FLOW CONTROL AUTOMATION UPGRADES: PHASE 1

The Bureau of Reclamation

Small Scale Water Efficiency

WaterSMART Grant Proposal 2024

Funding Opportunity Announcement No. R24AS00059

DATE:
February 6, 2024

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PROJECT NARRATIVE

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1. Execu ve Summary

This application to the WaterSmart Small-Scale Water Efficiency Projects (SWEP) Grant Program for the project, "Flow Control Automation Upgrades: Phase 1," is submitted by the Hallwood Irrigation Company (HIC). HIC serves the community of Hallwood, located in unincorporated Yuba County, California. HIC is an eligible Category A applicant for SWEP, as a tax-exempt non-profit corporation providing irrigation water to approximately 9,200 acres of farmland in the valley north of the Yuba River. The Flow Control Automation Upgrades: Phase 1 Project will benefit HIC and communities within Yuba County.

The Flow Control Automation Upgrades, located within Yuba County, will upgrade three (3) sluice gates with automated flow gates. The automated flow gates will include solar-powered Supervisory Control and Data Acquisition (SCADA) hardware installation with software access via cellular connectivity. This would allow the ditch tenders to utilize remote operation technology to manage diversions more efficiently and collect real-time flow data. Improving operational control will greatly increase the efficiency of the system and minimize the amount of excess water diverted from the Yuba River. The proposed project will provide safe, reliable, and efficient water delivery for years to come. The primary objective of this proposed project is to implement improvements in irrigation system control and management to enhance operational efficiency and prevent water loss. The design objectives include providing flow monitoring, data acquisition, and remote operational control while maintaining existing flow capacities.

The proposed project has been approved for 56% cost share funding ($125,000) from Yuba Water Agency (YWA) and has been accepted as part of the Yuba Integrated Regional Water Management Plan (IRWMP), which was last updated in 2018. The funding agreement from YWA is attached. This project supports the top priorities of the IRWMP, including enhancing water supply management.

The project duration is less than (1) year. The final design is expected to be initiated in July 2024, and construction is expected to be completed by April 30, 2025. The Flow Control Automation Upgrades Project is not located in a federal facility. The date of submission of this application is February 6, 2024.

2. Project Loca on

The Flow Control Automation Upgrades project is located in Yuba County, California, approximately 9.2 miles northeast of the City of Marysville. The project latitude is 39.209943° (39°12'35.8") N, and the longitude is -121.478909° (121°28'44.1") W. The project location is shown in Figure 1.

Figure 1. Flow Control Automation Upgrades: Phase 1– Vicinity Map

3. Technical Project Description

HIC received a Community Impact Grant from YWA for the HIC System Renovation Plan. The first phase of the Renovation Plan included the development of an irrigation system condition assessment, which Peterson Brustad (PBI) completed in December 2022. The condition assessment resulted in the identification and prioritization of several needed improvements. The project proposed in this application, the Flow Control Automation Upgrades, is included in the 1st and 2nd highest priority items out of the 12 improvement projects recommended.

This project will replace three sluice gates located at the two main diversion points at the start of HIC's irrigation system: North Diversion and South Diversion. The existing sluice gates will be replaced with automated flow gates. Two of the new flow gates will be installed at the North Diversion, and the third gate will be installed at the South Diversion. The automated flow gates will include solar-powered Supervisory Control and Data Acquisition (SCADA) hardware installation with software access via cellular connectivity. This would allow the ditch tenders to utilize remote operation technology to manage diversions more efficiently and collect real-time flow data. Improving operational control will greatly increase the efficiency of the system and minimize the amount of excess water diverted from the Yuba River.

The automated flow gates that will be installed are Rubicon SlipMeter, or an approved equal (See Figure 3). These gates have a built-in flow meter and an ultrasonic water level sensor to measure flow even when the gate opening is partially full (down to 50% full). The metering system uses ultrasonic technology by measuring velocity planes through a known cross-sectional area. The SlipMeter has the capability to be operated and monitored on-site or remotely through

cellular communication. The system is solar-powered with backup batteries and can be manually operated if needed.

The automated flow gates can be controlled via setpoints for position, flow, or upstream water level. The SCADA system will be accessed through an online platform, such as Rubicon's SiteConnect. Multiple users can access the system to observe data and trends from each gate and adjust setpoints as needed. HIC would have the ability to monitor all flow gates in the system on one centralized webpage, accessed via a laptop or phone with a cellular connection.

Installation of each automated flow gate is a two-day process during the irrigation off-season and will require a crane to lift the gate into place. A manufacturer technician will oversee the installation performed by a contractor. Each gate requires a pedestal assembly (Figure 4) that controls the gate with a solar panel for power. The pedestal assemblies will be placed in close proximity to the gates, and the panels will be oriented to maximize sun exposure.

The North Diversion currently has two 48" sluice gates, and the South Diversion has one 48" sluice gate (Figure 5). Both the North and South Diversions have headwalls that have been replaced within the last seven years and do not require any improvements for the automated gate installations. The pedestal assemblies can be installed within 25' of each gate, as shown in Figure 6.

