SPECIAL NOTICE REGARDING
CORONAVIRUS DISEASE 2019 (COVID-19)
AND PARTICIPATION IN PUBLIC MEETINGS

On March 4, 2020, Governor Newsom declared a State of Emergency resulting from the threat of COVID-19. On September 16, 2021, Governor Newsom signed Assembly Bill No. 361 into law. Assembly Bill No. 361 amends Government Code section 54953(e) by adding provisions for remote teleconferencing participation in meetings by members of a legislative body, without the requirements of Government Code section 54953(b)(3), subject to the existence of certain conditions. The San Bernardino Valley Municipal Water District adopted a resolution determining, by majority vote, that, as a result of the declared State of Emergency, a meeting in person would present imminent risks to the health or safety of attendees. Accordingly, it has been determined that all Board and Workshop meetings of the San Bernardino Valley Municipal Water District will be held pursuant to the Brown Act and will be conducted via teleconference. There will be no public access to the meeting venue.

BOARD OF DIRECTORS WORKSHOP - RESOURCES
THURSDAY, NOVEMBER 3, 2022 – 2:00 P.M.

PUBLIC PARTICIPATION

Public participation is welcome and encouraged. You may participate in the November 3, 2022, meeting of the San Bernardino Valley Municipal Water District online and by telephone as follows:

Dial-in Info: (877) 853 5247 US Toll-free
Meeting ID: 979 215 700
PASSCODE: 3802020
https://sbvmwd.zoom.us/j/979215700

If you are unable to participate online or by telephone, you may also submit your comments and questions in writing for the District's consideration by sending them to comments@sbvmwd.com with the subject line "Public Comment Item #" (insert the agenda item number relevant to your comment) or "Public Comment Non-Agenda Item". Submit your written comments by 6:00 p.m. on Wednesday, November 2, 2022. All public comments will be provided to the Chair and may be read into the record or compiled as part of the record.

IMPORTANT PRIVACY NOTE: Participation in the meeting via the Zoom app is strongly encouraged. Online participants MUST log in with a Zoom account. The Zoom app is a free download.
Please keep in mind: (1) This is a public meeting; as such, the virtual meeting information is published on the World Wide Web and available to everyone. (2) Should you participate remotely via telephone, your telephone number will be your "identifier" during the meeting and available to all meeting participants; there is no way to protect your privacy if you elect to call in to the meeting.

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT
380 E. Vanderbilt Way, San Bernardino, CA 92408

BOARD OF DIRECTORS WORKSHOP - RESOURCES

AGENDA

2:00 PM Thursday, November 3, 2022

CALL TO ORDER
Chairperson: Director Hayes
Vice-Chair: Director Harrison

1) INTRODUCTIONS

2) PUBLIC COMMENT
Members of the public may address the Board regarding any item within the subject matter jurisdiction of the Board; however, no action may be taken on off-agenda items except as authorized by law. Each speaker is limited to a maximum of three (3) minutes.

3) PRESENTATION

3.1 Equity Aspects of Water: Exploring the Role of Valley District (Page 3)
Staff Memo - Equity Aspects of Water: Exploring the Role of Valley District

4) DISCUSSION ITEMS

4.1 Consider Amendment No. 1 to the Agreement with Geoscience for the San Bernardino Basin Conjunctive Use Project Plan and Related Groundwater Modeling (Page 5)
Staff Memo - Consider Amendment No. 1 with Geoscience for the San Bernardino Basin Conjunctive Use Project Plan
Amendment No. 1 to Geoscience Agreement

5) FUTURE BUSINESS

6) ADJOURNMENT

PLEASE NOTE:
Materials related to an item on this Agenda submitted to the Board after distribution of the agenda packet are available for public inspection in the District's office located at 380 E. Vanderbilt Way, San Bernardino, during normal business hours. Also, such documents are available on the District's website at www.sbvmwd.com subject to staff's ability to post the documents before the meeting. The District recognizes its obligation to provide equal access to those individuals with disabilities. Please contact Melissa Zoba at (909) 387-9228 two working days prior to the meeting with any special requests for reasonable accommodation.

DATE: November 3, 2022

TO: Board of Directors' Workshop – Resources

FROM: Adekunle Ojo, Manager of Water Resources

SUBJECT: Equity Aspects of Water: Exploring the Role of Valley District

Staff Recommendation

Receive and File.

Summary

At the October 20, 2022 Upper Santa Ana River Water Forum, Staff provided a presentation advancing policy and programmatic intersections that create a more inclusive and equitable access to water for everyone in the community. The presentation was summarized due to time constraints. The purpose of this agenda item is to conclude that presentation by providing additional context and details, including potential roles Valley District can play to assist retail agencies, cities and other partners to take advantage of available funding opportunities in the near future.

Background

In recent years, funding to address water equity and inclusion issues have increased at the federal and state level. At the federal level, over $600 million is currently available to address water and energy equity and environmental justice issues. In California alone, the State has committed at least $1.3 billion over the next decade to address water equity and resilience; this excludes additional funding provided from other sources. The California Budget Act of 2021, for example, set aside $350 million for Septic-to-Sewer Projects, providing $45,000 to $125,000 per household depending on the economic status of the beneficiary community. Many communities in the Valley District service area, including but not limited to Bloomington, Mentone, and parts of Redlands and San Bernardino are prime destinations for these funds.

These are just a few of the opportunities available to retail agencies, cities, nonprofits, and other enablers and cooperators in our service area can take advantage of with some incentive and assistance from Valley District on as-needed basis.

District Strategic Plan Application

This presentation aligns with our values of being collaborative, trustworthy, innovative, and driven. It aligns with our priorities to be integrated and cost-effective. It also aligns with the strategies to build trust by being a collaborative and resourceful partner.

Fiscal Impact

There is no fiscal impact, as this is an informational item.

