



PASO BASIN GSA COOPERATIVE COMMITTEE

TECHNICAL ADVISORY COMMITTEE APPLICANT REQUEST

Title	Expanded Monitoring Network Technical Advisory Committee
Purpose	Form a Technical Advisory Committee (TAC) to advise and assist in implementation of the Paso Basin expanded monitoring network

Project Description

The goal of this project is to expand the current Basin Monitoring Network by incorporating up to 100 existing wells into the Basin RMS network and installing a minimum of 8 new monitoring wells where existing wells do not exist or where access to existing wells cannot be secured. Additionally, a minimum of 3 stream gauges, and a minimum of 2 climatologic stations will be installed for better understanding of the interaction between surface water and groundwater. This project may also require that supplemental hydrogeologic investigations be performed to develop an enhanced understanding of conditions present in the basin where groundwater levels have declined below designated minimum thresholds (MT's) as established in the Groundwater Sustainability Plan.

Role of the TAC:

Participate in TAC meetings to advise on the implementation of the expanded monitoring network in the Paso Basin which may occur through the grant duration (April 2025), or until the project is complete, and provide periodic reports to the Paso Basin Cooperative Committee (PBCC). TAC meetings are not subject to Brown Act requirements unless a quorum of the PBCC is appointed to a TAC.

Directions/Process:

Each PBCC GSA may recommend representatives to the Technical Advisory Committee which will be reviewed at a subsequent PBCC meeting and subject to appointment to the TAC by a majority vote of the PBCC. Staff expects the total size of the TAC to be 6-10 participants. Please submit any applicant forms to Blaine Reely at breely@co.slo.ca.us by close of business on **March 6, 2023**.

Attachments:

1. Applicant Forms
2. GSI Water Solutions, Inc. Technical Memorandum, "Paso Robles Basin Groundwater Monitoring Network Expansion and Investigation of the El Pomar Junction Area", October 20, 2022
3. SLO County GSD Map, "Paso Water Basin Monitoring Network Expansion Project October 21, 2022



COUNTY OF SAN LUIS OBISPO
GROUNDWATER SUSTAINABILITY DEPARTMENT
Blaine T. Reely Director

PASO BASIN GSA COOPERATIVE COMMITTEE

TECHNICAL ADVISORY COMMITTEE
APPLICANT FORM

Title	Expanded Monitoring Network Technical Advisory Committee
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Applicant / Contact Information

Name	
Address	
Phone	
Email	
Entity/Association	

Areas of Interest or Concern (check all that apply):

- Domestic Water Supplies
- Agricultural Water Usage
- Municipal/Community Water Systems
- Dry, or At-Risk Drinking Water Wells
- Areas of Environmental Sensitivity
- Government Oversight/Accountability
- Equitable Right to Water

Circle Any Specific Areas of Interest You May Have:

