July 5, 2024

Remote Data Acquisition for High Production Groundwater Wells

in the Pajaro Valley, Santa Cruz and Monterey Counties State of California

Applicant/Project Manager: Pajaro Valley Water Management Agency
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Notice of Funding Opportunity # BOR-DO-R24AS00059

Water SMART Grants: Small-Scale Water Efficiency Projects for FY'24

Contents

Executive Summary

The Pajaro Valley Water Management Agency (PV Water) is pleased to submit to the U.S. Bureau of Reclamation (Bureau) a proposal for the Remote Data Acquisition for High Production Groundwater Wells Project (Project) for remote telemetry equipment that will support water conservation activities and prevent water loss on this day of July 5th, 2024. As a Category A applicant, PV Water manages the Pajaro Valley Groundwater Basin (Basin), which is located in Central California, adjacent to Monterey Bay in Monterey, Santa Cruz, and San Benito counties, California. The Basin provides over 90% of the total water supply to the community. The largest municipality is the City of Watsonville, a Disadvantaged Community.

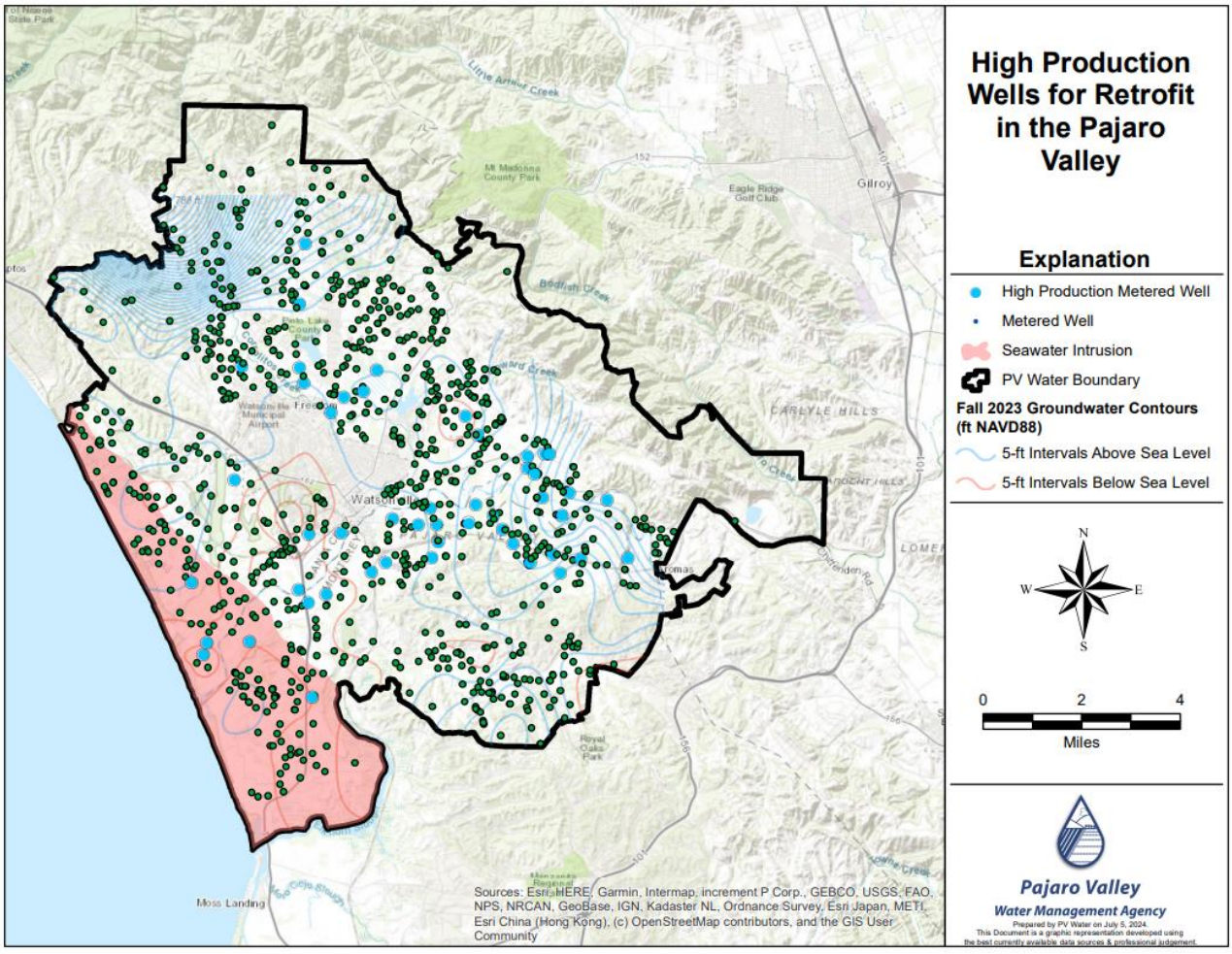
Bureau funds will be used to deploy remote telemetry equipment on **forty-nine** (49) metered irrigation wells for farms within the Basin. This project will seek to expand upon previously funded projects from USBR Water SMART grants (referenced in next paragraph). All wells to be upgraded are currently measured with mechanical propeller meters and are read manually by Agency staff on a quarterly basis. The telemetry technology proposed herein would replace the mechanical meter with a digital meter equipped with telemetry for greater dependability of operation, accuracy of data, more frequent data collection, and reduce greenhouse gas emissions by reducing the amount of driving required to collect data. The ability to acquire remote water use data will improve water conservation, aid in irrigation management, improve groundwater pumping data, and help reduce groundwater declines through more accurate irrigation management, communications technology for data transmission will be cellular. This project helps meet the goals of the Agency's 2014 Basin Management Plan (BMP).