DATE: November 3, 2022

TO: Board of Directors' Workshop - Resources

FROM: Adekunle Ojo, Manager of Water Resources

SUBJECT: Consider Amendment No. 1 to the Agreement with Geoscience, Inc. and cost share to prepare the San Bernardino Basin Conjunctive Use Project Plan and Related Groundwater Modeling

Staff Recommendation

Staff recommends approval of Amendment No. 1 to the agreement with Geoscience, Inc., which incorporates the revised scope and cost share for the preparation of a San Bernardino Basin Conjunctive Use Project Plan ("Plan"). This amendment incorporates SARCCUP into the Plan, increases the not-to-exceed cost by $8,235, and reduces Valley District share of the cost from 33.3% to 19%.

Summary

On April 19, 2022, the Valley District Board of Directors approved a contract with Geoscience after a competitive selection process, and a three-way cost share to prepare the Conjunctive Use Project (CUP) Plan as part of the Three-Party Agreement between the San Gorgonio Pass Water Agency (SGPWA), Yucaipa Valley Water District (YVWD), and Valley District. The equal split of the $178,936 contract amounted to $59,645 per agency. There is a considerable overlap between the SGPWA/YVWD CUP and the Santa Ana River Conservation and Conjunctive Use Program (SARCCUP). After further consideration, staff explored the economies of scale and cost savings that can be realized if SARCCUP was added to the existing SGPWA/YVWD work. Staff from Valley District, YVWD, SGPWA, Eastern Municipal Water District (EMWD), and Western Municipal District (WMWD) have reviewed the revised scope from Geoscience and formulated a new cost share based on the total project storage of 69,750 acre-feet – 40,000 acre-feet for SGPWA/YVWD/Valley District (57%) and 29,750 for EMWD/WMWD (43%).

Accordingly, the original project proponents (Valley District, SGPWA and YVWD) will be responsible for 57% of the total cost or 19% each while the SARCCUP agencies (EMWD and

WMWD) will be responsible for 43% of the total cost or 21% each of the total cost; Valley District is managing the contract with Geoscience and will bill other project partners based on actual cost.

Background

Keeping the San Bernardino Basin relatively full is one of the goals identified in the Upper Santa Ana River Watershed Integrated Regional Urban Water Management Plan and a conjunctive use program is one of the strategies to achieve that. Conjunctive use is a term used to describe the planned use of both surface water and groundwater resources to maximize total water availability in a region long-term. It typically involves proactive and aggressive recharge of surface water in wet years with the goal of having additional groundwater storage that can used during dry years. It has many benefits including improving local water supply, reducing groundwater depletion, improve groundwater quality, and reduce subsidence risk.

Valley District is supporting the establishment of two separate 20,000-acre-foot storage accounts in the San Bernardino Basin, one for the Yucaipa Valley Water District (YVWD) and one for the San Gorgonio Pass Water Agency (Pass Agency), subject to the Terms and Conditions of the Conjunctive Use Guidelines of the Basin. In addition, Valley District is a partner in SARCCUP, offering the largest storage space of 64,000 acre-feet in the San Bernardino Basin that is expected to be largely utilized by YVWD/SGPWA, Western Municipal Water District, and Eastern Municipal Water District. The Conjunctive Use Project Plan (CUP Plan) being prepared by Geoscience will define the storage and operating criteria in detail, perform groundwater modeling and project analysis, determine and mitigate impacts, and provide other pertinent information to assist the Basin Technical Advisory Committee (BTAC) and the Western-San Bernardino Watermaster to review and approve the proposal.

The commitment to store additional imported water in the San Bernardino Basin establishes a strong foundation for long-term interagency collaboration to meet common goals while creatively managing the San Bernardino Basin as a regional asset.

Fiscal Impact

This amendment reduces Valley District's cost share from the original Valley District cost funding share of $59,645 to a revised cost funding share of $30,066.42 (or $35,562 if the optional task to evaluate new wells is completed). Funding for this project was budgeted in the Fiscal Year 2022-2023 General Fund Budget under Budget Line 6360 (Consultants).

Attachment

Amendment No. 1 to Geoscience Agreement

FIRST AMENDMENT TO THE CONSULTING SERVICES AGREEMENT

This First Amendment to the Consulting Services Agreement ("***Amendment***") is entered into as of November 3, 2022, by and between Geoscience Support Services, Inc. ("***Consultant***"), and San Bernardino Valley Municipal Water District, a water district organized and existing under the California Municipal Water District Law of 1911 ("***District***"). Consultant and District are hereafter referred to individually as "***Party***" and collectively as the "***Parties***."

RECITALS

A. The Parties entered into that certain Consulting Services Agreement, dated April 19, 2021 ("***Consulting Agreement***"), whereby Consultant agreed to provide certain professional services to District in connection with the development and preparation of a Conjunctive Use Project Plan and Related Groundwater Modeling. The Consulting Agreement provided for a Maximum Fee of $178,936.

B. The Parties desire to amend the Consulting Agreement in accordance with Article 1.3 of the Agreement on Task Orders.

OPERATIVE TERMS

NOW, THEREFORE, in consideration of the mutual covenants and conditions contained in this Amendment, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. Recitals; Defined Terms. The Recitals are material to this Amendment, and by this reference are hereby incorporated herein. For purposes of this Amendment, all capitalized terms shall have the meanings given to such terms in the Consulting Agreement, unless such terms are otherwise defined herein.

2. Additional Services. In accordance with Article 1.3 of the Consulting Agreement, the Parties hereby expand the Services to include the additional professional services and activities described in Addendum to Add SARCCUP to YVWD/SGPWA Conjunctive Use Project Plan, dated September 13, 2022, which is attached as ***Attachment "A"*** to this Amendment and incorporated herein by this reference. Said services and activities shall be considered Additional Services under the Consulting Agreement and shall be performed and completed in accordance with the standards and obligations set forth in the Consulting Agreement.

3. Compensation. The Maximum Fee is hereby increased to One Hundred and Eighty-Seven Thousand, One Hundred and Seventy-One Dollars and Zero Cents ($187,171.00), reflecting Eight Thousand Two Hundred and Thirty-Five Dollars and Zero Cents ($8,235.00) for the cost of the Additional Services described in Attachment "A" hereto. All references to Maximum Fee in the Consulting Agreement shall refer to the amount set forth herein.

