

# American River Basin

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### Proposal Total Cost Estimate

This Proposition 84 Implementation Grant Proposal for the American River Basin (ARB) Integrated Regional Water Management (IRWM) Planning Region contains 15 projects. The total cost of the proposal is \$53,653,468. Of this amount, \$37,431,246 (~70%) is provided as non-state funding match and \$16,222,222 (~30%) is being requested from the State through the Proposition 84, Round 1 Implementation Grant Program. Table 1 displays the overall costs for this grant application. Detailed cost estimates for each of the fifteen projects contained in this Proposal follow. The specific work items shown in Attachments 3 and 5, the Work Plan and Schedule, are reflected in the detailed cost estimates.

**Table 1: Proposal Budget**

<b>Summary Budget</b>						
<b>American River Basin Integrated Regional Water Management Plan</b>						
<b>Individual Project Name</b>		<b>Non-State Share* (Funding Match)</b>	<b>Requested Grant Funding</b>	<b>Other State Funds Being Used</b>	<b>Total</b>	<b>% Funding Match</b>
<b>1</b>	City of Roseville ASR Program - Phase 2	\$2,437,513	\$2,000,000	\$0	\$4,437,513	55%
<b>2</b>	Secret Ravine Fish Passage Improvement Project	\$121,059	\$314,766	\$0	\$435,825	28%
<b>3</b>	E.A. Fairbairn Groundwater Well Project	\$578,454	\$1,000,000	\$0	\$1,578,454	37%
<b>4</b>	Shasta Park Reservoir and Well Project	\$12,609,693	\$1,000,000	\$0	\$13,609,693	93%
<b>5</b>	Antelope Creek Water Efficiency and Flood Control Improvement Project	\$533,227	\$1,134,000	\$0	\$1,667,227	32%
<b>6</b>	Regional Water Meter Retrofit Acceleration Project	\$44,785	\$924,000	\$0	\$968,785	5%
<b>7</b>	Regional Indoor and Outdoor Water Efficiency Project	\$0	\$1,000,000	\$0	\$1,000,000	0%
<b>8</b>	SRCSD / SPA Recycled Water Project	\$6,817,790	\$1,566,000	\$0	\$8,383,790	81%
<b>9</b>	North Antelope Booster Pump Station Project	\$653,412	\$265,000	\$0	\$918,412	71%
<b>10</b>	Coyle Avenue and Roseville Park Pumps Stations and Treatment Systems Project	\$4,235,537	\$1,500,000	\$0	\$5,735,537	74%
<b>11</b>	Willow Hill Pipeline Rehabilitation Project	\$5,727,799	\$1,950,000	\$0	\$7,677,799	75%
<b>12</b>	Lower American River Mile 0.5 Aquatic Riparian Habitat Enhancement Project	\$1,260,889	\$1,425,000	\$0	\$2,685,889	47%
<b>13</b>	Lower Cosumnes River Floodplain Restoration Project	\$692,314	\$420,000	\$0	\$1,112,314	62%
<b>14</b>	OHWD / Rancho Murieta Groundwater Recharge Project	\$970,390	\$1,498,456	\$0	\$2,468,846	39%
<b>15</b>	Sleepy Hollow Detention Basin Retrofit Project	\$748,384	\$225,000	\$0	\$973,384	77%
	<b>Grand Total</b>	<b>\$37,431,246</b>	<b>\$16,222,222</b>	<b>\$0</b>	<b>\$53,653,468</b>	<b>70%</b>

## Detailed Project Cost Estimates

The following sections detail the cost estimates for the fifteen projects included in this Proposal.

### Project 1: City of Roseville ASR Program – Phase 2

The City of Roseville's Aquifer Storage and Recovery (ASR) Program has been developed to improve the City's water supply reliability, to maintain groundwater as a sustainable resource, and to meet regional conjunctive use program goals. While water demands have been steadily increasing over time, the City of Roseville and the American River Basin IRWM Region have been affected by:

- Extended drought and wet periods
- An increased push to dedicate surface water for environmental purposes
- Declining groundwater levels
- On-going and potential impacts to surface water quality and groundwater quality

The ASR program is an element of a comprehensive, regional conjunctive use program being implemented in southern Placer County and northern Sacramento County. The regional conjunctive use program provides reliability for local water purveyors and opportunities to increase flows to the San Francisco Bay/Sacramento-San Joaquin Delta (Delta) system during dry periods through groundwater banking and surface water exchange. The City's ASR program consists of injecting available treated surface water supplies from the City's water treatment plant (WTP) into the North American Subbasin of the Sacramento Valley Groundwater Basin. Most injections would occur during fall, winter, and spring months when water is plentiful in Folsom Lake and system demands are lowest due to precipitation. Summer injection would occur only when water availability to the City exceeds customer demands. Groundwater extraction would occur when the City's surface water supplies are cut back in response to drought conditions or in emergency situations.

The objective of the ASR program, in context of the regional conjunctive use program referred to as the Regional Water Master Plan (RWMP), is developing equitable, cost-effective water resource management strategies for enhancing water supply reliability, and operational flexibility for water users of Folsom Lake, the lower American River, and the connected groundwater basin. The City's ASR program is to address the above challenges while improving groundwater supply reliability. The project objectives include:

- Maximizing the City's ability to fully utilize its surface water entitlements while improving the City's overall water supply reliability;
- Managing the groundwater aquifer as a sustainable resource to ensure groundwater availability in times of drought; and
- Meeting regional conjunctive use program goals as outlined in the City's General Plan, Water Forum Agreement, Western Placer County Groundwater Management Plan, and American River Basin IRWM Plan.

Implementation of the City of Roseville's ASR Program can be divided into multiple phases. Phase 1 has been implemented; the City has constructed four wells, all of which are equipped for both extraction and injection. Phase 2, for which funding is being requested, consists of completing above-ground improvements and installing well heads for two wells that have already been constructed. The Phase 2 portion of the ASR Program will include the design and construction of the above-ground infrastructure for the Hayden Parkway Well and West Park #1 Well.

A summary of the budget for Phase 2 of the City of Roseville's ASR Project is presented in Table 2. The budget is based on the on latest project documentation, as well as estimates for professional services. The total cost for this project is \$4,437,513. The funding match for this project is \$2,437,513 or 55%.

**Table 2: City of Roseville ASR Program – Phase 2 Budget**

<b>Project Budget</b>						
<b>Project Title: City of Roseville ASR Program – Phase 2</b>						
		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>	<b>(e)</b>
<b>Budget Category</b>		<b>Non-State Share* (Funding Match)</b>	<b>Requested Grant Funding</b>	<b>Other State Funds Being Used</b>	<b>Total</b>	<b>% Funding Match</b>
<b>(a)</b>	Direct Project Administration Costs	\$79,893	\$0	\$0	\$79,893	100%
<b>(b)</b>	Land Purchase/Easement	\$0	\$0	\$0	\$0	0%
<b>(c)</b>	Planning/Design/Engineering/ Environmental Documentation	\$257,862	\$134,000	\$0	\$391,862	66%
<b>(d)</b>	Construction/Implementation	\$1,544,750	\$1,544,750	\$0	\$3,089,500	50%
<b>(e)</b>	Environmental Compliance/ Mitigation/Enhancement	\$74,640	\$0	\$0	\$74,640	100%
<b>(f)</b>	Construction Administration	\$321,250	\$321,250	\$0	\$642,500	50%
<b>(g)</b>	Other Costs	\$4,643	\$0	\$0	\$4,643	100%
<b>(h)</b>	Construction/Implementation Contingency	\$154,475	\$0	\$0	\$154,475	100%
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$2,437,513</b>	<b>\$2,000,000</b>	<b>\$0</b>	<b>\$4,437,513</b>	<b>55%</b>

*\*List sources of funding: Local Contribution includes the City of Roseville's Water Construction Fund.*

### (a) Direct Project Administration Detail

Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and council communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report) and were estimated to be \$79,893. This estimate assumes that LCP costs were equal to 2% of construction labor costs (or \$33,550), and that all other project administration costs (communications, reporting, etc.) were equivalent to 1.5% of overall construction costs (or \$46,343). These estimates were based on past experience with implementation of a similar project funded under a Proposition 50 Implementation Grant, prior experience with Labor Compliance Program costs, and experience on other similar projects.

### (b) Land Purchase/Easement Detail

Land and rights-of-way acquisition are not required for the City of Roseville ASR Program – Phase 2; the City obtained the land in 2007 through annexation as part of the Specific Plan Process.

### (c) Planning/Design/Engineering/Environmental Documentation Detail

Direct project planning/design/engineering/documentation costs were estimated using hourly wage paid by discipline and the number of hours to be expended for planning/design/engineering/environmental documentation work items. Detail is provided in the following table; the total estimated costs for planning, design and engineering are \$391,862.

No further work is required for project assessment and evaluation. The project as proposed herein is a subsequent phase to an existing project that has already been implemented. As such, this project has been found to be technically feasible.

The planning, design, and engineering costs include the completion of a 10%, 30%, 90%, and 100% Design Package. The 10% design will be used to show the general layout and siting of the facilities, and the project objectives and any applicable constraints will be identified. For the 30% design, finer details on the types of above ground infrastructure will be included, as well as information on the two well heads that are to be installed. The 90% design will include all plans and specifications for the well heads and facilities, and detailed itemized costs. The 100% Design will be used to advertise the project for bid for construction and will consist of the complete and signed specifications.

The Draft Aquifer Storage and Recover EIR is scheduled to be completed in February of 2011, with the Final EIR scheduled for completion in May of 2011. The environmental documents are being prepared by City staff; costs associated with completing the EIR are not included as either a grant request or a funding match as the EIR is for the larger, overall ASR program and not just the two wells for which permit funding is being sought.

Permits for the project will consist primarily of a Waste Discharge Requirement (WDR) Permit from the Central Valley Regional Water Quality Control Board and a Public Water Supply Permit Amendment from the California Department of Public Health (CDPH). The WDR Permit will be obtained by April

2011 (prior to funding agreement execution) while the CDPH Permit will be obtained after the project has been constructed.

**Table 3: Planning/Design/Engineering/Environmental Documentation Detail**

Stage (i.e planning, Design*, etc.)	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
10% Design	Project Manager	\$180.00	450	\$81,000
30% Design	Project Manager	\$180.00	600	\$108,000
90% Design	Project Manager	\$180.00	600	\$108,000
100% Design	Project Manager	\$180.00	525	\$94,500
CDPH Permit Amendment	Project Manager	\$181.00	2	\$362
			<b>Total</b>	<b>\$391,862</b>

#### (d) Construction/Implementation Detail

This phase of the City of Roseville’s ASR Program is currently at the conceptual design level. This project is not significantly different than Phase 1 of the ASR Program, therefore, the total costs associated with Construction/Implementation were estimated based on recent requests for quotes and system experience from the Phase 1 project. The estimated construction cost for this Project is \$3,089,500. The breakdown of the estimate is shown in Tables 4, 5, and 6.

**Table 4: Cost of Materials for Construction**

Materials Used (units)	Unit Costs (\$)	Number of Units	Total (\$)
Well Pump	\$150,000	2	\$300,000
Baski Valve	\$85,000	2	\$170,000
Chem Metering Pumps	\$5,000	8	\$40,000
Piping (per well)	\$200,000	2	\$400,000
Structural Concrete (per well)	\$70,000	2	\$140,000
Eyewash, Cabinets, ID tags, fire extinguishers (per well)	\$15,000	2	\$30,000
Hypochlorite Tank (per well)	\$8,000	4	\$32,000
			<b>Total</b>
			<b>\$1,112,000</b>

**Table 5: Cost of Equipment for Construction**

Equipment Used (units)	Unit Cost (\$)	Number of Units	Total (\$)
Earthwork (per well)	\$50,000	2	\$100,000
Utilities (per well)	\$20,000	2	\$40,000
Paving (per well)	\$50,000	2	\$100,000
Sitework (per well)	\$30,000	2	\$60,000
<b>Total</b>			<b>\$300,000</b>

**Table 6: Labor Costs for Construction**

Discipline	Hourly Wage by discipline (\$)	Number of hours	Total (\$)
Bidding/ Contracting	\$175.00	500	\$87,500
Mobilization (per well)	\$50,000	2	\$100,000
Site Preparation (per well)	\$30,000	2	\$60,000
Electrical (per well)	\$250,000	2	\$500,000
Instrumentation (per well)	\$150,000	2	\$300,000
Building (per well)	\$300,000	2	\$600,000
Painting & Coating (per well)	\$15,000	2	\$30,000
<b>Total</b>			<b>\$1,677,500</b>

Work to be completed under this task includes preparing and publishing the Notice to Bidder, reviewing, selecting and awarding the bid, contracting, mobilization to the site, site construction, and performance testing and demobilization. See Attachment 3 – Work Plan for more details.

### (e) Environmental Compliance/ Mitigation/Enhancement Detail

As previously stated, the City of Roseville will be completing a Draft EIR for the ASR Program in February of 2011 with the Final EIR scheduled for completion in May of 2011. Environmental compliance, mitigation, and enhancement will be performed according to the mitigation measures documented in the adopted FEIR as part of this task. Monitoring for compliance with the General Stormwater NPDES Permit for construction will also be conducted as part of this task, in addition to implementation of the Project Performance Monitoring Plan. The total costs for Environmental Compliance, Mitigation and Enhancement are estimated to be \$74,640 based on the information presented in Table 7.

**Table 7: Labor Costs for Environmental Compliance/Mitigation/Enhancement**

Discipline	Hourly Wage by discipline (\$)	Number of hours	Total (\$)
Mitigation Compliance - Project Manager	\$180.00	80	\$14,400
Public Works Dept - Stormwater Inspector	\$120.00	214	\$25,680
Performance Monitoring	\$180.00	112	\$20,160
Performance Monitoring	\$90.00	160	\$14,640
<b>Total</b>			<b>\$74,640</b>

### (f) Construction Administration Detail

Construction Administration includes the costs incurred to administer and manage construction for the Project. Construction administration costs were based on the expected labor hours for the engineering construction management support and the construction inspector. The engineering construction management support includes an engineer who will be responsible for review construction submittals during the 14-month construction period. The construction inspector is a full-time, onsite inspector who will ensure that proper construction methods, techniques and safety procedures are followed. Total construction administration costs for the Roseville ASR Program were estimated to be \$642,500; a breakdown of this estimate is provided in Table 8, below.

**Table 8: Labor Costs for Construction Administration**

Discipline	Hours	Unit Cost (\$)	Total Costs (\$)
Engineering Construction Management Support	1100	\$175.00	\$192,500
Construction Inspector	3000	\$150.00	\$450,000
<b>Total</b>			<b>\$642,500</b>

### (g) Other Costs Detail

Other costs anticipated for the City of Roseville ASR Program – Phase 2 are participation in preparation of a program-wide Project Performance Monitoring Plan and permit fees. A single Project Performance Monitoring Plan will be prepared for the entire suite of projects included in the Prop 84 Implementation Grant Application; however, project specific monitoring criteria and schedule will be established and administered for each project. The costs shown here represent the estimated cost of preparing the associated section of the Project Performance Monitoring Plan for the City of Roseville’s ASR Project – Phase 2 and the DWR and CDPH permit fees.

**Table 9: Other Costs**

Item	Cost (\$)
Performance Monitoring Plan	\$525
Permit Fees	\$4,118
<b>Total</b>	<b>\$4,643</b>

### (h) Construction/Implementation Contingency Detail

A 5% construction/implementation contingency (or \$154,475) will be used for this project. This contingency level is slightly lower than what might otherwise be used for a project at a similar level of design; however, the construction cost estimates for this project were taken from Phase 1 of the ASR Program, which is similar to the proposed project. The City of Roseville is confident that their estimated construction costs will be close to the actual cost for the project, and therefore feel that a smaller contingency is justified.

### (i) Grand Total (Sum rows (a) through (h) for each column) Detail

The total estimated cost for Roseville ASR Program is \$4,437,513; of this, \$2,437,513 will be provided through a local funding match and \$2,000,000 is being requested from the Proposition 84 IRWM Implementation Grant Program.

### Calculation of Funding Match %

The funding match for Roseville ASR Program is \$2,437,513 or 55% of the total project cost. The source of the funding match for this project is the City of Roseville's Water Construction Fund.

## Project 2: Secret Ravine Fish Passage Improvement Project

The Secret Ravine Fish Passage Improvement Project, proposed by the City of Roseville (City), in conjunction with the Dry Creek Conservancy (DCC), will improve fish passage on Secret Ravine in western Placer County, California. Secret Ravine is a perennial stream that supports spawning, juvenile rearing and emigration of Central Valley fall run Chinook salmon (*Oncorhynchus tshawytscha*) and spawning, seasonal rearing and migration of Central Valley ESU steelhead (*Oncorhynchus mykiss*). An abandoned bridge and utility crossing on Secret Ravine presents a migration obstacle to all species of salmonids. The Secret Ravine Fish Passage Improvement Project proposes to remove the abandoned bridge and modify the channel bed to improve fish passage under all expected flow conditions.

Improved fish passage will be achieved by removing the bridge, abutments, concrete apron and abandoned utility pipes from the East Channel. Once these features are removed, the portion of the East Channel upstream of the bridge crossing will be lowered by approximately 1 to 3 feet below the current bed elevation to ensure that this channel becomes the dominant flow path and portions of the streambanks adjacent to the bridge abutments will be graded to improve floodplain function. Large woody debris

(LWD) structures will be placed in the channel to provide habitat and induce local scour. A log sill will be constructed at the upstream end of the West Channel to control grade and ensure that the East Channel is the favored flow path; at high flows both channels will be active. A series of LWD structures will be placed along the West Channel to provide backwater habitat and high flow refugia. These structures will provide the additional benefit of protecting the right bank from erosion. The West Channel Bridge will be removed, but the concrete abutment on the right bank will remain in place to reduce the potential for bank erosion along the base of the existing concrete block retaining wall located adjacent to the channel. The 16-inch steel pipe and concrete-encased pipe will remain in place to control grade in the West Channel. When complete, the East Channel is expected to accommodate passage for all species of salmonids at all flows; low flow migration barriers may remain in the West Channel.

In addition to the passage improvement, interpretive signage will be placed along a trail at the project site, explaining the life cycle of salmon and steelhead as well as signage explaining what residents and trail users can do to help improve habitat and water quality for wild life will be installed at the far end of the trail spur. Improvements made by this project will be available for public viewing via the trail and an overlook area.

A summary of the budget for the Secret Ravine Fish Passage Improvement Project is presented in Table 10. The budget is based on the latest Project documentation, primarily the 90% design, as well as estimates for professional services. The total cost for this project is \$435,825. The funding match for this project is \$121,059 or 28%.

**Table 10: Secret Ravine Fish Passage Improvement Project Budget**

Project Budget						
Project Title: Secret Ravine Fish Passage Improvement Project						
		(a)	(b)	(c)	(d)	(e)
Budget Category		Non-State Share* (Funding Match)	Requested Grant Funding	Other State Funds Being Used	Total	% Funding Match
(a)	Direct Project Administration Costs	\$18,513	\$4,000	\$0	\$22,513	82%
(b)	Land Purchase/Easement	\$0	\$0	\$0	\$0	0%
(c)	Planning/Design/Engineering/Environmental Documentation	\$36,008	\$35,500	\$0	\$71,508	50%
(d)	Construction/Implementation	\$32,913	\$220,249	\$0	\$253,162	13%
(e)	Environmental Compliance/ Mitigation/Enhancement	\$2,448	\$5,450	\$0	\$7,898	31%
(f)	Construction Administration	\$11,020	\$33,000	\$0	\$44,020	25%
(g)	Other Costs	\$4,983	\$6,425	\$0	\$11,408	44%
(h)	Construction/Implementation Contingency	\$15,174	\$10,142	\$0	\$25,316	60%
(i)	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$121,059</b>	<b>\$314,766</b>	<b>\$0</b>	<b>\$435,825</b>	<b>28%</b>

*\*List sources of funding: Dry Creek Conservancy funds, City of Roseville General Fund, In-kind Services*

### (a) Direct Project Administration Detail

Direct project administration costs include general project administration tasks (claim preparation, communications with RWA and between the City of Roseville and the Dry Creek Conservancy, and council communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report) and were estimated to be \$22,513. Direct project administration costs were calculated based on the expected level of effort of 121 hours by City of Roseville engineering staff at a rate of \$153/hour, to complete administration and reporting tasks under budget category (a). The City of Roseville does not currently have a Labor Compliance Program (LCP), so a certified third-part LCP consultant will be hired to complete LCP services.

**Table 11: Project Administration Detail**

Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Administration - Senior Engineer	\$153.00	105	\$16,065
Reporting – Senior Engineer	\$153.00	16	\$2,448
Labor Compliance Program			\$4,000
<b>Total</b>			<b>\$22,513</b>

### (b) Land Purchase/Easement Detail

Land for this project is already owned by the City of Roseville. It was deeded to the City through Development Agreements Fee Title and is part of the City’s open space. Therefore, no land purchase or easement acquisition costs are anticipated.

### (c) Planning/Design/Engineering/Environmental Documentation Detail

Direct project planning/design/engineering/environmental documentation costs were estimated using hourly wage paid by discipline and the number of hours to be expended for planning, design, engineering, and environmental documentation work items, as well as the costs incurred for conceptual design through 90% design. The total for Budget category (c) is \$71,508. Detail is provided in Tables 12 and 13.

The 90% design was completed February 2009 by a consultant for a total of \$27,500; these services were paid for by the Dry Creek Conservancy (DCC). DCC also oversaw the preparation of the Biological Assessment and permitting, spending 60 hours at a rate of \$50. This work was completed prior to June 1, 2011 and will be used toward the funding match, as well as the \$27,500 for the preparation of the 90% design.

Several permits will be required for the Fish Passage Improvement Project. A California Department of Fish and Game section 1602 Streambed Alteration Agreement and a U.S. Army Corps of Engineers Section 404 permit has already been obtained. A Central Valley Regional Water Quality Control Board (CVRWQCB) Section 401 permit has been tentatively granted contingent upon sending the Corps of Engineers Section 404 permit to CVRWQCB. This will be completed prior to construction. In addition, a City of Roseville Grading Permit and a City of Roseville Flood Encroachment Permit will be obtained

prior to project construction. Labor costs associated with obtaining these permits are included in the costs shown below; permit fees are included in Section (g) Other Costs.

**Table 12: Planning/Design/Engineering/Environmental Documentation Detail**

Stage	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Permitting	Senior Engineer	\$153.00	36	\$5,508
Permitting & Design	Watershed Coordinator	\$50.00	200	\$10,000
Environmental Documentation - Biological Assessment	Watershed Coordinator	\$50.00	60	\$3,000
100% Design	Consultant			\$25,500
<b>Total</b>				<b>\$44,008</b>

**Table 13: Planning/Design/Engineering Costs through 90% Design Level**

Stage	Other Direct Charge	Total
Up to 90% Design	Consultant expenses	\$27,500
<b>Total</b>		<b>\$27,500</b>

### (d) Construction/Implementation Detail

The total cost for Construction/Implementation for this Project is \$253,161. The basis of the estimate is shown in Tables 14, 15 and 16. For items quoted as lump sum; the unit costs shown below include the costs for labor, materials and equipment.

**Table 14: Cost of Materials for Construction**

Materials Used (units)	Unit Costs (\$)	Number of Units	Total (\$)
Mobilization and Demobilization (each)	\$20,000	Lump Sum	\$20,000
Disposal of waste concrete (each)	\$4,600	Lump Sum	\$4,600
Clearing/ Grubbing (each)	\$20,000	Lump Sum	\$20,000
Dewatering/ Diversion (each)	\$30,000	Lump Sum	\$30,000
Stream Substrate (cubic yard)	\$30.00	60	\$1,800
Stripping/ excavation of stream (each)	\$5,000	Lump Sum	\$5,000
Logs (each)	\$2,000.00	12	\$24,000
Boulders (each)	\$350.00	30	\$10,500
Planting Material (each)	\$5,000	Lump Sum	\$5,000
Connections (each)	\$200.00	36	\$7,200
Interpretive Sign Fabrication (each)	\$3,000.00	6	\$18,000
Prop 84 signage (each)	\$1,500.00	2	\$3,000
<b>Total</b>			<b>\$149,100</b>

**Table 15: Cost of Equipment for Construction**

Equipment Used (units)	Unit Costs (\$)	Number of Units	Total (\$)
City barrier removal (excavator, two dump trucks, backhoe)	\$13,297	Lump Sum	\$13,297
<b>Total</b>			<b>\$13,297</b>

**Table 16: Labor Costs for Construction**

Discipline	Hourly Wage by discipline (\$)	Number of hours	Total (\$)
City barrier removal	\$15,189	Lump Sum	\$15,189
City access path clearing	\$1,800	Lump Sum	\$1,800
Place logs	12 logs @ 250 each		\$3,000
Install log sill	2 logs @ \$2,250 each		\$4,500
Install connections	2 connections @\$200 each		\$400.00
Planting - City Tree Trimmer	\$69.92	214	\$14,963
Irrigation/ maintenance - City Park Maintenance Worker I	\$15.83	750	\$11,873
Installation of trail spur	\$36,000	Lump Sum	\$36,000
Interpretive Sign Design	\$76.00	40	\$3,040
<b>Total</b>			<b>\$90,765</b>

**(e) Environmental Compliance/ Mitigation/Enhancement Detail**

Environmental Compliance, Mitigation and Enhancement costs for the Secret Ravine Fish Passage Improvement Project have been calculated as \$7,898 based on the materials and labor costs included in Table 17 and Table 18. The City of Roseville was granted a Notice of Exemption for CEQA; the primary environmental mitigation action required is restoration of the stream bed and re-vegetation of the stream banks. These costs have been included under Construction/Implementation costs. The costs associated with compliance with the Stormwater Pollution Prevention Plan are shown below in Table 17; these costs are lump sum and include materials, equipment and labor costs. Costs for implementing the approved Project Performance Monitoring Plan are also included below and are estimated to be \$2,448 based on the information presented in Table 18.

