# Appendix 9-3

Project Submittals

# UPPER FEATHER RIVER IRWM

## PROJECT INFORMATION FORM

**Please submit by 5:00 p.m. on August 3, 2015, to UFR.contact@gmail.com**

Please provide information in the tables below:

### I. PROJECT PROPONENT INFORMATION

| | |
|---|---|
| **Agency / Organization** | Taylorsville Mill Race Group sponsored by Feather River Resource Conservation District |
| **Name of Primary Contact** | Brian Kingdon |
| **Name of Secondary Contact** | Holly Foster |
| **Mailing Address** | 125 Slate Drive, Taylorsville, CA 95983; 2521 Williams Road, Oroville, CA 95965 |
| **E-mail** | bskingdon@gmail.com; holly@robertfosterranch.com |
| **Phone** | (530)284-6504; (530) 570-0757 |
| **Other Cooperating Agencies / Organizations / Stakeholders** | n/a |
| **Is your agency/organization committed to the project through completion? If not, please explain** | Yes |

### II. GENERAL PROJECT INFORMATION

| | |
|---|---|
| **Project Title** | ALS-1: Taylorsville Mill Race Farmers Dam Resurfacing |
| **Project Category** | ☒ **Agricultural Land Stewardship**<br>☐ **Floodplains/Meadows/Waterbodies**<br>☐ **Municipal Services**<br>☐ **Tribal Advisory Committee**<br>☐ **Uplands/Forest** |
| **Project Description**<br>(Briefly describe the project, in 300 words or less) | The Taylorsville Mill Race irrigation system can trace its beginnings to the founding of the community of Taylorsville by Jobe Taylor. The original main ditch was dug by Chinese labor in the 1850s and provided water to power a grist and a lumber mill operated by Jobe Taylor. Area farmers utilized the "tail water" from the mills to irrigate crops and pastureland. When the mills ceased operation, farmers and ranchers continued to utilize the ditch system and water rights. Now part of the Indian Creek Decree (No. 4185), the Taylorsville Mill Race represents the largest diversion right (No. 54) within the decree and its associated watermaster service area. There are eleven shares or water rights held by landowners that make up the non-profit Taylorsville Mill Race Group, irrigating approximately 3,000 acres. |

| | |
|---|---|
| | Historically an earthen dam was built prior to the irrigation season that diverted water in Indian Creek for the Taylorsville Mill Race diversion; however, in the 1940s or 1950s (exact year not known), a more permanent cement dam was built that provided for a more reliable system and less disruption and damage to the stream flow and the adjacent banks of Indian Creek. This structure is maintained by the non-profit group of users who are organized under the name of the Taylorsville Mill Race Group.<br><br>In 1986, the group undertook the work of resurfacing the face of the dam to repair damage and ensure its continued viability. This project was completed by members of the group with significant amounts of in-kind labor and donated expertise and equipment, but still cost the participants $34, 400 (Holly Foster interview with Charlie Neer, C. Neer Construction Co., May 30, 2015). The Mill Race Group has identified the need to resurface the dam again in the near future (within the next 10 years). |
| **Project Location Description** (e.g., along the south bank of stream/river between river miles or miles from Towns/intersection and/or address): | The Farmers' Dam is located east of the community of Taylorsville, on Indian Creek approximately ½ mile upstream of the bridge on County Road A22 (Arlington Road). (Maps and photos of the project area are available from Holly Foster.) |
| **Latitude:** | |
| **Longitude:** | |

## III. APPLICABLE IRWM PLAN OBJECTIVES ADDRESSED

For each of the objectives addressed by the project, provide a one to two sentence description of how the project contributes to attaining the objective and how the project outcomes will be quantified. If the project does not address *any* of the IRWM plan objectives, provide a one to two sentence description of how the project relates to a challenge or opportunity of the Region.

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Restore natural hydrologic functions. | ☐ Yes<br>☒ N/A | Due to the historical nature of the Mill Race Dam, its deterioration would be detrimental to the surrounding riparian area. | |
| Reduce potential for catastrophic wildland fires in the Region. | ☒ Yes<br><br>☐ N/A | The Mill Race and its associated water supply serves as important component to wildland fire suppression for | There are approximately 2,000 residents in The Mill Race represents a |

| Upper Feather River IRWM Objectives: | Will the project address the objective? | Brief explanation of project linkage to selected Objective | Quantification (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| | | the Indian Valley area and its residents. | dependable water source to aid the approximately 2,000 residents of Indian Valley in the event of catastrophic wildfire, especially the community of Taylorsville. |
| Build communication and collaboration among water resources stakeholders in the Region. | ☒ Yes<br>☐ N/A | The Mill Race Dam is an important structural component within Indian Valley, and specifically the community of Taylorsville. | In addition to supporting the irrigation on approximately nine family-owned livestock and hay operations in Indian Valley, the Taylorsville Mill Race represents an important historical structure within the valley. |
| Work with DWR to develop strategies and actions for the management, operation, and control of SWP facilities in the Upper Feather River Watershed in order to increase water supply, recreational, and environmental benefits to the Region. | ☐ Yes<br>☒ N/A | While the Taylorsville Mill Race Dam is a private structure, it is downstream from Antelope Lake, a SWP dam constructed in 1964. | There are eleven shares or water rights held by landowners that make up the non-profit Taylorsville Mill Race Group, irrigating approximately 3,000 acres. |
| Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality. | ☐ Yes<br>☒ N/A | | |
| Continue to actively engage in FERC relicensing of hydroelectric facilities in the Region. | ☐ Yes<br>☒ N/A | | |

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Address economic challenges of municipal service providers to serve customers. | ☐ Yes<br>☒ N/A | | |
| Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the RWQC Basin Plan. | ☒ Yes<br>☐ N/A | In addition to supporting the irrigation on approximately nine family-owned livestock and hay operations in Indian Valley, the Taylorsville Mill Race represents an important historical structure within the valley. The associated ditch system provides for a source of conjunctive water management for ranching and farming operations that utilize both ground and surface water. Additionally, the ditch system provides important wildlife habitat, as well as flood control for the valley during periods of excessive precipitation. | There are eleven shares or water rights held by landowners that make up the non-profit Taylorsville Mill Race Group, irrigating approximately 3,000 acres. |
| Address water resources and wastewater needs of DACs and Native Americans. | ☐ Yes<br>☒ N/A | | |
| Coordinate management of recharge areas and protect groundwater resources. | ☒ Yes<br>☐ N/A | The Taylorsville Mill Race ditch system provides a source of conjunctive water management for ranching and farming operations that utilize both ground and surface water. The seasonal irrigation is also a component to regional aquifer recharge. | There are eleven shares or water rights held by landowners that make up the non-profit Taylorsville Mill Race Group, irrigating approximately 3,000 acres. |
| Improve coordination of land use and water resources planning. | ☒ Yes<br>☐ N/A | Ensuring the long-term viability of the Taylorsville Mill Race Dam is an important component to the management of adjacent agricultural lands, and unincorporated residential areas. | There are eleven shares or water rights held by landowners that make up the non-profit Taylorsville Mill Race Group, irrigating |

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| | | | approximately 3,000 acres. |
| Maximize agricultural, environmental and municipal water use efficiency. | ☒ Yes<br>☐ N/A | The Taylorsville Mill Race Dam represents a major irrigation diversion structure for the Indian Valley region, and is critical to the irrigation of approximately 3,000 acres. Ensuring its long-term viability through this resurfacing project will be critical to efficient water usage associated with this water right. | There are eleven shares or water rights held by landowners that make up the non-profit Taylorsville Mill Race Group, irrigating approximately 3,000 acres. |
| Effectively address climate change adaptation and/or mitigation in water resources management. | ☒ Yes<br>☐ N/A | The Mill Race Dam represents an important structure for water storage and control in the Indian Valley region, and its management in consultation with the area watermaster can help mitigate water shortages due to perceived climate change and/or drought. The historical nature of the structure means that it is now an important component of the riparian corridor that is adjacent | There are eleven shares or water rights held by landowners that make up the non-profit Taylorsville Mill Race Group, irrigating approximately 3,000 acres. |
| Improve efficiency and reliability of water supply and other water-related infrastructure. | ☒ Yes<br>☐ N/A | The Taylorsville Mill Race Dam represents a major irrigation diversion structure for the Indian Valley region, and is critical to the irrigation of approximately 3,000 acres. Ensuring its long-term viability through this resurfacing project will be critical to efficient water usage associated with this water right. | There are eleven shares or water rights held by landowners that make up the non-profit Taylorsville Mill Race Group, irrigating approximately 3,000 acres. |
| Enhance public awareness and understanding of water management issues and needs. | ☒ Yes<br>☐ N/A | In addition to supporting the irrigation on approximately nine family-owned livestock and hay operations in Indian Valley, the Taylorsville Mill Race represents an important | There are eleven shares or water rights held by landowners that make up the non-profit Taylorsville |

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| | | historical structure within the valley. The associated ditch system provides for a source of conjunctive water management for ranching and farming operations that utilize both ground and surface water. Additionally, the ditch system provides important wildlife habitat, as well as flood control for the valley during periods of excessive precipitation. | Mill Race Group, irrigating approximately 3,000 acres. |
| Address economic challenges of agricultural producers. | ☒ Yes<br>☐ N/A | The Taylorsville Mill Race Dam represents a major irrigation diversion structure for the Indian Valley region, and is critical to the irrigation of approximately 3,000 acres. Ensuring its long-term viability through this resurfacing project will be critical to the economic survival of approximately nine family-owned livestock and hay operations. | There are eleven shares or water rights held by landowners that make up the non-profit Taylorsville Mill Race Group, irrigating approximately 3,000 acres. |
| Work with counties/ communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding. | ☒ Yes<br>☐ N/A | The Taylorsville Mill Race Group is an unincorporated, non-profit organization of water uses; however, with no paid staff, it will be important that capacity is developed to facilitate the management of this project. | There are eleven shares or water rights held by landowners that make up the non-profit Taylorsville Mill Race Group, irrigating approximately 3,000 acres. |

If no objectives are addressed, describe how the project relates to a challenge or opportunity for the Region:

## IV. PROJECT IMPACTS AND BENEFITS

Please provide a summary of the expected project benefits and impacts in the table below or check N/A if not applicable; **do no leave a blank cell.** Note that DWR encourages multi-benefit projects.

| **If applicable, describe benefits or impacts of the project with respect to:** | | |
|---|---|---|
| **a. Native American Tribal Communities** | ☐ N/A | Much of the UFRW is populated by DACs and Native Americans. Ensuring the long-term viability of the Taylorsville Mill Race Dam is important to the community economically, and has benefits to the community at large. (Note: The project, as described, does not meet the letter of the guidelines around Tribal project involvement. However, the Maidu Summit Consortium has expressed an interest in advisory involvement in the project via the Greenville Rancheria or Cunningham Family.) |
| **b. Disadvantaged Communities[1]** | ☒ N/A | Much of the UFRW is populated by DACs and Native Americans. Ensuring the long-term viability of the Taylorsville Mill Race Dam is important to the community economically, and has benefits to the community at large. (Note: N/A is checked because the project does not meet the letter of the guidelines around critical water needs of a DAC.) |
| **c. Environmental Justice[2]** | ☒ N/A | Assistance provided through this project would be for the specific purpose of resurfacing the Taylorsville Mill Race Dam, and for engaging qualified individuals or firms for the engineering, permitting and construction components. |
| **d. Drought Preparedness** | ☐ N/A | As a significant structure in an already existing water management system, the long-term viability of the Mill Race Dam is important for ongoing drought planning for ag operations within Indian Valley. |
| **e. Assist the region in adapting to effects of climate change[3]** | ☐ N/A | As a significant structure in an already existing water management system, the long-term viability of the Mill Race Dam is important for responding to perceived changes in water supply due to climate change. |

| | | |
|---|---|---|
| **f. Generation or reduction of greenhouse gas emissions (e.g. green technology)** | ☐ N/A | The working landscapes supported by the Taylorsville Mill Race Dam provide significant capacity for carbon sequestration. |
| **g. Other expected impacts or benefits that are not already mentioned elsewhere** | ☐ N/A | Ensuring the long-term viability of the ag operations that depend on the Taylorsville Mill Race Dam has multiple public benefits, including improving the largest economic driver in the region. |

[1] A Disadvantaged Community is defined as a community with an annual median household (MHI) income that is less than 80 percent of the Statewide annual MHI. DWR's DAC mapping is available on the UFR website (http://featherriver.org/maps/) .
[2] Environmental Justice is defined as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies. An example of environmental justice benefit would be to improve conditions (e.g. water supply, flooding, sanitation) in an area of racial minorities.
[3] Climate change effects are likely to include increased flooding, extended drought, and associated secondary effects such as increased wildfire risk, erosion, and sedimentation.

