Debt Service (6% for 20 years)					\$ 461,000
Electricity (\$0.06 kWh)					\$ 28,000
Operation & Maintenance					\$ 73,000
Water Purchase					\$ 196,000
Total Annual Costs					\$ 758,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water					\$ 2,527
Per 1,000 Gallons					\$ 7.75

UNIT COSTS (After Amortization)

Per Acre-Foot					\$ 990
Per 1,000 Gallons					\$ 3.04

WUGNAME:	Ballinger, Winters, Bronte and Robert Lee
STRATEGY:	Lake Brownwood to Runnels and Coke Counties
STRATEGY NUMBER:	F25BroSys
AMOUNT (ac-ft/yr):	Winters 729
	Ballinger 1345
	Bronte 280
	Robert Lee 448
	Total 2,802

CONSTRUCTION COSTS

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Transmission pipeline	20 in.	230,936	LF	\$ 51	\$ 11,777,736
Transmission pipeline	18 in.	93,471	LF	\$ 42	\$ 3,925,782
Transmission pipeline	12 in.	61,797	LF	\$ 28	\$ 1,730,316
Transmission pipeline	10 in.	54,357	LF	\$ 24	\$ 1,304,568
Right-of-way easements		202	AC	\$ 1,000	\$ 202,000
Engineering and Contingencies (30%)					\$ 5,682,000
Subtotal Pipeline					\$ 24,622,402

Pump Station	Size	Quantity	Unit	Unit Price	Cost
Pump Station at Lake Brownwood	700 HP	1	LS	\$ 1,900,000	\$ 1,900,000
Booster Station #1	700 HP	1	LS	\$ 1,900,000	\$ 1,900,000
Storage Tank at Booster Station #1	0.75 MG	1	LS	\$ 215,000	\$ 215,000
Booster Station #2	700 HP	1	LS	\$ 1,900,000	\$ 1,900,000
Storage Tank at Booster Station #2	0.75 MG	1	LS	\$ 215,000	\$ 215,000
Storage Tank at High Point	0.75 MG	1	LS	\$ 215,000	\$ 215,000
Outlet structure at Valley Creek		1	LS	\$ 100,000	\$ 100,000
Booster Station #3	400 HP	1	LS	\$ 1,500,000	\$ 1,500,000
Storage Tank at Booster Station #3	0.5 MG	1	LS	\$ 156,000	\$ 156,000
Engineering and Contingencies (35%)					\$ 2,835,000
Subtotal of Pump Station(s)					\$ 10,936,000

CONSTRUCTION TOTAL \$ 35,558,402

Permitting and Mitigation \$ 322,000

Interest During Construction (12 months) \$ 1,482,000

TOTAL COST \$ 37,362,402

ANNUAL COSTS

Debt Service (6% for 20 years)	\$ 3,257,000
Electricity (\$0.06 kWh)	\$ 166,000
Operation & Maintenance	\$ 468,000
Raw Water Purchase	\$ 1,141,000
Total Annual Costs	\$ 5,032,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 1,796
Per 1,000 Gallons	\$ 5.51

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 633
Per 1,000 Gallons	\$ 1.94

Notes: Cost for buying raw water is assumed to be \$1.25 per 1,000 gallons

WUGNAME: Bronte
STRATEGY: Five New Water Wells
STRATEGY NUMBER: F13OthGW
AMOUNT (ac-ft/yr): 100

CONSTRUCTION COSTS

Well Field	Size	Quantity	Unit	Unit Price	Cost
Water wells		5	EA	\$ 65,000	\$ 325,000
Piping and other appurtenances		1	LS	\$ 21,000	\$ 21,000
Engineering and contingencies (30%)					\$ 104,000
					\$ 450,000

CONSTRUCTION TOTAL \$ 450,000

Permitting and Mitigation \$ 4,000

Interest During Construction (6 months) \$ 10,000

TOTAL COST **\$ 464,000**

ANNUAL COSTS

Debt Service (6% for 20 years)	\$ 40,000
Electricity (\$0.06 kWh)	\$ 3,000
Operation & Maintenance	\$ 4,000
Water Purchase	\$ 10,000
Total Annual Costs	\$ 57,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 570
Per 1,000 Gallons	\$ 1.75

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 170
Per 1,000 Gallons	\$ 0.52

WUGNAME:
STRATEGY:
STRATEGY NUMBER:
AMOUNT (ac-ft/yr):

Bronte, Robert Lee, Winters
 Generic 0.1 MGD Reuse
 F04Reuse
 110

CONSTRUCTION COSTS

Land Acquisition	Quantity	Unit	Unit Price	Cost
Reclaimed Treatment Plant Land Acquisition	3	AC	\$ 5,000	\$ 15,000
Engineering and Contingencies (30%)				\$ 4,500
Subtotal Land Acquisition				\$ 20,000

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Transmission pipeline 75gpm	4 in	10,560	LF	\$ 20	\$ 211,000
Right-of-way easements		7	AC	\$ 2,000	\$ 14,500
Engineering and Contingencies (30%)					\$ 79,000
Subtotal Pipeline					\$ 304,500

Pump Station(s) & Ground Storage	Size	Quantity	Unit	Unit Price	Cost
Pump Station	2-75 gpm	1	EA	\$ 24,000	\$ 24,000
Storage tank	0.025 MG	1	EA	\$ 80,000	\$ 80,000
Engineering and Contingencies (35%)					\$ 36,400
Subtotal of Pump Station(s)					\$ 141,000

Treatment Equipment	Quantity	Unit	Unit Price	Cost
Microfiltration/Ultrafiltration (MF/UF) and Reverse Osmosis (RO) Equipment and Installation	1	EA	\$ 370,000	\$ 370,000
UV/Oxidation	1	EA	\$ 65,000	\$ 65,000
Engineering and Contingencies (35%)				\$ 153,000
Subtotal of Treatment Equipment				\$ 588,000

Building	Quantity	Unit	Unit Price	Cost
Metal Building	3,500	SF	\$ 90	\$ 315,000
Engineering and Contingencies (35%)				\$ 111,000
Subtotal of Building				\$ 426,000

Electrical	Cost
20% of Equipment Cost	\$ 54,000
Engineering and Contingencies (35%)	\$ 19,000
Subtotal of Electrical	\$ 73,000

Instrumentation	Cost
20% of Equipment Cost	\$ 54,000
Engineering and Contingencies (35%)	\$ 19,000
Subtotal of Instrumentation	\$ 73,000

CONSTRUCTION TOTAL \$ 1,625,500

Interest During Construction \$ 35,000

TOTAL COST

\$ 1,660,500

ANNUAL COSTS

Debt Service (6% for 20 years)	\$	145,000
Operation & Maintenance	\$	53,000
Total Annual Costs	\$	198,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$	1,800
Per 1,000 Gallons	\$	5.42

UNIT COSTS (After Amortization)

Per Acre-Foot	\$	482
Per 1,000 Gallons	\$	1.45

WUGNAME: Ballinger
STRATEGY: Generic 0.2 MGD Reuse
STRATEGY NUMBER: F04Reuse
AMOUNT (ac-ft/yr): 220

CONSTRUCTION COSTS

Land Acquisition	Quantity	Unit	Unit Price	Cost
Reclaimed Treatment Plant Land Acquisition	3	AC	\$ 5,000	\$ 15,000
Engineering and Contingencies (30%)				\$ 4,500
Subtotal Land Acquisition				\$ 20,000

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Transmission pipeline 75gpm	4 in	10,560	LF	\$ 20	\$ 211,000
Right-of-way easements		7	AC	\$ 2,000	\$ 14,500
Engineering and Contingencies (30%)					\$ 79,000
Subtotal Pipeline					\$ 304,500

Pump Station(s) & Ground Storage	Size	Quantity	Unit	Unit Price	Cost
Pump Station	2-150 gpm	1	EA	\$ 24,000	\$ 24,000
Storage tank	0.05 MG	1	EA	\$ 100,000	\$ 100,000
Engineering and Contingencies (35%)					\$ 43,500
Subtotal of Pump Station(s)					\$ 167,500

Treatment Equipment	Quantity	Unit	Unit Price	Cost
Microfiltration/Ultrafiltration (MF/UF) and Reverse Osmosis (RO) Equipment and Installation	1	EA	\$ 565,000	\$ 565,000
UV/Oxidation	1	EA	\$ 100,000	\$ 100,000
Engineering and Contingencies (35%)				\$ 233,000
Subtotal of Treatment Equipment				\$ 898,000

Building	Quantity	Unit	Unit Price	Cost
Metal Building	3,500	SF	\$ 90	\$ 315,000
Engineering and Contingencies (35%)				\$ 111,000
Subtotal of Building				\$ 426,000

Electrical	Cost
20% of Equipment Cost	\$ 61,000
Engineering and Contingencies (35%)	\$ 21,000
Subtotal of Electrical	\$ 82,000

Instrumentation	Cost
20% of Equipment Cost	\$ 61,000
Engineering and Contingencies (35%)	\$ 21,000
Subtotal of Instrumentation	\$ 82,000

CONSTRUCTION TOTAL \$ 1,980,000

Interest During Construction \$ 43,000

TOTAL COST

\$ 2,023,000

ANNUAL COSTS

Debt Service (6% for 20 years)	\$	176,000
Operation & Maintenance	\$	76,000
Total Annual Costs	\$	252,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$	1,145
Per 1,000 Gallons	\$	3.45

UNIT COSTS (After Amortization)