Figure 2: Locations of Proposed Upgrades – Phase 1

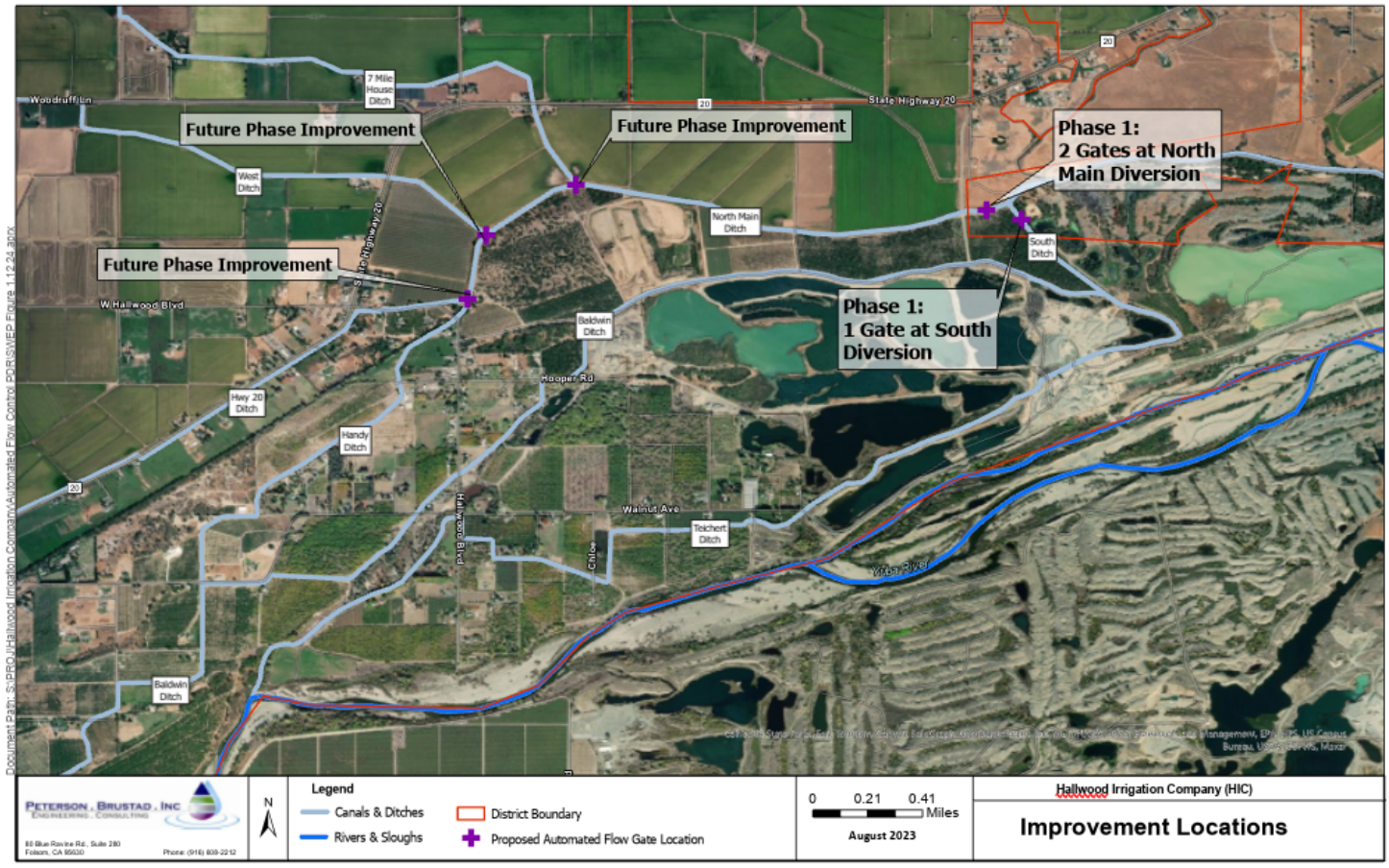


Figure 3. Rubicon SlipMeter

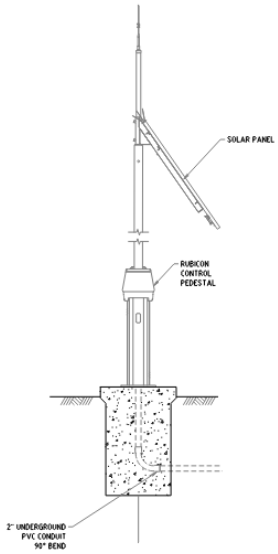


Figure 4. Pedestal assembly

Figure 5. North and South Diversions existing headwall and gates

Figure 6. Proposed locations for North and South Diversion pedestals

4. Evalua on Criteria

A. Evalua on Criterion A – Project Benefits

The HIC irrigation system is currently difficult to operate and requires considerable experience to manage adequately. The existing sluice gates are manually operated. Without automated controls, any unexpected operational change or system failure can result in flow and water level changes that propagate downstream. This can then result in under or over-deliveries to irrigators and an excessive amount of return water to the Yuba or Feather River. Furthermore, the system is currently managed manually based on institutional knowledge, which will create difficulties in the event of staff turnover. HIC's existing senior operator, has been manually managing the system flows for over 40 years and is near retirement. The two junior operators and only other HIC staff have combined less than 4 years of experience.

The primary objective of this proposed project is to implement improvements in irrigation system control and management to enhance operational efficiency and prevent water loss. The design objectives include providing flow monitoring, data acquisition, and remote operational control while maintaining existing flow capacities.

This project will result in more efficient management of the water supply by enhancing the operational efficiency of HIC's facilities. Installing automated flow gates at the identified diversions would improve the efficiency of the HIC system and water usage by allowing for remote operation of the flow-control structure and providing real-time flow rate data acquisition. This will allow flows to match the demands of irrigators more precisely. Additionally, by improving flow control parameters at the identified diversions, less water will be lost through timely adjustments, preventing overflow and, thus, reducing the amount of water diverted from the Yuba River.

By efficiently managing HIC's diversions, water conserved will flow downstream in the Yuba River. As described in the Yuba IRWMP, the resources of the Yuba River are managed for

multiple beneficial uses, including municipal and agricultural water supply, hydropower generation, recreation, and environmental benefits.

Diversions are restricted during periods of drought causing a deficit in the supply to the HIC customers. During these dry periods, farmers must pump groundwater to fulfill their irrigation water supply needs. Recent curtailment periods occurred in 2021 and 2022.

The current irrigation system was constructed more than 100 years ago. In recent years, the system has experienced overflows due to the inability to respond to changing system demands. In two instances, these overflows resulted in system failures causing the loss of water supply and property damage. The automated flow gates will provide alarms and real-time control through remote operation, which will allow HIC staff to manage water flows in real-time and avoid overflows.

Not making the proposed improvements will result in continued water supply loss and operational difficulties, and inefficiencies. Without reliable and efficient operational control, farmers will continue to experience under or over-deliveries of water, which could lead to crop loss or property damage. Furthermore, HIC will not be able to fulfill the water supply management objectives of the Yuba IRWMP.

HIC has led collaborative relationship-building efforts within the county and state for years and was a substantial partner in the Yuba River Accord. The Yuba Accord is a multi-agency settlement agreement that provides benefits for fish and wildlife purposes, and water supply reliability for irrigation, hydropower generation and recreation. HIC has participated in the county's transfer pumping program, which has provided much-needed water to drought-stricken farm and ranch lands throughout California. HIC works diligently with federal and state agencies to conserve and protect wildlife and fisheries. The project is the result of robust agency relationships and long-term collaboration between member units (consisting of eight local water districts) and YWA.

HIC shares their diversion from the Yuba River with Cordua Irrigation District and Ramirez Water District. The proposed project will eliminate water loss due to operational inefficiencies of the existing sluice structures. This water provides collaboration opportunities for the beneficial use of this surface water with Cordua Irrigation District and Ramirez Water District. Minimizing water loss and increased water efficiency allows more surface water to be diverted to Cordua Irrigation District and Ramirez Water District.

