

McMullin Area Groundwater Sustainability Agency

Groundwater Monitoring Indicator Wells

WaterSMART Small-Scale Water Efficiency
Grant Application FOA# BOR-DO-20-F006



Applicant: McMullin Area Groundwater Sustainability Agency
Address: 275 S. Madera Avenue, Suite 301; Kerman, CA 93630

Project Manager: Matt Hurley, General Manager
Address: 275 S. Madera Avenue, Suite 301; Kerman, CA 93630
E-mail: mhurley@mcmullinarea.org
Phone: (559) 515-3339
Website: www.mcmullinarea.org

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TECHNICAL PROPOSAL AND EVALUATION CRITERIA

Executive Summary

The McMullin Area Groundwater Sustainability Agency (MAGSA), is proposing to implement a data collection system for the twenty-three monitoring wells used for groundwater level observation in this newly-established Groundwater Sustainability Agency (GSA) near Fresno, CA. This intent of this project will be to equip each well with a pressure transducer to measure groundwater level, a totalizing flow meter, and a remote telemetry unit (RTU) for real-time data collection and transmission to groundwater managers. Most of these wells are large capacity production wells for agriculture. Data gathered will be used for monitoring groundwater levels for groundwater management purposes within the GSA, monitoring saltwater intrusion, and groundwater extraction records will be used to calibrate groundwater models, and

Background Data

MAGSA was formed in 2017 pursuant to the 2014 Sustainable Groundwater Management Act (SGMA) of the State of California. SGMA requires governments and water agencies of high- and medium priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. For critically over-drafted basins, including the Kings Subbasin where MAGSA is located, the deadline for achieving sustainability is 2040.

MAGSA was formed as a Joint Powers Authority that is comprised of the County of Fresno, the Raisin City Water District, and the Mid-Valley Water District. A copy of the Joint Powers Agreement is available on the GSA's website (<https://www.mcmullinarea.org>). The County of Fresno has land use authority over the portion of the basin that MAGSA intends to manage. The Mid-Valley and Raisin City Water Districts are California Water Districts formed under the provisions of Water Code sections 34000-38500 with the ability to acquire, plan, construct, maintain, improve, operate and keep in repair the necessary works for production, storage, transmission, and distribution of water for irrigation, domestic, industrial, and municipal purposes.

The JPA gives MAGSA the authority to fulfill the role of a GSA for the McMullin area and to develop, adopt and implement a Groundwater Sustainability Plan (GSP). Mid Valley Water District and Raisin City Water District are both local public agencies.

The MAGSA Joint Powers Authority provided notice to DWR as required by Water Code section 10723.8, establishing MAGSA as the **exclusive** GSA pursuant to Water Code section 10723.8(c) for purposes of managing groundwater under Water Code sections 10720 et seq. (the Sustainable Groundwater Management Act of 2014 or SGMA) for the portion of the Kings Subbasin that lies within the boundaries of the GSA, as seen in Figure 1, "Groundwater Sustainability Agencies in the Kings Subbasin." The JPA, through reference to and incorporation of SGMA, empowers MAGSA to develop and implement a GSP to achieve sustainable groundwater management within its boundaries, in compliance with the mandates and timelines contained in SGMA.

Accordingly, through the SGMA notification process, MAGSA has been deemed the exclusive GSA within the designated territory empowered to sustainably manage the McMullin area of the Kings Subbasin in compliance with SGMA.

On January 28, 2020, MAGSA and the six other GSAs in the Kings Subbasin jointly submitted their Groundwater Sustainability Plans (GSP) to the Department of Water Resources for initial review. Pursuant to SGMA legislation, completion of this action immediately and fully vested all of the oversight and enforcement powers of a GSA with the MAGSA.

The Board has adopted a phased approach to sustainability, allowing a landowner room to adjust and continue to thrive over the 20-year implementation period. The goal of reducing groundwater overdraft by 91,000 acre feet has been divided into phases. The Phase 1 target amount is a 10% reduction or 9,110 acre feet by 2025.

The MAGSA Board and Staff will immediately begin work toward achieving this target through implementation of management actions and projects and programs identified in the GSP, such as implementation of enhanced efficiency irrigation conservation practices, a robust groundwater extraction data gathering and management system for water marketing and accurate groundwater level monitoring for evaluating change in storage in the local aquifer, among others. The Board continues to strongly encourage involvement and input by landowners and stakeholders in fleshing out the most effective groundwater sustainability programs that can immediately be implemented.

Project Location

The Kings Subbasin is located within the southern part of the San Joaquin Valley Basin in the Central Valley of California. It is bordered by five groundwater subbasins which include the Madrea, Kaweah, Tulare Lake, Westside, and Delta-Mendota Subbasins. MAGSA is located near Kerman, CA in western Fresno County bordered on the west by the James Bypass and on the north by the San Joaquin River. MAGSA administers the Groundwater Sustainability Plan (GSP) for wells in Fresno County. The 23 observation wells prioritized for this project are spatially distributed throughout the MAGSA District. MAGSA is one of seven GSAs within the Kings Subbasin as shown in **Figure 1: Groundwater Sustainability Areas in the Kings Subbasin**.

