San Francisco Bay Regional Water Enhancement Program IRWM Round 2 Implementation Proposal

Attachment 4 References

Project 1. Bay Area Regional Conservation and Education Program

Regional Water Conservation and Education Program Annual Water Cost and Savings Worksheets

Project 4. Marin/Sonoma Conserving Our Watersheds: Agricultural BMP Projects

Lewis, D., M. Lennox, N. Scolari, L. Prunuske, C. Epifanio. 2011. A Half Century of Stewardship: a programmatic review of conservation by Marin RCD & partner organizations (1959-2009). Prepared for Marin Resource Conservation District by U.C. Cooperative Extension, Novato CA. 99 - Page iv. http://cemarin.ucdavis.edu/files/130468.pdf

See Attachment 3, Project 4 References

Project 5. Napa Milliken Creek Flood Damage Reduction and Fish Passage Barrier Removal

Summary of Cost-Benefit Analysis

Project 8. Pescadero Water Supply and Sustainability Project

1. Construction Cost Estimate
2. Bolted Steel Tank Quote
3. Pipeline Costs
4. Power Costs
5. Pump Station Costs
6. Well Permitting Cost Estimate

Project 12. Richmond Breuner Marsh Restoration Project

Breuner Marsh Restoration and Public Access Project, Engineers Cost 60% Estimate.

Project 13. Roseview Heights Infrastructure Upgrades for Water Supply and Quality Improvement, Santa Clara County

Various Equipment Cost Estimates

Project 18. St. Helena Upper York Creek Dam Removal and Ecosystem Restoration Project

1. Broussard, Clare. 2013. Design and Construction Cost Estimate Summary Sheet 1/25/2013,

Upper York Creek Dam Removal Cost Estimate. Personal communication from Prunuske Chatham, Inc. accounting records.

Table A: Bay Area Water Conservation and Education Program Cost Per Participant, Per Program Element

			Program Participants													
			1	2	3	4	5	6	7	8	9	10	11	12		
	Program Element		Bay-Friendly	ACWD	SFPUC	CCWD	Solano	Sonoma	Zone 7	SCVWD	Napa County Southern Sonoma County RCD	City of Napa	EBMUD	BAWSCA	Total Grant Administration	Total Regional Rebates/ Installations/ Interventions/ Education and Trainings
1	Water-Efficient Landscape Rebate	Number of Sq. Ft. to rebate		$260,000		$150,000	$230,000	$280,000	$70,000	$115,000		$200,000		$80,000		$1,385,000
2	Water Efficiency Sustainable Landscape Education Program	1 program	$414,124						$0	$0	$0	$0	$0	$0		$414,124
3	Water Lab and Education	per site evaluation									$260,000					$260,000
4	Weather Based Irrigation Controller Rebate (SF)	Number of stations to rebate						$1,500	$245	$1,000		$400				$3,145
5	Weather Based Irrigation Controller Rebate (CII/ MF)	Number of stations to rebate		$1,200		$0		$1,000	$600	$1,000		$400				$4,200
6	Large Landscape Irrigation Retrofit Program	1 project			$330,000	$0			$0							$330,000
7	High-Efficiency Toilets (SCVWD)	# of HET Rebates				$0			$0	$2,300						$2,300
8	High-Efficiency Washers (SCVWD)	# of Washer Rebates				$0			$0	$5,750						$5,750
9	Home Water Report	per household annually				$30,000			$43,881				$80,000	$50,000		$203,881
10	Grant Administration	Staff Hours for reporting							$0						$150,000	
	Program Total (Total program cost based on the # of program elements)		$200,193	$173,250	$234,300	$174,375	$129,375	$202,500	$188,193	$490,313	$195,000	$127,500	$240,000	$195,000	$150,000	**$2,699,999**

Table B: Bay Area Water Conservation and Education Program Annual Estimated Cost per Water Savings (Annual Cost per gallon per year of program element life)

	Program Element		Annual Unit Water Savings (Gal per Year)	Annual Total Water Savings (Gal)	Annual Total Water Savings (AF)	# of Years of Water Savings	Total Life Water Savings (AF)	Total Cost per AF ($)	DWR Grant per AF ($)	Participant Match per AF ($)
1	Water-Efficient Landscape Rebate	Number of Sq. Ft. to rebate	25	34,532,667	106	30	3,179	$450	$245	$205
2	Water Efficiency Sustainable Landscape Education Program	1 program	25	8,942,088	27	30	823	$503	$243	$260
3	Water Lab and Education	per site evaluation	300,000	14,400,000	44	30	1,326	$196	$147	$49
4	Weather Based Irrigation Controller Rebate (SF)	Number of stations to rebate	1,268	3,987,860	12	30	367	$232	$128	$103
5	Weather Based Irrigation Controller Rebate (CII/ MF)	Number of stations to rebate	3,383	14,208,600	44	30	1,308	$119	$72	$47
6	Large Landscape Irrigation Retrofit Program	1 project	13	4,332,042	13	20	399	$2,404	$587	$1,816
7	High-Efficiency Toilets (SCVWD)	# of HET Rebates	5,535	12,730,121	39	30	1,172	$265	$147	$118
8	High-Efficiency Washers (SCVWD)	# of Washer Rebates	7,978	45,874,310	141	12	1,689	$232	$128	$104
9	Home Water Report	per household annually	1,228	250,365,868	768	5	3,842	$287	$159	$128
10	Grant Administration	Staff Hours for reporting	-	-	-	-	-	-	-	-
	Program Total (Total water savings cost based on the # of program elements)			**389,373,555**	**1,195**		**14,106**	**$362**	**$191**	**$181**

Table C: Bay Area Water Conservation and Education Program Cost Estimate By Participant Agency, By Program Element

Bay-Friendly										
	Minimum Total Rebate Amount ($ per Unit)	Rebate Unit	DWR Unit Funding (75% of Rebate) ($ per unit)	Agency Unit Funding (25% of Rebate) ($ per unit)	Agnecy Proposed Total Units	Total Rebate Amount ($)	Agency Rebate Amount (25% of Rebate) ($)	DWR Rebate Amount (75% of Rebate)	Admin Labor and Overhead ($)	Total Match ($)
Water-Efficient Landscape Rebate	0.75	Square Foot	0.56	0.19		$0	$0	$0	$0.28	$0
Bay-Friendly Professional Landscape Training	0.00	Per Training	0.00	0.00	414,124	$414,124	$213,931	$200,193	$0.00	$213,931
Water Lab and Education	0.00					$0	$0	$0	$0.00	$0
Weather Based Irrigation Controller Rebate (SF)	20.00	Irrigation Station	15.00	5.00		$0	$0	$0	$7.05	$0
Weather Based Irrigation Controller Rebate (CII/ MF)	30.00	Irrigation Station	22.50	7.50		$0	$0	$0	$7.05	$0
Irrigation Retrofits and Recycle Water Retrofits	2.75	Square Foot	0.71	2.04		$0	$0	$0	$0.16	$0
High-Efficiency Toilets (SCVWD)	100.00		75.00	25.00		$0	$0	$0	$35.25	$0
High-Efficiency Washers (SCVWD)	50.00		37.50	12.50				$0	$18.05	$0
Home Water Report	4.00	Per Household	3.00	1.00		$0	$0	$0	$1.41	$0
Total						**$414,124**	**$213,931**	**$200,193**		**$213,931**

ACWD										
	Minimum Total Rebate Amount ($ per Unit)	Rebate Unit	DWR Unit Funding (75% of Rebate) ($ per unit)	Agency Unit Funding (25% of Rebate) ($ per unit)	Agnecy Proposed Total Units	Total Rebate Amount ($)	Agency Rebate Amount (25% of Rebate) ($)	DWR Rebate Amount (75% of Rebate)	Admin Labor and Overhead ($)	Total Match ($)
Water-Efficient Landscape Rebate	0.75	Square Foot	0.56	0.19	260,000	$195,000	$48,750	$146,250	$0.28	$122,070
Bay-Friendly Professional Landscape Training	0.00	Per Training	0.00	0.00		$0	$0	$0	$0.00	$0
Water Lab and Education	0.00					$0	$0	$0	$0.00	$0
Weather Based Irrigation Controller Rebate (SF)	20.00	Irrigation Station	15.00	5.00	0	$0	$0	$0	$7.05	$0
Weather Based Irrigation Controller Rebate (CII/ MF)	30.00	Irrigation Station	22.50	7.50	1,200	$36,000	$9,000	$27,000	$7.05	$17,460
Irrigation Retrofits and Recycle Water Retrofits	2.75	Square Foot	0.71	2.04		$0	$0	$0	$0.16	$0
High-Efficiency Toilets (SCVWD)	100.00		75.00	25.00		$0	$0	$0	$35.25	$0
High-Efficiency Washers (SCVWD)	50.00		37.50	12.50		$0	$0	$0	$18.05	$0
Home Water Report	4.00	Per Household	3.00	1.00		$0	$0	$0	$1.41	$0
Total						**$219,000**	**$57,750**	**$173,250**		**$139,530**

