

## PROPOSAL

### **SUBJECT: PROPOSAL TO INSTALL A NETWORK OF MONITORING WELLS AND STREAM GAGES TO ADDRESS DATA GAPS IN THE PASO ROBLES GROUNDWATER SUSTAINABILITY PLAN THAT PERTAIN TO INTERCONNECTED SURFACE WATER QUANTIFIABLE OBJECTIVES**

#### **BACKGROUND**

The Paso Robles Subbasin is identified by the California Department of Water Resources (DWR) in Bulletin 118 as Subbasin No. 3-004.06 (DWR, 2016). The Subbasin is part of the greater Salinas Valley Basin in the Central Coastal region of California. The Subbasin encompasses an area of approximately 436,240 acres, or 681 square miles and is entirely within San Luis Obispo County. In 2014, the State of California enacted the Sustainable Groundwater Management Act (SGMA). This law requires groundwater basins in California that are designated as medium or high priority be managed sustainably. The Paso Robles Subbasin is currently designated a high priority groundwater basin. Among other requirements, satisfying the requirements of SGMA requires that the Groundwater Sustainability Agencies (GSAs) that overly the basin develop and implement a Groundwater Sustainability Plan (GSP) which provides for the management of the basin to achieve quantifiable objectives.

Four (4) local agencies within the Paso Robles Subbasin, including the County of San Luis Obispo, the Shandon-San Juan Water District, the City of Paso Robles and the San Miguel Community Services District (said agencies are collectively referred to as the “Paso Robles Subbasin GSAs”) decided to become GSAs within their jurisdiction, such that the service areas of the Paso Robles Subbasin GSAs collectively cover the entire Paso Robles Subbasin with regard to the management of the groundwater basin. Consistent with the options identified in Water Code Section 10727, the Paso Basin GSAs entered into a Memorandum of Agreement (“MOA”) regarding preparation of a GSP for the Paso Robles Groundwater Basin for purposes of preparing a single GSP for the Paso Robles Subbasin and establishing the Paso Robles Groundwater Basin Cooperative Committee (“Committee”) to conduct activities related to GSP development and SGMA implementation.

The Paso Basin GSAs, with the assistance of a consultant team, which was led by Montgomery & Associates, have jointly developed the 2019 Groundwater Sustainability Plan for the Salinas Valley – Paso Robles Area (“Paso Robles SubBasin GSP”) in the manner described in the MOA, and in accordance with the requirements of SGMA. The GSA Committee adopted a motion on November 20, 2019 recommending that each of the Paso Robles Subbasin GSAs adopt the Paso Robles Subbasin GSP. All of the GSA’s have voted to approve and adopt the Paso Robles Subbasin GSP as of December XX, 2019. The final approved Paso Robles Subbasin GSP will be submitted to the DWR prior to January 31, 2020 in accordance with the requirements of SGMA.

As described in the Paso Robles Subbasin GSP, the primary water bearing deposits within the groundwater basin include those bedrock strata which are associated with the Paso Robles Formation. The existing network of groundwater monitoring wells within this formation are deemed nominally adequate to assess the condition of the bedrock aquifer in the near term to evaluate the success of future GSP management actions and project benefits. A significant data gap is the connectivity of the deeper portions of the aquifer in the Subbasin. Notwithstanding, the Paso Robles Subbasin GSA's understand and are committed to investing in the expansion of this bedrock aquifer monitoring network in the future to increase the level of knowledge with regard to the condition and future health of the Subbasin. The extent and continuity of the deeper portions of the aquifer is significant for assessing how pumping or projects in one part of the basin may influence other areas, and for assessing how recharge may benefit various parts of the Subbasin.

In contrary to the GSA's ability to monitor and assess the condition of the Paso Robles Formation bedrock aquifer, the existing network of monitoring wells within the areas where surface water and groundwater interaction are likely to occur is extremely sparse. Ephemeral surface water flows in the Subbasin over the last 40 years make it difficult to assess the interconnectivity of surface water and groundwater and to quantify if any surface water depletion has occurred. There are no available data that establish whether or not the groundwater and surface water are connected through a continuous saturated zone in any aquifer. Although water elevation contour maps of the Paso Robles Formation wells may suggest that a continuous saturated zone between the surface water and the Paso Robles Formation aquifer does not exist.