Per Acre-Foot	\$	345
Per 1,000 Gallons	\$	1.04

WUGNAME: Robert Lee
STRATEGY: Mountain Creek Intake Structure
STRATEGY NUMBER: F20Intake
AMOUNT (ac-ft/yr): 50

CONSTRUCTION COSTS

Pump Station with Intake	Size	Quantity	Unit	Unit Price	Cost
Pump Station with Intake	10 HP	1	LS	\$ 250,000	\$ 250,000
Pipeline	8 in	5,280	LF	\$ 24	\$ 127,000
Engineering and Contingencies (35%)					\$ 132,000
Subtotal Pump Station and Intake					\$ 509,000

CONSTRUCTION TOTAL \$ 509,000

Permitting and Mitigation \$ 3,000

Interest During Construction (6 months) \$ 21,000

TOTAL COST \$ **533,000**

ANNUAL COSTS*

Debt Service (6% for 20 years)*	\$ 46,000
Electricity (\$0.06 kWh)	\$ 1,000
Operation & Maintenance	\$ 16,000
Total Annual Costs	\$ 63,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 1,260
Per 1,000 Gallons	\$ 3.87

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 340
Per 1,000 Gallons	\$ 1.04

WUGNAME:
STRATEGY:
STRATEGY NUMBER:
AMOUNT (ac-ft/yr):

Robert Lee
 Lake Spence Desalination Facility
 F16Desal
 500

CONSTRUCTION COSTS

Pump Station with Intake	Size	Quantity	Unit	Unit Price	Cost
Pump Station with Intake	50 HP	1	LS	\$ 650,000	\$ 650,000
Engineering and Contingencies (35%)					\$ 227,500
Subtotal Pump Station and Intake					\$ 877,500

Transmission to Treatment Plant	Size	Quantity	Unit	Unit Price	Cost
Pipeline	10-inch	15,840	LF	\$ 24	\$ 380,000
Right-of-way		7.3	AC	\$ 2,000	\$ 15,000
Engineering and Contingencies (30%)					\$ 119,000
Subtotal Transmission to Treatment Plant					\$ 514,000

Treatment Facilities	Size	Quantity	Unit	Unit Price	Cost
RO Treatment Facility	1.0 MGD	1	LS	\$ 3,200,000	\$ 3,200,000
Ground storage tank	0.1 MG	1	LS	\$ 75,000	\$ 75,000
Engineering and Contingencies (35%)					\$ 1,146,000
Subtotal of Treatment					\$ 4,421,000

CONSTRUCTION TOTAL \$ 5,812,500

Permitting and Mitigation \$ 52,000

Interest During Construction (6 months) \$ 242,000

TOTAL COST \$ **6,106,500**

ANNUAL COSTS*

Debt Service (6% for 20 years)*	\$ 532,000
Electricity (\$0.06 kWh)	\$ 9,000
Operation & Maintenance	\$ 19,000
Water Treatment	\$ 122,000
Total Annual Costs	\$ 682,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 1,364
Per 1,000 Gallons	\$ 4.19

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 300
Per 1,000 Gallons	\$ 0.92

WUGNAME: Big Spring
STRATEGY: Big Spring Reuse
STRATEGY NUMBER: F04Reuse
AMOUNT (ac-ft/yr): 1,855

CONSTRUCTION COSTS

Land Acquisition	Quantity	Unit	Unit Price	Cost
Reclaimed Treatment Plant Land Acquisition	2	AC	\$ 2,000	\$ 4,000
Engineering and Contingencies (35%)				\$ 1,000
Subtotal Land Acquisition				\$ 5,000

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Transmission pipeline	10 in	5,500	LF	\$ 50	\$ 275,000
Transmission pipeline	6 in	500	LF	\$ 30	\$ 15,000
Right-of-way easements		4	AC	\$ 1,000	\$ 4,000
Engineering and Contingencies (30%)					\$ 88,000
Subtotal Pipeline					\$ 382,000

Diversion Structure & Pump Station	Size	Quantity	Unit	Unit Price	Cost
Pump Station	2-1715 gpm	1	EA	\$ 50,000	\$ 50,000
Engineering and Contingencies (35%)					\$ 18,000
Subtotal of Diversion and Pump Station					\$ 68,000

Pump Station(s) & Ground Storage	Size	Quantity	Unit	Unit Price	Cost
Pump Station	2-1400 gpm	1	EA	\$ 50,000	\$ 50,000
Storage tank	0.50 MG	1	EA	\$ 300,000	\$ 300,000
Engineering and Contingencies (35%)					\$ 123,000
Subtotal of Pump Station(s)					\$ 473,000

Treatment Equipment	Quantity	Unit	Unit Price	Cost
Microfiltration/Ultrafiltration (MF/UF)	1	EA	\$ 1,553,000	\$ 1,553,000
Reverse Osmosis (RO)	1	EA	\$ 1,380,000	\$ 1,380,000
UV/Oxidation	1	EA	\$ 435,000	\$ 435,000
Engineering and Contingencies (35%)				\$ 1,179,000
Subtotal of Treatment Equipment				\$ 4,547,000

Reject Facilities	Quantity	Unit	Unit Price	Cost
High Pressure Membrane Reject (Piping to Creek)	1	EA	\$ 105,000	\$ 105,000
Low Pressure Membrane Reject	1	EA	\$ 75,000	\$ 75,000
Engineering and Contingencies (35%)				\$ 63,000
Subtotal of Reject Facilities				\$ 243,000

Building	Quantity	Unit	Unit Price	Cost
Metal Building	5,000	SF	\$ 90	\$ 450,000
Engineering and Contingencies (35%)				\$ 158,000
Subtotal of Building				\$ 608,000

Electrical	Cost
20% of Equipment Cost	\$ 338,000
Engineering and Contingencies (35%)	\$ 118,000
Subtotal of Electrical	\$ 456,000

Instrumentation	Cost
20% of Equipment Cost	\$ 338,000
Engineering and Contingencies (35%)	\$ 118,000
Subtotal of Instrumentation	\$ 456,000

CONSTRUCTION TOTAL \$ 7,238,000

Permitting and Mitigation \$ 64,000

Interest During Construction \$ 304,000

TOTAL COST

\$ 7,606,000

ANNUAL COSTS

Debt Service (6% for 20 years)	\$ 663,000
Operation & Maintenance	\$ 505,000
Total Annual Costs	\$ 1,168,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 630
Per 1,000 Gallons	\$ 1.93

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 272
Per 1,000 Gallons	\$ 0.84

WUGNAME: Odessa and Midland
STRATEGY: Odessa and Midland Reuse Project
STRATEGY NUMBER: F04Reuse
AMOUNT (ac-ft/yr): 9,799

CONSTRUCTION COSTS

Land Acquisition	Quantity	Unit	Unit Price	Cost
Reclaimed Treatment Plant Land Acquisition	5	AC	\$ 5,000	\$ 25,000
Disposal Facilities Land Acquisition	25	AC	\$ 1,000	\$ 25,000
Engineering and Contingencies (35%)				\$ 18,000
Subtotal Land Acquisition				\$ 43,000

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Transmission pipeline	30 in	84,000	LF	\$ 150	\$ 12,600,000
Transmission pipeline	24 in	3,000	LF	\$ 120	\$ 360,000
Transmission pipeline	12 in	5,280	LF	\$ 60	\$ 317,000
Right-of-way easements		122	AC	\$ 2,000	\$ 244,000
Engineering and Contingencies (30%)					\$ 4,056,000
Subtotal Pipeline					\$ 17,577,000

Pump Station(s) & Ground Storage	Size	Quantity	Unit	Unit Price	Cost
Pump Station Reclaimed water to terminal	2-7500 gpm	1	EA	\$ 122,000	\$ 122,000
Pump Station Midland Reclaimed Water	2-7640 gpm	1	EA	\$ 168,000	\$ 168,000
Storage tank Reclaimed water to terminal	2.7 MG	1	EA	\$ 810,000	\$ 810,000
Storage tank Midland Reclaimed Water	3.75 MG	1	EA	\$ 945,000	\$ 945,000
Engineering and Contingencies (35%)					\$ 716,000
Subtotal of Pump Station(s)					\$ 2,761,000

Treatment Equipment	Size	Quantity	Unit	Unit Price	Cost
Microfiltration/Ultrafiltration (MF/UF)		1	EA	\$ 6,048,000	\$ 6,048,000
Reverse Osmosis (RO)		1	EA	\$ 5,832,000	\$ 5,832,000
UV/Oxidation		1	EA	\$ 1,600,000	\$ 1,600,000
Secondary Treatment @ Midland's WWTP	3.75 MG	1	EA	\$ 6,250,000	\$ 6,250,000
Engineering and Contingencies (35%)					\$ 6,906,000
Subtotal of Treatment Equipment					\$ 26,636,000

Reject Facilities		Quantity	Unit	Unit Price	Cost
High Pressure Membrane Reject					
Pumps	2-1875 gpm	1	EA	\$ 110,000	\$ 110,000
RO reject lagoon	2.7 MG	1	EA	\$ 450,000	\$ 450,000
Brine Lagoon	40.5 MG	1	EA	\$ 2,232,000	\$ 2,232,000
Disposal Well		4	EA	\$ 1,500,000	\$ 6,000,000
Pipeline	18 in	85,000	LF	\$ 90	\$ 7,621,000
Low Pressure Membrane Reject					
Lagoon	1.5 MG	1	LS	\$ 550,000	\$ 550,000
Engineering and Contingencies (35%)					\$ 5,937,000
Subtotal of Reject Facilities					\$ 22,900,000