DWR encourages multiple benefit projects which address one or more of the following elements (PRC §75026(a). Indicate which elements are addressed by your project.

| | | | |
|---|---|---|---|
| a. Water supply reliability, water conservation, water use efficiency | ☒ Yes ☐ N/A | g. Drinking water treatment and distribution | ☐ Yes ☒ N/A |
| b. Stormwater capture, storage, clean-up, treatment, management | ☒ Yes ☐ N/A | h. Watershed protection and management | ☒ Yes ☐ N/A |
| c. Removal of invasive non-native species, creation/enhancement of wetlands, acquisition/protection/restoration of open space and watershed lands | ☒ Yes ☐ N/A | i. Contaminant and salt removal through reclamation/desalting, other treatment technologies and conveyance of recycled water for distribution to users | ☐ Yes ☒ N/A |
| d. Non-point source pollution reduction, management and monitoring | ☐ Yes ☒ N/A | j. Planning and implementation of multipurpose flood management programs | ☒ Yes ☐ N/A |
| e. Groundwater recharge and management projects | ☒ Yes ☐ N/A | k. Ecosystem and fisheries restoration and protection | ☒ Yes ☐ N/A |
| f. Water banking, exchange, reclamation, and improvement of water quality | ☒ Yes ☐ N/A | | |

## V. RESOURCE MANAGEMENT STRATEGIES

For each resource management strategy (RMS) employed by the project, provide a one to two sentence description in the table below of how the project incorporates the strategy. A description of the RMS can be found in Volume 2 of the 2013 California Water Plan (http://featherriver.org/2013-california-water-plan-update/).

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Reduce Water Demand | | |
| Agricultural Water Use Efficiency | ☒ Yes ☐ No | Any enhancements made to the already existing dam structure will improve long-term agricultural water use efficiency. |
| Urban water use efficiency | ☐ Yes ☒ No | |
| Improve Flood Management | | |
| Flood management | ☒ Yes ☐ No | The Mill Race ditch system is an important component of flood control within Indian Valley. |
| Improve Operational Efficiency and Transfers | | |
| Conveyance – regional/local | ☒ Yes ☐ No | The Mill Race ditch system is an important water conveyance system within Indian Valley. |
| System reoperation | ☒ Yes ☐ No | Ensure long-term viability of the Taylorsville Mill Race. |
| Water transfers | ☐ Yes ☒ No | |
| Increase Water Supply | | |
| Conjunctive management | ☒ Yes ☐ No | The Mill Race water diversion system is part of a conjunctive management protocol for most of the shareholders who also utilize groundwater to supplement surface water allocations. |
| Precipitation Enhancement | ☐ Yes ☒ No | |
| Municipal recycled water | ☐ Yes ☒ No | |
| Surface storage – regional/local | ☒ Yes ☐ No | The Mill Race Dam represents an important structure to provide for timely flows within the valley-wide irrigation system. |
| Improve Water Quality | | |
| Drinking water treatment and distribution | ☐ Yes ☒ No | |
| Groundwater remediation/aquifer remediation | ☐ Yes ☒ No | |
| Matching water quality to water use | ☐ Yes ☒ No | |
| Pollution prevention | ☐ Yes ☒ No | |
| Salt and salinity management | ☐ Yes ☒ No | |
| Urban storm water runoff management | ☒ Yes ☐ No | The Taylorsville Mill Race ditch system represents an important component of flood control within Indian Valley and for the unincorporated community of Taylorsville. |
| Practice Resource Stewardship | | |
| Agricultural land stewardship | ☒ Yes ☐ No | There are approximately nine family-owned livestock and hay operations that depend on surface water diverted through the Taylorsville Mill Race ditch system. These |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| | | members irrigate approximately 3,000 acres with the Mill Race diversion, and are responsible for managing adjacent non-irrigated lands that represent significant agricultural landscapes in the valley. |
| Ecosystem restoration | ☒ Yes ☐ No | The Mill Race and adjacent properties represent a significant amount of habitat that is held privately. Supporting the ongoing viability of this structure enhances those habitats. |
| Forest management | ☐ Yes ☒ No | |
| Land use planning and management | ☒ Yes ☐ No | The Mill Race is an important component to the hydrology and topography in Indian Valley, thus its ongoing viability should be connected to land use planning. |
| Recharge area protection | ☒ Yes ☐ No | The surface irrigation on the approximately 3,000 acres served by the Mill Race system represents a significant aquifer recharge area. |
| Sediment management | ☒ Yes ☐ No | Ensuring the long-term viability of the dam structure will prevent potential sediment issues that might arise if the dam structure were to deteriorate. |
| Watershed management | ☒ Yes ☐ No | Resurfacing the dam will help prevent a catastrophic erosion event, and therefore potential downstream bank erosion and sedimentation |
| People and Water | | |
| Economic incentives | ☐ Yes ☒ No | Ensuring the long-term viability of the Taylorsville Mill Race Dam is important to the economic survival of approximately nine family-owned ag operations within Indian Valley, which also provide important economic support to the community at large. |
| Outreach and engagement | ☒ Yes ☐ No | The Taylorsville Mill Race represents an important historical structure within the valley. As the work is initiated, project managers will be communicating with residents of the area about the critical need to maintain the dam structure and its importance to the area at large. |
| Water and culture | ☒ Yes ☐ No | The Taylorsville Mill Race represents an important historical structure within the valley. |
| Water-dependent recreation | ☐ Yes ☒ No | |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Wastewater/NPDES | ☐ Yes ☒ No | |

Other RMS addressed and explanation:

| |
|---|
| |

## VI. PROJECT COST AND FINANCING

Please provide any estimates of project cost, sources of funding, and operation and maintenance costs, as well as the source of the project cost in the table below.

**PROJECT BUDGET**

Project serves a need of a DAC?: ☐ Yes ☒ No

Funding Match Waiver request?: ☐ Yes ☒ No

| | Category | Requested Grant Amount | Cost Share: Non-State Fund Source* (Funding | Cost Share: Other State Fund Source* | Total Cost |
|---|---|---|---|---|---|
| a. | **Direct Project Administration** | $15,000 (est) | | | $15,000 |
| b. | **Land Purchase/Easement** | | | | |
| c. | **Planning/Design/Engineering / Environmental** | $35,000 (est) | | | $35,000 |
| d. | **Construction/Implementation** | $100,000 (est) | | | $100,000 (est) |
| e. | **Environmental Compliance/ Mitigation/Enhancement** | | | | |
| f. | **Construction Administration** | | | | |
| g. | **Other Costs** | TBD | | | |
| h. | **Construction/Implementation Contingency** | | | | |
| i. | **Grand Total (Sum rows (a) through (h) for each column)** | $150,000 | | | $150,000 |

| | | | | |
|---|---|---|---|---|
| j. | **Can the Project be phased?** ☒ Yes ☐ No If **yes**, provide cost breakdown by phases | | | |
| | | **Project Cost** | **O&M Cost** | **Description of Phase** |
| | **Phase 1** | $35,000 | | Year 1: Plan/Design/Permit |
| | **Phase 2** | $100,000 | | Year 2: Construction |
| | **Phase 3** | $15,000 | | Ongoing: Administration and Monitoring |
| | **Phase 4** | | | |

| | | |
|---|---|---|
| **k.** | **Explain how operation and maintenance costs will be financed for the 20-year planning period for project implementation (not grant funded).** | Part of this resurfacing project will include planning for the long-term viability of the structure beyond the life of the restoration, and will potentially incorporate the development of endowment funds to aid in the long-term maintenance of the structure. |
| **l.** | **Has a Cost/Benefit analysis been completed?** | ☐ Yes ☒ No |
| **m.** | **Describe what impact there may be if the project is not funded (300 words or less)** | There are approximately nine family-owned livestock and hay operations that depend on surface water diverted through the Taylorsville Mill Race ditch system. These members irrigate approximately 3,000 acres with the Mill Race diversion, and are responsible for managing adjacent non-irrigated lands that represent significant agricultural landscapes in the valley. If this restoration project is not funded, it represents a significant economic burden on these operations, as well as the community as a whole due to their contributions to the local economy and the environment. |
| *List all sources of funding.<br>Note: See Project Development Manual, Exhibit B, for assistance in completing this table (http://featherriver.org/documents/). | | |

## VIII. PROJECT STATUS AND SCHEDULE

Please provide a status of the project, level of completion as well as a description of the activities planned for each project stage. If unknown, enter **TBD**.

| Project Stage | Check the Current Project Stage | Completed? | Description of Activities in Each Project Stage | Planned/ Actual Start Date (mm/yr) | Planned/ Actual Completion Date (mm/yr) |
|---|---|---|---|---|---|
| **a. Assessment and Evaluation** | ☐ | ☐ Yes<br>☒ No<br>☐ N/A | Project planning | | |
| **b. Final Design** | ☐ | ☐ Yes<br>☒ No<br>☐ N/A | Finalize project design | | |
| **c. Environmental Documentation (CEQA / NEPA)** | ☐ | ☐ Yes<br>☒ No<br>☐ N/A | | | |
| **d. Permitting** | ☐ | ☐ Yes<br>☒ No<br>☐ N/A | Secure permits | | |

| | | | | | |
|---|---|---|---|---|---|
| **e. Construction Contracting** | ☐ | ☐ Yes<br>☒ No<br>☐ N/A | Secure contractor, materials | | |
| **f. Construction Implementation** | ☐ | ☐ Yes<br>☒ No<br>☐ N/A | Resurface dam; Ongoing maintainance | | |
| **Provide explanation if more than one project stage is checked as current status** | | | | | |

## IX. PROJECT TECHNICAL FEASIBILITY

Please provide any related documents (date, title, author, and page numbers) that describe and confirm the technical feasibility of the project. See www.featherriver.org/catalog/index.php for documents gathered on the UFR Region.

| | |
|---|---|
| **a. List the adopted planning documents the proposed project is consistent with or supported by** (e.g. General Plans, UWMPs, GWMPs, Water Master Plan, Habitat Conservation Plans, TMDLs, Basin Plans, etc.). | Indian Creek Decree<br>Others TBD |
| **b. List technical reports and studies supporting the feasibility of this project.** | Plumas County Ag Commissioner's Report<br>Watermaster Report<br>Others TBD |
| **c. Concisely describe the scientific basis** (e.g. how much research has been conducted) **of the proposed project in 300 words or less.** | A feasibility study will be a component of the initial development stage; however, significant work has already been conducted to address the economic contribution of family-owned ranches to local rural economies and habitat conservation. |
| **d. Does the project implement green technology** (e.g. alternate forms of energy, recycled materials, LID techniques, etc.). | ☒ Yes ☐ No ☐ N/A<br>If yes, please describe.<br><br>TBD – will depend on contractor and materials available (possibly recycled). Possible use of solar pump during resurfacing. |
| **e. Are you an Urban Water Supplier[1]?** | ☐ Yes ☒ No ☐ N/A |
| **f. Are you are an Agricultural Water Supplier[2]?** | ☐ Yes ☒ No ☐ N/A |
| **g. Is the project related to groundwater?** | ☐ Yes ☒ No ☐ N/A<br>If yes, please indicate which groundwater basin. |

[1] Urban Water Supplier is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually.

[2] Agricultural Water Supplier is defined as a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding the acreage that receives recycled water.

# Climate Change – Project Assessment Checklist

This climate change project assessment tool allows project applicants and the planning team to assess project consistency with Proposition 84 plan standards and RWMG plan assessment standards. The tool is a written checklist that asks GHG emissions and adaptation/resiliency questions.

Name of project: __ALS 1 –Taylorsville Mill Race Farmers Dam Resurfacing____

Project applicant: __Taylorsville Mill Race Group/FRRCD_____

## GHG Emissions Assessment

### Project Construction Emissions

*(If you check any of the boxes, please see the attached worksheet)*

☒ The project requires nonroad or off-road engines, equipment, or vehicles to complete.
☒ The project requires materials to be transported to the project site.
☒ The project requires workers to commute to the project site.
☐ The project is expected to generate GHG emissions for other reasons.
☐ The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

### Operating Emissions

*(If you check any of the boxes, please see the attached worksheet)*

☐ The project requires energy to operate.
☐ The project will generate electricity.
☐ The project will proactively manage forests to reduce wildfire risk.
☒ The project will affect wetland acreage.
☐ The project will include new trees.
☐ Project operations are expected to generate or reduce GHG emissions for other reasons.

# Adaptation & Resiliency Assessment

## Water Supply

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water supply vulnerability issues:

- ☐ Not applicable
- ☐ Reduced snowmelt
- ☒ Unmet local water needs (drought)
- ☐ Increased invasive species

Update to existing infrastructure that supports local irrigation and water supplies.

## Water Demand

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water demand vulnerability issues:

- ☐ Not applicable
- ☐ Increasing seasonal water use variability
- ☐ Unmet in-stream flow requirements
- ☒ Climate-sensitive crops
- ☒ Groundwater drought resiliency
- ☒ Water curtailment effectiveness

Provides for ongoing management of existing irrigation diversion; will increase efficiency and management capabilities.