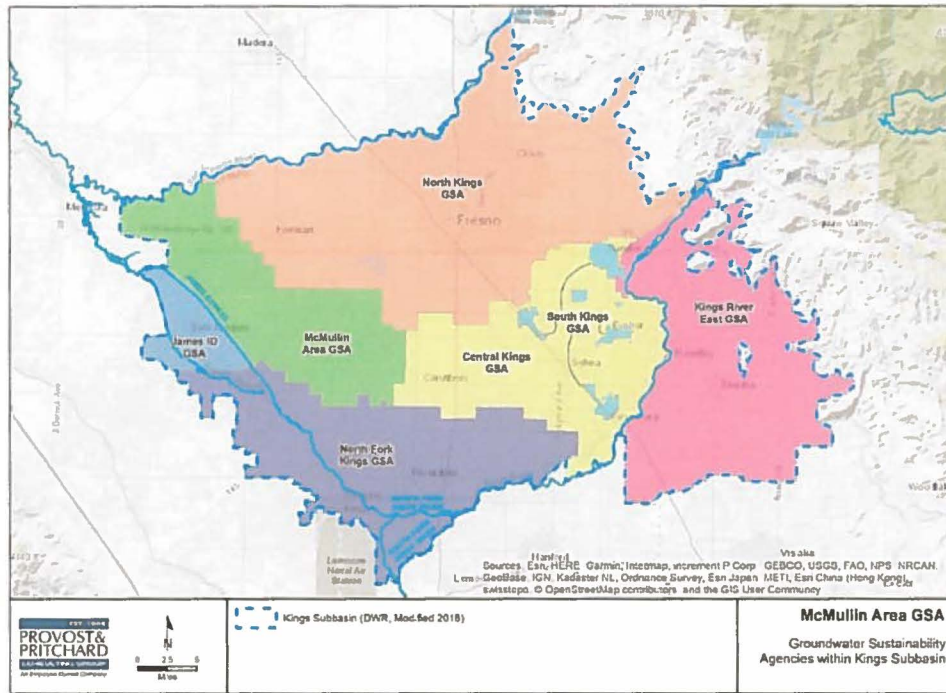
The District covers around 120,635 acres in Fresno County. District boundaries include three other public entities including the Mid-Valley Water District (MVWD), Raisin City Water District (RCWD) and Fresno County.

The area consists of a combination of large and small farming operations that generally host permanent crops and annual row crops. Farmed agricultural land represents a large majority of the total area. Farm operations within the area generally include vineyards, almonds, alfalfa, dairy farms, poultry farms, and various row crops. Agricultural lands represent the vast majority of the district with 92% of the land use area. Residential areas (single rural family dwellings) occupy

only about 1 percent of the total area. A few industrial units which comprise mainly manufacturing assembly processing units and storage and distribution units reside in the district.

Figure 1

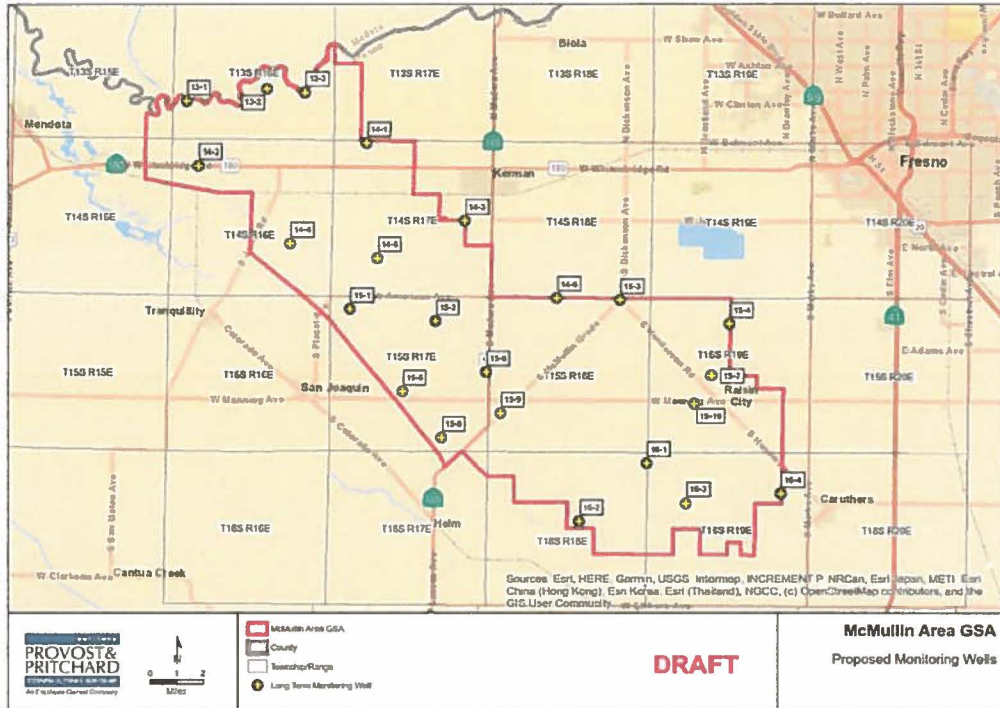
Groundwater Sustainability Areas in the Kings Subbasin