**Table 17: Cost of Materials for Environmental Compliance/Mitigation/Enhancement**

Materials Used (Units)	Unit Costs (\$)	Number of Units	Total (\$)
Slope protection fabric (yds)	\$10.00	385	\$3,850
Coir roll (ft)	\$8.00	200	\$1,600
<b>Total</b>			<b>\$5,450</b>

**Table 18: Labor Costs for Implementing Project Performance Monitoring Plan**

Discipline	Hourly Wage by discipline (\$)	Number of hours	Total (\$)
Project Performance Monitoring	\$153.00	16	\$2,448

### (f) Construction Administration Detail

Construction Administration includes the costs incurred to administer and manage construction for the Project. Total construction administration costs for the Secret Ravine Fish Passage Improvement Project were estimated to be \$44,020; a breakdown of this estimate is provided in Table 19, below. This estimate is based on an estimate of staffing costs for Dry Creek Conservancy, the City of Roseville’s estimate for overseeing field operations, and a lump sum billing estimate by a construction management consultant.

**Table 19: Cost of Construction Administration**

Discipline	Hours	Unit Cost (\$)	Total (\$)
Dry Creek Conservancy Staff	260	\$50.00	\$13,000
Construction Management Consultant	Lump Sum	\$20,000	\$20,000
City of Roseville Eng Tech	145	\$76.00	\$11,020
<b>Total</b>			<b>\$44,020</b>

### (g) Other Costs Detail

Other costs anticipated for the Secret Ravine Fish Passage Improvement Project include participation in preparation of a program-wide Project Performance Monitoring Plan, field inspection of structural stability, channel morphology and instream habitat, and Dry Creek Conservancy’s general liability policy insurance premium. A single Project Performance Monitoring Plan will be prepared for the entire suite of projects included in the Proposition 84 Implementation Grant Application; however, project specific monitoring criteria and schedule will be established and administered for each project.

**Table 20: Other Costs**

Item	Cost (\$)
Field inspection-structure stability, channel morphology, and instream habitat	\$4,800
Dry Creek Conservancy insurance	\$1,100
Project Performance Monitoring Plan	\$525
DFG Section 1602 Streambed Alteration Permit	\$4,482
RWQCB Section 401 Permit	\$500
<b>Total</b>	<b>\$11,407</b>

### (h) Construction/Implementation Contingency Detail

The construction/implementation contingency percentage applied to this project is 10% of the construction/implementation costs. The contingency is based on DCC's prior experience with similar projects and engineering practice for this stage of design. The contingency cost equals \$25,316 and includes funds to handle unknown and unspecified conditions encountered during construction or implementation of the project.

### (i) Grand Total (Sum rows (a) through (h) for each column) Detail

The total estimated cost for Secret Ravine Fish Passage Improvement Project is \$435,824; \$121,059 is provided through funding match, including sunk costs incurred by DCC, City of Roseville in-kind services, and City of Roseville General Fund. The remaining \$314,766 is being requested from the Proposition 84 IRWM grant program.

### Calculation of Funding Match %

The funding match for Secret Ravine Fish Passage Improvement Project is \$121,059 or 28% of the total project costs. The source of funding match includes a National Fish and Wildlife grant, City of Roseville General Funds and in-kind services.

## Project 3: E.A. Fairbairn Groundwater Well Project

The E.A. Fairbairn Groundwater Well Project consists of constructing a 2 million gallon per day (mgd) groundwater well and ancillary wellhead facilities (e.g. piping) to be located at the E.A. Fairbairn Water Treatment Plant site. The project site is currently owned by the City of Sacramento, and the Project will be owned, operated and maintained by the City of Sacramento Department of Utilities. The well will produce up to 2,250 acre-feet per year (AFY) to meet current and future demands.

A summary of the budget for the E.A. Fairbairn Groundwater Well Project is presented in Table 21. The budget is based on the latest project documentation and estimates for professional services. The total cost for this project is \$1,578,454. The funding match for this project is \$578,454, or 37%.

**Table 21: E.A. Fairbairn Groundwater Well Project Budget**

Project Budget						
Project Title: E.A. Fairbairn Groundwater Well Project						
		(a)	(b)	(c)	(d)	(e)
Budget Category		Non-State Share* (Funding Match)	Requested Grant Funding	Other State Funds Being Used	Total	% Funding Match
(a)	Direct Project Administration Costs	\$9,760	\$0	\$0	\$9,760	100%
(b)	Land Purchase/Easement	\$0	\$0	\$0	\$0	0%
(c)	Planning/Design/Engineering/ Environmental Documentation	\$276,000	\$0	\$0	\$276,000	100%
(d)	Construction/Implementation	\$0	\$1,000,000	\$0	\$1,000,000	0%
(e)	Environmental Compliance/ Mitigation/Enhancement	\$10,000	\$0	\$0	\$10,000	100%
(f)	Construction Administration	\$81,000	\$0	\$0	\$81,000	100%
(g)	Other Costs	\$1,694	\$0	\$0	\$1,694	100%
(h)	Construction/Implementation Contingency	\$200,000	\$0	\$0	\$200,000	100%
(i)	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$578,454</b>	<b>\$1,000,000</b>	<b>\$0</b>	<b>\$1,578,454</b>	<b>37%</b>

**\*List sources of funding:** *Development fees and in-kind services*

**(a) Direct Project Administration Detail**

Direct project administration costs were calculated based on expected level of effort by involved staff and costs. Table 22 details the hourly wages paid by discipline and the number of hours to be expended for project administration. Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and council communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report).

**Table 22: E.A. Fairbairn Groundwater Well Project Administration Hourly Detail**

Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Labor Compliance - Administrator	\$100.00	24	\$2,400
Quarterly Reports - Project Manager	\$140.00	16	\$2,240
Quarterly Reports - Administrator	\$100.00	32	\$3,200
Final Reporting - Project Manager	\$140.00	8	\$1,120
Final Reporting - Administrator	\$100.00	8	\$800
<b>Total</b>			<b>\$9,760</b>

**(b) Land Purchase/Easement Detail**

Project construction will be at the site of the E.A. Fairbairn Water Treatment Plant. This property is already owned by the City of Sacramento and therefore, there is no associated cost for land purchase or easements.

**(c) Planning/Design/Engineering/Environmental Documentation Detail**

No environmental or design work has been completed to date. Project planning, design, engineering, and environmental documentation costs were estimated using hourly wage paid by discipline and the number of hours to be expended for each associated work item. City staff, in conjunction with consultants, will complete design and environmental documentation as shown in Table 23. No planning documents are necessary for this project. The City will complete 30%, 60% and 100% (final) design. In addition, a Mitigated Negative Declaration will be prepared for CEQA compliance. Prior to construction, the City will acquire an NPDES General Stormwater Permit and a Sacramento County Well Construction Permit; the permit fees are included under Budget Category (g) Other Costs.

**Table 23: Planning/Design/Engineering/Environmental Documentation Detail**

Stage	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Pre-design	Project Manager	\$140.00	171	\$24,000
Surveying	Associate Engineer	\$100.00	120	\$12,000
Geotech Consultant	Geotechnical Engineer	\$190.00	253	\$48,000
Potholes	Associate Engineer	\$100.00	60	\$6,000
Drafting	Associate Engineer	\$100.00	240	\$24,000
30% Design	Project Manager	\$140.00	86	\$12,000
60% Design	Project Manager	\$140.00	86	\$12,000
Final Design	Project Manager	\$140.00	86	\$12,000
30% through Final Design	Design Engineer (Consultants)	\$190.00	442	\$84,000
Contract Admin	Administrator	\$100.00	60	\$6,000
Environmental Documentation - MND	Environmental Planning	\$125.00	288	\$36,000
<b>Total</b>				<b>\$276,000</b>

#### (d) Construction/Implementation Detail

The total cost for Construction/Implementation for this Project is \$1,000,000. The basis of the estimate is shown in Tables 24 and 25. The cost for equipment includes the associated labor for each line item shown.

**Table 24: Cost of Construction Materials**

Materials Used (units)	Unit Costs (\$)	Number of Units	Total (\$)
Well Casing and Packing Materials	\$215,000.00	1	\$215,000
Pump & Motor	\$145,000.00	1	\$145,000
Water Metering Equip.	\$10,000.00	1	\$10,000
Chem Metering Pumps	\$5,000.00	2	\$10,000
Piping	\$150.00	300	\$45,000
Control Building	\$40,000.00	1	\$40,000
Pressure Tank	\$70,000.00	1	\$70,000
Electrical	\$100,000.00	1	\$100,000
Miscellaneous: Eyewash, Cabinets, ID tags, fire extinguishers	\$15,000.00	1	\$15,000
CI & FI Chem Systems	\$45,000.00	1	\$45,000
Concrete & AC	\$50,000.00	1	\$50,000
<b>Total</b>			<b>\$745,000</b>

**Table 25: Cost of Construction Equipment and Labor**

Equipment Used (units)	Costs (\$)	Number of Units	Total (\$)
Earthwork	\$50,000.00	1	\$50,000
Utilities	\$35,000.00	1	\$35,000
Paving	\$50,000.00	1	\$50,000
Sitework	\$30,000.00	1	\$30,000
Well Boring	\$90,000.00	1	\$90,000
<b>Total</b>			<b>\$255,000</b>

### (e) Environmental Compliance/ Mitigation/Enhancement Detail

Environmental Compliance, Mitigation and Enhancement costs for the E.A. Fairbairn Groundwater Well Project have been calculated as \$10,000. This cost is for the implementation of the approved Project Performance Monitoring Plan for a total of 80 hours during project construction at an hourly rate of \$125. No additional mitigation measures are anticipated beyond standard construction practices. This assumption is based on previous experience with well construction at sites such as the one proposed. Additionally, monitoring for compliance with the General Stormwater NPDES Permit for construction will be conducted by the construction contractor; therefore costs associated with this monitoring and reporting are included in the lump-sum construction costs.

It should be noted that, while the schedule for this project shows that project performance monitoring and reporting will cease at the completion of project construction, it is understood the project performance monitoring will continue for 10 years following project completion, with annual project performance reporting.

**Table 26: Labor Costs for Environmental Compliance/Mitigation/Enhancement**

Discipline	Hourly Wage by discipline (\$)	Number of hours	Total (\$)
Performance Monitoring	\$125.00	80	\$10,000
<b>Total</b>			<b>\$10,000</b>

### (f) Construction Administration Detail

Construction Administration represents the costs incurred to administer and manage construction for the Project. The construction administration costs are assumed to be approximately 6.75% of the total construction costs or \$81,000. This assumption is based on prior experience with similar projects.

### (g) Other Costs Detail

Other costs associated with the E.A. Fairbairn Groundwater Well Project include permit fees as shown in the following table, and costs associated with participation in preparation of a program-wide Project Performance Monitoring Plan.

A single Project Performance Monitoring Plan will be prepared for the entire suite of projects included in the Prop 84 Implementation Grant Application; however, project specific monitoring criteria and schedule will be established and administered for each project. The costs shown here represent the estimated cost of preparing the associated section of the Project Performance Monitoring Plan for the City of Sacramento’s E.A. Fairbairn Groundwater Well Project and permit fees for the project.

**Table 27: Other Costs**

Item	Cost (\$)
County of Sacramento Well Drillers Permit	\$852
Stormwater NPDES Permit Amendment	\$317
Project Performance Plan Preparation	\$525
<b>Total</b>	<b>\$1,694</b>

### (h) Construction/Implementation Contingency Detail

The construction/implementation contingency percentage applied to this project is 20% of the construction expenses or \$200,000. The contingency is based on other similar projects and professional experience, in addition to the current design status of the project. As the project design continues, the

contingency will be adjusted. These costs include funds to handle unknown and unspecified conditions encountered during construction or implementation of the project.

### (i) Grand Total (Sum rows (a) through (h) for each column) Detail

The total estimated cost for the E.A. Fairbairn Groundwater Well Project is \$1,578,454; \$578,454 is provided through funding match and \$1,000,000 is being requested from the Proposition 84 IRWM grant program.

### Calculation of Funding Match %

The funding match for the E.A. Fairbairn Groundwater Well Project is \$578,454 or 37% of the total project costs.

## Project 4: Shasta Park Reservoir and Well Project

In October of 2005, the City of Sacramento prepared a *Water Distribution System Master Plan* (West Yost & Associates, 2005) which identified additional customer demands due to significant projected growth in the area. The additional growth and associated projected demand is the driving force for additional groundwater wells to supplement the city's existing surface water and groundwater supplies. The Shasta Park Reservoir and Well Project consists of a 2 million gallon per day (mgd) groundwater well, a 4 million gallon (MG) reservoir, a booster pump station and ancillary support facilities. Once operational, the project will be capable of supplying 2,250 acre-feet per year (AFY) in dry years, 1,462 AFY in average years, and 337 AFY in wet years.

In addition to increasing and diversifying the City of Sacramento's water supplies, the Shasta Park Reservoir and Well Project addresses the need for additional water storage in the southeast portion of Sacramento, which includes disadvantaged communities. The implementation of a new reservoir at this location will help maintain service pressure through peak demand periods and provide additional emergency and fire suppression water supply.

A summary of the budget for the Shasta Park Reservoir and Well Project is presented in Table 28. The budget is based on the latest project documentation and estimates for professional services. The total cost for this project is \$13,609,693. The funding match for this project is \$12,609,693, or 93%.

**Table 28: Shasta Park Reservoir and Well Project Budget**

Project Budget						
Project Title: Shasta Park Reservoir and Well						
Budget Category		(a)	(b)	(c)	(d)	(e)
		Non-State Share* (Funding Match)	Requested Grant Funding	Other State Funds Being Used	Total	% Funding Match
(a)	Direct Project Administration Costs	\$20,320	\$0	\$0	\$20,320	100%
(b)	Land Purchase/Easement	\$350,000	\$0	\$0	\$350,000	100%
(c)	Planning/Design/Engineering/ Environmental Documentation	\$1,068,850	\$0	\$0	\$1,068,850	100%
(d)	Construction/Implementation	\$8,582,500	\$1,000,000	\$0	\$9,582,500	90%
(e)	Environmental Compliance/ Mitigation/Enhancement	\$90,000	\$0	\$0	\$90,000	100%
(f)	Construction Administration	\$578,800	\$0	\$0	\$578,800	100%
(g)	Other Costs	\$2,723	\$0	\$0	\$2,723	100%
(h)	Construction/Implementation Contingency	\$1,916,500	\$0	\$0	\$1,916,500	100%
(i)	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$12,609,693</b>	<b>\$1,000,000</b>	<b>\$0</b>	<b>\$13,609,693</b>	<b>93%</b>

\*List sources of funding: *Development Fees and In-kind Services*

### (a) Direct Project Administration Detail

Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and board communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report), and were estimated to be \$20,320. Table 29 details the hourly wages paid by discipline and the number of hours to be expended for project administration. Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and council communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report); project administration costs (communications, reporting, etc.) were estimated based on expected level of effort by involved staff and costs for equipment and supplies.

**Table 29: Project Administration Hourly Detail**

Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Labor Compliance - Administrator	\$100.00	48	\$4,800
Quarterly Reports - Project Manager	\$140.00	40	\$5,600
Quarterly Reports - Administrator	\$100.00	80	\$8,000
Final Reporting - Project Manager	\$140.00	8	\$1,120
Final Reporting - Administrator	\$100.00	8	\$800
<b>Total</b>			<b>\$20,320</b>

### (b) Land Purchase/Easement Detail

The proposed location for this project is not currently owned by the City. The City’s Real Estate Division is currently waiting for the completion of environmental documentation before appraising the proposed property. The City has however already begun informal discussions with Sacramento Housing and Redevelopment Agency, the owner of the parcel, regarding the sale of the property. The estimated cost for the property is \$350,000 and is based on the asking price of surrounding properties.

### (c) Planning/Design/Engineering/Environmental Documentation Detail

All planning work for the Shasta Park Reservoir and Well Project will be completed before June 2011. As neither grant funds nor local match is being sought for the planning tasks, the planning costs are no included in the project budget.

No environmental or design work (beyond conceptual design) has been completed to date. Design, engineering, and environmental documentation costs were estimated using hourly wage paid by discipline and the number of hours to be expended for each associated work item. City staff, in conjunction with consultants, will complete design and environmental documentation as shown in Table 30. The City will complete 30%, 60% and 100% (final) design. In addition, a Mitigated Negative Declaration will be prepared for CEQA compliance.

American River Basin  
Attachment 4 – Budget

Prior to construction, the City will acquire an NPDES General Stormwater Permit, Sacramento County Well Construction Permit and a Sacramento County General Environmental Permit; the costs shown in Table 30 include the labor costs associated with obtaining these permits. Permit fees are included in Other Costs (Budget Category (g), below).

**Table 30: Planning/Design/Engineering/Environmental Documentation Detail**

Stage	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Pre-Design	Project Engineer	\$120.00	720	\$86,400
Pre-Design	Project Manager	\$140.00	410	\$57,400
Surveying	Associate Engineer	\$100.00	865	\$86,500
Geotech Consultant	Geotechnical Engineer	\$190.00	610	\$115,900
Potholes	Associate Engineer	\$100.00	230	\$23,000
Drafting	Associate Engineer	\$100.00	1160	\$116,000
30% Design	Project Manager	\$140.00	500	\$70,000
60% Design	Project Manager	\$140.00	440	\$61,600
Final Design	Project Manager	\$140.00	300	\$42,000
30% through Final Design	Design Engineer (Consultants)	\$190.00	1520	\$288,800
Contract Admin	Administrator	\$100.00	230	\$23,000
Property Admin	Administrator	\$100.00	695	\$69,500
Environmental Documentation -MND	Environmental Planner	\$125.00	230	\$28,750
<b>Total</b>				<b>\$1,068,850</b>

**(d) Construction/Implementation Detail**

The total cost for Construction/Implementation for this Project is \$9,582,500. The basis of the estimate is shown in Tables 31 and 32. The cost for equipment includes the associated labor for each line item shown.

**Table 31: Cost of Construction Materials**

Materials Used (units)	Unit Costs (\$)	Number of Units	Total (\$)
Well Casing and Packing Materials (LF)	\$625.00	350	\$218,750
Well Pump & Motors (each)	\$145,000.00	1	\$145,000
Chem Metering Pumps (each)	\$5,000.00	2	\$10,000
Distribution Piping (LF)	\$150.00	300	\$45,000
Control & Pump Building (each)	\$575,000.00	1	\$575,000
Pressure Tank (each)	\$70,000.00	1	\$70,000
Miscellaneous: Eyewash, Cabinets, ID tags, fire extinguishers (LS)	\$45,000.00	1	\$45,000
Cl & Fl Chem Systems (LS)	\$45,000.00	1	\$45,000
Concrete & AC (LS)	\$95,000.00	1	\$95,000
Electrical (LS)	\$300,000.00	1	\$300,000
Meter Vault and Meters (EA)	\$40,000.00	2	\$80,000
8" Exterior CMU Wall (LF)	\$350.00	1100	\$385,000
Reservoir Booster Pumps & Motors (each)	\$110,000.00	4	\$440,000
Drainage Piping (LF)	\$150.00	850	\$127,500
Landscaping (LS)	\$45,000.00	1	\$45,000
Concrete Reservoir (each)	\$6,662,500.00	1	\$6,662,500
Transmission Piping (LF)	\$450.00	850	\$382,500
<b>Total</b>			<b>\$8,422,500</b>

**Table 32: Cost of Construction Equipment and Labor**

Equipment Used (units)	Costs (\$)	Number of Units	Total (\$)
Earthwork (each)	\$350,000	1	\$350,000
Utilities (each)	\$95,000	1	\$95,000
Paving (each)	\$200,000	1	\$200,000
Sitework (each)	\$175,000	1	\$175,000
Tank Wire Wrapping (each)	\$250,000	1	\$250,000
Well Boring (each)	\$90,000	1	\$90,000
<b>Total</b>			<b>\$1,160,000</b>

### (e) Environmental Compliance/ Mitigation/Enhancement Detail

Environmental Compliance, Mitigation and Enhancement costs for the Shasta Park Reservoir and Well Project have been calculated as \$90,000. The cost as summarized in Table 33. This cost is for the implementation of the approved Project Performance Monitoring Plan for a total of 80 hours during project construction at an hourly rate of \$125. Additional costs are those associated with mitigation measures that are expected to be identified in the Mitigated Negative Declaration. Current environmental documents suggest that land will need to be mitigated on a 1:1 basis and the estimated cost for 2 acres of Swainson’s Hawk land is \$80,000. This assumption is based on previous experience with well construction at similar sites. Additional mitigation activities such as monitoring for compliance with the General Stormwater NPDES Permit for construction, dust suppression and noise mitigation will be conducted by the construction contractor; therefore costs associated with this monitoring and reporting are included in the lump-sum construction costs.

**Table 33: Costs for Environmental Compliance/Mitigation/Enhancement**

Discipline	Hourly Wage by discipline (\$)	Number of hours	Total (\$)
Performance Monitoring	\$125.00	80	\$10,000
Swainson’s Hawk Land	Lump Sum		\$80,000
<b>Total</b>			<b>\$90,000</b>

### (f) Construction Administration Detail

Construction Administration represents the costs incurred to administer and manage construction for the Project. The construction administration costs are based on hourly rates by each discipline as seen in Table 34. Total construction administration costs for the Shasta Park Reservoir and Well Project were estimated to be \$578,800.

**Table 34: Construction Administration Costs**

Discipline	Hours	Unit Cost (\$)	Total (\$)
Project Engineer	965	\$120.00	\$115,800
Associate Engineer	1740	\$100.00	\$174,000
Inspector	1580	\$110.00	\$173,800
Construction Administrator	580	\$100.00	\$58,000
Construction Consultant	180	\$190.00	\$34,200
Clerical Costs (Blueprints, etc)	Lump Sum		\$23,000
<b>Total</b>			<b>\$578,800</b>

### (g) Other Costs Detail

Other costs associated with the Shasta Park Reservoir and Well Project include permit fees and costs associated with participation in preparation of a program-wide Project Performance Monitoring Plan (Table 35). A single Project Performance Monitoring Plan will be prepared for the entire suite of projects

included in the Proposition 84 Implementation Grant Application; however, project specific monitoring criteria and schedule will be established and administered for each project. The costs shown here represent the estimated cost of preparing the associated section of the Project Performance Monitoring Plan for the City of Sacramento’s Shasta Park Reservoir and Well Project and permit fees for the project.

**Table 35: Construction Administration Costs**

Item	Cost (\$)
NPDES General Stormwater Permit	\$346
Well Construction Permit Fee	\$852
Sacramento County General Environmental Permit	\$1,000
Project Performance Monitoring Plan	\$525
<b>Total</b>	<b>\$2,723</b>

### (h) Construction/Implementation Contingency Detail

The construction/implementation contingency percentage applied to this project is 20% of the construction expenses, or \$1,916,500. The contingency is based on other similar projects and professional experience, in addition to the current design status of the project. As the project design continues, the contingency will be adjusted. These costs include funds to handle unknown and unspecified conditions encountered during construction or implementation of the project.

### (i) Grand Total (Sum rows (a) through (h) for each column) Detail

The total estimated cost for the Shasta Park Reservoir and Well Project is \$13,609,693; \$12,609,693 is provided through funding match and \$1,000,000 is being requested from the Proposition 84 IRWM grant program.

### Calculation of Funding Match %

The funding match for the Shasta Park Reservoir and Well Project is \$12,609,693 or 93% of the total project costs. The funding match is from developmental fees and in-kind services.