A significant data gap that was identified in Paso Robles Subbasin GSP was the need to expand the network of monitoring wells and stream gages within the alluvial deposits, which are associated with the major surface water drainage features which drain the Subbasin. The potential for interconnected surface water within the alluvial aquifer will be assessed as data from this expanded network of monitoring wells and stream gages are developed and analyzed. Per the recommendations set forth in the GSP, *"Definitive data delineating any interconnections between surface water and groundwater or a lack of interconnected surface waters is a data gap that will be addressed during implementation of this GSP"*.

A critical component of the current groundwater model is streamflow and streamflow data is very limited. Two existing stream gages exist within the Basin. This project plans to expand that network by coupling stream gages with monitoring wells in each of the major drainages across the Subbasin.

The Paso Robles Subbasin GSA's have developed the following project description, scope of work, budget and schedule to address this significant data gap.

### **PROJECT DESCRIPTION**

Previous investigations in the Paso Robles Subbasin have identified shallow water bearing zones in the recent alluvium water bearing zones with unknown connectivity with the Paso Robles Formation. The alluvial deposits are generally associated with the major surface water drainage

features which drain the subbasin. These include the Salinas River, Huer Huero Creek, Estrella River, San Marcos Creek, Shell Creek, San Juan Creek and other smaller surface water drainage features. Groundwater dependent ecosystems (GDEs) are plant and animal communities that require groundwater to meet some or all of their water needs. It is well documented that GDEs can be associated with areas where there is a direct connection between shallow alluvium water bearing formations and deeper bedrock aquifers. The County of San Luis Obispo' existing groundwater monitoring program does not include any nested monitoring wells that are located such that the interaction between the surface stream flows, associated alluvium deposits and the underlying Paso Robles Formation can be assessed. Nested monitoring wells are necessary to assess vertical head and water quality relationships between each of these hydrologic systems. Further, there are only two (2) stream gages that currently exist within the Paso Robles Subbasin.

During the development of the Paso Robles Subbasin GSP, it was established that there are data gaps in assessing the existence of interconnected surface water bodies in the Subbasin. The GSP states "The initial data gap is the lack of wells that monitor the shallow groundwater table adjacent to streams and rivers. Areas of potential shallow groundwater in the Alluvial Aquifer will be targeted as areas where shallow groundwater wells are needed. In these areas of potential shallow groundwater, either existing shallow monitoring wells must be identified, or new monitoring wells must be installed. If the shallow monitoring wells indicate interconnected surface water bodies in the Subbasin, additional analysis will be undertaken to quantify the surface water depletion and potentially relate the quantified surface water depletion rates to shallow groundwater elevations".

In conjunction with the approval of the GSP, the Paso Robles Subbasin GSAs agreed that if the shallow monitoring wells indicate interconnected surface water bodies in the Subbasin, additional data gaps may be identified to address all of the SGMA regulations including the following:

- Establishing flow conditions including surface water discharge, surface water head, and baseflow contribution.
- Establishing the approximate date and location where ephemeral or intermittent flowing streams and rivers cease to flow, if applicable.
- Establishing temporal change in conditions due to variations in stream discharge and regional groundwater extraction.

To address this issue, the Paso Robles Subbasin GSA's have identified ten (10) potential sites where additional hydrologic, geologic, hydrogeologic data are necessary. It is recommended that a stream gage and monitoring well be installed at each of these sites. The referenced sites have been identified where stream gages coupled with dedicated monitoring wells will supply key data sets. Monitoring wells will either be nested or paired depending on local conditions and if existing wells are available and suitable. A minimum of three wells are planned for each site. One completed within the alluvial aquifer, one completed a short distance below the base of the

alluvial aquifer into the Paso Formation and at least one to be completed deeper into the Paso Robles Formation at elevations similar to production wells in the general vicinity of each individual site. The final configuration of each nested monitoring well will be determined based on the results of the initial exploratory test drilling at each site. Each stream gage would be constructed and installed in accordance with applicable USGS specifications.

Two of the selected sites, the 13th St. Bridge in Paso Robles and the Airport Road crossing of the Estrella River have existing USGS stream gages. The other eight (8) sites will require new stream gage installations. Each site will require specific research of existing well logs and available hydrogeologic investigations to plan for the number and depth of monitoring wells. The location of the proposed monitoring sites are summarized in Table 1 and graphically depicted in the attached exhibit. These sites were chosen to:

- 1) Fill in missing hydrologic, geologic, hydrologic data.
- 2) Provide groundwater elevation data in and water bearing formations areas that have few wells.
- 3) Provide information regarding the presence, characteristics and condition of GDEs.
- 3) Provide information about surface water and groundwater flows into or out of the Subbasin.
- 4) Provide data substantiating the success of proposed recharge projects.

