

Attachment 9 Past Performance

The Local Groundwater Assistance (LGA) grant program was established in 2000 by AB303 and was administrated by the Department of Water Resources (DWR) to provide a maximum of \$250,000 in grants for the improvement of groundwater management in the State of California.

CVWD has received three (3) grants from the LGA Program in FY 01/02, FY 02/03 and FY 04/05 for a total of \$685,000. The studies included

1. FY 01/02 – "Verdugo Basin Groundwater Evaluation and Monitoring Project" - Installed, developed, tested, and sampled three monitoring wells to identify new production well sites in the Verdugo Basin. Conducted groundwater level and water quality monitoring. Completed studies that estimated annual recharge, estimated basin outflow, and reported on monitoring. It was completed in May 2004 and the project was on-time and within budget. A Grantee Performance Evaluation for this project is attached in **Appendix E**.
2. FY 02/03 – "Verdugo Basin Groundwater Storage and Conjunctive Use Feasibility Study" -Developed and utilized a groundwater flow model to evaluate the hydrogeology and groundwater flow in the Verdugo Basin. Evaluated four alternatives in the Basin with potential for small neighborhood storm runoff recharge projects. The study recommended a project to install storm water infiltration galleries at Crescenta Valley County Park so that local storm water could be used as a method to recharge the basin. The study showed a possibility of 1,500 ac-ft/year of storm water that could be put back into the Verdugo Basin. It was completed in June 2005 and the project was on-time and within budget. A Grantee Performance Evaluation for this project is attached in **Appendix F**.
3. FY 04/05 – "Verdugo Basin Geophysical Study" - Conduct geophysical evaluations of the Verdugo Basin to enhance management of the basin for long-term supply by identifying underlying bedrock and water bearing layers. It was completed in June 2006 and the project was on-time and within budget. A Grantee Performance Evaluation for this project is attached in **Appendix G**. Table 9-1 gives an example of how this project's tasks were completed within the time allotted and within the budget provided by CVWD and its consultant, Geomatrix.

The goals of these studies were to obtain data and information to enhance the District's ability to utilize local water resources. See LGA program report in **Appendix H** by DWR (page 9) which discusses these projects.

Table 9-2 shows a summary of funding programs for which projects have been completed by CVWD on time and within budget.

Table 9-1: Sample Performance for the Verdugo Basin Geophysical Study

Task	Performance
Task 1 - Gravity Survey	CVWD and Geomatrix staff commenced the gravity survey soon after the Grant agreement was approved. The gravity survey identify groundwater basin boundaries and configuration, subsurface features that may significantly affect groundwater flow and hydrogeologic and aquifer information to assist the District in locating future extraction wells. Geomatrix started in September 2005 and the field date for the gravity survey was completed within 4 months. The technical memorandum was submitted to the Technical Advisory Committee for review and this task was completed on schedule.
Task 2 - Seismic Refraction Studies	CVWD and Geomatrix staff commenced the Seismic Refraction study soon after the gravity survey was completed. This information was used to enhance the information from the gravity survey. The technical memorandum was submitted to the Technical Advisory Committee for review and this task was completed on schedule.
Task 3 - Resistivity Survey/ Time Domain Electromagnetic Survey	Geomatrix and their sub-consultant, Geovision worked on the time domain electromagnetic survey in selected areas within the basin to obtain more information on the Verdugo Basin. The technical memorandum was submitted to the Technical Advisory Committee for review and this task was completed on schedule.
Task 4 - Upgrading the Verdugo Basin Groundwater Model	Geomatrix inputted the data from the previous surveys into the Groundwater Model to improve the accuracy of the model. The technical memorandum was submitted to the Technical Advisory Committee for review and this task was completed on schedule.
Task 5 - Reporting	CVWD submitted quarterly invoices and progress reports on time and a final report prior to the project end date. All invoices and reports were approved by agency staff.
Task 6 - Final Report	CVWD submitted a final report after review by the Task Advisory Committee and a 3rd party to DWR and the final report was accepted in June 2006.

Table 9-2: Past Performance

Funding Source	Funding Program	Project Description	Funding Amount	Status
DWR	LGA	<u>Verdugo Basin Groundwater Evaluation and Monitoring Project</u> : Installed, developed, tested, and sampled three monitoring wells to identify new production well sites in the Verdugo Basin. Conducted groundwater level and water quality monitoring. Completed studies that estimated annual recharge, estimated basin outflow, and reported on monitoring.	\$250,000	Completed in June, 2004 on time and within budget
DWR	LGA	<u>Verdugo Basin Groundwater Storage and Conjunctive Use Feasibility Study</u> : Developed and utilized a groundwater flow model to evaluate the hydrogeology and groundwater flow in the Verdugo Basin. Evaluated four alternatives in the Basin with potential for small neighborhood storm runoff recharge projects.	\$185,000	Completed in June, 2005 on time and within budget
DWR	LGA	<u>Verdugo Basin Geophysical Study</u> : Conduct geophysical evaluations to enhance management of the basin for long-term supply.	\$250,000	Completed in June, 2006 on time and within budget
CDPH	Proposition 50, Chapter 3, Water Security	Installation of an emergency water supply interconnection between Los Angeles Department of Water & Power, CVWD & FMWD	\$606,925	Under design and to be completed by March 2014
USBR	Initiative Cooperative Agreement	Recycled Water Feasibility Study	\$20,000	Completed in April, 2004 on time and within budget

**Appendix E - Grantee Evaluation for “Verdugo Basin
Groundwater Evaluation Monitoring Project”**

DEPARTMENT OF WATER RESOURCES

1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 942360001
(916) 653-5791



E-694
①



July 14, 2004

Mr. David Gould
Crescenta Valley Water District
2700 Foothill Boulevard
La Crescenta, California 91214

Local Groundwater Management Assistance Act of 2000,
Agreement No. 4600002445

Dear Mr. Gould:

We have received and accepted your Final Project. This represents completion of your agency's obligations under Agreement No. 4600002445 with the Department of Water Resources.