Excessive Use of groundwater for irrigation has caused groundwater level declines in the local aquifer which is causing seawater intrusion into the freshwater aquifer of the Pajaro Valley, and because of seawater intrusion and groundwater levels below sea level the state of California has categorized the basin as critically overdrafted. Approximately 900 groundwater irrigation wells exist in the Pajaro Valley irrigating over 28,000 acres. The **forty-nine (49)** wells identified for this project are some of the highest production irrigation wells in the groundwater basin. Therefore, improving the irrigation management on these wells and the irrigated acres they serve will have the greatest impact on reducing overdraft of the Basin's aquifers. A web-based server will deliver data directly to the agency as well as to farmers for irrigation water management purposes. PV Water has just completed two successful projects funded by the Small-Scale Water Efficiency Program in FY'18 and FY '21 for similar technology implemented on the Coastal Distribution System (CDS) that provides water from the Watsonville Area Water Recycling Project (WAWRP) and on other high-capacity groundwater wells in the project area. This project is not located on a federal facility. This two-year project will expand upon the earlier projects by deploying telemetry technology to more of the highest producing groundwater wells in the Pajaro Valley, with an estimated completion date of 2026.

Project Location

The Pajaro Valley is a coastal valley that straddles southern Santa Cruz County and northern Monterey County and covers approximately 120 square miles. The Valley is bordered on the northeast by the coastal Santa Cruz Mountains and on the southwest by the Pacific Ocean with the City of Watsonville near the center at located at gps coordinates: 36.92, -121.763611. Located adjacent to Monterey Bay, the roughly 120 square mile Pajaro Valley produces approximately $1 billion of conventional and organic, high-value fruit, vegetable, and flower crops annually on about 28,000 irrigated acres. The *Remote Water Use Data Acquisition for High Production Wells project* will occur on **forty-nine** (**49)** high production wells within the PV Water agency boundaries as shown in Figure 1 below.

Figure 1. High Production Wells for Telemetry Upgrades in the Pajaro Valley



Technical Project Description

High production groundwater irrigation wells are currently metered with mechanical propeller flow meters. Existing propeller meters are primarily Water Specialties strap-on saddle meters. **Forty-nine (49)** of these meters on wells as shown in Figure 1, will be

upgraded with the addition of battery-powered McCrometer remote telemetry technology to operate free from commercial electricity. In addition, the McCrometer remote telemetry units (RTUs) will be equipped with digital (rather than mechanical) registers. Digital registers have a decreased incidence of repairs which will provide more reliable data to the Agency and water users within the PV Water.

McCrometer telemetry also features ExactRead™ technology which ensures the flow reading on the meter's register in the field and the data remotely viewed on the web are always the same. Flowmeter totalizer data is generated and transmitted directly from the meter register which eliminates miscommunication of raw pulse data that can lead to confusion and result in poor data. The McCrometer system provides battery operated wireless telemetry of flow data from Water Specialties propeller meters as well as has the capability to transmit data from other sensors such as rain gages or pressure transducers. This project proposes the use of digital registers which will improve the data quality of the meter readings received by the agency and its customers. The McCrometer system utilizes cellular service to transmit data to a web-based server where it can be accessed by the irrigator, PV Water staff, or agency hydrologists for water management purposes. The McCrometer system on groundwater wells in PV Water will be battery-powered. The McCrometer RTUs will be programmed to report water use data daily for groundwater wells. Remote water use data will also be on a web-based server.

