

Attachment 6. Budget

Total project costs are \$1,897,969. The requested DWR grant funds will cover \$250,000, with the remaining \$1,647,969 to be funded by the Palmdale Water District. Table 6-1 provides a summary budget for the proposed project, and a detailed work breakdown structure and fee schedule is provided in Table 6-2.

**Table 6-1
Total Project Budget**

Budget Category		Non-State Share* (Funding Match)	Requested Grant Funding	Total
(a)	Task 1 Project Administration	\$88,839	\$0	\$88,839
(b)	Task 2 Update Water Demands and Water Supply Plans for the PWD and Other Stakeholders	\$57,311	\$0	\$57,311
(c)	Task 3 Determine the Timing and Magnitude of Imported and Recycled Water for Recharge	\$71,222	\$0	\$71,222
(d)	Task 4 Develop Preliminary LCGRRP Alternatives	\$421,022	\$0	\$421,022
(e)	Task 5 Conduct Site Specific Investigations to Determine Environmental Issues and Constraints	\$482,804	\$0	\$482,804
(f)	Task 6 Assess the Groundwater Response of Each Alternative	\$58,262	\$250,000	\$308,262
(g)	Task 7 Refine the LCGRRP Alternatives and Evaluate Feasibility	\$100,862	\$0	\$100,862
(h)	Task 8 Prepare LCGRRP Report	\$80,491	\$0	\$80,491
(i)	Task 9 Conduct Public Outreach	\$114,613	\$0	\$114,613
(j)	Contingency at 10 percent	\$172,543	\$0	\$172,543
(k)	Grand Total	\$1,647,969	\$250,000	\$1,897,969

**Table 6-2
Line Item Cost Estimate and Work Breakdown Structure**

Task and Subtask Description	Professional Staff Time (person days)					Total Labor Costs	Other Direct Costs				Total ODCs	Totals	
	Principal	Associate	Senior	Staff	Eng Tech		Mileage and Tolls	Travel	Subs	Repro		Subtask	Task
Task 1 Project Administration						\$87,840					\$999		\$88,839
Task 1.1 Project Management													
1.1.1 Progress and financial management		4				\$6,560							\$6,560
1.1.2 Subconsultant contract administration and coordination		2				\$3,280							\$3,280
1.1.3 Preparation of progress reports and invoices to the Palmdale Water District (PWD)		6				\$9,840							\$9,840
1.1.4 Preparation of progress reports and invoices to the State for the PWD		9				\$14,760							\$14,760
Task 1.2 Progress Meetings													
1.2.1 Monthly teleconferences with the PWD and consultants	5	5				\$17,800							\$17,800
1.2.2 Stakeholder meetings every other month in Palmdale	10	10				\$35,600	\$999				\$999		\$36,599
Task 2 Update Water Demands and Water Supply Plans for the PWD and Other Stakeholders						\$57,200					\$111		\$57,311
Task 2.1 Collect, Compile, and Review Data and Reports from the PWD and Other Stakeholders to Spatially and Temporally Define Water Demand, Uses, Supply Plans and Groundwater Production													
2.1.1 Obtain reports and data from all stakeholders	1	7				\$13,400							\$13,400
2.1.2 Obtain geographic information system (GIS) and other related shapefiles			2			\$2,480							\$2,480
2.1.3 Compile revised projections of water demands, uses, supply plans, and groundwater production		5				\$8,200							\$8,200
2.1.4 Describe existing recharge projects in the Antelope Valley, and how these projects would contribute to sustainability and mitigate existing recharge deficiencies	2	3				\$8,760							\$8,760
2.1.5 Describe proposed recharge projects in the Antelope Valley, and how these projects would contribute to sustainability and mitigate existing recharge deficiencies	1	2				\$5,200							\$5,200
Task 2.2 Prepare Task 2 Report													
2.2.1 Prepare draft task report and submit to the PWD and other stakeholders	1	5			2	\$12,040							\$12,040
2.2.2 Review draft task report with all stakeholders at a meeting	1	1				\$3,560	\$111				\$111		\$3,671
2.2.3 Review comments on task report and prepare a revised draft task report and submit to the PWD and the other stakeholders	1	1			1	\$3,560							\$3,560
Task 3 Determine the Timing and Magnitude of Imported and Recycled Water for Recharge						\$56,000					\$15,222		\$71,222
Task 3.1 Determine the Timing and Magnitude of Imported Water Available for Recharge													
3.1.1 Review the projected deliveries for direct use for each State Water Project (SWP) contractor to meet future demands under varying SWP water allocations	2					\$3,840							\$3,840
3.1.2 Determine the amount of unused capacity in the East Branch of the SWP and the variables that control it	2					\$3,840			\$3,000		\$3,000		\$6,840
3.1.3 Assess the SWP contractor interest in conveying non-SWP water in the East Branch and the amount of water they intend to acquire and transport to the Antelope Valley	2					\$3,840	\$111		\$5,000		\$5,111		\$8,951
3.1.4 Develop alternatives to convey surplus SWP and non-SWP waters to the Antelope Valley in the East Branch of the SWP	2					\$3,840			\$3,000		\$3,000		\$6,840
3.1.5 Describe the methods, processes, agreements and permits required to secure surplus SWP and non-SWP water and to convey it to the Antelope Valley for recharge	2					\$3,840			\$4,000		\$4,000		\$7,840