Aquifer Storage and Recovery		Quantity	Unit	Unit Price	Cost
Pipeline	14 in	27,000	LF	\$ 70	\$ 1,890,000
Pumps	2-1875 gpm	1	EA	\$ 34,000	\$ 34,000
Well Field Modification		1	LS	\$ 50,000	\$ 50,000
Engineering and Contingencies (35%)					\$ 691,000
Subtotal of Aquifer Storage and Recovery					\$ 2,665,000
Building		Quantity	Unit	Unit Price	Cost
Metal Building		15,000	SF	\$ 90	\$ 1,350,000
Engineering and Contingencies (35%)					\$ 473,000
Subtotal of Building					\$ 1,823,000
Electrical					Cost
10% of Equipment Cost					\$ 1,391,000
Engineering and Contingencies (35%)					\$ 487,000
Subtotal of Electrical					\$ 1,878,000
Instrumentation					Cost
10% of Equipment Cost					\$ 1,391,000
Engineering and Contingencies (35%)					\$ 487,000
Subtotal of Instrumentation					\$ 1,878,000
CONSTRUCTION TOTAL					\$ 78,161,000
Permitting and Mitigation					\$ 697,000
Interest During Construction					\$ 3,286,000
TOTAL COST					\$ 82,144,000
ANNUAL COSTS					
Debt Service (6% for 20 years)					\$ 7,162,000
Operation & Maintenance					\$ 2,851,000
Total Annual Costs					\$ 10,013,000
UNIT COSTS (Until Amortized)					
Per Acre-Foot of treated water					\$ 1,022
Per 1,000 Gallons					\$ 3.14
UNIT COSTS (After Amortization)					
Per Acre-Foot					\$ 291
Per 1,000 Gallons					\$ 0.89

WUGNAME: Snyder
STRATEGY: Snyder Reuse Project
STRATEGY NUMBER: F04Reuse
AMOUNT (ac-ft/yr): 726

CONSTRUCTION COSTS

Land Acquisition	Quantity	Unit	Unit Price	Cost
Reclaimed Treatment Plant Land Acquisition	2	AC	\$ 2,000	\$ 4,000
Engineering and Contingencies (35%)				\$ 1,000
Subtotal Land Acquisition				\$ 5,000

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Transmission pipeline to CRMWD GST	8 in	6,800	LF	\$ 50	\$ 340,000
Transmission pipeline to Reclaimed WTP	8 in	1,500	LF	\$ 40	\$ 60,000
Transmission pipeline to Disposal	4 in	1,500	LF	\$ 20	\$ 30,000
Right-of-way easements		7	AC	\$ 1,000	\$ 7,000
Engineering and Contingencies (30%)					\$ 131,000
Subtotal Pipeline					\$ 568,000

Pump Station(s) & Storage	Size	Quantity	Unit	Unit Price	Cost
Pump Station finished water to CRMWD GST	2-500	1	EA	\$ 40,000	\$ 40,000
Pump Station WWTP effluent to Reclaim WTP	2-700	1	EA	\$ 40,000	\$ 40,000
Storage reservoir in snyder	15 MG	1	EA	\$ 990,000	\$ 990,000
Storage tank	0.18 MG	1	EA	\$ 180,000	\$ 180,000
Lagoon (1day storage)	1 MG	1	EA	\$ 175,000	\$ 175,000
Engineering and Contingencies (35%)					\$ 499,000
Subtotal of Pump Station(s)					\$ 1,924,000

Treatment Equipment	Size	Quantity	Unit	Unit Price	Cost
Microfiltration/Ultrafiltration (MF/UF)		1	EA	\$ 607,000	\$ 607,000
Reverse Osmosis (RO)		1	EA	\$ 432,000	\$ 432,000
UV/Oxidation		1	EA	\$ 190,000	\$ 190,000
Engineering and Contingencies (35%)					\$ 430,000
Subtotal of Treatment Equipment					\$ 1,659,000

Reject Facilities		Quantity	Unit	Unit Price	Cost
High Pressure Membrane Reject					
Pumps	2-125 gpm	1	EA	\$ 25,000	\$ 25,000
RO reject lagoon (1 day storage)	0.18 MG	1	EA	\$ 63,000	\$ 63,000
Low Pressure Membrane Reject					
Pumps	2-70 gpm	1	EA	\$ 25,000	\$ 25,000
Lagoon (1 day storage)	0.2 MG	1	LS	\$ 175,000	\$ 175,000
Engineering and Contingencies (35%)					\$ 101,000
Subtotal of Reject Facilities					\$ 389,000

Aquifer Storage and Recovery		Quantity	Unit	Unit Price	Cost
Pipeline	8 in	27,000	LF	\$ 40	\$ 1,080,000
Pumps	2-347	1	EA	\$ 35,000	\$ 35,000
ASR Well Facilities		1	LS	\$ 142,000	\$ 142,000
Engineering and Contingencies (35%)					\$ 440,000
Subtotal of Aquifer Storage and Recovery					\$ 1,697,000
Building		Quantity	Unit	Unit Price	Cost
Metal Building		4,500	SF	\$ 90	\$ 405,000
Engineering and Contingencies (35%)					\$ 142,000
Subtotal of Building					\$ 547,000
Electrical					Cost
10% of Equipment Cost					\$ 128,000
Engineering and Contingencies (35%)					\$ 45,000
Subtotal of Electrical					\$ 173,000
Instrumentation					Cost
10% of Equipment Cost					\$ 128,000
Engineering and Contingencies (35%)					\$ 45,000
Subtotal of Instrumentation					\$ 173,000
CONSTRUCTION TOTAL					\$ 7,135,000
Permitting and Mitigation					\$ 63,000
Interest During Construction					\$ 300,000
TOTAL COST					\$ 7,498,000
ANNUAL COSTS					
Debt Service (6% for 20 years)					\$ 654,000
Operation & Maintenance					\$ 200,000
Total Annual Costs					\$ 854,000
UNIT COSTS (Until Amortized)					
Per Acre-Foot of treated water					\$ 1,176
Per 1,000 Gallons					\$ 3.61
UNIT COSTS (After Amortization)					
Per Acre-Foot					\$ 275
Per 1,000 Gallons					\$ 0.85

WUGNAME: CRMWD
STRATEGY: Southwest Pecos County to Odessa
STRATEGY NUMBER: F130thGW
AMOUNT (ac-ft/yr): 15,000

CONSTRUCTION COSTS

Well Field	Size	Quantity	Unit	Unit Price	Cost
Water Wells	12-inch	10	EA	\$ 278,000	\$ 2,780,000
Well field piping		20	MGD	\$ 250,000	\$ 5,000,000
Other well field appurtenances		1	LS	\$ 1,000,000	\$ 1,000,000
Engineering and Contingencies (35%)					\$ 3,073,000
Subtotal of Well Field					\$ 11,853,000

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Transmission pipeline	42 in.	554,400	LF	\$ 178	\$ 98,406,000
Right-of-way easements		255	AC	\$ 2,000	\$ 510,000
Engineering and Contingencies (30%)					\$ 29,675,000
Subtotal Pipeline					\$ 128,591,000

Pump Station(s) & Ground Storage	Size	Quantity	Unit	Unit Price	Cost
Pump Station	250 HP	1	EA	\$ 1,065,000	\$ 1,065,000
Storage tank	4 MG	1	EA	\$ 745,000	\$ 745,000
Engineering and Contingencies (35%)					\$ 634,000
Subtotal of Pump Station(s)					\$ 2,444,000

CONSTRUCTION TOTAL \$ 142,888,000

Permitting and Mitigation \$ 1,308,000

Interest During Construction (12 months) \$ 5,954,000

TOTAL COST \$ 150,150,000

ANNUAL COSTS

Debt Service (6% for 20 years)	\$ 13,091,000
Electricity (\$0.06 kWh)	\$ 1,074,000
Operation & Maintenance	\$ 1,384,000
Water Purchase	\$ 1,466,000
Water Treatment	\$ 1,711,000
Total Annual Costs	\$ 18,726,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 1,248
Per 1,000 Gallons	\$ 3.83

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 376
Per 1,000 Gallons	\$ 1.15

WUGNAME:	CRMWD
STRATEGY:	Well field development and transmission pipeline from Roberts
STRATEGY NUMBER:	County to CRMWD
AMOUNT (ac-ft/yr):	F08Market
	25,000