SFPUC										
	Minimum Total Rebate Amount ($ per Unit)	Rebate Unit	DWR Unit Funding (75% of Rebate) ($ per unit)	Agency Unit Funding (25% of Rebate) ($ per unit)	Agnecy Proposed Total Units	Total Rebate Amount ($)	Agency Rebate Amount (25% of Rebate) ($)	DWR Rebate Amount (28% of Rebate)	Admin Labor and Overhead ($)	Total Match ($)
Water-Efficient Landscape Rebate	0.75	Square Foot	0.56	0.19		$0	$0	$0	$0.28	$0
Bay-Friendly Professional Landscape Training	0.00	Per Training	0.00	0.00		$0	$0	$0	$0.00	$0
Water Lab and Education	0.00					$0	$0	$0	$0.00	$0
Weather Based Irrigation Controller Rebate (SF)	20.00	Irrigation Station	15.00	5.00		$0	$0	$0	$7.05	$0
Weather Based Irrigation Controller Rebate (CII/ MF)	30.00	Irrigation Station	22.50	7.50		$0	$0	$0	$7.05	$0
Irrigation Retrofits and Recycle Water Retrofits	2.75	Square Foot	0.71	2.04		$958,683	$754,383	$234,300	$0.16	$724,383
High-Efficiency Toilets (SCVWD)	100.00		75.00	25.00		$0	$0	$0	$35.25	$0
High-Efficiency Washers (SCVWD)	50.00		37.50	12.50					$18.05	$0
Home Water Report	4.00	Per Household	3.00	1.00		$0	$0	$0	$1.41	$0
Total						**$958,683**	**$754,383**	**$234,300**		**$724,383**

CCWD										
	Minimum Total Rebate Amount ($ per Unit)	Rebate Unit	DWR Unit Funding (75% of Rebate) ($ per unit)	Agency Unit Funding (25% of Rebate) ($ per unit)	Agnecy Proposed Total Units	Total Rebate Amount ($)	Agency Rebate Amount (25% of Rebate) ($)	DWR Rebate Amount (75% of Rebate)	Admin Labor and Overhead ($)	Total Match ($)
Water-Efficient Landscape Rebate	0.75	Square Foot	0.56	0.19	150,000	$112,500	$28,125	$84,375	$0.28	$70,425
Bay-Friendly Professional Landscape Training	0.00	Per Training	0.00	0.00		$0	$0	$0	$0.00	$0
Water Lab and Education	0.00					$0	$0	$0	$0.00	$0
Weather Based Irrigation Controller Rebate (SF)	20.00	Irrigation Station	15.00	5.00		$0	$0	$0	$7.05	$0
Weather Based Irrigation Controller Rebate (CII/ MF)	30.00	Irrigation Station	22.50	7.50		$0	$0	$0	$7.05	$0
Irrigation Retrofits and Recycle Water Retrofits	2.75	Square Foot	0.71	2.04		$0	$0	$0	$0.16	$0
High-Efficiency Toilets (SCVWD)	100.00		75.00	25.00		$0	$0	$0	$35.25	$0
High-Efficiency Washers (SCVWD)	50.00		37.50	12.50		$0	$0	$0	$18.05	$0
Home Water Report	4.00	Per Household	3.00	1.00	30,000	$120,000	$30,000	$90,000	$1.41	$72,300
Total					**180000**	**$232,500**	**$58,125**	**$174,375**		**$142,725**

Solano County Water Agency										
	Minimum Total Rebate Amount ($ per Unit)	Rebate Unit	DWR Unit Funding (75% of Rebate) ($ per unit)	Agency Unit Funding (25% of Rebate) ($ per unit)	Agnecy Proposed Total Units	Total Rebate Amount ($)	Agency Rebate Amount (25% of Rebate) ($)	DWR Rebate Amount (75% of Rebate)	Admin Labor and Overhead ($)	Total Match ($)
Water-Efficient Landscape Rebate	0.75	Square Foot	0.56	0.19	230,000	$172,500	$43,125	$129,375	$0.28	$107,985
Bay-Friendly Professional Landscape Training	0.00	Per Training	0.00	0.00		$0	$0	$0	$0.00	$0
Water Lab and Education	0.00					$0	$0	$0	$0.00	$0
Weather Based Irrigation Controller Rebate (SF)	20.00	Irrigation Station	15.00	5.00		$0	$0	$0	$7.05	$0
Weather Based Irrigation Controller Rebate (CII/ MF)	30.00	Irrigation Station	22.50	7.50		$0	$0	$0	$7.05	$0
Irrigation Retrofits and Recycle Water Retrofits	2.75	Square Foot	0.71	2.04		$0	$0	$0	$0.16	$0
High-Efficiency Toilets (SCVWD)	100.00		75.00	25.00		$0	$0	$0	$35.25	$0
High-Efficiency Washers (SCVWD)	50.00		37.50	12.50		$0	$0	$0	$18.05	$0
Home Water Report	4.00	Per Household	3.00	1.00		$0	$0	$0	$1.41	$0
Total					**230000**	**$172,500**	**$43,125**	**$129,375**		**$107,985**

Sonoma County Water Agency										
	Minimum Total Rebate Amount ($ per Unit)	Rebate Unit	DWR Unit Funding (75% of Rebate) ($ per unit)	Agency Unit Funding (25% of Rebate) ($ per unit)	Agnecy Proposed Total Units	Total Rebate Amount ($)	Agency Rebate Amount (25% of Rebate) ($)	DWR Rebate Amount (75% of Rebate)	Admin Labor and Overhead ($)	Total Match ($)
Water-Efficient Landscape Rebate	0.75	Square Foot	0.56	0.19	280,000	$210,000	$52,500	$157,500	$0.28	$131,460
Bay-Friendly Professional Landscape Training	0.00	Per Training	0.00	0.00		$0	$0	$0	$0.00	$0
Water Lab and Education	0.00					$0	$0	$0	$0.00	$0
Weather Based Irrigation Controller Rebate (SF)	20.00	Irrigation Station	15.00	5.00	1,500	$30,000	$7,500	$22,500	$7.05	$18,075
Weather Based Irrigation Controller Rebate (CII/ MF)	30.00	Irrigation Station	22.50	7.50	1,000	$30,000	$7,500	$22,500	$7.05	$14,550
Irrigation Retrofits and Recycle Water Retrofits	2.75	Square Foot	0.71	2.04		$0	$0	$0	$0.16	$0
High-Efficiency Toilets (SCVWD)	100.00		75.00	25.00		$0	$0	$0	$35.25	$0
High-Efficiency Washers (SCVWD)	50.00		37.50	12.50		$0	$0	$0	$18.05	$0
Home Water Report	4.00	Per Household	3.00	1.00		$0	$0	$0	$1.41	$0
Total						**$270,000**	**$67,500**	**$202,500**		**$164,085**

Zone 7										
	Minimum Total Rebate Amount ($ per Unit)	Rebate Unit	DWR Unit Funding (75% of Rebate) ($ per unit)	Agency Unit Funding (25% of Rebate) ($ per unit)	Agnecy Proposed Total Units	Total Rebate Amount ($)	Agency Rebate Amount (25% of Rebate) ($)	DWR Rebate Amount (75% of Rebate)	Admin Labor and Overhead ($)	Total Match ($)
Water-Efficient Landscape Rebate	0.75	Square Foot	0.56	0.19	70,000	$52,500	$13,125	$39,375	$0.28	$32,865
Bay-Friendly Professional Landscape Training	0.00	Per Training	0.00	0.00		$0	$0	$0	$0.00	$0
Water Lab and Education	0.00			0.00		$0	$0	$0	$0.00	$0
Weather Based Irrigation Controller Rebate (SF)	20.00	Irrigation Station	15.00	5.00	245	$4,900	$1,225	$3,675	$7.05	$2,952
Weather Based Irrigation Controller Rebate (CII/ MF)	30.00	Irrigation Station	22.50	7.50	600	$18,000	$4,500	$13,500	$7.05	$8,730
Irrigation Retrofits and Recycle Water Retrofits	2.75	Square Foot	0.71	0.69		$0	$0	$0	$0.16	$0
High-Efficiency Toilets (SCVWD)	100.00		75.00	25.00		$0	$0	$0	$35.25	$0
High-Efficiency Washers (SCVWD)	50.00		37.50	12.50		$0	$0	$0	$18.05	$0
Home Water Report	4.00	Per Household	3.00	1.00	43,882	$175,528	$43,882	$131,646	$1.41	$105,756
Total						**$250,928**	**$62,732**	**$188,196**		**$150,303**