## Water Quality

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water quality vulnerability issues:

- ☐ Not applicable
- ☒ Increasing catastrophic wildfires
- ☐ Eutrophication (excessive nutrient pollution in a waterbody, often followed by algae blooms and other related water quality issues)
- ☐ Seasonal low flows and limited abilities for waterbodies to assimilate pollution
- ☐ Water treatment facility operations
- ☐ Unmet beneficial uses (municipal and domestic water supply, water contact recreation, cold freshwater habitat, spawning habitat, wildlife habitat, etc.)

Existing water diversion structure and storage that makes water available during peak fire season.

## Flooding

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority flooding vulnerability issues:

- ☐ Not applicable
- ☐ Aging critical flood protection
- ☒ Wildfires
- ☐ Critical infrastructure in a floodplain
- ☒ Insufficient flood control facilities

## Ecosystem and Habitat

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority ecosystem and habitat vulnerability issues:

- ☐ Not applicable
- ☐ Climate-sensitive fauna or flora
- ☒ Recreation and economic activity
- ☐ Quantified environmental flow requirements
- ☐ Erosion and sedimentation
- ☐ Endangered or threatened species
- ☐ Fragmented habitat

Dam is a significant part of irrigation system for cattle operations in Indian Valley, providing an economic base for the community at large.

## Hydropower

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority hydropower vulnerability issues:

- ☒ Not applicable
- ☐ Reduced hydropower output

ALS 1 –Taylorsville Mill Race Farmers Dam Resurfacing

**GHG Emissions Analysis**

**Project Construction Emissions**

[X] The project requires non-road or off-road engines, equipment, or vehicles to complete. If yes:

| Type of Equipment | Maximum Number Per Day | Total 8-Hour Days in Operation | Total $MTCO_2e$ |
|---|---|---|---|
| Tractors/Loaders/Backhoes | 2 | 5 | 3 |
| Dumpers/Tenders | 2 | 5 | 0 |
| Cement and Mortar Mixers | 2 | 5 | 0 |
| Skid Steer Loaders | 2 | 5 | 1 |
| Other Construction Equipment | 1 | 5 | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | **Total Emissions** | **4** |

[X] The project requires materials to be transported to the project site. If yes:

| Total Number of Round Trips | Average Trip Distance (Miles) | Total $MTCO_2e$ |
|---|---|---|
| 30 | 50 | **2** |

[x] The project requires workers to commute to the project site. If yes:

| Average Number of Workers | Total Number of Workdays | Average Round Trip Distance Traveled (Miles) | Total $MTCO_2e$ |
|---|---|---|---|
| 5 | 2 | 200 | **1** |

[ ] The project is expected to generate GHG emissions for other reasons. If yes, explain:

[ ] The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

ALS 1 –Taylorsville Mill Race Farmers Dam Resurfacing

**Project Operating Emissions**

☐ The project requires energy to operate. If yes:

| Annual Energy Needed | Unit | Total $MTCO_2e$ |
|---|---|---|
| | kWh (Electricity) | **0** |
| | Therm (Natural Gas) | **0** |

☐ The project will generate electricity. If yes:

| Annual kWh Generated | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

☐ The project will proactively manage forests to reduce wildfire risk. If yes:

| Acres Protected from Wildfire | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

☒ The project will affect wetland acreage. If yes:

| Acres of Protected Wetlands | Total $MTCO_2e$ |
|---|---|
| 3,000 | **-12,990** |

*A negative value indicates GHG reductions

☐ The project will include new trees. If yes:

| Acres of Trees Planted | Total $MTCO_2e$ |
|---|---|
| 0 | **0** |

*A negative value indicates GHG reductions

☐ Project operations are expected to generate or reduce GHG emissions for other reasons. If yes, explain:

**GHG Emissions Summary**

| | |
|---|---|
| Construction and development will generate approximately: | 7 $MTCO_2e$ |
| In a given year, operation of the project will result in: | -12,990 $MTCO_2e$ |

# UPPER FEATHER RIVER IRWM

## PROJECT INFORMATION FORM

**Please submit by 5:00 p.m. on August 3, 2015, to UFR.contact@gmail.com**

Please provide information in the tables below:

### I. PROJECT PROPONENT INFORMATION

| | |
|---|---|
| **Agency / Organization** | Feather River Resource Conservation District (FRRCD) |
| **Name of Primary Contact** | Nils Lunder |
| **Name of Secondary Contact** | Brian Kingdon |
| **Mailing Address** | |
| **E-mail** | Lunder.nils@gmail .com |
| **Phone** | (530) 258-6936 cell |
| **Other Cooperating Agencies / Organizations / Stakeholders** | Natural Resource Conservation Service, Sierra Valley Resource Conservation District (SVRCD), Upper Feather River Watershed Group, University of California Cooperative Extension, California Cattlemen Association, Farm Bureau, United States Forest Service, Plumas Audubon Society |
| **Is your agency/organization committed to the project through completion? If not, please explain** | Yes |

### II. GENERAL PROJECT INFORMATION

| | |
|---|---|
| **Project Title** | ALS-2: Water Quality & Infrastructure Upgrades on Working Lands |
| **Project Category** | ■ **Agricultural Land Stewardship**<br>☐ **Floodplains/Meadows/Waterbodies**<br>☐ **Municipal Services**<br>☐ **Tribal Advisory Committee**<br>☐ **Uplands/Forest** |
| **Project Description** (Briefly describe the project, in 300 words or less) | The project will identify opportunities to improve water quality, reduce erosion and sedimentation and increase water use efficiency in the region. The FRRCD will work in partnership with the SVRCD and other organizations in order to connect with landowners in the project area to install infrastructure to protect and enhance riparian areas, to monitor and improve water quality and to better utilize water supplies in the Upper Feather River watershed. |
| **Project Location Description** (e.g., along the south bank of stream/river between river miles or miles from Towns/intersection and/or address): | The project will occur on participating private lands in the upper Feather River watersheds. |
| **Latitude:** | |
| **Longitude:** | |

## III. APPLICABLE IRWM PLAN OBJECTIVES ADDRESSED

For each of the objectives addressed by the project, provide a one to two sentence description of how the project contributes to attaining the objective and how the project outcomes will be quantified. If the project does not address *any* of the IRWM plan objectives, provide a one to two sentence description of how the project relates to a challenge or opportunity of the Region.

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Restore natural hydrologic functions. | ■ Yes<br>☐ N/A | Project will reduce livestock impact on sensitive riparian areas, will reduce sedimentation and will improve water quality for downstream users | Approximately 3000 acres of streams/wetlands restored or enhanced |
| Reduce potential for catastrophic wildland fires in the Region. | ☐ Yes<br>■ N/A | | |
| Build communication and collaboration among water resources stakeholders in the Region. | ■ Yes<br>☐ N/A | Project will engage local land owners and land managers and will improve communication and collaboration among water resources stakeholders in the region. | Approximately 3000 acres of streams/wetlands restored or enhanced |
| Work with DWR to develop strategies and actions for the management, operation, and control of SWP facilities in the Upper Feather River Watershed in order to increase water supply, recreational, and environmental benefits to the Region. | ■ Yes<br>☐ N/A | Project proponents will work with both DWR and landowners in the region to assess potential modifications to water management along SWP tributaries. | Approximately 500-1000 acres of streams/wetlands restored or enhanced |
| Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality. | ☐ Yes<br>■ N/A | | |
| Continue to actively engage in FERC relicensing of hydroelectric facilities in the Region. | ☐ Yes<br>■ N/A | | |
| Address economic challenges of municipal service providers to serve customers. | ☐ Yes<br>■ N/A | | |

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the RWQC Basin Plan. | ■ Yes<br>☐ N/A | Project will engage local land owners and land managers to improve irrigation efficiency, and establish off-site stock water facilities and riparian fencing, all of which may contribute to less particulate matter in streams. | Approximately 3000 acres of streams/wetlands restored or enhanced, 30,000 feet of pipe installed to improve water use efficiency |
| Address water resources and wastewater needs of DACs and Native Americans. | ☐ Yes<br>■ N/A | | |
| Coordinate management of recharge areas and protect groundwater resources. | ■ Yes<br>☐ N/A | Project will engage local land owners and land managers to implement improvements in infrastructure including irrigation efficiency, which may serve to reduce use of groundwater, and riparian fencing, which may help recharge. | Approximately 3000 acres of streams/wetlands restored or enhanced; 30,000 feet of pipe installed |
| Improve coordination of land use and water resources planning. | ■ Yes<br>☐ N/A | Project will engage local land owners and land managers and will improve communication and collaboration among water resources stakeholders in the region. | |
| Maximize agricultural, environmental and municipal water use efficiency. | ■ Yes<br>☐ N/A | Project will engage local agricultural land owners and land managers to improve irrigation efficiency, off-stream stock water facilities and riparian fencing. | Approximately 3000 acres of streams/wetlands restored or enhanced, 30,000 feet of pipe installed to improve water use efficiency |
| Effectively address climate change adaptation and/or mitigation in water resources management. | ■ Yes<br>☐ N/A | Project will engage local land owners and land managers to implement improvements in infrastructure including irrigation efficiency and riparian area protection. | Approximately 3000 acres of streams/wetlands restored or enhanced, 30,000 feet of pipe installed to improve water use |

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| | | | efficiency |
| Improve efficiency and reliability of water supply and other water-related infrastructure. | ■ Yes<br>☐ N/A | Improvements in infrastructure including irrigation efficiency, off-site stock water facilities and riparian fencing. Pipe will aid in irrigation supply reliability. | Approximately 3000 acres of streams/wetlands restored or enhanced; 30,000 feet of irrigation pipe installed |
| Enhance public awareness and understanding of water management issues and needs. | ■ Yes<br>☐ N/A | Public will be informed of the purpose of the project and why the project is a priority, outreach will be performed by the FR RCD and the SV RCD | Outreach materials will be developed; landowners will be engaged by local experts. |
| Address economic challenges of agricultural producers. | ■ Yes<br>☐ N/A | Will develop infrastructure that will assist local livestock producers to better manage their animals, their water systems and their rangelands. Funding will be available to local agricultural producers to improve infrastructure including irrigation efficiency, off-site stock water facilities and riparian fencing. | Approximately 3000 acres of streams/wetlands restored or enhanced, 30,000 feet of pipe installed to improve water use efficiency |
| Work with counties/ communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding. | ■ Yes<br>☐ N/A | Funding for this project will include the cost of project coordinators that will work with interested land owners and land managers | |

If no objectives are addressed, describe how the project relates to a challenge or opportunity for the Region:

The proposed project will construct approximately 30,000 feet of livestock fence at sensitive riparian areas in the Upper Feather River watershed. The protection of those sensitive areas will also lead to an increase in riparian vegetation that will provide habitat to wildlife while also leading to increased bank stabilization and improved downstream water quality in the future. Additionally, the project will assist landowners with the installation of 30 solar powered off-stream/site water facilities that will provide livestock water, thus reducing the impact of livestock on sensitive riparian areas in the region. The project will also assist landowners to assess and develop water delivery infrastructure in an attempt to increase water use efficiency for both stock water as well as irrigation. Approximately 30,000 feet of irrigation pipe will be installed to assist with water delivery.

## IV. PROJECT IMPACTS AND BENEFITS

Please provide a summary of the expected project benefits and impacts in the table below or check N/A if not applicable; **do no leave a blank cell.** Note that DWR encourages multi-benefit projects.

| **If applicable, describe benefits or impacts of the project with respect to:** | | |
|---|---|---|
| **a. Native American Tribal Communities** | ■ N/A | |
| **b. Disadvantaged Communities**[1] | ■ N/A | |
| **c. Environmental Justice**[2] | ■ N/A | |
| **d. Drought Preparedness** | ☐ N/A | The proposed project will increase drought preparedness by facilitating improvements in infrastructure including irrigation efficiency, off-site stock water facilities and riparian fencing. |
| **e. Assist the region in adapting to effects of climate change**[3] | ☐ N/A | The project will protect and enhance important riparian habitats in the region. These habitats are increasingly important for sensitive plants and animals as the region prepares for the effects of climate change in the future. It will also facilitate improvements in infrastructure including irrigation efficiency, off site stock water facilities. |
| **f. Generation or reduction of greenhouse gas emissions (e.g. green technology)** | ☐ N/A | The projects will assist with local landowners and land managers as they work to assess how their management techniques impact carbon sequestration by protecting approximately 3000 acres of streams/wetlands. |
| **g. Other expected impacts or benefits that are not already mentioned elsewhere** | ☐ N/A | Project will be monitored in order to determine how the infrastructure improvements impacts riparian health as well as water quality, erosion and sedimentation. These monitoring efforts will be a collaborative effort with other on-going projects run by local organizations. |

[1] A Disadvantaged Community is defined as a community with an annual median household (MHI) income that is less than 80 percent of the Statewide annual MHI. DWR's DAC mapping is available on the UFR website (http://featherriver.org/maps/) .

[2] Environmental Justice is defined as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies. An example of environmental justice benefit would be to improve conditions (e.g. water supply, flooding, sanitation) in an area of racial minorities.

[3] Climate change effects are likely to include increased flooding, extended drought, and associated secondary effects such as increased wildfire risk, erosion, and sedimentation.