4. Binding Effect. This Amendment shall be binding upon and inure to the benefit of the Parties' permitted successors and assigns. The Parties acknowledge and agree that except to the extent specifically provided in this Amendment, the Consulting Agreement shall continue in full force and effect as previously written.

5. No Other Modifications. The Parties acknowledge that this Amendment evidences the entire agreement between the Parties with respect to the matters addressed herein and supersedes all previous negotiations and discussions related thereto.

6. Counterparts. This Amendment may be executed in two or more counterparts, each of which shall be an original, but all of which shall constitute one and the same instrument.

[*Signature Page Follows*]

IN WITNESS WHEREOF, the Parties hereby execute this Amendment as of the date first set forth above.

DISTRICT:

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By: _____
Heather P. Dyer
CEO/General Manager

CONSULTANT:

GEOSCIENCE SUPPORT SERVICES, INC.

By: _____

Name: _____

Its: _____

Attachment A

Addendum to Add SARCCUP to YVWD/SGPWA Conjunctive Use Project Plan

GEOSCIENCE

The First Name in Groundwater

September 13, 2022

Mr. Bob Tincher, PE
Chief Water Resources Officer / Deputy General Manager
San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
San Bernardino, CA 92408-3593

Re: Addendum to Add SARCCUP to YVWD/SGPWA Conjunctive Use Project Plan

Dear Bob:

Per your 22-Aug-22 email request, Geoscience Support Services, Inc. (Geoscience) has prepared this addendum to add the Santa Ana River Conservation and Conjunctive Use Project (SARCCUP) to the Yucaipa Valley Water District (YVWD) and San Gorgonio Pass Water Agency (SGPWD) Conjunctive Use Project (YVWA/SGAWA CUP) Plan. Geoscience was retained by San Bernardino Valley Municipal Water District (Valley District), YVWD, and SGPWD to prepare a conjunctive use project plan for YVWD and SGPWA in the San Bernardino Basin. There is considerable overlap between the YVWD/SGPWA CUP and SARCCUP, as shown on Figure 1 below. The existing proposed scope of work and budget is provided as Attachment A. This addendum provides a description of the additional effort not included in the existing YVWD/SGPWA CUP Plan and associated budget.

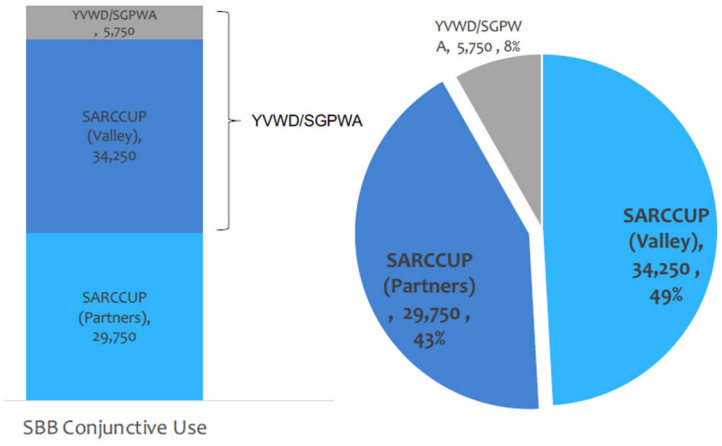


Figure 1. Conjunctive Use in San Bernardino Basin

PO Box 220 Claremont, CA 91711
t. 909.451.6650
f. 909.451.6638
www.gssiwater.com

Scope of Work

Task 1 – Define the Project

Subtask 1.1: Prepare a Description of the Means of Recharge and Recovery

The existing scope of work is to work closely with the YVWD, SGPWA, and Valley District to prepare a project description of the means of recharge and recovery, including any new facilities that may be required. Geoscience will also review and analyze the existing geohydrologic data including the recharge capacity of spreading grounds, well capacity of the existing production wells, and potential environmental constraints (e.g., perchlorate and TCE contaminate plumes) in the San Bernardino Basin that may be potentially impacted by recharge and extraction from the CUP.

The additional effort to add the SARCCUP to Subtask 1.1 will also involve working closely with Western Municipal Water District (Western) and Valley District to prepare a project description of the means of recharge and recovery, including any new facilities that may be required.

Subtask 1.2: Develop CUP Recharge and Extraction Schedules

In order to assess the potential impacts on groundwater levels and water quality from operations associated with the SARCCUP and YVWD/SGPWA CUP, recharge and extraction schedules for Project scenarios will be developed to compare with a Baseline Scenario (i.e., No Project Scenario). The existing scope of work is to work closely with YVWD, SGPWA, and Valley District to develop recharge and extraction schedules. This will start with the criteria used by Geoscience in a previous modeling study for the Bunker Hill Conjunctive Use Program (BHCUP).

The additional effort to develop the recharge and extraction schedules for the SARCCUP will be based on the information provided in Section 3 of the report entitled “Santa Ana River Conservation and Conjunctive Use Program Decision Support Model” prepared by CH2M (June 2018).

Subtask 1.3: Estimate CUP Cost

The existing scope of work includes *Subtask 1.3.1: Cost Estimates without New Extraction Wells*, or optional *Subtask 1.3.2: Cost Estimates for New Extraction Wells*.

No additional effort is required for this subtask.

Task 2 – Determine and Mitigate Impacts (Groundwater Modeling and Project Analysis)

Subtask 2.1: Develop Assumptions for Baseline (No Project) and CUP Predictive Model Scenarios

The existing scope of work includes development of a total of four predictive model scenarios.

No additional effort is required for this subtask.

Subtask 2.2: Run and Analyze Predictive Model Scenarios

The existing scope of work is to prepare model input data, run the model scenarios, and analyze model results. Various modeling computer codes will be used for this study, including MODFLOW-NWT, MODPATH, and MT3D-USGS.

No additional effort is required for this subtask.