The upgrading of meters with telemetry equipment will be conducted by PV Water staff. PV Water staff are proficient in repairs and maintenance of Water Specialties propeller meters. PV Water staff will provide the fieldwork to install the equipment. Equipment installation is estimated to take approximately 2.5 hours per site, which will include travel to and from each site in a class 1 light duty truck, coordinating lockout/tagout with the well operator, isolating and draining the water line, and removing the old meter and installing the upgraded meter with simple hand tools. McCrometer technical support staff will provide additional training to PV Water staff prior to the deployment of equipment for this project.

Evaluation Criterion A—Project Benefits (35 Points)

The addition of remote telemetry on large capacity groundwater irrigation wells will have several benefits to improved water management on the farm as well as throughout the Pajaro Valley, aiding water conservation efforts, helping to prevent excessive use of groundwater, aiding in irrigation management, and improving water use data accuracy and data collection of groundwater extraction.

The current metering program provides PV Water with water measurement data, but presents several issues that can be resolved with this proposal: manual meter reading is time consuming for agency staff and can create human errors; mechanical meter registers are more likely to malfunction than digital registers, and take longer to discover malfunction, which can result in lost water use data; remote telemetry data can be used to streamline billing practices for the agency and stabilize revenue streams; irrigators are not aware of accumulated in-season water usage until PV Water quarterly water use

bills are received. Irrigators can have the option to access PV Water's remote data to track, plan, and maximize efficient water use.

PV Water is currently working with the Resource Conservation District of Santa Cruz County (RCD), the University of California Cooperative Extension, and independent consultants to implement a Basin Management Plan agricultural water conservation program and promote Irrigation Water Management (IWM) in the Pajaro Valley. PV Water's Basin Management Plan (BMP), contains a suite of projects and programs to bring the groundwater basin into balance and halt seawater intrusion. PV Water has partnered with the RCD and other partners to implement IWM Practices such as wireless soil moisture monitoring. PV Water also provides technical support to growers to help them apply for funding through the NRCS (Natural Resources Conservation Service) EQIP to improve on-farm irrigation efficiency practices. The use of remote water use data will assist with the successful implementation of these IWM practices .

Farmers are already using meters as irrigation management tools in the Pajaro Valley; however, remote water use data will allow farmers to match water use application to crop water demands based on local evapotranspiration rates. Local evapotranspiration rates are available from CIMIS weather stations located within the Pajaro Valley. PV Water would like to improve the use of CIMIS data within the Agency for IWM and believes that remote water use data will help facilitate this.

Remote data will allow PV Water to conserve water resources by providing water system operators (and the growers/irrigators themselves) with real-time data on groundwater use for improved irrigation water management. This project allows for conjunctive use and flexibility for improved groundwater management in the Pajaro Valley to limit further seawater intrusion in the Pajaro Valley. Groundwater conserved will remain in the local aquifer for future use in times of drought. The groundwater wells prioritized for this project are the highest production wells in the Pajaro Valley and therefore the largest groundwater users. Consequently, improved management on acres irrigated by these wells will have the greatest impact on reducing the drawdown of the aquifer in the Pajaro Valley. If this project is not funded, the consequences would be that prime agricultural land in the seawater intrusion zone the Pajaro Valley could cease to be farmable which would be devastating to the local economy.

The Pajaro Valley Hydrologic Model (PVHM) is a tool collaboratively developed with the United States Geological Survey that has been used to simulate a baseline scenario 34 years into the future to estimate the water budget of the Basin. Projects built and implemented by PV Water to date were confirmed to reduce both the seawater intrusion and the groundwater over-draft problems in the future simulation. A simulation of the PVHM estimate the long-term average annual shortfall of the Basin's water budget to be approximately 12,100 AFY. Data gathered remotely from the installation of telemetry equipment to high-capacity production wells will provide higher frequency and more reliable data for the PVHM and to water resource managers, including daily usage.

The implementation of telemetry equipment to obtain water use data will increase collaboration and information sharing among irrigators, water suppliers, and even academics who often look to PV Water to support research projects related to water

resources management. Remote data will help irrigators improve the operation of large capacity wells, which result in reduced groundwater pumping in the overdrafted basin. Telemetry provides visibility to what is actually used; excessive use, unscheduled use, and provides water system growers the information they need remotely to contact the irrigator to resolve issues as they arise. These applications of water use data will significantly reduce water waste in the valley, reducing groundwater overdraft.