DWR encourages multiple benefit projects which address one or more of the following elements (PRC §75026(a). Indicate which elements are addressed by your project.

| | | | |
|---|---|---|---|
| a. Water supply reliability, water conservation, water use efficiency | ■ Yes ☐ N/A | g. Drinking water treatment and distribution | ☐ Yes ■ N/A |
| b. Stormwater capture, storage, clean-up, treatment, management | ☐ Yes ■ N/A | h. Watershed protection and management | ■ Yes ☐ N/A |
| c. Removal of invasive non-native species, creation/enhancement of wetlands, acquisition/protection/restoration of open space and watershed lands | ■ Yes ☐ N/A | i. Contaminant and salt removal through reclamation/desalting, other treatment technologies and conveyance of recycled water for distribution to users | ☐ Yes ■ N/A |
| d. Non-point source pollution reduction, management and monitoring | ■ Yes ☐ N/A | j. Planning and implementation of multipurpose flood management programs | ■ Yes ☐ N/A |
| e. Groundwater recharge and management projects | ■ Yes ☐ N/A | k. Ecosystem and fisheries restoration and protection | ■ Yes ☐ N/A |
| f. Water banking, exchange, reclamation, and improvement of water quality | ■ Yes ☐ N/A | | |

## V. RESOURCE MANAGEMENT STRATEGIES

For each resource management strategy (RMS) employed by the project, provide a one to two sentence description in the table below of how the project incorporates the strategy. A description of the RMS can be found in Volume 2 of the 2013 California Water Plan (http://featherriver.org/2013-california-water-plan-update/).

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Reduce Water Demand | | |
| Agricultural Water Use Efficiency | ■ Yes ☐ No | Project will facilitate the installation of infrastructure to increase water use efficiency by installing approximately 30,000 of water supply pipe, it will also provide a framework for the local RCDs to highlight efforts underway by land managers and land owners to increase water-use efficiency |
| Urban water use efficiency | ☐ Yes ■ No | |
| Improve Flood Management | | |
| Flood management | ■ Yes ☐ No | Project will help to enhance riparian areas and will assist in the attenuation of flood events and the filtration of sediments and nutrients from upstream land uses |
| Improve Operational Efficiency and Transfers | | |
| Conveyance – regional/local | ■ Yes ☐ No | The project will assist local landowners to ensure that their water use efficiency is |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| | | improved by installing approximately 30,000 of water supply pipe. |
| System reoperation | ☐ Yes ■ No | |
| Water transfers | ☐ Yes ■ No | |
| Increase Water Supply | | |
| Conjunctive management | ■ Yes ☐ No | The project will assist local landowners to ensure that their water use efficiency, which involves a combination of surface and groundwater in many cases, is improved. |
| Precipitation Enhancement | ☐ Yes ■ No | |
| Municipal recycled water | ■ Yes ☐ No | Potential use of treated wastewater for irrigation. |
| Surface storage – regional/local | ☐ Yes ■ No | |
| Improve Water Quality | | |
| Drinking water treatment and distribution | ☐ Yes ■ No | |
| Groundwater remediation/aquifer remediation | ☐ Yes ■ No | |
| Matching water quality to water use | ☐ Yes ■ No | |
| Pollution prevention | ■ Yes ☐ No | Project will assist efforts underway by land managers and land owners to improve operations to reduce water pollution. |
| Salt and salinity management | ☐ Yes ■ No | |
| Urban storm water runoff management | ☐ Yes ■ No | |
| Practice Resource Stewardship | | |
| Agricultural land stewardship | ■ Yes ☐ No | Project will complement efforts underway by land managers and land owners to modify their operations to improve agricultural land stewardship (improvements in infrastructure including irrigation efficiency, off-site stock water facilities and riparian fencing) |
| Ecosystem restoration | ■ Yes ☐ No | Riparian fencing, off-site stock watering, planting of trees and other native plants in riparian areas. |
| Forest management | ☐ Yes ■ No | |
| Land use planning and management | ■ Yes ☐ No | Project will complement efforts underway by land managers and land owners to manage their lands (protection of open space, agriculturally zoned operations) |
| Recharge area protection | ■ Yes ☐ No | Project will complement efforts underway by land managers and land owners to manage recharge areas to maximize groundwater recharge (riparian area fencing, off-stream stock watering) |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Sediment management | ■ Yes ☐ No | Project will complement efforts underway by land managers and land owners to reduce sediment production (e.g., riparian fencing) |
| Watershed management | ■ Yes ☐ No | Project will complement efforts underway by land managers and land owners to manage the watersheds (streams, tributaries) on their lands |
| People and Water | | |
| Economic incentives | ■ Yes ☐ No | Project will enhance and restore approximately 3000 acres of wetlands and riparian areas. This will increase available wildlife habitat and may lead to increased tourism in the region. Additionally, the proposed infrastructure may increase the economic viability of agriculture in the region for our local producers. |
| Outreach and engagement | ■ Yes ☐ No | Project will increase the awareness of locals and visitors to the region on management efforts that are occurring in the area; the local RCDs will develop and educate the region regarding the efforts of the project and the project participants. |
| Water and culture | ■ Yes ☐ No | Preserving historical ranching heritage in the region. Increased wildlife habitat, recreation opportunities (e.g., birdwatching). |
| Water-dependent recreation | ■ Yes ☐ No | Potential for infrastructure development on working lands that support public recreation (e.g., birdwatching, canoeing). |
| Wastewater/NPDES | ■ Yes ☐ No | Project will enhance and restore approximately 3000 acres of wetlands and riparian areas. This will increase available wildlife habitat and will improve water quality. Protected areas will act as bio-filters for sediment and nutrients that enter the project areas from upstream land management activities. |

Other RMS addressed and explanation:

| |
|---|
| |

## VI. PROJECT COST AND FINANCING

Please provide any estimates of project cost, sources of funding, and operation and maintenance costs, as well as the source of the project cost in the table below.

**PROJECT BUDGET**

Project serves a need of a DAC?: ■ Yes ☐ No
Funding Match Waiver request?: ☐ Yes ■ No

| | Category | Requested Grant Amount | Cost Share: Non-State Fund Source* (Funding Match) | Cost Share: Other State Fund Source* | Total Cost |
|---|---|---|---|---|---|
| a. | **Direct Project Administration** | $142,500 | | | |
| b. | **Land Purchase/Easement** | | | | |
| c. | **Planning/Design/Engineering / Environmental** | 30,000 | | | |
| d. | **Construction/Implementation** | 1,320,000 | | | |
| e. | **Environmental Compliance/ Mitigation/Enhancement** | 30,000 | | | |
| f. | **Construction Administration** | | | | |
| g. | **Other Costs** | 25,000 | | | |
| h. | **Construction/Implementation Contingency** | 20,000 | | | |
| i. | **Grand Total (Sum rows (a) through (h) for each column)** | $1,567,500 | | | |

| | | | | |
|---|---|---|---|---|
| j. | **Can the Project be phased?** ■ **Yes** ☐ **No** If **yes**, provide cost breakdown by phases | | | |
| | | **Project Cost** | **O&M Cost** | **Description of Phase** |
| | **Phase 1** | $25,000 | | Outreach to landowners, prioritization of properties. |
| | **Phase 2** | $900,000 | | Installation of off-site facilities |
| | **Phase 3** | $522,500 | | Installation of water delivery infrastructure |
| | **Phase 4** | $120,000 | | Installation of riparian fence systems |

| | | |
|---|---|---|
| k. | **Explain how operation and maintenance costs will be financed for the 20-year planning period for project implementation (not grant funded).** | Contracts will be developed between project proponents and participating landowners requiring landowners to take on the costs and responsibilities associated with ongoing operation and maintenance of infrastructure improvements (e.g., fencing, pipe, off-site watering). |
| l. | **Has a Cost/Benefit analysis been completed?** | ☐ **Yes** ■ **No** |
| m. | **Describe what impact there may be if the project is not funded (300 words or less)** | If the project is not funded, the status quo will continue. The benefit of this project is that it will provide opportunities for agricultural |

| | | |
|---|---|---|
| | | producers to improve their operations. Due to declining surface water availability at this time, many local producers are having difficulty ensuring that their livestock have adequate water. |

*List all sources of funding.
Note: See Project Development Manual, Exhibit B, for assistance in completing this table (http://featherriver.org/documents/).

## VIII. PROJECT STATUS AND SCHEDULE

Please provide a status of the project, level of completion as well as a description of the activities planned for each project stage. If unknown, enter **TBD**.

| Project Stage | Check the Current Project Stage | Completed? | Description of Activities in Each Project Stage | Planned/ Actual Start Date (mm/yr) | Planned/ Actual Completion Date (mm/yr) |
|---|---|---|---|---|---|
| **a. Assessment and Evaluation** | ■ | ☐ Yes<br>■ No<br>☐ N/A | Assess and repair of existing fencing system | 08/2016 | 12/2016 |
| **b. Final Design** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | Mapping and budget development of phases 1-4 | 01/2017 | 06/2017 |
| **c. Environmental Documentation (CEQA / NEPA)** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | Analyze if any of the proposed project requires CEQA/NEPA compliance | 01/2017 | 06/2017 |
| **d. Permitting** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | Secure any permits necessary to complete phases 1-4 | 06/2017 | 12/2017 |
| **e. Construction Contracting** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | | 01/2018 | 12/2018 |
| **f. Construction Implementation** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | Contracts will be developed with professionals to install appropriate infrastructure for phases 2-4 | 04/2018 | 12/2019 |
| **Provide explanation if more than one project stage is checked as current status** | | | The FR RCD and the SV RCD are conducing outreach with local landowners that would benefit from infrastructure improvements on their properties | | |

## IX. PROJECT TECHNICAL FEASIBILITY

Please provide any related documents (date, title, author, and page numbers) that describe and confirm the technical feasibility of the project. See www.featherriver.org/catalog/index.php for documents gathered on the UFR Region.

| | |
|---|---|
| **a. List the adopted planning documents the proposed project is consistent with or supported by** (e.g. General Plans, UWMPs, GWMPs, Water Master Plan, Habitat Conservation Plans, TMDLs, Basin Plans, etc.). | 20X2020 Water Conservation Plan<br>California Water Plan Update 2013<br>East Branch North Fork Feather River Erosion Control Strategy<br>Feather River Resource Conservation District Long-range Workplan 2005-2009<br>Mountain Meadow Watershed Restoration Action Plan<br>Upper Feather River Watershed Integrated Regional Water Management Plan |
| **b. List technical reports and studies supporting the feasibility of this project.** | Adapt Flee or Perish. Water and climate change |
| **c. Concisely describe the scientific basis** (e.g. how much research has been conducted) **of the proposed project in 300 words or less.** | Evidence suggests that evaporative losses are reduced when water is moved through impermeable pipes versus open, unlined ditches. |
| **d. Does the project implement green technology** (e.g. alternate forms of energy, recycled materials, LID techniques, etc.). | ■ Yes ☐ No ☐ N/A<br>The project will utilize solar energy to pump water for livestock use. |
| **e. Are you an Urban Water Supplier[1]?** | ☐ Yes ■ No ☐ N/A |
| **f. Are you are an Agricultural Water Supplier[2]?** | ☐ Yes ■ No ☐ N/A |
| **g. Is the project related to groundwater?** | ■ Yes ☐ No ☐ N/A<br>If yes, please indicate which groundwater basin.<br>Indian Valley, American Valley, Sierra Valley |

[1] Urban Water Supplier is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually.

[2] Agricultural Water Supplier is defined as a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding the acreage that receives recycled water.

# Climate Change – Project Assessment Checklist

This climate change project assessment tool allows project applicants and the planning team to assess project consistency with Proposition 84 plan standards and RWMG plan assessment standards. The tool is a written checklist that asks GHG emissions and adaptation/resiliency questions.

Name of project: ALS-2: Water Quality & Infrastructure Upgrades on Working Lands

Project applicant: Feather River RCD and Sierra Valley RCD

## GHG Emissions Assessment

### Project Construction Emissions

*(If you check any of the boxes, please see the attached worksheet)*

- ☒ The project requires nonroad or off-road engines, equipment, or vehicles to complete.
- ☒ The project requires materials to be transported to the project site.
- ☒ The project requires workers to commute to the project site.
- ☐ The project is expected to generate GHG emissions for other reasons.
- ☐ The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

### Operating Emissions

*(If you check any of the boxes, please see the attached worksheet)*

- ☐ The project requires energy to operate.
- ☒ The project will generate electricity.
- ☐ The project will proactively manage forests to reduce wildfire risk.
- ☒ The project will affect wetland acreage.
- ☒ The project will include new trees.
- ☒ Project operations are expected to generate or reduce GHG emissions for other reasons.

# Adaptation & Resiliency Assessment

## Water Supply

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water supply vulnerability issues:

- ☐ Not applicable
- ☐ Reduced snowmelt
- ☒ Unmet local water needs (drought)
- ☐ Increased invasive species

The proposed project will increase watershed resiliency by protecting and enhancing shoreline vegetation, increasing bank stability and improving water infiltration. The project will reduce the impact of livestock on sensitive riparian areas by establishing solar powered off stream water sources and by establishing infrastructure to better manage riparian areas.