Task 3 – Prepare the Conjunctive Use Project Plan

Subtask 3.1: Prepare a Draft Conjunctive Use Project Plan

The existing scope of work includes preparation of a draft CUP Plan for review, summarizing the work results from Tasks 1 and 2, discussed above. This draft CUP Plan will include information required under CUP Guidelines, including project definition and potential groundwater impacts along with any mitigation measures. Model descriptions, model assumptions, and model results will also be included in the report.

No additional effort is required for this subtask.

Subtask 3.2: Prepare a Final Conjunctive Use Project Plan

The existing scope of work includes preparation of a Final CUP Plan incorporating comments on the draft CUP Plan.

No additional effort is required for this subtask.

Task 4 – Meetings and Project Management

Subtask 4.1: Prepare for and Attend Meetings

The existing scope of work is to prepare for and attend seven meetings, including:

- Kickoff meeting to discuss the project goals and objectives, scope of work, work product, and schedule.
- Status update meetings (assumes four meetings) to discuss project locations, recharge and extraction schedule, major assumptions for predictive model scenarios, and modeling results.
- Basin Technical Advisory Committee (BTAC) meetings (assumes two meetings) to provide an overview of modeling assumptions, modeling results, and CUP Plan.

The kickoff meeting has been held on August 1st, 2022. There are six meetings left for this Project.

No additional effort is required for this subtask.

Subtask 4.2: Project Management

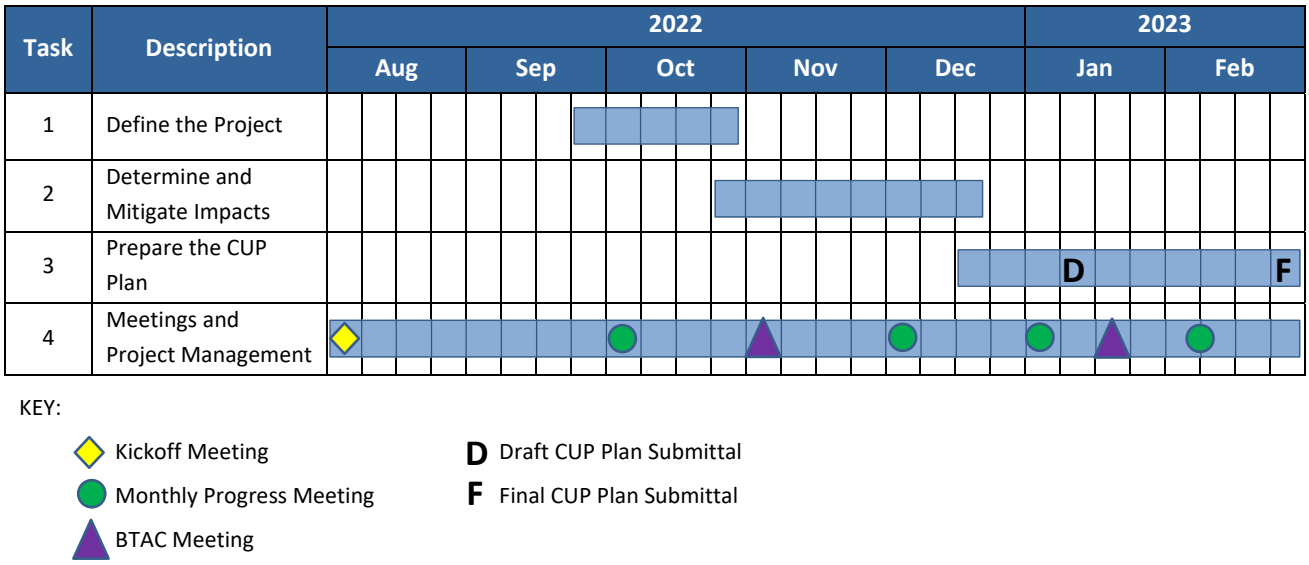
The existing scope work is to coordinate project activities throughout the course of the project. Project management includes any additional hours and costs to cover tasks related to any unforeseen issues or requests that arise during the Project.

No additional effort is required for this subtask.

Schedule

The updated schedule adding the SARCCUP to the YVWD/SGPWA CUP is shown on Figure 2 below.

Figure 2. Updated Project Schedule



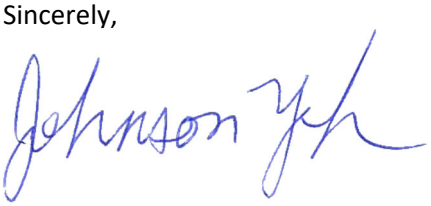
Cost Estimate

The approved budget for the existing scope of work is $149,050 without optional *Task 1.3.2: Cost Estimates for New Extraction Wells* and $178,936 with optional Task 1.3.2 (see Table 1). The cost estimate for the additional effort to add the SARCCUP is $8,235 (see yellow highlighted items in Table 1). The total cost including the SARCCUP and YVWD/SGPWA CUP is $157,285 without optional *Task 1.3.2: Cost Estimates for New Extraction Wells* and $187,171 with optional Task 1.3.2 (see Table 1).

All tasks will be conducted for the SARCCUP and YVWD/SGPWA CUP with the exception of optional *Task 1.3.2: Cost Estimates for New Extraction Wells*, which has an associated cost of $29,886. The cost sharing for this task will depend on the necessity of new extractions for the SARCCUP and/or YVWD/SGPWA.

If you have any questions, please contact me at (909) 451-6650

Sincerely,



Johnson Yeh, PhD, PG, CHG
Principal Geohydrologist
Encl.