Technical Project Description and Milestones

Groundwater levels have been measured in the GSA on a bi-annual basis since the 1950s by the CA DWR. For the past several years, DWR has also asked local agencies to collect and report groundwater level data under the CASGEM (California Statewide Groundwater Elevation Monitoring) program. KRCD (Kings River Conservation District) has also operated and maintained a groundwater monitoring network from 1989 until current day. MAGSA will conduct future monitoring of the 23 “Indicator” wells in the monitoring network.

Figure 2
MAGSA Indicator Wells



In general, groundwater levels in these wells have not been measured on a regular basis resulting in temporal data gaps or data of insufficient quality. A small number of private wells have been monitored consistently and have detailed temporal groundwater elevation data; however, most landowners have not performed measurements at all or, at best, they have monitored wells on a sporadic “as needed” basis, and the timing of fall and spring measurements has not been consistent. In the future, each agency in the Kings River Basin (including MAGSA) will monitor groundwater levels at least every March and October to provide consistency in the measurements unless funding for groundwater level instrumentation is achieved under this proposal.

The MAGSA Board plans to alleviate the issue of temporal data gaps and poor quality data by equipping all monitoring wells with real-time telemetry to continually retrieve groundwater level data as well as pumping data from the same wells to enhance local modeling efforts and monitor aquifer storage for groundwater management purposes.

This proposal requests funding for a one-year project to install totalizing flow meters, pressure transducers for groundwater level monitoring, and remote telemetry units (RTUs) on **all twenty-three indicator wells** that have been historically used for groundwater level monitoring

in MAGSA. This project will establish consistent, reliable, and high quality data to the district for aquifer storage estimates and groundwater management decisions.

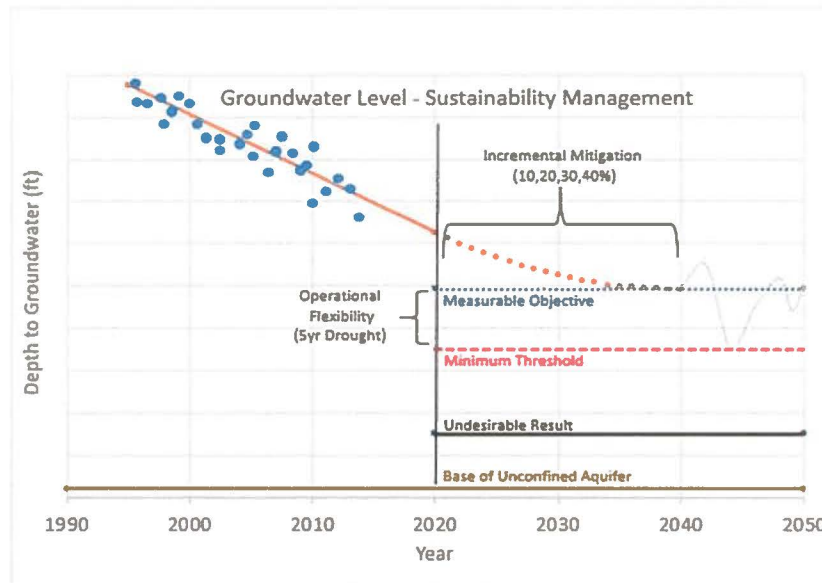
Groundwater storage capacity will be calculated using local groundwater levels and specific yield values. This methodology has proven to be adequate in estimating annual change in groundwater storage in other regions of the Kings Basin. Specific yield values for various depths have been determined through extensive literature research. Groundwater storage calculations are largely dependent on the groundwater level monitoring network, which is being enhanced with telemetry and water level instrumentation following the formation of the GSA..



Figure 3 contains a graph that represents the **sustainable management criteria** based on measured groundwater levels in the twenty-three Indicator Wells in MAGSA. Each Indicator Well in MAGSA will have such a graph. The GSAs within the Kings Basin have defined the *Undesirable Result* for groundwater levels to be significant and unreasonable when either the water level has declined to a depth that a new productive well cannot be constructed, or when the water level has declined to a depth that water quality cannot be treated for beneficial use.

The **Minimum Threshold** was set at an elevation to allow operational flexibility of an anticipated groundwater level decline during a 5-year drought. The actual decline during the historic 2012-2016 drought was determined and the **Minimum Thresholds** were set by adding that distance below the **Measurable Objective** for each Indicator Well in the network. MAGSA's groundwater management objective will be to maintain groundwater levels as close to the **Measurable Objective** as possible to preserve storage in the aquifer above the **Minimum Threshold** and prevent excessive groundwater declines. Accurate measurement will be critical to the successful implementation of management actions assuring compliance.