GROUNDWATER COSTS					
	Quantity	Unit	Unit Price	Cost	
Groundwater Rights	10,000	Acre	500	\$	5,000,000
Subtotal				\$	5,000,000
CONSTRUCTION COSTS					
	Size	Quantity	Unit	Unit Price	Cost
Well Facilities					
Wells (1,000 gpm per well)	1000 gpm	23	LS	\$450,000	\$10,350,000
Well field pipeline (\$250,000 / mgd)	33.5 mgd	33.50	MGD	\$250,000	\$8,375,000
Engineering and Contingencies (30%)					\$5,618,000
Subtotal of Well Field					\$24,343,000
Pipeline					
Pipeline	48 in.	1,625,000	LF	\$176	\$286,000,000
Right of Way Easements (ROW)	30 ft.	1,119	Acre	\$4,000	\$4,477,000
Engineering and Contingencies (30%)					\$87,143,000
Subtotal of Pipeline					\$377,620,000
Pump Station(s)					
Booster Pump Station	4500 HP	1	LS	\$5,450,000	\$5,450,000
Booster Pump Station	4000 HP	2	LS	\$5,100,000	\$10,200,000
Booster Pump Station	750 HP	1	LS	\$2,000,000	\$2,000,000
Ground Storage Tank	4.2 MG	3	LS	\$775,000	\$2,325,000
Engineering and Contingencies (35%)					\$6,991,000
Subtotal of Pump Station(s)					\$26,966,000
CONSTRUCTION TOTAL					\$ 142,888,000
Permitting and Mitigation					\$3,750,000
Interest During Construction (18 months)					\$26,683,000
TOTAL COST Before Development Costs					\$432,679,000
Development Costs					
Preliminary Expenses		1	LS	\$25,000,000	\$25,000,000
Development Fee	15%	1	LS	\$73,404,000	\$73,404,000
Subtotal					\$98,404,000
TOTAL COST					\$562,766,000

ANNUAL COSTS

Debt Service (6% for 30 years)	\$40,884,000
Electricity transmission(\$0.06 kWh)	\$3,256,000
Electricity well field (330 HP each well \$0.06 kWh)	\$2,972,000
Operation & Maintenance	\$4,031,000
Total Annual Costs	\$51,143,000

UNIT COSTS (Until Amortized)

Per Acre-Foot	\$2,046
Per 1,000 Gallons	\$6.28

UNIT COSTS (After Amortization)

Per Acre-Foot	\$410
Per 1,000 Gallons	\$1.26

WUGNAME:
STRATEGY:
STRATEGY NUMBER:
AMOUNT (ac-ft/yr):

CRMWD
 Winkler County Well Field
 F12CenGW
 6,000

CONSTRUCTION COSTS

Well Field	Size	Quantity	Unit	Unit Price	Cost
Water wells		7	EA	\$ 173,000	\$ 1,211,000
Well field pipeline	10"	2,800	LF	\$ 24	\$ 67,000
Well field pipeline	12"	6,050	LF	\$ 28	\$ 169,000
Well field pipeline	14"	600	LF	\$ 32	\$ 19,000
Well field pipeline	16"	1,000	LF	\$ 37	\$ 37,000
Well field pipeline	18"	800	LF	\$ 42	\$ 34,000
Well field pipeline	24"	2,000	LF	\$ 66	\$ 132,000
Well field pipeline	27"	2,000	LF	\$ 76	\$ 152,000
Well field pipeline	30"	7,650	LF	\$ 86	\$ 658,000
Other well field appurtenances			LS	\$ 1,000,000	\$ 1,000,000
Engineering and contingencies (35%)					\$ 1,218,000
Subtotal Well field					\$ 4,697,000

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Transmission pipeline	36 in	228,934	LF	\$ 89	\$ 20,375,000
Right-of-way easements		105	AC	\$ 2,000	\$ 210,000
Engineering and Contingencies (30%)					\$ 6,176,000
Subtotal Pipeline					\$ 26,761,000

Pump Station(s) & Ground Storage	Size	Quantity	Unit	Unit Price	Cost
Pump Station	1600 HP	1	EA	\$ 3,060,000	\$ 3,060,000
Storage tank	5 MG	2	EA	\$ 895,000	\$ 1,790,000
Engineering and Contingencies (35%)					\$ 1,698,000
Subtotal of Pump Station(s)					\$ 6,548,000

CONSTRUCTION TOTAL \$ 38,006,000

Permitting and Mitigation \$ 344,000

Interest During Construction (12 months) \$ 1,584,000

TOTAL COST \$ **39,934,000**

ANNUAL COSTS

Debt Service (6% for 20 years)	\$ 3,482,000
Electricity (\$0.06 kWh)	\$ 484,000
Operation & Maintenance	\$ 434,000
Water Purchase	\$ 587,000
Total Annual Costs	\$ 4,987,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 831
Per 1,000 Gallons	\$ 2.55

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 251
Per 1,000 Gallons	\$ 0.77

WUGNAME:
STRATEGY:
STRATEGY NUMBER:
AMOUNT (ac-ft/yr):

Kimble County Manufacturing
 New Groundwater from Edwards-Trinity Plateau Aquifer
 F10ETRGW
 1,000

CONSTRUCTION COSTS

Well Field	Size	Quantity	Unit	Unit Price	Cost
Water wells	8-in.	5	EA	\$ 108,000	\$ 540,000
Connection to Existing System		5	LF	\$ 50,000	\$ 250,000
Engineering and contingencies (35%)					\$ 277,000
Subtotal Well field					\$ 1,067,000

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Transmission pipeline	12 in.	79,200	LF	\$ 28	\$ 2,217,600
Right-of-way easements		36	AC	\$ 2,000	\$ 72,000
Engineering and Contingencies (30%)					\$ 687,000
Subtotal Pipeline					\$ 2,976,600

Pump Station(s) & Ground Storage	Size	Quantity	Unit	Unit Price	Cost
Pump Station	200 HP	1	EA	\$ 930,000	\$ 930,000
Storage tank	0.5 MG	1	EA	\$ 155,000	\$ 155,000
Engineering and Contingencies (35%)					\$ 380,000
Subtotal of Pump Station(s)					\$ 1,465,000

CONSTRUCTION TOTAL \$ 5,508,600

Permitting and Mitigation \$ 49,000

Interest During Construction (6 months) \$ 119,000

TOTAL COST \$ **5,676,600**

ANNUAL COSTS

Debt Service (6% for 20 years)	\$ 495,000
Electricity (\$0.06 kWh)	\$ 56,000
Operation & Maintenance	\$ 70,000
Water Purchase	\$ 49,000
Total Annual Costs	\$ 670,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 670
Per 1,000 Gallons	\$ 2.06

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 175
Per 1,000 Gallons	\$ 0.54

WUGNAME: Menard
STRATEGY: New Hickory Well
STRATEGY NUMBER: F11HICGW
AMOUNT (ac-ft/yr): 160

CONSTRUCTION COSTS

Well Field	Size	Quantity	Unit	Unit Price	Cost
Water wells	10-in	1	EA	\$ 869,600	\$ 869,600
Connection to existing system		1	LS	\$ 50,000	\$ 50,000
Engineering and contingencies (35%)					\$ 321,900
Subtotal Well field					\$ 1,241,500

CONSTRUCTION TOTAL \$ 1,241,500

Permitting and Mitigation \$ 11,000

Interest During Construction (6 months) \$ 26,900

TOTAL COST \$ **1,279,400**

ANNUAL COSTS

Debt Service (6% for 20 years)	\$ 111,500
Electricity (\$0.06 kWh)	\$ 50,000
Operation & Maintenance	\$ 11,000
Total Annual Costs	\$ 172,500

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 1,078
Per 1,000 Gallons	\$ 3.31

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 381
Per 1,000 Gallons	\$ 1.17

WUGNAME: Menard
STRATEGY: New Hickory Well with ASR
STRATEGY NUMBER: F17ASR
AMOUNT (ac-ft/yr): 240

CONSTRUCTION COSTS

Well Field	Size	Quantity	Unit	Unit Price	Cost
Water wells	10-in	1	EA	\$ 869,600	\$ 869,600
Connection to existing system		1	LS	\$ 50,000	\$ 50,000
Injection pump		1	EA	\$ 15,000	\$ 15,000
Engineering and contingencies (35%)					\$ 327,100
Subtotal Well field					\$ 1,261,700

CONSTRUCTION TOTAL \$ 1,261,700

Permitting and Mitigation \$ 51,200

Interest During Construction (6 months) \$ 27,300

TOTAL COST \$ **1,340,200**

ANNUAL COSTS

Debt Service (6% for 20 years)	\$ 116,800
Electricity (\$0.06 kWh)	\$ 91,000
Operation & Maintenance	\$ 11,200
Total Annual Costs	\$ 219,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 913
Per 1,000 Gallons	\$ 2.80

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 426
Per 1,000 Gallons	\$ 1.31

WUGNAME:
STRATEGY:
STRATEGY NUMBER:
AMOUNT (ac-ft/yr):

Menard
 San Saba Off-Channel Reservoir
 F22OCR
 500

CONSTRUCTION COSTS

Reservoir	Size	Quantity	Unit	Unit Price	Cost
Mobilization		1	LS	\$ 211,700	\$ 245,200
Care of Water During Construction		1	LS	\$ 46,900	\$ 160,100
Clearing and Grubbing		5	Ac	\$ 2,000	\$ 10,800
Foundation Preparation		1	LS	\$ 50,000	\$ 50,000
Required Excavation		10,000	CY	\$ 4	\$ 35,000
Borrow Excavation		188,000	CY	\$ 4	\$ 658,000
Random Compacted Fill		198,000	CY	\$ 5	\$ 891,000
Core Wall		4,000	CY	\$ 325	\$ 1,300,000
Soil Cement		8,000	CY	\$ 80	\$ 640,000
Flex Base Roadway		1,000	CY	\$ 40	\$ 40,000
Spillway Structure Reinforced Concrete		1,800	CY	\$ 375	\$ 675,000
Rock Riprap		550	CY	\$ 100	\$ 55,000
Misc. Internal Drainage		1	LS	\$ 500,000	\$ 500,000
Instrumentation-Piezometers		1	LS	\$ 50,000	\$ 50,000
Instrumentation-Monuments		1	LS	\$ 25,000	\$ 25,000
Reservoir site		75	AC	\$ 2,300	\$ 172,500
Engineering and contingencies (35%)					\$ 1,928,000
Subtotal Reservoir					\$ 7,435,600