Cost Proposal for Professional Services
To Prepare a Conjunctive Use Project Project Plan and Related Groundwater Modeling

Task No.	Description	Approved Budget (April 2022)				Additional Cost to Add SARCCUP to YVWD/SGPWA CUP (This Addendum)									Total Cost (Approved Budget + Additional Cost)
		GEOSCIENCE	Sub-Consultant KJ	Sub-Consultant Markup	Total Cost	Principal Modeler	Senior Modeler	Senior Geohydro.	Project Modeler	Senior Associate Modeler	Associate Modeler	GSI/CAD Specialist	Clerical	GEOSCIENCE Labor	
	Hourly Rate:			10%		$289	$264	$235	$244	$210	$196	$155	$107		
	Task 1 - Define the Project														
1.1	Prepare a Description of the Means of Recharge and Recovery	$ 6,890.00	$ -	$ -	$ 6,890	1	4							$ 1,345.00	$ 8,235
1.2	Develop CUP Recharge and Extraction Schedules	$ 6,890.00	$ -	$ -	$ 6,890	2	8			20				$ 6,890.00	$ 13,780
1.3	Estimate CUP Cost														
1.3.1	Cost Estimates without New Extraction Wells		$ 11,730.00	$ 1,173.00	$ 12,903									$ -	$ 12,903
1.3.2 (Optional)	Cost Estimates for New Extraction Wells	$ 12,220.00	$ 16,060.00	$ 1,606.00	$ 29,886									$ -	$ 29,886
Subtotal without Optional Tasks (Task 1.1, 1.2, and 1.3.1):		**$ 13,780**	**$ 11,730**	**$ 1,173**	**$ 26,683**	**3**	**12**	**0**	**0**	**20**	**0**	**0**	**0**	**$ 8,235**	**$ 34,918**
Subtotal with Optional Tasks (Task 1.1, 1.2, 1.3.1, and 1.3.2):		**$ 26,000**	**$ 27,790**	**$ 2,779**	**$ 56,569**	**3**	**12**	**0**	**0**	**20**	**0**	**0**	**0**	**$ 8,235**	**$ 64,804**
	Task 2 - Determine and Mitigate Impacts (Groundwater Modeling and Project Analysis)														
2.1	Develop Assumptions for Baseline (No Project) and CUP Predictive Model Scenarios (Assuming 3 Project Scenarios)	$ 19,028.00	$ -	$ -	$ 19,028									$ -	$ 19,028
2.2	Run and Analyze Predictive Model Scenarios (Assuming 3 Project Scenarios)	$ 48,328.00	$ -	$ -	$ 48,328									$ -	$ 48,328
Subtotal:		**$ 67,356**	**$ -**	**$ -**	**$ 67,356**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ 67,356**
	Task 3 - Prepare the Conjunctive Use Project Plan														
3.1	Prepare a Draft Conjunctive Use Plan	$ 16,252.00	$ -	$ -	$ 16,252									$ -	$ 16,252
3.2	Prepare a Final Conjunctive Use Plan	$ 6,450.00	$ -	$ -	$ 6,450									$ -	$ 6,450
Subtotal:		**$ 22,702**	**$ -**	**$ -**	**$ 22,702**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ 22,702**
	Task 4 - Meetings and Project Management														
4.1	Prepare for and Attend Meetings (Assuming 1 Kickoff meeting, 4 project team meetings, and 2 BTAC meetings)	$ 14,552.00	$ 5,212.00	$ 521.20	$ 20,285									$ -	$ 20,285
4.2	Project Management	$ 12,024.00	$ -	$ -	$ 12,024									$ -	$ 12,024
Subtotal:		**$ 26,576**	**$ 5,212**	**$ 521**	**$ 32,309**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ 32,309**

Cost Proposal for Professional Services
To Prepare a Conjunctive Use Project Project Plan and Related Groundwater Modeling

Task No.	Description	Approved Budget (April 2022)				Additional Cost to Add SARCCUP to YVWD/SGPWA CUP (This Addendum)									Total Cost (Approved Budget + Additional Cost)
		GEOSCIENCE	Sub-Consultant KJ	Sub-Consultant Markup	Total Cost	Principal Modeler	Senior Modeler	Senior Geohydro.	Project Modeler	Senior Associate Modeler	Associate Modeler	GSI/CAD Specialist	Clerical	GEOSCIENCE Labor	
	Hourly Rate:			10%		$289	$264	$235	$244	$210	$196	$155	$107		
TOTAL HOURS AND COST without Optional Task 1.3.2:		$ 130,414	$ 16,942	$ 1,694	$ 149,050	3	12	0	0	20	0	0	0	$ 8,235	$ 157,285
TOTAL HOURS AND COST with Optional Task 1.3.2:		$ 142,634	$ 33,002	$ 3,300	$ 178,936	3	12	0	0	20	0	0	0	$ 8,235	$ 187,171

Notes:

1 Reimbursable Expenses Include Subconsultant Fees, Mileage, and report reproduction costs.

GEOSCIENCE is aware of the requirements of California Labor Code Sections 1720 et seq. and 1770 et seq., which require the payment of prevailing wage rates and the performance of other requirements on certain “public works” and “maintenance” projects. The work GEOSCIENCE performs does not fall under prevailing wage rate categories.

2 Geoscience's Schedule and Consultants Fee included with this bid are valid for a period of 6 months assuming the starting date shown in the baseline Schedule.

3 Geoscience will manage work hours between employee classifications or utilize other employee classifications provided that the total project fee is not exceeded without prior approval of the Owner. Geoscience will first request approval from the Owner before work hours are managed between Tasks as listed in the Consultants Fee Schedule.

4 Services not Specifically Identified in the Scope of Work are not included in this Agreement for Professional Services.

5 One (1) round of comments and resulting deliverable revision is budgeted for the Draft Conjunctive Use Project Plan (Task 4.1). Reasonable efforts within this budget will be made to address responsive comments. If comments or suggested revisions require additional effort outside of the proposed scope of work, then the revisions will only be performed upon consultation with the Owner and through a contract modification. The Final/100% Document Review will not incorporate any new comments.

6 Budget for Task 2.0 is an allowance only and represents a credible scope and budget based on the known information and Consultant’s experience with similar projects. Effort for these tasks is limited to the budget identified in the Consultant Fee Estimate.

Additional effort required for model scenario runs that is a result of change in initial scenario assumptions, or other unforeseen conditions and/or model assumption changes, will only be provided as authorized by the Client through a contract modification.