## Project 5: Antelope Creek Water Efficiency and Flood Control Improvement Project

The Antelope Creek Water Efficiency and Flood Control Improvement Project is being proposed through collaboration between the Placer County Water Agency (PCWA) and the Placer County Flood Control and Water Conservation District (District). This is a multi-objective water efficiency and regional flood control improvement project proposed within the Dry Creek Watershed area of the American River Basin. The project will meet multiple planning objectives by improving water supply and water quality, increasing flood protection, restoring local ecosystems and expanding an existing public recreation corridor.

This project is proposed in two phases. The first phase consists of the design and construction of concrete gunite lining and erosion control measures along PCWA's Antelope Canal, combined with the design and construction of the first (in a series of two) on-channel flood control weirs along Antelope Creek in the vicinity of Atlantic Street in Roseville. The second phase includes the gunite lining and installation of erosion control measures along PCWA's Caperton Canal, combined with the design and construction of the second upstream flood control weir on Antelope Creek in the vicinity of the Roseville Parkway crossing. Only the first phase, the work on Antelope Creek, is proposed to be funded by the Proposition 84 Implementation Grant Program.

A summary of the budget for the Antelope Creek Water Efficiency and Flood Control Improvement Project is presented in Table 36. The budget is based on the latest project documentation and estimates for professional services. The total cost for this phase 1 project is \$1,667,227. The funding match for this project is \$533,227 or 32%.

**Table 36: Antelope Creek Water Efficiency and Flood Control Improvement Project**

<b>Project Budget</b>						
<b>Project Title: Antelope Creek Water Efficiency and Flood Control Improvement Project</b>						
<b>Budget Category</b>		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>	<b>(e)</b>
		<b>Non-State Share* (Funding Match)</b>	<b>Requested Grant Funding</b>	<b>Other State Funds Being Used</b>	<b>Total</b>	<b>% Funding Match</b>
<b>(a)</b>	Direct Project Administration Costs	\$81,542	\$0	\$0	\$81,542	100%
<b>(b)</b>	Land Purchase/Easement	\$0	\$0	\$0	\$0	0%
<b>(c)</b>	Planning/Design/Engineering/ Environmental Documentation	\$150,000	\$60,290	\$0	\$210,290	71%
<b>(d)</b>	Construction/Implementation	\$37,817	\$894,590	\$0	\$932,407	4%
<b>(e)</b>	Environmental Compliance/ Mitigation/Enhancement	\$177,215	\$0	\$0	\$177,215	100%
<b>(f)</b>	Construction Administration	\$80,000	\$41,138	\$0	\$121,138	66%
<b>(g)</b>	Other Costs	\$6,653	\$1,872	\$0	\$8,525	78%
<b>(h)</b>	Construction/Implementation Contingency	\$0	\$136,110	\$0	\$136,110	0%
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$533,227</b>	<b>\$1,134,000</b>	<b>\$0</b>	<b>\$1,667,227</b>	<b>32%</b>

*\*List sources of funding: Funding match will consist of in-kind services and local funding from the Dry Creek Trust Fund*

### (a) Direct Project Administration Detail

Direct project administration costs for the Phase 1 project were calculated based on expected level of effort by involved staff and costs. Table 37 details the hourly wages paid by discipline and the number of hours to be expended for project administration. Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and council communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report). An additional \$2,519 is included to account for miscellaneous supplies and copying, which results in a total project administration cost of \$81,542.

**Table 37: Administration Detail**

Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Admin	\$115.00	445	\$51,175
Reporting	\$115.00	80	\$9,200
Labor Compliance Program			\$18,648
Miscellaneous Supplies			\$2,2518
		<b>Total</b>	<b>\$81,542</b>

### (b) Land Purchase/Easement Detail

The easement from the City of Roseville to the District for the flood control project is anticipated to be a zero cost easement. Other required easements (e.g. from private land owners) are also expected to be zero costs easements; therefore no land purchase or easement cost details are included for this project and no grant funding is requested for land purchases or easements.

### (c) Planning/Design/Engineering/Environmental Documentation Detail

Direct project planning/design/engineering/environmental documentation costs were estimated using hourly wage paid by discipline and the number of hours to be expended for planning, design, engineering, environmental documentation work items. This budget item includes a 30% Design, 60% Design, 90% (pre-final) Design, 100% (final) Design and a Mitigated Negative Declaration.

All planning work for the Antelope Creek Water Efficiency and Flood Control Improvement Project has been completed. Previous planning studies included the *Canal and Reservoir Feasibility Study Report* (May 2005), the 2010 Update to *Dry Creek Watershed Flood Control Plan Draft* (November 2010, final expected in March or April 2011), and the *Antelope Creek Water Efficiency and Flood Control Improvement Project Flood Damage Reduction Analysis* (December 2010). These planning projects were not included in the costs for this project. The project has been determined to be feasible based on the planning work completed and PCWA’s extensive experience with similar canal lining projects (including 2.66 miles in 2010 alone).

The 10% Design for this project has been completed. Design is expected to begin in August 2011. A 30%, 60%, 90% and 100% (Final) design document will be completed. The 30% design is expected to be

completed in November 2011, followed by 60% in January 2012, 90% in March 2012 and 100% (final) will be completed in April 2012. Design of the canal lining component of the project will be performed by PCWA staff. An engineering consultant firm will be hired to design the flood control component of the project. A geotechnical consultant will review weir designs at all stages and make foundation recommendations. Costs described below include design and environmental costs for both the canal lining component and the flood control component of the project. The 100% plans and specs will be used to prepare the bid package for bid advertisement.

A Mitigated Negative Declaration (MND) is expected to begin to be prepared in January 2012, with completion by July 2012. No additional environmental documentation is expected to be required.

**Table 38: Planning/Design/Engineering/Environmental Documentation Detail**

Stage	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Design	Senior Principal	\$215.00	20	\$4,300
Design	Principal Professional	\$155.00	90	\$13,950
Design	Senior Professional	\$135.00	180	\$24,300
Design	Project Professional	\$115.00	150	\$17,250
Design	Staff Professional	\$85.00	135	\$11,475
Design	Engineering Assistant	\$78.00	105	\$8,190
Design	CAD	\$85.00	180	\$15,300
Design	Clerical	\$48.00	90	\$4,320
Design	Geotechnical Sub	\$190.00	316	\$60,040
CEQA	Environmental Sub	\$150.00	335	\$50,250
Design	Other Direct Costs			\$915
			<b>Total</b>	<b>\$210,290</b>

#### (d) Construction/Implementation Detail

The total cost for Construction/Implementation for the Phase 1 Project is \$932,407. The basis of the estimate is shown in Table 39; costs shown in this table are furnished and installed prices and include material, labor and equipment costs.

**Table 39: Cost of Materials for Construction**

Item (units)	Unit Costs (\$)	Number of Units	Total (\$)
Wall Excavation (CY)	\$90.00	475	\$47,025
Hauling (CY)	\$15.00	475	\$7,838
Grading (CY)	\$25.00	500	\$13,750
Reinforced Concrete Weirs (LF)	\$2,000.00	250	\$550,000
Guniting Canal Lining (LF)	\$76.00	3290	\$275,044
Rip-rap (CY)	\$100.00	125	\$13,750
Stream Level Gauge (each)	\$12,500	2	\$25,000
<b>Total</b>			<b>\$932,407</b>

The costs for construction/implementation of Phase 2 of this project are not included as the Phase 2 project is to be funded through a future grant application under DWR’s Proposition 1E Stormwater and Flood Management grant program.

**(e) Environmental Compliance/ Mitigation/Enhancement Detail**

Environmental Compliance, Mitigation and Enhancement costs for the Antelope Creek Water Efficiency and Flood Control Improvement Project have been calculated \$164,975 based on the past cost of similar projects. This includes all materials and equipment costs for site restoration and any additional environmental compliance costs. Finally, monitoring required as part of implementation of the Project Performance Plan will be implemented under this task.

It should be noted that, while the schedule for this project shows that project performance monitoring and reporting will cease at the completion of project construction, it is understood the project performance monitoring will continue for 10 years following project completion, with annual project performance reporting.

**Table 40: Cost of Environmental Compliance/Mitigation/Enhancement**

Item	Total (\$)
ReLandscaping/Irrigation	\$75,000
Boulder Complexes. Root Wads	\$30,000
Bank Contouring	\$45,000
Interpretive Signage	\$10,000
Benches	\$4,975
<b>Total</b>	<b>\$164,975</b>

**Table 41: Labor Costs for Implementing Project Performance Monitoring Plan**

Discipline	Hourly Wage (\$)	Number of hours	Total (\$)
Performance Monitoring	\$153.00	80	\$12,240

**(f) Construction Administration Detail**

Construction Administration for the Phase 1 project is expected to cost approximately \$121,138, based on the estimated time and materials costs for the project below. This estimate is based on the Placer County Flood Control and Water Conservation District’s experience with similar projects. Construction administration for the canal lining and spillway work will be performed by PWCA, while construction administration of the flood control component of the project is expected to be performed by a consultant. The costs summarized below include construction administration costs for both project components. Construction administration costs for the Phase 2 project are not included in this estimate as the Phase 2 project will be funded through a future grant application under DWR’s Proposition 1E Stormwater and Flood Management grant program.

**Table 42: Cost of Construction Administration**

Discipline	Hours	Unit Cost (\$)	Total (\$)
Senior Principal	12	\$215.00	\$2,580
Principal Professional	100	\$155.00	\$15,500
Senior Professional	115	\$120.00	\$13,800
Project Professional	115	\$120.00	\$13,800
Staff Professional	250	\$74.00	\$18,500
Engineering Assistant	100	\$100.00	\$10,000
Clerical	48	\$48.00	\$2,308
Geotech Consultant	235	\$190.00	\$44,650
<b>Total</b>			<b>\$121,138</b>

**(g) Other Costs Detail**

Other costs associated with the Antelope Creek Water Efficiency and Flood Control Improvement Project include permit fees as shown in the following table, and costs associated with participation in preparation of a program-wide Project Performance Monitoring Plan.

A single Project Performance Monitoring Plan will be prepared for the entire suite of projects included in the Proposition 84 Implementation Grant Application; however, project specific monitoring criteria and schedule will be established and administered for each project. The costs shown here represent the estimated cost of preparing the associated section of the Project Performance Monitoring Plan for the Antelope Creek Water Efficiency and Flood Control Improvement Project and permit fees for the project.

**Table 43: Other Costs**

Item	Cost (\$)
Department of Fish and Game 1600 Streambed Alteration Agreement	\$4,483
U.S. Army Corps of Engineers Section 404 Encroachment Permit	\$100
Regional Water Quality Control Board Water Certification	\$400
City of Roseville Grading and Encroachment Permit	\$300
City of Roseville Tree Mitigation Permit	\$2,717
Prepare Monitoring Report	\$525
<b>Total</b>	<b>\$8,525</b>

### (h) Construction/Implementation Contingency Detail

The construction/implementation contingency percentage applied to this project is 15% of the construction costs, or \$136,110. The contingency is based on prior project experience and engineering practice. These costs include funds to handle unknown and unspecified conditions encountered during construction or implementation of the project.

### (i) Grand Total (Sum rows (a) through (h) for each column) Detail

The total estimated cost for Antelope Creek Water Efficiency and Flood Control Improvement Project is \$1,667,227; \$533,227 is provided through funding match and \$1,134,000 is being requested from the Proposition 84 IRWM grant program.

### Calculation of Funding Match %

The funding match for Antelope Creek Water Efficiency and Flood Control Improvement Project is \$533,227 or 32% of the total project costs and is provided by in-kind services and local contributions, including funds from the Dry Creek Trust Fund and PCWA's General Fund.

## Project 6: Regional Water Meter Retrofit Acceleration Project

The Regional Water Meter Retrofit Acceleration Project will install 840 additional residential meters in the service areas of three of the largest local public water suppliers in the region: the City of Sacramento, Sacramento Suburban Water District, and Sacramento County Water Agency. These meters will help accelerate local meter installation to meet the 2025 state mandate, and will demonstrably improve water management in the region through direct measurement of consumption using meters. Furthermore, the meters will immediately encourage water conservation. In 2004, the California Urban Water Conservation Council (CUWCC) published the BMP Cost and Savings Study confirming that meters combined with commodity based water rates (or volumetric pricing on amount used by the customer) are effective in driving consumer behavior to improved water management by reducing their water consumption. The CUWCC estimated 20% savings associated with installing meters, which is the basis for the savings calculation in this application. Moreover, the additional information provided by the meters will allow the agencies to better manage all of the water within the metered area. For example, the agencies will be able to adopt aggressive tiered pricing structures to encourage further savings and track progress during voluntary or mandatory cutback periods.

A summary of the budget for the Regional Water Meter Retrofit Acceleration Project is presented in Table 44. The budget is based on the latest project documentation as well as estimates for professional services. The total cost for this project is \$968,785. The funding match for this project is \$44,785, or 5%.

**Table 44: Regional Water Meter Retrofit Acceleration Project Budget**

<b>Project Budget</b>						
<b>Project Title: Regional Water Meter Retrofit Acceleration Project</b>						
<b>Budget Category</b>		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>	<b>(e)</b>
		<b>Non-State Share* (Funding Match)</b>	<b>Requested Grant Funding</b>	<b>Other State Funds Being Used</b>	<b>Total</b>	<b>% Funding Match</b>
<b>(a)</b>	Direct Project Administration Costs	\$26,580	\$0	\$0	\$26,580	100%
<b>(b)</b>	Land Purchase/Easement	\$0	\$0	\$0	\$0	0%
<b>(c)</b>	Planning/Design/Engineering/ Environmental Documentation	\$6,480	\$0	\$0	\$6,480	100%
<b>(d)</b>	Construction/Implementation	\$0	\$924,000	\$0	\$924,000	0%
<b>(e)</b>	Environmental Compliance/ Mitigation/Enhancement	\$3,600	\$0	\$0	\$3,600	100%
<b>(f)</b>	Construction Administration	\$7,200	\$0	\$0	\$7,200	100%
<b>(g)</b>	Other Costs	\$925	\$0	\$0	\$925	100%
<b>(h)</b>	Construction/Implementation Contingency	\$0	\$0	\$0	\$0	0%
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$44,785</b>	<b>\$924,000</b>	<b>\$0</b>	<b>\$968,785</b>	<b>5%</b>

**\*List sources of funding:** The in-kind labor expenses and direct labor compliance expenses to be funded directly by the participants: City of Sacramento, Sacramento Suburban Water District, and Sacramento County Water Agency.

### (a) Direct Project Administration Detail

Direct project administration costs were calculated based on expected level of effort by involved staff and costs for equipment and supplies. Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and council communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report) and were estimated to be \$79,893. This estimate assumes that LCP costs were equal to 2% of construction labor costs (or \$33,550), and that all other project administration costs (communications, reporting, etc.) were equivalent to 1.5% of overall construction costs (or \$46,343). These estimates were based on past experience with implementation of a similar project funded under a Proposition 50 Implementation Grant, prior experience with Labor Compliance Program costs, and experience on other similar projects.

45 details the hourly wages paid by discipline and the number of hours to be expended for project administration. The labor compliance program is assumed to be 2% of the construction costs which is based on prior experience. The total project administrations costs for this project are \$26,580.

**Table 45: Project Administration Hourly Detail**

Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Admin	\$90.00	66	\$5,940
Reporting	\$90.00	24	\$2,160
Labor compliance			\$18,480
		<b>Total</b>	<b>\$26,580.00</b>

### (b) Land Purchase/Easement Detail

The Regional Water Meter Retrofit Acceleration Project involves the installation of residential water meters in existing water utilities easements. Therefore, this project does not require the purchase or lease of land or easements. A Sacramento County Encroachment Permit will be acquired to work in County easements.

### (c) Planning/Design/Engineering/Environmental Documentation Detail

Direct project design and environmental documentation costs were estimated using hourly wage paid by discipline and the number of hours to be expended for planning, design, engineering, and environmental documentation work items. Detail is provided in the following table; the total estimated cost for planning, design, engineering and environmental documentation is \$6,480.

No assessment or evaluation studies will be performed to assess the feasibility of this project; research conducted to date by the CUWCC and the State of California verify the effectiveness of water meters in water conservation.

The environmental documentation costs for the Regional Water Meter Retrofit Acceleration Project include the preparation and approval of a Categorical Exemption. Costs for planning, design and

engineering include preparation of 100% (Final) bid documents that will identify the meter locations, detail implementation specifications and provide coordination details between the three agencies. Due to the nature of this project, limited hours are required for these tasks.

**Table 46: Planning/Design/Engineering/Environmental Documentation Detail**

Stage (i.e. Planning, Design, etc.)	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Final specifications and bid documents	Project Engineer	\$90.00	60	\$5,400
Prepare CEQA	Project Engineer	\$90.00	12	\$1,080
<b>Total</b>				<b>\$6,480</b>

### (d) Construction/Implementation Detail

The total cost for Construction/Implementation for this Project is \$924,000. The basis of the estimate is shown in Table 47. No costs for equipment or labor are shown for this project as the quotes received were lump sum; therefore, the unit costs shown below include the costs for labor, materials and equipment. The costs also incorporate measures the contractors will implement to protect water quality and ensure the resident's property is not negatively impacted by the installation of the water meter. This unit cost is confirmed by more than 7,000 residential meter retrofits by the City of Sacramento, Sacramento Suburban Water District and Sacramento County Water Agency during 2010.

**Table 47: Cost of Construction**

Materials (units)	Unit Costs (\$)	Number of Units	Total (\$)
Meter plus installation	\$1,100.00	840	\$924,000
<b>Total</b>			<b>\$924,000</b>

### (e) Environmental Compliance/ Mitigation/Enhancement Detail

As a Categorical Exemption will be filled for this project, no mitigation measures will be required. As previously mentioned, the erosion, sediment and pollution control measures are included in the construction costs. Costs for implementing the approved Project Performance Monitoring Plan are estimated to be \$3,600 based on expected measures to be in the performance and monitoring plan document in Attachment 6.

**Table 48: Environmental Compliance/Mitigation/Enhancement Costs**

Discipline	Hourly Wage by discipline (\$)	Number of Hours	Total (\$)
Performance Monitoring	\$90.00	40	\$3,600
<b>Total</b>			<b>\$3,600</b>

### (f) Construction Administration Detail

Construction Administration represents the costs incurred to administer and manage construction for the Project. Costs were determined by assuming that ten water meters can be installed daily resulting in a total of approximately 80 days for the implementation of the project. It was further assumed that approximately one hour of construction administration per day will be required during the installation of the water meters, totaling 80 hours for construction administration. As shown in Table 49, Total construction administration cost for the Regional Residential Meter Installation Project was estimated to be \$7,200.

**Table 49: Labor Cost for Construction Administration**

Discipline	Hours	Unit Cost (\$)	Total Costs (\$)
Project Engineer	80	\$90.00	\$7,200
<b>Total</b>			<b>\$7,200</b>

### (g) Other Costs Detail

Other costs anticipated for the Regional Water Meter Retrofit Acceleration Project are participation in preparation of a program-wide Project Performance Monitoring Plan and fees for the Sacramento County Encroachment Permit. A single Project Performance Monitoring Plan will be prepared for the entire suite of projects included in the Proposition 84 Implementation Grant Application; however, project specific monitoring criteria and schedule will be established and administered for each project. The costs shown here represent the estimated cost of preparing the associated section of the Plan for the Regional Water Meter Retrofit Acceleration Project.

**Table 50: Other Costs**

Item	Cost (\$)
Project Performance Plan Preparation	\$525
Sacramento County Encroachment Permit	\$400
<b>Total</b>	<b>\$925</b>

### (h) Construction/Implementation Contingency Detail

No construction/implementation contingency will be applied to this project.

### (i) Grand Total (Sum rows (a) through (h) for each column) Detail

The total estimated cost for Regional Water Meter Retrofit Acceleration Project is \$968,785; \$44,785 is provided through funding match and \$924,000 is being requested from the Proposition 84 IRWM grant program.

## Calculation of Funding Match %

The funding match for Regional Water Meter Retrofit Acceleration Project is \$44,785 or 5% of the total project costs. The local match will be funded through a combination of in-kind labor and funding provided by the project participants (the City of Sacramento, Sacramento Suburban Water District and Sacramento County Water Agency). Note that this project is being presented as a stand-alone acceleration of meter installations. The participating agencies are already committed to installing some 3,950 meters in FY11/12 with a budget of over \$9.6 million. We are not characterizing this as local share for this project because the acceleration is over and above the work already planned and can be completed on a stand-alone basis. Additionally, the ARB regional suite of projects is well in excess of the required local share for the program.

## Project 7: Regional Indoor and Outdoor Water Efficiency Project

Water supply agencies, the business community, and environmental interests in the greater Sacramento region have identified increasing urban and agricultural water use efficiency and conservation as primary methods of improving water management in the region. Improved water management allows for better use of water to meet environmental needs in the lower American River and ensures a long-term water supply for urban and agricultural users. In addition, local water use efficiency and conservation helps the state meet its goal of a 20% reduction in per-capita water use by 2020.

For this project, four separate water conservation components of the project are being targeted:

(1) interior water efficiency fixture retrofits, primarily targeted at disadvantaged communities (DACs); (2) exterior residential water use surveys and upgrades; (3) exterior water use surveys and upgrades for commercial, industrial and institutional (CII) and agricultural irrigation water use; and (4) the preparation of water use budgets for accounts with dedicated landscape meters. Disadvantaged customers are being targeted as part of this project because they are often unable to afford the upfront capital to participate in conservation programs. The exterior surveys, budgets and system upgrades were selected because landscape water use is the largest portion of water use in the region.

Implementation of the measures funded under this project is estimated to save 9,615 acre-feet of water over the life of the program. This project will consist of the following measures or programs:

- **Interior Conservation Retrofits** - This effort will provide a complete interior water conservation retrofit for 1,098 households in the Greater Sacramento Area. This portion of the project will be targeted primarily to disadvantaged customers. The retrofit will include a standard survey of interior water use, and direct, no-cost installation of indoor water efficiency devices including toilets, showerheads, and faucet aerators. In addition, hose-end shut-off valves will be provided for exterior hose bibs.
- **Exterior Residential Water Use Surveys and Upgrades** - For single-family accounts, provide 285 exterior water use surveys (landscape audits) and up to \$500 for each completed survey in irrigation system upgrades.

- **Exterior Large Landscape Water Use Surveys and Upgrades** - For large landscapes, including CII and residential agriculture accounts with mixed-use meters, provide 76 exterior water surveys and up to \$1,500 for each completed survey in irrigation system upgrades.
- **Landscape Water Budgets** - Prepare up to 404 landscape water budgets for dedicated landscape irrigation meters in accordance with the state's current Model Water Efficient Landscape Ordinance.

A summary of the budget for the Regional Indoor and Outdoor Water Efficiency Project is presented in Table 51. The budget is based on the latest project documentation as well as estimates for professional services. The total cost for this project is \$1,000,000. There is no funding match for this project.

**Table 51: Regional Indoor and Outdoor Water Efficiency Project Budget**

<b>Project Budget</b>						
<b>Project Title: Regional Indoor and Outdoor Water Efficiency Project</b>						
<b>Budget Category</b>		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>	<b>(e)</b>
		<b>Non-State Share* (Funding Match)</b>	<b>Requested Grant Funding</b>	<b>Other State Funds Being Used</b>	<b>Total</b>	<b>% Funding Match</b>
<b>(a)</b>	Direct Project Administration Costs	\$0	\$16,270	\$0	\$16,270	0%
<b>(b)</b>	Land Purchase/Easement	\$0	\$0	\$0	\$0	0%
<b>(c)</b>	Planning/Design/Engineering/ Environmental Documentation	\$0	\$900	\$0	\$900	0%
<b>(d)</b>	Construction/Implementation	\$0	\$884,500	\$0	\$884,500	0%
<b>(e)</b>	Environmental Compliance/ Mitigation/Enhancement	\$0	\$3,600	\$0	\$3,600	0%
<b>(f)</b>	Construction Administration	\$0	\$94,205	\$0	\$94,205	0%
<b>(g)</b>	Other Costs	\$0	\$525	\$0	\$525	0%
<b>(h)</b>	Construction/Implementation Contingency	\$0	\$0	\$0	\$0	0%
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$0</b>	<b>\$1,000,000</b>	<b>\$0</b>	<b>\$1,000,000</b>	<b>0%</b>

**\*List sources of funding: There is no funding match for this project**

### (a) Direct Project Administration Detail

Direct project administration costs were calculated based on expected level of effort by involved staff and costs. Table 52 details the hourly wages paid by discipline and the number of hours to be expended for project administration. The labor compliance program is assumed to be 2% of the construction costs which is based on prior experience. For this project, labor compliance will be required for the Interior Conservation Retrofit component of this project, as that is the only component in which construction contractors will be utilized. The total project administration cost for this project is \$16,270.

