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Attachment 1

Cost Estimate For 9.6 MGD Desalination Plan			
	Size/Quantity	Description	Cost
CONSTRUCTION COSTS			
Desalination Plant Supply and Return Facilities			
Slant Test Well Installation,	1 EA	790 LF, 29-deg, 12-inch diam., 1000 gpm	$5,000,000
Slant Production Well Installation	8 EA	580 LF, 22-deg, 12-inch diam., 1880 gpm each	$20,200,000
Slant Well Caissons with Manifolding	8 EA	8 ft Diam., 20 foot deep, 150 ft 24-in pipe each	$1,400,000
Intake Pump Station Equipment, Electrical and I&C	1 LS	16,000 gpm, VFD, 1,000 HP inst., 3+1	$3,600,000
Intake Pump Station Structural and Civil	3,000 Sq Ft	Canned Suctions vertical pumps in 50x60 ft building	$600,000
Temporary Sheet Piling and Wave Protection for Construction	2 EA	Sheet Piling: 650 ft x 80 ft (x2 clusters)/ Tetrapods	$4,700,000
Feedwater Pipeline	8,300 LF	42-inch I.D. HDPE/FPVC Trenched	$2,600,000
Feedwater Pipeline - Special Construction	500 LF	J&B under Highway-1 (length incl. above)	$500,000
Tunnel Caissions	2 EA	1-16-ft diameter, 1-10 ft diam., both 25 ft deep	$400,000
Tunnel under the dunes	2,500 LF	72-inch TBM	$5,000,000
Feedwater Pipeline Between Clusters	900 LF	36-inch I.D. HDPE/FPVC Trenchless	$1,000,000
Brine Pipeline	5,000 LF	24-inch I.D. HDPE/FPVC	$900,000
Brine Connection to Outfall	1 LS	Metering Structure & Outfall Connection	$300,000
Pumps for Delivery to CSIP Pond	1.5 mgd	2 x 10 hp, in DWPS	$100,000
Pipeline to CSIP Pond	6,200 LF	12-inch PVC	$620,000
Subtotal Feedwater and Brine Disposal			***$46,900,000***
Desalination Plant			
Plant Inlet Facilities			
Feedwater Receiving Tank	1 MG	2-0.5 MG Open Lined Steel Tanks	$1,200,000
Pretreatment			
Granular Media Pressure Filters	11 EA	8Ft-Diam x 40 ft long Press GMFs	$4,600,000
Filter Backwash System	1 LS	2 x 750 gpm 25 hp Pumps, 0.2 MG Tank, 500LF 36-inch pipe	$800,000
Chemical Storage and Feed Equipment	1 LS	NaOCl, NaHSO3	$400,000
Piping for filter feed, filtrate, backwash supply and waste, and chemical piping	1 LS	500 ft 1-inch to 36-inch	$200,000
Reverse Osmosis			
Forwarding Pumps	7 EA	VS pumps @ 2580 gpm each	$500,000
Cartridge Filters	7 EA	2580 gpm each	$500,000
1st Pass HP Feed Pumps	7 EA	CS pumps @ 1160 gpm each	$2,000,000
ERD Booster Pumps	7 EA	CS pumps @ 1420 gpm each	$600,000
ERD PX System	7 EA	1420 gpm ERD each 1st Pass Array	$6,700,000
1st Pass Membrane Arrays	7 EA	1160 gpm (permeate flow, 45% recovery) each	$11,400,000
2nd Pass RO Feed Pumps	7 EA	VS pumps @ 490 gpm each	$800,000
2nd Pass Membrane Arrays	7 EA	440 gpm (permeate flow, 90% recovery) each	$3,600,000
CIP System	1 LS	1 System to serve all arrays	$400,000
Miscellaneous Piping, Valves, Crane System and Equipment	1 LS		$2,800,000
Post Treatment			
Process Equipment	1 LS	CO2, Calcite, NaOCL, NaOH	$800,000
Calcite Contactors	15,000 Cu Ft	3 contactors at 5,000 cu ft each	$500,000
Residuals Handling & Treatment			