7 Consultant will use existing, owner-furnished model(s) as-is. Consultant assumes that the existing model has clear documentation of pertinent files required for running the model and that model files will be provided in an editable electronic format.

8 Groundwater model input files and model output files that were used to generate the deliverables provided in this scope of services will be made available to the client in .txt file format if requested. Specialized spreadsheets, software, or other electronic tools used to expedite the processing of model input and output files are the intellectual property of Geoscience Support Services Inc. and will not be provided.

ATTACHMENT A

Existing Proposed Scope of Work and Budget for

YVWD/SGPWA Conjunctive Use Project Plan

GEOSCIENCE

Project Understanding

Meet CUP Guidelines

San Gorgonio Pass Water Agency (Pass Agency) and the Yucaipa Valley Water District (Yucaipa), (collectively Project Proponents) are working with the San Bernardino Valley Municipal Water District (Valley District), a San Bernardino Basin Watermaster, to store up to 20,000 acre-feet each, or 40,000 acre-feet total, of imported water in the San Bernardino Basin as part of a Joint Water Supply Agreement for the Calimesa Area. To use the basin for conjunctive use, the Project Proponents require approval from the Western-San Bernardino Watermaster (Watermaster). The purpose of this project is to assist the Project Proponents to prepare and submit the Conjunctive Use Project (CUP) plan, per the CUP Guidelines developed by the Basin Technical Advisory Committee (BTAC), to the BTAC for consideration. The BTAC will then make its recommendation to the Watermaster. Per the CUP Guidelines, the CUP Plan will define the project, consider basin losses during high groundwater conditions, perform groundwater modeling and project analysis, determine and mitigate impacts and provide other pertinent information to assist the BTAC and the Watermaster to review and approve the proposal.

Project Approach

Proven approach

Geoscience has worked extensively in the San Bernardino Basin and Upper Santa Ana River Basin to develop advanced modeling tools, including the Integrated Santa Ana River (SAR) Model, to better understand the effects of artificial recharge projects on surface and groundwater systems. Geoscience has the experience and expertise in this basin to thoroughly and efficiently address all the key issues that may arise during preparation of the Conjunctive Use Plan.

Key issues to develop this Conjunctive Use Plan include verifying that State Water Project water is stored efficiently and avoids losses to rejected recharge, evapotranspiration, and underflow outflow and storing water does not adversely impact the movement of existing contaminate plumes. We will work closely with Pass Agency, Yucaipa, and Valley District to prepare a description of the means and schedule of recharge and recovery and develop the assumptions for the model predictive scenarios. The Upper Santa Ana River Integrated Model will be used to develop the CUP Plan. We will work with our sub-consultant partner, Kennedy Jenks Consultants (Kennedy Jenks), to estimate and provide anticipated costs associated with the project, including capital costs for possible new facilities, operational costs, energy costs, and administrative and other costs. The following sections discuss our proposed scope of work and deliverables.

Task 1: Define the Project

Subtask 1.1 Prepare A Description of the Means of Recharge and Recovery

We will work closely with the Project Proponents to prepare a project description of the means of recharge and recovery including any new required facilities. Geoscience has worked extensively in the San Bernardino Basin, and developed the previous Bunker Hill Conjunctive Use Plan and the Integrated SAR Model. We have carefully reviewed and complied existing geohydrologic data including the recharge capacity of existing spreading grounds, production capacity of the existing wells, and contaminant plumes (e.g., perchlorate and TCE) that may potentially impact recharge and extraction operations from the CUP. Our team will work closely with Pass Agency, Yucaipa and Valley District to prepare a thorough project plan based on our understanding of the existing geohydrologic conditions in the basin.

Subtask 1.2 Develop CUP Recharge and Extraction Schedules

To assess potential impacts on groundwater levels and water quality from the CUP, we will develop recharge and extraction schedules for project scenarios and compare them with the Baseline

Scenario (i.e., No Project Scenario). We will then use the Integrated SAR Model to evaluate CUP project scenarios. The proposed project scenarios, including recharge and extraction schedules, will be based on recharge water availability and future planned water demands. As part of developing the Integrated SAR Model, Geoscience has already developed future hydrologic assumptions based on an analysis of historical hydrologic conditions in the basin. We will evaluate both "No Project" and "Project" conditions under average hydrologic conditions (including wet and dry climatic cycles). We will work closely with the Project Proponents to develop recharge and extraction schedules.

Subtask 1.3 Estimate CUP Cost

1.3.1 Cost Estimates without New Extraction Wells

We will prepare the capital and O&M costs (including energy costs) for the facilities proposed under Task 1.1. We will review as-built drawings and the current status of the recharge and recovery facilities. The costs will assume that the 20,000 AF of recharge for Pass Agency and Yucaipa (40,000 AF total) in the San Bernardino Basin is achieved through existing recharge basins and the recovery is through exchange(s).

1.3.2 (Optional) Cost Estimates for New Extraction Wells

Should one or more of the Project Proponents require new extraction wells, Geoscience will prepare locations and drilling cost estimates, and Kennedy Jenks will prepare the equipping and conveyance cost estimates. Estimates will be an American Society of Professional Estimators (AACC) level 5 estimate based on conceptual design data.

Task 2: Determine and Mitigate Impacts (Groundwater Modeling and Project Analysis)

Subtask 2.1 Develop Assumptions for Baseline (No Project) and CUP Predictive Model Scenarios

Geoscience has already developed rigorous future scenario assumptions as part of previous development of the Integrated SAR Model. This will lower the cost and expedite scenario assumption development needed for this project. We will work closely with Project Proponents to develop the major assumptions for Baseline (No Project) predictive model scenarios including the hydrologic base period, groundwater pumping, surface water diversion, and groundwater replenishment.