## Water Demand

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water demand vulnerability issues:

- ☐ Not applicable
- ☐ Increasing seasonal water use variability
- ☒ Unmet in-stream flow requirements
- ☐ Climate-sensitive crops
- ☒ Groundwater drought resiliency
- ☐ Water curtailment effectiveness

Increasing irrigation efficiency may increase water availability in streams.

Protecting and enhancing shoreline vegetation, increasing bank stability and improving water infiltration will improve groundwater drought resiliency.

## Water Quality

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water quality vulnerability issues:

- ☐ Not applicable
- ☐ Increasing catastrophic wildfires
- ☒ Eutrophication (excessive nutrient pollution in a waterbody, often followed by algae blooms and other related water quality issues)
- ☒ Seasonal low flows and limited abilities for waterbodies to assimilate pollution
- ☐ Water treatment facility operations

☒ Unmet beneficial uses (municipal and domestic water supply, water contact recreation, cold freshwater habitat, spawning habitat, wildlife habitat, etc.)

Improving downstream water availability translates to additional water in streams which will reduce concentration of nutrients/pollutants in streams and improve conditions for wildlife.

## Flooding

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority flooding vulnerability issues:

☒ Not applicable
☐ Aging critical flood protection
☐ Wildfires
☐ Critical infrastructure in a floodplain
☐ Insufficient flood control facilities

## Ecosystem and Habitat

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority ecosystem and habitat vulnerability issues:

☐ Not applicable
☒ Climate-sensitive fauna or flora
☐ Recreation and economic activity
☐ Quantified environmental flow requirements
☒ Erosion and sedimentation
☐ Endangered or threatened species
☐ Fragmented habitat

Encouraging proactive management of riparian areas through improved infrastructure will enhance opportunities for flora and fauna (providing refuge for species that rely on riparian zones) and will reduce erosion and sedimentation.

## Hydropower

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority hydropower vulnerability issues:

☒ Not applicable
☐ Reduced hydropower output

Upper Feather River IRWMP

Project Assessment - GHG Emissions Analysis

ALS-2: Water Quality, Infrastructure Upgrades on Working Lands

**GHG Emissions Analysis**

**Project Construction Emissions**

[X] The project requires non-road or off-road engines, equipment, or vehicles to complete. If yes:

| Type of Equipment | Maximum Number Per Day | Total 8-Hour Days in Operation | Total $MTCO_2e$ |
|---|---|---|---|
| Bore/Drill Rigs | 1 | 30 | 30 |
| Trenchers | 1 | 30 | 7 |
| Tractors/Loaders/Backhoes | 1 | 30 | 8 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | **Total Emissions** | **44** |

[X] The project requires materials to be transported to the project site. If yes:

| Total Number of Round Trips | Average Trip Distance (Miles) | Total $MTCO_2e$ |
|---|---|---|
| 90 | 50 | **7** |

[X] The project requires workers to commute to the project site. If yes:

| Average Number of Workers | Total Number of Workdays | Average Round Trip Distance Traveled (Miles) | Total $MTCO_2e$ |
|---|---|---|---|
| 2 | 90 | 50 | **3** |

[X] The project is expected to generate GHG emissions for other reasons. If yes, explain:

Remaining work can be accomplished via standard highway vehicles, such as pick-up trucks.

[ ] The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

ALS-2: Water Quality, Infrastructure Upgrades on Working Lands

**Project Operating Emissions**

[ ] The project requires energy to operate. If yes:

| Annual Energy Needed | Unit | Total $MTCO_2e$ |
|---|---|---|
| | kWh (Electricity) | **0** |
| | Therm (Natural Gas) | **0** |

[X] The project will generate electricity. If yes:

| Annual kWh Generated | Total $MTCO_2e$ |
|---|---|
| 25,920 | **-5** |

*A negative value indicates GHG reductions

[ ] The project will proactively manage forests to reduce wildfire risk. If yes:

| Acres Protected from Wildfire | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

[X] The project will affect wetland acreage. If yes:

| Acres of Protected Wetlands | Total $MTCO_2e$ |
|---|---|
| 3,000 | **-12,990** |

*A negative value indicates GHG reductions

[X] The project will include new trees. If yes:

| Acres of Trees Planted | Total $MTCO_2e$ |
|---|---|
| 200 | **-37,200** |

*A negative value indicates GHG reductions

[ ] Project operations are expected to generate or reduce GHG emissions for other reasons. If yes, explain:

The project will protect and enhance riparian areas on working lands. By protecting these sensitive habitats we believe that there will be increases in vegetative diversity and abundance, and this will assist in the sequestration of GHG

**GHG Emissions Summary**

| | |
|---|---|
| Construction and development will generate approximately: | 54 $MTCO_2e$ |
| In a given year, operation of the project will result in: | -50,195 $MTCO_2e$ |

# UPPER FEATHER RIVER IRWM

## PROJECT INFORMATION FORM

**Please submit by 5:00 p.m. on August 3, 2015, to UFR.contact@gmail.com**

Please provide information in the tables below:

### I. PROJECT PROPONENT INFORMATION

| | |
|---|---|
| **Agency / Organization** | Feather River Resource Conservation District and Sierra Valley Resource Conservation District |
| **Name of Primary Contact** | Russell Reid |
| **Name of Secondary Contact** | Nils Lunder/Carol Dobbas/Holly Foster |
| **Mailing Address** | |
| **E-mail** | rreid@frc.edu; lunder.nils@gmail.com; cjdobbas@yahoo.com; holly@robertfosterranch.com |
| **Phone** | (530)283-1147 |
| **Other Cooperating Agencies / Organizations / Stakeholders** | Plumas Sierra Cattlemen's Association, Plumas-Sierra Farm Bureau, Upper Feather River Watershed Group |
| **Is your agency/organization committed to the project through completion? If not, please explain** | Yes. |

### II. GENERAL PROJECT INFORMATION

| | |
|---|---|
| **Project Title** | ALS-3: Enhanced Management of Livestock Grazing |
| **Project Category** | ☒ **Agricultural Land Stewardship**<br>☐ **Floodplains/Meadows/Waterbodies**<br>☐ **Municipal Services**<br>☐ **Tribal Advisory Committee**<br>☐ **Uplands/Forest** |
| **Project Description**<br>(Briefly describe the project, in 300 words or less) | Livestock operations are a significant part of the economic and cultural fabric of the Upper Feather River Watershed. There is an ongoing need to provide technical assistance to working landscape managers and owners to ensure that their operations continue to stay viable, and that improvements to water quality and quantity management can continue to be made.<br><br>This assistance would augment individual landowner efforts, and collaborative programs already being instituted by other existing organizations, including the Upper Feather River Watershed Group, to further the goals of improving water quality and supply in the Upper Feather River Watershed, |

| | |
|---|---|
| | while improving land stewardship on working landscapes.<br><br>This project would provide cost-sharing assistance for the following general stewardship practices:<br>• Technical assistance and training workshops to develop soil and water quality/conservation management plans for individual operations that defines UFRW commodity-specific water quality management practices, and potentially meets requirements set forth in the Irrigated Lands Regulatory Program (IRLP) to develop Farm Evaluations for water quality management practices, Sediment and Erosion Assessment Reports and Management Plans, Nitrogen Management Plans, as well as Management Practice Verification.<br>• Baseline documentation of existing conditions on working landscapes in the region to identify most critical practices.<br>• Management practices to improve soil health, including but not limited to, grazing management regimes, seeding, etc.<br>• Fencing to support specific grazing management plans designed to improve and increase forages, soil health and water quality<br>• Infrastructure to increase irrigation efficiency and water conservation<br>• Soil moisture monitoring technical assistance<br>• Land leveling and forage development |
| **Project Location Description** (e.g., along the south bank of stream/river between river miles or miles from Towns/intersection and/or address): | Projects would be conducted on working landscapes in Sierra, American and Indian Valleys, with a focus on irrigated lands being impacted by the IRLP. |
| **Latitude:** | |
| **Longitude:** | |

## III. APPLICABLE IRWM PLAN OBJECTIVES ADDRESSED

For each of the objectives addressed by the project, provide a one to two sentence description of how the project contributes to attaining the objective and how the project outcomes will be quantified. If the project does not address *any* of the IRWM plan objectives, provide a one to two sentence description of how the project relates to a challenge or opportunity of the Region.

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Restore natural hydrologic functions. | ☒ Yes<br>☐ N/A | Improvements to existing working landscape practices will enhance opportunities for water conservation and water quality management, thus benefitting natural hydrologic functions in the region. | Approximately 30,000 acres of irrigated lands enrolled in the UFRWG, plus similar amount of hay crop acreage and non-irrigated rangeland. |
| Reduce potential for catastrophic wildland fires in the Region. | ☐ Yes<br>☒ N/A | | |
| Build communication and collaboration among water resources stakeholders in the Region. | ☒ Yes<br>☐ N/A | Education, training and outreach will be a significant component of this project improving collaboration on a region-wide basis. | Outreach to members of UFRWG who manage approximately 30,000 acres of irrigated lands enrolled in the UFRWG. Outreach would also be targeted to members of other ag organizations, managers, and owners of similar amounts of hay crop acreage and non-irrigated rangeland. |
| Work with DWR to develop strategies and actions for the management, operation, and control of SWP facilities in the Upper Feather River Watershed in order to increase water supply, recreational, and | ☐ Yes<br>☒ N/A | | |

| Upper Feather River IRWM Objectives: | Will the project address the objective? | Brief explanation of project linkage to selected Objective | Quantification (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| environmental benefits to the Region. | | | |
| Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality. | ☒ Yes<br>☐ N/A | The ag community's efforts to enhance water management practices should serve as an example, and potentially set the stage for more collaborative opportunities between different stakeholders, including municipalities. | Approximately 30,000 acres of irrigated lands enrolled in the UFRWG, plus similar amount of hay crop acreage and non-irrigated rangeland. |
| Continue to actively engage in FERC relicensing of hydroelectric facilities in the Region. | ☐ Yes<br>☒ N/A | | |
| Address economic challenges of municipal service providers to serve customers. | ☐ Yes<br>☒ N/A | | |
| Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the RWQC Basin Plan. | ☒ Yes<br>☐ N/A | The overriding goal of all phases of this project supports the objective of protecting, restoring, and enhancing both surface and groundwater resources within the ag sector, which in turn will benefit the entire basin. | Approximately 30,000 acres of irrigated lands enrolled in the UFRWG, plus similar amount of hay crop acreage and non-irrigated rangeland. |
| Address water resources and wastewater needs of DACs and Native Americans. | ☐ Yes<br>☒ N/A | Much of the UFRW is populated by DACs and Native Americans; enhancement of water management on working landscapes will be mutually beneficial, especially to those members of the community that are directly involved in production agriculture. | Approximately 30,000 acres of irrigated lands enrolled in the UFRWG, plus similar amount of hay crop acreage and non-irrigated rangeland. |
| Coordinate management of recharge areas and protect groundwater resources. | ☒ Yes<br>☐ N/A | Technical assistance will encourage more coordinated management of surface and groundwater resources, thus improving recharge areas and enhancing groundwater management. | Approximately 30,000 acres of irrigated lands enrolled in the UFRWG, plus similar amount of hay crop acreage and non-irrigated |

| Upper Feather River IRWM Objectives: | Will the project address the objective? | Brief explanation of project linkage to selected Objective | Quantification (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| | | | rangeland. |
| Improve coordination of land use and water resources planning. | ☒ Yes<br>☐ N/A | Technical assistance will encourage more coordinated management of surface and groundwater resources, as well as land use. | Approximately 30,000 acres of irrigated lands enrolled in the UFRWG, plus similar amount of hay crop acreage and non-irrigated rangeland. |
| Maximize agricultural, environmental and municipal water use efficiency. | ☒ Yes<br>☐ N/A | Technical assistance aimed at agricultural operations would have an overriding goal of increasing efficiency and developing management plans for periods of water shortage. | Approximately 30,000 acres of irrigated lands enrolled in the UFRWG, plus similar amount of hay crop acreage and non-irrigated rangeland. |
| Effectively address climate change adaptation and/or mitigation in water resources management. | ☒ Yes<br>☐ N/A | Ongoing education and technical assistance for "on-the-ground" managers will help the region be more resilient to any perceived changes in climate, and/or periods of significant drought. | Approximately 30,000 acres of irrigated lands enrolled in the UFRWG, plus similar amount of hay crop acreage and non-irrigated rangeland. |
| Improve efficiency and reliability of water supply and other water-related infrastructure. | ☒ Yes<br>☐ N/A | Technical assistance to improve water supplies, as well as cost-sharing for infrastructure projects that improve water quality and quantity will improve the reliability of future ag water supplies and provide benefits to the entire region. | Approximately 30,000 acres of irrigated lands enrolled in the UFRWG, plus similar amount of hay crop acreage and non-irrigated rangeland. |
| Enhance public awareness and understanding of water management issues and needs. | ☐ Yes<br>☒ N/A | | |