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Task and Subtask Description	Professional Staff Time (person days)					Total Labor Costs	Other Direct Costs				Total ODCs	Totals	
	Principal	Associate	Senior	Staff	Eng Tech		Mileage and Tolls	Travel	Subs	Repro		Subtask	Task
Task 3.2 Determine the Timing and Magnitude of Recycled Water Available for Recharge													
3.2.1 Obtain the most recent recycled water production and reuse plans from the Los Angeles County Sanitation District and compare to reuse projection in Task 2	1	3				\$5,880							\$5,880
3.2.2 Collect existing and planned non-potable water infrastructure information for the PWD and other potential project participants		1				\$1,640							\$1,640
3.2.3 Prepare estimates of the amount of uncommitted recycled water that could be used for recharge and describe how that water could be conveyed from treatment plants to the LCRRP		2				\$3,280							\$3,280
3.2.4 Describe the methods, processes, agreements, and permits required to secure water and to convey it to the LCRRP	1	3				\$6,840							\$6,840
Task 3.3 Prepare Task 3 Report													
3.3.1 Prepare draft task report and submit to the PWD and other stakeholders	1	5			2	\$12,040							\$12,040
3.3.2 Review draft task report with all stakeholders at a meeting	1	1				\$3,560	\$111			\$111			\$3,671
3.3.3 Review comments on task report and prepare a revised draft task report and submit to the PWD and the other stakeholders	1	1			1	\$3,560							\$3,560
Task 4 Develop Preliminary LCRRP Alternatives						\$215,800					\$205,222		\$421,022
Task 4.1 Compile Basic Data for Developing Alternatives													
4.1.1 Review all available hydrogeologic information		5	10			\$20,600							\$20,600
4.1.2 Conduct geophysical investigations													
Conduct Electrical Resistivity and Time Domain Electromagnetic Induction investigations to identify recharge impediments and flow barriers		5	5			\$14,400			\$80,000	\$80,000			\$94,400
Conduct ground surface deformation investigation using InSAR to assess fate of natural recharge in Littlerock Creek		5	5			\$14,400			\$100,000	\$100,000			\$114,400
4.1.3 Conduct topographic survey of the project area using LIDAR									\$25,000	\$25,000			\$25,000
4.1.4 Collect existing and planned potable and non-potable water infrastructure information from the PWD and other potential project participants	2	2	5			\$13,320							\$13,320
4.1.5 Collect existing and planned flood control and road infrastructure information for the project area	2		5			\$10,040							\$10,040
Task 4.2 Develop Alternative Facility and Operating Plans for the LCRRP													
4.2.1 Develop up to ten facility layouts, associated operating plans and cost opinions including a baseline (no-project) alternative	5	20	20			\$67,200							\$67,200
4.2.2 Develop feasibility criteria	2					\$3,840							\$3,840
4.2.3 Review alternatives with the PWD and other stakeholders	2	2	2			\$9,600	\$111			\$111			\$9,711
4.2.4 Refine the alternatives	1	1	1			\$4,800							\$4,800
Task 4.3 Prepare Task 4 Report													
4.3.1 Prepare draft Task 4 report and submit to the PWD and other stakeholders	5	7	10		3	\$36,360							\$36,360
4.3.2 Review task report with the PWD and the other stakeholders at a meeting	1	2	1			\$6,440	\$111			\$111			\$6,551
4.3.3 Review comments on task report and prepare a revised draft task report and submit to the PWD and the other stakeholders	2	4	2		2	\$14,800							\$14,800
Task 5 Conduct Site Specific Investigations to Determine Environmental Issues and Constraints						\$330,360					\$152,444		\$482,804
Task 5.1 Assess the Ground Surface and Near-Ground Surface Impacts of Each Alternative													
5.1.1 Conduct an assessment of each alternative's consistency with flood control and natural hydrologic functions	1	20				\$34,720							\$34,720