Additionally, the project will maintain and enhance a reliable groundwater supply for users within the North Yuba and South Yuba subbasins through the effective management of conjunctive water use. The Yuba subbasins were two of the 127 regions identified as medium-or-high-priority basins in 2014 by the Department of Water Resources (DWR). The project will improve the efficiency of surface water usage through "smarter" operation of the flow control structures. By increasing the efficiency of surface water use, the project maximizes the benefits of limited surface water supplies and reduces the demand on groundwater basins. Such water savings will allow for continued avoidance of "deficit pumping." Furthermore, the water savings from the project will improve water supply conditions that allow Yuba Subbasin water suppliers

to implement their groundwater substitution transfer program, which provides benefits during dry years to water suppliers throughout the state under Yuba County's Groundwater Sustainability Plan. This ensures that the project will maintain and enhance the benefits for Yuba County by maintaining mutually beneficial relationships with existing Yuba Accord transfer buyers.

A significant portion of California experienced severe drought conditions during the 5-year period from 2012 to 2016. Most recently, a large portion of California experienced similar drought conditions during the 2021 water year. According to a report produced by the California Office of Environmental Health Hazard Assessment, in September 2021, 88 percent of California experienced extreme to exceptional drought. The project area (Yuba County) was categorized as experiencing "Exceptional Drought" during both of the most recent drought events. At the start of the 2023 water year, California was still experiencing drought conditions.

Water savings resulting from the automation of the flow gates will allow the system to operate more efficiently. This will increase water reliability for HIC customers during periods of drought.

The Yuba River is home to both the steelhead trout and the spring-run Chinook salmon. The spring-run Chinook salmon is designated as a threatened species under both the federal Endangered Species Act (ESA), and the California ESA (CESA). The Steelhead trout is considered a threatened species under the federal ESA. The IRWMP states that changes or reductions to the flow of the stream can cause dewatering of salmonid redds and stranding of fry and juvenile fish. To protect the salmon and steelhead trout habitat, the Lower Yuba Accord manages the stream flows. Minimizing the water supply losses and operational inefficiencies provides an opportunity to divert less surface water from the Yuba River and keep more consistent and predictable flows in the system, which will benefit the habitat for these species.

The project's water savings will produce co-benefits in recreational and environmental areas, as well as provide economic opportunities. By enhancing the efficiency of HIC's diversions, the project will minimize water loss and ultimately reduce the amount of water that is diverted from the Yuba River, thereby providing recreational and environmental benefits downstream of the diversion. The economic benefit of the project will result from a more cost-effective and reliable delivery of water to the irrigators within HIC's system. By increasing the efficiency of flow adjustments, the irrigators will be able to maximize the use of surface water while minimizing the need to supplement with groundwater pumping. The result will be a more cost-effective source of water for the irrigators, thereby maximizing the economic benefits of their operations. The water savings from the project will create additional economic opportunities for Yuba Subbasin water suppliers to implement their groundwater substitution transfer program, which provides benefits during dry years to water suppliers throughout the state. This project also provides opportunities for local contractors to support the construction efforts, which will benefit the Yuba County economy and support well-paying jobs for Yuba County residents.

USBR funding approval for the proposed project will provide new opportunities for HIC's customers to enhance on-farm water use efficiency. PBI has coordinated with the NRCS Yuba/Sutter Service Center to inform them of the proposed project and seek opportunities for

complementing on-farm improvements. The sole use of HIC's water deliveries is for agricultural irrigation, so improvements in water efficiency support the on-farm conservation objectives of NRCS. The NCRS staff provided PBI with the Environmental Quality Incentives Program WaterSMART Initiative (EQIP-WSI) application with the instruction to complete it after receiving WaterSMART funding from USBR. As part of an NRCS focus area in California, the project would be eligible to participate in EQIP-WSI to support water conservation among farmers in the community of Hallwood.

B. Evalua on Criterion B – Planning Efforts Suppor ng the Project

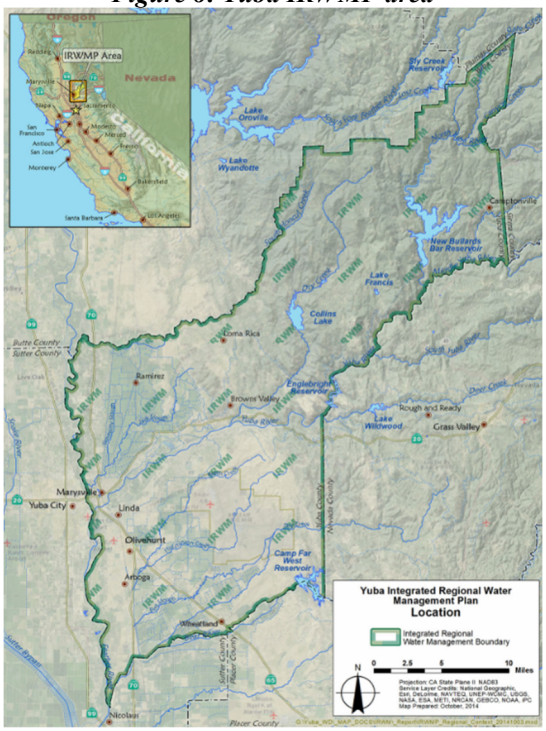
This project has been accepted into the Yuba Integrated Regional Water Management Plan (IRWMP), which includes dozens of agencies, municipalities, and non-project organizations—these groups came together to coordinate in an ongoing manner around water-related priorities within Yuba County. This project supports top IRWMP priorities, including enhancing water supply management. The plan was initially developed in 2008, and the CA Department of Water Resources (DWR) officially accepted the latest update in 2018. The IRWMP is a formal, collaborative group that supports all aspects of water management in the Yuba IRWM Plan area, which includes the project location. The primary plan goals include (See attached Table 17-1 from the IRWMP):

- Ensure adequate and reliable water supply that meets the diverse needs of the region
- Enhance regional economic development by supporting recreational opportunities and sustainable agriculture
- Preserve and restore watershed health and promote environmental stewardship
- Address climate vulnerabilities and reduce greenhouse gas emissions
- Promote equitable distribution of resources to disadvantaged communities and Tribes across the region

In 2002, the CA State Legislature passed the Integrated Regional Water Management (IRWM) Planning Act (SB 1672) to "encourage local entities to improve water quality and water supply reliability to meet the state's overall agricultural, domestic, industrial and environmental water needs." DWR managed the IRWMP process statewide and managed competitive bond-funded grant programs to support the process. The Yuba IRWMP, a self-governed/organized, geographically based group, was convened by a group of stakeholders. Its boundaries are coterminous with the Yuba County boundaries. The IRWMP has been sponsored by YWA, which has funded the facilitation and administration of the IRWM planning process and stakeholder engagement. With this support, and with multiple, multi-million dollar grants from DWR, the Yuba IRWMP continues to be active. HIC was actively involved in the IRWMP development and continues to participate as an IRWMP member. HIC participated in interviews and workshops led by IRWMP members, as well as YWA staff, on project development and implementation.