SCVWD										
	Minimum Total Rebate Amount ($ per Unit)	Rebate Unit	DWR Unit Funding (75% of Rebate) ($ per unit)	Agency Unit Funding (25% of Rebate) ($ per unit)	Agnecy Proposed Total Units	Total Rebate Amount ($)	Agency Rebate Amount (25% of Rebate) ($)	DWR Rebate Amount (75% of Rebate)	Admin Labor and Overhead ($)	Total Match ($)
Water-Efficient Landscape Rebate	0.75	Square Foot	0.56	0.19	115,000	$86,250	$21,563	$64,688	$0.28	$53,993
Bay-Friendly Professional Landscape Training	0.00	Per Training	0.00	0.00		$0	$0	$0	$0.00	$0
Water Lab and Education	0.00			0.00		$0	$0	$0	$0.00	$0
Weather Based Irrigation Controller Rebate (SF)	20.00	Irrigation Station	15.00	5.00	1,000	$20,000	$5,000	$15,000	$7.05	$12,050
Weather Based Irrigation Controller Rebate (CII/ MF)	30.00	Irrigation Station	22.50	7.50	1,000	$30,000	$7,500	$22,500	$7.05	$14,550
Irrigation Retrofits and Recycle Water Retrofits	2.75	Square Foot	0.69	2.06		$0	$0	$0	$0.16	$0
High-Efficiency Toilets (SCVWD)	100.00		75.00	25.00	2,300	$230,000	$57,500	$172,500	$35.25	$138,575
High-Efficiency Washers (SCVWD)	50.00		37.50	12.50	5,750	$287,500	$71,875	$215,625	$18.05	$175,663
Home Water Report	4.00	Per Household	3.00	1.00		$0	$0	$0	$1.41	$0
Total					**125050**	**$653,750**	**$163,438**	**$490,313**		**$394,830**

Napa County - Southern Sonoma County RCD: MOBILE WATER LAB										
	Minimum Total Rebate Amount ($ per Unit)	Rebate Unit	DWR Unit Funding (75% of Rebate) ($ per unit)	Agency Unit Funding (25% of Rebate) ($ per unit)	Agnecy Proposed Total Units	Total Rebate Amount ($)	Agency Rebate Amount (25% of Rebate) ($)	DWR Rebate Amount (75% of Rebate)	Admin Labor and Overhead ($)	Total Match ($)
Water-Efficient Landscape Rebate	0.75	Square Foot	0.56	0.19		$0	$0	$0	$0.28	$0
Bay-Friendly Professional Landscape Training	0.00	Per Training	0.00	0.00		$0	$0	$0	$0.00	$0
Water Lab and Education	0.00					$0	$65,000	$0	$0.00	$65,000
Weather Based Irrigation Controller Rebate (SF)	20.00	Irrigation Station	15.00	5.00		$0	$0	$0	$7.05	$0
Weather Based Irrigation Controller Rebate (CII/ MF)	30.00	Irrigation Station	22.50	7.50		$0	$0	$0	$7.05	$0
Irrigation Retrofits and Recycle Water Retrofits	2.75	Square Foot	0.71	2.04		$0	$0	$0	$0.16	$0
High-Efficiency Toilets (SCVWD)	100.00		75.00	25.00		$0	$0	$0	$35.25	$0
High-Efficiency Washers (SCVWD)	50.00		37.50	12.50		$0		$0	$18.05	$0
Home Water Report	4.00	Per Household	3.00	1.00		$0		$0	$1.41	$0
Total						**$0**	**$65,000**	**$0**		**$65,000**

City of Napa										
	Minimum Total Rebate Amount ($ per Unit)	Rebate Unit	DWR Unit Funding (75% of Rebate) ($ per unit)	Agency Unit Funding (25% of Rebate) ($ per unit)	Agnecy Proposed Total Units	Total Rebate Amount ($)	Agency Rebate Amount (25% of Rebate) ($)	DWR Rebate Amount (75% of Rebate)	Admin Labor and Overhead ($)	Total Match ($)
Water-Efficient Landscape Rebate	0.75	Square Foot	0.56	0.19	200,000	$150,000	$37,500	$112,500	$0.28	$93,900
Bay-Friendly Professional Landscape Training	0.00	Per Training	0.00	0.00		$0	$0	$0	$0.00	$0
Water Lab and Education	0.00					$0	$0	$0	$0.00	$0
Weather Based Irrigation Controller Rebate (SF)	20.00	Irrigation Station	15.00	5.00	400	$8,000	$2,000	$6,000	$7.05	$4,820
Weather Based Irrigation Controller Rebate (CII/ MF)	30.00	Irrigation Station	22.50	7.50	400	$12,000	$3,000	$9,000	$7.05	$5,820
Irrigation Retrofits and Recycle Water Retrofits	2.75	Square Foot	0.71	2.04		$0	$0	$0	$0.16	$0
High-Efficiency Toilets (SCVWD)	100.00		75.00	25.00		$0	$0	$0	$35.25	$0
High-Efficiency Washers (SCVWD)	50.00		37.50	12.50		$0	$0	$0	$18.05	$0
Home Water Report	4.00	Per Household	3.00	1.00		$0	$0	$0	$1.41	$0
Total					**200800**	**$170,000**	**$42,500**	**$127,500**		**$104,540**

EBMUD										
	Minimum Total Rebate Amount ($ per Unit)	Rebate Unit	DWR Unit Funding (75% of Rebate) ($ per unit)	Agency Unit Funding (25% of Rebate) ($ per unit)	Agnecy Proposed Total Units	Total Rebate Amount ($)	Agency Rebate Amount (25% of Rebate) ($)	DWR Rebate Amount (75% of Rebate)	Admin Labor and Overhead ($)	Total Match ($)
Water-Efficient Landscape Rebate	0.75	Square Foot	0.56	0.19		$0	$0	$0	$0.28	$0
Bay-Friendly Professional Landscape Training	0.00	Per Training	0.00	0.00		$0	$0	$0	$0.00	$0
Water Lab and Education	0.00					$0	$0	$0	$0.00	$0
Weather Based Irrigation Controller Rebate (SF)	20.00	Irrigation Station	15.00	5.00		$0	$0	$0	$7.05	$0
Weather Based Irrigation Controller Rebate (CII/ MF)	30.00	Irrigation Station	22.50	7.50		$0	$0	$0	$7.05	$0
Irrigation Retrofits and Recycle Water Retrofits	2.75	Square Foot	0.71	2.04		$0	$0	$0	$0.16	$0
High-Efficiency Toilets (SCVWD)	100.00		75.00	25.00		$0	$0	$0	$35.25	$0
High-Efficiency Washers (SCVWD)	50.00		37.50	12.50		$0	$0	$0	$18.05	$0
Home Water Report	4.00	Per Household	3.00	1.00	80,000	$320,000	$80,000	$240,000	$1.41	$192,800
Total						**$320,000**	**$80,000**	**$240,000**		**$192,800**

BAWSCA										
	Minimum Total Rebate Amount ($ per Unit)	Rebate Unit	DWR Unit Funding (75% of Rebate) ($ per unit)	Agency Unit Funding (25% of Rebate) ($ per unit)	Agnecy Proposed Total Units	Total Rebate Amount ($)	Agency Rebate Amount (25% of Rebate) ($)	DWR Rebate Amount (75% of Rebate)	Admin Labor and Overhead ($)	Total Match ($)
Water-Efficient Landscape Rebate	0.75	Square Foot	0.56	0.19	80,000	$60,000	$15,000	$45,000	$0.28	$37,560
Bay-Friendly Professional Landscape Training	0.00	Per Training	0.00	0.00		$0	$0	$0	$0.00	$0
Water Lab and Education	0.00		0.00	0.00		$0	$0	$0	$0.00	$0
Weather Based Irrigation Controller Rebate (SF)	20.00	Irrigation Station	15.00	5.00		$0	$0	$0	$7.05	$0
Weather Based Irrigation Controller Rebate (CII/ MF)	30.00	Irrigation Station	22.50	7.50		$0	$0	$0	$7.05	$0
Irrigation Retrofits and Recycle Water Retrofits	2.75	Square Foot	2.06	0.69		$0	$0	$0	$0.16	$0
High-Efficiency Toilets (SCVWD)	100.00		75.00	25.00		$0	$0	$0	$35.25	$0
High-Efficiency Washers (SCVWD)	50.00		37.50	12.50		$0	$0	$0	$18.05	$0
Home Water Report	4.00	Per Household	3.00	1.00	50,000	$200,000	$50,000	$150,000	$1.41	$120,500
Total						**$260,000**	**$65,000**	**$195,000**		**$158,060**