Thank you for your interest in the Local Groundwater Assistance Fund and your efforts to better understand and manage groundwater in your area. If you have any questions, please contact Judy Colvin at (916) 651-9665 or Harley Davis at (916) 651-9229.

Sincerely,

A handwritten signature in blue ink, appearing to read "John K. Woodling".

for

John K. Woodling, Chief
Conjunctive Water Management Branch
Division of Planning and Local Assistance

**Appendix F - Grantee Evaluation for “Verdugo Basin
Groundwater Storage and Conjunctive Use
Feasibility Study”**

DEPARTMENT OF WATER RESOURCES

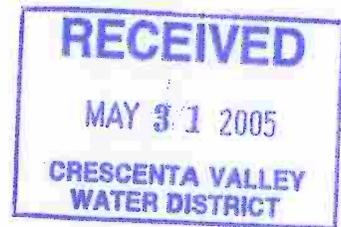
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

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May 24, 2005

Mr. David Gould
District Engineer
Crescenta Valley Water District
2700 Foothill Boulevard
La Crescenta California 91214



Local Groundwater Management Assistance Act of 2000,
Agreement No. 4600003160

Dear Mr. Gould:

We have received and accepted your Final Report titled "Verdugo Basin Groundwater Recharge Storage and Conjunctive Use Feasibility Study". This represents completion of your agency's obligations under Agreement No. 4600003160 with the California Department of Water Resources.

Thank you for your interest in the Local Groundwater Assistance Grant Program and your efforts to better understand and manage groundwater in your area. The attachment, Grant Performance Evaluation, is for your records.

If you have any questions, please contact Judy Colvin at (916) 651-9665 or Harley Davis at (916) 651-9229.

Sincerely,

Tracie Billington, Chief
Special Projects

cc: Mr. Dennis Erdman
General Manager
Crescenta Valley Water District
2700 Foothill Boulevard
La Crescenta California 91214

Mr. W. Greg Hamer
Geomatrix Consultants, Inc.
250 East Rincon Street, Suite 204
Corona CA 92879

STATE OF CALIFORNIA
GRANTEE PERFORMANCE EVALUATION
 DEPARTMENT OF WATER RESOURCES
 CONJUNCTIVE WATER MANAGEMENT BRANCH
 Rev5/04

AGREEMENT NUMBER 4600003160	AMENDMENT NUMBERS
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DEPARTMENT Water Resources	GRANTEE'S NAME AND ADDRESS Crescenta Valley Water District 2700 Foothill Boulevard La Crescenta, California 91214
DIVISION Local Planning and Assistance	
EVALUATOR'S NAME Judy Colvin	
PROJECT TITLE Verdugo Basin Groundwater Recharge Storage & Conjunctive Use Feasibility Study	AGREEMENT EXPIRATION DATE May 1, 2005
1. TOTAL AGREEMENT AMOUNT INCLUDING AMENDMENTS \$185,000.00	GRANTEE DEPARTMENT (if different than grantee's name)

2. DESCRIBE THE WORK THAT WAS IN THE PROJECT WORK PLAN.

Crescenta Valley Water District's (CVWD) project was titled "Verdugo Basin Groundwater Recharge Storage and Conjunctive Use Feasibility Study." The project team was made up of CVWD, Geomatrix Consultants, and a Technical Advisory Committee (TAC). The feasibility study evaluated the potential of developing a recharge and conjunctive use program in the Verdugo Basin. After the development of the water balance and groundwater model, the project team 1) used a screening process to identify hydrogeologic conditions, water sources, and recharge methods that appear most promising, 2) developed four recharge alternatives and simulations of each alternative using the groundwater flow model, and 3) evaluated the recharge alternatives. Development of alternatives and comparative evaluations in the final report were explained and well documented. Results of the study find recharge alternatives are technically feasible in the Basin and the preferred recharge alternative is Alternative C. Recommendations include additional data collection activities, such as gauging flows in channels to monitor overall basin conditions and specific activities for the preferred alternative (monitoring flow, water quality sampling, soil borings, and on-going discussions with participating agencies).

3. WAS THE WORK PERFORMED?

NO - If no, explain why YES - If yes, explain how the work met the specific problem, administrative requirement, or program need for the project.

- CVWD and their consultants, Geomatrix Consultants, were cooperative throughout the project life.
- The project was completed as planned, budgeted and scheduled.
- Knowledge and information gained from the project will be valuable to CVWD and accomplishes the goal of the AB 303 Local Groundwater Assistance grant program to improve groundwater basin management.

4. DID THE GRANTEE FULFILL ALL REQUIREMENTS OF THE AGREEMENT?

NO - If no, explain why YES - If yes, explain how the work met the specific problem, administrative requirement, or program need for the project.

- Reporting requirements were met and submitted in a timely manner.
- Quarterly reports included presentation handouts and summaries from TAC meetings. Final report was well organized; findings were very interesting and supplemented with effective figures and maps.
- Invoicing requirements were met and supporting documents were accurate.
- Grantee was always available by telephone and e-mail when communication was necessary.

5. EMPLOYEE TO BE CONTACTED REGARDING GRANTEE PERFORMANCE Judy Colvin	6. TITLE Environmental Scientist	7. TELEPHONE NUMBER (916) 651 -9665
8. EVALUATOR'S SIGNATURE 	9. TITLE <i>same as above</i>	10. DATE <i>5/25/05</i>
		11. TELEPHONE NUMBER <i>same as above</i>

**Appendix G - Grantee Evaluation for “Verdugo Basin
Geophysical Study”**

DEPARTMENT OF WATER RESOURCES

1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

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**CRESCENTA VALLEY
WATER DISTRICT**

April 8, 2008

Mr. David Gould, District Engineer
Crescenta Valley Water District
2700 Foothill Boulevard
La Crescenta, California 91214

Local Groundwater Management Assistance Act of 2000,
FY 2004/2005 Agreement No. 4600004074

Dear Mr. Gould:

We have received and accepted your report entitled *Verdugo Basin Geophysical Evaluation Report*. This represents completion of your agency's obligations under Agreement No. 4600004074 with the California Department of Water Resources.