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Pipeline from River to OCR	24 in	1,500	LF	\$ 66	\$ 99,000
Pipeline from OCR to WTP	8 in	5,400	LF	\$ 30	\$ 162,000
Pipeline from WTP to Menard	8 in	2,300	LF	\$ 30	\$ 69,000
Right-of-way easements		1	AC	\$ 2,000	\$ 2,000
Engineering and Contingencies (30%)					\$ 100,000
Subtotal Pipeline					\$ 432,000

Pump Station(s) & Ground Storage	Size	Quantity	Unit	Unit Price	Cost
Channel Weir		1	LS	\$ 275,000	\$ 275,000
River Pump Station	400 HP	1	LS	\$ 1,500,000	\$ 1,500,000
Reservoir Pump Station w intake	50 HP	1	LS	\$ 600,000	\$ 600,000
Pump Station (WTP to Menard)	50 HP	1	EA	\$ 400,000	\$ 400,000
Engineering and Contingencies (35%)					\$ 971,000
Subtotal of Pump Station(s)					\$ 3,746,000

New Water Treatment Plant	Size	Quantity	Unit	Unit Price	Cost
Conventional WTP	1.1 mgd	1	LS	\$ 4,200,000	\$ 4,200,000
Engineering and Contingencies (35%)					\$ 1,470,000
Subtotal WTP					\$ 5,670,000

CONSTRUCTION TOTAL					\$ 17,283,600
Permitting and Mitigation					\$ 529,500
Interest During Construction	(24 months)				\$ 1,412,000
TOTAL COST					\$ 19,225,100

ANNUAL COSTS

Debt Service (6% for 30 years)	\$ 1,397,000
Electricity (\$0.06 kWh)	\$ 20,000
Operation & Maintenance	\$ 186,000
Water Treatment	\$ 57,000
Water Purchase	\$ 59,000
Total Annual Costs	\$ 1,719,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 3,438
Per 1,000 Gallons	\$ 10.55

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 644
Per 1,000 Gallons	\$ 1.98

WUGNAME: Midland
STRATEGY: T-Bar Well Field
STRATEGY NUMBER: F12CenGW
AMOUNT (ac-ft/yr): 13,600

Based on draft cost estimate by PSC. Provided by City of Midland on 5/16/05

CONSTRUCTION COSTS

Well Field	Size	Quantity	Unit	Unit Price	Cost
Wells		43	EA	\$ 353,000	\$ 15,179,000
Well field piping		20	MGD	\$ 250,000	\$ 5,000,000
Well field site improvements		1	LS	\$ 3,643,000	\$ 3,643,000
Engineering and Contingencies (35%)					\$ 8,338,000
					\$ 32,160,000

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Pipe	36 in.	368,860	LF	\$ 114	\$ 42,050,000
Right-of-way easements		169	AC	\$ 2,000	\$ 338,000
Engineering and Contingencies (30%)					\$ 12,716,000
Subtotal Pipeline					\$ 55,104,000

Pump Station(s) & Ground Storage	Size	Quantity	Unit	Unit Price	Cost
Pump Station at Well Field	1400 HP	1	LS	\$ 2,840,000	\$ 2,840,000
Storage Tank at Well Field	6 MG	1	LS	\$ 1,100,000	\$ 1,100,000
Booster Station	1400 HP	1	LS	\$ 2,840,000	\$ 2,840,000
Storage Tank at Booster Station	6 MG	1	LS	\$ 1,100,000	\$ 1,100,000
Storage Tank at High Point	6 MG	1	LS	\$ 1,100,000	\$ 1,100,000
Chlorination and other improvements		1	LS	\$ 8,000,000	\$ 8,000,000
Engineering and Contingencies (35%)					\$ 5,943,000
Subtotal of Pump Station(s)					\$ 22,923,000

CONSTRUCTION TOTAL \$ 110,187,000

Permitting and Mitigation \$ 994,000

Interest During Construction (12 months) \$ 4,591,000

TOTAL COST \$ 115,772,000

ANNUAL COSTS

Debt Service (6% for 20 years)	\$ 10,094,000
Electricity (\$0.06 kWh)	\$ 1,257,000
Operation & Maintenance	\$ 1,729,000
Total Annual Costs	\$ 13,080,000

UNIT COSTS (Before Amortization)

Per Acre-Foot of treated water	\$ 962
Per 1,000 Gallons	\$ 2.95

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 220
Per 1,000 Gallons	\$ 0.67

WUGNAME:
STRATEGY:
STRATEGY NUMBER:
AMOUNT (ac-ft/yr):

City of Ballinger
 Pipeline to Hords Creek Reservoir
 F06AVolRed
 220

CONSTRUCTION COSTS

Pipeline	Size	Quantity	Unit	Unit Price	Cost
12" DR-11 HDPE water line	12 in.	16,000	LF	\$ 25.00	\$ 400,000
10" DR-13.5 HPDE water line	10 in.	8,000	LF	\$ 17.00	\$ 136,000
10" DR-17 HPDE water line	10 in.	86,000	LF	\$ 14.00	\$ 1,204,000
Class "C" bedding material		110,000	LF	\$ 1.20	\$ 132,000
HPDE heat fusion fittings		1	LS	\$ 67,000	\$ 67,000
10" gate valve with valve box	10 in.	25	EA	\$ 2,000	\$ 50,000
12" gate valve with valve box	10 in.	3	EA	\$ 2,500	\$ 7,500
Tie-in existing raw water line	10 in.	1	EA	\$ 2,000	\$ 2,000
Master meter and valve vault		1	LS	\$ 9,800	\$ 9,800
Air relief valve assembly		10	EA	\$ 3,000	\$ 30,000
Flush valve assembly		5	EA	\$ 2,500	\$ 12,500
Stream crossing		4	EA	\$ 15,000	\$ 60,000
18" bore & steel casement		1,500	LF	\$ 100	\$ 150,000
Gravel roadway repair		3,900	LF	\$ 8.00	\$ 31,200
Asphalt roadway repair		1,000	LF	\$ 20.00	\$ 20,000
Pipeline markers		200	EA	\$ 50.00	\$ 10,000
Right-of-way easements		1	LS	\$ 55,000	\$ 55,000
Engineering and Contingencies (30%)					\$ 713,000
Subtotal pipeline					\$ 3,090,000
Pump Station	Size	Quantity	Unit	Unit Price	Cost
Pump Station	35 HP	1	EA	\$ 150,000	\$ 150,000
Fencing		500	LF	\$ 20.00	\$ 10,000
Pipe insulation		1	LS	\$ 5,000	\$ 5,000
Site piping		1	LS	\$ 25,000	\$ 25,000
Electrical service		1	LS	\$ 50,000	\$ 50,000
Controls and telemetry		1	LS	\$ 15,000	\$ 15,000
Engineering and Contingencies (35%)					\$ 89,000
Subtotal of Pump Station(s)					\$ 344,000
Ground Storage	Size	Quantity	Unit	Unit Price	Cost
Ground Storage Tank	500,000 gal	1	EA	\$ 300,000	\$ 300,000
Engineering and Contingencies (35%)					\$ 105,000
Subtotal of Ground Storage					\$ 405,000
Mobilization, bonding & insurance	Size	Quantity	Unit	Unit Price	Cost
		1	LS	\$ 143,900	\$ 143,900
CONSTRUCTION TOTAL					\$ 3,982,900
Permitting and Mitigation					\$ 35,000
Interest During Construction	(6 months)				\$ 86,000
TOTAL COST					\$ 4,103,900

ANNUAL COSTS

Debt Service (6% for 20 years)	\$	358,000
Electricity (\$0.06 kWh)	\$	5,000
Operation & Maintenance	\$	51,000
Raw Water Purchase	\$	22,000
Total Annual Costs	\$	436,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$	1,982
Per 1,000 Gallons	\$	6.08

UNIT COSTS (After Amortization)

Per Acre-Foot	\$	355
Per 1,000 Gallons	\$	1.09

WUGNAME: Miles, Ballinger and Winters
 Purchase Water from San Angelo Regional Desal Facility -
STRATEGY: Runnels County System
STRATEGY NUMBER: F24SADESA
AMOUNT (ac-ft/yr): Miles 224
 Ballinger 1345
 Winters 729
 Total 2,298

CONSTRUCTION COSTS

Pipeline	Size	Quantity	Unit	Unit Price	Cost
San Angelo to Miles	18 in.	100,183	LF	\$ 42	\$ 4,207,684
Miles to Ballinger	18 in.	92,340	LF	\$ 42	\$ 3,878,281
Ballinger to Winters	12 in.	79,965	LF	\$ 28	\$ 2,239,008
Right-of-way easements		125	AC	\$ 1,000	\$ 125,000
Engineering and Contingencies (30%)					\$ 3,135,000
Subtotal Pipeline					\$ 13,584,974

Pump Station(s) & Ground Storage	Size	Quantity	Unit	Unit Price	Cost
Pump Station at San Angelo	300 HP	1	LS	\$ 1,200,000	\$ 1,200,000
Storage Tank at San Angelo	0.5 MG	1	LS	\$ 155,000	\$ 155,000
Pump Station at Miles	200 HP	1	LS	\$ 775,000	\$ 775,000
Storage Tank at Miles	0.5 MG	1	LS	\$ 155,000	\$ 155,000
Pump Station at Ballinger	200 HP	1	LS	\$ 775,000	\$ 775,000
Storage Tank at Ballinger	0.4 MG	1	LS	\$ 122,000	\$ 122,000
Engineering and Contingencies (35%)					\$ 1,114,000
Subtotal of Pump Station(s)					\$ 4,296,000