The Yuba IRWMP covers the northern region of California's Central Valley. The region extends from the Sierra Nevada foothills to the floor of the Sacramento Valley near Marysville (Figure 8).

Figure 8: Yuba IRWMP area



The proposed project for this application is located within the IRWMP Plan Area, northeast of Marysville, CA. The geographic location of the project is shown in Figure 1.
Through the IRWMP project solicitation process, HIC became eligible to apply for a Community Impact Cost-sharing Grant from YWA for the Flow Control Automation Upgrades project. Based on the IRWMP project approval and associated application materials, YWA approved cost-share funding for HIC in an agreement that included the name and project location of the North and South Diversions.

As discussed above, the Flow Control Automation project has been accepted as an IRWMP project. The specific IRWMP objectives met by this project include:

- **Improve water supply system capacity, flexibility, and efficiency**, including, but not limited to, optimizing existing water storage, **upgrading and retrofitting aging infrastructure**, and developing new infrastructure, where necessary (IRWMP Objective 1.2)
- **Promote water conservation and water use efficiency** by instituting various techniques including, but not limited to, groundwater recharge, conjunctive management, **irrigation efficiencies**, municipal water conservation, water recycling, and reuse (IRWMP Objective 1.3)

The performance metrics identified in the IRWMP for these objectives include a reduction in water system operational costs and tons of carbon emissions avoided, which will be project benefits based on the reduced maintenance requirements.
To support IRWMP implementation, YWA provided grant funding to HIC to identify and design priority projects that would enhance the system's reliability and efficiency. PBI developed a

Condition Assessment for the evaluation of the irrigation system and systematic project prioritization.

The Condition Assessment development process included multiple field visits during which HIC personnel provided input and information on system needs. After the system condition was evaluated, problem areas were identified, and alternative solutions were developed for each problem. Each alternative solution was then compared and ranked to determine a recommended project to solve each problem. Each alternative is ranked based on the following three criteria: 1) costs, 2) constructability, and 3) effectiveness. The rank number is based on the number of alternatives, and a higher rank signifies a more preferred alternative for the criterion. The cost criterion is based on the estimated capital costs and operations and maintenance (O&M) costs.

The constructability criterion is primarily based on the expected project schedule, specifically whether it can be fully completed within a reasonable canal shutdown timeframe (typically 2 months). The effectiveness criterion contains three aspects, water conservation, supply and management, and system reliability. The alternative with the highest total score is the preferred alternative. This process ranked operational losses as the 2nd priority in the list of suggested improvements in the irrigation system.

C. Evalua on Criterion C – Implementa on and Results

See below for the project implementation schedule.

	2024								2025			
Task	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Task 1 - Project Administration												
Task 2 - Environmental Permitting												
Task 3 - Final Design												
Task 4 - Contract Services												
Task 5 - Construction Administration												
Task 6 - Construction												

The scope of work for the proposed project is as follows:

Task 1: Project Administration

Prepare reports detailing work completed during the reporting period for inclusion in Quarterly Progress Reports. Monthly invoices will be accompanied by Monthly Progress Reports summarizing services provided by task, including any backup documentation.

Deliverables: Quarterly Progress Reports and Invoices

Task 2: Environmental Permitting

Prepare the appropriate CEQA documentation and file the document(s) with the County Clerk's Office and State Clearinghouse as required. Prepare and submit a Categorical Exemption. Complete the required CEQA documentation. Prepare the appropriate NEPA supporting documentation and provide it to USBR.

Deliverables: CEQA documentation (Class 2 Categorical Exemption), NEPA supporting documentation (USBR to obtain Categorical Exclusion or Environmental Assessment/Finding of No Significant Impact)

Task 3: Final Design

Develop the 100% design plans and specifications in accordance with requirements for public bidding for construction.

Deliverables: 100% design plans and specifications

Task 4: Contract Services

Develop all necessary pre-bid and bid documents to secure a contractor. Award the contract and submit the Notice of Award followed by the Notice to Proceed.

Deliverables: Proof of bid advertisement, bid documentation, Notice of Award, Notice to Proceed

Task 5: Construction Administration

Photo-document pre-construction conditions and daily construction activities. Prepare any change orders, address the contractor's onsite questions, review/update the construction schedule, review contractor submittals and pay requests, and notify the contractor if work is not acceptable. Finalize record drawings and submit the as-built drawings.

Deliverables: Photo documentation of pre-, during, and post-construction activities included within the appropriate Quarterly Progress Reports, As-built drawings

Task 6: Construction

Construct the project per the final design plans and specifications and as outlined in the awarded contract. Conduct an inspection of the completed project by a licensed professional and submit a Certification of Completion letter from the licensed professional to ensure that the component was constructed per the 100% design plans and specifications.

Deliverables: Certification of Completion

Based on a preliminary environmental review, it is expected that this project will be eligible for a Categorical Exclusion and Exemption through NEPA and CEQA, respectively. The timeframe for this process is expected to be completed during the Pre-Award Phase (May 2024 – September 2024). No other permits or approvals are required.

Engineering design work of the proposed project performed by PBI in collaboration with HIC is in progress. PBI has concluded the 60% design of this project. The 90% design is underway and will be completed in February 2024. If selected for the SWEP grant in May 2024, PBI will prepare final design documents and will complete the design prior to the award of funding in September 2024.

This project location is within the boundaries of HIC's facilities and will not require any easements or permissions to access.

PBI has coordinated with the local Reclamation office (Interior Region 10) to discuss the potential environmental and cultural resource compliance requirements on behalf of HIC. In September 2023, PBI met with staff from the local Reclamation office, including environmental and cultural resources specialists. Based on the project details, USBR prepared cost estimates for compliance, which were less than $20,000 to be covered by USBR. PBI's environmental sub-consultant will prepare the biological and cultural surveys and reports necessary for consultation with the US Fish and Wildlife Service and State Historic Preservation Office, as well as provide draft NEPA documents to assist USBR in the process. PBI's team will also prepare the CEQA documents for California compliance. These costs have been included in the project budget.

