

**AMENDMENT NO. 2
TO THE
PROFESSIONAL SERVICE AGREEMENT
BY AND BETWEEN
THE SIERRA VALLEY GROUNDWATER MANAGEMENT DISTRICT
AND
McGINLEY & ASSOCIATES, INC.**

WHEREAS, an agreement was entered into the 15th day of March, 2021, (“Agreement”) by and between the SIERRA VALLEY GROUNDWATER MANAGEMENT DISTRICT (“DISTRICT”), and McGinley & Associates, Inc. (“CONTRACTOR”), to provide sustainable groundwater services; and

WHEREAS, the Agreement provides for amendments; and

WHEREAS, Amendment No. 1 was approved on October 18, 2021; and

WHEREAS, the Agreement provides for a termination date of December 31, 2022; and

WHEREAS, the parties wish to amend the following parts of the Agreement:

1. Section 2.12 Maximum Cost to District;
2. Scope of Services (Exhibit A);
3. Budget (Exhibit B); and
4. Schedule (Exhibit C).

NOW, THEREFORE, the parties hereto agree to the following:

1. Amend and replace Section 2.12 Maximum Cost to District as follows:
 - a. Notwithstanding any other provision of this Agreement, in no event shall the cost to District for the services to be provided hereunder exceed the maximum sum of \$284,060.
2. Amend Scope of Services (Exhibit A) in its entirety and replace with the attached “Exhibit A” to this Amendment No. 2.
3. Amend Budget (Exhibit B) in its entirety and replace with the attached “Exhibit B” to this Amendment No. 2.
4. Amend Schedule (Exhibit C) in its entirety and replace with the attached “Exhibit C” to this Amendment No. 2.

In all other respects, the terms of the Agreement are affirmed.

IN WITNESS WHEREOF, the parties hereto have executed this Amendment as of May 16, 2022.

DISTRICT:

CONTRACTOR:

By: _____
Chair

By: _____
Vice President

Approved as to form:

By: _____
District Counsel

EXHIBIT A SCOPE OF SERVICES

Project Title: Sierra Valley Subbasin Groundwater Sustainability Plan (GSP) Development (Project)

Project Description: This Work Plan includes activities associated with the planning, development, preparation, and implementation of a GSP for the Sierra Valley Basin by the Sierra Valley Groundwater Management District (District). The resulting GSP will incorporate appropriate Best Management Practices (BMPs) as developed by the California Department of Water Resources (DWR), and will result in a more complete understanding of the groundwater subbasin to support long-term sustainable groundwater management.

Task 4. Category (d): Monitoring Networks and Data Management

4.4 Monitoring Networks

c. Agricultural Pump Flow Metering Program

Contractor will review the existing flow metering network to identify and understand the temporal and spatial data requirements for the agricultural pump flow metering program. The methods and equipment being used for metering will be reviewed and recommendations for improvements and/or expansion of data collection will be made to help assure accuracy is being maintained and the needs of the GSP are being met.

Contractor will identify and prioritize metering locations for inclusion in the agricultural pump metering program.

Meter equipment/installation standards and standard operating procedures (SOPs) will be provided by Contractor through engineered drawings, details, and specifications, inspections, and field verifications for District implementation of meter replacement program. Instrumentation and equipment will be specified.

Implementation of the Agricultural Pump Flow Metering Program (Flow Meter Replacement Project) is included in Task 6.3.

Deliverables:

- Site Visit Summary Documentation
- Engineering Packet including Drawings, Details, and Specifications

Task 6. Category (d): Monitoring Networks

6.1 Technical Memorandum

This task builds off of the prior Category (d) Task 4.4 Contractor monitoring program standards work and data gap analysis to be completed by others (Larry Walker Associates) and includes tasks for installations of additional monitoring stations for subsidence and monitoring of water levels for GDEs, as outlined in the GSP. The monitoring points to be incorporated may include installations, map development, surveying, and additional protocols for data collection, maintenance, and quality control (QC) for the network. These attributes will be developed into network instructions so that the District may effectively implement the monitoring program. The Monitoring Networks Technical Memorandum will include operation and maintenance recommendations of the monitoring network as outlined in Task 4.4c.

Deliverables:

- Monitoring Networks Technical Memorandum

6.2 Land Subsidence Network

The Contractor will establish the subsidence survey monument network, which will be developed with recommendations of locations for new subsidence survey monuments. Existing monument(s) along Highway 70 may be incorporated into the network. Legal descriptions for easements will be prepared by US Geomatics and landowner access agreements will be drafted by Schroeder Law Offices, as required. The number of subsidence network monuments for purposes of budget will not exceed four (4).