Figure 3: Sustainable Management Criteria Graph



The primary effect of the chronic lowering of the groundwater table has caused wells to be drilled deeper and deeper to maintain productivity. Without correcting the basin to groundwater sustainability and stabilizing the water table, the decades long trend of drilling deeper and deeper wells would continue causing increased financial burden on stakeholders. In some areas of the basin, bedrock is shallow and the availability of supply above the bedrock could be diminished such that productive wells could not be constructed if water levels are not stabilized above these levels. In some portions of the basin, as water levels decline, the water quality changes are significant enough to require additional treatment. Stabilizing the water table will reduce the changing conditions and provide for more sustainable long-term conditions within the basin.

Upon the successful award of this proposal, MAGSA will proceed with procuring the equipment necessary for this project. Pressure transducers will be ordered from the manufacturer based on well construction records and depth to water. Totalizing flow meters will be sized according to measurements of well discharge pipes and models will be selected that will best accommodate proper installation for accurate readings. Remote telemetry units will be purchased that will be capable of accepting electronic signals from the flow meters as well as the pressure transducers.

Collecting the necessary measurement data on the Indicator Wells will begin in October, 2020 to ensure that proper sizing of equipment will be ordered from the manufacturer for high quality data collection. Totalizing flow meters will be purchased and installed in November, 2020. In January, 2020 the pressure transducers and RTUs will be purchased based on well measurements and deployed to Indicator Wells in February, 2020. Following the deployment, a final report will be prepared for the Bureau by June, 2021.



Evaluation Criteria

Evaluation Criterion A—Project Benefits: *Up to 35 points may be awarded based upon evaluation of the benefits that are expected to result from implementing the proposed project. This criterion considers a variety of project benefits, including the significance of the anticipated water management benefits and the public benefits of the project. This criterion prioritizes projects that modernize existing infrastructure in order to address water reliability concerns, including making water available for multiple beneficial uses and resolving water related conflict in the region.*

- *What are the benefits to the applicant's water supply delivery system?*

Groundwater elevation will be used as the sole indicator for the chronic lowering of groundwater levels. The minimum thresholds used for groundwater levels will set the overall groundwater storage volume desired to be maintained. Groundwater elevation data will be utilized to track the effectiveness of water conservation practices to improve groundwater storage in MAGSA and provide guidance to Board members in making decisions to implement controls such as tiered pricing or restrictive allocations necessary to reverse groundwater declines

Real-time telemetry will gather continuous data that will ensure the highest accuracy of (and greatest confidence in) groundwater level readings for the GSA. Daily water level records gathered in real-time will eliminate temporal data gaps that have existed within the area for decades. Continuous water level recordings during times of non-pumping will show gradual increases that will represent trends of peak groundwater recharge rather than one-time readings in the Spring or Fall improving the quality of data as well.

RTUs will regularly supply flow and groundwater level data in real-time without the need for MAGSA staff to drive to the well sites enhancing the environment by conserving staff time and resources including vehicle mileage, pollution and wear and tear.

Groundwater modeling in MAGSA until now has consisted of Hydro-geologic Conceptual Models. Conceptual models consist of two scaled cross-sections, map(s) of physical characteristics, topographic information, surficial geology, soil characteristics, surface water bodies, source and point of delivery for imported water supplies. Real-time flow data coupled with groundwater elevation data will represent a significant asset to improved groundwater modeling in the district.

- *Extent to which the proposed project improves overall water supply reliability*

Accurate groundwater elevation data will be THE greatest measure of groundwater sustainability and effectiveness of management practices within the GSA. MAGSAs goal is to manage the local aquifer such that the water table stays as close as possible to the Measurable Objective (**see Figure 3**). The Measurable Objective has been set above the Minimum Threshold which ensures that the water table does not reach levels representing an undesirable result. Water table conditions are considered to be significant and unreasonable when either the

water level has declined to a depth that a new productive well cannot be constructed, or when the water level has declined to a depth that water quality cannot be treated for beneficial use.

The amount of aquifer storage between the Measurable Objective and the Minimum Threshold represents Operational Flexibility. This is a quantity of groundwater that represents a cautionary period for irrigators to make changes to their farming operations such as deficit irrigation, changing crops, idling acres or implementing other water conservation practices to limit aquifer depletion.

In some portions of the Subbasin, as water levels decline, the groundwater quality changes could potentially be significant enough to require additional treatment, but ongoing evaluation of groundwater quality data is needed to understand these potential changes. Stabilizing the water table should reduce changing conditions potentially associated with declining groundwater levels and provide for more sustainable long-term conditions within the Subbasin.

- *The expected geographic scope benefits from the proposed project (e.g., local, sub-basin, basin)*

MAGSA covers approximately 120,635 acres in Fresno County. The twenty-three indicator wells are located throughout the McMullin Area GSA (**Figure 2**). These indicator wells are spatially located evenly across the GSA. The method of groundwater monitoring presented in this proposal has the potential to expand to the remaining Kings Subbasin GSAs once the other GSAs see its effectiveness.