TOTAL PROGRAM										
	Minimum Total Rebate Amount ($ per Unit)	Rebate Unit	DWR Unit Funding (75% of Rebate) ($ per unit)	Agency Unit Funding (25% of Rebate) ($ per unit)	Agnecy Proposed Total Units	Total Rebate Amount ($)	Administration Unit Cost (L+B+Prof Serv. + OH)	Total Agency Rebate + Admin Costs	Agency Rebate Amount (25% of Rebate) ($)	DWR Rebate Amount (75% of Rebate) ($)
Water-Efficient Landscape Rebate	0.75	Square Foot	0.5625	0.1875	1,385,000	$1,038,750	$0.2820	$1,429,320.00	$259,687.50	$779,062.50
Bay-Friendly Professional Landscape Training	0.00	Per Training	0.0000	0.0000	414,124	$414,124	$0.0000	$414,124.00	$213,931.00	$200,193.00
Water Lab and Education	0.00		0.0000	0.0000	0	$260,000	$0.0000	$260,000.00	$65,000.00	$195,000.00
Weather Based Irrigation Controller Rebate (SF)	20.00	Irrigation Station	15.0000	5.0000	3,145	$62,900	$7.0500	$85,072.25	$15,725.00	$47,175.00
Weather Based Irrigation Controller Rebate (CII/ MF)	30.00	Irrigation Station	22.5000	7.5000	4,200	$126,000	$7.0500	$155,610.00	$31,500.00	$94,500.00
Irrigation Retrofits and Recycle Water Retrofits	2.75	Square Foot	2.0625	0.6875	330,000	$958,613	$0.1551	$958,683.00	$724,383.00	$234,300.00
High-Efficiency Toilets (SCVWD)	100.00		75.0000	25.0000	2,300	$230,000	$35.2500	$311,075.00	$57,500.00	$172,500.00
High-Efficiency Washers (SCVWD)	50.00		37.5000	12.5000	5,750	$287,500	$18.0500	$391,287.50	$71,875.00	$215,625.00
Home Water Report	4.00	Per Household	3.0000	1.0000	203,882	$815,528	$1.4100	$1,103,001.62	$203,882.00	$611,646.00
TOTAL PROGRAM						**$4,193,415**		**$5,108,173**	**$1,643,483.50**	**$2,550,001.50**

Breuner Marsh Restoration and Public Access Project

Item	Description	Est. Qty.	Unit	Unit Price	Total
1	***Mobilization & Stakeout***				
A	Mobilization (±5% of Total Construction Costs)	1	LS	$300,000.00	$ 300,000.00
B	Survey Stakeout	1	LS	$40,000.00	$ 40,000.00
			SUBTOTAL		**$ 340,000.00**
2	***Traffic & Site Protection***				
A	Temporary Access and Security Fencing (Point Pinole)	1	LS	$15,000.00	$ 15,000.00
B	Temporary ESA Fencing	20,000	LF	$4.00	$ 80,000.00
C	Other Temporary Construction Fencing (allow)	2,000	LF	$3.00	$ 6,000.00
E	Site Security (9 Months)	1	LS	$45,000.00	$ 45,000.00
			SUBTOTAL		**$ 146,000.00**
3	***SWPPP, Erosion Control & Compliance***				
A	Erosion & Sediment Controls/SWPP Compliance	1	LS	$70,000.00	$ 70,000.00
B	Biological Monitoring and Reporting	1	LS	$90,000.00	$ 90,000.00
C	Water Quality Monitoring	1	LS	$10,000.00	$ 10,000.00
D	Cultural Monitor	1	LS	$3,000.00	$ 3,000.00
E	Dewatering for Bridge Demo	1	LS	$5,000.00	$ 5,000.00
			SUBTOTAL		**$ 178,000.00**
4	***Demolition***				
A	Clearing, Grubbing & Trimming	100	AC	$1,000.00	$ 100,000.00
B	Demolition, Offhaul, and Disposal of Existing Bridge	120	TN	$75.00	$ 9,000.00
C	Onsite Disposal of Miscelaneous Rubble	500	TN	$15.00	$ 7,500.00
D	Demolition, Offhaul and Disposal of Miscelaneous Rubble	8,000	TN	$30.00	$ 240,000.00
E	Hazardous Material Removal and Disposal (allow)	1	LS	$100,000.00	$ 100,000.00
			SUBTOTAL		**$ 456,500.00**
5	***Earthwork***				
A	Grading (balance on-site)	95,000	CY	$12.00	$ 1,140,000.00
B	Seasonal Wetland Treatments (top soiling 6" depth)	20,000	CY	$12.00	$ 240,000.00
C	Seasonal Wetland Treatments (ripping)	500,000	SF	$0.05	$ 25,000.00
C	Tidal Wetlands Treatments (fine grading/minor channels)	5,000	CY	$12.00	$ 60,000.00
D	Grading - Slough Channel A (south)	4,500	CY	$15.00	$ 67,500.00
E	Grading - Slough Channel B (mid)	2,900	CY	$15.00	$ 43,500.00
F	Grading - Slough Channel C (north)	3,800	CY	$15.00	$ 57,000.00
			SUBTOTAL		**$ 1,633,000.00**
6	***Paving and Sufacing***				
A	Woven Geotextile (under AB on trails)	14,000	SY	$5.00	$ 70,000.00
B	AC Bay and Spur Trail (3" AC/12" AB)	73,280	SF	$7.00	$ 512,960.00
C	Parking Lot (27 spaces, 4" AC/12" AB, includes striping, etc)	18,000	SF	$8.50	$ 153,000.00
D	AC Turnarounds, Misc. (3" AC/12" AB)	2,000	SF	$7.00	$ 14,000.00
E	Goodrick Ave to Parking Lot (resurfacing)	10,000	SF	$5.00	$ 50,000.00
			SUBTOTAL		**$ 799,960.00**
	Bridge and Boardwalk				
A	90' X 16' Painted Steel Truss Bridge (Rheem Creek)	90	LF	$3,300.00	$ 297,000.00
B	Giant Marsh Boardwalk	1,440	LF	$700.00	$ 1,008,000.00
C	Eastern Boardwalk (near Carr property)	160	LF	$700.00	$ 112,000.00
D	Spur Boardwalk	200	LF	$600.00	$ 120,000.00
			SUBTOTAL		**$ 1,537,000.00**
	Landscaping and Visitor Facilities				
A	Native Plant Salvage	1,000	SF	$5.00	$ 5,000.00
B	Planting (Coastal Scrub Areas)	3	AC	$15,000.00	$ 37,500.00
C	Drill Seed/Mulch and/or Hydroseed	59	AC	$3,000.00	$ 177,000.00
D	Wildlife Protection Fencing (4' chain link trailside)	9,000	LF	$9.00	$ 81,000.00
E	Perimeter Security Fencing (6' chain link)	8,000	LF	$16.00	$ 128,000.00
F	Picnic Tables	4	LS	$1,500.00	$ 6,000.00
G	Benches	5	LS	$1,000.00	$ 5,000.00
H	Trash Receptacle	4	LS	$1,000.00	$ 4,000.00
I	Signs (allow)	1	LS	$9,000.00	$ 9,000.00
J	Restroom	1	LS	$75,000.00	$ 75,000.00
K	Bollards (Rheem Creek)	1	LS	$2,000.00	$ 2,000.00
L	Vehicle Gate (allow)	1	LS	$3,000.00	$ 3,000.00
			SUBTOTAL		**$ 532,500.00**
				CONSTRUCTION SUBTOTAL	**$ 5,622,960.00**
				15% CONTINGENCY	**$ 843,444.00**

CARSON MANUFACTURING COMPANY

P.O. BOX 750338
PETALUMA, CA 94975-0338
Phone: 707-778-3141
Fax: 707-778-8691

Quotation

Quote To: ROSEVIEW MUTUAL WATER CO
10517 CROTHERS ROAD
SAN JOSE, CA 95127

Quote Number:	11779			**Contact:**	TIM SCHACHER
Quote Date:	11/20/08	**Expires:**	12/20/08	**Inquiry:**	
Customer:	ROSEVIEW			**Terms:**	50% DEPOSIT/NET ON COMPLETION
Salesman:	HOUSE			**Phone:**	(408) 315-6287
Ship Via:	DELIVER			**FAX:**	
FOB:	PETALUMA				

Thank you for the opportunity to quote per your requirements.
Any applicable taxes not included.