Storage/Settling Pond/Decant PS	1 MG	500 LF 36-inch/500 LF 12-inch/0.5 acre, composite liner, 6 ft deep/150 gpm PS	$600,000
RO CIP Effluent Treatment	20,000 Gal	2-10,000 gal. tanks in concrete vault	$100,000
Brine Storage Basin	3 MG	50,000 SF, 8 ft deep lined open basin	$400,000
Clearwell and Pump Stations			
Clearwell Pump Station Equipment	9.6 MGD	4 at 30 hp, 2200 gpm each	$900,000
Clearwell Reservoirs	2.0 MG	2-1 MG Covered Steel Tanks	$2,000,000

	Desalinated Water Pump Station Equipment	9.6 mgd	4 x 200 hp (VFD) and surge tanks	$2,300,000
	Engine-Generator Emergency Power System	0.50 MW	Diesel fueled, w/auto transfer switch	$950,000
	Plant Infrastructure			
	Admin/O&M/Lab Building	10,000 Sq Ft		$2,500,000
	Filter Structure	14,400 Sq Ft	12 foot high walled pit, slab on grade, open	$800,000
	RO/Post Treatment/Chemical Building	19,200 Sq Ft	Slab-on-grade, 26- foot height steel frame construction with metal skin. Incl. 15 ft deep filtrate channel	$2,300,000
	Desalinated Water Pump Sta & Eng-Gen Bldg	2,100 Sq Ft	Slab-on-grade, CMU, Truss roof system	$420,000
	Site Grading and Excavation	100,000 Cu Yd	Assumes balanced site	$500,000
x	Additional Yard Piping	4,000 LF		$1,000,000
	Paving and Sidewalks	200,000 Sq Ft		$2,000,000
	Landscaping	70,000 Sq Ft		$490,000
	Perimeter Fencing and Security	3,700 LF		$110,000
x	Electrical Service Connection			$1,000,000
	Electrical, Instrumentation and Control Systems	40.0%	40 % of Process and Mechanical Items	$15,300,000
	Subtotal Desalination Plant			**$71,470,000**
	Mobilization/Demobilization	2.0%		**$1,430,000**
	Engineering/Startup	15.0%		**$10,720,000**
	Subtotal Desalination Facilities			***$83,600,000***
	Product Water Pipeline (To 1st St and Beach Range Road)			
	Trenched Pipelines	32,000 LF	36 in. ML/CSP 250 psi	$10,880,000
	Special Construction		None	$0
	Subtotal Product Water Pipeline			***$10,900,000***
	Brine Diffuser	*1 LS*	*Based on Contingency Plan*	*$6,300,000*
	Pipeline to Potrero	*1 LS*	*Based on Contingency Plan*	*$14,500,000*
BASE CONSTRUCTION COSTS				**$162,200,000**
IMPLEMENTATION COSTS @20%		20.0%		**$32,400,000**
ROW EASEMENT AND LAND ACQUISITION				
	PIPELINE TO POTRERO	1 LS	*Based on Contingency Plan*	$300,000
	Slant Well Sites, ROW and Intake Pump Station	1 EA	Purchase and Easement	$1,100,000
	Desalination Plant	40 Ac	Purchase	$600,000
	One Time Charge for Outfall Connection	1 LS		$2,600,000
	Private Property Easements for Desalinated Water Pipelines	0 LF	Easement	$0
	Pipelines in TAMC ROW for Product Water Pipeline	725,000 SF	29,000 ft of 25 ft permanent easement and 50 ft Construction Easement	$1,500,000
	SUBTOTAL ROW/EASEMENT/LAND COSTS			**$6,100,000**
MOST PROBABLE CAPITAL COSTS WITHOUT CONTINGENCY				**$200,700,000**
PROJECT CONTINGENCY ALLOWANCE @ 25%		25.0%		**$50,100,000**
MITIGATION ALLOWANCE @ 1%		**1.0%**		**$2,500,000**
MOST PROBABLE CAPITAL COSTS WITH CONTINGENCY (2012 Dollars)				**$253,300,000**