- *Extent to which the proposed project will increase collaboration and information sharing among water managers in the region*

All seven GSAs in the Kings River Basin have communicated during the process of the development of their GSPs and have coordinated their groundwater monitoring programs. The remaining Kings River Basin GSAs will also have similar groundwater sustainability management criteria as in Figure 3 of this proposal to gauge success of their similar practices to achieve groundwater sustainability. The implementation of this groundwater monitoring system will facilitate communication of more accurate data across the Kings River Basin.

Reporting efforts with the CA DWR will be greatly improved as a result of this project. The technology deployed on Indicator Wells in MAGSA will automatically collect water level data for developing reports to deliver water level data to the DWR and other agencies such as the USGS.

- *Any anticipated positive impacts/benefits to local sectors and economies (e.g., agriculture, environment, recreation, tourism)*

MAGSA covers over 120,000 acres in the Central Valley irrigated by approximately 1,000 irrigation wells. Absent sound groundwater management by MAGSA, groundwater levels would continue to decline and cause many irrigation wells to go dry. The MAGSA Groundwater Sustainability Plan allows for continued agricultural production in the region.

Groundwater management practices implemented by MAGSA will also preserve groundwater for municipal and industrial uses by maintaining local groundwater elevations above the Minimum Threshold for these beneficial uses.

- *Extent to which the project will complement work done in coordination with NRCS in the area (e.g., with a direct connection to the district's water supply). Describe any on-farm efficiency work that is currently being completed or is anticipated to be completed in the future using NRCS assistance through EQIP or other programs.*

MAGSA enjoys a very good working relationship with the USDA, NRCS and local Tranquility RCD offices in promoting and incentivizing Irrigation Water Best Management Practices. MAGSA intends to partner with federal agencies to utilize EQIP programs to implement water conserving irrigation water management practices. Upon the successful implementation of this project, MAGSA intends to make an application to the Resource Conservation Partnership Program (RCPP) for additional complementary Irrigation Water Management practices such as soil moisture monitoring and weather stations which will further promote water conservation in the Kings River Subbasin.

Evaluation Criterion B—Planning Efforts Supporting the Project: *Up to 35 points may be awarded based on the extent to which the proposed on-the-ground project is supported by an applicant's existing water management plan, water conservation plan, System Optimization Review (SOR), or identified as part of another planning effort led by the applicant. This criterion prioritizes projects that are identified through local planning efforts and meet local needs.*

Describe how your project is supported by an existing planning effort.

- *Does the proposed project implement a goal or address a need or problem identified in the existing planning effort?*

Yes, this project relates directly to the MAGSA Groundwater Sustainability Plan (GSP) drafted and submitted to the State of California on January 28, 2020. According to SGMA legislation, this action fully vests all oversight and enforcement powers of groundwater management with MAGSA. This project enables MAGSA to implement goals described in the following two chapters of the MAGSA GSP.

Section 4.1 of the MAGSA GSP establishes the Sustainability Goal for the McMullin GSA. The coordination efforts between the GSAs have resulted in initial quantities for each GSA to mitigate in order to correct current and future conditions. For MAGSA, this is **91,100 AF** per year. These quantities and each GSAs respective obligation will continue to be monitored and evaluated as additional information is gathered.

The basin has agreed to a phased approach of increasing mitigation of groundwater extraction to achieve sustainability. The proposed mitigation schedule is shown in **Table 4-2** from Chapter 4 of the MAGSA GSP.

Table 4-2 Overdraft Mitigation Schedule

Period	Percent of Overdraft Mitigated	Cumulative Mitigation
2020-2025	10%	10%
2025-2030	20%	30%
2030-2035	30%	60%
2035-2040	40%	100%

To achieve the goal of decreased groundwater extraction over time, MAGSA will implement incentives to meter all large capacity groundwater wells in the district and equip meters with real-time telemetry for groundwater management activities. MAGSA is in the initial phases of implementing a groundwater marketing program aided by a grant from the Bureau of Reclamation. The progress of achieving success of this Sustainability Goal will be monitored by the twenty-three Indicator Wells (**Figure 2**) that will be enhanced by this proposal.

Chapter 5 of the MAGSA GSP identifies the monitoring network being developed by the MAGSA that will collect data to determine short-term, seasonal, and long-term trends in groundwater and related surface conditions. This information will yield data necessary to support: **1)** the implementation of this Plan, **2)** evaluation of the effectiveness of this Plan, and **3)** decision making by the MAGSA management.

This chapter identifies the twenty-three “Indicator” wells to be used for groundwater level monitoring. These wells have a history of being monitored by a number of agencies including the USGS, CA DWR, and the KRCD. As a result, the continued monitoring of these wells will be important to tracking the long-term trends and the effects of conservation practices implemented pursuant to the MAGSA GSP.