**Table 52: Project Administration Hourly Detail**

Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Reporting	\$70.00	46	\$3,220
Admin	\$70.00	108	\$7,560
Labor Compliance Program			\$5,490
<b>Total</b>			<b>\$16,270</b>

### (b) Land Purchase/Easement Detail

The Regional Indoor and Outdoor Water Efficiency Project involves the installation of residential water saving devices, water audits and surveys. All work will be performed at the homeowner’s or business’ request; therefore, this project does not require the purchase or lease of land or easements.

### (c) Planning/Design/Engineering/Environmental Documentation Detail

To implement the BMPs identified in the CUWCC’s *Memorandum of Understanding Regarding Urban Water Conservation in California*, RWA will draft a final design document that will identify locations for BMPs implementation, as well as provide coordination details between RWA and each of the local agencies that will receive funds under this project. Direct project design documentation costs were estimated using hourly wage paid by discipline and the number of hours to be expended for design work. Detail is provided in the following table.

**Table 53: Planning/Design/Engineering/Environmental Documentation Detail**

Stage	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Final Design	Project Manager	\$75.00	12	\$900
<b>Total</b>				<b>\$900</b>

### (d) Construction/Implementation Detail

The total cost for Construction/Implementation for this Project is \$884,500. The basis of the estimate is shown in Tables 54 and 55.

**Table 54: Cost of Materials for Construction**

Materials Used (units)	Unit Costs (\$)	Number of Units	Total (\$)
Interior Conservation Retrofit (per site)	\$145.00	1098	\$159,210
Exterior Residential Water Use Survey & Incentive (per site)	\$500.00	285	\$142,500
Exterior Large Landscape Water Use Survey & Incentive (per site)	\$1,500.00	76	\$114,000
Workshops – Other Direct Costs			\$1,875
<b>Total</b>			<b>\$417,585</b>

**Table 55: Labor Costs for Construction**

Discipline	Hourly Wage by Discipline (\$)	Number of Hours	Total (\$)
Interior Conservation Retrofit - Installation	\$75.00	1098	\$82,350
Interior Conservation Retrofit - Survey	\$65.00	549	\$32,940
Exterior Residential Water Use Survey & Incentives	\$55.00	285	\$15,675
Exterior Large Landscape Water Use Survey & Incentives	\$55.00	190	\$10,450
Landscape Water Budget – GIS	\$75.00	2424	\$181,800
Landscape Water Budget - Landscaper	\$75.00	808	\$60,600
Landscape Water Budget – Technical Support	\$75.00	808	\$60,600
Irrigation Efficiency Workshops	\$75.00	300	\$22,500
<b>Total</b>			<b>\$466,915</b>

**(e) Environmental Compliance/Mitigation/Enhancement Detail**

No environmental compliance, mitigation, or enhancement is required for this project. However, project performance monitoring will be implemented under this budget item. Costs for plan implementation are shown below in Table 56.

**Table 56: Construction Administration Costs**

Discipline	Hourly Wage by discipline (\$)	Number of hours	Total (\$)
Performance Monitoring	\$90.00	40	\$3,600
<b>Total</b>			<b>\$3,600</b>

**(f) Construction/Implementation Administration Detail**

Construction/Implementation Administration represents the costs incurred to administer and manage construction for the Project. While typical construction management costs for construction projects are in the 5% range, the budget for this task was estimated to be approximately 10% of overall construction/implementation costs. Use of a higher construction/implementation administration percentage is justified for this project as it consists of a large number of individual surveys/projects and does not include larger material costs. Therefore, for this project, total Construction/Implementation Administration costs are estimated to be \$94,205.

**(g) Other Costs Detail**

Other costs anticipated for the Regional Indoor and Outdoor Water Efficiency Project are participation in preparation of a program-wide Project Performance Monitoring Plan. A single Project Performance Monitoring Plan will be prepared for the entire suite of projects included in this Proposition 84 Implementation Grant Application; however, project specific monitoring criteria and schedule will be established and administered for each project. The costs shown here represent the estimated cost of preparing the associated section of the Project Performance Monitoring Plan for RWA’s project. The cost for the Project Performance and Monitoring Plan for this project is estimated to be \$525.

**Table 57: Other Costs**

Item	Cost (\$)
Project Performance Plan Preparation	\$525
<b>Total</b>	<b>\$525</b>

**(h) Construction/Implementation Contingency Detail**

No implementation contingency will be included for this project.

**(i) Grand Total (Sum rows (a) through (h) for each column) Detail**

The total estimated cost for the Regional Indoor and Outdoor Water Efficiency Project is \$1,000,000, all of which is being requested from the Proposition 84 IRWM grant program.

## Calculation of Funding Match %

The funding match for Implementation Regional Indoor and Outdoor Water Efficiency Project is 0% of the total project costs. Note that there is no funding match for this project because it is being implemented as a stand-alone project under the Regional Water Authority Water Efficiency Program. Each of the participants individually has ongoing water efficiency programs, as does RWA for the region. It would be unnecessarily complex to integrate the cost shares of all of those programs into this project. Additionally, a cost share is not being proposed because the entire suite of projects in this Proposal is well in excess of the required non-State funding match.

## Project 8: Sacramento Regional County Sanitation District / Sacramento Power Authority Recycled Water Project

The proposed Sacramento Regional County Sanitation District/Sacramento Power Authority Recycled Water Project includes the design and construction of the necessary treatment and transmission facilities to replace potable water use with recycled water at the Campbell Soup Cogeneration Plant (Cogeneration Plant), a facility owned by the Sacramento Power Authority (Authority). The non-potable water needs of the Cogeneration Plant, currently met by potable surface water supplied by the City of Sacramento (City), will be replaced with recycled water to be produced by the Sacramento Regional County Sanitation District (SRCSD). The replacement of potable water with recycled water will free-up surface water to meet potable water needs and augment the region's water supplies. For this project, SRCSD will produce the recycled water, the City and/or SRCSD/SPA will convey the recycled water via a recycled water pipelines, and the Authority will use the recycled water at the Cogeneration Plant.

The Cogeneration Plant is located approximately 5.5 miles north of the Sacramento Regional Wastewater Treatment Plant (SRWTP), at the northwest intersection of Franklin Boulevard and 47<sup>th</sup> Avenue. The City currently supplies potable surface water to the Authority to meet the water needs of the Cogeneration Plant, which has a water demand of approximately 1 million gallons per day (MGD) or 1,000 acre-feet per year. This potable water is used primarily to meet non-potable water demands at the Cogeneration Plant's cooling towers. The quality of the recycled water produced by SRCSD at its SRWTP Water Reclamation Facility (WRF) is a good fit to meet the non-potable water demands at the Cogeneration Plant. The recycled water demands for the Cogeneration Facility are year-round, as opposed to seasonal demands.

This project is expected to include approximately 5.5 miles of 12-inch diameter transmission pipeline, modifications to piping systems and associated appurtenances at the Authority's Cogeneration Plant to use recycled water in-lieu of potable water at its cooling towers, and piping and infrastructure modifications at the WRF treatment facilities. As described here, the project would include the production of recycled water by SRCSD and installation of the facilities necessary to bring the recycled water from the SRCSD WRF to the point of connection near the Authority's Cogeneration Plant property.

Two potential routes were identified to provide recycled water service from the SRCSD WRF to the Cogeneration Plant. These routes include an alignment along 24<sup>th</sup> Street and a second alignment along the Union Pacific Railroad (UPRR). The alignment along 24<sup>th</sup> Street is preferred as it appears to have enough space available to install the recycled water transmission main and has fewer conflicts with existing utilities. Potential conflicts with overhead utilities are not as restrictive along 24<sup>th</sup> Street as compared with the UPRR alignment. Furthermore, other nearby water users could be connected to the recycled water transmission in the future as part of an expansion project.

A summary of the budget for the Sacramento Regional County Sanitation District/Sacramento Power Authority Recycled Water Project is presented in Table 58. The budget is based on the latest project documentation, as well as estimates for professional services. The total cost for this project is \$8,383,790. The funding match for this project is \$6,817,790 or 81%.

**Table 58: Sacramento Regional County Sanitation District/Sacramento Power Authority Recycled Water Project Budget**

Project Budget						
Project Title: Sacramento Regional County Sanitation District/Sacramento Power Authority Recycled Water Project						
Budget Category		(a)	(b)	(c)	(d)	(e)
		Non-State Share* (Funding Match)	Requested Grant Funding	Other State Funds Being Used	Total	% Funding Match
(a)	Direct Project Administration Costs	\$129,760	\$0	\$0	\$129,760	100%
(b)	Land Purchase/Easement	\$310,000	\$0	\$0	\$310,000	100%
(c)	Planning/Design/Engineering/ Environmental Documentation	\$688,755	\$500,000	\$0	\$1,188,755	58%
(d)	Construction/Implementation	\$4,003,000	\$1,066,000	\$0	\$5,069,000	79%
(e)	Environmental Compliance/ Mitigation/Enhancement	\$59,950	\$0	\$0	\$59,950	100%
(f)	Construction Administration	\$612,000	\$0	\$0	\$612,000	100%
(g)	Other Costs	\$525	\$0	\$0	\$525	100%
(h)	Construction/Implementation Contingency	\$1,013,800	\$0	\$0	\$1,013,800	100%
(i)	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$6,817,790</b>	<b>\$1,566,000</b>	<b>\$0</b>	<b>\$8,383,790</b>	<b>81%</b>

\*List sources of funding: *In-kind services and local contributions*

### (a) Direct Project Administration Detail

Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and board communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report) and were estimated to be \$129,760. This estimate assumes that LCP costs were equal to 2% of construction costs (or \$101,380); all other project administration costs (communications, reporting, etc.) were estimated based on expected level of effort by involved staff and costs for equipment and supplies. Table 59 details the hourly wages paid by discipline and the number of hours to be expended for project administration. The cost of equipment and supplies for this task are assumed to be \$2,505.

**Table 59: Project Administration Hourly Detail**

Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Administration	\$115	175	\$20,125
Reporting	\$115	50	\$5,750
Labor Compliance			\$101,380
Other Direct Costs			\$2,505
<b>Total</b>			<b>\$129,760</b>

### (b) Land Purchase/Easement Detail

Land easement acquisitions costs have been estimated based on the probable construction costs of the project. It was assumed that costs for land easement acquisitions would be 5% of the construction cost or \$310,000. This estimate was based on prior experience with similar projects.

### (c) Planning/Design/Engineering/Environmental Documentation Detail

Direct project planning/design/engineering/documentation costs were estimated using hourly wage paid by discipline and the number of hours to be expended for planning/design/engineering/environmental documentation work items. Detail is provided in the following table; the total estimated costs for planning, design, engineering and environmental documentation are \$1,188,755.

Design report submittals will include a 30%, 60%, 90%, and 100% (Final) Design. The expected completion date of the Final Design is June 2013. A Negative Declaration for the pipeline will also be prepared under this budget category and is expected to be completed in June 2013.

**Table 60: Planning/Design/Engineering/Environmental Documentation Detail**

Stage (i.e. planning, Design, etc.)	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Design	Senior Principal	\$215.00	125	\$26,875
Design	Principal Professional	\$155.00	260	\$40,300
Design	Senior Professional	\$135.00	1150	\$155,250
Design	Project Professional	\$115.00	2451	\$281,865
Design	Staff Professional	\$85.00	3120	\$265,200
Design	Engineering Assistant	\$78.00	330	\$25,740
Design	CAD	\$85.00	3255	\$276,675
Design	Clerical	\$50.00	1137	\$56,850
Design	Environmental Sub	\$150.00	400	\$60,000
<b>Total</b>				<b>\$1,188,855</b>

#### (d) Construction/Implementation Detail

Estimated costs of construction for the project were based on quotes obtained by SRSCD and on similar projects previously constructed. The total cost for Construction/Implementation for this project is \$5,069,000; the basis for the estimate is shown Table 61. No costs for equipment or labor are shown for this project as the quotes received were lump sum; therefore, the unit costs shown below include the costs for labor, materials and equipment.

**Table 61: Construction Costs**

Materials Used	Unit Costs (\$)	Number of Units	Total (\$)
Recycled water pipeline (inch-diameter-mile)	\$71,500	66	\$4,719,000
Piping Modifications at Cogeneration Plant (LS)	\$350,000	1	\$350,000
<b>Total</b>			<b>\$5,069,000</b>

#### (e) Environmental Compliance/Mitigation/Enhancement Detail

As previously stated, SRSCD will complete Negative Declaration in June 2013. It is expected that 150 linear feet of swales and 15 inlet drop covers will be needed for environmental compliance, in addition to renting an air particulate monitor. The air particulate monitor will be rented for 24 months, 3 months prior to construction to obtain baseline readings, 18 months during constructions and 3 more months following construction. An onsite biologist will also be present during construction. Monitoring for compliance

with the General Stormwater NPDES Permit for construction will be conducted by the construction contractor; therefore costs associated with this monitoring and reporting are included in the lump-sum construction costs. Monitoring required as part of implementation of the Project Performance Plan will also be implemented under this task. Details are provided in Tables 62 through 64. The total cost for this budget category is \$59,950.

**Table 62: Environmental Compliance/Mitigation/Enhancement Materials Detail**

Materials Used	Unit Costs (\$)	Number of Units	Total (\$)
Swales (LF)	\$10.00	150	\$1,500
Inlet Drop Covers (EA)	\$15.00	15	\$225
<b>Total</b>			<b>\$1,725</b>

**Table 63: Environmental Compliance/Mitigation/Enhancement Equipment Detail**

Equipment Used	Costs (\$)	Number of Units	Total (\$)
Air Particulate Monitor (monthly rental)	\$150.00	24	\$3,600
<b>Total</b>			<b>\$3,600</b>

**Table 64: Environmental Compliance/Mitigation/Enhancement Labor Detail**

Discipline	Hourly Wage by discipline (\$)	Number of Hours	Total (\$)
Onsite biologist	\$115.00	400	\$46,000
Performance Monitoring	\$115.00	75	\$8,625
<b>Total</b>			<b>\$54,625</b>

### (f) Construction Administration Detail

Construction Administration represents the costs incurred to administer and manage construction for the Project. The construction administration costs are based on hourly rates by each discipline as shown in Table 65. Total construction administration costs for the Sacramento Regional County Sanitation District/Sacramento Power Authority Recycled Water Project are estimated to be \$612,000.

**Table 65: Construction Administration Costs**

Discipline	Hours	Unit Cost (\$)	Total (\$)
Principal-in-Charge	24	\$309.60	\$7,430
Principal Professional	48	\$256.58	\$12,316
Senior Professional	160	\$224.45	\$35,912
Project Professional	1000	\$206.31	\$206,310
Staff Professional	1000	\$169.57	\$169,570
Engineering Assistant	1000	\$132.55	\$132,550
Clerical	697	\$68.74	\$47,912
<b>Total</b>			<b>\$612,000</b>

### (g) Other Costs Detail

Other costs anticipated for this project include participation in preparation of a program-wide Project Performance Monitoring Plan. Permit fees were not included in this budget category as no grant funds are being requested to cover permit fees and the fees will not be used as a source of funding match.

A single Project Performance Monitoring Plan will be prepared for the entire suite of projects included in the Prop 84 Implementation Grant Application; however, project specific monitoring criteria and schedule will be established and administered for each project. The costs shown here represent the estimated cost of preparing the associated section of the Plan for the Sacramento Regional County Sanitation District/Sacramento Power Authority Recycled Water Project for the project.

**Table 66: Other Costs**

Item	Cost (\$)
Project Performance Plan Preparation	\$525
<b>Total</b>	<b>\$525</b>

### (h) Construction/Implementation Contingency Detail

A construction/implementation contingency of 20% (or \$1,013,800) will be used for the Sacramento Regional County Sanitation District/Sacramento Power Authority Recycled Water Project. This percentage was based on prior experience with similar projects at this stage of design.

### (i) Grand Total (Sum rows (a) through (h) for each column) Detail

The total estimated cost for Sacramento Regional County Sanitation District/Sacramento Power Authority Recycled Water Project is \$8,383,790; of this \$6,817,790 will be provided through a local funding match, and \$1,566,000 is being requested from the Proposition 84 IRWM Implementation Grant Program.

### Calculation of Funding Match %

The funding match for Sacramento Regional County Sanitation District/Sacramento Power Authority Recycled Water Project is \$6,817,790 or 81% of the total project costs and will be provided by in-kind services and local contributions.

## Project 9: North Antelope Booster Pump Station Project

The North Antelope Booster Pump Station Project will construct a booster pump station adjacent to the existing Antelope Reservoir in the Sacramento Suburban Water District (SSWD) service area. This pump station will pump groundwater produced from wells in the SSWD's North Service Area into the Antelope and Cooperative Transmission Pipelines for conveyance to other districts in the region not capable of increasing their own groundwater supplies. The project includes installation of two 50 horsepower centrifugal pumps, two magnetic flow meters, a motor control center, and the piping and appurtenances necessary to connect the pumps to the distribution system.

This project will enable the retail surface water customers in the San Juan Water District to use more groundwater by reversing the flow of water in Antelope and Cooperative Transmission Pipelines. By enabling the movement of groundwater from SSWD to these other districts, this project expands the opportunity for conjunctive use, providing both regional and statewide benefits during dry years and other times when supplies are limited.

A summary of the budget for the North Antelope Booster Pump Station Project is presented in Table 67. The budget is based on the latest project documentation, as well as estimates for professional services. The total cost for this project is \$918,412. The funding match for this project is \$653,412 or 71%.

**Table 67: North Antelope Booster Pump Station Project Budget**

<b>Project Budget</b>						
<b>Project Title: North Antelope Booster Pump Station Project</b>						
		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>	<b>(e)</b>
<b>Budget Category</b>		<b>Non-State Share* (Funding Match)</b>	<b>Requested Grant Funding</b>	<b>Other State Funds Being Used</b>	<b>Total</b>	<b>% Funding Match</b>
<b>(a)</b>	Direct Project Administration Costs	\$34,844	\$0	\$0	\$34,844	100%
<b>(b)</b>	Land Purchase/Easement	\$0	\$0	\$0	\$0	0%
<b>(c)</b>	Planning/Design/Engineering/ Environmental Documentation	\$167,742	\$0	\$0	\$152,742	100%
<b>(d)</b>	Construction/Implementation	\$262,800	\$265,000	\$0	\$527,800	50%
<b>(e)</b>	Environmental Compliance/ Mitigation/Enhancement	\$9,600	\$0	\$0	\$9,600	100%
<b>(f)</b>	Construction Administration	\$65,476	\$0	\$0	\$65,476	100%
<b>(g)</b>	Other Costs	\$7,390	\$0	\$0	\$7,390	100%
<b>(h)</b>	Construction/Implementation Contingency	\$105,560	\$0	\$0	\$105,560	100%
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$653,412</b>	<b>\$265,000</b>	<b>\$0</b>	<b>\$918,412</b>	<b>71%</b>
<b>*List sources of funding: Capital Improvement Funds; Rate Recovery</b>						

### (a) Direct Project Administration Detail

Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and board communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report) and were estimated to be \$34,844. This estimate assumes that LCP costs were equal to 2% of construction costs (or \$10,556); all other project administration costs (communications, reporting, etc.) were estimated based on expected level of effort by involved staff and costs for equipment and supplies. Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and council communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report) and were estimated to be \$79,893. This estimate assumes that LCP costs were equal to 2% of construction labor costs (or \$33,550), and that all other project administration costs (communications, reporting, etc.) were equivalent to 1.5% of overall construction costs (or \$46,343). These estimates were based on past experience with implementation of a similar project funded under a Proposition 50 Implementation Grant, prior experience with Labor Compliance Program costs, and experience on other similar projects.

details the hourly wages paid by discipline and the number of hours to be expended for project administration. The cost of equipment and supplies for this task are assumed to be 10% of project administration labor or \$2,208.00.

**Table 68: Administration Hourly Detail**

Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Senior Professional	\$160.00	138	\$22,080
Labor Compliance			\$10,556
<b>Total</b>			<b>\$32,636</b>

### (b) Land Purchase/Easement Detail

The land for the proposed project is currently owned by the Sacramento Suburban Water District as part of SSWD's Antelope Reservoir. There is no cost to the project associated with this line item.

### (c) Planning/Design/Engineering/Environmental Documentation Detail

Direct project planning/design/engineering/documentation costs were estimated using hourly wage paid by discipline and the number of hours to be expended for planning/design/engineering/environmental documentation work items. Detail is provided in the following tables; the total estimated costs for planning, design, and engineering are \$167,742.

All planning work for the North Antelope Booster Pump Station Project has been completed. A Technical Memorandum was completed June 19, 2009 evaluating the cost of the project at two potential locations. The 10% Design for the project has already been completed. A 30%, 60%, 90% and 100% (final) design

package will be prepared for the project. The final design report will be used to prepare a bid for the project.

SSWD has not yet begun environmental documentation for this project but anticipates filing a Negative Declaration. The Negative Declaration is expected to be completed in November of 2011.

Several permits will be required for the North Antelope Booster Pump Station Project. A California Department of Public Health Permit Amendment, a Sacramento County Electrical Permit and a Public Water Supply Amendment will be obtained prior to project construction. Labor costs associated with obtaining these permits are included in the costs shown below; permit fees are included in Other Costs (Category (g), below).

**Table 69: Planning/Design/Engineering Detail**

Stage (i.e planning, Design, etc.)	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
30%, 60%, 90% and Final Design	Senior Principal	\$215.00	8	\$1,720
30%, 60%, 90% and Final Design	Principal Project Manager	\$180.00	60	\$10,800
30%, 60%, 90% and Final Design	Senior Professional	\$160.00	240	\$38,400
30%, 60%, 90% and Final Design	Project Professional	\$125.00	240	\$30,000
30%, 60%, 90% and Final Design	ACAD Drafting	\$110.00	96	\$10,560
30%, 60%, 90% and Final Design	Clerical	\$60.00	60	\$3,600
30%, 60%, 90% and Final Design	Structural Engineering			\$10,000
30%, 60%, 90% and Final Design	Electrical Engineering			\$20,000
30%, 60%, 90% and Final Design	Miscellaneous Supplies			\$22,662
<b>Total</b>				<b>\$147,742</b>

**Table 70: Environmental Documentation Detail**

Stage	Other Direct Charge (description)	Total
Environmental	Completion of Negative Declaration	\$20,000
<b>Total</b>		<b>\$20,000</b>

### (d) Construction/Implementation Detail

Estimated costs of construction for the North Antelope Booster Pump Station Project were based on quotes obtained by SSWD and on similar projects previously constructed. The total cost for Construction/Implementation for this Project is \$527,800. The basis for the estimate is shown in Table 71. No costs for equipment or labor are shown for this project as the quotes received were lump sum; therefore, the unit costs shown below include the costs for labor, materials and equipment.

**Table 71: Construction Cost for Booster Pump Station**

Materials Used (units)	Number of Units	Unit Costs (\$)	Total (\$)
Mobilization/Demobilization (each)	1	\$40,000.00	\$40,000
Exploratory Excavations (each)	1	\$1,000.00	\$1,000
Site Health and Safety (each)	1	\$1,500.00	\$1,500
Erosion Control Measures (each)	1	\$1,000.00	\$1,000
Construction Photos (each)	1	\$500.00	\$500
Clearing and Grubbing (each)	1	\$6,000.00	\$6,000
Paving (sq ft)	1000	\$20.00	\$20,000
36-inch Station Piping including Fittings (lf)	160	\$500.00	\$80,000
36-inch Motor Operated Butterfly Valve (each)	1	\$8,000.00	\$8,000
12-inch Butterfly Valves and Appurtenances (each)	4	\$1,200.00	\$4,800
12-inch Station Piping including Fittings (lf)	40	\$300.00	\$12,000
50hp Centrifugal Booster Pumps (each)	2	\$32,000.00	\$64,000
12-inch Mag Meters (each)	2	\$6,000.00	\$12,000
Well Pump Components (each)	2	\$20,000.00	\$40,000
Meter Vault (each)	2	\$5,000.00	\$10,000
Motor Control Center (each)	1	\$30,000.00	\$30,000
SCADA Upgrade and Programming (each)	1	\$6,000.00	\$6,000
Concrete Work (cu.yd.)	10	\$2,000.00	\$20,000
Miscellaneous Painting (each)	1	\$5,000.00	\$5,000
Disinfection of Pump and Piping (each)	1	\$2,000.00	\$2,000
Performance Testing (each)	1	\$5,000.00	\$5,000
Electrical (each)	1	\$150,000.00	\$150,000
Records and Submittals (each)	1	\$4,000.00	\$4,000
Site Cleanup (each)	1	\$5,000.00	\$5,000
<b>Total</b>			<b>\$527,800</b>

### (e) Environmental Compliance/ Mitigation/Enhancement Detail

As previously stated, SSWD has not yet begun environmental documentation for this project but anticipates filing a statutory exemption under CEQA Article 21080.21. No mitigation measures are expected to be required for this project. Compliance with the Stormwater Pollution Prevention Plan will be conducted by the construction contractor; therefore, costs associated with any activities required by the SWPPP are included in the lump-sum construction costs. Costs for implementing the approved Project Performance Monitoring Plan are shown below and are estimated to be \$9,600 based on the information presented in Table 72.