Thank you for your interest in the Local Groundwater Assistance Grant Program and your efforts to better understand and manage groundwater in your area. The Grant Performance Evaluation is attached for your records. If you have any questions, please contact me at (916) 651-9226 or Harley H. Davis at (916) 651-9229.

Sincerely,

A handwritten signature in cursive script, appearing to read "Tracie Billington".

Tracie Billington, Chief
Special Projects

Attachment

cc: Mr. Dennis Erdman, General Manager
Crescenta Valley Water District
2700 Foothill Boulevard
La Crescenta, California 91214

Mr. Bob Pierotti
DWR Southern District
770 Fairmont Avenue, Suite 102
Glendale, California 91203-1035

STATE OF CALIFORNIA
GRANTEE PERFORMANCE EVALUATION
 DEPARTMENT OF WATER RESOURCES
 CONJUNCTIVE WATER MANAGEMENT BRANCH
 Rev5/04

		AGREEMENT NUMBER 4600004074	AMENDMENT NUMBERS
DEPARTMENT Water Resources	GRANTEE'S NAME AND ADDRESS Crescenta Valley Water District 2700 Foothill Boulevard La Crescenta, CA 91214		
DIVISION Local Planning and Assistance			
EVALUATOR'S NAME Brett Wyckoff			
PROJECT TITLE Verdugo Basin Geophysical Evaluation Project	AGREEMENT EXPIRATION DATE May 15, 2007		
1. TOTAL AGREEMENT AMOUNT INCLUDING AMENDMENTS \$250,000.00		GRANTEE DEPARTMENT (if different than grantee's name).	
2. DESCRIBE THE WORK THAT WAS IN THE PROJECT WORK PLAN.			

The objectives of the proposal were to:

- 1) Identify Basin boundaries and configuration to increase the understanding of the Basin water storage capacity, a key factor in the conjunctive use of the Basin;
- 2) Identify subsurface features that may significantly affect groundwater flow. This information would be incorporated into the groundwater flow model for the Basin and used to further evaluate recharge alternatives;
- 3) Provide hydro geologic and aquifer information to assist CVWD in locating future production wells; and
- 4) Provide information necessary to optimize future groundwater resource development in the Basin.

To achieve the objectives, the proposed project consisted of three types of geophysical evaluations: Basin-wide gravity survey, seismic surface wave survey, and electrical resistivity imaging survey. The purpose of the gravity survey was to produce more accurate information concerning the bedrock topography and the variations in thickness of the more-permeable unconsolidated deposits throughout the Basin. The purpose of the seismic surface wave survey was to confirm and validate the density assumptions used in the gravity survey, and to confirm depths to bedrock as interpreted from the gravity survey. The primary purpose of this electrical resistivity imaging survey was to investigate the permeability of shallow sediments at or near potential recharge locations.

3. WAS THE WORK PERFORMED?

NO - If no, explain why

YES - if yes, explain how the work met the specific problem, administrative requirement, or program need for the project.

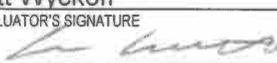
The geophysical surveys were successfully completed. A better understanding of groundwater basin geometry, subsurface features, and hydro geologic characteristics was gained by completion of this project. This new information will assist the District and other Basin stakeholders in optimizing the development and use of the Basin's water source. The increased understanding of the Basin's water storage capacity and subsurface features that affect the movement of groundwater will assist the District and other stakeholders with locating future production wells and recharge areas, management of Basin and imported water sources, and overall optimization of the Basin as a source of reliable, long-term supply. The geophysical information generated by the project was also to be used to improve and optimize the District's "Verdugo Basin Groundwater Storage and Conjunctive Use Feasibility Study".