Item	Part Number / Description	Revision	Quantity	Price
1	TL-25-162IDX114TALL 25 MIL PVC TANK LINER NSF 61 APPROVED 162" ID x 114" TALL HEM & ROPE, FINISHED HEIGHT		1	$ 1,590.00 /EA
3	GEO-SQFT 8 OZ GEOTEXTILE NONWOVEN SQ. FT. PRICING		600	$ 0.33 /SQF
4	MISC-PLUMBING MISCELLANEOUS PLUMBING FITTINGS S.S. FLANGES, GASKETS TANK NIPPLES		1	$ 850.00 /EA
7	BATTEN I" WIDE POLY PRO BATTEN STRIP WITH S.S. FASTENERS		48	$ 4.00 /FT
8	INSTALLATION/LINER		1	$ 3,600.00 /EA

Item	Part Number / Description	Revision	Quantity	Price
	LABOR CHARGE FOR THE INSTALLATION OF A 25 MIL PVC TANK LINER INTO AN EXISTING REDWOOD WATER TANK			
9	MOBILIZATION MOBILIZATION, TRAVEL, LODGING, ETC.		1	$ 400.00 /EA
			Total:	***$ 6,830.00***

SALES TAX WILL BE APPLIED TO THE MATERIALS ONLY

WEATHER WILL PLAY A FACTOR WITH THIS INSTALLATION BUT IF YOU WOULD LIKE TO PROCEED I SUGGEST WE GET EVERYTHING READY AND HOPE FOR A CLEAR STRETCH

By CURTIS LANG

CARSON MANUFACTURING COMPANY

ROSEVIEW HEIGHTS MUTUAL WATER CO.
901 S. WHITE RD.
SAN JOSE, CA 95127

2667

12/17 2008

11-4288/1210

PAY TO THE ORDER OF CARSON manufacturing $ 11,607.99

eleven thousand six hundred seven and 99/xx DOLLARS

WELLS FARGO BANK
ALUM ROCK OFFICE
2880 ALUM ROCK AVENUE
SAN JOSE, CA 95127

FOR INVOICE # 27100

⑈002667⑈ ⑆121042882⑆

To: 10517 CROTHERS ROAD
SAN JOSE, CA 95127

To: 10517 CROTHERS ROAD
SAN JOSE, CA 95127

Invoice Number:	27100	**Salesman:**	HOUSE
Invoice Date:	11/17/08	**Terms:**	50% DEPOSIT/NET ON COMPLETIC
Customer:	ROSEVIEW	**Packing List:**	24417
Order No:	24417	**PO Number:**	VERBAL-TIM

Item	Quantity	Description	Revision	Unit Price	Amount
1	1	TL-25-314IDX192TALL - 25 MIL PVC TANK LINER NSF 61 APPROVED 314" ID x 192" TALL HEM & ROPE, FINISHED HEIGHT		$ 4,340.00 / EA	$ 4,340.00
3	2,400	GEO-SQFT - 8 OZ GEOTEXTILE NONWOVEN SQ. FT. PRICING		$ 0.33 / SQF	$ 792.00
4	1	MISC-PLUMBING - MISCELLANEOUS PLUMBING FITTINGS S.S. FLANGES, GASKETS TANK NIPPLES		$ 700.00 / EA	$ 700.00
6	3	BOOT-POST - SUPPORT POST BOOT 5 3/4" x 7 3/4" x 36" TALL		$ 175.00 / EA	$ 525.00
7	88	BATTEN - I" WIDE POLY PRO BATTEN STRIP WITH S.S. FASTENERS		$ 4.00 / FT	$ 352.00
8	1	INSTALLATION/LINER - LABOR CHARGE FOR THE INSTALLATION OF A 25 MIL PVC TANK LINER INTO AN EXISTING REDWOOD WATER TANK		$ 13,600.00 / EA	$ 13,600.00
9	1	MOBILIZATION - MOBILIZATION, TRAVEL, LODGING, ETC.		$ 1,800.00 / EA	$ 1,800.00

Sub-total:	**$ 22,109.00**
Sales Tax:	**$ 553.49**
Shipped Via UPS PPD/BILL:	**$ 0.00**
Invoice Total:	***$ 22,662.49***
Paid To Date:	***($11,054.50)***
Balance Due:	***$ 11,607.99***

CARSON MANUFACTURING COMPANY

P.O. BOX 750338
PETALUMA, CA 94975-0338
Phone: 707-778-3141
Fax: 707-778-8691

Quotation

Quote To: ROSEVIEW MUTUAL WATER CO
10517 CROTHERS ROAD
SAN JOSE, CA 95127

Quote Number:	11530			**Contact:**	TIM SCHACHER
Quote Date:	01/16/08	**Expires:**	02/15/08	**Inquiry:**	
Customer:	ROSEVIEW			**Terms:**	50% DEPOSIT/NET ON COMPLETION
Salesman:	HOUSE			**Phone:**	(408) 315-6287
Ship Via:	DELIVER			**FAX:**	
FOB:	PETALUMA				

Thank you for the opportunity to quote per your requirements.
Any applicable taxes not included.

Item	Part Number / Description	Revision	Quantity	Price
1	TL-25-28IDX17TALL 25 MIL PVC TANK LINER NSF 61 APPROVED 28' ID x 17' TALL HEM & ROPE		1	$ 4,125.00 /EA
2	BATTEN-SS BATTEN STRIP 1/8" STAINLESS STEEL (304) 1" WIDE x 12' LONG 5/16" HOLES ON 12" CENTERS		88	$ 5.25 /LFT
3	GEO-SQFT 8 OZ GEOTEXTILE NONWOVEN SQ. FT. PRICING		840	$ 0.28 /SQF
4	MISC-PLUMBING MISCELLANEOUS PLUMBING FITTINGS S.S. SCREWS, ETC.		1	$ 700.00 /EA
5	INSTALLATION/LINER		1	$ 7,500.00 /EA

Item	Part Number / Description	Revision	Quantity	Price
	LABOR CHARGE FOR THE INSTALLATION OF A 25 MIL PVC TANK LINER			
6	BOOT-POST SUPPORT POST BOOT		1	$ 175.00 /EA
			Total:	***$ 13,197.20***

THE ABOVE PRICING IS ONLY AN ESTIMATE UNTIL A SITE REVIEW IS CONDUCTED

4 TO 6 WEEK LEAD TIME TO PRODUCE AND SCHEDULE THE INSTALLATION

By CURTIS LANG

CARSON MANUFACTURING COMPANY

CARSON MANUFACTURING COMPANY

P.O. BOX 750338
PETALUMA, CA 94975-0338
Phone: 707-778-3141
Fax: 707-778-8691

Quotation

Quote To: ROSEVIEW MUTUAL WATER CO
10517 CROTHERS ROAD
SAN JOSE, CA 95127

Quote Number:	11762			**Contact:**	TIM SCHACHER
Quote Date:	10/24/08	**Expires:**	11/23/08	**Inquiry:**	
Customer:	ROSEVIEW			**Terms:**	50% DEPOSIT/NET ON COMPLETION
Salesman:	HOUSE			**Phone:**	(408) 315-6287
Ship Via:	DELIVER			**FAX:**	
FOB:	PETALUMA				

Thank you for the opportunity to quote per your requirements.
Any applicable taxes not included.

Item	Part Number / Description	Revision	Quantity	Price
1	TL-25-314IDX192TALL 25 MIL PVC TANK LINER NSF 61 APPROVED 314" ID x 192" TALL HEM & ROPE, FINISHED HEIGHT		1	$ 4,340.00 /EA
3	GEO-SQFT 8 OZ GEOTEXTILE NONWOVEN SQ. FT. PRICING		2,400	$ 0.33 /SQF
4	MISC-PLUMBING MISCELLANEOUS PLUMBING FITTINGS S.S. FLANGES, GASKETS TANK NIPPLES		1	$ 700.00 /EA
6	BOOT-POST SUPPORT POST BOOT		3	$ 175.00 /EA
7	BATTEN I" WIDE POLY PRO BATTEN STRIP WITH S.S. FASTENERS		88	$ 4.00 /FT

Item	Part Number / Description	Revision	Quantity	Price
8	INSTALLATION/LINER LABOR CHARGE FOR THE INSTALLATION OF A 25 MIL PVC TANK LINER INTO AN EXISTING REDWOOD WATER TANK		1	$ 13,600.00 /EA
9	MOBILIZATION MOBILIZATION, TRAVEL, LODGING, ETC.		1	$ 1,800.00 /EA
			Total:	***$ 22,109.00***

3 WEEK LEAD TIME TO PRODUCE & SCHEDULE THE INSTALLATION

By CURTIS LANG

CARSON MANUFACTURING COMPANY

Tim Schacher <tim.rvhmwc@gmail.com>

budgetary tank quotes

Elizabeth Binkley <elizabeth@binkleyassociates.com> Wed, Jun 15, 2011 at 3:14 PM

To: Tim Schacher <tim_rvhmwc@earthlink.net>

Tim,

I went ahead and got budgetary quotes for a few different tanks, with our specifications. They should only be considered budgetary at this time because I believe they left out a few things. I really wanted to see what kind of price difference we'd see between BH Tank and Superior. I can forward you the actual quotes if you'd like, but please keep in mind they need some further review and revision.