**Table 72: Labor Costs for Environmental Compliance/Mitigation/Enhancement**

Discipline	Hourly Wage (\$)	Number of hours	Total (\$)
Performance Monitoring	\$160.00	60	\$9,600
<b>Total</b>			<b>\$9,600</b>

### (f) Construction Administration Detail

Construction Administration includes the costs incurred to administer and manage construction for the Project. Construction administration costs were based on the expected labor hours that each discipline will spend on these activities. Total construction administration costs for the North Antelope Booster Pump Station Project were estimated to be \$65,476; a breakdown of this estimate is provided in Table 73, below.

**Table 73: Labor Costs for Construction Administration**

Discipline	Hours	Unit Cost (\$)	Total (\$)
Principal Professional	40	\$180.00	\$7,200
Project Professional	240	\$125.00	\$30,000
Staff Professional	80	\$100.00	\$8,000
Clerical	60	\$60.00	\$3,600
Electrical Engineering Contractor			\$10,000
Structural Engineering Contractor			\$4,000
General Administration			\$2,676
<b>Total</b>			<b>\$65,476</b>

### (g) Other Costs Detail

Other costs anticipated for the North Antelope Booster Pump Station Project are participation in preparation of a program-wide Project Performance Monitoring Plan and permit fees. A single Project Performance Monitoring Plan will be prepared for the entire suite of projects included in the Prop 84 Implementation Grant Application; however, project specific monitoring criteria and schedule will be established and administered for each project. The costs shown here represent the estimated cost of preparing the associated section of the Plan for the North Antelope Booster Pump Station Project and permit fees for the project.

**Table 74: Other Costs**

Item	Cost (\$)
Department of Public Health Permit Amendment	\$4,960
County of Sacramento Electrical Permit	\$45
Public Water Supply Amendment	\$1,860
Project Performance Plan Preparation	\$525
<b>Total</b>	<b>\$7,390</b>

### (h) Construction/Implementation Contingency Detail

A construction/implementation contingency of 20% (or \$105,560) of the construction/implementation costs will be used for the North Antelope Booster Pump Station Project. This percentage was based on prior experience with similar projects at this stage of design.

### (i) Grand Total (Sum rows (a) through (h) for each column) Detail

The total estimated cost for North Antelope Booster Pump Station Project is \$918,412; of this \$653,412 will be provided through a local funding match, and \$265,000 is being requested from the Proposition 84 IRWM Implementation Grant Program.

### Calculation of Funding Match %

The funding match for North Antelope Booster Pump Station Project is \$653,412 or 71% of the total project costs. The local match will be funded through Capital Improvement Funds and rate recovery.

## Project 10: Coyle Avenue and Roseview Park Pump Stations and Treatment Systems Project

Sacramento Suburban Water District (SSWD) has developed and is currently implementing a conjunctive use program to improve their water supply reliability. As documented in the District's *2009 Water Master Plan* (Brown and Caldwell, July 2009), the development of a conjunctive use program in the SSWD service area provides regional benefits in addition to local benefits (pages 7.3-7.7). While SSWD has sufficient water to meet their current and future demands, the addition of the conjunctive use program will increase the ability of SSWD to provide water to other districts in the region that are not capable of increasing their water supply. That is, expansion of groundwater banking in the SSWD service area provides expanded conjunctive use opportunities to the American River Basin IRWM region.

The proposed 16-inch diameter wells will be constructed in SSWD's North Service Area (NSA). The Coyle Avenue well will have a pumping capacity of 2,250 acre-feet per year (1,400 gallons per minute or gpm), as documented in the *Coyle Avenue Exploration Summary and Well Design Recommendations Technical Memorandum* (Luhdorff and Scalmanini, January 2010), while the Roseview Park well will have a capacity of 3,500 acre-feet per year (2,200 gpm). Two 1,200-square foot pump stations will be constructed to house each well, well pump, and associated discharge piping, motor control centers, treatment equipment, and chlorination facilities. In addition to the pump stations, distribution pipelines, fences, and other appurtenances will be installed to make the wells fully operational. Wellhead treatment systems will consist of chlorination for disinfection and possible direct-filtration treatment for manganese removal (wellhead treatment for manganese will be determined following well construction).

A summary of the budget for the Coyle Avenue and Roseview Park Pump Stations and Treatment Systems is presented in Table 75. The budget is based on the latest project documentation (primarily the final design for the wells and the 10% design for the pump stations and treatment systems), as well as estimates for professional services. The total cost for this project is \$5,735,537. The funding match for this project is \$4,235,537 or 74%.

**Table 75: Coyle Avenue and Roseview Park Pump Stations and Treatment Systems Project Budget**

<b>Project Budget</b>						
<b>Project Title: Coyle Avenue and Roseville Pumps Stations and Treatment Systems</b>						
		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>	<b>(e)</b>
<b>Budget Category</b>		<b>Non-State Share* (Funding Match)</b>	<b>Requested Grant Funding</b>	<b>Other State Funds Being Used</b>	<b>Total</b>	<b>% Funding Match</b>
<b>(a)</b>	Direct Project Administration Costs	\$88,670	\$0	\$0	\$88,670	100%
<b>(b)</b>	Land Purchase/Easement	\$69,400	\$0	\$0	\$69,400	100%
<b>(c)</b>	Planning/Design/Engineering/ Environmental Documentation	\$420,750	\$0	\$0	\$420,750	100%
<b>(d)</b>	Construction/Implementation	\$2,511,935	\$1,500,000	\$0	\$4,011,935	63%
<b>(e)</b>	Environmental Compliance/ Mitigation/Enhancement	\$38,400	\$0	\$0	\$38,400	100%
<b>(f)</b>	Construction Administration	\$267,440	\$0	\$0	\$267,440	100%
<b>(g)</b>	Other Costs	\$36,555	\$0	\$0	\$36,555	100%
<b>(h)</b>	Construction/Implementation Contingency	\$802,387	\$0	\$0	\$802,387	100%
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$4,235,537</b>	<b>\$1,500,000</b>	<b>\$0</b>	<b>\$5,735,537</b>	<b>74%</b>
<b>*List sources of funding: <i>In-kind services and local contributions</i></b>						

### (a) Direct Project Administration Detail

Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and board communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report), and were estimated to be \$88,670. This estimate assumes that LCP costs were equal to 2% of construction labor costs (or \$58,750); all other project administration costs (communications, reporting, etc.) were estimated based on expected level of effort by involved staff and costs for equipment and supplies. Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and council communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report) and were estimated to be \$79,893. This estimate assumes that LCP costs were equal to 2% of construction labor costs (or \$33,550), and that all other project administration costs (communications, reporting, etc.) were equivalent to 1.5% of overall construction costs (or \$46,343). These estimates were based on past experience with implementation of a similar project funded under a Proposition 50 Implementation Grant, prior experience with Labor Compliance Program costs, and experience on other similar projects.

details the hourly wages paid by discipline and the number of hours to be expended for project administration. The cost of equipment and supplies for this task are assumed to be 10% of project administration labor or \$2,720.00.

**Table 76: Project Administration Hourly Detail**

Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Senior Professional	\$160.00	170	\$27,200
Labor Compliance			\$58,750
<b>Total</b>			<b>\$85,950</b>

### (b) Land Purchase/Easement Detail

The land for the two wells is not currently owned by the Sacramento Suburban Water District; however, SSWD has submitted offer letters to the San Juan Unified School District (SJUSD) for the Coyle Avenue site and the Sunrise Recreation and Park District (SRPD) for the Roseview Park site. SJUSD and SRPD are currently finalizing the offers from SSWD, and the finalization and transfer of the property is expected to occur before June 1, 2011. The location of the Coyle Avenue Well will be in the northeasterly corner of the Coyle Avenue Elementary School's soccer fields and the estimated purchase price of this property is \$36,500. The Roseview Park Well will be on the eastern side of Roseview Park along Antelope North Road and the purchase price of this property is \$32,900. The total land purchase cost for the Coyle Avenue and Roseview Park Pump Stations and Treatment Systems is \$69,400.

### (c) Planning/Design/Engineering/Environmental Documentation Detail

Direct project planning/design/engineering/documentation costs were estimated using hourly wage paid by discipline and the number of hours to be expended for planning/design/engineering/environmental documentation work items. Detail is provided in the following tables; the total estimated costs for planning, design, and engineering are \$420,750.

All planning work for the Coyle Avenue and Roseview Park Pump Stations and Treatment Systems Project has been completed. This project has been found to be technically feasible and is similar to other projects that have been implemented by SSWD to date.

Final (100%) design for the wells has been completed; the new wells will be identical in design to that used at the Verner Avenue Well. Costs for preparation of the 60%, 90% and final design packages for the wells are presented here as part of the local funding match for the project. The 10% design of the pump stations and treatment systems has been completed, and costs associated with completion of that design package are presented here as part of the local funding match for the project. A 30%, 60%, 90% and 100% (Final) Design package will be prepared for this portion of the project. The final design report for the pump stations and treatment systems will be used to prepare a bid package for that portion of the project.

A Draft Initial Study/Negative Declaration (IS/ND) has been prepared for the Coyle Avenue and Roseview Park Pump Stations and Treatment Systems Project and is currently out for public review. A public meeting for the project was held on December 20, 2010. Preparation of the Final IS/ND will begin following closure of the public comment period, with the Final IS/ND to be prepared during the first quarter of 2011. Costs for preparation of the final environmental documentation are presented here as part of the local funding match for the project.

Several permits will be required for the Coyle Avenue and Roseview Park Pump Stations and Treatment Systems Project. A Sacramento County well construction permit and a California Department of Public Health Permit Amendment have already been obtained for each well. A Sacramento County sewer permit, Sacramento County Water Agency permit and a Public Water Supply Amendment will be obtained for each well prior to project construction. Additionally, a NOI to comply with the Central Valley Regional Water Quality Control Board's General Stormwater NPDES Permit will be filed for both the Coyle Avenue and Roseview Park sites. Labor costs associated with obtaining these permits are included in the costs shown below; permit fees are included in Other Costs (Section (g), below).

**Table 77: Planning/Design/Engineering Detail – Coyle Avenue**

Stage	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
<b>Coyle Avenue Well</b>				
60%, 90% and Final Design	Senior Principal	\$215.00	13	\$2,795
60%, 90% and Final Design	Senior Professional	\$160.00	90	\$14,400
60%,90% and Final Design	Project Professional	\$125.00	92	\$11,500
60%,90% and Final Design	Staff Professional	\$100.00	32	\$3,200
60%,90% and Final Design	CAD	\$110.00	20	\$2,200
60%,90% and Final Design	Clerical	\$60.00	35	\$2,100
<b>Well Subtotal</b>				<b>\$36,195</b>
<b>Coyle Avenue Pump Station</b>				
30%, 60%, 90% and Final Design	Senior Principal	\$215.00	20	\$4,300
30%, 60%, 90% and Final Design	Principal Project Manager	\$180.00	90	\$16,200
30%, 60%, 90% and Final Design	Senior Professional	\$160.00	170	\$27,200
30%, 60%, 90% and Final Design	Project Professional	\$125.00	130	\$16,250
30%, 60%, 90% and Final Design	Staff Professional	\$100.00	60	\$6,000
30%, 60%, 90% and Final Design	Engineering Assistant	\$85.00	140	\$11,900
30%, 60%, 90% and Final Design	CAD	\$110.00	240	\$26,400
30%, 60%, 90% and Final Design	Clerical	\$60.00	80	\$4,800
30%, 60%, 90% and Final Design	Electrical/Structural Engr.			\$50,000
30%, 60%, 90% and Final Design	General			\$6,130
<b>Pumping Station Subtotal</b>				<b>\$169,180</b>
<b>Total</b>				<b>\$205,375</b>

**Table 78: Planning/Design/Engineering Detail – Roseview Park**

Stage	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
<b>Roseview Park Well</b>				
60%, 90% and Final Design	Senior Principal	\$215.00	13	\$2,795
60%, 90% and Final Design	Senior Professional	\$160.00	90	\$14,400
60%,90% and Final Design	Project Professional	\$125.00	92	\$11,500
60%,90% and Final Design	Staff Professional	\$100.00	32	\$3,200
60%,90% and Final Design	CAD	\$110.00	20	\$2,200
60%,90% and Final Design	Clerical	\$60.00	35	\$2,100
<b>Well Subtotal</b>				<b>\$36,195</b>
<b>Roseview Park Pump Station</b>				
30%, 60%, 90% and Final Design	Senior Principal	\$215.00	20	\$4,300
30%, 60%, 90% and Final Design	Principal Project Manager	\$180.00	90	\$16,200
30%, 60%, 90% and Final Design	Senior Professional	\$160.00	170	\$27,200
30%, 60%, 90% and Final Design	Project Professional	\$125.00	130	\$16,250
30%, 60%, 90% and Final Design	Staff Professional	\$100.00	60	\$6,000
30%, 60%, 90% and Final Design	Engineering Assistant	\$85.00	140	\$11,900
30%, 60%, 90% and Final Design	CAD	\$110.00	240	\$26,400
30%, 60%, 90% and Final Design	Clerical	\$60.00	80	\$4,800
30%, 60%, 90% and Final Design	Electrical/Structural Engr.			\$50,000
30%, 60%, 90% and Final Design	General			\$6,130
<b>Pumping Station Subtotal</b>				<b>\$169,180</b>
<b>Total</b>				<b>\$205,375</b>

**Table 79: Environmental Documentation Detail – Coyle Avenue**

Stage	Other Direct Charge (description)	Total
Final CEQA	Completion of Environmental Documentation	\$5,000
<b>Total</b>		<b>\$5,000</b>

**Table 80: Environmental Documentation Detail – Roseview Park**

Stage	Other Direct Charge (description)	Total
Final CEQA	Completion of Environmental Documentation	\$5,000
<b>Total</b>		<b>\$5,000</b>

### (d) Construction/Implementation Detail

Estimated costs of construction for the Coyle Avenue and Roseview Park Pump Stations and Treatment Systems Project were based on quotes obtained by SSWD and on similar projects previously constructed. The total cost for Construction/Implementation for this Project is \$4,011,935, of which \$1,979,165 is for the Coyle Avenue site and \$2,032,770 is for the Roseview Park site. The basis for the estimate is shown in Table 81 for the Coyle Avenue Well, Table 82 for the Roseview Park Well, Table 83 for the Coyle Avenue Pump Station and Treatment System, and Table 84 for the Roseview Park Pump Station and Treatment System. No costs for equipment or labor are shown for this project as the quotes received were lump sum; therefore, the unit costs shown below include the costs for labor, materials and equipment.

**Table 81: Construction Cost - Coyle Avenue Well**

Materials Used (units)	Unit Costs (\$)	Number of Units	Total (\$)
Mobilization for Drilling (each)	\$75,000	1	\$75,000
36" Conductor Casing (ft)	\$450	60	\$27,000
Production Borehole (ft)	\$100	380	\$38,000
Caliper and Electric Log (each)	\$3,500	1	\$3,500
18.625" Diameter (O.D.) x 3/8" Wall Type 304 SS Well Casing (ft)	\$400	204	\$81,600
18.625" Diameter (O.D.) x 3/8" Wall Type 304 SS Blank Well Casing (ft)	\$450	76	\$34,200
18.625" Diameter (O.D.) Type 304 SS Wire Wrapped Well Casing (ft)	\$300	54	\$16,200
2" Sounding Pipe (ft)	\$12	195	\$2,340
3" Gravel Fill Pipe (ft)	\$10	180	\$1,800
4" Injection Pipe (ft)	\$40	180	\$7,200
Gravel Envelope (ft)	\$45	195	\$8,775
Annular Seal (ft)	\$50	160	\$8,000
Well Development (each)	\$20,000	1	\$20,000
Aquifer Testing (each)	\$5,000	1	\$5,000
Gyro and Video Survey (each)	\$3,500	1	\$3,500
Well Disinfection (each)	\$3,000	1	\$3,000
Standby Time (hrs)	\$275	12	\$3,300
Discharge of Development Water (each)	\$3,000	1	\$3,000
<b>Total</b>			<b>\$341,415</b>

**Table 82: Construction Cost - Roseview Park Well**

Materials Used (units)	Unit Costs (\$)	Number of Units	Total (\$)
Mobilization for Drilling (each)	\$75,000	1	\$75,000
36" Conductor Casing (ft)	\$450	60	\$27,000
Production Borehole (ft)	\$100	490	\$49,000
Caliper and Electric Log (each)	\$3,500	1	\$3,500
18.625" Diameter (O.D.) x 3/8" Wall Type 304 SS Well Casing (ft)	\$400	220	\$88,000
18.625" Diameter (O.D.) x 3/8" Wall Type 304 SS Blank Well Casing (ft)	\$450	40	\$18,000
18.625" Diameter (O.D.) Type 304 SS Wire Wrapped Well Casing (ft)	\$300	210	\$63,000
2" Sounding Pipe (ft)	\$12	210	\$2,520
3" Gravel Fill Pipe (ft)	\$10	200	\$2,000
4" Injection Pipe (ft)	\$40	180	\$7,200
Gravel Envelope (ft)	\$45	200	\$9,000
Annular Seal (ft)	\$50	180	\$9,000
Well Development (each)	\$20,000	1	\$20,000
Aquifer Testing (each)	\$5,000	1	\$5,000
Gyro and Video Survey (each)	\$3,500	1	\$3,500
Well Disinfection (each)	\$3,000	1	\$3,000
Standby Time (hrs)	\$275	12	\$3,300
Discharge of Development Water (each)	\$3,000	1	\$3,000
<b>Total</b>			<b>\$391,020</b>

**Table 83: Construction Cost – Coyle Avenue Pumping Station and Treatment System**

Materials Used (units)	Unit Costs (\$)	Number of Units	Total (\$)
Mobilization for Pump & Treatment Facilities (each)	1	\$78,000	\$78,000
Records and Submittals (each)	1	\$8,000	\$8,000
Site Health and Safety (each)	1	\$1,500	\$1,500
Temporary Barrier Fence (each)	1	\$3,000	\$3,000
Clearing and Grubbing (each)	1	\$10,000	\$10,000
Earthwork (each)	1	\$50,000	\$50,000
Paving (ft <sup>2</sup> )	6500	\$7	\$45,500
Fencing (ft)	350	\$100	\$35,000
Site Cleanup (each)	1	\$10,000	\$10,000
Concrete (yd <sup>3</sup> )	75	\$1,250	\$93,750
Painting (each)	1	\$13,000	\$13,000
Building (each)	1	\$180,000	\$180,000
Signs and Safety Equipment (each)	1	\$5,000	\$5,000
Station Piping & Drainage System (each)	1	\$150,000	\$150,000
Valve and Related Appurtenances (each)	1	\$70,000	\$70,000
Well Pump Components (each)	1	\$60,000	\$60,000
Service Pumps (each)	1	\$40,000	\$40,000
Loprest Fe/Mn Removal System (each)	1	\$225,000	\$225,000
Onsite Chemical Treatment (each)	1	\$30,000	\$30,000
Lab Equipment (each)	1	\$15,000	\$15,000
Disinfection of Pump and Piping (each)	1	\$5,000	\$5,000
Performance Testing (each)	1	\$10,000	\$10,000
Electrical (each)	1	\$400,000	\$400,000
Generator (each)	1	\$80,000	\$80,000
Landscaping and Miscellaneous (each)	1	\$20,000	\$20,000
<b>Total</b>			<b>\$1,637,750</b>

**Table 84: Construction Cost – Roseview Park Pumping Station and Treatment System**

Materials Used (units)	Unit Costs (\$)	Number of Units	Total (\$)
Mobilization for Pump & Treatment Facilities (each)	1	\$78,000	\$78,000
Records and Submittals (each)	1	\$8,000	\$8,000
Site Health and Safety (each)	1	\$1,500	\$1,500
Temporary Barrier Fence (each)	1	\$3,000	\$3,000
Clearing and Grubbing (each)	1	\$10,000	\$10,000
Earthwork (each)	1	\$50,000	\$50,000
Paving (ft <sup>2</sup> )	6500	\$7	\$45,500
Fencing (ft)	390	\$100	\$39,000
Site Cleanup (each)	1	\$10,000	\$10,000
Concrete (yd <sup>3</sup> )	75	\$1,250	\$93,750
Painting (each)	1	\$13,000	\$13,000
Building (each)	1	\$180,000	\$180,000
Signs and Safety Equipment (each)	1	\$5,000	\$5,000
Station Piping & Drainage System (each)	1	\$150,000	\$150,000
Valve and Related Appurtenances (each)	1	\$70,000	\$70,000
Well Pump Components (each)	1	\$60,000	\$60,000
Service Pumps (each)	1	\$40,000	\$40,000
Loprest Fe/Mn Removal System (each)	1	\$225,000	\$225,000
Onsite Chemical Treatment (each)	1	\$30,000	\$30,000
Lab Equipment (each)	1	\$15,000	\$15,000
Disinfection of Pump and Piping (each)	1	\$5,000	\$5,000
Performance Testing (each)	1	\$10,000	\$10,000
Electrical (each)	1	\$400,000	\$400,000
Generator (each)	1	\$80,000	\$80,000
Landscaping and Miscellaneous (each)	1	\$20,000	\$20,000
<b>Total</b>			<b>\$1,641,750</b>

### (e) Environmental Compliance/Mitigation/Enhancement Detail

As previously stated, SSWD will be completing the Final IS/ND for the Coyle Avenue and Roseview Park Pump Stations and Treatment Systems Project in early 2011. Based on the Draft IS/MND currently available for public review, there are no mitigations required for implementation of this project. Monitoring for compliance with the General Stormwater NPDES Permit for construction will be conducted by the construction contractor; therefore costs associated with this monitoring and reporting are included in the lump-sum construction costs. Costs for implementing the approved Project Performance Monitoring Plan are shown below and are estimated to be \$38,400 based on the information presented in Table 85.

**Table 85: Labor Costs for Environmental Compliance/Mitigation/Enhancement**

Discipline	Hourly Wage (\$)	Number of hours	Total (\$)
Performance Monitoring	\$160.00	240	\$38,400
<b>Total</b>			<b>\$38,400</b>

**(f) Construction Administration Detail**

Construction Administration includes the costs incurred to administer and manage construction for the Project. Construction administration costs were based on the expected labor hours that each discipline will spend on these activities. Total construction administration costs for the Coyle Avenue and Roseview Park Pump Stations and Treatment Systems Project were estimated to be \$267,440; a breakdown of this estimate for the Coyle Avenue site and Roseview Park site is provided in Tables 86 and 87, below.

**Table 86: Labor Costs for Construction Administration – Coyle Avenue Well**

Discipline	Hours	Unit Cost (\$)	Total Costs (\$)
Well - Senior Professional	14	\$160.00	\$2,240
Well - Project Professional	20	\$125.00	\$2,500
Well - Staff Professional	60	\$100.00	\$6,000
Well - Engineering Tech/Asst	20	\$85.00	\$1,700
Pump Station - Senior Professional	20	\$215.00	\$4,300
Pump Station - Principal Professional	100	\$180.00	\$18,000
Pump Station - Project Professional	240	\$125.00	\$30,000
Pump Station - Staff Professional	200	\$100.00	\$20,000
Pump Station - Engineering Assistant	80	\$85.00	\$6,800
Pump Station - Clerical	48	\$60.00	\$2,880
Pump Station - Electrical Engineering			\$20,000
Pump Station - Structural Engineering			\$10,000
Pump Station - General Admin.			\$9,300
<b>Total</b>			<b>\$133,720</b>

**Table 87: Labor Costs for Construction Administration – Roseview Park Well**

Discipline	Hours	Unit Cost (\$)	Total Costs (\$)
Well - Senior Professional	14	\$160.00	\$2,240
Well - Project Professional	20	\$125.00	\$2,500
Well - Staff Professional	60	\$100.00	\$6,000
Well - Engineering Tech/Asst	20	\$85.00	\$1,700
Pump Station - Senior Professional	20	\$215.00	\$4,300
Pump Station - Principal Professional	100	\$180.00	\$18,000
Pump Station - Project Professional	240	\$125.00	\$30,000
Pump Station - Staff Professional	200	\$100.00	\$20,000
Pump Station - Engineering Assistant	80	\$85.00	\$6,800
Pump Station - Clerical	48	\$60.00	\$2,880
Pump Station - Electrical Engineering			\$20,000
Pump Station - Structural Engineering			\$10,000
Pump Station - General Admin.			\$9,300
<b>Total</b>			<b>\$133,720</b>

**(g) Other Costs Detail**

Other costs are anticipated for the Coyle Avenue and Roseview Park Pump Stations and Treatment Systems Project are participation in preparation of a program-wide Project Performance Monitoring Plan and permit fees. A single Project Performance Monitoring Plan will be prepared for the entire suite of projects included in the Proposition 84 Implementation Grant Application; however, project specific monitoring criteria and schedule will be established and administered for each project. The costs shown here represent the estimated cost of preparing the associated section of the plan for the Coyle Avenue and Roseview Park Pump Stations and Treatment Systems Project and permit fees for the project.