PBI has coordinated with our local USBR office for their environmental cost. PBI was informed that USBR will cover the cost of resource compliance up to $20,000. A separate line item will be included for the Reclamation's costs and the sub-consultant's costs.

D. Evalua on Criterion D – Nexus to Reclama on

The Hallwood Side Channel and Floodplain Restoration Project is funded by YWA and the USBR California-Great Basin through the Central Valley Project Improvement Act. This restoration project seeks to improve local fish habitat in the Yuba River and reduce flood risk, and the project area is located directly downstream of HIC's diversion point. The proposed project in this application will improve water conservation in the Yuba River to support environmental benefits, including the Reclamation-funded Hallwood Side Channel and Floodplain Restoration Project.

E. Evalua on Criterion E – Presiden al and Department of Interior Priori es

E.1. Climate Change

The IRWMP has identified a list of climate change impacts in the Yuba County Region. These impacts include reduced streamflow and water supply, reduced water quality, increased flooding, infrastructure failure during winter peak flows, increased wildfire potential, and effects on the region's recreation industries from lower summer flows. The proposed project will help offset the effects of climate change by aiding in water conservation through the control of the flow at each diversion. Unexpected changes to ditch levels due to overflows or spills can be avoided. This can help prevent floods and other disruptions. The water that is conserved as a result of this project will stay in the system longer, reducing the amount of water that is diverted from the Yuba River. This benefits the salmon habitat as well as the recreation industry downstream. The implementation of solar-powered SCADA units will also help reduce carbon emissions and other maintenance requiring on-site vehicles.

This project strengthens water supply sustainability by minimizing surface water losses due to operational difficulties. By increasing the efficiency of surface water use, the project maximizes the benefits of limited surface water supplies and reduces the demand on groundwater basins. The water savings from the project will improve water supply conditions that allow the Yuba Subbasins water suppliers to implement their groundwater substitution transfer program which provides benefits during dry years to water suppliers throughout the state under Yuba County's Groundwater Sustainability Plan. The project will improve water conservation by providing recharge benefits and decreasing demand on groundwater basins.
This project improves the water supply and management by minimizing excess diversions. By controlling flow based on system demands and making precise adjustments, this project allows less water to be diverted from the Yuba River, thereby increasing the water supply available within the river.

E.2. Disadvantaged or Underserved Communi es

According to the Climate and Economic Justice Screening tool, Marysville, California, is identified as a disadvantaged group. Marysville is in the 99th percentile for expected economic loss to agricultural value resulting from natural hazards each year, the 91st percentile for projected flood risk, the 95th percentile for the level of inhalable particles 2.5 mm or smaller, and the 95th percentile for projected wildfire risk. Marysville also falls in the 77th percentile for low income, where income is less than or equal to twice the federal poverty level.

The Yuba IRWMP defines a Disadvantaged Community (DAC) as a community with an annual median household income (MHI) less than 80% of the statewide annual MHI. Based on the 2010 census, six communities in the IRWMP area were identified as DACs. The IRWMP has actively sought to include and benefit DACs in the planning efforts. The IRWMP has worked on outreach and engagement with DACs to develop and fund projects intended for their benefit and advancement. Some communities specifically identified in the IRWMP are the disadvantaged Latino, Hmong, and Tribal communities in the area.

The proposed project will provide economic opportunities in the construction sector, services sector, and agricultural sector. The more cost-effective and reliable delivery of water to the irrigators within HIC's system will increase economic opportunities in the area. This project will also increase water delivery system efficiency by minimizing water loss and ultimately reducing the amount of water that is diverted from the Yuba River. These water savings from the project will create additional economic opportunities for Yuba Subbasin water suppliers to implement their groundwater substitution transfer program, which provides benefits during dry years to water suppliers throughout the state. This project will produce and sustain good-paying jobs in the community for years to come.

As described above, this project will contribute to the mitigation of the effects of climate change on the community. By providing a more reliable and efficient supply of water and helping to reduce carbon emissions through the proposed automation features.

E.3. Tribal Benefits

The Yuba IRWMP ensured that local Native American tribes participated in the development of the plan. The Yuba IRWMP region includes both Federally Recognized Tribes and Non-Federally Recognized tribes. The goal of the IRWMP tribal outreach was to solicit input on the plan from the tribal communities affected by water issues or inefficiencies in Yuba County. As part of the IRWMP, this project will help address some of those concerns and provide indirect benefits to tribes within the Yuba IRWMP area.

Improving the efficiency of the canal system by automating the flow gates will benefit the local tribes by providing water savings that will help reduce demands on ground water through deficit pumping, thereby improving the conditions in the Basin from which these communities draw their water supply.

II. Budget Narra ve

The Budget Proposal for this project is included as an attachment.

Salaries and Wages
There are no Salaries and Wages costs associated with this project.

Fringe Benefits
There are no Fringe Benefits or costs associated with this project.

Travel
There are no travel costs associated with this project.

Equipment
There are no equipment costs associated with this project.

Materials and Supplies
This project includes the addition of computing equipment and software required for the Rubicon flow gates to be installed. The computer cost estimate of $1,500 is based on the average cost of a computer with the required specifications.
The operation of the SlipMeter gates requires SCADA subscription and software quoted at $1,500 per gate resulting in a total cost of $4,500.

Contractual
Dewberry will be contracted to perform environmental permitting services for this project. The subconsultants will prepare CEQA documentation and NEPA supporting documentation as required. The total estimate for the environmental costs was based on a quote received for a previous project. Based on an average hourly rate of $186, the estimated time spent on the project is 40 hours. The estimated cost breakdown by task is shown below:

Task	Cost
Categorical Exemption	$ 5,600
Board of Directors Staff Report	$ 1,000
Board of Directors Resolution	$ 1,000
Total	$ 7,600

PBI will be contracted to provide engineering and administrative services, including final design and construction management services through the duration of the project. The cost estimate is based on costs to perform other similar projects. Based on an average hourly rate of $215, the estimated PBI time spent on the project is 190 hours. The estimated cost breakdown by task is shown below:

Task	Project Budget
Project Administration	$ 14,700
Final Design	$ 7,000
Contract Services	$ 4,600
Construction Administration	$ 14,400
Total	$ 40,700

Construction

Construction costs include mobilization/demobilization, water pollution control plans, worker protection and safety, crane rental and operations, existing gate demolition, and cost and installation of the automated flow gates, pedestals, and conduits. These will be purchased by the construction contractor and installed at the specified project locations. Costs for construction are based on received quotes and RS Means data.