HIGH END OF ACCURACY RANGE		125%		**$316,600,000**
LOW END OF ACCURACY RANGE		85%		**$215,300,000**

Cost Estimate For 6.9 MGD Desalination Plan			
	Size/Quantity	Description	Cost
CONSTRUCTION COSTS			
Desalination Plant Supply and Return Facilities			
Slant Test Well Installation,	1 EA	790 LF, 29-deg, 12-inch diam., 1000 gpm	$5,000,000
Slant Production Well Installation	6 EA	580 LF, 22-deg, 12-inch diam., 1600 gpm each	$15,100,000
Slant Well Caissons with Manifolding	6 EA	8 ft Diam., 20 foot deep, 150 ft 24-in pipe each	$1,100,000
Intake Pump Station Equipment, Electrical and I&C	1 LS	10,500 gpm, 600 HP installed, 3+1	$2,300,000
Intake Pump Station Structural and Civil	3,000 Sq Ft	Canned Suctions vertical pumps in 50x60 ft building	$600,000
Temporary Sheet Piling and Wave Protection for Construction	2 EA	Sheet Piling: 550 ft x 80 ft (x2 clusters)/ Tetrapods	$3,900,000
Feedwater Pipeline	8,300 LF	36-inch I.D. HDPE/FPVC Trenched	$2,200,000
Feedwater Pipeline - Special Construction	500 LF	J&B under Highway-1 (length included above)	$500,000
Tunnel Caissions	2 EA	1-16-ft diameter, 1-10 ft diam., both 25 ft deep	$500,000
Tunnel under the dunes	2,500 LF	72-inch TBM	$5,000,000
Feedwater Pipeline Between Clusters	900 LF	36-inch I.D. HDPE/FPVC Trenchless	$1,000,000
Brine Pipeline	5,000 LF	24-inch I.D. HDPE/FPVC	$900,000
Brine Connection to Outfall	1 LS	Metering Structure & Outfall Connection	$300,000
Pumps for Delivery to CSIP Pond	1.5 mgd	2 x 10 hp, in DWPS	$80,000
Pipeline to CSIP Pond	6,200 LF	12-inch PVC	$620,000
Subtotal Feedwater and Brine Disposal			***$39,100,000***
Desalination Plant			
Plant Inlet Facilities			
Feedwater Receiving Tank	1 MG	2-0.5 MG Open Lined Steel Tanks	$1,200,000
Pretreatment			
Granular Media Pressure Filters	7 EA	8Ft-Diam x 40 ft long Press GMFs	$2,900,000
Filter Backwash System	1 LS	2 x 750 gpm 25 hp Pumps, 0.2 MG Tank, 500LF 36-inch pipe	$750,000
Chemical Storage and Feed Equipment	1 LS	NaOCl, NaHSO3	$400,000
Piping for filter feed, filtrate, backwash supply and waste, and chemical piping	1 LS	400 ft 1-inch to 36-inch	$150,000
Reverse Osmosis			
Forwarding Pumps	5 EA	VS pumps @ 2580 gpm each	$400,000
Cartridge Filters	5 EA	2580 gpm each	$400,000
1st Pass HP Feed Pumps	5 EA	CS pumps @ 1160 gpm each	$1,400,000
ERD Booster Pumps	5 EA	CS pumps @ 1420 gpm each	$400,000
ERD PX System	5 EA	1420 gpm ERD each 1st Pass Array	$4,800,000
1st Pass Membrane Arrays	5 EA	1160 gpm (permeate flow, 45% recovery) each	$8,100,000
2nd Pass RO Feed Pumps	5 EA	VS pumps @ 490 gpm each	$500,000
2nd Pass Membrane Arrays	5 EA	440 gpm (permeate flow, 90% recovery) each	$2,600,000
CIP System	1 LS	1 System to serve all arrays	$400,000
Miscellaneous Piping, Valves, Crane System and Equipment	1 LS		$2,000,000
Post Treatment			
Process Equipment	1 LS	CO2, Calcite, NaOCL, NaOH	$800,000
Calcite Contactors	10,000 Cu Ft	2 contactors at 5000 cu ft each	$300,000
Residuals Handling & Treatment			
