

ATTACHMENT 6 - BUDGET

The budget for the proposed project is detailed in **Exhibit 6.1** and summarized in **Table 6.1** below:

Table 6.1 - Budget Summary

Task	Budget Category	Non-State Share (Funding Match)	Requested Grant Funding	Total
1	Stakeholder Involvement	\$0	\$2,590	\$2,590
2	Monitoring Well Design	\$0	\$17,920	\$17,920
3	Monitoring Well Construction	\$0	\$205,340	\$205,340
4	Post Construction Evaluation	\$0	\$9,480	\$9,480
5	Project Reporting	\$0	\$12,965	\$12,965
	Grant Total	\$0	\$248,295	\$248,295

Below is a list of supporting documents for the budget:

- Exhibit 6.1 – Detailed Project Cost Estimate
- Exhibit 6.2 – Detailed Monitoring Well Construction Costs by Well Type and Size
- Exhibit 6.3 – Monitoring Well Construction Cost Inventory
- Exhibit 6.4 – Laboratory Costs for Water Quality Testing

The budget items are consistent with the work plan and budget. Additional details on the cost estimate follow.

Monitoring Well Costs

Monitoring well construction costs were estimated based on actual bids received for a similar project for a nearby irrigation district in 2010. Since 2010, construction and well drilling costs have not appeared to change significantly in the San Joaquin Valley. A detailed monitoring well construction cost estimate by well type and size is included as **Exhibit 6.2**. For simplicity, four categories of monitoring wells costs were developed in this exhibit:

- Wells with depths up to 80 feet, 2-inch diameter casings
- Wells with depths between 80 feet and 100 feet, 2-inch diameter casings
- Wells with depths between 100 feet and 150 feet, 4-inch diameter casings
- Wells with depths between 150 feet and 200 feet, 4-inch diameter casings

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For each well category, a single construction cost estimate was developed that could be applied to each well the District has identified for replacement. These construction costs were developed from the 2010 construction bids. The estimate assumes that workers are paid Fresno County prevailing wages.

As discussed previously in **Section 4.2**, CID ranked (by priority of replacement) each well that the District identified as needing to be replaced. **Exhibit 6.3** summarizes this ranking for each well identified for replacement, and also includes estimated well size and construction costs associated to each well using the general monitoring well cost categories detailed in **Exhibit 6.2**.

It should be noted that costs for monitoring wells in the project area can vary significantly. Monitoring well costs vary with hydrologic conditions (generally higher during dry years), contractor availability, fuel costs and cost for materials. Therefore, it is possible that the monitoring well costs could vary considerably from the estimate provided. During project implementation, any significant change in costs would be reported to the DWR as soon as the information is available so that discussions can be held on modifying the budget and scope of work. However, it is believed that the cost estimate provided is the best and most reasonable value that can be provided more than one year in advance of the anticipated well construction.

Water Quality Sampling and Testing

Groundwater will be tested for irrigation suitability analysis in **Subtask 4.3 – Groundwater Quality Testing**. A water testing price sheet from a local laboratory is included as **Exhibit 6.4**. Irrigation suitability analyses cost \$100 per sample. Therefore, testing costs for the proposed project are summarized as follows:

(12 wells + 2 duplicate samples) x \$100/sample = \$1,400 x 15% markup = \$1,610 (rounded to \$1,700).

Labor Compliance

The budget includes \$6,000 for a third party consultant to develop and implement a labor compliance program during the construction phase of the project. This assumes that construction of all wells would occur over a 3-month period of time. Labor compliance fees may be reduced if the construction phase duration is reduced.

Legal Fees

The budget includes a nominal \$1,000 budget for legal fees. The legal fees are needed for the District's legal counsel to review bidding documents and assist with permitting efforts, if needed. No substantial legal services are expected to be needed, so the nominal budget is considered adequate.

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Consultant Fees

Consultant fees were provided by CID's consulting engineer, Provost & Pritchard Consulting Group, and are based on their standard fee schedule.

Permits

Fresno County Well Drilling permits have no cost when monitoring wells are installed. A single Fresno County encroachment permit must be acquired for the construction project (a single \$500 permit is anticipated to cover all monitoring wells in the project). No other permits or permitting fees will be required for the project.

Mileage

Mileage will be charged at rates specified by DWR, assumed for now to be standard IRS rates. The cost estimate assumes the mileage rate to be \$0.555/mile. No per diem or lodging costs are included in the cost estimate. Mileage for the project is based on trips between Fresno, Fresno County, the location of the proposed consultants, and the project sites located in an unincorporated area of Fresno County. Trips will be needed to verify well locations, conduct pre-bid and pre-construction meetings with contractors, monitor construction, collect water quality samples, and survey well elevations. Each trip to the job sites will average 50 miles round trip. It is assumed that 20 total round trips are made during the project, most to observe construction and log soils.

Administrative Tasks

Administrative costs will be limited to Sub-task 5.1 – Progress Reports, which total \$3,545, which is about 1.4% of the requested grant amount.

Contingency

The construction cost estimate has a built in contingency of 5%. CID is prepared to pay for extra costs if they exceed the estimate or to revise the project scope to fit within the available budget.