Mobilization/Demobilization	$	7,500	1	LS	$	7,500
Implementation of Water Pollution Control Plan	$	1,000	1	LS	$	1000
Worker Protection and Safety/Shoring	$	1,500	1	LS	$	1,500
Crane Rental And Operations	$	3,100	4	Day	$	12,400
Existing Sluice Gate Demolition	$	800	3	Ea	$	2,400
Automated Flow Gates	$	38,300	3	Ea	$	114,900
Pedestal and Conduit	$	5,000	3	Ea	$	15,000
Total					**$**	**154,700**

Other Direct Costs

The proposed project is currently at 60% design and is subject to 10% contingency. The contingency is applied to construction and material-related costs. The total cost for contingency is $16,000. The total cost of the project, including the 10% contingency, is estimated to be $225,000.

Indirect Cost

There are no indirect costs associated with this project.

Budget Proposal

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

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
1. Yuba Water Agency	$125,000
Non-Federal Subtotal	$125,000
REQESTED RECLAMATION FUNDING	$100,000

Table 2. —Total Project Cost Table

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	$100,000
Costs to be paid by the applicant	$0.00
Value of third-party contributions	$125,000.00
TOTAL PROJECT COST	$225,000.00

Table 3. —Budget Proposal

a. Personnel

Position Title	Time	Rate	Total	Rate Basis	Comments (as needed)
Not Applicable for this Project	0	$0	**$0**	N/A	Due to HIC's limited staff, the project will be implemented with the use of consultants and contractors.
		Total	**$0**		

b. Fringe Benefits

Position Title	Compensation	Quantity	Total Cost	Comments (as needed)
Not Applicable for this Project	0	0.00	**$0**	Due to HIC's limited staff, the project will be implemented with the use of consultants and contractors.
		Total	**$0**	

c. Travel

Purpose	From/To	# of Days	# of Travelers	Lodging	Flight	Vehicle	Per Diem	Cost per Trip	Basis for Estimate
Not Applicable for this Project	N/A	0	0	$0	$0	$0	$0	**$0**	No travel needed
							Total	**$0**	

d. Equipment

Equipment Item	Quantity	Unit Cost	Total Cost	Basis of Cost	Purpose	Rental Comparison
Not Applicable for this Project			**$0**	N/A	N/A	
		Total	**$0**			

e. Supplies

Supply Item	Quantity	Unit Cost	Total Cost	Basis of Cost	Purpose	
Computer	1	$1,500	**$1,500**	**Average cost of a computer with required specifications**	**Data collection and SCADA software use**	
SCADA Software Starter Kit	3	$1,000	**$3,000**	**Quoted Price From Rubicon**	**Data collection from flow gates**	
Software Annual Subscription	3	$500	**$1,500**	**Quoted Price From Rubicon**	**Data collection from flow gates**	
		Total	**$6,000**			

f. Contractual: Subawards					
Subrecipient Name	**Description of Activities**		**Total Cost**	**Description of budgeted costs**	**Basis of Cost**
Environmental Consultant - Dew Berry	Provide environmental compliance services		**$7,600**		
		Subtotal	**$7,600**		

g. Construction: Recipient-Owned Equipment Use Costs					
Equipment Item	**Hours**	**Rate**	**Total Cost**	**Basis of Cost**	**Purpose**
Crane Rental and Operations	32	$388	**$12,400**	RS Means Estimate	Movement and install of new Flow Gates
		Subtotal	**$12,400**		

g. Construction: Materials					
Item	**Quantity**	**Unit Cost**	**Total Cost**	**Basis of Cost**	**Comments** (as needed)
48" x 48" Automated Flow Gate	3	$38,300	**$114,900**	Quote from Rubicon	Cost includes installation
Pedestal and Conduit	3	$5,000	**$15,000**	Quote	Cost includes installation - pedestal for solar panel assembly
		Subtotal	**$129,900**		

g. Construction: Contractual				
Contractor Name	**Description of Services**	**Total Cost**	**Description of cost estimate**	**Basis of Cost**
Peterson Brustad Inc.	Design, construction management, grant administration	**$40,700**		Quoted amount based on PBI 2024 rate schedule
TBD	Construction contractor to furnish and install new flow gates, concrete pedestal, and demolish and remove existing flow gates	**$12,400**		Estimated based on previous project
	Subtotal	**$53,100**		

h. Other Direct Costs					
Item Description	**Quantity**	**Unit Cost**	**Total**	**Basis of Cost**	**Purpose**
Contingency	10%	$160,700	**$16,000**	60% Design	Contingency applied to construction-related costs and equipment not including PBI services
		Total	**$16,000**		

j. Indirect Costs					
Rate Type	**Current Federal NICRA**	**Base Description**	**Base Total**	**Rate**	**Total Cost**
Not Applicable					**$0**
				Total	**$0**
				TOTAL PROJECT COST	**$225,000**

III. Environmental and Cultural Resources Compliance

• *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.*

The proposed project will not have any significant impacts to the surrounding environment. The automated flow gates will be installed on existing headwalls, and land disturbance will be minimal. The only excavation activity required will be installing conduit in a narrow trench along the roadway. The diversions are downstream of the fish screen in an existing concrete structure, so it is not a habitat area. The active construction period will be short-term (less than two weeks), and potential temporary impacts will be managed with environmental controls. The work will be conducted during the irrigation system outage when the water levels are low, and pollution control BMPs will be implemented to prevent any water quality impacts. The long-term impacts of the project will be beneficial to the environment by enhancing water use efficiency and using solar-powered equipment to reduce the use of vehicles for traveling to the site. Based on a preliminary environmental review, it is expected that this project will be eligible for a Categorical Exclusion and Exemption through NEPA and CEQA, respectively.

• *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?*

Based on State and Federal biological database searches, there were no critical habitats identified within the project area. Additionally, there were no known locations of Federal threatened or endangered species within the project area. The project construction activities will take place on an existing concrete structure with minimal land disturbance (along a roadway), so there will not be any habitat impacts associated with the proposed project.

• *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.*

There are no known wetlands or other surface waters inside the project boundaries that potentially fall under the Clean Water Act (CWA) jurisdiction as "Waters of the United States" and, therefore, would not have any impacts on these resources.