**Table 88: Other Costs**

Item	Unit Cost	Units	Cost (\$)
County of Sacramento Well Drillers Permit	\$852	2	\$1,704
Department of Public Health Permit Amendment	\$4,960	2	\$9,920
County of Sacramento Sewer Permit	\$45	2	\$90
County of Sacramento Water Agency Permit	\$10,000	2	\$20,000
Stormwater NPDES Permit Amendment	\$298	2	\$596
Public Water Supply Amendment	\$1,860	2	\$3,720
Project Performance Plan Preparation	\$525	1	\$525
<b>Total</b>			<b>\$36,555</b>

### (h) Construction/Implementation Contingency Detail

A construction/implementation contingency of 20% (or \$802,387) of the construction/implementation costs will be used for the Coyle Avenue and Roseview Park Pump Stations and Treatment Systems Project. This percentage was based on prior experience with similar projects at this stage of design.

### (i) Grand Total (Sum rows (a) through (h) for each column) Detail

The total estimated cost for Coyle Avenue and Roseview Park Pump Stations and Treatment Systems Project is \$5,735,537; of this \$4,235,537 will be provided through a local funding match, and \$1,500,000 is being requested from the Proposition 84 IRWM Implementation Grant Program.

### Calculation of Funding Match %

The funding match for Coyle Avenue and Roseview Park Pump Stations and Treatment Systems Project is \$4,235,537 or 74% of the total project costs.

## Project 11: Willow Hill Pipeline Rehabilitation Project

The City of Folsom's Willow Hill Pipeline is a major component of the City's water system and a key project of the City's overall System Operation Review (SOR) Program due to its high leakage rate. The pipeline is a 30-inch diameter raw water pipeline that runs approximately 3.5 miles from Randall Drive to the City's Willow Hill Reservoir. Preliminary data indicates that the Willow Hill System loses up to one million (1,000,000) gallons per day, equating to approximately 1,100 acre-feet per year (AFY). This loss rate is currently costing the City approximately \$500,000 per year and can easily be remedied by implementing improvements such as slip-lining the pipeline and/or replacing sections of the pipeline to reduce losses.

The Willow Hill Pipeline Rehabilitation Project has been identified as a major project towards water system optimization throughout the City. Preparation of plans and specification is expected to begin in the first quarter of 2011 with a targeted completion, bid for construction, and commencement of construction activities in November 2011.

A summary of the budget for the City of Folsom's Willow Hill Pipeline Rehabilitation Project is presented in Table 89. The budget is based on the latest project documentation, as well as estimates for professional services. The total cost for this project is \$7,677,799. The funding match for this project is \$5,727,799 or 75%.

**Table 89: Willow Hill Pipeline Rehabilitation Project**

<b>Project Budget</b>						
<b>Project Title: Willow Hill Pipeline Rehabilitation Project</b>						
<b>Budget Category</b>		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>	<b>(e)</b>
		<b>Non-State Share* (Funding Match)</b>	<b>Requested Grant Funding</b>	<b>Other State Funds Being Used</b>	<b>Total</b>	<b>% Funding Match</b>
<b>(a)</b>	Direct Project Administration Costs	\$165,635	\$0	\$0	\$165,635	98%
<b>(b)</b>	Land Purchase/Easement	\$0	\$0	\$0	\$0	0%
<b>(c)</b>	Planning/Design/Engineering/ Environmental Documentation	\$399,960	\$0	\$0	\$399,960	50%
<b>(d)</b>	Construction/Implementation	\$4,516,170	\$1,950,000	\$0	\$6,466,170	75%
<b>(e)</b>	Environmental Compliance/ Mitigation/Enhancement	\$12,800	\$0	\$0	\$12,800	100%
<b>(f)</b>	Construction Administration	\$304,440	\$0	\$0	\$304,440	51%
<b>(g)</b>	Other Costs	\$5,485	\$0	\$0	\$5,485	100%
<b>(h)</b>	Construction/Implementation Contingency	\$323,309	\$0	\$0	\$323,309	100%
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$5,727,799</b>	<b>\$1,950,000</b>	<b>\$0</b>	<b>\$7,677,799</b>	<b>75%</b>
<b>*List sources of funding: Capital Improvement Funds; Rate Recovery</b>						

### (a) Direct Project Administration Detail

Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and board communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report), and were estimated to be \$165,635. This estimate assumes that LCP costs were equal to 2% of construction labor costs (or \$129,324); all other project administration costs (communications, reporting, etc.) were estimated based on expected level of effort by involved staff and costs for equipment and supplies. Table 90 details the hourly wages paid by discipline and the number of hours to be expended for project administration. The cost of equipment and supplies for this task are assumed to be 10% of project administration labor or \$15,058.

**Table 90: Project Administration Hourly Detail**

Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Senior/Principal	\$210.00	3	\$630
Senior Professional	\$160.00	90	\$14,400
Principal Professional	\$155.00	8	\$1,240
Project Professional	\$115.00	40	\$4,600
Clerical	\$48.00	8	\$384
Labor Compliance			\$129,323
Equipment & Supplies			\$15,058
<b>Total</b>			<b>\$165,635</b>

### (b) Land Purchase/Easement Detail

The City of Folsom already owns both the infrastructure and the associated property within the project. Therefore, there is no cost for budget category (b) for this project.

### (c) Planning/Design/Engineering/Environmental Documentation Detail

Direct project planning/design/engineering/documentation costs were estimated using hourly wage paid by discipline and the number of hours to be expended for planning, design, engineering, and environmental documentation work items. Detail is provided in the following table; the total estimated costs for planning, design, and engineering are \$3,999,960.

All planning work for the City of Folsom’s Willow Hill Pipeline Rehabilitation Project has been completed. This project has been found to be technically feasible and is similar to other projects that have previously been implemented by the City of Folsom.

Design for the project is expected to begin in January 2011 with the condition assessment. It is expected that 10% Design will be completed in April 2011 and the 30% Design will be completed in July 2011. The 90% Design will be completed in September 2011 and the 100% (Final) Design will be completed in

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October 2011. Costs for the design are summarized in Table 91, below. All design work will be performed by City of Folsom staff.

As the Willow Hill Pipeline Rehabilitation Project is a rehabilitation project of existing infrastructure, this project will be exempt from environmental review under CEQA Article 19, Section 15302. Therefore, no environmental documentation will be required. However, a Notice of Exemption will be filed for the project.

This project may require a public water system supply permit amendment from California Department of Public Health and an amendment to the existing Waste Discharge Requirements for City of Folsom. Labor costs associated with obtaining these permits are included in the costs shown below in the environmental stage; permit fees are included in Other Costs (Section (g), below).

**Table 91: Planning/Design/Engineering/Environmental Documentation Detail**

Stage	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
10% Design	Senior/Principal	\$210.00	60	\$12,600
10% Design	Principal Professional	\$155.00	80	\$12,400
10% Design	Senior Professional	\$135.00	100	\$13,500
10% Design	Project Professional	\$115.00	100	\$11,500
10% Design	Engineering Assistant	\$78.00	80	\$6,240
10% Design	Staff Professional	\$74.00	80	\$5,920
10% Design	Clerical	\$48.00	80	\$3,840
10% Design	Legal Counsel	\$250.00	8	\$2,000
<b>10% Design</b>				<b>\$68,000</b>
30% Design	Senior/Principal	\$210.00	60	\$12,600
30% Design	Principal Professional	\$155.00	80	\$12,400
30% Design	Senior Professional	\$135.00	100	\$13,500
30% Design	Project Professional	\$115.00	200	\$23,000
30% Design	Engineering Assistant	\$78.00	250	\$19,500
30% Design	Staff Professional	\$74.00	250	\$18,500
30% Design	Clerical	\$48.00	80	\$3,840
30% Design	Legal Counsel	\$250.00	8	\$2,000
<b>30% Design</b>				<b>\$105,340</b>

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Stage	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
90% Design	Senior/Principal	\$210.00	80	\$16,800
90% Design	Principal Professional	\$155.00	100	\$15,500
90% Design	Senior Professional	\$135.00	125	\$16,875
90% Design	Project Professional	\$115.00	125	\$14,375
90% Design	Engineering Assistant	\$78.00	250	\$19,500
90% Design	Staff Professional	\$74.00	250	\$18,500
90% Design	Clerical	\$48.00	75	\$3,600
90% Design	Legal Counsel	\$250.00	8	\$2,000
<b>90% Design</b>				<b>\$107,150</b>
100%/Final Design	Senior/Principal	\$210.00	80	\$16,800
100%/Final Design	Principal Professional	\$155.00	100	\$15,500
100%/Final Design	Senior Professional	\$135.00	125	\$16,875
100%/Final Design	Project Professional	\$115.00	125	\$14,375
100%/Final Design	Engineering Assistant	\$78.00	250	\$19,500
100%/Final Design	Staff Professional	\$74.00	250	\$18,500
100%/Final Design	Clerical	\$48.00	75	\$3,600
100%/Final Design	Legal Counsel	\$250.00	8	\$2,000
<b>100% Design</b>				<b>\$107,150</b>
Environmental	Senior/Principal	\$210.00	4	\$840
Environmental	Principal Professional	\$155.00	4	\$620
Environmental	Senior Professional	\$135.00	8	\$1,080
Environmental	Project Professional	\$115.00	20	\$2,300
Environmental	Engineering Assistant	\$78.00	20	\$1,560
Environmental	Staff Professional	\$74.00	40	\$2,960
Environmental	Clerical	\$48.00	20	\$960
Environmental	Legal Counsel	\$250.00	8	\$2,000
<b>Environmental Documentation</b>				<b>\$12,320</b>
<b>Total</b>				<b>\$399,960</b>

### (d) Construction/Implementation Detail

Estimated costs for the City of Folsom’s Willow Hill Pipeline Rehabilitation Project were based on City of Folsom’s experience with similar projects. The total cost for Construction/Implementation for this Project is \$6,466,170. The basis of the estimate is shown in Table 92. No costs for equipment or labor are shown for this project as the quotes received were lump sum; therefore, the unit costs shown below include the costs for labor, materials and equipment.

**Table 92: Cost of Construction**

Item	Unit Costs (\$)	Number of Units	Total (\$)
Pipeline Lining (ft)	\$205	21,000	\$4,305,000
Fitting Rehabilitation (no.)	\$275	3,250	\$893,750
Flow Control Structures (each)	\$22,000	4	\$88,000
Flow Meter Replacement (each)	\$20,000	4	\$80,000
Reservoir Lining (sq ft)	\$1.50	566,280	\$849,420
Site Restoration (lump sum)	\$250,000	1	\$250,000
<b>Total</b>			<b>\$6,466,170</b>

### (e) Environmental Compliance/ Mitigation/Enhancement Detail

Environmental Compliance, Mitigation and Enhancement costs for the Willow Hill Pipeline Rehabilitation Project are estimated to be \$12,800. As stated, this project is expected to be exempt from CEQA review and no mitigation measures are anticipated beyond standard construction practices. Monitoring for compliance with the NPDES Permit for construction will be conducted by the construction contractor; therefore costs associated with this monitoring and reporting are included in the lump-sum construction costs. Costs for implementing the approved Project Performance Monitoring Plan are shown below and are estimated to be \$12,800 based on the information presented in Table 93.

**Table 93: Cost of Environmental Compliance/Mitigation/Enhancement**

Discipline	Hourly Wage by discipline (\$)	Number of hours	Total (\$)
Performance Monitoring	\$160.00	80	\$12,800
<b>Total</b>			<b>\$12,800</b>

### (f) Construction Administration Detail

Construction Administration is expected to cost approximately \$304,400 based on the estimated time and materials costs for the project shown below. These estimates are based on the City of Folsom’s prior experience with similar projects.

**Table 94: Cost of Construction Administration**

Discipline	Hours	Unit Cost (\$)	Equipment Costs (\$)	Total Costs (\$)
Senior/Principal	120	\$210.00		\$25,200
Principal Professional	200	\$155.00		\$31,000
Senior Professional	200	\$135.00		\$27,000
Project Professional	330	\$115.00		\$37,950
Legal Counsel	24	\$250.00		\$6,000
Staff Professional	650	\$74.00		\$48,100
Engineering Assistant	325	\$78.00		\$25,350
Clerical	80	\$48.00		\$3,840
Direct Expenses			\$15,000.00	\$15,000
Electrical Engineering Sub			\$35,000.00	\$35,000
Structural Engineering Sub			\$50,000.00	\$50,000
<b>Total</b>				<b>\$304,440</b>

### (g) Other Costs Detail

Other costs anticipated for the Willow Hill Pipeline Rehabilitation Project are participation in preparation of a program-wide Project Performance Monitoring Plan and permit fees. A single Project Performance Monitoring Plan will be prepared for the entire suite of projects included in the Prop 84 Implementation Grant Application; however, project specific monitoring criteria and schedule will be established and administered for each project. The costs shown here represent the estimated cost of preparing the associated section of the plan for the Willow Hill Pipeline Rehabilitation Project and permit fees for the project.

**Table 95: Other Costs**

Item	Cost (\$)
Amendment to WDR for City of Folsom (CVRWQCB)	\$2480
Department of Public Health Permit Amendment	\$2480
Project Performance Plan Preparation	\$525
<b>Total</b>	<b>\$5,485</b>

### (h) Construction/Implementation Contingency Detail

The construction/implementation contingency percentage applied to this project is 5% of the construction expenses, or \$375,000. The contingency was estimated based on prior project experience, recognizing the minimal level of open trench work expected and the well-defined field conditions the will result from the field assessment. These costs include funds to handle unknown and unspecified conditions encountered during construction or implementation of the project.

### (i) Grand Total (Sum rows (a) through (h) for each column) Detail

The total estimated cost for the Willow Hill Pipeline Rehabilitation Project is \$7,677,799; \$5,727,799 is provided through funding match and \$1,950,000 is being requested from the Proposition 84 IRWM grant program.

### Calculation of Funding Match %

The funding match for Willow Hill Pipeline Rehabilitation Project is \$5,727,799 or 75% of the total project costs. The matching funds will be provided from City of Folsom Capital Improvement Program funds and rate recovery.

## Project 12: Lower American River Mile 0.5 Aquatic Riparian Habitat Enhancement Project

The Lower American River Mile 0.5 Aquatic Riparian Habitation Enhancement Project is located in the American River Parkway (Parkway) along the north (or right) bank of the American River, one-half mile upstream of the confluence with the Sacramento River. The project has been developed to increase the frequency of flooded habitat availability for fish in the American and Sacramento Rivers during the spring and winter season and to provide improved riparian habitat for birds and other wildlife species. These enhancements will be achieved by lowering and re-grading the over-steepened river bank at the site and improving the quality of the upland habitat on the adjacent elevated floodplain. Grading and planting activities will occur in two phases over two construction seasons to comply with the U.S. Fish and Wildlife Service's Valley Elderberry Longhorn Beetle guidelines and requirements. The first phase will involve transplanting existing elderberry shrubs and reseeding for erosion control. The second phase consists of degrading the existing bank at River Mile 0.5R (RM 0.5R), grading benches at various elevations, installing erosion control structures and woody material on the constructed benches and planting native grasses, tules, shrubs and trees on the benches and on the adjacent elevated floodplain. A portion of the match funding fulfills compensatory mitigation requirements for SAFCA's Natomas Levee Improvement Program.

A summary of the budget for the Lower American River Mile 0.5 Aquatic Riparian Habitation Enhancement Project is presented in Table 96. The budget is based on the latest project documentation, including the final design, as well as estimates for professional services. The total cost for this project is \$2,685,889. The funding match for this project is \$1,260,889 or 47% and will be provided by local and partner funds, in-kind services, and possibly other state and federal sources that have yet to be identified.

**Table 96: Lower American River Mile 0.5 Aquatic Riparian Habitat Enhancement Budget**

<b>Project Budget</b>						
<b>Project Title: Lower American River Mile 0.5 Aquatic Riparian Habitat Enhancement Project</b>						
<b>Budget Category</b>		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>	<b>(e)</b>
		<b>Non-State Share* (Funding Match)</b>	<b>Requested Grant Funding</b>	<b>Other State Funds Being Used</b>	<b>Total</b>	<b>% Funding Match</b>
<b>(a)</b>	Direct Project Administration Costs	\$47,832	\$0	\$0	\$47,832	100%
<b>(b)</b>	Land Purchase/Easement	\$251,460	\$0	\$0	\$251,460	100%
<b>(c)</b>	Planning/Design/Engineering/ Environmental Documentation	\$189,866	\$0	\$0	\$189,866	100%
<b>(d)</b>	Construction/Implementation	\$266,581	\$1,425,000	\$0	\$1,691,581	16%
<b>(e)</b>	Environmental Compliance/ Mitigation/Enhancement	\$23,000	\$0	\$0	\$23,000	100%
<b>(f)</b>	Construction Administration	\$135,326	\$0	\$0	\$135,326	100%
<b>(g)</b>	Other Costs	\$8,508	\$0	\$0	\$8,508	100%
<b>(h)</b>	Construction/Implementation Contingency	\$338,316	\$0	\$0	\$338,316	100%
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$1,260,889</b>	<b>\$1,425,000</b>	<b>\$0</b>	<b>\$2,685,889</b>	<b>47%</b>

**\*List sources of funding:** *Local funds, partner funds, in-kind services*

### (a) Direct Project Administration Detail

Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and board communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report), and were estimated to be \$47,832. The Labor Compliance Program will be performed in-house by Sacramento County Construction Management. This estimate assumes that LCP implementation costs were equal to 2% of construction labor costs (or \$33,832); all other project administration costs (communications, reporting, etc.) were estimated based on expected level of effort by involved staff and costs for equipment and supplies. Table 97 details the hourly wages paid by discipline and the number of hours to be expended for project administration.

**Table 97: Project Administration Hourly Detail**

Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Administration	\$100.00	56	\$5,600
Reporting	\$100.00	84	\$8,400
Labor Compliance			\$33,832
<b>Total</b>			<b>\$47,832</b>

### (b) Land Purchase/Easement Detail

The land for the proposed project consists of 11.43 acres purchased prior to 1984 by Sacramento County, a partner in this project. The County has calculated a market value of \$22,000 per acre for the use of the American River Parkway for restoration by outside parties. This cost will either be waived or paid by SAFCA. For this project, the anticipated cost for the use of the land is \$251,460.

### (c) Planning/Design/Engineering/Environmental Documentation Detail

Direct project planning/design/engineering/environmental documentation costs include the actual cost of the 100% (Final) Design, which was completed June 19, 2009, and the anticipated costs associated with obtaining the permits required for the project. An Environmental Assessment and Initial Study were submitted December 2007, and a Notice of Determination and project approval was completed May 27, 2008. Costs associated with the Environmental documentation are not included in the cost estimate for this budget category.

Table 98 summarizes the cost of the final design and the estimated labor costs for permitting. Permit fees are included in Other Costs (Section (g), below). While the costs shown below for permitting will be incurred subsequent to the grant agreement execution, the costs for final design shown below are provided as documentation of recent expenses provided as part of the local funding match for this project.

The costs summarized below include the cost of preparing a Basis of Design Report, completed June 2009, but do not include any previous studies.

**Table 98: Planning/Design/Engineering Detail**

Stage	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Final Design	Incurred Design Costs			\$164,866
Permitting	Environmental Planner	\$100.00	250	\$25,000
<b>Total</b>				<b>\$189,866</b>

#### (d) Construction/Implementation Detail

The total cost for Construction/Implementation for the Lower American River Mile 0.5 Aquatic Riparian Habitation Enhancement Project is \$1,691,581. The basis of the estimate is shown in Table 99; costs shown in this table are furnished and installed prices and include material, labor and equipment costs.

Work to be completed under this task includes mobilizing and preparing the site, transplanting the existing elderberry bushes to a new site, re-grading of the floodplain site and existing bank to provide an appropriate habitat, and planting of the new floodplain. See Attachment 3 – Work Plan for more details.

**Table 99: Furnished and Installed Materials Costs for Construction**

Item (unit)	Unit Costs (\$)	Number of Units	Total (\$)
Mobilization & Site Preparation (LS)	\$35,000	1	\$35,000
Site Restoration (LS)	\$10,372	1	\$10,372
Record Drawings (LS)	\$7,840	1	\$7,840
Irrigation Sprinkler System (LS)	\$85,000	1	\$85,000
Elderberry Signage (LS)	\$1,000	1	\$1,000
Elderberry Transplanting (each)	\$400.00	500	\$200,000
Traffic Control (LS)	\$50,000	1	\$50,000
Clearing and Grubbing (LS)	\$130,000	1	\$130,000
Protection Fencing (ft)	\$3.50	2000	\$7,000
Excavation (cu. yd)	\$7.00	60000	\$420,000
Brush Mattress (LS)	\$92,818	1	\$92,818
In-Stream Woody Material (LS)	\$100,996	1	\$100,996
Aquatic Tree Band Container Planting (each)	\$3.50	11600	\$40,600
Upland Treepot Container Planting (each)	\$20.05	12000	\$240,600
Cages and Mulch (each)	\$35.00	1500	\$52,500
Benches (each)	\$20.05	1500	\$30,075
Shrubs and Vines (each)	\$20.05	600	\$12,030
Beaver Exclusion Fence (each)	\$4.50	2000	\$9,000
Broadcast Seed (acres)	\$1,500.00	4	\$5,250
Drill Seed Upland (acres)	\$2,000.00	8	\$16,000
Disposal (acres)	\$5,000.00	2	\$10,500
Landscape Establishment (years)	\$45,000.00	3	\$135,000
<b>Total</b>			<b>\$1,691,581</b>

### (e) Environmental Compliance/ Mitigation/Enhancement Detail

A Mitigated Negative Declaration was completed in May 2008. All mitigation measures have been incorporated into the final design and will be accomplished by avoiding sensitive resources through pre-construction surveys and transplanting elderberries per U.S. Fish and Wildlife Service Requirements. These costs have been included as part of construction costs in budget category (d). Environmental compliance costs include stormwater pollution control, estimated to cost \$13,000, and implementation of the approved Project Performance Monitoring Plan, estimated to be \$10,000. Total costs for this budget category are presented in Table 100.

**Table 100: Costs for Environmental Compliance/Mitigation/Enhancement**

Discipline	Unit Cost (\$)	Number of Units	Total (\$)
Stormwater Pollution Control (Lump Sum)	\$13,000	1	\$13,000
Project Performance Monitoring (hrs)	\$100.00	100	\$10,000
<b>Total</b>			<b>\$23,000</b>

### (f) Construction Administration Detail

Construction Administration is expected to cost approximately \$135,327, or approximately 8% of estimated construction cost. This cost is estimated based on prior project experience.

### (g) Other Costs Detail

Other costs for the Lower American River Mile 0.5 Aquatic Riparian Habitation Enhancement Project include participation in preparation of a program-wide Project Performance Monitoring Plan and permit fees. A single Project Performance Monitoring Plan will be prepared for the entire suite of projects included in the Prop 84 Implementation Grant Application; however, project specific monitoring criteria and schedule will be established and administered for each project. The costs shown in Table 101 represent the estimated cost of preparing the associated section of the Plan for the Lower American River Mile 0.5 Aquatic Riparian Habitation Enhancement Project and permit fees.

**Table 101: Other Costs**

Item	Cost (\$)
Project Performance Monitoring Plan	\$525
DFG Section 1602 Streambed Alteration Permit	\$4,483
RWQCB Section 401 Permit	\$500
State Lands Commission Lease	\$3,000
<b>Total</b>	<b>\$8,5078</b>

### (h) Construction/Implementation Contingency Detail

The construction/implementation contingency percentage applied to this project is 20% of the construction expenses, or \$338,316. The contingency is based on prior project experience and engineering practice. These costs include funds to handle unknown and unspecified conditions encountered during construction or implementation of the project.