CUP predictive model scenarios will be identical to the Baseline scenario, but with the additional CUP recharge and pumping developed for Subtask 1.2, as well as any mitigation measures, if necessary. The modeling analysis will include evaporation loss occurring in the spreading grounds, and a one-time, leave-behind for the benefit of the San Bernardino Basin (equal to 5% of the water stored) for agencies mostly, or completely, outside of Valley District's service area. In developing the budget for this work, we have assumed that four model scenarios will be required, including one Baseline scenario (No Project) and three CUP scenarios.

Subtask 2.2 Run and Analyze Predictive Model Scenarios

We will prepare model input data, run model scenarios, and analyze model results. Various modeling computer codes will be used for this study including MODFLOW-NWT, MODPATH and MT3D-USGS.

The MODFLOW Groundwater Flow Model of the Upper Santa Ana River Integrated Model will be used to evaluate evaporation loss, changes in groundwater levels, underflow outflow to the Rialto-Colton Basin from the San Bernardino Basin, groundwater storage for various project scenarios, and potential liquefaction.

MODPATH is a particle-tracking software that will develop flow path lines and travel times in the vicinity of artificial recharge areas and contaminant plumes in the San Bernadino Basin using the results of groundwater flow model simulations.

The MT3D-USGS groundwater solute transport model of the Upper Santa Ana River Integrated Model will be required to simulate groundwater quality (e.g., TCE (Norton and Redlands-Crafton plumes) and perchlorate) in the San Bernardino Basin.

By running the MODFLOW, MODPATH, and MT3D- USGS components of the Upper Santa Ana River Integrated Model, we will determine the optimal location and amounts of recharge and recovery to confirm that the CUP will operate efficiently.

Task 3: Prepare the Conjunctive Use Project Plan

Subtask 3.1 Prepare a Draft Conjunctive Use Project Plan

We will prepare a draft Conjunctive Use Project Plan summarizing the work results from Tasks 1 and 2, as discussed above, for Project Proponent review. This draft CUP Plan will include information required per CUP Guidelines including project definition, potential groundwater impacts, and mitigation measures. We will also include model descriptions, assumptions, and results in the report.

Subtask 3.2 Prepare a Final Conjunctive Use Project Plan

A Final Conjunctive Use Project Plan will be prepared incorporating comments on the draft Conjunctive Use Project Plan.

Deliverables for Task 3:

- Draft Conjunctive Use Project Plan
- Final Conjunctive Use Project Plan

Task 4: Meetings and Project Management

Subtask 4.1 Prepare for and Attend Meetings

We will prepare for and attend four meetings including:

- Kickoff meeting to discuss the project goals and objectives, scope of work, work product, and schedule.
- Status update meetings (assumes four meetings) to discuss project locations, recharge and extraction schedule, major assumptions for predictive model scenarios, and modeling results
- BTAC meetings (assumes two meetings) to provide overview modeling assumptions, modeling results, and Conjunctive Use Project Plan.

Subtask 4.2 Project Management

We will coordinate project activities throughout the project. Project management includes any additional hours and costs to cover tasks related to any unforeseen issues or requests that arise during the Project.

Organizational Chart

Experienced Staff

Johnson Yeh, PhD, PG, CHG
Principal Modeler
jyeh@geoscience-water.com

David Barnes, MEng
Senior Modeler
dbarnes@geoscience-water.com

Chris Coppinger, PG, CHG
Senior Geohydrologist
ccoppinger@geoscience-water.com

Leo Liu, MS, EIT
Senior Associate Modeler
lliu@geoscience-water.com

Si Si, MS, EIT
Senior Associate Modeler
ssi@geoscience-water.com

Kennedy Jenks

Harold Galser, PE - *Technical Advisor*
David Ferguson, PhD, PE - *Recharge & Recovery*
Paul Chau, PE, CEM - *Groundwater Recovery*
Connor Rutten, PE - *Hydraulic Modeling*
Janet Hoffman, PE, CEM - *Cost Estimator*