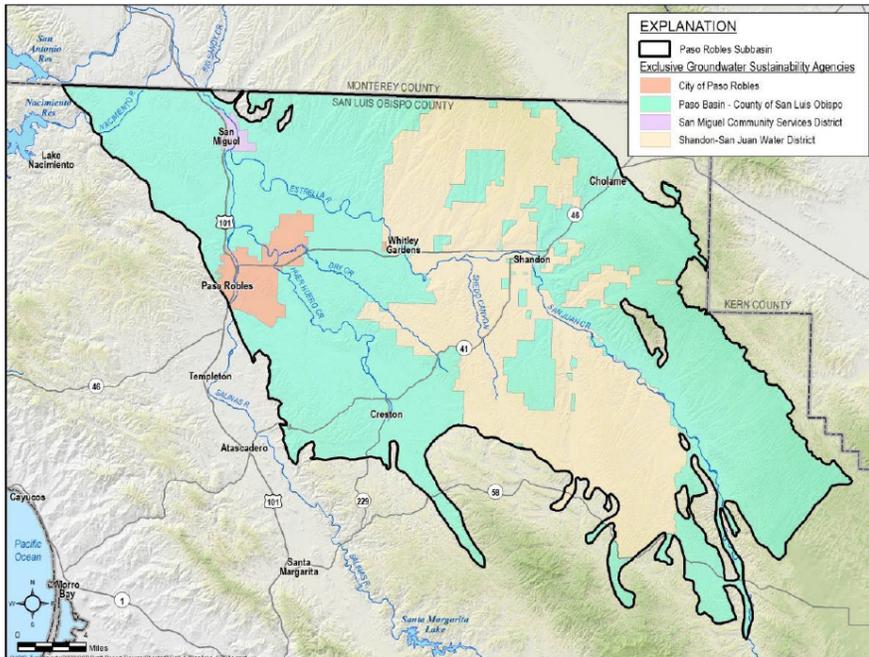


Figure 2-1. Extent of GSP Plan Area and Exclusive Groundwater Sustainability Agencies



WORK PLAN

Paso Robles Basin Groundwater Level Monitoring Network Expansion and Investigation of the El Pomar Junction Area

To: Blaine Reely, Groundwater Sustainability Director, County of San Luis Obispo

From: GSI Water Solutions, Inc.
Nate Page, PG, Managing Hydrogeologist,
Lee Knudtson, Staff Hydrologist
Dave O'Rourke, PG, CHG, Principal Hydrogeologist

Date: November 30, 2022

GSI is pleased to present this work plan to expand and refine the existing groundwater monitoring network in the Paso Robles Area Subbasin of the Salinas Valley Groundwater Basin (Basin) and to investigate the hydrogeology in the El Pomar Junction area. The purpose of the groundwater monitoring network expansion portion of the work plan is two-fold; 1) to refine the set of monitoring wells throughout the Basin that are measured manually in April and October and 2) establish a subset of wells equipped with continuous water level monitoring devices to better understand the hydrogeology of the Basin and to capture the annual high and low groundwater elevations in each well, which are often at some date other than April and October.

The chronic lowering of groundwater elevation undesirable result identified in Representative Monitoring Site (RMS) well 27S/13E-28F01 in the Paso Robles Subbasin Water Year 2021 Annual Report requires an investigation to determine if this undesirable result is a localized or Basin-wide issue¹. This work plan details a hydrogeologic investigation of the El Pomar Junction area to satisfy this requirement and to generally improve upon the hydrogeologic understanding of the area. Details from this investigation shall be incorporated into the expansion and refinement of the groundwater monitoring network.

The ultimate goal of this work plan is to identify a refined set of RMS wells equipped with continuous water level monitoring devices that are ideally suited to annually evaluate the Basin condition in regard to the six undesirable results². The refined RMS well network shall be spatially distributed to minimize data gap areas.

Background

This work plan is presented in conjunction with a master spreadsheet of existing historically monitored wells in the Basin and geographic information systems (GIS) mapping of these same wells. These datasets are the culmination of a desktop study performed by GSI Water Solutions, Inc. (GSI) to compile existing datasets and identify key wells in the Basin for ongoing manual measurements and continuous monitoring device utilization. A set of 102 key wells have been preliminarily identified based on their spatial distribution, historical water level

¹ This investigation is required according to Section 8.4.5.1 of the GSP.

² California Water Code 10721 (x)

https://leginfo.ca.gov/faces/codes_displaySection.xhtml?sectionNum=10721.&lawCode=WAT

data, and representativeness of groundwater conditions within a localized area. These key wells are discussed in further detail below.

The existing historically monitored wells in the Basin include:

- San Luis Obispo Flood Control and Water Conservation District (SLOFCWCD) groundwater monitoring program wells³ [252 total, 104 have recent measurements],
- The Paso Robles Basin Groundwater Sustainability Plan (GSP) Representative Monitoring Sites (RMS) wells⁴ [23 wells],
- City of Paso Robles Supplemental Environmental Project (SEP) wells [4 wells],
- Wells monitored by the Shandon-San Juan Water District (SSJWD)⁵ [65 wells], and
- Wells monitored by the Estrella-El Pomar-Creston Water District (EPCWD)⁶ [35 wells].