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 Line Item Cost Estimate and Work Breakdown Structure**

Task and Subtask Description	Professional Staff Time (person days)					Total Labor Costs	Other Direct Costs				Total ODCs	Totals	
	Principal	Associate	Senior	Staff	Eng Tech		Mileage and Tolls	Travel	Subs	Repro		Subtask	Task
5.1.2 Conduct biologic resources impact assessment pursuant to the Strategic Water Resources Plan (SWRP) CEQA mitigation measures BIO-1a, BIO-2a, and BIO-5a for all alternatives identified in Task 4		2				\$3,280			\$30,000		\$30,000	\$33,280	
5.1.3 Conduct cultural resources impact assessment pursuant to SWRP CEQA mitigation measures CUL-1a and CUL-3a for all alternatives identified in Task 4		2				\$3,280			\$30,000		\$30,000	\$33,280	
5.1.4 Conduct geologic/seismic/mineral resources impact assessment pursuant to SWRP CEQA mitigation measures GEO-1 and GEO-3 for all alternatives identified in Task 4		2				\$3,280			\$30,000		\$30,000	\$33,280	
5.1.5 Prepare CEQA documentation for geophysical survey in Task 4		2				\$3,280			\$30,000		\$30,000	\$33,280	
Task 5.2 Prepare Task 5.1 Report													
5.2.1 Prepare draft Task 5.1 report and submit to the PWD and other stakeholders	5	7	10		3	\$36,360						\$36,360	
5.2.2 Review task report with the PWD and the other stakeholders at a meeting	1	1	1			\$4,800	\$111				\$111	\$4,911	
5.2.3 Review comments on task report and prepare a revised draft task report and submit to the PWD and other stakeholders	1	4	2		2	\$11,920						\$11,920	
Task 5.3 Assess Historical and Current Groundwater Conditions													
5.3.1 Collect and compile well data and associated groundwater production, groundwater level, water quality data and ground level data and reports		5	20			\$33,000						\$33,000	
5.3.2 Compile all well data into a project database and GIS			10	20		\$33,200						\$33,200	
5.3.3 Review groundwater level data and prepare a description of the groundwater level trends		2	5			\$9,480						\$9,480	
5.3.4 Prepare initial groundwater level conditions map		1	3			\$5,360						\$5,360	
5.3.5 Review groundwater quality data, prepare a description of the groundwater quality trends, and identify water quality constituents of interest		4	5			\$12,760						\$12,760	
5.3.6 Prepare groundwater sampling and analysis plan, collect groundwater samples at ten wells, analyze samples for Title 22 constituents, and load data into project database	2	15	10	10		\$51,240	\$222		\$32,000		\$32,222	\$83,462	
5.3.7 Prepare initial groundwater concentration maps for the constituents of interest		1	3			\$5,360						\$5,360	
5.3.8 Review ground level data and recent subsidence reports and prepare descriptions of ground level trends		5	10			\$20,600						\$20,600	
5.3.9 Prepare map showing limits of subsidence and geographic distribution of recent subsidence rates		1	3			\$5,360						\$5,360	
Task 5.4 Prepare Task 5.3 Report													
5.4.1 Prepare draft Task 5.3 report and submit to the PWD and other stakeholders	5	7	10		3	\$36,360						\$36,360	
5.4.2 Review task report with the PWD and the other stakeholders at a meeting	1	1	1			\$4,800	\$111				\$111	\$4,911	
5.4.3 Review comments on task report and prepare a revised draft task report and submit to the PWD and other stakeholders	1	4	2		2	\$11,920						\$11,920	
Task 6 Assess the Groundwater Response of Each Alternative						\$308,040					\$222	\$308,262	
Task 6.1 Acquire and Update the 2012 USGS MODFLOW Model of the Antelope Valley													
6.1.1 Acquire the 2012 USGS MODFLOW model of the Antelope Valley basin													
Review model files and reports	2	3				\$8,760						\$8,760	
Conduct verification runs		2				\$3,280						\$3,280	
6.1.2 Update model calibration hydrology to current period and to be consistent with Public Water Agency experts work	1	3				\$6,840						\$6,840	
6.1.3 Recalibrate the USGS MODFLOW model	1	15	5			\$32,720						\$32,720	
6.1.4 Prepare input files for the no-project (baseline) alternative and simulate with the MODFLOW model	1					\$1,920						\$1,920	