CONSTRUCTION TOTAL \$ 17,880,974

Permitting and Mitigation \$ 162,000

Interest During Construction (6 months) \$ 387,000

TOTAL COST \$ **18,429,974**

ANNUAL COSTS

Debt Service (6% for 20 years)	\$ 1,607,000
Electricity (\$0.06 kWh)	\$ 48,000
Operation & Maintenance	\$ 219,000
Treated Water Purchase	\$ 2,246,000
Total Annual Costs	\$ 4,120,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 1,793
Per 1,000 Gallons	\$ 5.50

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 1,094
Per 1,000 Gallons	\$ 3.36

WUGNAME:
STRATEGY:
STRATEGY NUMBER:
AMOUNT (ac-ft/yr):

San Angelo
 Phase I - 5.0 MGD Regional Brackish Water Desalination Facility
 F16DESAL
 5,600

CONSTRUCTION COSTS

Well Field	Size	Quantity	Unit	Unit Price	Cost
Land acquisition		800	AC	\$ 2,000	\$ 1,600,000
Well pumps	10-500 gpm	16	EA	\$ 15,000	\$ 240,000
Well construction		16	EA	\$ 150,000	\$ 2,400,000
Well field piping		5	LS	\$ 250,000	\$ 1,250,000
Ground storage tank	1.5 MG		LS	\$ 500,000	\$ 500,000
Engineering and Contingencies (35%)					\$ 2,097,000
Subtotal Well Field					\$ 8,087,000

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Transmission pipeline - well field to treatment p	30 in.	80,000	LF	\$ 86	\$ 6,880,000
Transmission pipeline - treatment plant to disp	16 in.	2,000	LF	\$ 37	\$ 74,000
Right-of-way easements		56.47	AC	\$ 1,000	\$ 56,000
Engineering and Contingencies (30%)					\$ 2,103,000
Subtotal Pipeline					\$ 9,113,000

Pumps	Size	Quantity	Unit	Unit Price	Cost
Well field to treatment plant	2- 4000 gpm	2	EA	\$ 70,000	\$ 140,000
High pressure well disposal pumps	2-1300 gpm	2	EA	\$ 20,000	\$ 40,000
Engineering and Contingencies (35%)					\$ 63,000
Subtotal of Pumps					\$ 243,000

Treatment Facilities	Size	Quantity	Unit	Unit Price	Cost
Land acquisition		30	AC	\$ 2,000	\$ 60,000
RO Unit	5.0 MGD	1	LS	\$ 2,625,000	\$ 2,625,000
Ground storage tank	2.5 MG	1	LS	\$ 750,000	\$ 750,000
Disinfection facility		1	LS	\$ 120,000	\$ 120,000
Metal Building		5,000	SF	\$ 90	\$ 450,000
Engineering and Contingencies (35%)					\$ 1,402,000
Subtotal of Treatment					\$ 5,407,000

Reject Facilities	Size	Quantity	Unit	Unit Price	Cost
Brine lagoon	19 MG	1	LS	\$ 1,350,000	\$ 1,350,000
Disposal wells		7	LS	\$ 1,200,000	\$ 8,400,000
Engineering and Contingencies (35%)					\$ 3,413,000
Subtotal of Reject Facilities					\$ 13,163,000

Electrical and Instrumentation	Size	Quantity	Unit	Unit Price	Cost
Electrical		1	LS	\$ 355,050	\$ 355,000
Instrumentation		1	LS	\$ 236,700	\$ 237,000
Power Service		10,000	LF	\$ 30	\$ 300,000
Engineering and Contingencies (35%)					\$ 312,000
Subtotal of Electrical & Instrumentation					\$ 1,204,000
CONSTRUCTION TOTAL					\$ 37,217,000
Permitting and Mitigation					\$ 333,000
Interest During Construction	(24 months)				\$ 3,040,000
TOTAL COST					\$ 40,590,000
ANNUAL COSTS					
Debt Service (6% for 20 years)					\$ 3,539,000
Electricity (\$0.06 kWh)					\$ 429,000
Operation & Maintenance					\$ 1,106,000
Water Purchase					\$ 547,000
Total Annual Costs					\$ 5,621,000
UNIT COSTS (Until Amortized)					
Per Acre-Foot of treated water					\$ 1,004
Per 1,000 Gallons					\$ 3.08
UNIT COSTS (After Amortization)					
Per Acre-Foot					\$ 372
Per 1,000 Gallons					\$ 1.14

WUGNAME:
STRATEGY:
STRATEGY NUMBER:
AMOUNT (ac-ft/yr):

San Angelo
 Phase II - Upgrade Desal Facility to 10 MGD
 F16DESAL
 11,200

CONSTRUCTION COSTS

Well Field	Size	Quantity	Unit	Unit Price	Cost
Land acquisition		800	AC	\$ 2,000	\$ 1,600,000
Well pumps	10-500 gpm	16	EA	\$ 15,000	\$ 240,000
Well construction		16	EA	\$ 150,000	\$ 2,400,000
Well field piping		5	LS	\$ 250,000	\$ 1,250,000
Ground storage tank	1.5 MG		LS	\$ 500,000	\$ 500,000
Engineering and Contingencies (35%)					\$ 2,097,000
Subtotal Well Field					\$ 8,087,000

Pumps	Size	Quantity	Unit	Unit Price	Cost
Well field to treatment plant	3 - 4000 gpm	3	EA	\$ 70,000	\$ 210,000
High pressure well disposal pumps	1 -1300 gpm	1	EA	\$ 20,000	\$ 20,000
Engineering and Contingencies (35%)					\$ 81,000
Subtotal of Pumps					\$ 311,000

Treatment Facilities	Size	Quantity	Unit	Unit Price	Cost
RO Unit	5.0 MGD	1	LS	\$ 2,625,000	\$ 2,625,000
Disinfection facility		1	LS	\$ 50,000	\$ 50,000
Engineering and Contingencies (35%)					\$ 936,000
Subtotal of Treatment					\$ 3,611,000

Reject Facilities	Size	Quantity	Unit	Unit Price	Cost
Brine lagoon	19 MG	1	LS	\$ 1,350,000	\$ 1,350,000
Disposal wells		7	LS	\$ 1,200,000	\$ 8,400,000
Engineering and Contingencies (35%)					\$ 3,413,000
Subtotal of Reject Facilities					\$ 13,163,000

Electrical and Instrumentation	Size	Quantity	Unit	Unit Price	Cost
Electrical		1	LS	\$ 355,050	\$ 355,000
Instrumentation		1	LS	\$ 236,700	\$ 237,000
Power Service		10,000	LF	\$ 30	\$ 300,000
Engineering and Contingencies (35%)					\$ 312,000
Subtotal of Electrical & Instrumentation					\$ 1,204,000

CONSTRUCTION TOTAL \$ 26,376,000

Permitting and Mitigation \$ 234,000

Interest During Construction (24 months) \$ 2,154,000

TOTAL COST

\$ 28,764,000

ANNUAL COSTS*

Debt Service (6% for 20 years)*	\$	6,047,000
Electricity (\$0.06 kWh)	\$	917,000
Operation & Maintenance	\$	1,910,000
Water Purchase	\$	1,095,000
Total Annual Costs	\$	9,969,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$	890
Per 1,000 Gallons	\$	2.73

UNIT COSTS (After Amortization)

Per Acre-Foot	\$	350
Per 1,000 Gallons	\$	1.07

* Includes debt service and other annual costs for 5 MGD facility

WUGNAME: San Angelo
STRATEGY: Groundwater from Edwards-Trinity (Plateau) aquifer
STRATEGY NUMBER: F10ETRGW
AMOUNT (ac-ft/yr): 12,000

CONSTRUCTION COSTS

Well Field	Size	Quantity	Unit	Unit Price	Cost
Water wells		10	EA	\$ 200,000	\$ 2,000,000
Well field piping		15	MGD	\$ 250,000	\$ 3,750,000
Other well field appurtenances			LS	\$ 500,000	\$ 500,000
Engineering and contingencies (30%)					\$ 1,875,000
Subtotal Well Field					\$ 8,125,000

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Transmission pipeline	30 in.	160,000	LF	\$ 86	\$ 13,760,000
Right-of-way easements		73	AC	\$ 2,000	\$ 146,000
Engineering and Contingencies (30%)					\$ 4,172,000
Subtotal Pipeline					\$ 18,078,000

Pump Station(s) & Ground Storage	Size	Quantity	Unit	Unit Price	Cost
Pump Station	450 HP	1	EA	\$ 1,600,000	\$ 1,600,000
Storage tank	6 MG	1	EA	\$ 1,100,000	\$ 1,100,000
Engineering and Contingencies (35%)					\$ 945,000
Subtotal of Pump Station(s)					\$ 3,645,000

CONSTRUCTION TOTAL \$ 29,848,000

Permitting and Mitigation \$ 273,000

Interest During Construction (24 months) \$ 1,244,000

TOTAL COST \$ **31,365,000**

ANNUAL COSTS

Debt Service (6% for 20 years)	\$ 2,735,000
Electricity (\$0.06 kWh)	\$ 1,389,000
Operation & Maintenance	\$ 323,000
Water Purchase	\$ 1,173,000
Total Annual Costs	\$ 5,620,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 468
Per 1,000 Gallons	\$ 1.44