Storage/Settling Pond/Decant PS	1 MG	500 LF 36-inch/500 LF 12-inch/0.5 acre, composite liner, 6 ft deep/150 gpm PS	$600,000
RO CIP Effluent Treatment	20,000 Gal	2-10,000 gal. tanks in concrete vault	$100,000
Brine Storage Basin	3 MG	50,000 SF, 8 ft deep lined open basin	$400,000
Clearwell and Pump Stations			
Clearwell Pump Station Equipment	6.4 mgd	3 at 30 hp, 2400 gpm each	$600,000
Clearwell Reservoirs	2.0 MG	2-1 MG Covered Steel Tanks	$2,000,000
Desalinated Water Pump Station Equipment	6.4 mgd	4 x 150 hp (VFD) and surge tanks	$1,700,000
Engine-Generator Emergency Power System	0.3 MW	Diesel fueled, w/auto transfer switch	$600,000

	Plant Infrastructure			
	Admin/O&M/Lab Building	10,000 Sq Ft		$2,500,000
	Filter Structure	9,600 Sq Ft	12 foot high walled pit, slab on grade, open	$600,000
	RO/Post Treatment/Chemical Building	12,800 Sq Ft	Slab-on-grade, 26- foot height steel frame construction with metal skin. Incl. 15 ft deep filtrate channel	$1,500,000
	Desalinated Water Pump Sta & Eng-Gen Bldg	2,100 Sq Ft	Slab-on-grade, CMU, Truss roof system	$420,000
	Site Grading and Excavation	100,000 Cu Yd	Assumes balanced site	$500,000
x	Additional Yard Piping	4,000 LF		$1,000,000
	Paving and Sidewalks	220,000 Sq Ft		$2,200,000
	Landscaping	70,000 Sq Ft		$490,000
	Perimeter Fencing and Security	3,700 LF		$110,000
x	Electrical Service Connection			$1,000,000
	Electrical, Instrumentation and Control Systems	40.0%	40 % of Process and Mechanical Items	$11,300,000
	Subtotal Desalination Plant			**$55,120,000**
	Mobilization/Demobilization	2.0%		**$1,100,000**
	Engineering/Startup	15.0%		**$8,270,000**
	Subtotal Desalination Facilities			***$64,500,000***
	Product Water Pipeline (To 1st St and Beach Range Road)			
	Trenched Pipelines	32,000 LF	36 in. ML/CSP 250 psi	$10,900,000
	Special Construction		None	$0
	Subtotal Product Water Pipeline			***$10,900,000***
	Brine Diffuser	*1 LS*	*Based on Contingency Plan*	*$6,300,000*
	Pipeline to Potrero	*1 LS*	*Based on Contingency Plan*	*$14,500,000*
	Brine Diffuser 25% contingency	*1 LS*	*Based on Contingency Plan*	*$1,900,000*
	Pipeline to Potrero 25% contingency	*1 LS*	*Based on Contingency Plan*	*$4,400,000*
	ADDITIONAL CAPITAL FOR 6.9 MGD PLANT OVER 6.4 MGD PLANT	1 LS	Agreed to Cost in Settlement	$3,460,000
	BASE CONSTRUCTION COSTS			**$145,100,000**
	IMPLEMENTATION COSTS - Equal to 9.6 MGD Implementation Costs			**$32,400,000**
	ROW EASEMENTS, LAND ACQUISITION, & OUTFALL CONNECTION			
	PIPELINE TO POTRERO	1 LS	*Based on Contingency Plan*	*$300,000*
	Desalination Plant Intakes and Pipelines	1 EA	Purchase and Easement	$1,100,000
	Desalination Plant	40 Ac	Purchase	$600,000
	One Time Charge for Outfall Connection	1 LS		$1,800,000
	Private Property Easements for Desalinated Water Pipelines	0 LF	Easement	$0
	Pipelines in TAMC ROW for Product Water Pipeline	725,000 SF	29,000 ft of 25 ft permanent easement and 50 ft Construction Easement	$1,500,000