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 Line Item Cost Estimate and Work Breakdown Structure**

Task and Subtask Description	Professional Staff Time (person days)					Total Labor Costs	Other Direct Costs				Total ODCs	Totals	
	Principal	Associate	Senior	Staff	Eng Tech		Mileage and Tolls	Travel	Subs	Repro		Subtask	Task
6.1.5 Prepare input for an MT3D model for water quality constituents of interest and simulate with the MT3D model	1	5	5			\$16,320						\$16,320	
6.1.6 Conduct sensitivity analysis to determine the sensitivity of the models predictions to assumptions on model parameters and features of the baseline alternative	1	5	5			\$16,320						\$16,320	
6.1.7 Summarize the baseline alternative simulation results in maps, charts and tables	1	5	10			\$22,520						\$22,520	
6.1.8 Prepare a draft task report describing the basin response to the baseline alternative and submit to the PWD and other stakeholders	3	3	5			\$16,880						\$16,880	
6.1.9 Review the task report with the PWD and other stakeholders at a meeting	1	1	1			\$4,800	\$111			\$111		\$4,911	
6.1.10 Revise the baseline alternative based on comments and re-simulate	1	2	2			\$7,680						\$7,680	
6.1.11 Summarize the revised baseline alternative simulation results in maps, charts and tables	1	2	2			\$7,680						\$7,680	
6.1.12 Revise the task report documenting the baseline alternative simulation results	1					\$1,920						\$1,920	
Task 6.2 Assess the Groundwater Response for Each Recharge Alternative and Compare to the Baseline Alternative													
6.2.1 Develop inputs files for the MODFLOW and MT3D models for the with-project alternatives	2	5				\$12,040						\$12,040	
6.2.2 Simulate each with-project alternative													
Get the model to run for each alternative		10				\$16,400						\$16,400	
Review each alternative simulation results to determine if the alternative needs to be modified for reasonableness	2	5	5			\$18,240						\$18,240	
Revise each alternative's input files and re-simulate as appropriate		5				\$8,200						\$8,200	
Conduct sensitivity analysis to determine the sensitivity of the model predictions to assumptions on model parameters and features of the alternatives	2	10				\$20,240						\$20,240	
Summarize each alternative's simulation results in maps, charts and tables and compare to the baseline alternative evaluated in Task 6.1	2	5	20			\$36,840						\$36,840	
Compare the simulation results from each alternative to the baseline alternative and assess their impacts on groundwater level, flow, water quality and subsidence	2					\$3,840						\$3,840	
6.2.3 Update the draft Task 6 report to describe the groundwater impacts and submit to the PWD and other stakeholders	5	5	10			\$30,200						\$30,200	
6.2.4 Review task report with the PWD and the other stakeholders in a meeting	1	1	1			\$4,800	\$111			\$111		\$4,911	
6.2.5 Review comments on task report and prepare a revised draft task report and submit to the PWD and the other stakeholders	2	2	2			\$9,600						\$9,600	
Task 7 Refine the LCGRRP Alternatives and Evaluate Feasibility						\$100,640				\$222		\$100,862	
Task 7.1 Develop Preliminary Refinements to Recharge Project Alternatives													
7.1.1 Review the results of Tasks 5 and 6 and develop recommended changes to the preliminary LCGRRP alternatives	2	5	10			\$24,440						\$24,440	
7.1.2 Update project recharge and recovery estimates and cost opinions	1	5	5			\$16,320						\$16,320	
7.1.3 Develop list of additional investigations, and their costs, that should be done prior to project-specific CEQA and design	2	2				\$7,120						\$7,120	
7.1.4 Apply the feasibility criteria developed in Task 4 to each alternative, assess feasibility, and rank	2	5											
7.1.5 Review results of Tasks 7.1.1 through 7.1.3 with the PWD and other stakeholders at a meeting	2	2				\$7,120	\$111			\$111		\$7,231	
7.1.6 Finalize the alternatives based on comments and suggestions of the PWD and other stakeholders	1	5				\$10,120						\$10,120	
Task 7.2 Prepare Implementation Plan and Task 7 Report													
7.2.1 Develop implementation plan for feasible alternatives	3	3											
7.2.2 Prepare draft Task 7 report and submit to the PWD and other stakeholders	3	5	5		2	\$22,080						\$22,080	