Neither one addressed my concern about the limited space at the tank sites, and I see that BH Tank explicitly used their standard assumption of 20' around the tank. Superior made no mention of it at all. This is typical in my experience. You really have to pay close attention to the details on their bids. They tend to overlook some things.

Following is a summary of the response. Includes materials, tax, delivery, and labor to install:

Superior Tank:

165,000 gallon 34'-2" diameter by 24'-1.5" high	$109,000	$0.66/gallon
50,000 gallon 23'-2" diameter by 16'-1" high	$63,393	$1.27/gallon

BH Tank:

177,000 gallon 32.6' diameter by 28' high	$138,268	$0.78/gallon
164,000 gallon 32.68' diameter by 26' high	$127,043	$0.77/gallon
55,000 gallon 21.5' diameter by 20' high	$82,035	$1.49/gallon

So between these two, Superior is less expensive. I should point out that BH Tank sells Columbian tanks and marks them up. Quite a few times in the past we've purchased Columbian tanks directly through Columbian and it is cheaper and is likely comparable to the Superior prices. Columbian subs out the installation to Thompson Tank usually (and sometimes, rarely, BH Tank). We can pursue this if you'd like. The main reason I got a quote directly from BH Tank this time is because we've had much better experiences working with BH Tank than Columbian and Thompson. We've only used Superior once many years ago and so I can't offer much of an opinion on working with them. I believe they manufacture their own tanks.

Regardless, I think you were leaning towards the Superior 165,000 gallon tank for the Roseview site since it is a couple feet shorter than the Columbian. Since they didn't respond to our comments about the space around the tank, I'm going to email them a drawing that shows how tight it is and see if that will get a response. I suspect it will be okay but require extra labor and possibly equipment.

They assume they can bring a 48' long flatbed right up to each tank site staging area. Do you have any experience with large flatbeds in your neighborhood? I'm wondering if they'll have to deliver the tanks on shorter trucks or offload onto shorter trucks when they get off the freeway. Let me know if you have any experience up there with this type of thing. Another thing to add to your list will be to secure a staging area near each tank. Something around 30'x30' preferably within 100' of each tank.

Talk to you soon. We're looking at your proposed easements.

_____

Elizabeth Binkley, P.E.

Senior Engineer

Binkley Associates

Consulting Engineers

(408) 257-9252

Tim Schacher <tim.rvhmwc@gmail.com>

budget quote request - Roseview Heights Mutual Water Co.

Gasaway, Pat <pgasaway@prestonpipelines.com> Thu, Jan 17, 2013 at 6:28 AM

To: "tim.rvhmwc@gmail.com" <tim.rvhmwc@gmail.com>
Cc: "Young, Josh" <JYoung@prestonpipelines.com>

Hello Tim,

The quick budget you requested is below. Let me know if you would like to set up a jobwalk where I could assist you with a constructability assessment, schedule (with detailed sequence of events) and more detailed budget. We would love to work with you on this project!

DEMO (E) TANK SITE	1.00	LS	
RELOCATE (E) PUMP SET AND ESTABLISH TEMP TANKS	1.00	LS	
8" HDPE DR-11	1,750.00	LF	
SITE WORK AT (N) TANK SITES	1.00	LS	
165,000 GALLON BOLTED STEEL TANK	1.00	EA	
50,000 GALLON BOLTED STEEL TANK	1.00	EA	
			$775,000.00
RECOMMENDED 20% CONTINGENCY			$155,000.00
TOTAL BUDGET			***$930,000.00***

Best Regards,

Patrick Gasaway

Estimator

tel - 408.262.1418

fax - 408.262.1870

Roseview Heights Mutual Water Company
302F Toyon Avenue, Box 270
San Jose, CA 95127

INVOICE

QTR	QTR PERIOD	INVOICE NO.
2Q12	8/1/12-10/31/12	179

BILL TO
MR. T. SCHACHER 10517 CROTHERS ROAD SAN JOSE, CA 95127

FOR WATER SERVICE TO:
MR. TIMOTHY SCHACHER DEBRA MENDLOWITZ 10517 CROTHERS ROAD SAN JOSE, CA 95127

ACCOUNT #	DUE DATE	INVOICE DATE	METER READING
CR-3	12/30/2012	11/30/2012	3750

DESCRIPTION	QTY	RATE	AMOUNT
Water Charge Based on CCF Usage	70	4.02	281.40
Insurance Charge Per Share		13.25	13.25
Maintenance Per Share		55.00	55.00
Reserve of $200/Share for infrastructure replacement.		200.00	200.00
For information on rates and fees call Tim at 408-259-4760.			
If you are having difficulty with your water supply, contact Tim Schacher at 408-259-4760 or 408-315-6287 or Alan Henninger at 408-251-9214.			

Interest accrued at 2.5% per quarter on unpaid balances. See statement attached.

Credit Balance	0
Amount Accrued This Quarter	$549.65
Total Amount Due Now	$549.65

Prunuske Chatham, Inc
Design and Construction Cost Estimate
Summary Sheet
1/25/2013

Upper York Creek Dam Removal
Cost Estimate

Cost Element	Cost
Prime Contractor Labor	$1,354,472
Prime Contractor Equipment	$264,439
Prime Contractor Materials	$440,741
Subcontractors	$2,056,527
Construction Subtotal	**$4,116,179**
Design	$240,000
Permits	$50,000
Contractor Procurement	$10,000
Construction Mngmnt Special Inspection	$120,000
Design Permit CM Subtotal	**$420,000**
Total	**$4,536,179**

Notes

All spoils are accepted by Spring Mountain Vineyard (SMV), no spoils go to LYCD or to Clover Flat
SMV prepares stockpile site at no cost to project
SMV handles its own erosion control at stockpile
Stream flow at April 15 is 5cfs or less
Round trip to SMV is 0.5 hours
A 10 Wheel dump truck can enter and exit the site every 5 minutes for 9 hours per day for about 2.5 months
Project provides spoil pile management at SMV
Need to confirm feasibility of SMV accepting all soil (approximately 30,000 to 40,000 yards)
Landslide stabilization design is conceptual and assumed 22 ISAs 50'-100' deep
Channel bed design is conceptual
Channel Bed material is supplied 30% from on-site material and 70% trucked in from a quarry
Spring Mountain Road Repair has a WAG for budget, see subcontractor work sheet
Erosion control blanket installation assumes a maximum use of blanket
10 woody debris structures assumed, complexity of each structure assumed to be medium
There are no toxic waste materials

Summary of Cost-Benefit Analysis

Return to Menu

Project Name: **Milliken Creek Flood Reduction Project**

Description: An in-stream impoundment dam along Milliken Creek has been identified to contribute to flooding of a neighborhood of over 50 homes. The impoundment is also a passage barrier for steelhead. The Project involves three integrated elements: 1) removal of the dam and restoration of the stream, 2) construction of a flood bypass/weir to ensure a flood detention area does not overflow into neighboring homes, and 3) minor grading/landscape improvements to ensure existing low lying properties recieve comparable level of protection as their neighbors.

Proposed project capital cost:	$ 1,763,400	[Note: construction costs which are assumed to occur in one year.]
Change in annual O&M costs:	$ 130	[Note: the change in annual O&M costs compared to without project condi
PV of future O&M costs:	$ 2,891	(at 4% discount rate over 50 years)
PV of future costs	$ 1,766,291	[Note: the sum of capital costs plus the PV of O&M costs.]

Benefits

	Actual	Potential	
EAD without project	$ 145,025	$ 156,131	[Note: for stormwater projects use "Potential" damage which ignores st
EAD with project	$ 1,677	$ 1,766	
Annual Benefit:	$ 143,348	$ 154,364	
PV of Future Benefits:	$ 3,187,881	$ 3,432,861	(at 4% discount rate over 50 years)

Cost-Benefit Analysis

	Actual	Potential	
Net Present Value (NPV)	$ 1,421,590	$ 1,666,570	(at 4% discount rate over 50 years)
Benefit:Cost Ratio	1.805	1.944	

NPV Sensitivity to Discount Rate:

	Actual	Potential
4%	$ 1,316,034	$ 1,552,680
5%	$ 853,555	$ 1,054,661
6%	$ 496,035	$ 669,667
7%	$ 214,913	$ 366,941
8%	-$ 9,751	$ 125,012

Summary of Cost-Benefit Analysis

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Project Name: **Milliken Creek Flood Reduction Project**

Description: An in-stream impoundment dam along Milliken Creek has been identified to contribute to flooding of a neighborhood of over 50 homes. The impoundment is also a passage barrier for steelhead. The Project involves three integrated elements: 1) removal of the dam and restoration of the stream, 2) construction of a flood bypass/weir to ensure a flood detention area does not overflow into neighboring homes, and 3) minor grading/landscape improvements to ensure existing low lying properties recieve comparable level of protection as their neighbors.