4. DID THE GRANTEE FULFILL ALL REQUIREMENTS OF THE AGREEMENT?

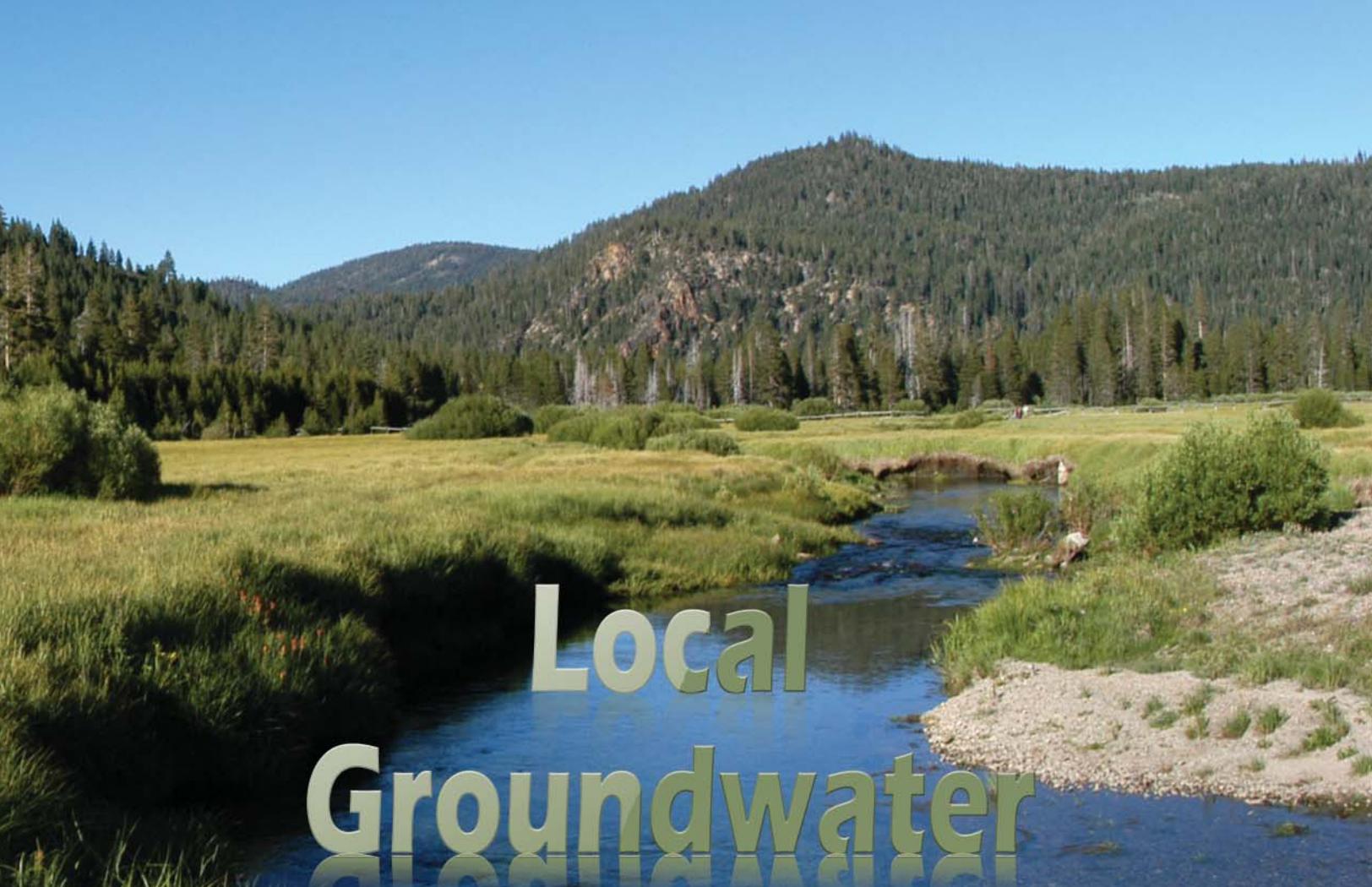
NO - If no, explain why

YES - if yes, explain how the work met the specific problem, administrative requirement, or program need for the project.

- The project was completed in accordance with the work plan included in the June 1, 2005 contract agreement.
- The project was completed on budget and ahead of schedule.
- All reporting requirements were met and submitted in a timely manner.
- Quarterly reports included presentation handouts and summaries from TAC meetings.
- Final report was organized and supplemented with effective figures and maps. Final report was submitted 7/17/2006.
- Invoicing requirements were met and supporting documents were accurate.
- Grantee and its consultants, Geomatrix Consultants, were cooperative throughout the project life. Grantee was always available by telephone and e-mail when communication was necessary.
- Knowledge and information gained from the project will be valuable to CVWD and accomplishes the goal of the AB 303 Local Groundwater Assistance grant program to improve groundwater basin management.

5. EMPLOYEE TO BE CONTACTED REGARDING GRANTEE PERFORMANCE Brett Wyckoff		6. Engineering Geologist	7. TELEPHONE NUMBER (916) 651 - 9283
8. EVALUATOR'S SIGNATURE 	9. TITLE Engineering Geologist	10. DATE 4/3/08	11. TELEPHONE NUMBER (916) 651 - 9283

Appendix H - LGA Program Report, FY 2000-2005



Local Groundwater Assistance Program



2000-2005

The Resources Agency . Department of Water Resources . Division of Planning and Local Assistance

Local Groundwater

Assistance Program FY 2000-2005

The Local Groundwater Management Assistance Act of 2000 (California Water Code Section 10795 et seq.) was enacted to provide grants to public agencies to conduct groundwater studies or to carry out groundwater monitoring and management activities. The enabling legislation (Assembly Bill 303) declared

groundwater a valuable natural resource in California that should be managed to ensure its safe production and quality. Over the course of five years, the Department of Water Resource (DWR) awarded nearly \$28 million in Local Groundwater Assistance (LGA) grants to local agencies to conduct 128 projects.

This document provides an overview of the LGA Grant Program. It describes the solicitation and award process, describes funded projects and summarizes their benefits, and presents program statistics, including the amount of funds awarded and number of applications submitted. ☞

Grant Award

Process And Advisory Panel

Technical Advisory Panel

Consistent with the Act, DWR formed a Technical Advisory Panel (TAP) made up of representatives of water interests and other stakeholders from hydrologic regions throughout the State. The legislation required TAP panelists to have

knowledge of groundwater; at least three members were to be board members of a local public agency that has adopted a groundwater management plan (GWMP); and the panel was to include a licensed civil engineer, geologist, and hydro-

geologist. The TAP assisted DWR in developing grant program criteria, reviewed DWR evaluations of projects, and made grant funding recommendations to DWR. Over the five years of the program, TAP members included:

Patricia Larson
Francis Borcalli
James Uptegrove
Kirby Brill
Linda Cole
Lisa Anderson
Mark McKean
Mike Tognolini
Roy Herndon
Tom Stokely
Steve Bachman
Sandy Denn
Walt Ward

Coachella Valley Water District
Wood Rogers
Uptegrove and Loos Engineering Surveying
Mojave Water Agency
Valley Water Protection Association
Metropolitan Water District of Southern California
Kings River Conservation District
East Bay Municipal Utility District
Orange County Water District
Trinity County Planning Department
United Water Conservation District
Glenn-Colusa Board of Directors
Modesto Irrigation District