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Address economic challenges of agricultural producers. | ☒ Yes<br>☐ N/A | Technical assistance and cost-sharing will provide significant opportunities to assist working landscape managers who manage their businesses on very thin margins. Technical assistance to meet increased regulatory requirements will also offset the economic burdens that these requirements place on agricultural producers. | Approximately 30,000 acres of irrigated lands enrolled in the UFRWG, plus similar amount of hay crop acreage and non-irrigated rangeland. |
| Work with counties/ communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding. | ☒ Yes<br>☐ N/A | To help ensure meaningful implementation of projects and the optimum utilization of grant monies, this project will include a component to provide necessary administrative capacity through the local RCDs. | Two regional RCDs and members of the various stakeholder organications will benefit from added capacity to ensure adequate administration of grant monies. Approximately 30,000 acres of irrigated lands enrolled in the UFRWG, plus similar amount of hay crop acreage and non-irrigated rangeland. |

If no objectives are addressed, describe how the project relates to a challenge or opportunity for the Region:

## IV. PROJECT IMPACTS AND BENEFITS

Please provide a summary of the expected project benefits and impacts in the table below or check N/A if not applicable; **do no leave a blank cell.** Note that DWR encourages multi-benefit projects.

| **If applicable, describe benefits or impacts of the project with respect to:** | | |
|---|---|---|
| **a. Native American Tribal Communities** | ☒ N/A | |
| **b. Disadvantaged Communities**[1] | ☒ N/A | Much of the UFRW is populated by DACs and Native Americans; enhancement of water management on working landscapes will be mutually beneficial, especially to those members of the community that are directly involved in production agriculture. |
| **c. Environmental Justice**[2] | ☐ N/A | Assistance provided through this project would be accessible to any qualified individual that is engaged in agricultural production or manages working landscapes. |
| **d. Drought Preparedness** | ☐ N/A | Ongoing education and technical assistance for "on-the-ground" managers will help the region be more resilient to any perceived changes in climate, and/or periods of significant drought. |
| **e. Assist the region in adapting to effects of climate change**[3] | ☐ N/A | Ongoing education and technical assistance for "on-the-ground" managers will help the region be more resilient to any perceived changes in climate, and/or periods of significant drought. |
| **f. Generation or reduction of greenhouse gas emissions (e.g. green technology)** | ☐ N/A | Working landscapes provide significant capacity for carbon sequestration. |
| **g. Other expected impacts or benefits that are not already mentioned elsewhere** | ☐ N/A | Enhancement of the working landscapes that make up a significant percentage of the UFR Watershed have multiple public benefits, including improving the largest economic driver in the region. |

[1] A Disadvantaged Community is defined as a community with an annual median household (MHI) income that is less than 80 percent of the Statewide annual MHI. DWR's DAC mapping is available on the UFR website (http://featherriver.org/maps/) .

[2] Environmental Justice is defined as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies. An example of environmental justice benefit would be to improve conditions (e.g. water supply, flooding, sanitation) in an area of racial minorities.

[3] Climate change effects are likely to include increased flooding, extended drought, and associated secondary effects such as increased wildfire risk, erosion, and sedimentation.

DWR encourages multiple benefit projects which address one or more of the following elements (PRC §75026(a). Indicate which elements are addressed by your project.

| | | | |
|---|---|---|---|
| a. Water supply reliability, water conservation, water use efficiency | ☒ Yes ☐ N/A | g. Drinking water treatment and distribution | ☐ Yes ☒ N/A |
| b. Stormwater capture, storage, clean-up, treatment, management | ☐ Yes ☒ N/A | h. Watershed protection and management | ☒ Yes ☐ N/A |
| c. Removal of invasive non-native species, creation/enhancement of wetlands, acquisition/protection/restoration of open space and watershed lands | ☒ Yes ☐ N/A | i. Contaminant and salt removal through reclamation/desalting, other treatment technologies and conveyance of recycled water for distribution to users | ☐ Yes ☒ N/A |
| d. Non-point source pollution reduction, management and monitoring | ☒ Yes ☐ N/A | j. Planning and implementation of multipurpose flood management programs | ☒ Yes ☐ N/A |
| e. Groundwater recharge and management projects | ☒ Yes ☐ N/A | k. Ecosystem and fisheries restoration and protection | ☒ Yes ☐ N/A |
| f. Water banking, exchange, reclamation, and improvement of water quality | ☒ Yes ☐ N/A | | |

## V. RESOURCE MANAGEMENT STRATEGIES

For each resource management strategy (RMS) employed by the project, provide a one to two sentence description in the table below of how the project incorporates the strategy. A description of the RMS can be found in Volume 2 of the 2013 California Water Plan (http://featherriver.org/2013-california-water-plan-update/).

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Reduce Water Demand | | |
| Agricultural Water Use Efficiency | ☒ Yes ☐ No | Technical assistance and cost-share projects are largely aimed at improving irrigation delivery efficiency, both from surface and groundwater sources. |
| Urban water use efficiency | ☐ Yes ☒ No | |
| Improve Flood Management | | |
| Flood management | ☒ Yes ☐ No | Improving the region's water storage capacity in the form of existing stock/irrigation ponds, drainage systems, etc. will improve opportunities for flood management, but also increase opportunities to capture storm water for future use. |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Improve Operational Efficiency and Transfers | | |
| Conveyance – regional/local | ☒ Yes ☐ No | Improving existing irrigation infrastructure to be more efficient and encouraging more advanced systems for new installations will improve water conveyance throughout the region. |
| System reoperation | ☒ Yes ☐ No | Improving existing irrigation infrastructure to be more efficient and encouraging more advanced systems for new installations will improve water conveyance throughout the region. |
| Water transfers | ☒ Yes ☐ No | Water transfers within a watershed or watermaster service area may be appropriate in some instances, and improving existing irrigation infrastructure to be more efficient and encouraging more advanced systems for new installations will improve water conveyance throughout the region. Infrastructure developed through this proposal would be only within the region, and would not be for the purpose of transferring water outside of the watershed. |
| Increase Water Supply | | |
| Conjunctive management | ☒ Yes ☐ No | Ag operators already focus on conjunctive management as a means to optimize existing water supplies. Technical assistance provided through this project would enhance on-site managers' ability to use water supplies as effectively as possible. |
| Precipitation Enhancement | ☐ Yes ☒ No | Not applicable. |
| Municipal recycled water | ☒ Yes ☐ No | This project would encourage the use of municipal recycled water for irrigation in areas where urban/ag interfaces exist. |
| Surface storage – regional/local | ☒ Yes ☐ No | Small-scale water storage in the form of stock and irrigation ponds, will provide a means of increasing surface storage, provide environmental benefits, and flood management opportunities during non-irrigation periods. |
| Improve Water Quality | | |
| Drinking water treatment and distribution | ☐ Yes ☒ No | Not applicable |
| Groundwater remediation/aquifer remediation | ☐ Yes ☒ No | |
| Matching water quality to water use | ☐ Yes ☒ No | |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Pollution prevention | ☒ Yes ☐ No | Enhancing irrigation water delivery systems in the form of pipeline and other infrastructure will mitigate potential water quality issues that can be present in livestock and agricultural operations. |
| Salt and salinity management | ☐ Yes ☒ No | |
| Urban storm water runoff management | ☒ Yes ☐ No | Much of the region's existing irrigated agricultural landscapes already provide an area that serves as a means to manage winter storm water runoff. Enhancement of existing storage capacity could provide for more effective use of this runoff during periods of water shortages. |
| Practice Resource Stewardship | | |
| Agricultural land stewardship | ☒ Yes ☐ No | The overriding goal of this project is to enhance and improve agricultural stewardship by providing resources that otherwise may not be available or economically feasible for agricultural producers in the region. |
| Ecosystem restoration | ☒ Yes ☐ No | Much of the area's habitat values are dependent on working landscapes, and the technical assistance and potential for infrastructure cost-sharing would enhance those existing mutual benefits. |
| Forest management | ☐ Yes ☒ No | This project does not focus on forest areas in the UFR Watershed. |
| Land use planning and management | ☒ Yes ☐ No | Technical assistance will provide for more opportunity to ensure land use planning and water management go hand-in-hand. |
| Recharge area protection | ☒ Yes ☐ No | Irrigation water applied during production season provides a recharge return system opportunity within the landscape. |
| Sediment management | ☒ Yes ☐ No | While not considered to be a significant issue, ongoing technical assistance provided to landscape managers will help ensure ongoing improvement. |
| Watershed management | ☒ Yes ☐ No | Technical assistance provided on a region-wide basis will have a broader benefit to the entire watershed. |
| People and Water | | |
| Economic incentives | ☒ Yes ☐ No | The overriding goal of this project is to enhance and improve agricultural stewardship by providing resources that otherwise may not be available or economically feasible for agricultural |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| | | producers in the region. |
| Outreach and engagement | ☒ Yes ☐ No | Technical assistance and educational programs will involve stakeholders at both a local and regional level, improving overall management within the region. |
| Water and culture | ☒ Yes ☐ No | Production agricultural has been a significant cultural component to the area's settlement and development. Working landscapes represent the largest economic driver in the region, and are a large part of the cultural landscape of the region. |
| Water-dependent recreation | ☐ Yes ☒ No | |
| Wastewater/NPDES | ☐ Yes ☒ No | |

Other RMS addressed and explanation:

| |
|---|
| |

## VI. PROJECT COST AND FINANCING

Please provide any estimates of project cost, sources of funding, and operation and maintenance costs, as well as the source of the project cost in the table below.

**PROJECT BUDGET**

Project serves a need of a DAC?: ☐ Yes ☒ No

Funding Match Waiver request?: ☐ Yes ☒ No

| | Category | Requested Grant Amount | Cost Share: Non-State Fund Source* (Funding Match) | Cost Share: Other State Fund Source* | Total Cost |
|---|---|---|---|---|---|
| **a.** | **Direct Project Administration** | $200,000 | | | $200,000 |
| **b.** | **Land Purchase/Easement** | n/a | n/a | n/a | n/a |
| **c.** | **Planning/Design/Engineering / Environmental Documentation** | $300,000 | Private landowner matching | Other ag cost-share (NRCS, etc.) | $300,000 |
| **d.** | **Construction/Implementation** | $800,000 | Private landowner matching | Other ag cost-share (NRCS, etc.) | $800,000 |
| **e.** | **Environmental Compliance/ Mitigation/Enhancement** | $200,000 | Private landowner matching | Other ag cost-share (NRCS, etc.) | $200,000 |

| | | | | | |
|---|---|---|---|---|---|
| **f.** | **Construction Administration** | TBD | Private landowner matching | Other ag cost-share (NRCS, etc.) | |
| **g.** | **Other Costs** | | Private landowner matching | Other ag cost-share (NRCS, etc.) | |
| **h.** | **Construction/Implementation Contingency** | TBD | Private landowner matching | Other ag cost-share (NRCS, etc.) | |
| **i.** | **Grand Total (Sum rows (a) through (h) for each column)** | $1,500,000 | | | $1,500,000 |

| | | | | |
|---|---|---|---|---|
| **j.** | **Can the Project be phased?** ☒ Yes ☐ No If **yes**, provide cost breakdown by phases | | | |
| | | **Project Cost** | **O&M Cost** | **Description of Phase** |
| | **Phase 1** | $150,000 | | Program Development Outreach to landowners. Workshops/TA. Seeking match funding. (2 years) |
| | **Phase 2** | $300,000 | | Continued project development. Additional landowner outreach. Hiring consultants. Landowner Application Process and contracting. CEQA. (1 year) |
| | **Phase 3** | $950,000 | | Hiring contractors. Project coordination. Outreach to landowners. Project Development. CEQA. Permitting. Project Implementation. (estimated 8 years) |
| | **Phase 4** | | $100,000 | Monitoring & Evaluation |

| | | |
|---|---|---|
| **k.** | **Explain how operation and maintenance costs will be financed for the 20-year planning period for project implementation (not grant funded).** | Ongoing management of projects would be largely the responsibility of the landowners and managers once the projects/plans were completed. Ongoing technical assistance provided by RCDs will be provided through initial capacity building funds secured in this proposal and future capacity building efforts. |
| **l.** | **Has a Cost/Benefit analysis been completed?** | ☐ Yes ☒ No |
| **m.** | **Describe what impact there may be if the project is not funded (300 words or less)** | Agricultural and working landscapes represent a significant percentage of the UFRW area, and thus ongoing improvement of their management by private landowners and managers is critical to the entire region, both culturally and economically. Some aspects of |

| | | |
|---|---|---|
| | | this project would be implemented to help landowners meet ongoing management plan requirements set forth in the Irrigated Lands Regulatory Program. Developing the necessary management plans represent a significant burden for agricultural producers that already operate on small economic margins. If these criteria are not met, it means that individual operations will be in non-compliance, representing a significant issue for the region and the ongoing operation of existing ag enterprises. As other educational and cost-share resources (U.C. Cooperative Extension, NRCS, Resource Conservation Districts, etc.) for ongoing working landscape enhancement become less available, it will be important to find alternative means to ensure the sustainability of the region's agricultural operations. If this project is not funded, it could be extremely detrimental for the long-term viability of ag operations and ongoing improvement in water management on working landscapes that are extremely important to the region. |

*List all sources of funding.
Note: See Project Development Manual, Exhibit B, for assistance in completing this table (http://featherriver.org/documents/).