	SUBTOTAL ROW/EASEMENT/LAND COSTS			**$5,300,000**
	MOST PROBABLE CAPITAL COSTS WITHOUT CONTINGENCY			**$182,800,000**
	PROJECT CONTINGENCY ALLOWANCE - See Memo for details			**$28,800,000**
	MITIGATION ALLOWANCE - Equal to 9.6 MGD Mitigation Costs			**$2,500,000**
	Percentage of total			
	MOST PROBABLE CAPITAL COSTS WITH CONTINGENCY (2012 Dollars)			**$214,100,000**
	HIGH END OF ACCURACY RANGE	125%		**$266,800,000**
	LOW END OF ACCURACY RANGE	85%		**$182,000,000**

Cost Estimate For 6.4 MGD Desalination Plan			
	Size/Quantity	Description	Cost
CONSTRUCTION COSTS			
Desalination Plant Supply and Return Facilities			
Slant Test Well Installation,	1 EA	790 LF, 29-deg, 12-inch diam., 1000 gpm	$5,000,000
Slant Production Well Installation	6 EA	580 LF, 22-deg, 12-inch diam., 1600 gpm each	$15,100,000
Slant Well Caissons with Manifolding	6 EA	8 ft Diam., 20 foot deep, 150 ft 24-in pipe each	$1,100,000
Intake Pump Station Equipment, Electrical and I&C	1 LS	10,500 gpm, 600 HP installed, 3+1	$2,300,000
Intake Pump Station Structural and Civil	3,000 Sq Ft	Canned Suctions vertical pumps in 50x60 ft building	$600,000
Temporary Sheet Piling and Wave Protection for Construction	2 EA	Sheet Piling: 550 ft x 80 ft (x2 clusters)/ Tetrapods	$3,900,000
Feedwater Pipeline	8,300 LF	36-inch I.D. HDPE/FPVC Trenched	$2,200,000
Feedwater Pipeline - Special Construction	500 LF	J&B under Highway-1 (length included above)	$500,000
Tunnel Caissions	2 EA	1-16-ft diameter, 1-10 ft diam., both 25 ft deep	$500,000
Tunnel under the dunes	2,500 LF	72-inch TBM	$5,000,000
Feedwater Pipeline Between Clusters	900 LF	36-inch I.D. HDPE/FPVC Trenchless	$1,000,000
Brine Pipeline	5,000 LF	24-inch I.D. HDPE/FPVC	$900,000
Brine Connection to Outfall	1 LS	Metering Structure & Outfall Connection	$300,000
Pumps for Delivery to CSIP Pond	1.5 mgd	2 x 10 hp, in DWPS	$80,000
Pipeline to CSIP Pond	6,200 LF	12-inch PVC	$620,000
Subtotal Feedwater and Brine Disposal			***$39,100,000***
Desalination Plant			
Plant Inlet Facilities			
Feedwater Receiving Tank	1 MG	2-0.5 MG Open Lined Steel Tanks	$1,200,000
Pretreatment			
Granular Media Pressure Filters	7 EA	8Ft-Diam x 40 ft long Press GMFs	$2,900,000
Filter Backwash System	1 LS	2 x 750 gpm 25 hp Pumps, 0.2 MG Tank, 500LF 36-inch pipe	$750,000
Chemical Storage and Feed Equipment	1 LS	NaOCl, NaHSO3	$400,000
Piping for filter feed, filtrate, backwash supply and waste, and chemical piping	1 LS	400 ft 1-inch to 36-inch	$150,000
Reverse Osmosis			
Forwarding Pumps	5 EA	VS pumps @ 2580 gpm each	$400,000
Cartridge Filters	5 EA	2580 gpm each	$400,000
1st Pass HP Feed Pumps	5 EA	CS pumps @ 1160 gpm each	$1,400,000
ERD Booster Pumps	5 EA	CS pumps @ 1420 gpm each	$400,000
ERD PX System	5 EA	1420 gpm ERD each 1st Pass Array	$4,800,000
1st Pass Membrane Arrays	5 EA	1160 gpm (permeate flow, 45% recovery) each	$8,100,000
2nd Pass RO Feed Pumps	5 EA	VS pumps @ 490 gpm each	$500,000