FY 2001-02

Projects and Awards



FY 2001-02
Grant Awards 21

Table 6 — FY 2001-02 Projects

Grant Recipient	Project Description	County	Grant Amount	Status
Butte County	Installed two multi-completion monitoring wells in one borehole equipped with extensometers in areas where water level and subsidence information is needed. Performed water quality analyses.	Butte	\$249,000	Complete
Crescenta Valley Water District	Installed, developed, tested, and sampled three monitoring wells to identify new production well sites in the Verdugo Basin. Conducted groundwater level and water quality monitoring. Completed studies that estimated annual recharge, estimated basin outflow, and reported on monitoring.	Los Angeles	\$250,000	Complete
Eastern Municipal Water District	Created a regional water resources database, incorporating data records that existed on hard copy and in multiple electronic formats. Developed an interface to maps and GIS information to the database.	Riverside	\$200,000	Complete
Eastside Water District	Developed preliminary plans for several conjunctive water management alternatives that have the potential of improving water supply reliability, protecting water quality, and providing environmental benefits. Identified locations and facilities needed to reduce overdraft.	Stanislaus	\$200,000	Complete
Glenn County	Installed a multi-completion well. Performed groundwater quality analyses. Developed a web page to make monitoring information widely available.	Glenn	\$250,000	Complete
Kings River Conservation District	Installed four monitoring well clusters (seven wells total) to study the conditions south of the Tulare Lake Basin. Installed data loggers and dedicated pumps and completed water level monitoring and mineral water quality analysis to establish baseline values. Performed ongoing monitoring of production and cluster wells to establish trends.	Kings	\$250,000	Complete

Grant Recipient	Project Description	County	Grant Amount	Status
Lassen County	Gathered and analyzed seismic refraction data. Developed a dedicated monitoring well and a GIS to examine and analyze existing groundwater conditions.	Lassen	\$200,000	Complete
Los Angeles Department of Water and Power	Installed five monitoring wells on the west side of the Owens Valley to monitor groundwater. Performed geophysical logs for each well to improve geohydrologic conceptual model. Measured thirty-eight water levels and refurbished one existing monitoring well.	Inyo	\$250,000	Complete
Mendocino City Community Services District	Evaluated existing geological and hydrogeological reports, maps, and geologic cross-sections; performed data gap analysis; and installed ten additional permanent monitoring wells and ten temporary observation wells. Following well testing, expanded the GIS system by adding groundwater data and conducted modeling of the hydrogeology.	Mendocino	\$200,000	Complete
Mojave Water Agency	Installed a single nested well in the Victorville Fan Unit in the vicinity of the Oro Grande Wash. Data gathered from the installation and monitoring of this well defined the hydrogeology of the study area.	San Bernardino	\$250,000	Complete
Monterey County Water Resources Agency	Installed four new dedicated monitoring wells and performed geophysical logs. Collected baseline well water quality and water level information. Added new monitoring well information to the agency's database.	Monterey	\$250,000	Complete
Pajaro Valley Water Management Agency	Reviewed, refined, and expanded the groundwater and surface water data collection program to compile data related to current project needs and for future undefined needs. Assembled database on existing wells and researched well records.	Santa Cruz	\$38,500	Complete
Sacramento Groundwater Authority	Identified and collected existing groundwater information to populate a data management system and utilize it to determine a baseline condition. Information gained formed the basis for understanding groundwater systems and served as reference to evaluate the benefits of future management actions on groundwater quality and storage.	Sacramento	\$200,000	Complete
San Benito County Water District	Developed a GIS database of water quality. Evaluated the water quality data to characterize water quality problems and sources. Prepared water quality-monitoring program.	San Benito	\$200,000	Complete
San Juan Basin Authority	Developed environmental monitoring program to evaluate changes that resulted from groundwater extractions associated with a desalination project. Installed six monitoring wells and stream gauges. Collected and analyzed water samples.	Orange	\$250,000	Complete
Santa Clara Valley Water District	Constructed two four-well monitoring sites in Cupertino and Palo Alto. Performed slug tests on seven monitoring wells to estimate aquifer parameters.	Santa Clara	\$250,000	Complete
Semitropic Water Storage District	Developed and constructed eight monitoring wells. Completed quality management monitoring and operations study. Developed GIS groundwater database. Studied the potential to increase aqueduct return water pumping.	Kern	\$250,000	Complete
Shasta County Water Agency	Grouped multiple individual management strategies into feasible plans. Evaluated those plans using basin model. Developed a water resources management plan and performed public outreach activities.	Shasta	\$100,000	Complete
Squaw Valley Public Service District	Established a monitoring network for surface stream flows and groundwater level measurements. Developed hydrogeologic cross sections to assist in updating groundwater model. Abandoned one well. Installed three stream gauges to characterize groundwater to surface water relationships. Updated the Basin's groundwater model to confirm sustainable yield estimates.	Placer	\$202,000	Complete
Tehama County Flood Control and Water Conservation District	Conducted an analysis of groundwater storage and movement during normal and drought years. Determined GIS locations of existing wells. Installed two 1,000 foot deep dual completion wells.	Tehama	\$200,000	Complete
Yolo County Flood Control & Water Conservation District	Developed a groundwater monitoring program and a database to inventory existing and future groundwater data for the county. Baseline groundwater conditions in the county were also identified.	Yolo	\$200,000	Complete