## VIII. PROJECT STATUS AND SCHEDULE

Please provide a status of the project, level of completion as well as a description of the activities planned for each project stage. If unknown, enter **TBD**.

| Project Stage | Check the Current Project Stage | Completed? | Description of Activities in Each Project Stage | Planned/ Actual Start Date (mm/yr) | Planned/ Actual Completion Date (mm/yr) |
|---|---|---|---|---|---|
| **a. Assessment and Evaluation** | ☐ | ☐ Yes<br>☒ No<br>☐ N/A | Program Development Outreach to landowners. Workshops/TA. Seeking match funding. | 2016 | 2018 |
| **b. Final Design** | ☐ | ☐ Yes<br>☒ No<br>☐ N/A | Hiring consultants. Landowner Application Process and contracting. | 2019 | 2027 |

| | | | | | |
|---|---|---|---|---|---|
| **c. Environmental Documentation (CEQA / NEPA)** | ☐ | ☐ Yes<br>☒ No<br>☐ N/A | CEQA. (Note some aspects of the project related to technical assistance do not require environmental documentation, permitting or construction.) | 2019 | 2027 |
| **d. Permitting** | ☐ | ☐ Yes<br>☒ No<br>☐ N/A | | 2019 | 2027 |
| **e. Construction Contracting** | ☐ | ☐ Yes<br>☒ No<br>☐ N/A | Hiring contractors. | 2019 | 2027 |
| **f. Construction Implementation** | ☐ | ☐ Yes<br>☒ No<br>☐ N/A | Project coordination. Outreach to landowners. Project Development. Project Implementation. | 2019 | 2027 |
| **Provide explanation if more than one project stage is checked as current status** | | | Some aspects of the project related to technical assistance do not require environmental documentation, permitting or construction. | | |

## IX. PROJECT TECHNICAL FEASIBILITY

Please provide any related documents (date, title, author, and page numbers) that describe and confirm the technical feasibility of the project. See www.featherriver.org/catalog/index.php for documents gathered on the UFR Region.

| | |
|---|---|
| **a. List the adopted planning documents the proposed project is consistent with or supported by** (e.g. General Plans, UWMPs, GWMPs, Water Master Plan, Habitat Conservation Plans, TMDLs, Basin Plans, etc.). | General Plan, UFRWG Annual Report, Irrigated Lands Regulatory Program |
| **b. List technical reports and studies supporting the feasibility of this project.** | U.C. Cooperative Extension (multiple studies), Ag Commisioner's Report, California Cattlemen's Association Watershed Resource Guide |
| **c. Concisely describe the scientific basis** (e.g. how much research has been conducted) **of the proposed project in 300 words or less.** | |

| | |
|---|---|
| **d. Does the project implement green technology** (e.g. alternate forms of energy, recycled materials, LID techniques, etc.). | ☒ Yes ☐ No ☐ N/A<br>If yes, please describe.<br>Solar and wind energy may be utilized in infrastructure cost-share projects. |
| **e. Are you an Urban Water Supplier[1]?** | ☐ Yes ☒ No ☐ N/A |
| **f. Are you are an Agricultural Water Supplier[2]?** | ☐ Yes ☒ No ☐ N/A |
| **g. Is the project related to groundwater?** | ☒ Yes ☐ No ☐ N/A<br>If yes, please indicate which groundwater basin. (Sierra, American and Indian Valleys) |

[1] Urban Water Supplier is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually.

[2] Agricultural Water Supplier is defined as a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding the acreage that receives recycled water.

# Climate Change – Project Assessment Checklist

This climate change project assessment tool allows project applicants and the planning team to assess project consistency with Proposition 84 plan standards and RWMG plan assessment standards. The tool is a written checklist that asks GHG emissions and adaptation/resiliency questions.

Name of project: ALS-3: Enhanced Management of Livestock Grazing

Project applicant: Feather River RCD and Sierra Valley RCD

## GHG Emissions Assessment

### Project Construction Emissions

*(If you check any of the boxes, please see the attached worksheet)*

☒ The project requires nonroad or off-road engines, equipment, or vehicles to complete.
☒ The project requires materials to be transported to the project site.
☒ The project requires workers to commute to the project site.
☐ The project is expected to generate GHG emissions for other reasons.
☐ The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

### Operating Emissions

*(If you check any of the boxes, please see the attached worksheet)*

☐ The project requires energy to operate.
☐ The project will generate electricity.
☐ The project will proactively manage forests to reduce wildfire risk.
☒ The project will affect wetland acreage.
☐ The project will include new trees.
☒ Project operations are expected to generate or reduce GHG emissions for other reasons.

# Adaptation & Resiliency Assessment

## Water Supply

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water supply vulnerability issues:

- ☐ Not applicable
- ☐ Reduced snowmelt
- ☒ Unmet local water needs (drought)
- ☐ Increased invasive species

The project has the potential to improve the conditions of working lands in the upper Feather River Watershed. Improved conditions on these lands could increase ground cover, could increase water infiltration and water retention during run-off events. As the soils are restored on participating working lands, they will have an increased ability to absorb GHG and sequester Carbon.

## Water Demand

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water demand vulnerability issues:

- ☐ Not applicable
- ☐ Increasing seasonal water use variability
- ☒ Unmet in-stream flow requirements
- ☒ Climate-sensitive crops
- ☒ Groundwater drought resiliency
- ☒ Water curtailment effectiveness

The project could increase resiliency by increasing the biological integrity of the soils on participating working lands. This could lead to more resilient crops that are less reliant on irrigation water to thrive.

## Water Quality

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water quality vulnerability issues:

- ☐ Not applicable
- ☐ Increasing catastrophic wildfires
- ☒ Eutrophication (excessive nutrient pollution in a waterbody, often followed by algae blooms and other related water quality issues)
- ☒ Seasonal low flows and limited abilities for waterbodies to assimilate pollution
- ☐ Water treatment facility operations
- ☐ Unmet beneficial uses (municipal and domestic water supply, water contact recreation, cold freshwater habitat, spawning habitat, wildlife habitat, etc.)

Working lands that participate in this project may respond to management techniques in such a way that improves water infiltration and water retention. These characteristics could reduce eutrophication in downstream water bodies.

## Flooding

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority flooding vulnerability issues:

- ☐ Not applicable
- ☐ Aging critical flood protection
- ☐ Wildfires
- ☒ Critical infrastructure in a floodplain
- ☐ Insufficient flood control facilities

Participating properties may be less prone to the effects of flooding and erosion as soil permeability is improved and ground cover is increased.

## Ecosystem and Habitat

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority ecosystem and habitat vulnerability issues:

- ☐ Not applicable
- ☒ Climate-sensitive fauna or flora
- ☒ Recreation and economic activity
- ☐ Quantified environmental flow requirements
- ☒ Erosion and sedimentation
- ☒ Endangered or threatened species
- ☐ Fragmented habitat

Participating properties may exhibit positive trends that benefit climate sensitive flora and fauna. They may exhibit increased productivity which will improve economic activities for local producers. Those properties may exhibit low rates of erosion and sedimentation and improve habitat for threatened and endangered species.

## Hydropower

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority hydropower vulnerability issues:

- ☐ Not applicable
- ☒ Reduced hydropower output

Reduced erosion of the lands in the upper watershed will benefit downstream hydro power operations.

ALS-3 : Enhanced Management of Livestock Grazing

**GHG Emissions Analysis**

**Project Construction Emissions**

[x] The project requires non-road or off-road engines, equipment, or vehicles to complete. If yes:

| Type of Equipment | Maximum Number Per Day | Total 8-Hour Days in Operation | Total $MTCO_2e$ |
|---|---|---|---|
| Trenchers | 1 | 50 | 11 |
| Tractors/Loaders/Backhoes | 1 | 50 | 14 |
| Excavators | 1 | 50 | 22 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | **Total Emissions** | **46** |

[x] The project requires materials to be transported to the project site. If yes:

| Total Number of Round Trips | Average Trip Distance (Miles) | Total $MTCO_2e$ |
|---|---|---|
| 50 | 50 | **4** |

[x] The project requires workers to commute to the project site. If yes:

| Average Number of Workers | Total Number of Workdays | Average Round Trip Distance Traveled (Miles) | Total $MTCO_2e$ |
|---|---|---|---|
| 2 | 100 | 100 | **7** |

[X] The project is expected to generate GHG emissions for other reasons. If yes, explain:

Vehicle travel for staff associated with project development and providing TA.

[ ] The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

Upper Feather River IRWMP
Project Assessment - GHG Emissions Analysis

ALS-3 : Enhanced Management of Livestock Grazing

**Project Operating Emissions**

☐ The project requires energy to operate. If yes:

| Annual Energy Needed | Unit | Total $MTCO_2e$ |
|---|---|---|
| | kWh (Electricity) | **0** |
| | Therm (Natural Gas) | **0** |

☐ The project will generate electricity. If yes:

| Annual kWh Generated | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

☐ The project will proactively manage forests to reduce wildfire risk. If yes:

| Acres Protected from Wildfire | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

☐ The project will affect wetland acreage. If yes:

| Acres of Protected Wetlands | Total $MTCO_2e$ |
|---|---|
| 200 | **-866** |

*A negative value indicates GHG reductions

☐ The project will include new trees. If yes:

| Acres of Trees Planted | Total $MTCO_2e$ |
|---|---|
| 0 | **0** |

*A negative value indicates GHG reductions

☒ Project operations are expected to generate or reduce GHG emissions for other reasons. If yes, explain:

More efficient cropping patterns, increased yield will sequester carbon.
Healthier range may reduce fertilizer use.

**GHG Emissions Summary**

| | |
|---|---|
| Construction and development will generate approximately: | 57 $MTCO_2e$ |
| In a given year, operation of the project will result in: | -866 $MTCO_2e$ |

featherriver.org



# UPPER FEATHER RIVER IRWM

## PROJECT INFORMATION FORM

**Please submit by 5:00 p.m. on August 3, 2015, to UFR.contact@gmail.com**

Please provide information in the tables below:

### I. PROJECT PROPONENT INFORMATION

| | |
|---|---|
| **Agency / Organization** | Plumas-Sierra County Department of Agriculture |
| **Name of Primary Contact** | Tim Gibson, Ag Commissioner |
| **Name of Secondary Contact** | Carol Dobbas, Project Manager Sierra Valley RCD<br>530-832-4415 |
| **Mailing Address** | 208 Fairgrounds Rd Quincy, CA 95971 |
| **E-mail** | timgibson@countyofplumas.com |
| **Phone** | 530-283-6365 |
| **Other Cooperating Agencies / Organizations / Stakeholders** | Sierra Valley Resource Conservation District<br>PO Box 3562 Quincy, CA 95971<br>sierravalleyrcd@gmail.com |
| **Is your agency/organization committed to the project through completion? If not, please explain** | Yes |

### II. GENERAL PROJECT INFORMATION

| | |
|---|---|
| **Project Title** | ALS-4: Invasive Weed Management |
| **Project Category** | ☒ **Agricultural Land Stewardship**<br>☐ **Floodplains/Meadows/Waterbodies**<br>☐ **Municipal Services**<br>☐ **Tribal Advisory Committee**<br>☐ **Uplands/Forest** |
| **Project Description**<br>(Briefly describe the project, in 300 words or less) | This multi-year project would support the cohesive strategy of the Plumas-Sierra Ag Department and the Sierra Valley RCD to protect waterways, croplands, timber lands, riparian and wetlands, and recreation areas from the spread of destructive and invasive noxious weeds.<br><br>Invasive noxious weeds undermine biological diversity, disrupt natural vegetative systems and degrade agricultural lands and regional waterways which can contribute to soil erosion and degradation of water quality.<br><br>Collaboration between local, regional and national organizations has taken place over the past 14 years. The Sierra Nevada Conservancy as well as both Plumas and Sierra |

| | |
|---|---|
| | RACs are past and current partners in this effort to enhance watershed health by controlling and eradicating invasive weed species. This project will ensure continuation of the successful weed management program in the UFR. |
| **Project Location Description** (e.g., along the south bank of stream/river between river miles or miles from Towns/intersection and/or address): | The project area includes participating private agriculture lands, public right of ways and public recreation areas in Sierra Valley, Long Valley, American Valley, and Indian Valley. Important waterways in these areas include: Middle Fork Feather and tributaries in Sierra Valley and Mohawk Valley; North Fork Feather River, Indian Creek and tributaries in Indian Valley and Greenhorn Creek and tributaries in American Valley; as well as others. |
| **Latitude:** | |
| **Longitude:** | |

## III. APPLICABLE IRWM PLAN OBJECTIVES ADDRESSED

For each of the objectives addressed by the project, provide a one to two sentence description of how the project contributes to attaining the objective and how the project outcomes will be quantified. If the project does not address *any* of the IRWM plan objectives, provide a one to two sentence description of how the project relates to a challenge or opportunity of the Region.