2nd Pass Membrane Arrays	5 EA	440 gpm (permeate flow, 90% recovery) each	$2,600,000
CIP System	1 LS	1 System to serve all arrays	$400,000
Miscellaneous Piping, Valves, Crane System and Equipment	1 LS		$2,000,000
Post Treatment			
Process Equipment	1 LS	CO2, Calcite, NaOCL, NaOH	$800,000
Calcite Contactors	10,000 Cu Ft	2 contactors at 5000 cu ft each	$300,000
Residuals Handling & Treatment			
Storage/Settling Pond/Decant PS	1 MG	500 LF 36-inch/500 LF 12-inch/0.5 acre, composite liner, 6 ft deep/150 gpm PS	$600,000
RO CIP Effluent Treatment	20,000 Gal	2-10,000 gal. tanks in concrete vault	$100,000
Brine Storage Basin	3 MG	50,000 SF, 8 ft deep lined open basin	$400,000
Clearwell and Pump Stations			
Clearwell Pump Station Equipment	6.4 mgd	3 at 30 hp, 2400 gpm each	$600,000
Clearwell Reservoirs	2.0 MG	2-1 MG Covered Steel Tanks	$2,000,000
Desalinated Water Pump Station Equipment	6.4 mgd	4 x 150 hp (VFD) and surge tanks	$1,700,000

	Engine-Generator Emergency Power System	0.3 MW	Diesel fueled, w/auto transfer switch	$600,000
	Plant Infrastructure			
	Admin/O&M/Lab Building	10,000 Sq Ft		$2,500,000
	Filter Structure	9,600 Sq Ft	12 foot high walled pit, slab on grade, open	$600,000
	RO/Post Treatment/Chemical Building	12,800 Sq Ft	Slab-on-grade, 26- foot height steel frame construction with metal skin. Incl. 15 ft deep filtrate channel	$1,500,000
	Desalinated Water Pump Sta & Eng-Gen Bldg	2,100 Sq Ft	Slab-on-grade, CMU, Truss roof system	$420,000
	Site Grading and Excavation	100,000 Cu Yd	Assumes balanced site	$500,000
x	Additional Yard Piping	4,000 LF		$1,000,000
	Paving and Sidewalks	220,000 Sq Ft		$2,200,000
	Landscaping	70,000 Sq Ft		$490,000
	Perimeter Fencing and Security	3,700 LF		$110,000
x	Electrical Service Connection			$1,000,000
	Electrical, Instrumentation and Control Systems	40.0%	40 % of Process and Mechanical Items	$11,300,000
	Subtotal Desalination Plant			**$55,120,000**
	Mobilization/Demobilization	2.0%		**$1,100,000**
	Engineering/Startup	15.0%		**$8,270,000**
	Subtotal Desalination Facilities			***$64,500,000***
	Product Water Pipeline (To 1st St and Beach Range Road)			
	Trenched Pipelines	32,000 LF	36 in. ML/CSP 250 psi	$10,900,000
	Special Construction		None	$0
	Subtotal Product Water Pipeline			***$10,900,000***
	Brine Diffuser	*1 LS*	*Based on Contingency Plan*	*$6,300,000*
	Pipeline to Potrero	*1 LS*	*Based on Contingency Plan*	*$14,500,000*
	Brine Diffuser 25% contingency	*1 LS*	*Based on Contingency Plan*	*$1,900,000*
	Pipeline to Potrero 25% contingency	*1 LS*	*Based on Contingency Plan*	*$4,400,000*
	BASE CONSTRUCTION COSTS			**$141,600,000**
	IMPLEMENTATION COSTS - Equal to 9.6 MGD Implementation Costs			**$32,400,000**
	ROW EASEMENTS, LAND ACQUISITION, & OUTFALL CONNECTION			
	PIPELINE TO POTRERO	1 LS	*Based on Contingency Plan*	*$300,000*
	Desalination Plant Intakes and Pipelines	1 EA	Purchase and Easement	$1,100,000
	Desalination Plant	40 Ac	Purchase	$600,000