Since the groundwater level measurement of these wells has been conducted historically by a patchwork of agencies, this has created temporal data gaps and data quality issues. Temporal data gaps are a result of insufficient frequency of monitoring. For instance, data may be available from a well only in the fall since it is rarely idle in the spring. In addition, a privately owned well may have sporadic access due to locked security fencing, roaming dogs, change in ownership, etc. Real-time well monitoring eliminates temporal gaps by continuously monitoring not only the water table elevation in the well, but also the output or production of the well to capture a true static water level when not in operation.

Quality of groundwater elevation data may also be suspect due to the inconsistency of agency personnel taking groundwater level readings in the past. Water level data may be available but be of poor or questionable accuracy. Poor data may at times be worse than no data since it could lead to incorrect assumptions or biases. The data may not appear consistent with other data in the area or with past readings at the monitoring site. The technology deployed through

this project will eliminate the inconsistencies in data collection in MAGSA and strengthen the quality of data gathered for gauging success of groundwater sustainability practices implemented in MAGSA.

- *Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects/measures.*

The MAGSA Board unanimously passed a resolution at their **Feb 3, 2020** board meeting. The Board recognizes that this project is integral to the execution of Chapters 4 and 5 of the newly-adopted GSP for the evaluation and monitoring of groundwater table elevation trends and the effectiveness of water sustainability practices in MAGSA.

Evaluation Criterion C—Project Implementation: *Up to 10 points may be awarded based upon the extent to which the applicant is capable of proceeding with the proposed project upon entering into a financial assistance agreement. Applicants that describe a detailed plan (e.g., estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion.*

- *Describe the implementation plan for the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.*

July, 2020: Successful notification of award from the Bureau
Sept, 2020: Sign contract with the Bureau
Oct, 2020: Order flowmeters from manufacturer based on well measurements
Nov, 2020: Contractors install flowmeters on groundwater monitoring wells
Jan, 2021: Order Remote Telemetry Units (RTUs) and pressure transducers.
Feb, 2021: Deploy RTUs and pressure transducers at monitoring wells.
June, 2021: Prepare Final Project Report for Bureau

- *Describe any permits that will be required, along with the process for obtaining such permits.*

No permits are required for this project.

- *Identify and describe any engineering or design work performed specifically in support of the proposed project.*

No engineering or design work is required for this project. McCrometer will provide technical support for installation of meters, telemetry equipment, and pressure transducers to ensure proper installation for accuracy of data.

- *Describe any new policies or administrative actions required to implement the project.*

No new policies or administrative actions are required for this project.

- *Describe how the environmental compliance estimate was developed. Have the compliance costs been discussed with the local Reclamation office?*

MAGSA staff has spoken with Tom Hawes from the Sacramento Bureau office. Mr. Hawes estimated Bureau Environmental compliance costs to be \$1,000 for the project. Since meters and telemetry equipment will be installed at existing pump sites, environmental compliance will be minimal.

Evaluation Criterion D— Nexus to Reclamation: *Up to 10 points may be awarded based on the extent that the proposal demonstrates a nexus between the proposed project and a Reclamation project or activity. Describe the nexus between the proposed project and a Reclamation project or activity, including:*

- *Is the proposed project connected to a Reclamation project or activity?*

Mid-Valley Water District (MVWD) receives on occasion San Joaquin River Section 215 water from the Friant Division of the Central Valley Project (CVP). The Friant Dam is owned and operated by the US Bureau of Reclamation (USBR). The USBR is also the lead agency for the San Joaquin River Restoration, which has resulted in significant delivery curtailments to Friant contractors. Raisin City Water District (RCWD) and MVWD are working toward developing programs that will allow them to take the Friant division flood water either directly from the Bureau or via other CVP contractors like FID.

- *Does the applicant receive Reclamation project water?*

MVWD, one of the participating agencies in MAGSA, may receive USBR 215 water when available.

- *Is the project on Reclamation project lands or involving Reclamation facilities?*

No, however, MAGSA is adjacent to several USBR projects listed above.

- *Is the project in the same basin as a Reclamation project or activity?*

Yes, MAGSA is in the same basin as the Friant Dam, the San Joaquin River Restoration Project and the Central Valley Project.

- *Will the proposed work contribute water to a basin where a Reclamation project is located?*

The Central Valley Project delivers water through the San Joaquin River system and the Delta Mendota Canal to the southern-most contractors in the San Luis and Delta Mendota Water Authority; namely the Tranquillity Irrigation District and the James Irrigation District. Both of these districts are directly adjacent to MAGSA. Tranquillity ID is within the Delta Mendota Subbasin and the James ID is within the Kings Subbasin. Accurate measurement of the well extractions will assist in area water management, assuring that Federal deliveries will be given their most effective use in a conjunctive use groundwater-surface water regime, resulting, ideally, in greater groundwater retention within each subbasin.

- *Will the project benefit any tribe(s)?*

No tribes or federal lands are located within the MAGSA Plan area.