### (i) Grand Total (Sum rows (a) through (h) for each column) Detail

The total estimated cost for Lower American River Mile 0.5 Aquatic Riparian Habitat Enhancement Project is \$2,685,889; \$1,260,899 is provided through funding match and \$1,425,000 is being requested from the Proposition 84 IRWM grant program.

## Calculation of Funding Match %

The funding match for the Lower American River Mile 0.5 Aquatic Riparian Habitat Enhancement Project is \$1,260,889 or 47% of the total project costs. The source of the funding match includes local funds, partner funds, and in-kind services.

## Project 13: Lower Cosumnes River Floodplain Restoration Project

The Lower Cosumnes River Floodplain Restoration Project, proposed by Ducks Unlimited, is located within the Cosumnes River Preserve in the upper Sacramento-San Joaquin Delta. The Cosumnes River is the last free flowing river on the west slope of the Sierra Nevada. Its lower reaches, including the proposed project location, flow through one of the biologically richest regions in California's Central Valley before merging with the Mokelumne River to flow into the Sacramento-San Joaquin Delta and eventually the Pacific Ocean. The project site is located on the Cosumnes River Preserve - Cougar Wetlands Unit, which is owned and managed by the Bureau of Land Management. The Cosumnes River Preserve is a collaborative partnership between federal, state, and private landowners to conserve, restore, and manage the upland, wetland, riparian, and riverine habitat associated with the lower Cosumnes River.

The project site is currently managed as a seasonal wetland that is filled with pumped river water from an existing agricultural diversion on the Cosumnes River. This project provides a rare opportunity to restore historic floodplain connectivity to the lower portion of a Central Valley river. The Cosumnes River is typical of other mid-Central Valley rivers with its degraded channel lacking complexity and few connections to side channels, backwaters, or low elevation floodplains. This condition creates a tendency for juvenile Chinook salmon to be forced downstream during high flow events, without an opportunity to rear in slack water areas, such as floodplains.

The proposed project will open two breaches in the levee to provide perennial and tidal connectivity of the River to the floodplain. From the breaches, a channel will be cut into the site to re-establish two historic tidal slough channels. Multiple slough side channels with varying elevations and small sub-floodplains will also be excavated off the two main channels. The upper ends of the two historic sloughs are further diked off from the floodplain and are currently managed to retain floodwaters for wintering waterfowl and seasonal brood rearing ponds. This management regime will continue, however fish screens will be installed on the pond inlets to prevent fish entrainment in the managed ponds.

A summary of the budget for the Lower Cosumnes River Floodplain Restoration Project is presented in Table 102. The budget is based on the latest project documentation, including the final design, as well as estimates for professional services. The total cost for this project is \$1,112,314. The funding match for this project is \$692,314 or 62% and will be provided by local and partner funds, in-kind services, and possibly other state and federal sources that have yet to be identified.

**Table 102: Lower Cosumnes River Floodplain Restoration Project Budget**

<b>Project Budget</b>						
<b>Project Title: Lower Cosumnes River Floodplain Restoration Project</b>						
<b>Budget Category</b>		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>	<b>(e)</b>
		<b>Non-State Share* (Funding Match)</b>	<b>Requested Grant Funding</b>	<b>Other State Funds Being Used</b>	<b>Total</b>	<b>% Funding Match</b>
<b>(a)</b>	Direct Project Administration Costs	\$39,840	\$0	\$0	\$39,840	100%
<b>(b)</b>	Land Purchase/Easement	\$0	\$0	\$0	\$0	0%
<b>(c)</b>	Planning/Design/Engineering/ Environmental Documentation	\$236,000	\$12,000	\$0	\$248,000	95%
<b>(d)</b>	Construction/Implementation	\$319,000	\$353,000	\$0	\$672,000	47%
<b>(e)</b>	Environmental Compliance/ Mitigation/Enhancement	\$24,000	\$10,000	\$0	\$34,000	71%
<b>(f)</b>	Construction Administration	\$24,200	\$10,000	\$0	\$34,200	71%
<b>(g)</b>	Other Costs	\$5,954	\$0	\$0	\$5,954	100%
<b>(h)</b>	Construction/Implementation Contingency	\$43,320	\$35,000	\$0	\$78,320	55%
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$692,314</b>	<b>\$420,000</b>	<b>\$0</b>	<b>\$1,112,314</b>	<b>62%</b>
<b>*List sources of funding: Funds obtained from federal grants and private donors</b>						

### (a) Direct Project Administration Detail

Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and board communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report), and were estimated to be \$39,840. This estimate assumes that LCP costs were equal to 2% of construction labor costs (or \$13,440); all other project administration costs (communications, reporting, etc.) were estimated based on expected level of effort by involved staff and costs for equipment and supplies. Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and council communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report) and were estimated to be \$79,893. This estimate assumes that LCP costs were equal to 2% of construction labor costs (or \$33,550), and that all other project administration costs (communications, reporting, etc.) were equivalent to 1.5% of overall construction costs (or \$46,343). These estimates were based on past experience with implementation of a similar project funded under a Proposition 50 Implementation Grant, prior experience with Labor Compliance Program costs, and experience on other similar projects.

Table 103 details the hourly wages paid by discipline and the number of hours to be expended for project administration. The cost of equipment and supplies for this task are assumed to be approximately 10% of project administration labor or \$2,400.

**Table 103: Project Administration Detail**

Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Administration – Engineer	\$120.00	150	\$18,000
Labor Compliance Program			\$13,440
Reporting – Engineer	\$120.00	50	\$6,000
<b>Total</b>			<b>\$37,440</b>

### (b) Land Purchase/Easement Detail

The project site is located on the Cosumnes River Preserve - Cougar Wetlands Unit, which is owned and managed by the Bureau of Land Management. The Cosumnes River Preserve is a collaborative partnership between federal (including the Bureau of Land Management), state, and private landowners so land purchase and easements are not required for this project and therefore, there is no associated cost in the budget for Budget Category (b).

### (c) Planning/Design/Engineering/Environmental Documentation Detail

Direct project planning/design/engineering/documentation costs were estimated using hourly wage paid by discipline and the number of hours to be expended for planning/design/engineering/environmental documentation work items. Detail is provided in the following tables; the total estimated costs for planning, design, and engineering are \$248,000.

Several previous studies have already been performed evaluating the feasibility of this type of project for providing endangered species and rare habitat restoration as well as documenting the need for this type of project in the Lower Cosumnes River. Additional planning work includes a floodplain hydrologic modeling study to identify flood stage and distribution changes resulting from the project. This is expected to be completed by July 2011 and will be used in support of a CEQA Mitigated Negative Declaration.

The 10% Design was completed in January of 2010 by Ducks Unlimited staff. Cost of completion for the 10% design was \$15,000, which was included as funding match. Table 104 summarizes the engineering and coordination costs for the 30%, 60% and 100% (Final) Designs. The 30% and 60% Design will include finer details of the proposed site work. The 100% (Final) design will include all plans and specifications for the project and will be used to advertise the project for bid for construction.

A CEQA Mitigated Negative Declaration is expected to be started upon completion of the hydrologic modeling study. In addition, to comply with NEPA, an Environmental Assessment will be developed to satisfy federal Endangered Species Act and National Historic Preservation Act requirements. Both CEQA and NEPA documentation is expected to be completed by February 2012.

Several permits will be required for the Lower Cosumnes River Floodplain Restoration Project. These permits include a California Department of Fish and Game (DFG) Section 1600 Streambed Alteration Agreement, a U.S. Army Corps of Engineers (USACOE) Section 404 permit, a Central Valley Regional Water Quality Control Board (CVRWQCB) Section 401 permit and a Floodplain Encroachment Permit from the Central Valley Flood Protection Board. In addition, a State Water Quality Control Board Stormwater NPDES Permit for Construction will be required. All permits will be acquired prior to construction by Ducks Unlimited Staff with an expected date prior to May 30, 2012. Labor costs associated with obtaining these permits are included in the costs shown below; permit fees are included in Other Costs (Section (g), below).

**Table 104: Planning/Design/Engineering/Environmental Documentation Ducks Unlimited Staffing Costs**

Stage	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Engineering Design – 30%	Engineer	\$120.00	175	\$21,000
Engineering Design – 60%	Engineer	\$120.00	100	\$12,000
Engineering Design – 100% (Final)	Engineer	\$120.00	100	\$12,000
Engineering Design & Environmental Documentation Coordination	Project Manager	\$100.00	80	\$8,000
<b>Total</b>				<b>\$53,000</b>

**Table 105: Planning/Design/Engineering/Environmental Documentation Other Costs**

Stage	Other Direct Charge	Total
Engineering Design	Engineering Design – 10%	\$15,000
Permitting	Permitting Costs	\$35,000
Planning	Floodplain Hydrologic Modeling	\$65,000
Environmental Documentation	CEQA Compliance	\$40,000
Environmental Documentation	NEPA Compliance	\$40,000
<b>Total</b>		<b>\$195,000</b>

### (d) Construction/Implementation Detail

The total cost for Construction/Implementation for this Project is \$672,000. The basis of the estimate is shown in Table 106. The costs shown below include all costs for labor, materials and equipment; costs shown in this table are furnished and installed prices and include material, labor and equipment costs.

Work to be completed under this task includes mobilizing and preparing the site, levee breaching, interior floodplain de-leveling, and installing fish exclusion screens on existing water intake structures. See Attachment 3 – Work Plan for more details.

**Table 106: Construction Cost Detail**

Materials Used (units)	Unit Cost (\$)	Number of Units	Total (\$)
Mobilization and Site Preparation (each)	\$30,000	1	\$30,000
Revegetation – trees and wetland plants (each)	\$25,000	1	\$25,000
Access Road Gravel (each)	\$15,000	1	\$15,000
Purchase and Installation of Fish Screen (no.)	\$13,000	4	\$52,000
Earthwork – Cut swales & levee breaches (cubic yard)	\$5.00	100,000	\$500,000
Earthwork – Compacted access/maintenance roads (cubic yard)	\$3.00	15,000	\$50,000
<b>Total</b>			<b>\$672,000</b>

### (e) Environmental Compliance/ Mitigation/Enhancement Detail

The SWPPP BMPs will include seeding of all disturbed soil areas and equipment staging areas and other stormwater measures for post-construction project stabilization. These costs will be incurred by the contractor and are included in the lump sum construction costs in budget category (d). Mitigation measures for CEQA and NEPA compliance are anticipated to consist of timing construction activities to occur during the non-breeding season for the Swainson’s Hawk and other birds and monitoring sensitive flora and fauna species during project implementation. Cofferdams will also be constructed to prevent sedimentation and preserve water quality in the Cosumnes River during implementation of the project. Finally, monitoring required as part of implementation of the Project Performance Plan will be implemented under this task.

Materials costs for implementing the environmental compliance measures are summarized in Table 107.

Table Labor costs for implementing the environmental compliance measures and the Project Performance Monitoring Plan are summarized in Table 108. Total costs for environmental compliance/mitigation and monitoring measures are estimated to be \$34,000.

**Table 107: Cost of Materials for Environmental Compliance/Mitigation/Enhancement**

Materials Used (Units)	Unit Cost (\$)	Number of Units	Total (\$)
Cofferdam (each)	\$20,000	1	\$20,000
<b>Total</b>			<b>\$20,000</b>

**Table 108: Labor Costs for Implementing Project Performance Monitoring Plan**

Discipline	Unit Cost (\$)	Number of Units	Total (\$)
Biologist (hr)	\$100.00	100	\$10,000
Cofferdam Installation Crew (each)	\$100.00	40	\$4,000
<b>Total</b>			<b>\$14,000</b>

### (f) Construction Administration Detail

Construction Administration represents the costs incurred to administer and manage construction for the Project. Construction administration costs are estimated to be \$34,200, based on 285 hours of Ducks Unlimited Staff time at \$120/hour. This cost is based on Ducks Unlimited’s prior experience with similar projects.

### (g) Other Costs Detail

Other costs anticipated for the Lower Cosumnes River Floodplain Restoration Project include participation in preparation of a program-wide Project Performance Monitoring Plan, fish and water quality monitoring, and permitting fees. A single Project Performance Monitoring Plan will be prepared for the entire suite of projects included in the Proposition 84 Implementation Grant Application; however, project specific monitoring criteria and schedule will be established and administered for each project.

**Table 109: Other Costs**

Item	Cost (\$)
Project Performance Monitoring Plan	\$525
DFG Section 1602 Streambed Alteration Permit	\$4,484
ACOE 404 Permit and Section 7 Consultation	\$100
RWQCB Section 401 Permit	\$500
NPDES General Stormwater Permit	\$346
Central Valley Flood Protection Board Encroachment Permit	No Fee
<b>Total</b>	<b>\$5,954</b>

### (h) Construction/Implementation Contingency Detail

The construction/implementation contingency percentage applied to this project is approximately 12% of the construction expenses, or \$78,320. The contingency is based on prior project experience and engineering practice. These costs include funds to handle unknown and unspecified conditions encountered during construction or implementation of the project.

### (i) Grand Total (Sum rows (a) through (h) for each column) Detail

The total estimated cost for Lower Cosumnes River Floodplain Restoration Project is \$1,112,314; \$692,314 is provided through funding match and \$420,000 is being requested from the Proposition 84 IRWM grant program.

### Calculation of Funding Match %

The funding match for Lower Cosumnes River Floodplain Restoration Project is \$692,314 or 62% of the total project costs. The local funding match will be provided local and partner funds, in-kind services, and possibly other state and federal sources that have yet to be identified.

## Project 14: OHWD / Rancho Murieta Groundwater Recharge Project

The OHWD/Ranch Murieta Groundwater Recharge Project is a regional conjunctive use project that will divert 4,000 acre-feet of available water owned by Rancho Murieta Community Services District (RMCS D) to spreading basins in Omochumne-Hartnell Water District (OHWD) to allow recharge of the groundwater aquifer. This project will benefit RMCS D by allowing the recovery of some the stored water during dry years to meet water supply shortage while also benefiting OHWD by increasing groundwater levels in the aquifer that is utilized by land owners in the Omochumne-Hartnell Water District.

This project will be constructed in three phases—Phase 1, Phase 2 and Phase 3. Phase 1 of the project consists of installing a river intake and constructing a conveyance pipeline and spreading basin. Phase 2 of the project consists of recovery well construction, while in Phase 3, an inflatable Obermeyer weir will

be installed to improve diversion capabilities. OHWD is requesting funding for Phases 1 and 2 of this project, which can be operated independently of Phase 3. Phase 3, which will be self-funded by OHWD, will be constructed later and would improve the efficiency of the project, but is not necessary for the function of the overall project.

During the Phase 1 project, a new pump station and intake on the Cosumnes River will be installed upstream of Blodgett Dam. The new pump station will be capable of drawing up to 30 cubic feet per second (cfs), and will draw water from a wet well placed in the river bank area that is hydraulically connected to the river. A culvert will connect this wet well to the intake structure, which will screen the diversion to protect fishery resources. Power sources for the lift station and fish screen will be installed by Sacramento Municipal Utility District (SMUD) as part of this project. Also in Phase 1, approximately 600 feet of pipeline will be installed to convey the water from the pumping unit to the spreading basin. Existing soils in the project area will be tested to determine their suitability as a backfill around the pipeline and levee protection features. Pressure relief and vacuum valves would be installed to provide pipeline protection. A riprap outflow structure will be constructed in the spreading basin to dissipate energy from water flow and provide protection against soil erosion.

The spreading basin will be constructed to allow infiltration of water. Removal of top soil will improve the infiltration rates and will provide earth material needed for constructing berms around the basin. A monitoring well will also be completed within the spreading basin to assess groundwater impacts. Field experience during drilling will determine if more than one well will be required.

In Phase 2 of the project, RMCS D will construct extraction wells in or near their service area to allow recovery of water during shortage periods. The recovery can take place on a regular cycle, such as the annual dry season, or it may simply be part of the long-term plan, such as for future drought protection. The Phase 2 scope of work consists of construction of a 500 to 600 foot deep groundwater well capable of producing between 500 and 600 gallons per minute (gpm). RMCS D has identified several possible well sites in the area that, based on existing information, appear to be suitable. While one well is currently planned for construction, the District acknowledges that additional wells may need to be constructed in the future, depending on future development scenarios. In addition to the proposed well, a 5,000-foot 10-inch diameter transmission pipeline will be constructed to convey extracted groundwater to the District's existing distribution system. The connection point will be a 10-inch diameter stub, located at the southwest end of the distribution system. No pretreatment of the groundwater is anticipated as the extracted water will be blended with available surface water supplies and will only be used in periods of water shortages or droughts.

A summary of the budget for Phases 1 and 2 of the OHWD/Rancho Murieta Groundwater Recharge Project is presented in Table 110. Phase 3 is not included in the budget, as grant funding is not being requested for this phase nor are costs of this phase being used as a source of matching funds. The budget is based on the latest project documentation as well as estimates for professional services. The total cost for this project is \$2,468,846. The funding match for this project is \$970,390 or 39%.

**Table 110: OHWD/Rancho Murieta Groundwater Recharge Project Budget**

<b>Project Budget</b>						
<b>Project Title: OHWD-Rancho Murieta Groundwater Recharge Project</b>						
		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>	<b>(e)</b>
<b>Budget Category</b>		<b>Non-State Share* (Funding Match)</b>	<b>Requested Grant Funding</b>	<b>Other State Funds Being Used</b>	<b>Total</b>	<b>% Funding Match</b>
<b>(a)</b>	Direct Project Administration Costs	\$52,470	\$0	\$0	\$52,470	100%
<b>(b)</b>	Land Purchase/Easement	\$75,000	\$0	\$0	\$75,000	100%
<b>(c)</b>	Planning/Design/Engineering/ Environmental Documentation	\$259,000	\$188,540	\$0	\$447,540	58%
<b>(d)</b>	Construction/Implementation	\$175,084	\$1,309,916	\$0	\$1,485,000	12%
<b>(e)</b>	Environmental Compliance/ Mitigation/Enhancement	\$19,200	\$0	\$0	\$19,200	100%
<b>(f)</b>	Construction Administration	\$74,725	\$30,620	\$0	\$74,725	100%
<b>(g)</b>	Other Costs	\$17,911	\$0	\$0	\$17,911	100%
<b>(h)</b>	Construction/Implementation Contingency	\$297,000	\$0	\$0	\$297,000	100%
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$970,390</b>	<b>\$1,498,456</b>	<b>\$0</b>	<b>\$2,468,846</b>	<b>39%</b>

**\*List sources of funding:** *District property tax revenue, acreage assessments, water charges and in-kind services*

### (a) Direct Project Administration Detail

Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and board communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report), and were estimated to be \$52,470. This estimate assumes that LCP costs were equal to 2% of construction labor costs (or \$29,700). Table 111 details the hourly wages paid by discipline and the number of hours to be expended for project administration. The cost of equipment and supplies for this task are assumed to be 10% of project administration labor and labor compliance, or \$4,770.

**Table 111: Administration Hourly Detail**

Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Senior Professional	\$150.00	120	\$18,000
Labor Compliance			\$29,700
<b>Total</b>			<b>\$47,700</b>

### (b) Land Purchase/Easement Detail

The proposed location of the project is not owned by the Omochumne-Hartnell Water District (OHWD) or the Rancho Murieta Community Services District. The spreading basin location is owned by a private owner. OHWD has contacted the land owner and received initial verbal approval to participate in the proposed project. The proposed extraction well location is within an easement dating back to 1955. However, portions of the transmission pipeline will be outside this easement and new easement extensions will need to be negotiated.

Negotiations of rights-of-way and land lease will conclude once funding for this project is approved. The lease for the spreading basin is expected to cost \$25,000 annually with an assumed initial lease term of 10 years and an option for an additional 10 years. Only the initial year of the lease to commence the project is included in the project budget; the remaining 19 years of lease expense are captured in the operation and maintenance expenses of the costs and benefits analysis in this application. The easements required for the extraction well and transmission pipeline, including the renegotiated easement extensions, are expected to total \$50,000. If necessary, easements for the intake and distribution pipeline will also be secured, but as the need for such easements is not currently expected, no cost was assumed in the budget. The total cost of the first-year lease and the permanent well easement for Phases 1 and 2 is \$75,000.

### (c) Planning/Design/Engineering/Environmental Documentation Detail

Direct project planning/design/engineering/environmental documentation costs were estimated using hourly wage paid by discipline and the number of hours to be expended for planning, design, engineering, environmental documentation work items. Total estimated costs for planning, design and environmental documentation are \$447,540; detail is provided in Tables 112 and 113.

The 30%, 60%, 90% and 100% (Final) Design Packages will be prepared for the project, and the final design report will be used to prepare a bid package for the project.

Several Initial Studies/Mitigated Negative Declarations (IS/MNDs) will be prepared for the project. OHWD will prepare an IS/MND for the Phase 1 components of the project. RMCSO will prepare one IS/MND for the Phase 2 components of the project and a separate IS/MND to address water rights for the second point of diversion. Preparation of the Phase 1 and Phase 2 IS/MNDs is expected to begin in September 2011, with the Final IS/MND completed and adopted by April 2012. Preparation of the Water Rights IS/MND is expected to begin in July 2011, with the Final MND completed and adopted by November 2011. Completion and adoption of this document will satisfy all CEQA requirements.

Several permits are required for construction of this project. These permits include U.S. Army Corps of Engineers Section 404 Permit, a California Department of Fish and Game Section 1601 Permit, Regional Water Quality Control Board Section 401 Permit, Sacramento County Well Permits, California Division of Water Rights Additional Point of Diversion Permit and California Department of Public Health Permit Amendment. Labor costs associated with obtaining these permits are included in the costs shown below; permit fees are included in Other Costs (Section (g), below).

**Table 112: Planning/Design/Engineering/Environmental Documentation Hourly Detail**

Stage	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Survey	Phase 1 - Principal Engineer	\$205.00	2	\$410
Engineering	Phase 1 - GIS	\$120.00	54	\$6,480
Engineering	Phase 1 - Admin. Assist	\$75.00	12	\$900
Env. Compliance	Phase 1 - Principal Scientist	\$210.00	4	\$840
Env. Compliance	Phase 1 - Senior Scientist	\$175.00	12	\$2,100
Env. Compliance	Phase 1 - Project Scientist	\$160.00	160	\$25,600
Env. Compliance	Phase 1 - Staff Scientist	\$130.00	12	\$1,560
Env. Document	Phase 1 - Principal Scientist	\$210.00	32	\$6,720
Env. Document	Phase 1 - Senior Scientist	\$175.00	140	\$24,500
Env. Document	Phase 1 - Project Scientist	\$160.00	380	\$60,800
Env. Document	Phase 1 - Staff Scientist	\$130.00	40	\$5,200
Environmental	Phase 1 - GIS	\$120.00	80	\$9,600
Environmental	Phase 1 - Admin. Assist	\$75.00	28	\$2,100
Permitting	Phase 1 - Principal Scientist	\$210.00	24	\$5,040
Permitting	Phase 1 - Senior Scientist	\$175.00	60	\$10,500
Permitting	Phase 1 - Project Scientist	\$160.00	160	\$25,600
Permitting	Phase 1 - Staff Scientist	\$130.00	32	\$4,160
Planning & Design	Phase 1 - Principal Engineer	\$205.00	40	\$8,200

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Stage	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Planning & Design	Phase 1 - Senior Engineer	\$160.00	96	\$15,360
Planning & Design	Phase 1 - Project Engineer	\$140.00	120	\$16,800
Planning & Design	Phase 1 - Staff Engineer	\$110.00	140	\$15,400
Survey	Phase 1 - Senior Engineer	\$160.00	4	\$640
Survey	Phase 1 - Project Engineer	\$140.00	6	\$840
Survey	Phase 1 - Survey Subcontractor			\$19,450
<b>Phase 1 Subtotal</b>				<b>\$268,800</b>
Predesign	Phase 2 - Survey			\$15,000
Predesign	Phase 2 - Geotech			\$5,000
Design	Phase 2 - 10% Design			\$5,000
Design	Phase 2 - 60% Design			\$30,000
Design	Phase 2 - 90% design			\$25,000
Design	Phase 2 - 100% Design			\$10,000
CEQA	Phase 2 - Water Rights			\$25,000
CEQA	Phase 2 - Well and pipeline			\$15,000
Permitting	Phase 2 - Water rights			\$25,000
Permitting	Phase 2 - CDPH Permit			\$10,000
Permitting	Phase 2 – Sac Co Well Permit			\$5,000
<b>Phase 2 Subtotal</b>				<b>\$170,000</b>
<b>Total</b>				<b>\$438,800</b>

**Table 113: Planning/Design/Engineering/Environmental Documentation Other Direct Charge Detail**

Stage	Other Direct Charge (description)	Total
Survey	Plan preparation	\$100
Planning & Design	Plan preparation and Documentation	\$1,800
Environmental Document	Documentation	\$3,400
Environmental Compliance	Documentation	\$3,440
<b>Total</b>		<b>\$8,740</b>

### (d) Construction/Implementation Detail

The total cost for Construction/Implementation for Phases 1 and 2 of the OHWD /Rancho Murieta Groundwater Recharge Project is \$1,485,000. The basis of the estimate is shown in Tables 114,115,116 and 117.