	One Time Charge for Outfall Connection	1 LS		$1,800,000
	Private Property Easements for Desalinated Water Pipelines	0 LF	Easement	$0
	Pipelines in TAMC ROW for Product Water Pipeline	725,000 SF	29,000 ft of 25 ft permanent easement and 50 ft Construction Easement	$1,500,000
	SUBTOTAL ROW/EASEMENT/LAND COSTS			**$5,300,000**
	MOST PROBABLE CAPITAL COSTS WITHOUT CONTINGENCY			**$179,300,000**
	PROJECT CONTINGENCY ALLOWANCE - See Memo for details			**$28,800,000**
	MITIGATION ALLOWANCE - Equal to 9.6 MGD Mitigation Costs			**$2,500,000**
	Percentage of total			
	MOST PROBABLE CAPITAL COSTS WITH CONTINGENCY (2012 Dollars)			**$210,600,000**
	HIGH END OF ACCURACY RANGE	125%		**$263,300,000**
	LOW END OF ACCURACY RANGE	85%		**$179,000,000**

Cost Estimate For CAW Only Faciliities			
	Size/Quantity	Description	Cost
BASE CONSTRUCTION COSTS			
So. Transfer Pipeline			
Trenched Pipelines	15,700 LF	36 in. ML/CSP 250 psi	$6,217,200
Special Construction		None	$0
Subtotal			***$6,220,000***
Seaside Pipeline			
Trenched Pipelines	13,000 LF	36 in. ML/CSP 250 psi	$5,148,000
Special Construction	1,000 LF	Length included in line item above	$1,900,000
Subtotal			***$7,050,000***
Monterey Pipeline			
Trenched Pipelines	28,700 LF	36 in. ML/CSP 150 psi	$11,365,200
Special Construction	750 LF	Length included in line item above	$1,800,000
Subtotal			***$13,165,200***
Valley Greens Pump Station	3 mgd	4 x 25 hp, 800 sf	***$300,000***
Terminal Reservoir and ASR PS			
Reservoir Structures	6 MG	2 x 3 MG,130 ft., DYK	$6,600,000
ASR Pump Station	9 mgd	4 x 50 hp vs, 1200 sf bldg	$1,500,000
Earthwork, Sitework, Yard Piping	1 LS	100kcuyds, 60ksf, 4000 LF	$2,600,000
Subtotal			***$10,700,000***
ASR Wells			
Monitoring Well	1 LS	1050 ft Depth, 5 inch diameter	$200,000
Test Well Site No. 5, Including Core Hole	1 LS	1050 ft Depth, 2.1/4.3 mgd (inj/ext)	$2,200,000
Test Well Site No. 6	1 LS	1050 ft Depth, 2.1/4.3 mgd (inj/ext)	$2,000,000
ASR No 5 Well Head Facilities Inc E/I/C			$1,100,000
ASR No 6 Well Head Facilities Inc E/I/C			$1,100,000
Subtotal			***$6,600,000***
ASR Pipelines and Backflush Facilities			
ASR Pipeline	5,000 LF	30-inch Diam MLCSP	$1,900,000
Recirculation Pipeline	5,000 LF	12-inch Diam PVC	$800,000
Backflush Piping (To Off-site Basin)	3,000 LF	20-inch Diam PVC	$600,000
Backflush Reclamation Basin	0.4 MG	Uncovered settling basin w/ pump	$100,000
Subtotal			***$3,400,000***
TOTAL BASE CONSTRUCTION COSTS (2009 $)			**$47,400,000**
ESCALATION TO OCTOBER 2012 $	**12.5 %**		**$5,900,000**
TOTAL BASE CONSTRUCTION (2012 $)			**$53,300,000**
IMPLEMENTATION COSTS	**20.0%**		**$10,700,000**
LAND ACQUISITION			
Pipelines in TAMC ROW	33,000 SF	Easement	$1,100,000
Terminal Reservoir	80,000 SF	Purchase	$800,000
ASR Well Sites	2 EA	Lease	$800,000
Pipelines in Bike Path	11,000 LF	Easement	$500,000
Pipelines through Presidio	3,000 LF	Easement	$50,000
Valley Greens Pump Station	9,000 SF	Purchase	$180,000