Proposed Monitoring Well & Stream Gauge Locations				
Point ID	Stream	Location	Latitude	Longitude
1	Salinas River	Paso Robles / 13th St Bridge	35.6283621	-120.639167
2	Salinas River	North San Miguel	35.7746645	-120.7066269
3	Huer Huero Creek	Creston / Hwy 41 Bridge	35.5343255	-120.524579
4	Huer Huero Creek	Mid Huer Huero Creek / Linne Rd	35.5961716	-120.5644939
5	Huer Huero Creek	Lower Huer Huero Creek / Buena Vista D	35.6714203	-120.6737819
6	Shell Creek	Shell Creek / Hwy 58 Bridge	35.4582416	-120.3339321
7	San Juan Creek	Shell Creek Rd Xing	35.598834	120.3328714
8	Estrella River	Shandon / W Centre St (Hwy 41) Bridge	35.6631647	-120.3629637
9	Estrella River	Estrella / Airport Rd Xing	35.7168528	-120.6403432
10	Estrella River	Whitley Gardens / Hwy 46 E Bridge	35.6581673	-120.510556

## **SCOPE OF WORK**

The Paso Robles Subbasin GSA's recognize that the feasibility of installing the proposed network of monitoring wells and stream gages at all of the ten (10) identify sites will require a significant initial capital investment as well as a commitment of resources and funding for annual operation and maintenance of the sites, the Paso Robles Subbasin GSA's intend to implement the proposed monitoring network over a period of time. Under the terms of this proposal, the GSA's anticipate that between two (2) and three (3) sites can be completed. Additional sites will be installed in

the future as funding becomes available. For the purposes of this proposal, the following scope of work is proposed.

### **Task 1 Initial Data Acquisition**

Review of all available documentation relevant to property ownership; mapping / aerial imagery; geology/hydrology reports / studies; well data; available water quality data and other information as may exist from which to develop an accurate understanding of the relevant conditions and constraints for each of the ten (10) identified sites.

### **Task 2 Site Reconnaissance**

Perform onsite visual inspections of each of the ten (10) identified sites to as necessary to become familiar with the surroundings and photo document the critical features. The initial site inspections will allow the project team to develop an understanding of the physical site characteristics, terrain, access, obstructions, availability of utilities (electric and communications) and other conditions that will be important in the final site selection phase. Visiting the site gives the team an opportunity to identify additional problems and concerns that may not be apparent from a site map or archival data.

### **Task 3 Selection of Initial Sites for Monitoring Well & Stream Gage Installation**

Based on the results of the initial tasks, the ten (10) sites will be prioritized. Based on the availability of funds, the highest priority three (3) sites will be selected for monitoring well and stream gage installation. A preliminary site plan for each of the selected sites will be developed which will include the proposed siting of the monitoring wells, stream gage, site access, utility services, site improvements, security fencing, and other site improvements that may be appropriate.

### **Task 4 Acquisition of Property Access Rights**

Determine the property ownership for each of the selected sites. The majority of the ten (10) sites are located on public property that is either owned by the County of San Luis Obispo, City of San Luis Obispo, or the State of California. It is anticipated that permanent access and encroachment of these sites can be acquired through a permanent easement or right of way encroachment permit. There are two (2) sites on the list that are located on private property. Monitoring site installation on these sites may require either property acquisition or the dedication of a permanent easement.

### **Task 5 Final Site Design**

Final design of each site will require that a topographic and property boundary survey be performed. Subsequently, a final design and construction documentation package will be prepared for each of the selected sites which will include the location and details of the monitoring wells, stream gage, site access, utility services, site improvements, security fencing, and other site improvements that may be appropriate. The final design package will be of

sufficient detail to allow for any required permitting and for the solicitation of competitive bids for construction of the complete monitoring site.

#### **Task 6 Site Construction and Installation**

Pending approval of the construction documents and issuance of all required permits, a solicitation for bids will be issued for the construction and installation of the monitoring well and stream gages, including all related site improvements. The scope of work to be performed under the terms of his proposal shall be complete as such time that the selected monitoring sites are installed, tested, operational and accepted by the Paso Robles Subbasin GSA's.

#### **PROJECT BUDGET**