Evaluation Criterion E— Department of the Interior Priorities: *Up to 10 points may be awarded based on the extent that the proposal demonstrates that the project supports the Department of the Interior priorities. Please address those priorities that are applicable to your project. It is not necessary to address priorities that are not applicable to your project. A project will not necessarily receive more points simply because multiple priorities are addressed. Points will be allocated based on the degree to which the project supports one or more of the Priorities listed, and whether the connection to the priority(ies) is well supported in the proposal.*

1. Creating a conservation stewardship legacy second only to Teddy Roosevelt

a. Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment

Implementing real-time monitoring of groundwater table elevations to gauge the effectiveness of management practices with respect to sustainable management criteria represents a sound scientific approach to groundwater resource management.

Telemetry for groundwater level observation and totalizing flow meters brings groundwater management into the 21st century. Real-time data is used in the financial sector, health and safety monitoring, and several other uses – why not for water management for food production? Telemetry is already widely used on single farms for pivot controls, soil moisture monitoring, or others uses. Conversely, this project will facilitate the use of real-time data for groundwater management on a watershed basis.

As a leader in local water planning and outreach efforts, the MAGSA will utilize remote monitoring of water management sensors to conserve water on irrigated lands and improve the efficiency of augmentation practices in the Kings River basin. This represents a science-based approach to irrigation best management practices (BMPs) by providing real-time water management data to district managers and water users in the MAGSA.

3. Restoring trust with local communities

a. Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands;

In MAGSA, those closest to managing groundwater resources are the farmers of irrigated land and the staff and board members of the MAGSA. This project will give them the tools to not only better manage groundwater resources, but also improve the relationships with the bordering GSAs (**Figure 1**) that have the same responsibilities in managing water resources in the Kings River Basin.

b. Expand the lines of communication with Governors, state natural resource offices, Fish and Wildlife offices, water authorities, county commissioners, Tribes, and local communities.

Real-time monitoring of groundwater levels in MAGSA will streamline data collection and reporting efforts within the GSA for communication with state and federal agencies as well as other GSAs in the Kings River Basin.

4. *Striking a regulatory balance*

a. Reduce the administrative and regulatory burden imposed on U.S. industry and the public;

Provide real-time feedback to water managers to gauge effectiveness of conservation practices implemented in MAGSA. This will reduce the regulatory burden on water users in MAGSA by only implementing practices that are necessary to satisfy sustainable management criteria.

5. *Modernizing our infrastructure*

a. Support the White House Public/Private Partnership Initiative to modernize U.S. infrastructure

This project represents a Public/Private partnership between the Bureau, MAGSA, and McCrometer. McCrometer will be instrumental in not only the manufacture of equipment deployed, but also providing training for the installation of this telemetry equipment and for the distribution of data to water users.

b. Remove impediments to infrastructure development and facilitate private sector efforts to construct infrastructure projects serving American needs;

This proposal will remove a financial impediment to the development of a virtual data network for groundwater measurement for groundwater managers and users in the MAGSA. This network will not require traditional infrastructure of radio towers or other physical structures. This will create a stand-alone network independent of other entities that may increase transmission costs.

Project Budget

Funding Plan and Letters of Commitment

MAGSA's Board of Directors have budgeted funds collected from member assessments to pay for the matching portion of the monitoring equipment. No expenses are to be incurred prior to the project start date. No funding requests are pending with any other entities. The cash match provided by MAGSA would be 55%. No outside funding sources are included in this proposal and consequently no letters of commitment are attached.

Funding Sources	% of Total Study Cost	Total Cost by Source
Costs to be reimbursed with the requested federal funding	45%	\$75,000
Costs to be paid by applicant, MAGSA	55%	\$92,268
Totals	100%	\$167,268

Budget Item Description	Computation \$/unit	Quantity	Quantity Type (hours/days)	Total Cost
Salaries and Wages				
	No federal funds to be used for salaries/wages			
Fringe Benefits				
	No fringe benefits provided by this project			
Travel				
	No federal funds to be used for travel to install equipment			
Equipment				
Remote Telemetry Units	\$1,738.25	23		\$39,980
McMag3000	\$2,755.20	10		\$27,552
DuraMag	\$2,549.60	10		\$25,496
UltraMag	\$4,828.80	3		\$14,486
Subtotal				\$107,514
Supplies and Materials				
Groundwater Monitoring Transducers (150')	\$ 1,500.97	11		\$16,511
Groundwater Monitoring Transducers (350')	\$ 1,811.95	12		\$21,743
Subtotal				\$38,254
Contractual/Construction*				
Environmental Compliance	\$1,000.00	1		\$1,000
Meter Installation Contractor	\$500.00	23		\$11,500
McCrometer Tech Support	\$1,800.00	5		\$9,000
Subtotal				\$21,500
Total Project Costs				\$167,268

Budget Narrative

MAGSA staff will contract with local irrigation contractors and/or McCrometer for the tasks of meter and telemetry installation. Materials and supplies required for the SCADA project consist of one totalizing flow meter, one pressure transducer for groundwater level observation, and one remote telemetry unit (RTU) installed on each of the 23 Indicator Wells. An average cost per unit of approximately \$5,900 was determined by pricing of materials from McCrometer, Inc. The telemetry will be utilized by MAGSA staff and Board members when determining effectiveness of practices implemented to achieve Sustainable Management Criteria. McCrometer will extend discount pricing to MAGSA for this project that would not be available on a retail basis providing an additional benefit to the project that is not reflected in the budget. A letter of participation from McCrometer is included in **Attachment 2**.