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 240
Per 1,000 Gallons	\$ 0.74

WUGNAME:	San Angelo
STRATEGY:	Groundwater from Southwest Pecos County
STRATEGY NUMBER:	F13OTHGW
AMOUNT (ac-ft/yr):	12,000

CONSTRUCTION COSTS

Well Field	Size	Quantity	Unit	Unit Price	Cost
Water wells		20	EA	\$ 700,000	\$ 14,000,000
Well field piping		15	MGD	\$ 250,000	\$ 3,750,000
Other well field appurtenances			LS	\$ 2,000,000	\$ 2,000,000
Engineering and contingencies (30%)					\$ 5,925,000
Subtotal Well Field					\$ 25,675,000

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Transmission pipeline	36 in.	401,719	LF	\$ 114	\$ 45,796,000
Transmission pipeline - high pressure	36 in.	341,582	LF	\$ 148	\$ 50,554,000
Transmission pipeline	30 in.	189,072	LF	\$ 86	\$ 16,260,000
Right-of-way easements		428	AC	\$ 1,000	\$ 428,000
Engineering and Contingencies (30%)					\$ 33,911,000
Subtotal Pipeline					\$ 146,949,000

Pump Station(s) & Ground Storage	Size	Quantity	Unit	Unit Price	Cost
Pump Station	500 HP	1	EA	\$ 1,700,000	\$ 1,700,000
Storage tank	6 MG	2	EA	\$ 1,100,000	\$ 2,200,000
Engineering and Contingencies (35%)					\$ 1,365,000
Subtotal of Pump Station(s)					\$ 5,265,000

CONSTRUCTION TOTAL \$ 177,889,000

Permitting and Mitigation \$ 1,635,000

Interest During Construction (24 months) \$ 14,528,000

TOTAL COST \$ 194,052,000

ANNUAL COSTS

Debt Service (6% for 20 years)	\$ 16,918,000
Electricity (\$0.06 kWh)	\$ 2,600,000
Operation & Maintenance	\$ 1,710,000
Water Purchase	\$ 1,173,000
Total Annual Costs	\$ 22,401,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 1,867
Per 1,000 Gallons	\$ 5.73

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 457
Per 1,000 Gallons	\$ 1.40

WUGNAME: San Angelo
STRATEGY: McCulloch County Well Field
STRATEGY NUMBER: F11HICGW
AMOUNT (ac-ft/yr): 12,000

CONSTRUCTION COSTS

Well Field	Size	Quantity	Unit	Unit Price	Cost
Water wells		19	EA	\$ 700,000	\$ 13,300,000
Well field piping		1	LS	\$ 6,549,000	\$ 6,549,000
Rehabilitation of existing wells		9	EA	\$ 350,000	\$ 3,150,000
Engineering and contingencies (30%)					\$ 6,900,000
Subtotal Well Field					\$ 29,899,000

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Transmission pipeline	36 in.	304,000	LF	\$ 114	\$ 34,656,000
Right-of-way easements		140	AC	\$ 2,000	\$ 280,000
Engineering and Contingencies (30%)					\$ 10,481,000
Subtotal Pipeline					\$ 45,417,000

Pump Station(s) & Ground Storage	Size	Quantity	Unit	Unit Price	Cost
Pump Station	2600 HP	1	EA	\$ 4,200,000	\$ 4,200,000
Storage tank	6 MG	2	EA	\$ 1,100,000	\$ 2,200,000
Engineering and Contingencies (35%)					\$ 2,240,000
Subtotal of Pump Station(s)					\$ 8,640,000

CONSTRUCTION TOTAL \$ 83,956,000

Permitting and Mitigation \$ 769,000

Interest During Construction (24 months) \$ 6,857,000

TOTAL COST \$ **91,582,000**

ANNUAL COSTS

Debt Service (6% for 20 years)	\$ 7,985,000
Electricity (\$0.06 kWh)	\$ 4,097,000
Operation & Maintenance	\$ 887,000
Water Purchase	\$ -
Total Annual Costs	\$ 12,969,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 1,081
Per 1,000 Gallons	\$ 3.32

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 415
Per 1,000 Gallons	\$ 1.27

WUGNAME:	City of Eden
STRATEGY:	0.7 MGD RO Plant
STRATEGY NUMBER:	F27ADVTR
AMOUNT (ac-ft/yr):	392

CONSTRUCTION COSTS

Treatment Facility	Size	Quantity	Unit	Unit Price	Cost
RO Plant	0.7 MGD	1	LS	\$ 1,070,000	\$ 1,070,000
Storage Tank	100,000 gal	1	LS	\$ 75,000	\$ 75,000
Engineering and Contingencies (35%)					\$ 400,750

CONSTRUCTION TOTAL \$ 1,545,750

Permitting and Mitigation \$ 13,740

Interest During Construction \$ 126,241

TOTAL COST \$ **1,685,731**

ANNUAL COSTS

Debt Service (6% for 20 years)	\$ 146,970
O&M	\$ 57,484
Total Annual Cost	\$ 204,454

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 522
Per 1,000 gallons	\$ 1.60

UNIT COSTS (After Amortization)

Per Acre-Foot of treated water	\$ 147
Per 1,000 gallons	\$ 0.45

WUGNAME:
STRATEGY:
STRATEGY NUMBER:
AMOUNT (ac-ft/yr):

City of Eden
 0.7 MGD CAX TreatmentPlant
 F27ADVTR
 392

CONSTRUCTION COSTS

Treatment Facility	Size	Quantity	Unit	Unit Price	Cost
CAX Plant	0.7 MGD	1	LS	\$ 1,070,000	\$ 1,050,000
Storage tank	100,000 gal	1	LS	\$ 75,000	\$ 75,000
Engineering and Contingencies (35%)					\$ 393,750

CONSTRUCTION TOTAL \$ 1,518,750

Permitting and Mitigation \$ 13,500

Interest During Construction \$ 124,036

TOTAL COST \$ **1,656,286**

ANNUAL COSTS

Debt Service (6% for 20 years)	\$ 144,403
O&M	\$ 31,935
Total Annual Cost	\$ 176,338

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 450
Per 1,000 gallons	\$ 1.38

UNIT COSTS (After Amortization)

Per Acre-Foot of treated water	\$ 81
Per 1,000 gallons	\$ 0.25

WUGNAME:
STRATEGY:
STRATEGY NUMBER:
AMOUNT (ac-ft/yr):

Richland SUD & McCulloch County Other (City of
Melvin, Live Oak Hills Subdivision)
Central Bottled Water Point in Brady
F26BOTTLE

0.5

Capital Costs for Set-up \$ 2,000

ANNUAL COSTS

Total Administrative Costs \$ 10,000
Water Cost \$ 1,200
Total Annual Cost \$ 11,200

PRO-RATED ANNUAL COSTS

Richland SUD \$ 8,009
Melvin \$ 1,970
Live Oak Hills Subdivision \$ 1,220

UNIT COSTS

Per Acre-Foot Bottled \$ 22,700
Per 1,000 Gallons \$ 69.66

WUGNAME:
STRATEGY:
STRATEGY NUMBER:
AMOUNT (ac-ft/yr):

Richland SUD
Richland SUD Specialized Media System
F27ADVTR

113

CAPITAL COSTS

		Cost
Building	\$	30,000
Connection to System	\$	20,000
Engineering and Permitting	\$	10,000

TOTAL CAPITAL COST

\$ 60,000

ANNUAL COSTS

Debt Service (6% over 10 years)	\$	8,152
Payments to WRT	\$	46,011
Power Supply	\$	10,826
Personnel	\$	5,000

Total Annual Cost

\$ 69,989

UNIT COSTS

Per Acre-Foot Delivered	\$	619
Per 1,000 Gallons	\$	1.90

WUGNAME: City of Eden
STRATEGY: Replacement Well
STRATEGY NUMBER: F30REPWELL
AMOUNT (ac-ft/yr): 323

CAPITAL COSTS

	Quantity	Units	Unit Price	Cost
Water Well Construction		1 EA	\$	920,300
Connection to Water System		1 EA	\$	100,000
Engineering and Contingencies (30%)			\$	306,090
Subtotal			\$	1,326,390
Permitting and Mitigation			\$	12,244
Interest During Construction			\$	28,739
TOTAL CAPITAL COST			\$	1,367,372

ANNUAL COSTS

	Quantity	Units	Unit Price	Cost
Debt Service (6% for 20 years)			\$	119,214
O&M			\$	10,203
Chemicals		1000 gal	\$ 0.10	10,512
Electricity			\$	138,750
Total Annual Cost			\$	278,679

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$	864
Per 1,000 gallons	\$	2.65

UNIT COSTS (After Amortization)

Per Acre-Foot of treated water	\$	494
Per 1,000 gallons	\$	1.52

WUGNAME: Richland SUD
STRATEGY: Replacement Well
STRATEGY NUMBER: F30REPWELL
AMOUNT (ac-ft/yr): 113

CAPITAL COSTS

	Quantity	Units	Unit Price	Cost
Water Well Construction		1 EA		\$ 863,850
Connection to Water System		1 EA		\$ 100,000
Engineering and Contingencies (30%)				\$ 289,155
Subtotal				\$ 1,253,005
Permitting and Mitigation				\$ 11,566
Interest During Construction				\$ 27,149
TOTAL CAPITAL COST				\$ 1,291,720