TOTAL ROW/EASEMENT/LAND COSTS			**$3,400,000**

MOST PROBABLE CAPITAL COSTS W/O CONTINGENCY (2012 $)			**$67,400,000**
PROJECT CONTINGENCY ALLOWANCE	**25.0%**		**$16,900,000**
MITIGATION ALLOWANCE	**0.8%**		**$700,000**
MOST PROBABLE CAPITAL COSTS W/ CONTINGENCY& MITIGATION			**$85,000,000**
ACCURACY ALLLOWANCE	0%		**$0**
OVERALL TOTAL			**$85,000,000**

Cost Estimate For ASR Faciliities			
	Size/Quantity	Description	Cost
BASE CONSTRUCTION COSTS			
Terminal Reservoir and ASR PS			
Reservoir Structures	6 MG	2 x 3 MG,130 ft., DYK	$6,600,000
ASR Pump Station	9 mgd	4 x 50 hp vs, 1200 sf bldg	$1,500,000
Earthwork, Sitework, Yard Piping	1 LS	100kcuyds, 60ksf, 4000 LF	$2,600,000
Subtotal			***$10,700,000***
ASR Wells			
Monitoring Well	1 LS	1050 ft Depth, 5 inch diameter	$200,000
Test Well Site No. 5, Including Core Hole	1 LS	1050 ft Depth, 2.1/4.3 mgd (inj/ext)	$2,200,000
Test Well Site No. 6	1 LS	1050 ft Depth, 2.1/4.3 mgd (inj/ext)	$2,000,000
ASR No 5 Well Head Facilities Inc E/I/C			$1,100,000
ASR No 6 Well Head Facilities Inc E/I/C			$1,100,000
Subtotal			***$6,600,000***
ASR Pipelines and Backflush Facilities			
ASR Pipeline	5,000 LF	30-inch Diam MLCSP	$1,900,000
Recirculation Pipeline	5,000 LF	12-inch Diam PVC	$800,000
Backflush Piping (To Off-site Basin)	3,000 LF	20-inch Diam PVC	$600,000
Backflush Reclamation Basin	0.4 MG	Uncovered settling basin w/ pump	$100,000
Subtotal			***$3,400,000***
TOTAL BASE CONSTRUCTION COSTS (2009 $)			**$20,700,000**
ESCALATION TO OCTOBER 2012 $	**12.5 %**		**$2,600,000**
TOTAL BASE CONSTRUCTION (2012 $)			**$23,300,000**
IMPLEMENTATION COSTS	**20.0%**		**$4,700,000**
	.		
LAND ACQUISITION			
Terminal Reservoir	80,000 SF	Purchase	$800,000
ASR Well Sites	2 EA	Lease	$800,000
TOTAL ROW/EASEMENT/LAND COSTS			**$1,600,000**
MOST PROBABLE CAPITAL COSTS W/O CONTINGENCY (2012 $)			**$29,600,000**
PROJECT CONTINGENCY ALLOWANCE	**25.0%**		**$7,400,000**
MITIGATION ALLOWANCE	**0.8%**		**$300,000**
MOST PROBABLE CAPITAL COSTS W/ CONTINGENCY& MITIGATION			**$37,300,000**
ACCURACY ALLLOWANCE	0%		**$0**
OVERALL TOTAL			**$37,300,000**

Estimate of Operation and Maintenance Cost

9.6 MGD Desal Plant & CAW Only Facilities	
Item	**Cost ($ 2012)**
Power	$4,760,000
Chemicals	$770,000
Membrane/Media Replacement	$550,000
R&R	$1,960,000
Purchased Recharge Water	$0
Labor & Misc	$3,090,000
Total	***$11,130,000***

6.9 MGD Desal Plant & CAW Only Facilities	
Item	**Cost ($ 2012)**
Power	$4,053,750
Chemicals	$679,219
Membrane/Media Replacement	$442,031
R&R	$1,703,438
Purchased Recharge Water	$8,991,000
Labor & Misc	$2,730,000
Total	***$18,599,438***

6.4 MGD Desal Plant & CAW Only Facilities	
Item	**Cost ($ 2012)**
Power	$3,760,000
Chemicals	$630,000
Membrane/Media Replacement	$410,000
R&R	$1,580,000
Purchased Recharge Water	$10,491,000
Labor & Misc	$2,730,000
Total	***$19,601,000***

ASR Standalone	
Item	**Cost ($ 2012)**
Power	$258,000
Chemicals	$57,000
Labor	$22,000
Total	***$337,000***