Estimated costs of construction for Phase 1 were based on a preliminary bid by a contractor. Monitoring well equipment includes the cost of a water meter, combined data logger and pressure transducers and solar panels. Labor cost was based on a preliminary bid estimate by a contractor; therefore there is no hourly breakdown.

Estimated costs of construction for Phase 2 were based on similar projects previously constructed. The unit costs shown for Phase 2 include the costs for labor, materials and equipment.

**Table 114: Cost of Materials for Phase 1 Construction**

Materials Used (units)	Unit Costs (\$)	Number of Units	Total (\$)
Pumping unit and Platform	\$105,000	1	\$105,000
Fishery Protection	\$105,000	1	\$105,000
Power Connection	\$30,000	1	\$30,000
Conveyance System	\$40,000	1	\$40,000
<b>Total</b>			<b>\$280,000</b>

**Table 115: Cost of Equipment for Phase 1 Construction**

Equipment Used (units)	Costs (\$)	Number of Units	Total (\$)
Monitoring Well and Spreading Basin Equipment	\$10,000.00	1	\$10,000
<b>Total</b>			<b>\$10,000</b>

**Table 116: Labor Costs for Phase 1 Construction**

Discipline	Total (\$)
Pumping unit and Platform	\$20,000
Fishery Protection	\$125,000
Conveyance System	\$40,000
Basin Preparation	\$300,000
Monitoring Well	\$55,000
<b>Total</b>	<b>\$540,000</b>

**Table 117: Construction Costs for Phase 2**

Materials Used (units)	Unit Costs (\$)	Number of Units	Total (\$)
Well boring and casing	\$200	500	\$100,000
Well head, pump and electrical	\$150,000	1	\$150,000
Transmission Pipeline	\$75.00	5,000	\$375,000
Power Connection	\$30,000	1	\$30,000
<b>Total</b>			<b>\$655,000</b>

**(e) Environmental Compliance/ Mitigation/Enhancement Detail**

Little environmental mitigation or enhancement actions above and beyond normal construction BMPs are expected to be required. Compliance with the Stormwater Pollution Prevention Plan will be conducted by the construction contractor; therefore costs associated with any activities required by the SWPPP are included in the lump-sum construction costs. Costs for implementing the approved Project Performance Monitoring Plan are shown below and are estimated to be \$19,200 based on the information presented in Table 118.

**Table 118: Labor Costs for Environmental Compliance/Mitigation/Enhancement**

Discipline	Hourly Wage by discipline (\$)	Number of hours	Total (\$)
Performance Monitoring	\$160.00	120	\$19,200
<b>Total</b>			<b>\$19,200</b>

**(f) Construction Administration Detail**

Construction Administration includes the costs incurred to administer and manage construction for the Project. Construction administration costs were based on the expected labor hours that each discipline will spend on these activities. Total construction administration costs for the OHWD-Rancho Murieta Groundwater Recharge Project were estimated to be \$74,725; a breakdown of this estimate is provided in Table 119, below.

**Table 119: Labor Costs for Construction Administration**

Discipline	Hours	Unit Cost (\$)	Total Cost (\$)
Principal Engineer	60	\$205.00	\$13,325
Senior Engineer	115	\$160.00	\$18,400
Project Engineer	130	\$140.00	\$18,200
Staff Engineer	180	\$110.00	\$19,800
Admin	40	\$75.00	\$3,000
Direct Expenses			\$2,000
<b>Total</b>			<b>\$74,725</b>

### (g) Other Costs Detail

Other costs anticipated for the OHWD-Rancho Murieta Groundwater Recharge Project are participation in preparation of a program-wide Project Performance Monitoring Plan and permit fees. A single Project Performance Monitoring Plan will be prepared for the entire suite of projects included in the Proposition 84 Implementation Grant Application; however, project specific monitoring criteria and schedule will be established and administered for each project. The costs shown here represent the estimated cost of preparing the associated section of the Plan for the OHWD-Rancho Murieta Project and permit fees for the project. The Project Performance Plan Preparation estimate assumes that preparation of the plan section for the OHWD/Rancho Murieta Groundwater Recharge Project will take 3 hours.

**Table 120: Other Costs**

Item	Cost (\$)
ACOE Section 404 Permit	\$100
CVRWQCB Section 401 Certification	\$500
CDFG Section 1601 Permit	\$4,483
CDFG CEQA review fee	\$2,839
Stormwater NDPES Permit Amendment	\$600
County of Sacramento Well Drillers Permit	\$1,704
California Department of Public Health Amendment	\$4,960
California Division of Water Rights Additional Point of Diversion Permit	\$2,200
Project Performance Plan Preparation	\$525
<b>Total</b>	<b>\$17,911</b>

### (h) Construction/Implementation Contingency Detail

The construction/implementation contingency percentage applied to this project is 20% of the construction expenses or \$297,000. The contingency is based on prior experience. These costs include

funds to handle unknown and unspecified conditions encountered during construction or implementation of the project.

### (i) Grand Total (Sum rows (a) through (h) for each column) Detail

The total estimated cost for OHWD/Rancho Murieta Groundwater Recharge Project is \$2,468,846; \$970,390 is provided through funding match and \$1,498,456 is being requested from the Proposition 84 IRWM grant program.

### Calculation of Funding Match %

The funding match for OHWD/Rancho Murieta Groundwater Recharge Project is \$970,390 or 39% of the total project costs. The sources of funding for the match include District property tax revenue, acreage assessments, water charges and in-kind services.

## Project 15: Sleepy Hollow Detention Basin Retrofit Project

The Sleepy Hollow detention basin is a 6.3-acre flood control basin that provides flood control and protection to the adjacent Sleepy Hollow Unit 2 subdivision in the City of Elk Grove. At the time that the detention basin was designed, the primary function of the basin was to manage stormwater runoff and relieve flood risks. The basin also has a low volume integrated water quality benefit of pollutant removal during small storm events. A concrete overflow spillway allows 100-year storm flows to enter the basin from the adjacent Laguna Creek tributary; however, the basin does act as on-line storage for watersheds north of the site.

Although the basin fulfills its original design intention, native vegetation is sparse in and around the basin and consequently provides poor habitat for native wildlife. There is a tremendous potential for the basin to provide multi-functional features that could provide not only flood storage, but also increase water quality benefits, enhance aquatic and upland habitat, recharge the groundwater, and provide recreational/aesthetic opportunities to the area. The basin can also provide opportunities for science education for students at five schools within a two-mile radius of the project site.

The goal of this project is to complete the design, plans, specifications, and construction of a multi-functional basin. The City of Elk Grove will be the lead agency on the detention basin retrofit project; however, it will be a collaborative effort with the Laguna Creek Watershed Council (LCWC) and the Sheldon Community Association to improve water quality and conveyance of flood flows, aquifer recharge capacity, and enhance the natural resource benefits for the community.

A summary of the budget for Sleepy Hollow Detention Basin Retrofit Project is presented in Table 121. The budget is based on the on latest project documentation, as well as estimates for professional services. The total cost for this project is \$973,384. The funding match for this project is \$748,384 or 77%.

**Table 121: Sleepy Hollow Detention Basin Retrofit Project Budget**

<b>Project Budget</b>						
<b>Project Title: Sleepy Hollow Detention Basin Retrofit</b>						
<b>Budget Category</b>		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>	<b>(e)</b>
		<b>Non-State Share* (Funding Match)</b>	<b>Requested Grant Funding</b>	<b>Other State Funds Being Used</b>	<b>Total</b>	<b>% Funding Match</b>
<b>(a)</b>	Direct Project Administration Costs	\$14,118	\$0	\$0	\$14,118	100%
<b>(b)</b>	Land Purchase/Easement	\$0	\$0	\$0	\$0	0%
<b>(c)</b>	Planning/Design/Engineering/Environmental Documentation	\$143,226	\$0	\$0	\$143,226	100%
<b>(d)</b>	Construction/Implementation	\$38,400	\$225,000	\$0	\$263,400	15%
<b>(e)</b>	Environmental Compliance/ Mitigation/Enhancement	\$357,500	\$0	\$0	\$357,500	100%
<b>(f)</b>	Construction Administration	\$61,435	\$0	\$0	\$61,435	100%
<b>(g)</b>	Other Costs	\$81,025	\$0	\$0	\$81,025	100%
<b>(h)</b>	Construction/Implementation Contingency	\$52,680	\$0	\$0	\$52,680	100%
<b>(i)</b>	<b>Grand Total (Sum rows (a) through (h) for each column)</b>	<b>\$748,384</b>	<b>\$225,000</b>	<b>\$0</b>	<b>\$973,384</b>	<b>77%</b>
<b>*List sources of funding: City of Elk Grove Storm Drain Utility Fund and In-Kind Services</b>						

### (a) Direct Project Administration Detail

Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and council communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report), and were estimated to be \$14,118. This estimate assumes that LCP costs were equal to 2% of construction labor costs (or \$5,268); all other project administration costs (communications, reporting, etc.) were estimated based on expected level of effort by involved staff and costs for equipment and supplies. Direct project administration costs include general project administration tasks (claim preparation, communications with RWA, and council communications), Labor Compliance Program (LCP) implementation, and reporting (quarterly reports and final report) and were estimated to be \$79,893. This estimate assumes that LCP costs were equal to 2% of construction labor costs (or \$33,550), and that all other project administration costs (communications, reporting, etc.) were equivalent to 1.5% of overall construction costs (or \$46,343). These estimates were based on past experience with implementation of a similar project funded under a Proposition 50 Implementation Grant, prior experience with Labor Compliance Program costs, and experience on other similar projects.

details the hourly wages paid by discipline and the number of hours to be expended for project administration.

**Table 122: Project Administration Hourly Detail**

Item	Discipline	Hourly Wage (\$/hr)	Number of Hours	Total
Administration	Admin I	\$47.50	120	\$5,700
Administration	Senior Admin	\$57.50	20	\$1,150
Labor Compliance				\$5,268
Equipment & Supplies				\$2,000
<b>Total</b>				<b>\$14,118</b>

### (b) Land Purchase/Easement Detail

Land for the project is currently in the process of being deeded to the City of Elk Grove as part of the condition of approval for developing the Sleepy Hollow Unit 2 subdivision. This will be completed by February 2011. No associated cost is included in the project budget.

### (c) Planning/Design/Engineering/Environmental Documentation Detail

Direct project planning/design/engineering/environmental documentation costs were estimated using hourly wage paid by discipline and the number of hours to be expended for planning, design, engineering, and environmental documentation work items. Detail is provided in the following tables; the total estimated costs for planning, design, and engineering are \$143,266.

A Flood Control and Storm Drainage Master Plan is currently in development and is expected to be completed by April 2011. This study will evaluate flood control and storm drainage deficiencies in the

area. No funding is requested to complete this study, nor will costs associated with this study be used as funding match.

The planning, design, and engineering costs include completion of 30%, 60%, 90%, and 100% Design packages. The 30% and 60% designs are expected to be completed prior to June 1, 2011, with the 30% design to be completed in April 2011 and the 60% design to be completed in June 2011. The 90% design will be completed in August 2011, with the Final (100%) design completed in October 2011. The 90% Design will include all plans and specifications for the well heads and facilities, and detailed itemized costs. The 100% Design will be used to advertise the project for bid for construction and will consist of the complete and signed specifications. Estimated costs to complete the design phases are included in Table 123.

**Table 123: Planning/Design/Engineering Detail**

Discipline	Job Title	Hourly Wage (\$/hr)	Number of Hours	Total
<b>30% Design</b>				
Project Review	Supervising Engineer	\$175.00	4	\$700
Project Report	Associate Engineer	\$135.00	20	\$2,700
Irrigation Design	Senior Engineer	\$150.00	12	\$1,800
Drafting Design	Engineering Technician	\$100.00	16	\$1,600
Traffic Engineering Review	Associate Engineer	\$135.00	4	\$540
Utilities review	Associate Engineer	\$135.00	4	\$540
Urban Forestry	Arborist	\$135.00	20	\$2,700
Civil Design Review	Associate Engineer	\$135.00	4	\$540
Admin	Associate Engineer	\$105.00	112	\$11,760
Admin	Senior Engineer	\$122.00	15	\$1,830
<b>30% Design Total</b>				<b>\$24,710</b>
<b>60% Design</b>				
Project Review	Supervising Engineer	\$175.00	8	\$1,400
Project Report	Associate Engineer	\$135.00	64	\$8,640
Drafting Design	Engineering Technician	\$100.00	40	\$4,000
Irrigation Design	Senior Engineer	\$150.00	24	\$3,600
Traffic Engineering Review	Associate Engineer	\$135.00	10	\$1,350
Utilities review	Associate Engineer	\$135.00	10	\$1,350
Urban Forestry	City Arborist	\$135.00	20	\$2,700
Electrical Review	Senior Engineer	\$150.00	6	\$900
Civil Design Review	Associate Engineer	\$135.00	6	\$810
Admin	Associate Engineer	\$105.00	112	\$11,760
Admin	Senior Engineer	\$122.00	15	\$1,830

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Discipline	Job Title	Hourly Wage (\$/hr)	Number of Hours	Total
<b>60% Design Total</b>				<b>\$38,340</b>
<b>90% Design</b>				
Project Review	Supervising Engineer	\$175.00	6	\$1,050
Project Report	Associate Engineer	\$135.00	30	\$4,050
Drafting Design	Engineering Technician	\$100.00	20	\$2,000
Irrigation Design	Senior Engineer	\$150.00	12	\$1,800
Traffic Engineering Review	Associate Engineer	\$135.00	8	\$1,080
Utilities review	Associate Engineer	\$135.00	8	\$1,080
Urban Forestry	City Arborist	\$135.00	12	\$1,620
Electrical Review	Senior Engineer	\$150.00	8	\$1,200
Civil Design Review	Associate Engineer	\$135.00	12	\$1,620
Admin	Associate Engineer	\$105.00	113	\$11,865
Admin	Senior Engineer	\$122.00	15	\$1,830
<b>90% Design Total</b>				<b>\$29,195</b>
<b>100% (Final) Design</b>				
Project Review	Supervising Engineer	\$175.00	4	\$700
Project Report	Associate Engineer	\$135.00	12	\$1,620
Drafting Design	Engineering Technician	\$100.00	8	\$800
Irrigation Design	Senior Engineer	\$150.00	4	\$600
Traffic Engineering Review	Associate Engineer	\$135.00	4	\$540
Utilities review	Associate Engineer	\$135.00	4	\$540
Urban Forestry	City Arborist	\$135.00	4	\$540
Electrical Review	Senior Engineer	\$150.00	4	\$600
Civil Design Review	Associate Engineer	\$135.00	4	\$540
Admin	Associate Engineer	\$105.00	113	\$11,865
Admin	Senior Engineer	\$122.00	15	\$1,830
<b>100% Design Total</b>				<b>\$20,175</b>
<b>Total</b>				<b>\$112,420</b>

A Mitigated Negative Declaration (MND) will be completed during the design phase of the project. No significant adverse impacts are expected as a result of the project; however construction-related mitigation measures (i.e. implementation of stormwater BMPs) are anticipated. Estimated costs for completing the MND are summarized in Table 124.

**Table 124: Environmental Documentation Detail**

Discipline	Job Title	Hourly Wage (\$/hr)	Number of Hours	Total
CEQA Documentation	Senior Associate Planner	\$127.00	16	\$2,032
Noticing	Project Manager	\$108.00	32	\$3,456
NEPA Documentation/Tech Studies	Associate Planner	\$91.00	32	\$2,912
Environmental CEQA Review	Graphics	\$76.00	40	\$3,040
CEQA Support	GIS	\$105.00	12	\$1,260
CEQA Support	Biological Resources	\$127.00	12	\$1,524
CEQA Support	Cultural Resources	\$111.00	12	\$1,332
CEQA Support	Admin	\$66.00	12	\$792
<b>Total</b>				<b>\$16,348</b>

It is anticipated that a California Department of Fish and Game Section 1602 Streambed Alteration Agreement will be required for this project; this permit will be acquired by January 2012. Compliance with the State’s General Stormwater NPDES Permit for construction will also be required. To that end, a Stormwater Pollution Prevention Plan (SWPPP) will be developed by the contractor and implemented as part of Budget Category (e) Environmental Compliance/Mitigation/Enhancement. The Project may also require a U.S. Army Corps of Engineers Section 404 Permit for construction in U.S. Waters; if a Section 404 Permit is sought, then a Central Valley Regional Water Quality Control Board Section 401 Water Quality Certification will also be required. Labor costs for acquiring permits are shown in Table 125. Permit fees are included in Budget Category (g) Other Costs.

**Table 125: Permitting Detail**

Stage	Job Title	Hourly Wage (\$/hr)	Number of Hours	Total
Jurisdictional Determination	Senior Associate Planner	\$127.00	32	\$4,064
Biological Survey	Associate Planner	\$91.00	30	\$2,730
Permit Negotiation / Preparation	Senior Associate Planner	\$127.00	48	\$6,096
Field Survey	Associate Planner	\$91.00	8	\$728
GIS	GIS	\$105.00	8	\$840
<b>Total</b>				<b>\$14,458</b>

### (d) Construction/Implementation Detail

The Sleepy Hollow Detection Basin Retrofit Project is currently in pre-design. The total cost for Construction/Implementation for this Project is \$263,400. The basis of the estimate is shown in Table

126; costs shown in this table are furnished and installed prices and include material, labor and equipment costs.

Work to be completed under this task includes mobilizing and preparing the site, grading for wetland construction, dry well construction, irrigation pipe installation and recreational trails construction. See Attachment 3 – Work Plan for more details.

**Table 126: Furnished and Installed Materials Costs for Construction**

Item	Unit	Unit Cost (\$)	Number of Units	Total (\$)
Mobilization	LS	\$10,000	1	\$10,000
Install Temporary Construction Fencing	LS	\$10,000	1	\$10,000
Clearing & Grubbing	LS	\$10,000	1	\$10,000
Decomposed Granite Paving W/ Binder & plastic header - jogging trail	SF	\$5.00	10,000	\$50,000
Concrete Mow Curbs	LF	\$15.00	2,000	\$30,000
Trash Receptacles	EA	\$600	4	\$2,400
Small Shade Structures	EA	\$5,000	2	\$10,000
Drinking Fountains	EA	\$5,000	2	\$10,000
Signage	EA	\$6,000	1	\$6,000
Grading	SF	\$0.25	300,000	\$75,000
Dry-Wells	EA	\$10,000	5	\$50,000
<b>Total</b>				<b>\$263,400</b>

### (e) Environmental Compliance/ Mitigation/Enhancement Detail

As previously stated, a MND will be prepared during project design. While no significant adverse impacts are anticipated from the project, standard construction mitigations will be required. Therefore, as part of environmental compliance, mitigation and enhancement task, it was assumed that an onsite biologist will be required to provide threatened and endangered species awareness to construction personnel, oversee construction operations during heavy equipment grading activity and conduct routine threatened and endangered species surveys of the construction area. The onsite biologist will also assist in implementing the approved Project Performance Monitoring Plan prepared under Budget Category (g) Other Costs. Additionally, it was assumed that restoration plantings and materials in accordance with restoration standards such as the sustainable River Friendly Landscaping Principles ([www.riverfriendly.org](http://www.riverfriendly.org)) will be required as construction mitigation.

Estimated environmental compliance costs for the Sleepy Hollow Detention Basin Retrofit Project have been calculated as \$344,700. This cost estimate assumes \$20,000 for an onsite biologist and \$324,700 in materials, as detailed in the tables below; materials costs shown in Table 127 are furnished and installed prices and include material, labor and equipment costs.

In addition, costs for implementing the approved Project Performance Monitoring Plan are also shown below and are estimated to be \$12,800 based on the information presented in Table 128. Total Environmental Compliance/Mitigation/Enhancement costs are therefore estimated to be \$357,500.

It should be noted that, while the schedule for this project shows that project performance monitoring and reporting will cease at the completion of project construction, it is understood the project performance monitoring will continue for 10 years following project completion, with annual project performance reporting.

**Table 127: Furnished and Installed Materials Costs for Environmental Compliance/Mitigation/Enhancement**

Item	Unit	Unit Cost (\$)	Number of Units	Total (\$)
General Irrigation (Shrub & G.C. Areas)	SF	\$1.50	50000	\$75,000
Scorpio Controller	EA	\$20,000	1	\$20,000
Backflow Assembly Unit & Cage	EA	\$2,200	1	\$2,200
Booster Pump	EA	\$15,000	1	\$15,000
1-Gallon Shrubs	EA	\$12.00	2000	\$24,000
1-Gallon Ground Cover Plants	EA	\$12.00	2000	\$24,000
5-Gallon Shrubs	EA	\$30.00	1000	\$30,000
15-Gallon Trees	EA	\$200	150	\$30,000
Bark Mulch w/ weed mat	SF	\$0.50	50000	\$25,000
Import Fill (FOR MOUNDING)	CY	\$45.00	100	\$4,500
Soil Preparation	SF	\$0.25	200000	\$50,000
Plant Establishment	LS	\$25,000	1	\$25,000
<b>Total</b>				<b>\$324,700</b>

**Table 128: Labor for Environmental Compliance/Mitigation/Enhancement**

Discipline	Hourly Wage by discipline (\$)	Number of hours	Total (\$)
Onsite biologist	\$100.00	200	\$20,000
Performance Monitoring	\$160.00	80	\$12,800
<b>Total</b>			<b>\$32,800</b>

### (f) Construction Administration Detail

Construction Administration is expected to cost approximately \$61,435, assuming 10% of construction cost, 10% of environmental mitigation costs and an additional 25 hours for miscellaneous construction administration tasks. This is a standard construction administration estimate for most City projects. Detail for construction administration costs is shown in Table 129.

**Table 129: Construction Administration Detail**

Discipline	Hours	Unit Cost (\$)	Total Costs (\$)
Construction Administration	25	\$105.00	\$2,625
Construction Management of Construction/ Implementation (Resident Engineer)	10% of estimated Construction Costs		\$26,340
Construction Management of Mitigation Implementation (Resident Engineer)	10% of Environmental Compliance/Mitigation/ Enhancement Costs		\$32,470
<b>Total</b>			<b>\$61,435</b>

### (g) Other Costs Detail

Other costs for this project include baseline monitoring, community engagement, project performance plan preparation, and permit and other fees (see budget category (c), above). In addition, as irrigation will be necessary at the beginning of the project to help the proposed vegetation establish, the City will need to tap into an existing water supply operated by the County of Sacramento. The anticipated fee for this water supply is \$25,000. More detail regarding the baseline monitoring (Task 12), community engagement tasks (Task 13), and Project Performance Plan (Task 14) is presented in Attachment 3 – Work Plan.

The City will participate in preparation of a program-wide Project Performance Monitoring Plan in which a single Project Performance Monitoring Plan will be prepared for the entire suite of projects included in the Prop 84 Implementation Grant Application; however, project specific monitoring criteria and schedule will be established and administered for each project.

The costs shown in Table 130, below, represent the estimated cost of preparing the associated section of the Plan for the Sleepy Hollow Detention Basin Retrofit Project, monitoring, community engagement, and permit fees for the project.

**Table 130: Other Costs**

Item	Cost (\$)
Baseline Monitoring	\$40,000
Community Engagement	\$10,000
Sacramento County Water Fees	\$25,000
California Department of Fish and Game Section 1602 Permit	\$4,000
Central Valley Regional Water Quality Control Board Section 401 Water Quality Certification	\$1,000
State Water Resources Control Board General Stormwater NPDES Permit for Construction	\$500
Performance Monitoring Plan	\$525
<b>Total</b>	<b>\$81,025</b>

### (h) Construction/Implementation Contingency Detail

The construction/implementation contingency percentage applied to this project is 20% of the construction expenses, or \$52,680. The contingency is based on prior project experience and engineering practice. These costs include funds to handle unknown and unspecified conditions encountered during construction or implementation of the project.

### (i) Grand Total (Sum rows (a) through (h) for each column) Detail

The total estimated cost for Sleepy Hollow Detention Basin Retrofit Project is \$960,584; \$735,584 is provided through funding match and \$225,000 is being requested from the Proposition 84 IRWM grant program.

### Calculation of Funding Match %

The funding match for Sleepy Hollow Detention Basin Retrofit Project is \$735,584 or 77% of the total project costs. The sources for the funding match include City of Elk Grove Storm Drain Utility Fund and in-kind services performed by City staff and the Laguna Creek Watershed Council. Additional labor will also be provided by the Sheldon Community Association volunteers.