ANNUAL COSTS

	Quantity	Units	Unit Price	Cost
Debt Service (6% for 20 years)				\$ 112,618
O&M				\$ 9,639
Chemicals		1000 gal	\$ 0.10	\$ 3,680
Electricity				\$ 46,255
Total Annual Cost				\$ 172,191

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water				\$ 1,524
Per 1,000 gallons				\$ 4.68

UNIT COSTS (After Amortization)

Per Acre-Foot of treated water				\$ 527
Per 1,000 gallons				\$ 1.62

WUGNAME:	City of Eden
STRATEGY:	Eden Bottled Water System
STRATEGY NUMBER:	F26BOTTLE
AMOUNT (ac-ft/yr):	1.34

CAPITAL COSTS

		Cost
Equipment	\$	40,000
Installation	\$	10,000
Metal Buildings	\$	60,000
Engineering and Contingences (20%)	\$	22,000
TOTAL CAPITAL COST FOR TWO SYSTEMS	\$	132,000
Permitting	\$	1,320
TOTAL CAPITAL COST	\$	133,320
ANNUAL COSTS		
Debt Service (6% for 10 yrs)	\$	18,114
O&M at \$2 per 1000 gallon	\$	8,760
Total Annual Cost	\$	26,874
UNIT COSTS		
Per Acre-Foot of Bottled Water	\$	19,994
Per 1,000 gallons	\$	61.36

WUGNAME:
STRATEGY:
STRATEGY NUMBER:
AMOUNT (ac-ft/yr):

Andrews
 Dockum Desalination Facility
 F27ADVTR
 950

CONSTRUCTION COSTS

Well Field	Size	Quantity	Unit	Unit Price		Cost
Land acquisition		3	AC	\$	2,000	\$ 6,000
Well pumps	10-500 gpm	3	EA	\$	15,000	\$ 45,000
Well construction		3	EA	\$	150,000	\$ 450,000
Well field piping	8-inch	15,840	LF	\$	20	\$ 317,000
Ground storage tank	250,000 gal		LS	\$	100,000	\$ 100,000
Engineering and Contingencies (35%)						\$ 321,300
Subtotal Pump Station and Intake						\$ 1,239,300

Disposal Facilities	Size	Quantity	Unit	Unit Price		Cost
Pipeline	8-inch	26,400	LF	\$	20	\$ 528,000
Right-of-way		12.1	AC	\$	2,000	\$ 24,000
High pressure well disposal pumps	2-1300 gpm	1	EA	\$	20,000	\$ 20,000
Brine Lagoon		1	LS	\$	300,000	\$ 300,000
Engineering and Contingencies (30%)						\$ 262,000
Subtotal Transmission to Treatment Plant						\$ 1,134,000

Treatment Facilities	Size	Quantity	Unit	Unit Price		Cost
RO Treatment Facility	1.0 MGD	1	LS	\$	1,440,000	\$ 1,440,000
Ground storage tank	0.25 MG	1	LS	\$	100,000	\$ 100,000
Engineering and Contingencies (35%)						\$ 539,000
Subtotal of Treatment						\$ 2,079,000

CONSTRUCTION TOTAL \$ 4,452,300

Permitting and Mitigation \$ 40,000

Interest During Construction (6 months) \$ 186,000

TOTAL COST \$ **4,678,300**

ANNUAL COSTS*

Debt Service (6% for 20 years)*	\$ 408,000
Electricity (\$0.06 kWh)	\$ 119,000
Operation & Maintenance	\$ 37,000
Water Treatment	\$ 232,000
Total Annual Costs	\$ 796,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 838
Per 1,000 Gallons	\$ 2.57

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 408
Per 1,000 Gallons	\$ 1.25

WUGNAME:
STRATEGY:
STRATEGY NUMBER:
AMOUNT (ac-ft/yr):

CRMWD
 Capitan Reef Complex Desalination Facility
 F16DESAL
 9,500

CONSTRUCTION COSTS

Well Field	Size	Quantity	Unit	Unit Price	Cost
Land acquisition		14	AC	\$ 2,000	\$ 28,540
Well Pumps	20-500 gpm	20	EA	\$ 15,000	\$ 300,000
Well Collection Piping	8-inch	20,000	L.F.	\$ 40	\$ 800,000
Well Construction		20	EA	\$ 326,000	\$ 6,520,000
Ground Storage Tank (6 hrs)	3.3 MG	1	L.S.	\$ 668,000	\$ 668,000
Engineering and Contingencies (35%)					\$ 2,910,790
Subtotal Well Field					\$ 11,227,330

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Transmission pipeline	30 in.	289,000	L.F.	\$ 86	\$ 24,854,000
Transmission pipeline - treatment plant to disp	16 in.	2,000	L.F.	\$ 37	\$ 74,000
Right-of-way easements		140	AC	\$ 2,000	\$ 280,000
Engineering and Contingencies (30%)					\$ 7,562,400
Subtotal Pipeline					\$ 32,770,400

Pumps	Size	Quantity	Unit	Unit Price	Cost
Well field to treatment plant	7500 gpm	3	EA	\$ 70,000	\$ 210,000
Booster Station	1600 HP	1	EA	\$ 3,060,000	\$ 3,060,000
Ground storage tank	5 MG	1	EA	\$ 895,000	\$ 895,000
High service pump station	5 - 2000 gpm	1	LS	\$ 180,000	\$ 180,000
Ground storage tank	2.5 MG	1	LS	\$ 510,000	\$ 510,000
High pressure well disposal pumps	3 - 1300 gpm	3	EA	\$ 20,000	\$ 60,000
Engineering and Contingencies (35%)					\$ 1,720,250
Subtotal of Pumps					\$ 6,635,250

Treatment Facilities	Size	Quantity	Unit	Unit Price	Cost
RO Unit	10.0 MGD	1	LS	\$ 4,200,000	\$ 4,200,000
Disinfection facility		1	LS	\$ 170,000	\$ 170,000
Metal Building		5,000	SF	\$ 90	\$ 450,000
Engineering and Contingencies (35%)					\$ 1,687,000
Subtotal of Treatment					\$ 6,507,000

Reject Facilities	Size	Quantity	Unit	Unit Price	Cost
Brine lagoon	37.5 MG	1	LS	\$ 2,400,000	\$ 2,400,000
Disposal wells		10	LS	\$ 1,200,000	\$ 12,000,000
Engineering and Contingencies (35%)					\$ 5,040,000
Subtotal of Reject Facilities					\$ 19,440,000

Electrical and Instrumentation	Size	Quantity	Unit	Unit Price	Cost
Electrical		1	LS	\$ 1,971,525	\$ 1,971,530
Instrumentation		1	LS	\$ 1,314,350	\$ 1,314,350
Power Service		25,000	LF	\$ 30	\$ 750,000
Engineering and Contingencies (35%)					\$ 1,412,560
Subtotal of Electrical & Instrumentation					\$ 5,448,440
CONSTRUCTION TOTAL					\$ 82,028,420
Permitting and Mitigation					\$ 736,990
Interest During Construction	(12 months)				\$ 3,418,120
TOTAL COST					\$ 86,183,530
ANNUAL COSTS					
Debt Service (6% for 20 years)					\$ 7,514,000
Electricity (\$0.06 kWh)					\$ 1,447,585
Operation & Maintenance					\$ 2,461,971
Water Purchase					\$ 929,000
Total Annual Costs					\$ 12,352,556
UNIT COSTS (Until Amortized)					
Per Acre-Foot of treated water					\$ 1,300
Per 1,000 Gallons					\$ 3.99
UNIT COSTS (After Amortization)					
Per Acre-Foot					\$ 509
Per 1,000 Gallons					\$ 1.56

WUGNAME:
STRATEGY:
STRATEGY NUMBER:
AMOUNT (ac-ft/yr):

CRMWD
 Lake Alan Henry to Snyder
 F06AVOLRED
 11,210

CONSTRUCTION COSTS

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Transmission pipeline	36 in.	133,647	LF	\$ 114	\$ 15,236,000
Right-of-way easements		61	AC	\$ 2,000	\$ 122,000
Engineering and Contingencies (30%)					\$ 4,607,000
Subtotal Pipeline					\$ 19,965,000

Pump Station(s) & Ground Storage	Size	Quantity	Unit	Unit Price	Cost
Pump Station & intake	2400 HP	1	LS	\$ 5,100,000	\$ 5,100,000
Storage tank	4 MG	1	LS	\$ 745,000	\$ 745,000
Engineering and Contingencies (35%)					\$ 2,046,000
Subtotal of Pump Station(s)					\$ 7,891,000

CONSTRUCTION TOTAL \$ 27,856,000

Permitting and Mitigation \$ 253,000

Interest During Construction (24 months) \$ 2,275,000

TOTAL COST \$ **30,384,000**

ANNUAL COSTS

Debt Service (6% for 20 years)	\$ 2,649,000
Electricity (\$0.06 kWh)	\$ 475,000
Operation & Maintenance	\$ 360,000
Water Purchase	\$ 6,575,000
Total Annual Costs	\$ 10,059,000

UNIT COSTS (Until Amortized)

Per Acre-Foot of treated water	\$ 897
Per 1,000 Gallons	\$ 2.75

UNIT COSTS (After Amortization)

Per Acre-Foot	\$ 661
Per 1,000 Gallons	\$ 2.03