Remote water use data will improve on-farm irrigation water management for farmers, as well as management for the groundwater basin throughout the Pajaro Valley. The delivery of remote data will improve the accuracy of data received by the agency by eliminating human error, reducing data gaps from mechanical failures, and will streamline billing practices through improved record keeping and data acquisition. Remote data will also alert the agency to meter issues which may be an indication of needed repairs or signal an on-farm line break and alert staff or irrigators to shut off water to prevent leaks.

The project will have positive impacts on the local agricultural economy in the state-designated Disadvantaged Community of Watsonville, CA. The groundwater basin sustains high-value agricultural production with an estimated annual value of $ $1 billion on 28,000 acres of agricultural land and maintains or supports regional agricultural employment of over 12,000 jobs.

The addition of remote water use data acquisition will modernize data collection for billing at PV Water. This will cut down on mistakes by eliminating human error. PV Water currently bills by the acre-foot and readings are only gathered on a quarterly basis for groundwater wells. As a result of this project, water use data for these wells will be available to the Agency and the individual water users daily instead of quarterly. Currently, if the irrigation flowmeter is broken, then pumping may continue without this knowledge getting to the agency for up to 3 months and therefore without billing for the usage. This project will improve the ability of the agency to capture water use records and seamlessly bill for augmentation charges thus supporting the water operations of PV Water. In addition, the gathering of remote data from production wells will reduce staff time for gathering meter data as well as reduce emmisions and miles accumulated on Agency vehicles.

In 2009 PV Water initiated a rate re-establishment process, in compliance with Proposition 218. The process ensures that anyone who benefits from existing facilities are paying their proportionate share of developing and delivering water and increasing the sustainable yield of the basin. The Augmentation Charges and Delivered Water Charges were required to pay for the operation and maintenance of the PV Water supplemental water and delivered water services. The data acquired by the Agency on water usage from meters confirms this Agency policy of assessing augmentation fees based on water usage within the Agency.

According to the website https://www.biologicaldiversity.org from the Center for Biological Diversity, the following threated or endanger species exist in Monterey County, CA: arroyo toad, beech layia, blunt-nosed leopard lizard, Buena vista ornate

shrew, California clapper rail, California condor, California jewelflower, California least tern, California red-legged frog, California spotted owl, California tiger salamander, clover lupine, coastal dunes milk-vetch, conservancy fairy shrimp, contra costa goldfields, foothill yellow-legged frog, giant kangaroo rat, and gowen cypress. No threatened or endangered species nor their habitat will be negatively impacted by this project since all of the work will be conducted in cultivated farm fields on existing wells and piping.

Evaluation Criterion B—Planning Efforts Supporting the Project (25 Points)

The PV Water Board of Directors adopted its first Basin Management Plan (BMP) and the supporting Environmental Impact Report in 1999. The Board directed staff to revise the plan in 2002, and a major update to the plan in 2010, which led to the adoption of the BMP Update and certification of the BMP Update Environmental Impact Report in 2014. The effort occurred over a four-year period and was a stakeholder driven process. The Ad Hoc Basin Management Planning Committee (Committee) was composed of 21 stakeholders representing a wide variety of interests in the Valley including both the Monterey County and Santa Cruz County Farm Bureaus. Over several years, the Committee evaluated the state of the groundwater basin and 44 potential programs and projects to eliminate groundwater over-draft and halt seawater intrusion. Water conservation activities were at the forefront of these programs, making up the single largest portion to stop overdrafted conditions. The Committee worked to address the 12,100 AFY shortfall in the water budget as determined by the Pajaro Valley Hydrologic Flow Model (Hanson et al., 2014). After two years of work, the Committee voted to save 5,000 AFY through a voluntary water conservation program, optimize existing water supply facilities to obtain 3,000 AFY, and develop 4,100 AFY of new supplemental water supplies. At just over 40% of the proposed solution, water conservation is the largest component of the plan. This project has been identified as a method that can help achieve a sizable portion of the water conservation needed in the Pajaro Valley.

Hydrologic modeling has shown that by reducing groundwater extractions in the coastal area, PV Water can halt seawater intrusion. To keep farming viable in the coastal area while also working to reduce coastal groundwater extractions, PV Water has been securing, producing, and delivering supplemental water supplies for irrigation use.

PV Water completed a Salt and Nutrient Management Plan (SNMP) in 2014 following a multi-year, stakeholder driven process. The SNMP evaluates the quality of water in the groundwater basin, the primary mechanisms for salt and nutrient flow into the basin, and strategies for managing salt and nutrient loading. The delivery and use of supplemental water resources is a major component of the plan to stop seawater intrusion, and as a result, eliminate salt loading occurring through intruding seawater.