Team contact information is provided in Appendix A

GEOSCIENCE

Fee Schedule

Task Description		Principal Modeler	Senior Modoler	Senior Geohydro.	Project Modeler	Senior Associate Modeler	Associate Modeler	GSI/CAD Specialist	Clerical	GEOSCIENCE Labor	GEOSCIENCE Reimbursable Expenses	GEOSCIENCE Sub-Total	Sub-Consultant KJ: Eng-Sci-9	Eng-Sci-6	Eng-Sci-3	Project Admin.	Admin. Assist.	KJ Labor	KJ Reimbursable Expenses	KJ Sub-Total	Totals: GEOSCIENCE	Sub-Consultant KJ	Sub-Consultant Markup	Total Cost
	Hourly Rate:	$289	$264	$235	$244	$210	$196	$155	$107				$310	$245	$190	$130	$110						10%	
	Task 1 - Define the Project																							
1.1	Prepare A Description of the Means of Recharge and Recovery	2	8			20				$ 6,890.00		$ 6,890.00						$ -		$ -	$ 6,890.00	$ -	$ -	$ 6,890
1.2	Develop CUP Recharge and Extraction Schedules	2	8			20				$ 6,890.00		$ 6,890.00						$ -		$ -	$ 6,890.00	$ -	$ -	$ 6,890
1.3	Estimate CUP Cost																							
1.3.1	Cost Estimates without New Extraction Wells									$ -		$ -	8	26	14		2	$ 11,730.00		$ 11,730.00		$ 11,730.00	$ 1,173.00	$ 12,903
1.3.2 (Optional)	Cost Estimates for New Extraction Wells			52						$ 12,220.00		$ 12,220.00	12	36	16	2	2	$ 16,060.00		$ 16,060.00	$ 12,220.00	$ 16,060.00	$ 1,606.00	$ 29,886
	Subtotal wiouth Optional Tasks (Task 1.1, 1.2 and 1.3.1):	**4**	**16**	**0**	**0**	**40**	**0**	**0**	**0**	**$ 13,780**	**$ -**	**$ 13,780**	**8**	**26**	**14**	**0**	**2**	**$ 11,730**	**$ -**	**$ 11,730**	**$ 13,780**	**$ 11,730**	**$ 1,173**	**$ 26,683**
	Subtotal with Optional Tasks (Task 1.1, 1.2, 1.3.1 and 1.3.2):	**4**	**16**	**52**	**0**	**40**	**0**	**0**	**0**	**$ 26,000**	**$ -**	**$ 26,000**	**$ 20**	**$ 62**	**$ 30**	**$ 2**	**$ 4**	**$ 27,790**	**$ -**	**$ 27,790**	**$ 26,000**	**$ 27,790**	**$ 2,779**	**$ 56,569**
	Task 2 - Determine and Mitigate Impacts (Groundwater Modeling and Project Analysis)																							
2.1	Develop Assumptions for Baseline (No Project) and CUP Predictive Model Scenarios (Assuming 3 Project Scenarios)	4	24			40	16			$ 19,028.00		$ 19,028.00						$ -		$ -	$ 19,028.00	$ -	$ -	$ 19,028
2.2	Run and Analyze Predictive Model Scenarios (Assuming 3 Project Scenarios)	8	64			64	80			$ 48,328.00		$ 48,328.00						$ -		$ -	$ 48,328.00	$ -	$ -	$ 48,328
	Subtotal:	**12**	**88**	**0**	**0**	**104**	**96**	**0**	**0**	**$ 67,356**	**$ -**	**$ 67,356**	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ -**	**$ -**	**$ 67,356**	**$ -**	**$ -**	**$ 67,356**
	Task 3 - Prepare the Conjunctive Use Project Plan																							
3.1	Prepare a Draft Conjunctive Use Plan	4	24			24		24		$ 16,252.00		$ 16,252.00						$ -		$ -	$ 16,252.00	$ -	$ -	$ 16,252
3.2	Prepare a Final Conjunctive Use Plan	2	8			12		8		$ 6,450.00		$ 6,450.00						$ -		$ -	$ 6,450.00	$ -	$ -	$ 6,450
	Subtotal:	**6**	**32**	**0**	**0**	**36**	**0**	**32**	**0**	**$ 22,702**	**$ -**	**$ 22,702**	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ -**	**$ -**	**$ 22,702**	**$ -**	**$ -**	**$ 22,702**
	Task 4 - Meetings and Project Management																							
4.1	Prepare for and Attend Meetings (Assuming 1 Kickoff meeting, 4 project team meetings, and 2 BTAC meetings)	8	40			8				$ 14,552.00		$ 14,552.00	12	4		2		$ 4,960.00	$ 252.00	$ 5,212.00	$ 14,552.00	$ 5,212.00	$ 521.20	$ 20,285
4.2	Project Management	8	24			12			8	$ 12,024.00		$ 12,024.00						$ -		$ -	$ 12,024.00	$ -	$ -	$ 12,024
	Subtotal:	**16**	**64**	**0**	**0**	**20**	**0**	**0**	**8**	**$ 26,576**	**$ -**	**$ 26,576**	**12**	**4**	**0**	**2**	**0**	**$ 4,960**	**$ 252**	**$ 5,212**	**$ 26,576**	**$ 5,212**	**$ 521**	**$ 32,309**
	TOTAL HOURS AND COST without Optional Task 1.3.2:	**38**	**200**	**0**	**0**	**200**	**96**	**32**	**8**	**$ 130,414**	**$ -**	**$ 130,414**	**20**	**30**	**14**	**2**	**2**	**$ 16,690**	**$ 252**	**$ 16,942**	**$ 130,414**	**$ 16,942**	**$ 1,694**	**$ 149,050**
	TOTAL HOURS AND COST with Optional Task 1.3.2:	**38**	**200**	**52**	**0**	**200**	**96**	**32**	**8**	**$ 142,634**	**$ -**	**$ 142,634**	**32**	**66**	**30**	**4**	**4**	**$ 32,750**	**$ 252**	**$ 33,002**	**$ 142,634**	**$ 33,002**	**$ 3,300**	**$ 178,936**

Notes:

1 Reimbursable Expenses Include Subconsultant Fees, Mileage, and report reproduction costs.
GEOSCIENCE is aware of the requirements of California Labor Code Sections 1720 et seq. and 1770 et seq., which require the payment of prevailing wage rates and the performance of other requirements on certain “public works” and “maintenance” projects. The work GEOSCIENCE performs does not fall under prevailing wage rate categories.

2 Geoscience's Schedule and Consultants Fee included with this bid are valid for a period of 6 months assuming the starting date shown in the baseline Schedule.

3 Geoscience will manage work hours between employee classifications or utilize other employee classifications provided that the total project fee is not exceeded without prior approval of the Owner. Geoscience will first request approval from the Owner before work hours are managed between Tasks as listed in the Consultants Fee Schedule.

4 Services not Specifically Identified in the Scope of Work are not included in this Agreement for Professional Services.

5 One (1) round of comments and resulting deliverable revision is budgeted for the Draft Conjunctive Use Project Plan (Task 4.1). Reasonable efforts within this budget will be made to address responsive comments. If comments or suggested revisions require additional effort outside of the proposed scope of work, then the revisions will only be performed upon consultation with the Owner and through a contract modification. The Final/100% Document Review will not incorporate any new comments.

6 Budget for Task 2.0 is an allowance only and represents a credible scope and budget based on the known information and Consultant’s experience with similar projects. Effort for these tasks is limited to the budget identified in the Consultant Fee Estimate.
Additional effort required for model scenario runs that is a result of change in initial scenario assumptions, or other unforeseen conditions and/or model assumption changes, will only be provided as authorized by the Client through a contract modification.

7 Consultant will use existing, owner-furnished model(s) as-is. Consultant assumes that the existing model has clear documentation of pertinent files required for running the model and that model files will be provided in an editable electronic format.

8 Groundwater model input files and model output files that were used to generate the deliverables provided in this scope of services will be made available to the client in .txt file format if requested. Specialized spreadsheets, software, or other electronic tools used to expedite the processing of model input and output files are the intellectual property of Geoscience Support Services Inc. and will not be provided.