6.3 Flow Meter Replacement Project (Agricultural Pump Flow Metering Project) and Groundwater Well Network Expansion

Prepare contractor bid document package for the flow meter replacement project, provide bidding coordination and clarifications, assist with meter quote(s) from vendors/manufactures, provide contractor project start-up and coordination including engineering inspections and daily work coordination, and provide final inspection/sign off on completed contractor work.

Ensure that flow meters are installed in compliance with manufacturers specifications, working properly, and properly calibrated.

Perform site visits for proposed new meter installations and existing meter installations. Evaluate current installations and meters for compliance with SOPs. Determine if meter requires calibration or repair. Develop site-specific plans to make each meter consistent with developed SOPs.

Install flow meters as described in the Engineering Packet and SOPs. Upgrade existing meter installations that are not compliant with developed SOPs. Have all meters repaired that are identified as needing repair. Have all meters identified requiring calibration properly calibrated.

Work products by others (Larry Walker Associates) under Category (c) and Tasks 1.1 through 1.3 and Category (d) Task 4.4(b) will define the groundwater level monitoring network for the GSP.

No expansion of the groundwater level network is proposed; however, accurate surveying for horizontal and vertical (elevation) control may be needed at some locations, including the District monitoring wells and existing DWR CASGEM sites. The Contractor shall review the existing location and elevation data, and provide additional surveying by US Geomatics, as identified to be needed.

Deliverables:

- Updated location and elevation data to be included in the Monitoring Networks Technical Memorandum (Task 6.1 deliverable)

6.4 Groundwater Dependent Ecosystems (GDE) Monitoring

Others (Larry Walker Associates) work products under Category (d) Task 4.4(d) will be used by Contractor to advance specific details of the monitoring plan to incorporate the defined GDEs into the GSP monitoring network. Contractor's work will include review of monitoring alternatives and identification of data gaps by others (Larry Walker Associates) and development of cost-effective strategies for long-term monitoring, including engagement with potential funding and implementation partners.

6.5 Groundwater Dependent Ecosystems (GDE) Monitoring Network Installations

As identified in the GSP, the GDEs monitoring network will include the addition of four (4) new monitoring wells for groundwater level measurement. Candidate wells for inclusion in the monitoring network will be identified using research of the locations of historical wells, information on existing wells that can be provided to the Contractor, and field inspections of the candidate wells. Field inspection will include reviews of access, casing conditions, depth to groundwater

(preferably within 30 ft of land surface), and the wells may be video inspected to assess depth and perforated intervals, casing condition, and suitability for use as a monitoring well. Four (4) representative wells will be selected for equipping for continuous water level monitoring. If possible (based on available cell service) the wells will be equipped with telemetry for real time data access. Landowner access agreements will be drafted by the Contractor.

Deliverables:

- Operation and maintenance instructions for the GDE monitoring wells will be included in the Monitoring Networks Technical Memorandum (Task 6.1 deliverable)

Task 7. Category (d): Groundwater Pumping Reduction Assessment

The GSP identifies numerous potential opportunities for reduction of groundwater use in the Sierra Valley Subbasin to achieve stabilized groundwater levels. Contractor will bring together experts with significant experience working with irrigation districts in improving irrigation and water delivery; long-term planning for lower groundwater uses in over-pumped basins; and finding effective, economical, and collaborative solutions to complex water resources issues. Contractor will be engaged in the process of identification and development of potential opportunities.

Given Contractor's understanding of pumping magnitudes and prior water budget determinations in Sierra Valley, the magnitude of over-pumping in the northeastern portion of the Valley will require greater management actions than can be simply achieved through irrigation efficiency improvements to reduce evaporation and wind drift losses or soil amendments to increase holding capacity. While these approaches have merit, more substantial conservation or water management measures are expected to be needed to meet the 20-year SGMA requirements.

Groundwater flow modeling to be completed by others (Larry Walker Associates) in Category (c) Task 3.3 includes developing and running model scenarios to support evaluation of potential projects and management actions or other analysis.

Engaging and obtaining input from agricultural groundwater users in the Valley will be invaluable in identification of pumping reduction opportunities. Conservation measures might include higher efficiency irrigation, rotational fallowing, wet-year and normal-year curtailments in pumping to support dry-year pumping, use of water resource rental pools, a conservation credit system, and/or formation of a groundwater shareholder system with progressive reduction in value of shares to meet the 20-year target pumping magnitude. These, and other opportunities identified will be carefully review of effectiveness, economic, financial and funding potential, along with engaged discussion with the agricultural groundwater users of the Valley to identify the best alternative to implement.

Contractor will investigate opportunities or methods to reduce and optimize groundwater pumping practices, including working with surface water delivery agencies to determine extent of surface water delivery flexibility and determine optimized delivery schedule.

The GSP document will need to include some discussion on pumping management strategies. Contractor will contribute to the drafting of this section of the GSP as requested by others (Larry Walker Associate) in preparation to submit the GSP by January 2022.