Priorities in expanding and refining the Basin groundwater monitoring network include infilling spatial data gap areas, addressing monitoring deficiencies in the alluvial aquifer (key to determining surface water-groundwater interactions), and addressing deficiencies associated with ongoing Dry Well⁷ occurrences, generally reported for rural domestic wells. While GSI's selection of key wells take these issues into consideration, the key wells list only includes historically and currently monitored wells. As specified below in the work plan scope, additional wells will need to be identified within areas of concern and added to the monitoring network. These may include existing wells that have not been previously monitored and/or new dedicated monitoring wells, such as the potential new well locations identified by Todd Groundwater in developing the revised GSP, and the proposed additional SEP wells.

During review of well completion reports provided by San Luis Obispo County Environmental Health Services (EHS), GSI discovered compelling lithologic evidence suggesting that several wells located in the El Pomar Junction area, some of which are active irrigation wells, are completed either partially or completely within the Santa Margarita Formation, a non-Basin aquifer that underlies the Paso Robles Formation⁸. Among these wells are three of the existing RMS wells (27S/12E-13N01, 27S/13E-30J01, and 27S/13E-30N01), which each appear to be completed entirely within the Santa Margarita Formation. Further work is required to assess these findings, as specified below. The reason that this assessment is important is that, if verified, these Santa Margarita Formation wells should be removed from the RMS network as these wells would not be representative of the Paso Robles Formation aquifer (and therefore not representative of the Basin).

An additional task described in this work plan is to develop a separate work plan to assess the connectivity between the non-Basin Santa Margarita Formation aquifer and the Paso Robles Formation aquifer within the El Pomar Junction area to inform future monitoring efforts and groundwater management decisions.

Key Wells

Manual Measurements

GSI has preliminarily identified **102** key wells among the historically and currently monitored wells in the Basin. In general, the currently monitored wells are considered the most likely pool from which to select a refined set of

³ These include wells monitored by the City of Paso Robles.

⁴ Nearly all of the existing RMS wells are included in the SLOFCWCD groundwater monitoring program (all except for the single alluvial well 18MW-01 in the City of Paso Robles)

⁵ As many as 13 wells monitored by SSJWD are also included in the SLOFCWCD groundwater monitoring program (three of these 13 wells are possible matches to wells in the SLOFCWCD program and need to be verified).

⁶ A single well monitored by EPCWD is also included in the SLOFCWCD groundwater monitoring program (26S/12E-03H04).

⁷ <https://mydrywell.water.ca.gov/report/publicpage>

⁸ The Paso Robles Formation is the defined bottom of the Basin.

RMS wells due to existing well owner land access agreements. The key wells identified for manual measurements are presented with three levels of priority:

1. **[83 wells]** Priority 1 wells are all currently monitored wells in either the SLOFCWCD program, the SSJWD program, or the EPCWD program (with six exceptions⁹). These wells exhibit the following criteria:
 - a. Are evenly distributed spatially throughout the Basin or are currently monitored alluvial wells,
 - b. Appear to represent groundwater conditions within a localized area (i.e. similar trends are exhibited in neighboring wells),
 - c. Historical water level hydrographs generally show a significant period of record and/or tell an interesting/important story (applies specifically to SLOFCWCD wells),
2. **[7 wells]** Priority 2 wells include seven historically monitored alluvial wells in the SLOFCWCD program.
3. **[12 wells]** Priority 3 wells include historically monitored SLOFCWCD program wells that further infill spatial gaps.