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	Principal	Associate	Senior	Staff	Eng Tech		Mileage and Tolls	Travel	Subs	Repro		Subtask	Task
7.2.3 Review task report with the PWD and the other stakeholders at a meeting	1	1	1			\$4,800	\$111				\$111	\$4,911	
7.2.4 Review comments on task report and prepare a revised draft task report and submit to the PWD and the other stakeholders	1	2	2		1	\$8,640						\$8,640	
Task 8 Prepare LCRRP Report						\$74,880					\$5,611		\$80,491
Task 8.1 Prepare Draft LCRRP Report	5	10	10			\$48,000				\$2,000	\$2,000	\$50,000	
Task 8.2 Review Draft Report with the PWD and Other Stakeholders in a Meeting	2	2	2			\$9,600	\$111				\$111	\$9,711	
Task 8.3 Prepare Final LCRRP Report	2	4	4		2	\$17,280				\$3,500	\$3,500	\$20,780	
Task 9 Conduct Public Outreach						\$113,280					\$1,333		\$114,613
Task 9.1 Create and Maintain a Website for the LCRRP Feasibility Investigation						\$14,400						\$14,400	
Task 9.2 Conduct Public Workshop No. 1 to Discuss Tasks 2, 3 and 4	6	6	6			\$29,760	\$111				\$111	\$29,871	
Task 9.3 Conduct Public Workshop No. 2 to Discuss Tasks 5 and 6	6	6	6			\$29,760	\$111				\$111	\$29,871	
Task 9.4 Conduct Public Workshop No. 3 to Discuss Task 7	6	6	6			\$29,760	\$111				\$111	\$29,871	
Task 9.5 Prepare for and Attend Five Association Meetings to Describe Project Results	5					\$9,600		\$1,000			\$1,000	\$10,600	
Subtotal	157	378	293	30	54	\$1,344,040	\$2,886		\$372,000	\$5,500	\$381,386		\$1,725,426
Contingency at 10 percent													<u>\$172,543</u>
Total													<u>\$1,897,969</u>

Consultant Labor Category	Hourly Rate	Daily Rate*
Principal	\$240	\$1,920
Associate	\$205	\$1,640
Senior	\$155	\$1,240
Staff	\$130	\$1,040
Eng Tech	\$120	\$960

Notes:
* Based upon eight hour day