Environmental and Cultural Resource Considerations

- *Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.*

No, The project will not impact the surrounding environment, no earth-disturbing activity will occur at each of the 23 project sites.

- *Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?*

No. The access to wells and installation of the project equipment will not impact any threatened or endangered species or their habitat.

- *Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States?" If so, please describe and estimate any impacts the proposed project may have.*

No.

- *When was the water delivery system constructed?*

The water delivery structures being measured in this grant application are the 23 Indicator Wells. Irrigation well drilling started in the early 1900s and proliferated in the later 1900s following the advancement of reverse-rotary mud drilling and rural electrification.

Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

No, The project sites are on existing wells, the areas immediately surrounding the wells are in active farmland with access roads leading to the well.

- *Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.*

None of these sites have cultural or historical significance, nor to MAGSA's understanding have any of the 1,000 wells in the GSA been registered with the State Historical Preservation Office.

- *Are there any known archeological sites in the proposed project area?*

No known archeological sites exist in the project areas proposed.

- *Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?*

No, to the contrary, this project has the potential to have a positive effect on low income or minority populations since the agricultural economy will be supported by this project.

- *Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?*

No sacred Indian sites or tribal lands exist in the project locations.

- *Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?*

No, the project will not involve any excavation or movement of soils, so no effect on any noxious weed species in the project areas.

OFFICIAL RESOLUTION

The MAGSA Board of Directors adopted a resolution at their meeting held on Feb 3, 2020. A copy of the Resolution is attached hereto as **Attachment 1**.

UEI AND SAM

MAGSA is registered with SAM, and the UEI is 081310209/85BF3

Attachment 1

Resolution 2020-02

**A RESOLUTION OF THE
MCMULLIN AREA GROUNDWATER SUSTAINABILITY AGENCY
SUPPORTING SUBMITTAL OF A WATERSMART GRANT, VERIFYING
FINANCIAL ABILITY AND INTENT TO PROVIDE MATCHING FUNDS,
IF AWARDED, AND CONFIRMING INTENT TO CONFORM TO
ESTABLISHED GUIDELINES**

WHEREAS, the United States Department of Interior, Bureau of Reclamation, has announced the WaterSMART Grants for Small-Scale Water Efficiency Projects for Fiscal Year 2020 to provide financial assistance to water managers; and

WHEREAS, MAGSA has a present need for funding to deploy groundwater measurement and monitoring devices necessary under the Sustainable Groundwater Management Act (SGMA) within its area of responsibility in the State of California.

NOW, THEREFORE, BE IT RESOLVED that the McMullin Area Groundwater Sustainability Agency (MAGSA) agrees to and authorizes the following;

1. The MAGSA Directors have reviewed and support the proposal submitted;
2. MAGSA is capable of providing the amount of funding needed for the matching grant from the WaterSMART Grant; and
3. If selected for a WaterSMART Grant, MAGSA will work with Reclamation to meet the established deadlines for entering into a cooperative agreement.

RESOLVED FURTHER, that MAGSA staff is authorized and directed to take such further actions as they deem necessary or appropriate to implement the foregoing resolutions.

The foregoing resolution was approved by the **McMullin Area Groundwater Agency Board of Directors** at a regular meeting held on the 3rd day of February, 2020 by the following vote, to wit:

AYES: Abercrombie, Cameron, Pacheco, Rai, Singh

NOES:

ABSENT:

ATTEST:


Matthew Hurley, Secretary

Attachment 2



3255 West Stetson Avenue
Hemet, CA 92545 USA
Tel (951) 652-6811
Fax (951) 652-3078
www.mccrometer.com

February 26, 2020

McMullin Area GSA
Attn: Matt Hurley, General Manager
275 S Madera Avenue, Suite 301
Kerman, CA 93630

Re: Bureau of Reclamation Water Smart Application; "Groundwater Monitoring Indicator Wells"

Dear Mr. Hurley:

McCrometer is glad to be a partner in the project titled "Groundwater Monitoring Indicator Wells". McCrometer will commit to supplying meters and telemetry equipment as well as technical support upon the successful award of this grant proposal.

McCrometer has provided durable and accurate flow measurement devices for the agricultural irrigation industry for 65 years. This project will support agriculture, improved water management for groundwater preservation, and local communities in the Kings Subbasin of California.

McCrometer applauds the Bureau of Reclamation for the recognition of practices that will enhance irrigation water management in the industry of agriculture by supporting projects through the Water Smart Program and strongly encourages the approval of this proposal.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Kenneth A. Quandt".

Kenneth A Quandt
Market Development Manager
McCrometer, Inc.