• *When was the water delivery system constructed?*

HIC was incorporated in 1910. As part of the preliminary assessment, PBI's environmental sub-consultant performed a cultural resources database search of the North Central Information Center's archive for previously recorded cultural resources in the vicinity of the Proposed Project area(s). Based on this research, it appears that some of the ditches may have been constructed as far back as the late 1860s, with numerous and continuous reconstructions and repairs throughout the years. However, most, if not all, of the original ditch system has been modified and sometimes covered or entirely replaced by later reconstruction. Based on the numerous modifications throughout the years, it is unlikely that any of these facilities would be eligible for the National Register of Historic Places (NRHP). Specifically, one (1) prehistoric isolated resource and ten (10) built environment resources have been previously recorded within and

within 1/4 mile of the project areas. However, none of these resources would likely be affected by the Proposed Project and are and have been considered not eligible for the NRHP or the California Register of Historical Places. Further, the Proposed Project alignments area is on Holocene flood plains, basin floors, and stream terraces associated with the movement of the Yuba River at the eastern side of the project area locations and Jack Slough near the western side of the project area locations (USDA 2022). In the early historic era, the Region was mainly marshy wetlands associated with slow-moving waterways, sometimes bordered by sparse oak groves. Therefore, the Proposed Project and surrounding area appear to have a low sensitivity to adversely affect prehistoric resources, built environmental resources, historic resources, and/or Native American archaeological and cultural resources.

• *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.*
The Proposed Project will not likely result in any modifications of or effects on individual features of an irrigation system or a system of importance as known by the NRHP.

• *Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?*
There are no known buildings, structures, or features that would likely be affected by the Project area that is eligible for listing on the NRHP.

• *Are there any known archeological sites in the proposed project area?*
There are no known archeological sites that would likely be affected by the Proposed Project.

• *Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?*
The Proposed Project will not have a disproportionately high and adverse effect on low-income or minority populations.

• *Will the proposed project limit access to, and ceremonial use of, Indian sacred sites or result in other impacts on tribal lands?*
The Proposed Project would not limit access to and ceremonial use of any known Indian sacred sites or result in other impacts on known tribal lands.

• *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?*
The Proposed Project would not likely contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

H.1.1 National Environmental Policy Act

For NEPA, this project is expected to be covered under a Categorical Exclusion. As a grant-funded project, it will meet Category E, Grant and Loan Activities. The work will be confined to areas already impacted by farming/development activities (using existing headwall), the work is

considered minor (replacing existing sluice gates with automated flow gates of the same size), and any potential impacts will be localized at the project site (temporary construction impacts will be controlled with BMPs).

H.1.2 National Historic Preservation Act

As discussed above, there are no known impacts on prehistoric resources, built environmental resources, historic resources, and/or Native American archaeological and cultural resources. PBI's environmental sub-consultant will prepare the cultural surveys and reports necessary for consultation with the State Historic Preservation Office to comply with the National Historic Preservation Act Section 106 process.

H.1.3 Endangered Species Act

As discussed above, there are no critical habitats identified and no known locations of Federal threatened or endangered species within the project area. PBI's environmental subconsultant will prepare the biological surveys and reports necessary for consultation with the US Fish and Wildlife Service.

IV. Required Permits or Approvals

Based on a preliminary environmental review, it is expected that this project will be eligible for a Categorical Exclusion and Exemption through NEPA and CEQA, respectively. The timeframe for this process is expected to be completed during the Pre-Award Phase (May 2024 – September 2024). No other permits or approvals are required.

V. Overlap Duplica on of Effort Statement

The Flow Control Automation Upgrades Project is part of the HIC System Renovation Plan. This project was identified as part of the 2nd highest priority out of the 12 improvement projects recommended. HIC intends to submit a separate application for the USBR WaterSMART Water and Energy Efficiency Grant (WEEG) by February 22, 2024. The application will include improvements at five locations, including the North and South Diversions. The WEEG awards are expected to be announced by June 2024. If the Flow Control Automation Upgrades Project is selected for both SWEP and WEEG funding, HIC will notify the SWEP coordinator immediately to decline the SWEP funding.

VI. Conflict of Interest Disclosure Statement

As of the date of the submission of this application, HIC is unaware of any actual or potential conflicts of interest that exist with respect to Federal financial assistance agreements.

VII. Uniform Audit Repor ng Statement

Not applicable for this project.

VIII. Cer fica on Regarding Lobbying

Not applicable for this project.

IX. Disclosure of Lobbying Ac vi es

Not applicable for this project.

X. Le ers of Support

A letter of support is included as an attachment.

XI. Le ers of Partnership

Not applicable (only for Category B applicants).

530.741.5000
info@yubawater.org
yubawater.org

YUBA WATER AGENCY

January 12, 2024

Subject: United States Bureau of Reclamation Funding Opportunity No. R24AS00059
WaterSMART Small-Scale Water Efficiency Projects
Hallwood Irrigation Company – Flow Control Automation Upgrades: Phase 1

To Whom It May Concern:

I am pleased to provide this letter of support for Hallwood Irrigation Company (HIC) in their application for Funding Opportunity No. R24AS00059 WaterSMART Small-Scale Water Efficiency Projects. This project will allow HIC to replace three existing manual sluice gates with three new automated flow gates. Replacement of these gates will improve efficiency and conservation through accurate flow measurement and solar-powered gate operation that will be remotely monitored and controlled via SCADA. By increasing the efficiency of HIC's main surface water diversions, the project enhances water supply management of the Yuba River.

Thank you for accepting this letter of support for the grant consideration.

Sincerely,

Kyle Morgado, PE
Water Resources Manager
Yuba Water Agency

GRANT AGREEMENT between
YUBA COUNTY WATER AGENCY and HALLWOOD IRRIGATION COMPANY

This agreement is made this 19th day of December, 2023 by and between the Yuba County Water Agency, a public agency ("Agency"), and the Hallwood Irrigation Company ("Grantee"), who agree as follows:

1. **Grant.** The Agency agrees to provide grant funds to the Grantee in a sum not to exceed $442,300, subject to the terms of this Agreement. The grant shall be used by the Grantee for flow control automation upgrades. By approving this Agreement, the Agency determines that the grant will directly further and support Agency purposes and objectives consistent with the Yuba County Water Agency Act and that the grant is an authorized and appropriate expenditure of Agency funds.

2. **Work to Be Performed.** Grantee shall fully perform the work described on **Exhibit A**, a grant form submitted by the Grantee on September 15, 2023 hereafter referred to as the "Work". Grantee acknowledges that the grant proceeds are restricted funds and that the proceeds will be used solely for the purposes described in Exhibit A and for no other purpose.

3. **Method of Payment.** The **Grantee** shall pay all invoices, bills, statements, and other expenses for the Work, and the Agency shall reimburse Grantee upon request. Reimbursement requests shall be submitted to the Agency by the Grantee by way of an email to **accountspayable@yubawater.org** and shall include satisfactory copies of subject invoice(s), bill(s), statement (s), and/or other proof of the cost of the item(s).