In 2014, Governor Jerry Brown signed into law the Sustainable Groundwater Management Act (SGMA), which requires that critically overdrafted groundwater basins such as the Pajaro Valley Groundwater Basin achieve sustainability by 2040. As a

requirement of SGMA, Groundwater Sustainability Agencies (GSA) like PV Water are required to work with stakeholders to develop Groundwater Sustainability Plans (GSP). SGMA allows GSAs to submit an Alternative to a GSP, and the PV Water Board of Directors provided direction to staff to submit the BMP, SNMP, and other supporting documents as an Alternative in 2016. This Alternative was approved in 2019 and the 5-year period update to this Alternative was just recently approved as of June 27th, 2024.

The *Remote Data Acquisition for High Production Groundwater Wells* project will help staff achieve the goals set forth in the BMP for these reasons: telemetry on meters supports BMP water conservation plans in that remote data can be used as a tool by water users to increase irrigation efficiency; telemetry deployed on the largest producing irrigation wells in the Pajaro Valley will improve the irrigation management for some of the largest groundwater users in the Agency and consequently, reduce the drawdown of the aquifer causing seawater intrusion; accumulation of accurate remote data sets of irrigation events will be valuable resources for future basin management planning and conservation programs.

Evaluation Criterion C—Project Implementation (20 Points)

This project proposal will upgrade **forty-nine** (49) mechanical flow meters at large capacity groundwater wells with telemetry equipment for the collection data of irrigation water use. The Agency has conducted an inventory of meters, line sizes, and serial numbers to develop a cost budget. The flow meter manufacturer was contacted and a quote received for the cost of the telemetry equipment to modify the existing meters for remote telemetry. No permits are required for this project. Before deployment of the RTUs, portions of the agency with poor cellular coverage will be evaluated through a site survey to determine needs for an external antenna.

Training will be conducted for PV Water Staff by McCrometer Technical Support Staff to ensure the proper installation of the meter and telemetry equipment. Field tests will be conducted at the beginning of installation to ensure accurate transmission of data.

PV Water staff plans to complete the upgrade of half of the meters in the first year of 2025, and the remaining meters in the second year, 2026, of the project. Installation appointments will be coordinated with the well operators.

No new permits will be required to complete this project. Work is considered operational improvements which can be accomplished within existing environmental restrictions. Work will be completed within existing rights-of-way. No engineering or design work will be required. The work proposed in this project is considered an upgrade of existing facilities.

Please refer to Section D.2.2.3. for a detailed budget and budget narrative.

Evaluation Criterion D— Nexus to Reclamation (5 Points)

PV Water has had success working with the Bureau in the past on water projects. The Watsonville Area Water Recycling Project (WAWRP) was approved for a $20 million grant under the Bureau's Title XVI funding in P.L. 104-266. PV Water funded the construction of the WAWRP through a combination of a City of Watsonville loan and other state loans and grants. PV Water has demonstrated (through past accomplishments) the ability to cooperate with the Bureau as well as local partners such as the City of Watsonville and local irrigators to facilitate a successful federally funded water project In addition, PV Water was a recipient of Small-Scale Water Use Efficiency grants in FY'18 and FY'21 from the Bureau for projects similar to this to upgrade meters with telemetry on turnouts within the CDS. This proposed project will build upon the success of these previous projects by providing technology that will improve the water use efficiency in the Pajaro Valley.

Evaluation Criterion E – Presidential and Department of the Interior Priorities (15 Points)

E.1.5.1. Sub-criterion No. E1. Climate Change

The proposed propeller meters will have built-in telemetry capabilities. Once the new meters are installed and connected to telemetry, agency staff will have access to accurate meter readings in real time for water management, reducing overall vehicle use and reducing greenhouse gas emissions. The proposed project will strengthen water supply sustainability by increasing water measurement efficiency and accuracy. Overdrafting of the local aquifer has been identified as a problem in PV Water for more than seven decades. The Agency has adopted measures to improve measurement accuracy at points of consumption and this project will address measurement accuracy and data acquisition at high-capacity wells for improved water management within the project area. Water conserved will remain in the local aquifer to improve resiliency to climate change in the project area and improve groundwater level declines to limit or reverse the effects of seawater intrusion.