Continuous Monitoring

Instrumenting as many key wells as possible with continuous monitoring devices will improve the understanding of the Basin hydrogeology. GSI recommends that the 83 Priority 1 key wells are assessed for continuous monitoring. It is likely that many of these wells will be found to be inappropriate for continuous monitoring due to issues ranging from well owners opting out to physical limitations of the well or wellhead construction or lack of access to cellular signal or wireless internet. For these reasons GSI recommends starting with this large list, with the assumption that the actual number of devices ultimately installed will be far less. One important purpose of instrumenting as many key wells as possible with continuous monitoring devices is to refine our understanding of the timing and degree to which groundwater levels fluctuate annually within the Basin. Based on the availability of several private continuous monitoring device datasets and private monitoring programs it is known that the bi-annual manual groundwater level measurements recorded by the SLOFCWCD program often do not capture the high and low groundwater elevations of the year. This can result in an ‘apples to oranges’ comparison of groundwater conditions from one year to the next. Because the condition of the Basin, assessed annually, is largely based on groundwater elevation measurements it is in the best interest of all stakeholders to identify the true nature and timing of groundwater elevation fluctuations throughout the year.

Work Plan Scope Items

Task 1 – Identify Current Well Owners

The provided compilation of existing historically monitored wells contains legacy well ownership information, inherited from the SLOFCWCD project as well as ownership information provided by SSJWD and EPCWD programs. The compilation of historically monitored wells will be overlaid with an up-to-date Assessor’s Parcel Number (APN) dataset in GIS to verify and/or identify current well owners for each of the wells contained in the dataset. It is assumed that the APN dataset will be made available by the County of San Luis Obispo Groundwater Sustainability Department (GSD). An inventory will be compiled of well owner information, including contact information for well owners and property managers, and other information necessary to access the wells.

⁹ Six exceptions to this include the four newly installed City of Paso Robles SEP wells and two historically monitored SLOFCWCD program wells located near reported Dry Wells on Jardine Road (<https://mydrywell.water.ca.gov/report/publicpage>).

Task 2 – Establish Communication with Well Owners

With priority given to the Key Wells identified in the provided materials, the next step is to contact the current well owners and gather the following information:

- Verify the well information on file to the best ability of the landowner
- Document how the well is used. If a pumping well, determine how often the well is pumping and inquire if there are periods when the well can be shut down for 24-hours prior to taking a water level measurement,
- Review their current well monitoring agreement or if they don't have one, discuss creating an agreement via a consent form,
- Discuss data privacy concerns, if any, and encourage public sharing of data¹⁰,
- Inquire if the well already has a private continuous monitoring device, if so ask if they willing to share the data,
- Make a plan to visit each well.

Task 3 – Research Missing Well Information

If well completion information is missing in the materials provided and the well owner is unable to provide a well completion report (WCR) then use the County EHS dataset to look for potential WCR matches to the well in question. If a WCR is identified with high to moderate confidence (primarily based on spatial proximity) review the lithologic log and the perforated interval to determine aquifer of completion, record in the master spreadsheet and GIS, and print a copy of the WCR to bring to the field (Task 4).

Task 4 – Field Investigation

Each well identified in Task 2 shall be visited to evaluate suitability for manual water level monitoring and for continuous monitoring based on the physical characteristics of the well and wellhead. The field visit shall be documented with photography and detailed notes. While in the field, the well shall be evaluated for monitoring potential as follows:

- Document access to the well including identification of private roads and gates
- Document size of access port(s),
- Determine if a sounding tube exists,
- Document well-head configuration including dimensions of discharge pipes and relative locations of well-head infrastructure to access ports to ensure enough space is available for manual monitoring and/or installation of continuous monitoring equipment,
- Document telemetry feasibility by identifying available cell service or local internet,
- Document site for well-head modification feasibility for well servicer.