Technical detailed evaluations for pumping reduction strategies and work with the Valley stakeholders are scheduled to continue into 2022. A Technical Report will examine and refine details of potential opportunities and arrive at the finalized pumping management action plan for optimizing groundwater and surface water use. The Technical Report will be used to inform planning efforts and future project evaluations.

A summary technical components and evaluations of Task 7 is as follows:

- Review of Existing Ranching and Irrigation Systems
- Mapping of Irrigation Areas with Combined Surface Water (SW) and Groundwater (GW) Use, and Stand-alone SW and GW (Larry Walker and Associates lead for groundwater flow modeling)
- Review of Irrigation Efficiency Options and Crop Options
- Irrigation Efficiency Improvement Demonstration Program (LEPA)
- Review of SW Resources and Combined SW and GW Uses
- Review of Water Conveyance Systems and Potential for Improvement
- Review for Potential On-Ranch Additional SW Storage
- Review of DWR Water Master SW Management and Decree Rights
- Review of Groundwater Pumping Management – Reduction Scenarios ID and Review
- Preliminary Economic and Funding Considerations for Groundwater Pumping Reduction Options
- Preliminary Feasibility to Augment Natural Recharge Through Runoff and/or Streamflow Management

An Irrigation Efficiency Improvement Demonstration Program will be started, with conversion of mid-elevation sprinkler systems to low energy precision application (LEPA) systems. The Demonstration Program will be a multi-year effort, and the Contractor will set up the program so that the District and volunteer farmers can implement and operate the Program. To begin the Demonstration, one or more center pivots will be identified for both instrumentation with soil moisture sensors, and flow meters to account for water use. LEPA sprinkler system conversion equipment will be designed and ordered for volunteer farmer installations. Records on water use, crop conditions, and crop yield (tons) will be kept by the volunteer farmers. Equipment for implementation of the Demonstration Program will be purchased by the District. An Irrigation Efficiency Improvement Demonstration Program Start-up Report will be prepared by Contractor for implementation by the District and volunteer farmers.

Deliverables:

- Technical results and recommendations documents:
 - Technical Report on Pumping Reduction Strategies with Recommendations
 - Irrigation Efficiency Improvement Demonstration Program Start-up Report

FRENCHMAN'S OPTIONAL TASK to be completed only if authorization is given to Contractor by the District:

Frenchman's Reservoir north of the Chilcoot-Vinton impounds waters of the Little Last Chance Creek. Current and historical reservoir operations will be carefully reviewed and considered, as there may be possible opportunities to provide more reliable surface water delivery, which in turn could help mitigate groundwater pumping reductions.

Some communities are implementing new reservoir manage schemes to increase storage capacity, maintain higher minimum pools for more assured drought supply, or to reduce flood spills and conserve water, manage winter releases to recharge the aquifer, or impound additional water on farms (augmented on-farm storage or winter icing of pastures).

A summary of technical components and evaluations is as follows:

- Review of Historical Storage in Frenchman’s Reservoir and Managed Releases for Irrigation
- Review and Quantification of Historical Spill Releases
- Concept Review for Modifications to Reservoir Operations
 - Increased minimum pool in fall to carryover for potential drought supply
 - Modifications to reduce spill (Winter Release concept)

Deliverable (OPTIONAL):