E.1.5.2. Sub-criterion No. E2. Disadvantaged or Underserved Communities

According to the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool (https://screeningtool.geoplatform.gov), the following Census tracts have been identified as disadvantaged communities within the project area and will benefit from this project: 6053010101, 6087110400, 6087110300, 6087110100, 6087110200, 6087122500, 6087110501, 6087110600, 6087110700, 6053014601. This project will provide benefits to the entire Pajaro Valley Basin, as well as direct benefits to disadvantaged communities (DACs) and underrepresented communities (UCs) within it. Approximately 64% (60,896) of the estimated 95,000 basin population are living within the DAC designated places of Watsonville, Freedom, and Pajaro. A number of residents also reside within DAC tracts, blocks, and UC designated areas in unincorporated areas of the Basin. Basin-wide benefits from implementation of

the project include reducing groundwater overdraft and seawater intrusion through providing supplemental sources of irrigation supply.

PV Water was awarded a block grant from the California Department of Conservation last year to repurpose the least viable agricultural land for multi-beneficial outcomes, like helping reduce overdraft and increase habitat and improve water quality. The grant will also fund our College Lake Integrated Resources Management Project which will convert agricultural land to water storage and less water intensive land uses to achieve sustainability; and environmental restoration and enhanced conditions. DACs will also receive these benefits, and in some locations, the benefits may be greater and more impactful due to proximity to projects. Importantly, these benefits will be achieved while maintaining the economic vitality of the region that is broadly dependent upon agricultural services and production. The Pajaro Valley produces more than $1 billion of agricultural products and sustains the employment of approximately 12,000, many of whom reside in DACs.

E.1.5.3. Sub-criterion No. E3. Tribal Benefits

No federally recognized tribes are located within the PV Water Project area. Consequently, the project will not serve or benefit a tribe.

Project Budget

Budget Narrative

The projected budget for the proposed has a total cost of $195,757. The breakdown between Non-Federal funding and Federal funding is shown in Table 1, below.

Table 1. Summary of Non-Federal and Federal Funding Sources

Table 1.—Summary of Non-Federal and Federal Funding Sources

Funding Sources	Funding Amount
Non-Federal Entities	
PV Water	$97,879
Other Federal Entities	
1. None	$0
Other Federal Subtotal	$0
Requested Reclamation Funding	$97,878
Total Study Funding	$195,757

The budget details are shown in Table 2, below. The primary cost in the budget is for the equipment, with some associated contractual costs. The proposed budget includes staff time for the General Manager and Water System Operations Supervisor for grant administration; the Water Meter Program Coordinator for primary responsibilities pertaining to equipment procurement, training, record keeping and diagnostics / data acquisition, and the Field Technician for equipment installation, with assistance from the

Maintenance Technician. Tables 4a and 4b below provide the details pertaining to the tasks associated with each member of the team.

Table 2. Proposed Budget

Table 2

Budget Item Description	Computation $/unit	Computation Quantity	Quantity Type (hours/days)	Total Cost
Salaries and Wages				
General Manager	145.46	24	hours	3,490.96
Water System Operations Supervisor	86.58	62	hours	5,368.07
Water Meter Program Coordinator	60.93	114	hours	6,945.51
Field Technician	43.77	118	hours	5,164.59
Maintenance & Operations Technician	42.20	74	hours	3,122.62
Subtotal				**24,091.76**
Fringe Benefits				
General Manager	66.24	24	hours	1,589.79
Water System Operations Supervisor	49.89	62	hours	3,093.24
Water Meter Program Coordinator	40.03	114	hours	4,563.82
Field Technician	11.24	118	hours	1,325.95
Maintenance & Operations Technician	17.09	74	hours	1,264.36
Subtotal				**11,837.18**
Equipment				
4" saddle meter with remote telemetry	2,468.25	1	ea	2,468.25
6" saddle meter with remote telemetry	2,863.40	7	ea	20,043.77
8" saddle meter with remote telemetry	2,947.55	32	ea	94,321.44
10" saddle meter with remote telemetry	3,029.40	9	ea	27,264.60
Subtotal		49		**144,098.06**
Contractual/Construction				
Diagnostics and Data Acquisition	160.00	24	Yr #1	3,840.00
Diagnostics and Data Acquisition	160.00	49	Yr #2	7,840.00
New Equipment Training	1,350.00	3	Day	4,050.00
Subtotal				**15,730.00**
Total Project Costs				**$ 195,756.99**

Table 4a. Proposed Staff Hours and Tasks

	General Manager (GM)	Water System Operations Supervisor (WSOS)	Meter Program Coordinator (MPC)	Field Technician (FT)	Operations and Maintenance Technician (OMT)
Grant Administration	16	30	16		
Equipment Procurement/Tracking		8	30	16	
McCrometer Training		8	8	8	8
Equipment Installation*			8	73	50
Meter Record Keeping		8	36	13	8
Diagnostics and Data Acquisition	8	8	16	8	8
Total Hours for two year project	**24**	**62**	**114**	**118**	**74**

Table 4b. Justifications

Justifications	
GM	Meeting with Staff to give direction on grant administration and digital data coordination, final oversight of grant administration
WSOS	Supervisory coordination of grant , Ops and Meter staff time, training
MPC	General coordination and execution of all aspects of physical and digital project details, assisting in field at challenging sites*
FT	In field equipment installation, data tracking*
OMT	Assisting in field equipment installation sites, data tracking*

PV Water's contribution to the cost-share requirement will come from the augmentation charge and water sales (special revenue fund) as noted above. Grant administration and compliance with the reporting requirements will be overseen by the General Manager and completed by the Water System Operations Supervisor.