Proposed project capital cost:	$ 1,418,540	[Note: construction costs which are assumed to occur in one year.]
Change in annual O&M costs:	$ 130	[Note: the change in annual O&M costs compared to without project condi
PV of future O&M costs:	$ 2,891	(at 4% discount rate over 50 years)
PV of future costs	$ 1,421,431	[Note: the sum of capital costs plus the PV of O&M costs.]

Benefits

	Actual	Potential	
EAD without project	$ 70,068	$ 75,019	[Note: for stormwater projects use "Potential" damage which ignores st
EAD with project	$ 3,642	$ 3,845	
Annual Benefit:	$ 66,426	$ 71,174	
PV of Future Benefits:	$ 1,477,226	$ 1,582,819	(at 4% discount rate over 50 years)

Cost-Benefit Analysis

	Actual	Potential	
Net Present Value (NPV)	$ 55,795	$ 161,388	(at 4% discount rate over 50 years)
Benefit:Cost Ratio	1.039	1.114	

NPV Sensitivity to Discount Rate:

	Actual	Potential
4%	$ 8,433	$ 110,434
5%	-$ 205,874	-$ 119,192
6%	-$ 371,544	-$ 296,705
7%	-$ 501,813	-$ 436,285
8%	-$ 605,920	-$ 547,834

Inputs

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Project Name: Milliken Creek Flood Reduction Project

Cost of Project: $ 1,418,540

Description: An in-stream impoundment dam along Milliken Creek has been identified to contribute to flooding of a neighborhood of over 50 homes. The impoundment is also a passage barrier for steelhead. The Project involves three integrated elements: 1) removal of the dam and restoration of the stream, 2) construction of a flood bypass/weir to ensure a flood detention area does not overflow into neighboring homes, and 3) minor grading/landscape improvements to ensure existing low lying properties recieve comparable level of protection as their neighbors.

Number of Events Modeled: 3

	Without Project						With Project					
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6
Average Return Interval (ARI)	25	50	100				25	50	100			
Annual Probability of Exceedance	0.040	0.020	0.010	#DIV/0!	#DIV/0!	#DIV/0!	0.040	0.020	0.010	#DIV/0!	#DIV/0!	#DIV/0!
Probability of Levee Failure	1.00	1.00	1.00				1.00	1.00	1.00			
Water Surface Elevation - channel (f)	70.25	71.03	72.12				68.37	68.69	69.80			
Flood Warning Time (hours)	2.5	2.5	2.5	0	0		2.5	2.5	2.5	0	0	
Flood Experience	Y	Y	Y	N	N		N	Y	Y	N	N	
Period of Inundation (days)	0.5	0.58	0.75				0	0.25	0.5			
HEC-FIA DATA INPUTS	N											
Residential Structural Damages ($)												
Residential Contents Damages ($)												
Residential Debris & Cleanup ($)												
Commercial Structural Damages ($)												
Commercial Contents Damages ($)												
Commercial Debris & Cleanup ($)												
Industrial Structural Damages ($)												
Industrial Contents Damages ($)												
Industrial Debris & Cleanup ($)												
Agricultural Structural Damages ($)												
Agricultural Contents Damages ($)												
Agricultural Debris & Cleanup ($)												
Residential Properties												
Ratio Depreciated Value to Replacement Value	64%	64%	64%				64%	64%	64%			
Average Flood depth above ground level (f)	0.78	0.88	1.75				0.39	0.59	0.75			
Rural - Res: Homesteads	0	0	0				0	0	0			
Rural - Other: Barns, sheds	0	0	0				0	0	0			
Urban Res: Single story (no base)	13	24	52				1	1	7			
Urban Res: Single story (basement)	0	0	0				0	0	0			
Urban Res: Two plus story (no base)	0	0	0				0	0	0			
Urban Res: Two plus story (basement)	0	0	0				0	0	0			
Mobile home	0	0	0				0	0	0			
Commercial Properties												
Ratio Depreciated Value to Replacement Value												
Average Flood depth above ground level (f)	0.00	0.00	0.00				0.00	0.00	0.00			
low value (building area inundated (sq.f.))	0	0	0				0	0	0			
medium value (building area inundated (sq.f.))	0	0	0				0	0	0			
high value (building area inundated (sq.f.))	0	0	0				0	0	0			
Industrial Properties												
Ratio Depreciated Value to Replacement Value												
Average Flood depth above ground level (f)	0.00	0.00	0.00				0.00	0.00	0.00			
low value (building area inundated (sq.f.))	0	0	0				0	0	0			
medium value (building area inundated (sq.f.))	0	0	0				0	0	0			
high value (building area inundated (sq.f.))	0	0	0				0	0	0			
Agricultural Production												
Corn (ac.)	0	0	0				0	0	0			
Rice (ac.)	0	0	0				0	0	0			
Walnuts (ac.)	0	0	0				0	0	0			
Almonds (ac.)	0	0	0				0	0	0			
Cotton (ac.)	0	0	0				0	0	0			
Tomatoes (ac.)	0	0	0				0	0	0			
Wine Grapes (ac.)	0	0	0				0	0	0			
Alfalfa (ac.)	0	0	0				0	0	0			
Pasture (ac.)	0	0	0				0	0	0			
Safflower (ac.)	0	0	0				0	0	0			
Sugar Beets (ac.)	0	0	0				0	0	0			
Beans (ac.)	0	0	0				0	0	0			
Other (ac.)	0	0	0				0	0	0			
Roads												
length of arterial roads inundated (miles)	0	0.0	0.0				0	0.0	0.0			
length of major roads inundated (miles)	0	0.0	0.0				0	0.0	0.0			
length of minor roads inundated (miles)	0.49	0.49	0.49				0.00	0.00	0.20			
length of unsealed roads inundated (miles)	0	0.0	0.0				0	0.0	0.0			

HEC-FIA Analysis was not necessary

Extrapolate Y-intercept: Y

DRAFT
30% Engineers Construction Cost Estimate

HydroScience
Strategic Water Solutions

Date: February 4, 2013
Project: CSA 11 - Well No. 3 and Tank No. 2
Project No.: 245-003-102
Project Engr.: Lani Good (edited by Michael Ducker and Curtis Lam)