Totals FY 2001-02

\$4,439,500

FY 2002-03

Projects and Awards



Table 7 — FY 2002-03 Projects

Grant Recipient	Project Description	County	Grant Amount	Status
Borrego Water District	Constructed two monitoring wells in the Borrego Valley Basin and outfitted wells with data loggers.	San Diego	\$171,000	Complete
Crescenta Valley Water District	Developed and utilized a groundwater flow model to evaluate the hydrogeology and groundwater flow in the Verdugo Basin. Evaluated four alternatives in the Basin with potential for small neighborhood storm runoff recharge projects.	Los Angeles	\$185,000	Complete
City of Davis	Performed a study to better understand the sustainability and long-term potable drinking water supply capability of the regional deep aquifer in southern Yolo County.	Yolo	\$225,000	Complete
Dunnigan Water District	Characterized existing groundwater data, designed and implemented a water-level and water-quality monitoring program, reviewed alternative conjunctive use strategies, and developed BMOs.	Yolo	\$249,830	Complete
Fresno Irrigation District	Monitored 12 wells for water quality parameters and collected groundwater level data. Installed flow meters in five recharge basins. Prepared a GWMP. Evaluated a multi-agency cooperative effort to fund construction of conjunctive use facilities for storm water.	Fresno	\$220,000	Complete
Glenn County	Installed two multi-completion monitoring wells. Converted three wells from production to monitoring. Installed a subsidence monitoring network. Conducted two large scale aquifer performance tests in the unconfined aquifers of the Stony Creek Fan.	Glenn	\$250,000	Complete
Inland Empire Utilities Agency	Installed two nested monitoring wells to help determine whether groundwater originating in the upper part of the Chino Basin is discharged to the Santa Ana River. Evaluated hydrologic control of the basin.	San Bernardino	\$250,000	Complete

Grant Recipient	Project Description	County	Grant Amount	Status
Kaweah Delta Water Conservation District	Constructed five dual-completion wells to assess the vertical separation between confined and unconfined conditions. Developed a basin-wide numerical groundwater model to evaluate groundwater impacts and benefits from five different agricultural and urban water use and water supply availability scenarios.	Tulare	\$230,000	Complete
Kern Water Bank Authority	Installed a triple completion monitoring well, data loggers, and performed various water quality tests. Continued database development and data analysis.	Kern	\$220,000	Complete
Kings River Conservation District	Formed a Basin Advisory Panel, compiled data, and updated a GWMP that included management options, current conditions, goals and objectives, implementation plan, and financing and governance options.	Fresno	\$220,000	Complete
Los Osos Community Services District	Determined the extent of salt water intrusion into the upper aquifer and in lower aquifer zones. Determined the source of recharge to the area's deep aquifer, and the feasibility of artificial recharge. Produced water level contour maps, performed aquifer tests, and re-surveyed key monitoring wells.	San Luis Obispo	\$220,000	Complete
Madera County Resource Management Agency	Analyzed groundwater conditions in the Oakhurst Basin by developing groundwater hydrographs, geologic mapping, well inventory, and analysis of water quality. Developed a GWMP and policies for development in the area.	Madera	\$250,000	Complete
Marina Coast Water District	Drilled a 1,700-foot deep monitoring well. Evaluated vertical gradients. Compared groundwater elevations and quality data to other wells to establish flow directions to evaluate the potential for sea water intrusion.	Monterey	\$250,000	Complete
Montara Sanitary District	Constructed five monitoring wells, installed stream flow gauging equipment, developed a groundwater model and a GWMP.	San Mateo	\$175,169	Complete
Pleasant Valley Water District	Developed a groundwater quality monitoring program, performed a well survey, populated a data management system, modified extraction wells for monitoring, analyzed water quality samples, and evaluated water quality data.	Fresno	\$220,000	Complete
Quincy Community Services District	Performed an assessment to establish the hydrogeologic basis for a GWMP for the American Valley. Evaluated and tested four deep wells and two spring sites for water quality.	Plumas	\$243,932	Complete
Rainbow Municipal Water District	Developed a GWMP for Rainbow Valley area by involving stakeholders. Performed a basin hydrologic analysis to improve water quality, create a reliable local water supply, and assist in meeting statewide objectives.	San Diego	\$199,810	Complete
Reclamation District 2068	Conducted a study to evaluate the feasibility of using groundwater to offset surface water. Installed one multi-completion monitoring well, performed a pump test, and installed a subsidence bench mark. Updated the GWMP and developed a model of the basin.	Yolo	\$249,614	Complete
San Bernardino Valley Water Conservation District	Installed two wells, north and south of the Santa Ana River spreading basins, to evaluate recharge operations and groundwater levels and flow. Performed pump tests, geophysical logging, and analyzed water quality parameters.	San Bernardino	\$230,000	Complete
San Jacinto Mountain Area Water Study Agency	Identified available water resources and prioritized water facility improvements and management practices. Developed a basin-wide Water Resources Management Plan for long-term use of local groundwater and surface water resources. Analyzed critically dry period recharge and extraction from the study area.	Riverside	\$225,000	Complete
Santa Clara Valley Water District	Installed nine monitoring wells at eight sites in Coyote and Llagas subbasins to fill data gaps in the groundwater monitoring system.	Santa Clara	\$249,320	Complete
Squaw Valley Public Service District	Installed a monitoring well, investigated water quality variations, performed outreach and education activities, and monitored surface water and groundwater characteristics to assist in verifying the Basin's hydrogeologic model.	Placer	\$171,000	Complete
Denair Community Services District	Install two dual-completion monitoring wells to support further development of an existing hydrogeologic model to assure quality drinking water during peak production periods.	Stanislaus	\$200,000	Ongoing
Merced Area Groundwater Pool Interests	Install 24 monitoring wells at six locations to monitor groundwater levels and monitor five stream gauges in Bear Creek to determine groundwater/surface water relationships. Survey about 290 wells using GPS.	Merced	\$250,000	Ongoing
South Tahoe Public Utility District	Develop a numerical groundwater model to understand the hydrogeology, use groundwater temperature to better delineate recharge sources and rates, and predict groundwater flow and contaminant transport.	El Dorado	\$200,000	Ongoing
Three Valleys Municipal Water District	Evaluated the potential to deliver untreated imported water into the San Antonio Spreading Grounds for groundwater recharge.	Los Angeles	\$230,000	Complete

