Yuba IRWMP – HIC-05

Project Short Form[1]

Please fill out the following information to the best of your ability/knowledge. Contact Keri Rinne with questions: keri.rinne@gmail.com

PROJECT SPONSOR INFORMATION

Lead Agency/Organization	Hallwood Irrigation Company
Name of Primary Contact(s)	Mark Chandless
Mailing Address	P.O. Box 1349, Marysville, CA 95901
Email Address	mchandless@att.net
Phone (###) ###-####	530-788-3289
Project Partners/Collaborators	Yuba Water Agency
YWA Liaison	Joanna Lessard; Ryan McNally

GENERAL PROJECT INFORMATION

Project Title	Seepage Loss Prevention
Project Total Budget (Attach detailed budget, if available)	$5,696,000
Budget Breakdown	Planning/Design Budget: $0.
	Implementation Budget: $5,696,000
Project Funding Match, if any	TBD
Total Project Funding Need	TBD
Project Location (Attach map if available)	Hallwood, Yuba County
Watershed/subwatershed	
Groundwater Basin (Select one)	☒ North Yuba Subbasin ☐ South Yuba Subbasin ☐ Not Applicable
Supports Yuba Groundwater Sustainability Plan (GSP)?	☒ Yes ☐ No
Measurable Objective(s) Benefit (Answer If 'Yes' above) (check *all* that apply)	☒ Chronic lowering of groundwater levels ☒ Reduction of groundwater storage ☒ Degraded water quality ☒ Land subsidence ☒ Depletions of interconnected surface waters
Project Priority (Select one)	☒ High ☐ Medium ☐ Low
Project Type (check *all* that apply)	☐ Conceptual ☐ Feasibility Study ☐ Study/Assessment ☐ Planning ☐ Engineering/Design ☐ Permitting ☐ CEQA/NEPA ☒ Facility Construction ☒ Restoration ☐ Monitoring ☐ Best Management Practices ☐ Acquisition

[1] Completed Project Short Forms should be sent via email to Keri Rinne at keri.rinne@gmail.com

	☐ Demonstration/Pilot Project
Legal Authority	

Please select the *status* of the CEQA/NEPA/Permitting for this project:

CEQA **(Select one)**	☒Exempt ☐Not Started ☐Initial Study ☐EIR ☐Determination ☐Unknown if Required
NEPA **(Select one)**	☒Exempt ☐ Not Started ☐Environmental Assessment ☐EIS ☐Record of Decision ☐ Unknown if Required
Permitting **(Select one)**	☒Not Required ☐Not started ☐Identified ☐Consultations Complete ☐Application Submitted ☐Complete ☐Unknown if Required

PROJECT DESCRIPTION

Write a narrative briefly describing the project components and/or characteristics (Suggest ~ 300 words).

The Hallwood Irrigation Company (HIC) received a Community Impact Grant from the Yuba Water Agency (YWA) for the HIC System Renovation Plan. The first phase of the Renovation Plan included the development of an irrigation system condition assessment, which was completed in December 2022. The condition assessment identified several recommended improvements and prioritized these improvements. The second phase of the Renovation Plan includes developing the construction documents, engineering, and permitting for the highest priority improvements. The project identified herein was identified as the 5th highest priority out of the 12 improvement projects recommended.

The condition assessment identified several seepage problem areas: approximately 6,000 linear feet near the beginning of the North Main Ditch, approximately 4,000 linear feet along the Highway 20 Ditch, and approximately 7,000 linear feet along the Warehouse Ditch. This accounts for an estimated total of 17,000 linear feet of ditches that experience seepage issues. The exact linear footage must be refined pending surveys and hydraulic investigations to be performed during the design phases for each seepage loss prevention project. It is recommended to phase the construction of seepage loss prevention projects to make it easier to secure funding for each identified canal section.

The recommended alternative for preventing seepage is to line the ditches with a geomembrane liner (such as reinforced polyethylene placed over a geotextile fabric or other composite materials).

A geomembrane liner could be placed along the canal banks exposed or covered in shotcrete or polymer concrete. It is recommended to cover the geomembrane liner with shotcrete or polymer concrete for this application because of the sediment removal practices employed by HIC. A polymer concrete would be able to cure in one day and would only require a 1-inch-thick layer, while shotcrete would require 28 days to fully cure and would need to be at least 3 inches thick. An 18-inch by 18-inch cross-section anchor trench would be required along the canal banks to tie-in the liner. The liner would need to be specified to be manufactured with geotextile layers on top and bottom to adhere to the soil and provide an interface for concrete application.

Geomembrane liners are typically sold with a 20-year warranty but can last upwards of 40 years when properly installed.

PROJECT RATIONALE/ISSUES STATEMENT

Briefly describe the need for the project and the desired outcomes/deliverables (Suggest ~ 200 words). Include an explanation of benefits and how they would be evaluated.

Seepage losses occur when water percolates through the ground underneath a canal. This results in increased irrigation demands and more diversion from the Yuba River or more groundwater pumping into the canal.

This project will prevent seepage and eliminate all water losses from the lined canal sections. Furthermore, ditch linings provide the added benefits of preventing erosion, improving canal water quality, and increasing the flow rate of water through the channel if the lining is installed exposed. Additionally, a ditch lining alternative would reduce the risk of bank blowout.

The two main goals are to (1) improve the efficient use of Yuba River surface water supplies in the area of benefit in the North Yuba Subbasin and (2) improve the quality and quantity of flow rate data to allow more precise and accurate control of flows in and diversions from the HIC irrigation system.

The project is expected to realize the following quantifiable benefits:

1. Water supply savings resulting from avoidance of excess surface water diversion.
2. Improved groundwater conditions due to greater availability of surface water supplies and subsequent reduced demand for groundwater.

Such water savings and resiliency will allow for continued avoidance of “deficit pumping” by these agencies. Furthermore, 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.