Certification of Labor Rates

The labor rates provided above are taken from the Board of Directors approved and adopted budget for the fiscal year ending June 30, 2024. The rates for fringe benefits are pulled from the same Board adopted budget.

Equipment

The equipment necessary for this project includes 49 Flow Connect Telemetry Modules for groundwater wells at an average cost of $2,941 each, for a total of $144,098.

Materials and Supplies

There will be no new materials or supplies needed included in the project budget other than the cost of the equipment.

Contractual

As shown on the Table 2, above, Contractual work accounts for $15,730 in the proposed budget. Of this, Diagnostics and Data Acquisition provide remote service and allow for data to be stored and accessed on the cloud for a cost of $11,680. Three days of training is budgeted at a total cost of $1,350 and is a necessary component of the project.

Environmental and Regulatory Compliance Costs

No environmental documentation is required for the installation of telemetry units at the groundwater wells. The project area where the meters are located is regularly accessed by tractors and other heavy equipment used for farming operations. Work (replacing existing meters by hand with upgraded meters) is considered operational improvements which can be accomplished within existing environmental restrictions. Work will be completed in existing agricultural fields. No engineering or design work will be required.

Other Expenses

No other expenses are anticipated.

Indirect Costs

No indirect costs are anticipated.

Total Costs

The total estimated cost for this project is $195,757, with $97,878 or 50% coming from the Federal cost share, and $97,879, or 50% coming from the non-Federal (PV Water) cost share.

D.2.2.6. Environmental and Cultural Resources Compliance

- *Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)?*

-Staff will utilize existing farm roads to access the irrigation wells, work does not include earth-disturbance; minor dust disturbance may occur when driving on dirt roads. As a precaution, Agency staff follow the industry policy of driving at a speed limit of 5 mph to limit dust, to prevent damage to fruit crops such as strawberries.

- *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?*

-The project area where the meters are located is regularly accessed by tractors and other heavy equipment used for farming operations. There are no anticipated impacts to any endangered or threatened species, wetlands, archaeological sites, low income or minority populations, or Indian sacred sites as the meters are in agricultural fields.

- *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.*

-The meters are located in agricultural fields. No work will take place in wetlands.

- *When was the water delivery system constructed?*

-Groundwater wells were drilled in the valley over the past 50 years, meters installed for groundwater management in the past 30 years, and are now upgrading to telemetry.

- *Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)?*

-No.

- *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.*

-No.

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

-No.

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

-No.

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

-No.

- *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.

D.2.2.7. Required Permits or Approvals

No new permits or other approvals are necessary for this project. PV Water owns the meters. No ground disturbance is necessary to complete the proposed project.

D.2.2.8. Official Resolution

The PV Water Board of Directors is supportive of Small Scale Water Efficiency grant proposals for telemetry on agency meters. Unfortunately, the regular meeting of the PV Board was cancelled for June and the board was unable to consider and approve the resolution at the June meeting. The next regular scheduled meeting will be on **July 17, 2024** where the Board is expected to approve a resolution that meets the grant proposal requirements. The signed resolution will be subsequently submitted to the Bureau to amend this application.

July 3, 2024

Pajaro Valley Water Management Agency
Attn: Brian Lockwood, General Manager
36th Brennan Street
Watsonville, CA 95076

Re: Bureau of Reclamation Water Smart Grant Application; **"Remote Data Acquisition for High Production Groundwater Wells in the Pajaro Valley of Santa Cruz and Monterey Counties"**

Dear Mr. Lockwood:

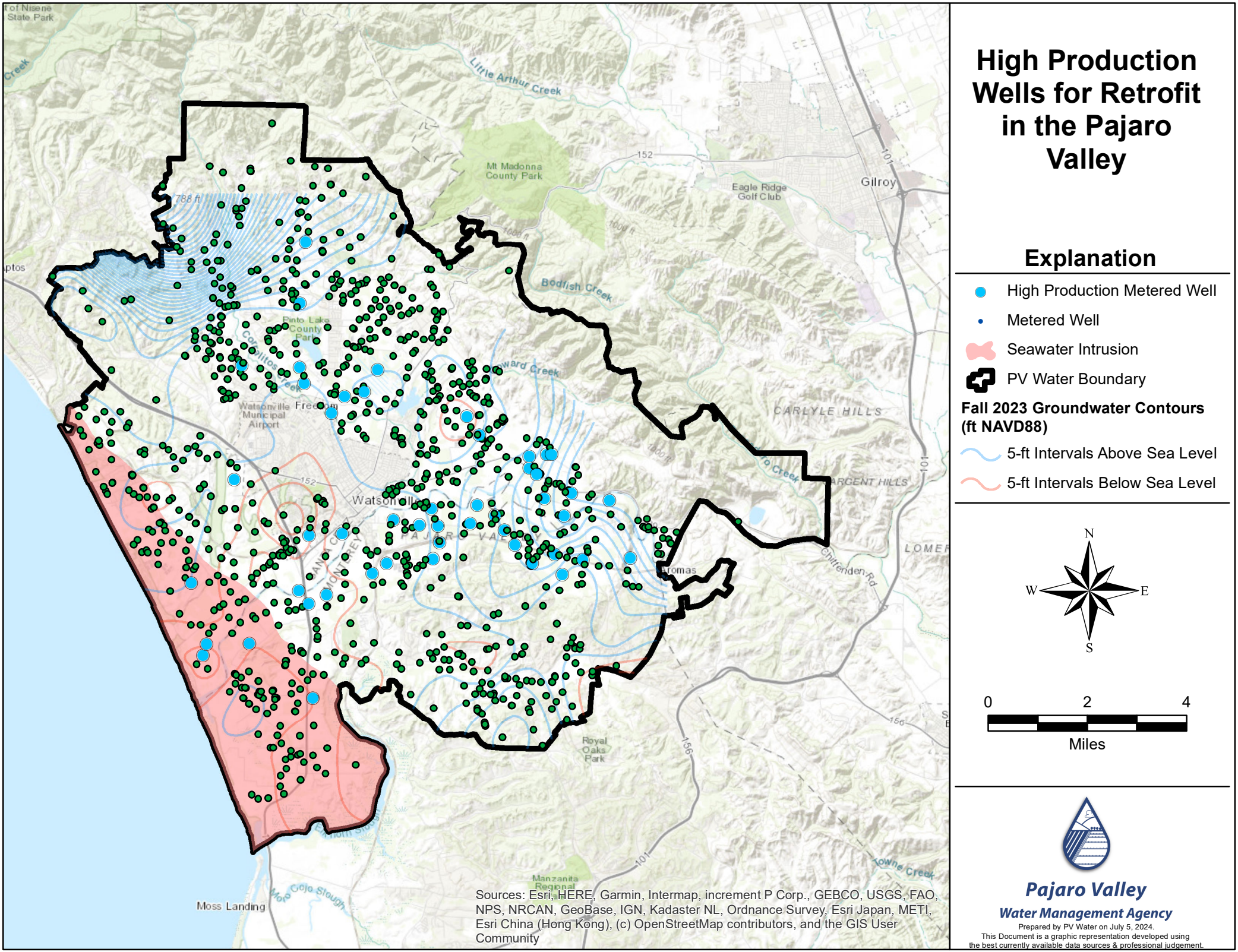
This is a letter of support for the Pajaro Valley Water Management Agency's (PVWMA)'s grant application for metering and water use reporting. These meters will provide my company real time water data and allow us to manage our irrigation better to achieve sustainability. This tool will help my company decide if we are overwatering or underwatering. These meters will also help me save time in making water management decisions on my farm.

Assistance from the District is needed for the educational programs associated with these irrigation systems as well. We need this type of assistance if we are going to succeed in the goal of sustainable groundwater management in PVWMA and the State of California.

Efforts from PVWMA to provide assistance for meters is very helpful and greatly appreciated. Thank you for pursuing this project.

Respectfully Submitted,

Mr. Robert Wall
Reiter Affiliated Co.
Watsonville, CA



High Production Wells for Retrofit in the Pajaro Valley

Explanation

- High Production Metered Well
- Metered Well
- Seawater Intrusion
- PV Water Boundary

Fall 2023 Groundwater Contours (ft NAVD88)

- 5-ft Intervals Above Sea Level
- 5-ft Intervals Below Sea Level

N
W E
S

0 2 4
Miles

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Pajaro Valley
Water Management Agency

Prepared by PV Water on July 5, 2024.
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