   Upon verification by the Agency that invoices, bills, statements, and other expenses for the Work are eligible for reimbursement to the Grantee and are otherwise in compliance with this Agreement, the Agency will process reimbursement within 30 days of receipt thereof. The total reimbursement shall not exceed the grant amount.

4. **Term & Termination.**

   4.1. This Agreement shall take effect at the date entered above. Grantee must complete the Work, and all grant fund reimbursement requests must be submitted to the Agency by June 30, 2025 unless extended by mutual agreement of the parties. Any grant funds not expended by this date shall be forfeited by the Grantee and retained by the Agency.

   4.2. Agency may terminate this Agreement at any time for cause by giving 14 days prior written notice to Grantee. Cause shall mean (a) Grantee violates this Agreement, and such violation continues for a period of 30 days after notice of violation from Agency which notice shall specify the violation; (b) Grantee files or there is filed against Grantee a bankruptcy petition (unless, in the case of a petition filed against Grantee, the same is dismissed or stayed within 60 days); (c) Grantee makes an assignment for the benefit of creditors; (d) Grantee becomes insolvent or there shall occur a material adverse change in the financial conditions of Grantee; (e) Grantee applies for or

consents to the appointment of a receiver, trustee, or conservator, or such appointment is made without Grantee's consent and is not vacated within 60 days; (f) Grantee files a petition or resolution of application for reorganization; or (g) Agency suffers a significant loss of revenue and/or deposits/reserves, resulting in a loss of sufficient funds for this grant.

5. **Reports.** Grantee shall submit quarterly reports to Agency outlining progress made during the quarter for the tasks shown in Exhibit A. Each quarterly report shall give a summary of expenses during the quarter and the grant in total. Quarterly reports are due within 45 days after the end of each quarter. Grantee shall submit a final report to the Agency within 60 days after completion of a project or program, or at the point in time when Yuba Water grant or loan funds have been exhausted. The final report shall demonstrate the use of agency funds and overall success of the project or program. All reports shall be emailed to: grants@yubawater.org.

6. **Compliance**. Grantee shall perform the Work in compliance with all applicable federal, state and local laws, regulations and codes, including acquisition of and compliance with all required permits, licenses, entitlements and authorizations.

7. **Public Works Requirement.** If the Work consists of public works, as defined in Labor Code sections 1720 to 1720.4, then Grantee and its contractors and subcontractors shall comply with California statutes and regulations applicable to public works projects, including, but not limited to, the following requirements: payment of prevailing wage rates; employment of apprentices; hours of labor limitations and overtime; payroll records; workers' compensation insurance; payment/labor and materials bond (if grant amount exceeds $25,000); non-discrimination laws; contractors' state license requirements; contractor registration with the State Department of Industrial Relations; and California Environmental Quality Act environmental review.

8. **Inspections.** Agency reserves the right to inspect any Work to determine whether it is being performed in accordance with this Agreement. Agency may withhold grant payments if it finds Work nonconforming, until Grantee remedies the nonconformity.

9. **Record Keeping.**

    9.1 Grantee shall keep and maintain accurate bookkeeping records, accounts, and documentation pertaining to the receipt, disbursement, and use of the grant proceeds to pay vendors, contractors, suppliers, and others who perform the Work for Grantee, including all invoices, receipts, canceled checks, contracts, purchase orders, and other source documents.

    9.2 These records shall be retained for a period of not less than three years from the final grant payment.

9.3 These records shall be accessible and available for inspection or audit by Agency, or by its employees, accountants, attorneys or agents, at reasonable times and upon reasonable notice.

9.4 If the grant exceeds $10,000, then (as required by Government Code section 8546.7) this Agreement and performance and payments under it are subject to examination and audit by the State Auditor General for three years following final payment.

10. **Indemnification.** Grantee shall indemnify, defend, protect, and hold harmless Agency, and its officers, employees, volunteers and agents from and against any and all liability, losses, claims, damages, expenses, demands, and costs (including but not limited to, attorney, expert witness and consultant fees and litigation costs) of every nature arising out of Grantee's performance of the Work and caused by the negligent or willful act or omission of Grantee and its contractors or subcontractors or their employees, agents, and subcontractors, except where caused by the active negligence, sole negligence or willful misconduct of Agency or as otherwise provided or limited by law. Grantee's obligations under this indemnification provision shall survive the termination of, or completion of Work under, this Agreement.

11. **General Provisions.**

11.1 Integration. This Agreement constitutes the sole, final, complete, exclusive and integrated expression and statement of terms of this contract among the parties concerning the subject matter addressed in this Agreement, and supersedes all prior negotiations, representations or agreements, either oral or written, that may be related to the subject matter of this Agreement, except those other documents that are expressly referenced in this Agreement.

11.2 Waiver. The waiver at any time by any party of its rights with respect to a default or other matter arising in connection with this Agreement shall not be deemed a waiver with respect to and subsequent default or matter.

11.3. Successors and Assignment. This Agreement shall bind and inure to the benefit of the respective successors, assigns, heirs, devisees, and personal representatives of the parties.

11.4 Governing Law and Venue. Except as otherwise required by law, this Agreement shall be interpreted, governed by, and construed under the laws of the State of California.

11.5 Attorney's Fees. In the events any legal action is brought to enforce or construe this Agreement, the prevailing party shall be entitled to an award of reasonable attorney's fees, expert witness and consultant fees, litigation costs, and costs of suit.

11.6 Amendment. This Agreement may be modified or amended only by a subsequent written agreement approved and signed by both parties. Amendment by Agency requires the approval of its Board of Directors.

11.7 Notices. Any notice, demand, invoice or other communication required or permitted to be given under this Agreement shall be in writing and either served personally or sent by prepaid, first class U.S. mail addressed as follows:

Yuba County Water Agency:
General Manager
Nicholas Whittlesey Jr.
1220 F. Street
Marysville, CA 95901

Grantee:
Steve Springer
Hallwood Irrigation Company
PO Box 1349
Marysville, CA 95901

Any party may change its address by notifying the other party of the change in the manner provided above.

YUBA COUNTY WATER AGENCY

By: _____

Nicholas Whittlesey Jr., General Manager

HALLWOOD IRRIGATION COMPANY

By: Steven W Springer
Steven W Springer (Jan 12, 2024 12:08 PST)

Steve Springer, President

Attachment
Exhibit A – Grant Application