Task 5 – Identify Additional Wells in Areas of Concern

This task is meant to address monitoring deficiencies in the alluvial aquifer (key to determining surface water-groundwater interactions), and to address monitoring deficiencies associated with ongoing Dry Well⁷ occurrences, generally reported for rural domestic wells. Additional wells, beyond the key wells listed above, will need to be identified within areas of concern and added to the monitoring network. The areas of concern for monitoring the alluvial aquifer include areas adjacent to the Salinas River, Huer Huero Creek, Estrella Creek, Cholame Creek, and San Juan Creek. The areas of concern for Dry Wells are indicated by the distribution of dry well reports, primarily in the Almond Drive, Jardine Road, Geneseo Road, and Ground Squirrel Hollow areas. These additional wells may include wells that have been previously monitored by SLOFCWCD, existing wells that have not been previously monitored and/or new dedicated monitoring wells, such as the potential new well locations identified by Todd Groundwater in developing the revised GSP, and the proposed additional SEP wells.

¹⁰ Wells with confidentiality agreements can still be monitored but are not RMS well candidates.

For any existing wells added to the monitoring network, a workflow similar to that specified in Tasks 1 through 4 will be followed. Any additional wells identified shall be added to the master spreadsheet and GIS.

Task 6 – Investigate El Pomar Junction Area

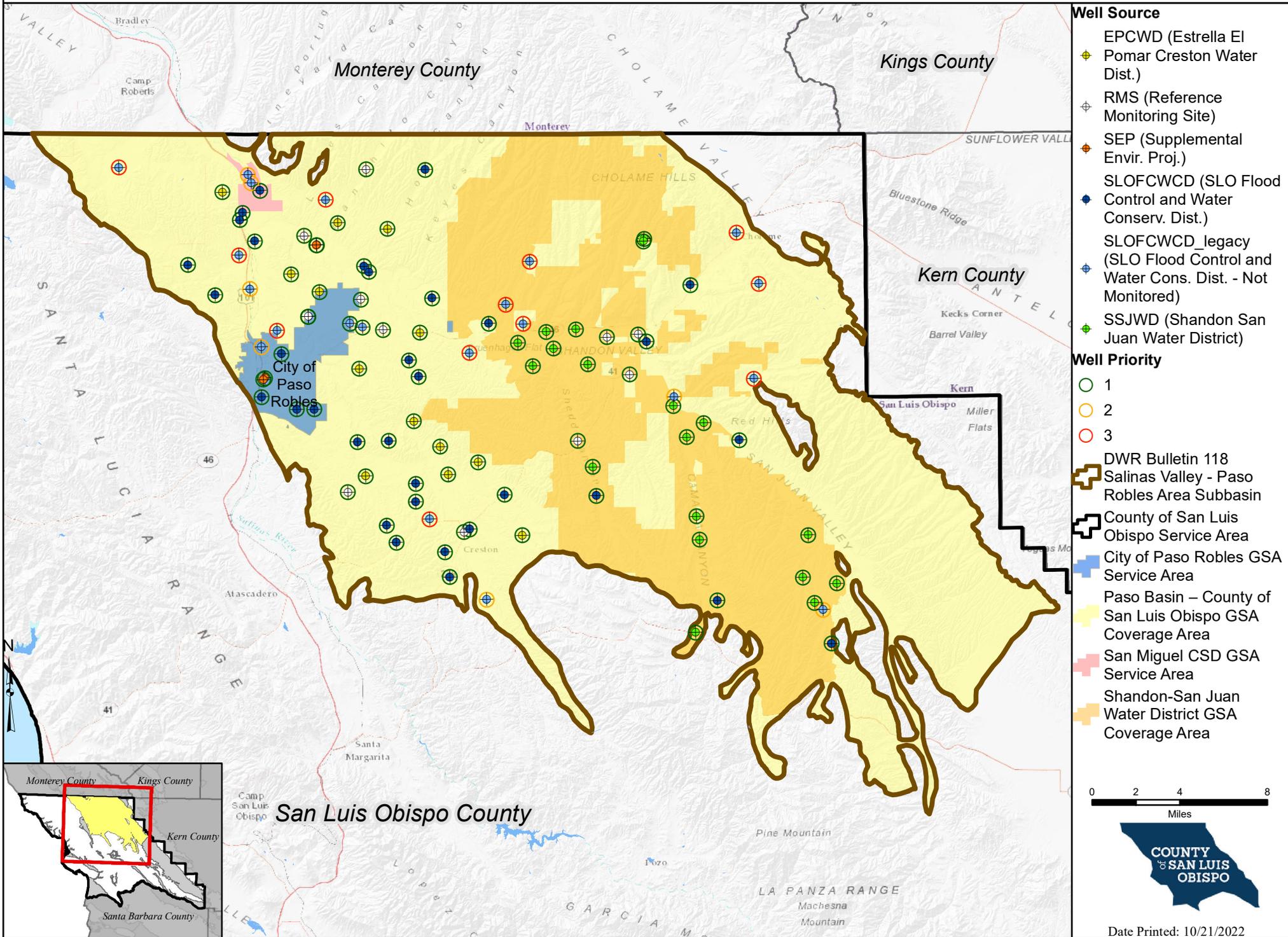
During review of WCRs provided by County EHS, GSI discovered compelling lithologic evidence indicating that several wells located in the El Pomar Junction area, including active irrigation wells, are completed either partially or completely within the Santa Margarita Formation, a non-Basin aquifer. Among these wells are three of the existing RMS wells (27S/12E-13N01, 27S/13E-30J01, and 27S/13E-30N01), which each appear to be completed entirely within the Santa Margarita Formation. In this task further review of El Pomar Junction area WCRs and any other discoverable hydrogeologic information shall be undertaken to verify these findings and more clearly identify distinct sets of Paso Robles Formation wells, Santa Margarita Formation wells, and wells that straddle both aquifers. In addition, a separate work plan shall be developed to assess the connectivity between the non-Basin Santa Margarita Formation aquifer and the Paso Robles Formation aquifer within this area to inform future monitoring efforts and groundwater management decisions.