Item #	Item Description	Quantity	Unit	Unit Price	Total	%	Materials	%	Labor
1	Mobilization	1	LS	$15,000.00	$15,000.00	10%	$1,500.00	90%	$13,500.00
2	Demobilization	1	LS	$10,000.00	$10,000.00	10%	$1,000.00	90%	$9,000.00
3	SWPP Preparation	1	EA	$3,500.00	$3,500.00	0%	$0.00	100%	$3,500.00
4	Erosion, Sediment and Stormwater Control	1	LS	$4,000.00	$4,000.00	40%	$1,600.00	60%	$2,400.00
5	Site Preparation	1	LS	$8,000.00	$8,000.00	67%	$5,360.00	33%	$2,640.00
6	Excavation and Grading	1	LS	$4,000.00	$4,000.00	10%	$400.00	90%	$3,600.00
7	Surface Restoration	1	LS	$3,200.00	$3,200.00	50%	$1,600.00	50%	$1,600.00
8	6' Chainlink Fencing	500	LF	$16.00	$8,000.00	40%	$3,200.00	60%	$4,800.00
9	12' Swing Gate, 20' Swing Gate	4	EA	$1,100.00	$4,400.00	40%	$1,760.00	60%	$2,640.00
10	Aggregate Base	25	CY	$40.00	$1,000.00	50%	$500.00	50%	$500.00
11	Bolted Steel Tank - 140,000 Gallon, concrete ringwall foundation, coating[1]	1	EA	$150,000.00	$150,000.00	40%	$60,000.00	60%	$90,000.00
12	Altitude Valve	1	EA	$5,000.00	$5,000.00	40%	$2,000.00	60%	$3,000.00
13	Level Sensor	0	EA	$1,500.00	$0.00	40%	$0.00	60%	$0.00
14	8" DI Pipe	150	LF	$85.00	$12,750.00	70%	$8,925.00	30%	$3,825.00
15	8" Gate Valve	5	EA	$105.00	$525.00	70%	$367.50	30%	$157.50
16	8" Bends, 45, 90, Tee	5	EA	$125.00	$625.00	70%	$437.50	30%	$187.50
17	Well drilling, installation, screen, casing, etc.[2]	1	LS	$78,000.00	$78,000.00	10%	$7,800.00	90%	$70,200.00
18	Well pump, equipping[2]	1	LS	$20,000.00	$20,000.00	40%	$8,000.00	60%	$12,000.00
19	Cast-In-Place Concrete	1	CY	$500.00	$500.00	50%	$250.00	50%	$250.00
20	2'x2' Catch Basin	1	EA	$1,500.00	$1,500.00	50%	$750.00	50%	$750.00
21	12" Gravity Storm Drain PVC	50	LF	$75.00	$3,750.00	60%	$2,250.00	40%	$1,500.00
22	12" X 12" Tee Storm Drain Connection	1	EA	$100.00	$100.00	60%	$60.00	40%	$40.00
23	12" X 12" Wye Storm Drain Connection	1	EA	$100.00	$100.00	60%	$60.00	40%	$40.00
24	Storm Drain Outlet Structure	1	EA	$3,000.00	$3,000.00	60%	$1,800.00	40%	$1,200.00
25	Rip Rap	2	CY	$450.00	$900.00	40%	$360.00	60%	$540.00
26	Electrical & Controls	1	LS	$45,000.00	$45,000.00	70%	$31,500.00	30%	$13,500.00
27	Conduit Wires and Trenching	1	LS	$13,000.00	$13,000.00	60%	$7,800.00	40%	$5,200.00
	SUBTOTAL				**$395,850.00**				
28	Bonds/Insurance	2%		SUBTOTAL	$7,917.00				
29	Overhead & Profit	10%		SUBTOTAL	$39,585.00				
30	Construction Contingency	20%		SUBTOTAL	$79,170.00				
	TOTAL				**$522,522.00**				

1 Based on Superior Tank quote 1/29/13. Assume about $40,000 for the foundation.
2 Based on Maggiora Brothers Drilling Inc. quote 1/29/13.

Michelle Trinh

From: Mike Ducker
Sent: Friday, January 25, 2013 9:54 AM
To: Michelle Trinh
Subject: FW: Bolted/Coated Potable Water Tank

Here is my second quote for a bolted steel tank. It is a little lower than the first that I am showing in the cost spreadsheet and it looks like it includes a base ring to hold the gravel bedding.

Michael Ducker
(916)364-1490
mducker@hydroscience.com

From: Charles Sybesma [mailto:AESales1@ae-as.com]
Sent: Friday, January 25, 2013 9:46 AM
To: Mike Ducker
Cc: Cesar Sanchez
Subject: Bolted/Coated Potable Water Tank

Michael Ducker
HydroScience Engineering
mducker@hydroscience.com
1-916-364-1490

RE: Budgetary Quote #1301-0459

Dear Michael,

Thank you for the opportunity to give your company a bid for a Bolted Liquid Storage Tank. As this is a preliminary budgetary bid, the actual cost could change either plus or minus by fifteen percent once all the details are specified. Below are the highlights of the tank being bid:

1) Description; 42 'D x16'H nominal sidewall height factory coated bolted carbon steel Potable Water storage tank designed in accordance with AWWA D103-09 Specifications, Embedded base setting ring, and Center supported 1:12 slope roof.
2) Coatings; Interior painted one coat of Trico Bond EP thermoset corrosion resistant powder epoxy (7 mils average, DFT). Exterior painted one coat of Trico Bond EP thermoset corrosion resistant powder epoxy with finish coat of Tan performance urethane (4.5 mils average, DFT).
3) Hardware; Galvanized bolts, nuts, washers and EPDM gasketing. Plastic encapsulated head bolts for interior, vertical, and roof seams.
4) Accessories; Mushroom vent with ½" mesh screen, 24" square roof manway with hinged cover, 30" x 46" flush cleanout with 2-piece cover, 6" 150# flat-faced single flanged nozzle for outlet, 6" 150# flat-faced single flanged nozzle for drain.

The quote for the above described tank including materials, labor, equipment, and per diem is: $92,632.10

Sincerely, Charles D. Sybesma, Territory Sales Manager, Accelerated Environmental Services, Inc.
1-661-699-4010 AESales1@ae-as.com

DRAFT
CSA 11 - Surface water transmission line construction cost estimate
February 5, 2013
HydroScience Engineers

Description	Unit	Quantity	Unit Cost	Subtotal
Mobilization	LS	1	$ 20,000.00	$ 20,000
Water Supply pipe, 4" HDPE SDR 21, 40' lengths w/ butt fusion joints, install labor and materials	LF	9610	$ 11.20	$ 107,632
Trenching & Excavation, chain trencher 12" wide x 36" deep	LF	9610	$ 0.95	$ 9,130
Backfill w/ vibratory plate compactor, 50% of excavation	LF	9610	$ 0.48	$ 4,565
4" elbows	EA	10	$ 63.00	$ 630
4" chech valves	EA	1	$ 803.00	$ 803
4" gate vavles	EA	4	$ 803.00	$ 3,212
Plant mix asphalt paving, replacement over trench, 4" thick asphalt, 24" wide x 100ft long, w/o hauling	SY	7.5	$ 46.00	$ 345
small job cost factor, additional 50%	SY	3.75	$ 46.00	$ 173
3/4" crushed stone base, compacted 3" deep, assume base is 24" x 6" x 100'	CY	3.7	$ 47.00	$ 174
small job cost factor, additional 50%	SY	1.85	$ 47.00	$ 87
Sawcut asphalt, 3"	LF	100	$ 47.00	$ 4,700
small job cost factor, additional 50%	SY	50	$ 47.00	$ 2,350
Subtotal				$ 146,663
Location Index, Sacramento, CA	%		8%	$ 11,733
Contingency	%		30%	$ 43,999
Total				**$ 202,394**

past, P	future, F	years, n	interest, i	Future Worth
2007	2013	6	0.03	**$ 241,670**

Est'd pipe cost $ 25.15 LF

Notes:
2007 RSMeans Cost Data
Assume no rock excavation, or blasting is required.

Draft
Power Cost Calculations
02/05/13
HydroScience Engineers

Groundwater Well
150 gpm
Depth to Static Water Level is 200 feet
Depth to Pumping water level 230 feet Total Dynamic Head TDH is **230 ft**

HP is gpm x TDH/3960/efficiency Efficiency assume combined 70%
Horsepower used is 12.44 or 9.3 KW
KWH used per one hour to pump 9,000 gallons or 0.03 Ac-ft

36.2 hours to pump one Ac-ft. Therefore, 336.7 KWH/Ac-ft
Assume average cost is $0.20/KWH Cost per AF is $67.33

Surface Water Source
200 gpm
Head loss through filters, etc 25 feet
Head loss in the pipeline approx 200 feet
Static lift approximately 200 feet
Total Dynamic Head is **425 feet**

HP is gpm x TDH/3960/efficiency Efficiency assume combined 70%
Horsepower used is 30.66 or 22.87 KW
KWH used per one hour to pump 12,000 gallons or .0368 Ac-ft

27.2 hours to pump one Ac-ft. Therefore, 622.06 KWH/Ac-ft
Assume average cost is $0.20/KWH Cost per AF is $124.41

Draft
Raw Water Pump Station Cost Estimate
02/05/13
HydroScience Engineers

Description	Unit	Quantity	Unit Cost	Subtotal
Mobilization	LS	1	$15,000	$15,000
Site Preparation	LS	1	$9,500	$9,500
Concrete Pump Slab, etc.	LS	1	$6,200	$6,200
Misc Mechanical, Control Valves, etc.	LS	1	$5,000	$5,000
2-25 HP pump station w/motor controls, etc	LS	1	$55,000	$52,000
Misc and Site electrical	LS	1	$10,000	$10,000
Subtotal				$97,700
Contigency			30%	$30,210
Total				$127,910

Notes:
Assumes Factory assembled Pump Station with Starter and Control Panel

Cost estimate for permitting of CSA 11 well installation, if no mitigation is required.

Labor		Hours	Standard rate/hour	Total
	Bio Report and CDP Application	50	$121.53	$6,076.50
	Initial Study/Neg Dec	50	$121.53	$6,076.50
	Meetings and Follow-up	8	$121.53	$972.24
	Management Review	10	$167.87	$1,678.70
				$14,803.94
Planning Fees				
	Fish and Game Filing Fee - IS/MND			$2,101.50
	SMC Planning Department - Coastal Development Permit	25	$75.00	$1,875.00
				$3,976.50
			Total	**$18,780.44**