Project Tracking and Billing

It is proposed to track and bill the project according to the five (5) tasks in budget. Budgets will not be tracked or billed by subtask. Tracking cost according to each sub-task would be cumbersome and would not add to understanding the project's cost.



EXHIBIT 6.1
DETAILED PROJECT COST ESTIMATE

**CONSOLIDATED IRRIGATION DISTRICT
GROUNDWATER MONITORING IMPROVEMENT PROJECT**
Detailed Project Cost Estimate

STAFF HOURS	Labor Costs						Subcontractors						Direct Costs		Totals	
	Principal Engineer	Senior Engineer	Associate Engineer	Associate Geologist	Drafter	Clerical	Subconsultant (Kenneth Schmidt & Associates)	Surveying	Well Construction	Water Quality Testing	Labor Compliance Officer	Legal Services	Mileage at \$0.555/mi.	Printing & Postage	Total Hours	Total Cost
Rate / Hour	\$170	\$140	\$120	\$100	\$80	\$60										
Task 1 Stakeholder Involvement																Task 1 Total = \$2,590
1.1 Public Outreach	4		4										\$25		8	\$1,185
1.3 District Board of Directors Meetings (6)	6		2			2							\$25		10	\$1,405
Task 2 Monitoring Well Design																Task 2 Total = \$17,920
2.1 Conceptual Design Memorandum	2	4	8	4			\$500					\$110			18	\$2,870
2.2 Prepare Environmental Documents/Permitting			2												2	\$240
2.3 Well Construction Drawings and Specifications	4	20	20		20								\$50		64	\$7,530
2.4 Prepare Bidding Documents/Assist with Bidding	4	20	20			4				\$1,000		\$110	\$50		48	\$7,280
Task 3 Monitoring Well Construction																Task 3 Total = \$205,340
3.1 Well Construction		20	80					\$169,900				\$550	\$50		100	\$182,900
3.2 Geologic Logging (assumes 12 wells)			10	150											160	\$16,200
3.3 Labor Compliance			2						\$6,000						2	\$6,240
Task 4 Post Construction Evaluation																Task 4 Total = \$9,480
4.1 Surveying			8					\$1,000				\$110			8	\$2,070
4.2 Prepare Record Drawings			8		8										16	\$1,600
4.3 Groundwater Level/Quality Testing (12 wells)				40					\$1,700			\$110			40	\$5,810
Task 5 Project Reporting																Task 5 Total = \$12,965
5.1 Progress Reports		8	20									\$25			28	\$3,545
5.2 Draft Project Report	4	20	20	10		4						\$50			58	\$7,170
5.3 Final Project Report		8	8			2						\$50			18	\$2,250
Total Hours:	24	100	212	204	28	12										
Total Cost:	\$4,080	\$14,000	\$25,440	\$20,400	\$2,240	\$720	\$500	\$1,000	\$169,900	\$1,700	\$6,000	\$1,000	\$990	\$325	580	\$248,295

TOTAL ESTIMATED PROJECT COST:

\$248,295



EXHIBIT 6.2

DETAILED MONITORING WELL CONSTRUCTION COSTS

BY WELL TYPE AND SIZE

Detailed Monitoring Well Construction Costs - By Well Type/Size

Exhibit 6.2

Consolidated Irrigation District
Groundwater Monitoring Improvement Project

Bid Item	Unit	Up to 80' (Costs for 80' Deep)			80' to 100' (Costs for 100' Deep Well)			100' to 150' (Costs for 125' Deep Well)			150' to 200' (Costs for 175' Deep Well)		
		Qty	Unit Price	Total	Qty	Unit Price	Total	Qty	Unit Price	Total	Qty	Unit Price	Total
Mobilization/Demobilization, Bonds, Insurance, Permits	LS	1	\$ 1,900	\$ 1,900	1	\$ 1,900	\$ 1,900	1	\$ 5,000	\$ 5,000	1	\$ 5,000	\$ 5,000
Miscellaneous Facilities, Operations, Worker Protection	LS	1	\$ 300	\$ 300	1	\$ 300	\$ 300	1	\$ 300	\$ 300	1	\$ 300	\$ 300
Drill 8-inch (or 12-inch) Diameter Borehole	LF	85	\$ 30	\$ 2,550	105	\$ 30	\$ 3,150	130	\$ 60	\$ 7,800	180	\$ 60	\$ 10,800
F&I 2-inch (or 4-inch) (nominal) Diameter Perforated Casing	LF	30	\$ 10	\$ 300	30	\$ 10	\$ 300	50	\$ 23	\$ 1,125	50	\$ 23	\$ 1,125
F&I 2-inch (or 4-inch) (nominal) Diameter Blank Casing	LF	50	\$ 8	\$ 375	70	\$ 8	\$ 525	75	\$ 20	\$ 1,500	125	\$ 20	\$ 2,500
F&I Gravel Filter Pack	LF	40	\$ 13	\$ 500	60	\$ 13	\$ 750	60	\$ 19	\$ 1,125	60	\$ 19	\$ 1,125
F&I Bentonite Seal	LF	10	\$ 25	\$ 250	10	\$ 25	\$ 250	10	\$ 63	\$ 625	10	\$ 63	\$ 625
F&I Cement-Grout Seal	LF	30	\$ 9	\$ 263	30	\$ 9	\$ 263	55	\$ 31	\$ 1,719	105	\$ 31	\$ 3,281
Construct Wellhead Facilities	EA	1	\$ 440	\$ 440	1	\$ 440	\$ 440	1	\$ 440	\$ 440	1	\$ 440	\$ 440
Final Drilling Report	LS	1	\$ 130	\$ 130	1	\$ 130	\$ 130	1	\$ 130	\$ 130	1	\$ 130	\$ 130