Total FY 2003-04

\$5,764,675

FY 2004-05

Projects and Awards



FY 2004-05
Grant Awards 30

Table 9 — FY 2004-05 Projects

Grant Recipient	Project Description	County	Grant Amount	Status
Alameda County Water District	Install eight monitoring wells to assist in monitoring and managing the Niles Cone Groundwater Basin.	Alameda	\$249,943	Ongoing
Alpine County	Develop a GWMP to implement groundwater management projects geared towards meeting regional BMOs.	Alpine	\$129,723	Ongoing
City of Anaheim	Destroy nine abandoned wells to eliminate contaminant conduit pathways.	Orange	\$250,000	Ongoing
Bighorn-Desert View Water Agency	Gather and synthesize existing data to develop a conceptual model. Perform a geophysical investigation and install two monitoring wells.	San Bernardino	\$168,300	Ongoing
Borrego Water District	Construct two monitoring wells to characterize the deepest aquifer in the Borrego Valley Groundwater Basin.	San Diego	\$193,200	Ongoing
Butte County	Develop a web-based Basin Management Objective and Information Center with GIS components to support groundwater management throughout the County.	Butte	\$247,820	Ongoing
Crescenta Valley Water District	Conduct geophysical evaluations to enhance management of the basin for long-term supply.	Los Angeles	\$250,000	Ongoing
Eastern Municipal Water District	Evaluate and quantify nitrogen losses in recycled water as it percolates from storage ponds to the groundwater table.	Riverside	\$200,000	Ongoing
Elsinore Valley Municipal Water District	Conduct water quality sampling, aquifer testing, and model development and calibration to address septic sourced nitrate contamination.	Riverside	\$168,300	Ongoing

Grant Recipient	Project Description	County	Grant Amount	Status
Glenn Colusa Irrigation District	Construct three triple-completion dedicated monitoring wells.	Glenn/Colusa	\$250,000	Ongoing
Indian Wells Valley Water District	Install and monitor ten monitoring wells in five targeted areas where recharge may be occurring. Collect water quality samples, collect continuous water level measurements and determine trends.	Kern	\$249,725	Ongoing
Inland Empire Utilities Agency	Install and sample two nested, multiple-depth piezometers in the projected path of a groundwater contamination plume.	San Bernardino	\$250,000	Ongoing
Inyo County	Develop a groundwater model for the Bishop/Laws area to assess the effects of alterations to the groundwater flow system and changes in water related land use.	Inyo	\$89,410	Ongoing
Kings River Conservation District	Monitor existing recharge facilities, conduct feasibility studies and field investigations to locate and design new facilities, create an inventory of available distribution and conveyance facilities, and improve regional monitoring.	Fresno	\$249,410	Ongoing
City of Lincoln	Determine the risks of contaminant migration by conducting a series of aquifer tests.	Placer	\$183,640	Ongoing
Los Angeles County Flood Control District	Expand a telemetry system to allow for real time reading of groundwater elevations, injection rates, and wellhead pressures to help manage seawater intrusion.	Los Angeles/Orange	\$250,000	Ongoing
Madera County Resource Management Agency	Create an action plan for groundwater protection throughout the County to prioritize groundwater management programs and mechanisms.	Madera	\$250,000	Ongoing
Mendocino City Community Services District	Construct monitoring wells, install data loggers, develop a Drought Contingency Plan, revise aquifer testing protocol, and create a geo-database.	Mendocino	\$144,400	Ongoing
Modesto Irrigation District	Develop and implement a real-time Well Field Optimization Project to facilitate well field operations in support of conjunctive use, reduce irrigation spillage, conserve energy, and control contaminant migration	Stanislaus/San Joaquin	\$250,000	Ongoing
Northeastern San Joaquin County Groundwater Banking Authority	Determine the source, distribution, and migration rate of saline groundwater throughout the Eastern San Joaquin Groundwater Basin.	San Joaquin	\$212,700	Ongoing
Sacramento Groundwater Authority	Develop an enhanced modeling tool with sufficient details and features to support the analysis of alternative groundwater management scenarios.	Sacramento	\$249,840	Ongoing
Sacramento Suburban Water District	Construct two new monitoring wells, install instrumentation in five existing wells, convert three existing wells to monitoring wells, and establish benchmark elevation of new and existing wells.	Sacramento	\$250,000	Ongoing
San Benito County Water District	Install a depth-specific multi-port monitoring well to define basin hydrostratigraphy and water quality changes with depth.	San Benito	\$250,000	Ongoing
City of San Bruno	Install two monitoring well clusters and develop a hydrologic data management system to understand the groundwater in areas deemed vulnerable to seawater intrusion.	San Mateo	\$249,870	Ongoing
San Timoteo Watershed Management Authority	Establish a baseline subsidence monitoring program and determine past subsidence within the Beaumont Basin.	Riverside	\$168,300	Ongoing
Semitropic Water Storage District	Install 21 data loggers and conduct two aquifer tests to upgrade the collection and analysis of groundwater data.	Kern	\$193,061	Ongoing
Tehama County Flood Control and Water Conservation District	Install two 1,000-foot-deep triple-completion monitoring wells and data loggers in 11 existing monitoring wells.	Tehama	\$202,970	Ongoing
City of Tracy	Develop a regional GWMP for the Tracy Groundwater Subbasin to support conjunctive use programs.	San Joaquin	\$184,842	Ongoing
United Water Conservation District	Install four monitoring wells to determine the distribution of saline intrusion in the southern Oxnard Plain Basin.	Ventura	\$168,300	Ongoing
Yuba County Water Agency	Install six dedicated monitoring wells to supplement the existing well network and determine the effects of water transfers on the aquifer.	Yuba	\$246,246	Ongoing

Total FY 2004-05

\$6,400,000

Crescenta Valley Water District

Verdugo Basin Geophysical Evaluation Project FY 2001-02 to 2004-05

Grant Amounts: \$250,000, \$185,000, and \$250,000

Project Status: Two Complete and One Ongoing



Crescenta Valley Water District (CVWD) received grant awards in FY 2001-2002, FY 2002-2003, and FY 2004-2005 enabling them to greatly increase their knowledge of the Verdugo Groundwater Basin. CVWD, located in Los Angeles County, provides water and sewer service to 32,000 residents in La Crescenta and adjacent portions of Glendale, Montrose, and La Canada-Flintridge. The LGA grants have many far-reaching benefits for CVWD, water purveyors in the basin, and for the Upper Los Angeles River Area watershed.