- Preliminary Surface Water Use Efficiency and Feasibility Review Report

EXHIBIT B - BUDGET

Task and Task Description - Amendment No. 2 (May 16, 2022)	McGinley Staff (ave. rate)	McGinley Principal	McGinley Total	J-U-B Hrs Sr/Principal	Subsidence Monuments (4)	US Geomatics Surveying Crew	Hansford Economic Principal	Schroeder Law Total	Grand Total
Billing Rates	\$110.00	\$180.00	Total	\$210.00	\$2,500.00	\$205.00	\$205.00	\$335.00	
Task 4 - Monitoring Networks and Data Management									
4.4 Monitoring Networks c. Agricultural Pump Flow Metering Program									
Engineering Packet including Drawings, Details, and Specifications	\$600	\$400	\$1,000	\$7,000	\$0	\$0	\$0	\$0	\$8,000.00
Site Visit Summary Documentation and Preliminary Meter Engineering Services	\$3,240	\$2,160	\$5,400	\$4,400	\$0	\$0	\$0	\$0	\$9,800.00
Task 4.4c Subtotal			\$6,400.00	\$11,400.00	\$0.00	\$0.00	\$0.00	\$0.00	\$17,800.00
Task 6 - Monitoring Networks									
6.1 Technical Memorandum (Monitoring Networks)	\$7,920	\$5,280	\$13,200	\$1,400	\$0	\$0	\$0	\$0	\$14,600.00
6.2 Land Subsidence Network (Subsidence Monuments)	\$6,138	\$4,092	\$10,230	\$0	\$10,000	\$4,000	\$0	\$0	\$24,230.00
6.3 Flow Meter Replacement Project (Agricultural Pump Flow Metering Program) and Groundwater Well Network Expansion	\$10,800	\$7,200	\$18,000	\$30,000	\$0	\$0	\$0	\$0	\$48,000.00
6.4 GDE Monitoring	\$6,120	\$4,080	\$10,200	\$0	\$0	\$0	\$0	\$0	\$10,200.00
6.5 GDE Monitoring Network Installations	\$22,500	\$15,000	\$37,500	\$0	\$0	\$2,500	\$0	\$0	\$40,000.00
Task 6 Subtotal			\$89,130.00	\$31,400.00	\$10,000.00	\$6,500.00	\$0.00	\$0.00	\$137,030.00
Task 7 - Groundwater Pumping Reduction Assessment									
Review of Existing Ranching and Irrigation Systems	\$6,600	\$4,400	\$11,000	\$3,000	\$0	\$0	\$0	\$0	\$14,000.00
Mapping of Areas with Combined SW and GW, and stand-alone SW and GW	\$600	\$400	\$1,000	\$0	\$0	\$0	\$0	\$0	\$1,000.00
Review of Irrigation Efficiency Options and Crop Options	\$4,800	\$3,200	\$8,000	\$0	\$0	\$0	\$0	\$0	\$8,000.00
Irrigation Efficiency Improvement Demonstration Program (LEPA)	\$15,000	\$10,000	\$25,000	\$0	\$0	\$0	\$0	\$0	\$25,000.00
Review of Surface Water Resources and Combined SW and GW Uses	\$1,500	\$1,000	\$2,500	\$0	\$0	\$0	\$0	\$0	\$2,500.00
Review of Water Conveyance Systems and Potential for Improvement	\$1,000	\$500	\$1,500	\$1,000	\$0	\$0	\$0	\$0	\$2,500.00
Review for Potential On-Ranch Additional SW Storage	\$2,000	\$1,000	\$3,000	\$4,000	\$0	\$0	\$0	\$0	\$7,000.00
Review of DWR Water Master SW Management and Decree Rights	\$3,000	\$2,000	\$5,000	\$3,000	\$0	\$0	\$0	\$5,000	\$13,000.00
Groundwater Pumping Management - Reduction Scenarios ID and Review	\$3,380	\$2,250	\$5,630	\$0	\$0	\$0	\$0	\$0	\$5,630.00
Preliminary Economic and Funding Considerations for Groundwater Pumping Reduction Options	\$1,200	\$800	\$2,000	\$1,000	\$0	\$0	\$2,000	\$0	\$5,000.00
Irrigation Efficiency Improvement Demonstration Program (LEPA) Start-up Report	\$4,800	\$3,200	\$8,000	\$0	\$0	\$0	\$0	\$0	\$8,000.00
Technical Report on Pumping Reduction Strategies with Recommendations	\$3,500	\$2,500	\$6,000	\$0	\$0	\$0	\$0	\$0	\$6,000.00
Preliminary Feasibility to Augment Natural Recharge Through Runoff and/or Streamflow Management	\$4,000	\$3,000	\$7,000	\$0	\$0	\$0	\$0	\$0	\$7,000.00
Task 7 Subtotal			\$85,630.00	\$12,000.00	\$0.00	\$0.00	\$2,000.00	\$5,000.00	\$104,630.00
OPTIONAL Review of Frenchman's Reservoir Water Resources Management and Conservation Potential									
Review of Historical Storage in Frenchman's Reservoir and Managed Releases for Irrigation	\$2,880	\$1,920	\$4,800	\$1,000	\$0	\$0	\$0	\$0	\$5,800.00
Review and Quantification of Historical Spill Releases	\$2,880	\$1,920	\$4,800	\$1,000	\$0	\$0	\$0	\$0	\$5,800.00
Concept Review for Modifications to Reservoir Operations	\$2,100	\$1,400	\$3,500	\$2,500	\$0	\$0	\$0	\$0	\$6,000.00
Preliminary Surface Water Use Efficiency and Feasibility Review Report	\$3,600	\$2,400	\$6,000	\$1,000	\$0	\$0	\$0	\$0	\$7,000.00
Task 7 Subtotal (Frenchman OPTION)			\$19,100.00	\$5,500.00	\$0.00	\$0.00	\$0.00	\$0.00	\$24,600.00
Task 7 Total			\$104,730.00	\$17,500.00	\$0.00	\$0.00	\$2,000.00	\$5,000.00	\$129,230.00
GRAND TOTAL			\$200,260.00	\$60,300.00	\$10,000.00	\$6,500.00	\$2,000.00	\$5,000.00	\$284,060.00