Construction Subtotal (per well)				\$ 7,000			\$ 8,000			\$ 19,800			\$ 25,300
Contingency (5%)				\$ 400			\$ 400			\$ 1,000			\$ 1,300
Construction Total (per well)				\$ 7,400			\$ 8,400			\$ 20,800			\$ 26,600

Notes: Unit prices based on actual 2010 bids for the construction of monitoring wells of similar size and depth in a nearby irrigation district.
Monitoring well construction costs are believed to not have changed significantly since 2010.



EXHIBIT 6.3

MONITORING WELL CONSTRUCTION COST INVENTORY

Monitoring Well Construction Cost Inventory

Exhibit 6.3

Consolidated Irrigation District
Groundwater Monitoring Improvement Project

Rank	CID Well No.	Type	Avg Well Depth of Nearby Wells (ft)	Avg Depth to Water of Nearby Wells (ft)	Proposed Well Depth (ft)	Proposed Casing Dia (in)	Proposed Well Depth Cost Category (ft)	Estimated Construction Cost	
1	24	M	101	43	80	2	up to 80'	\$7,400	
2	36	M/WQ	160	51	80	2	up to 80'	\$7,400	
3	39	M/WQ	163	56	95	2	80 to 100'	\$8,400	
4	16	M/WQ	157	N/A	80	2	up to 80'	\$7,400	
5	45	M	235	85	130	4	100' to 150'	\$20,800	
6	77	M	184	75	110	4	100' to 150'	\$20,800	
7	53	M	263	151	195	4	150' to 200'	\$26,600	
8	8	M	89	34	80	2	up to 80'	\$7,400	
9	52	M	203	137	175	4	150' to 200'	\$26,600	
10	67	M/WQ	200	77	120	4	100' to 150'	\$20,800	
11	80	M	198	65	100	2	80 to 100'	\$8,400	
15	13	M	98	36	75	2	up to 80'	\$7,400	Total: \$ 169,400
12	55	M	248	145	195	4	150' to 200'	\$26,600	If available funding is available
13	42	M	162	43	90	2	80 to 100'	\$8,400	
14	57	M	225	131	170	4	150' to 200'	\$26,600	
16	Apex 1	M	184	75	80	2	up to 80'	\$7,400	
17	Apex 2	M	184	75	80	2	up to 80'	\$7,400	

Notes: Well type: M = water level monitoring, WQ = water quality monitoring

Total of Wells Included in Project: \$ 169,400
County Encroachment Permit Fee: \$ 500
Total Project Construction Estimate: \$ 169,900

Total of all Wells in List: \$ 245,800



EXHIBIT 6.4
WATER QUALITY TESTING COSTS



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AGRICULTURAL SERVICES

Irrigation Water Suitability

Please select an analysis below for sampling instructions and container information.

<u>CONSTITUENTS</u>	<u>METHOD</u>	<u>PRICE</u>
Irrigation Water Suitability Irrigation Water Suitability (Alkalinity, bicarbonate, boron, calcium, carbonate, chloride, copper, electrical conductivity, fluoride, gypsum requirement, hydroxide, iron, magnesium, manganese, nitrate, pH, potassium, sodium, SAR, sulfate, total dissolved solids, total hardness, zinc)	Various	\$100.00

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Sample dilutions, special reporting, & special invoicing fees will be arranged on a case by case basis.

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EXHIBIT 6.5

IRRIGATION SUITABILITY TEST CONSTITUENTS



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Sample Container and Preservation Guidelines

Analysis/Constituent	Container	Preservation	Holding Time
Irrigation Suitability (Alkalinity, Bicarbonate, Boron, Calcium, Carbonate, Chloride, Copper, Electrical Conductivity, Fluoride, Gypsum Requirement, Hydroxide, Iron, Magnesium, Manganese, Nitrate, pH, Potassium, Sodium, Sodium Absorption Ratio (SAR), Sulfate, Total Dissolved Solids (by summation), Total Hardness, Zinc)	pint, plastic (HDPE) 1/2 pint, plastic (HDPE) (HDPE) 250 ml plastic	-- 1 ml 1+1 H2SO4 10 ml 1+1 HNO3	48 hours + pH 15 minutes (Field Test)

Sampling Instructions: A [Chain of Custody\(COC\)](#) form, listing all samples, date and time sampled, and analysis requested should be filled out by the Sampler. This COC form should accompany the samples to the testing laboratory.

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