2004-05 Project Description

CVWD is currently conducting several geophysical evaluations of the Verdugo Groundwater Basin to optimize the development and subsequent use of groundwater. The geophysical evaluations will increase the current understanding of the basin's water storage capacity, identify subsurface features that affect the movement of groundwater, gather hydrogeologic and aquifer information for use in locating future groundwater production

wells, and provide information to enhance basin management. This will result in the optimization of the basin as a long-term water supply.

2002-03 Project Summary

CVWD evaluated the potential for developing a supplemental recharge and conjunctive use program. Declining production from the CVWD wells has increased purchases of more-expensive imported water. A cost-effective conjunctive use program will help



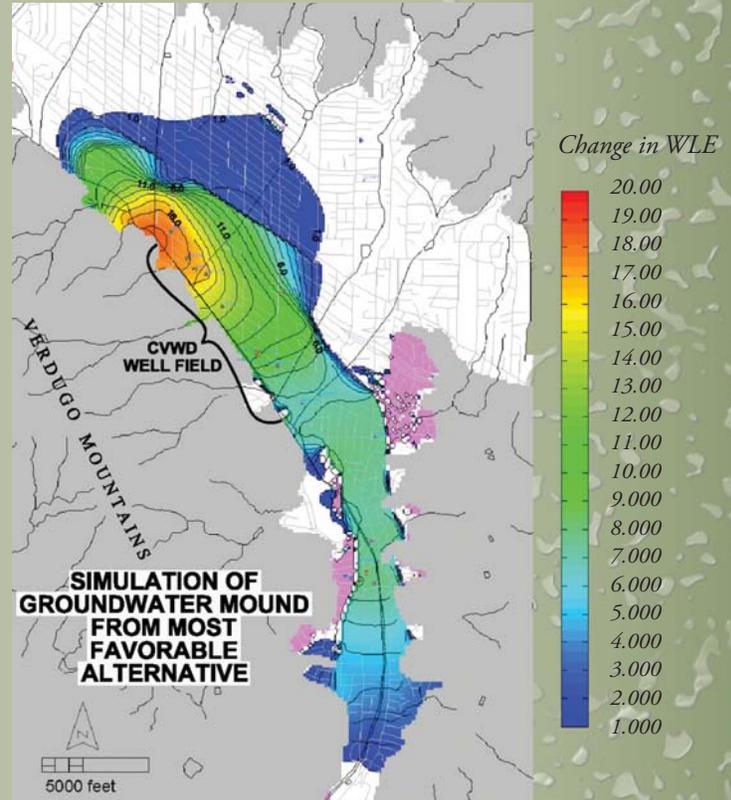
*Dunsmuir Channel
at Crescenta Valley Park*

CVWD increase its ground-water supply, reduce imported water purchases, and reduce costs. Key elements of the study included estimating the basin capacity for ASR; evaluating capture, retention, and percolation of storm water at parks and school yards; and assessing re-naturalization of watersheds, redesigning existing flood control facilities for storm water recharge, and recharging other sources of water. The study found potential in small neighborhood storm runoff recharge projects distributed across the basin and identified measures to optimize management and groundwater production. Recommendations included additional data collection activities

and actions to develop potential recharge projects.

2001-02 Project Summary

CVWD installed three ground-water monitoring wells to monitor water quality and water level data resulting in useful information on the geology, hydrogeology, water levels and water quality in areas within the Verdugo Groundwater Basin that had not been previously explored. In addition, water quality data from the monitoring wells was useful to monitor existing contaminants. From this project, CVWD gained valuable data about the basin's condition and possible locations for new water production wells. ☞

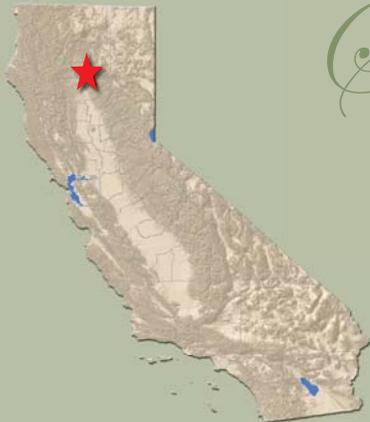


Shasta County Water Agency

Redding Basin Water Resources Management Plan FY 2003-04

Grant Amount: \$225,000

Project Status: Ongoing



Shasta County Water Agency prepared the Redding Basin Water Resources Management Plan. Three conceptual alternatives were evaluated to help improve water supply reliability in the Redding Groundwater Basin. Modeling analyses were used to refine these alternatives. The alternatives involve differing levels of water use efficiency improvements, conjunctive use

of groundwater and surface water, and conservation. Stakeholder meetings were held to gain input from the fourteen water purveyors located in the Redding Basin, and presentations have been made to the general public.

The Plan found that increased groundwater development represents the most reliable poten-

tial source of supplemental water supply, and that water use efficiency improvements could be the most readily implementable actions in the short-term. The water use efficiency improvements and conjunctive use elements would enable surface water to be transferred within the basin to areas that do not have direct access to large quantities of groundwater. ☞