Task 7 – Recommend a Refined RMS Network and Associated Sustainable Management Criteria

The ultimate goal of this work plan is to identify a refined set of RMS wells equipped with continuous monitoring devices that are ideally suited to annually evaluate the Basin condition in regard to the six undesirable results. The refined RMS well network shall be spatially distributed to minimize data gap areas. This work product will be a culmination of the prior tasks and will require input and coordination with Basin stakeholders and Groundwater Sustainability Agencies (GSA) staff and executive committee. It is assumed that sustainable management criteria (SMCs) established for the refined RMS network will be subject to future revisions as new water level datasets are developed and the understanding of Basin hydrogeology improves.

We value this opportunity to provide you with this work plan, and we look forward to continuing to serve you on this important project. Please contact us if you have any questions.

Paso Water Basin Monitoring Network Expansion Project



- Well Source**
- ◆ EPCWD (Estrella El Pomar Creston Water Dist.)
 - ⊕ RMS (Reference Monitoring Site)
 - ◆ SEP (Supplemental Envir. Proj.)
 - ◆ SLOFCWCD (SLO Flood Control and Water Conserv. Dist.)
 - ◆ SLOFCWCD_legacy (SLO Flood Control and Water Cons. Dist. - Not Monitored)
 - ◆ SSJWD (Shandon San Juan Water District)

- Well Priority**
- 1
 - 2
 - 3

- ◆ DWR Bulletin 118 Salinas Valley - Paso Robles Area Subbasin
- ◆ County of San Luis Obispo Service Area
- ◆ City of Paso Robles GSA Service Area
- ◆ Paso Basin – County of San Luis Obispo GSA Coverage Area
- ◆ San Miguel CSD GSA Service Area
- ◆ Shandon-San Juan Water District GSA Coverage Area