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Restore natural hydrologic functions. | ☒ Yes<br>☐ N/A | The project will improve native vegetation functions by reducing destructive impacts of invasive monocultures in meadowlands as well as riparian and wetland areas. | 640 acres total at a rate of approximately 213 acres per year. |
| Reduce potential for catastrophic wildland fires in the Region. | ☒ Yes<br>☐ N/A | Control of weed infestations will result in a reduction of dry vegetation and fire fuel loads in the UFRW. | 640 acres total at a rate of approximately 213 acres per year. |
| Build communication and collaboration among water resources stakeholders in the Region. | ☒ Yes<br>☐ N/A | An education and outreach component will enhance collaboration between the P-S Ag Dept, regional RCDs and private agricultural landowners as well as public land managers. | Outreach and education will take place at the County Fair and the DPR Continuing Education day for each of the three grant years. Three brochures will be developed outlining control of specific species of |

| Upper Feather River IRWM Objectives: | Will the project address the objective? | Brief explanation of project linkage to selected Objective | Quantification (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| | | | noxious weeds. |
| Work with DWR to develop strategies and actions for the management, operation, and control of SWP facilities in the Upper Feather River Watershed in order to increase water supply, recreational, and environmental benefits to the Region. | ☐ Yes<br>☒ N/A | | |
| Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality. | ☐ Yes<br>☒ N/A | | |
| Continue to actively engage in FERC relicensing of hydroelectric facilities in the Region. | ☐ Yes<br>☒ N/A | | |
| Address economic challenges of municipal service providers to serve customers. | ☐ Yes<br>☒ N/A | | |
| Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the RWQC Basin Plan. | ☒ Yes<br>☐ N/A | Elimination of invasive weed infestations will improve surface water resources for numerous beneficial uses including agriculture, aquatic, recreational, and municipal. | 640 acres total at a rate of approximately 213 acres per year. |
| Address water resources and wastewater needs of DACs and Native Americans. | ☐ Yes<br>☒ N/A | | |
| Coordinate management of recharge areas and protect groundwater resources. | ☐ Yes<br>☒ N/A | | |
| Improve coordination of land use and water resources planning. | ☒ Yes<br>☐ N/A | The Plumas-Sierra Agriculture Department and Sierra Valley RCD work with NRCS and local agricultural landowners to implement overall management strategies to enhance and protect rangelands, meadowlands and waterways within the UFRW. | 640 acres total at a rate of approximately 213 acres per year. |

| Upper Feather River IRWM Objectives: | Will the project address the objective? | Brief explanation of project linkage to selected Objective | Quantification (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Maximize agricultural, environmental and municipal water use efficiency. | ☒ Yes<br>☐ N/A | A reduction in invasive species will result in improved water use efficiency and greater availability to productive and native vegetation. | 640 acres total at a rate of approximately 213 acres per year. |
| Effectively address climate change adaptation and/or mitigation in water resources management. | ☒ Yes<br>☐ N/A | The project outreach component will incorporate climate change adaptation and water efficiency strategies for local agricultural lands. | Outreach and education will take place at the County Fair and the DPR Continuing Education day for each of the three grant years. Three brochures will be developed outlining control of specific species of noxious weeds. |
| Improve efficiency and reliability of water supply and other water-related infrastructure. | ☐ Yes<br>☒ N/A | | |
| Enhance public awareness and understanding of water management issues and needs. | ☒ Yes<br>☐ N/A | The project outreach events will increase awareness of the critical role of proper noxious invasive species control in good water resource management. | Outreach and education will take place at the County Fair and the DPR Continuing Education day for each of the three grant years. Three brochures will be developed outlining control of specific species of noxious weeds. |
| Address economic challenges of agricultural producers. | ☒ Yes<br>☐ N/A | A successful noxious weed and invasive species management program involves a long-range strategy and long-range financial commitment which is an economic challenge to most agricultural producers. The project will decrease this burden to key stakeholders. | Hours and chemical usage will be tracked as this is time and money that the agricultural producers will not be spending. |

| Upper Feather River IRWM Objectives: | Will the project address the objective? | Brief explanation of project linkage to selected Objective | Quantification (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Work with counties/ communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding. | ☒ Yes<br>☐ N/A | PS Ag Dept and SVRCD will work with other UFRW groups to ensure adequate staff is available to implement and administer grant projects. | This will be achieved through an annual Weeds Management Area group meeting. |

If no objectives are addressed, describe how the project relates to a challenge or opportunity for the Region:

## IV. PROJECT IMPACTS AND BENEFITS

Please provide a summary of the expected project benefits and impacts in the table below or check N/A if not applicable; **do no leave a blank cell.** Note that DWR encourages multi-benefit projects.

| If applicable, describe benefits or impacts of the project with respect to: | | |
|---|---|---|
| **a. Native American Tribal Communities** | ☒ N/A | |
| **b. Disadvantaged Communities**[1] | ☒ N/A | |
| **c. Environmental Justice**[2] | ☒ N/A | |
| **d. Drought Preparedness** | ☐ N/A | The project will increase drought preparedness by facilitating increased water flow efficiency and reducing water used by noxious plant species. |
| **e. Assist the region in adapting to effects of climate change**[3] | ☐ N/A | Reductions in noxious weeds will improve meadowlands and riparian areas which serve as habitats for sensitive species most likely to be affected by climate change. |
| **f. Generation or reduction of greenhouse gas emissions (e.g. green technology)** | ☐ N/A | Carbon sequestration will be enhanced through the removal of invasive weed monocultures and replacing them with a polyculture of native species. |
| **g. Other expected impacts or benefits that are not already mentioned elsewhere** | ☐ N/A | The project will be monitored to assist in quantifying the increased health of natural vegetative systems unique to the UFRW region. This collaborative effort will encourage future partnerships among the local resource organizations. |

[1] A Disadvantaged Community is defined as a community with an annual median household (MHI) income that is less than 80 percent of the Statewide annual MHI. DWR's DAC mapping is available on the UFR website (http://featherriver.org/maps/) .
[2] Environmental Justice is defined as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies. An example of environmental justice benefit would be to improve conditions (e.g. water supply, flooding, and sanitation) in an area of racial minorities.
[3] Climate change effects are likely to include increased flooding, extended drought, and associated secondary effects such as increased wildfire risk, erosion, and sedimentation.

DWR encourages multiple benefit projects which address one or more of the following elements (PRC §75026(a). Indicate which elements are addressed by your project.

| | | | |
|---|---|---|---|
| a. Water supply reliability, water conservation, water use efficiency | ☒ Yes ☐ N/A | g. Drinking water treatment and distribution | ☐ Yes ☒ N/A |
| b. Stormwater capture, storage, clean-up, treatment, management | ☐ Yes ☒ N/A | h. Watershed protection and management | ☒ Yes ☐ N/A |
| c. Removal of invasive non-native species, creation/enhancement of wetlands, acquisition/protection/restoration of open space and watershed lands | ☒ Yes ☐ N/A | i. Contaminant and salt removal through reclamation/desalting, other treatment technologies and conveyance of recycled water for distribution to users | ☐ Yes ☒ N/A |
| d. Non-point source pollution reduction, management and monitoring | ☒ Yes ☐ N/A | j. Planning and implementation of multipurpose flood management programs | ☐ Yes ☒ N/A |
| e. Groundwater recharge and management projects | ☐ Yes ☒ N/A | k. Ecosystem and fisheries restoration and protection | ☒ Yes ☐ N/A |
| f. Water banking, exchange, reclamation, and improvement of water quality | ☒ Yes ☐ N/A | | |

## V. RESOURCE MANAGEMENT STRATEGIES

For each resource management strategy (RMS) employed by the project, provide a one to two sentence description in the table below of how the project incorporates the strategy. A description of the RMS can be found in Volume 2 of the 2013 California Water Plan (http://featherriver.org/2013-california-water-plan-update/).

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Reduce Water Demand | | |
| Agricultural Water Use Efficiency | ☒ Yes ☐ No | Reduction of water used by non-productive invasive noxious weeds and shift use to productive vegetation systems. |
| Urban water use efficiency | ☐ Yes ☒ No | |
| Improve Flood Management | | |
| Flood management | ☐ Yes ☒ No | |
| Improve Operational Efficiency and Transfers | | |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Conveyance – regional/local | ☒ Yes ☐ No | Elimination of noxious weeds from conveyance structures will provide for improved bank stability and a restoration of natural stream flow resulting in an improvement of available water and conveyance downstream. |
| System reoperation | ☐ Yes ☒ No | |
| Water transfers | ☐ Yes ☒ No | |
| Increase Water Supply | | |
| Conjunctive management | ☐ Yes ☒ No | |
| Precipitation Enhancement | ☐ Yes ☒ No | |
| Municipal recycled water | ☐ Yes ☒ No | |
| Surface storage – regional/local | ☒ Yes ☐ No | Minor improvements in water holding capacity may be realized in small ponds, riparian areas and meadows through reduction of thirsty noxious weed vegetation along streambanks. |
| Improve Water Quality | | |
| Drinking water treatment and distribution | ☐ Yes ☒ No | |
| Groundwater remediation/aquifer remediation | ☐ Yes ☒ No | |
| Matching water quality to water use | ☐ Yes ☒ No | |
| Pollution prevention | ☒ Yes ☐ No | Improving native vegetative cover reduces soil erosion and other natural pollutants. |
| Salt and salinity management | ☒ Yes ☐ No | Buffers of native vegetation have been proven to be key in the reduction of salinity in streams due to agriculture. |
| Urban storm water runoff management | ☐ Yes ☒ No | |
| Practice Resource Stewardship | | |
| Agricultural land stewardship | ☒ Yes ☐ No | Implementation of native vegetation and meadow lands management will improve agriculture land stewardship and enhance the habitat benefits provided by agricultural lands. |
| Ecosystem restoration | ☒ Yes ☐ No | Healthy biological diversity within the native meadowlands of the UFRW is critical to ecosystem restoration. Weed management is an important tool to achieve this goal. |
| Forest management | ☒ Yes ☐ No | Weed encroachment across property boundaries between ranch lands and adjacent forest lands is prevented by a successful weed management program. |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Land use planning and management | ☐ Yes ☒ No | |
| Recharge area protection | ☐ Yes ☒ No | |
| Sediment management | ☒ Yes ☐ No | Noxious weeds contribute to bank erosion. Native vegetation provides for stable banks and better filters agricultural runoff resulting in sediment reduction. |
| Watershed management | ☒ Yes ☐ No | Vegetation biodiversity is an important component of overall watershed management. |
| People and Water | | |
| Economic incentives | ☒ Yes ☐ No | Funding assistance for costly weed management programs provides incentives to local agricultural land managers to participate more actively in the effort. |
| Outreach and engagement | ☒ Yes ☐ No | Outreach events and workshops will be an important part of this project. |
| Water and culture | ☒ Yes ☐ No | The culture of farming and ranching in the watershed has historically been based on the meadows and streams that are sustained by subterranean spring water and artesian wells. The preservation and protection of these historic/prehistoric features will become extremely important in sustaining the historical ranch lands and cultural heritage of the UFRW. The cultural significance of water to our headwaters region will need to be a united focus point of outreach by all UFRW organizations and agencies. |
| Water-dependent recreation | ☒ Yes ☐ No | Weed free recreational areas will encourage return visits to our water resource based region. The increase in natural, noxious weed free habitat will result in in stronger fisheries and improved habitat for migratory birds travelling the Pacific Flyway. |
| Wastewater/NPDES | ☐ Yes ☒ No | |

Other RMS addressed and explanation:

## VI. PROJECT COST AND FINANCING

Please provide any estimates of project cost, sources of funding, and operation and maintenance costs, as well as the source of the project cost in the table below.

**PROJECT BUDGET**

Project serves a need of a DAC?: ☐ Yes ☒ No
Funding Match Waiver request?: ☐ Yes ☒ No

| | Category | Requested Grant Amount | Cost Share: Non-State Fund Source* (Funding | Cost Share: Other State Fund Source* | Total Cost |
|---|---|---|---|---|---|
| a. | **Direct Project Administration** | $200,000 | TBD | TBD | $200,000+ |
| b. | **Land Purchase/Easement** | N/A | N/A | | N/A |
| c. | **Planning/Design/Engineering / Environmental** | 20,000 | TBD | | 20,000+ |
| d. | **Construction/Implementation** | 200,000 | TBD | | 200,000 |
| e. | **Environmental Compliance/ Mitigation/Enhancement** | N/A | N/A | | N/A |
| f. | **Construction Administration** | N/A | N/A | | N/A |
| g. | **Other Costs** | 30,000 | TBD | | 30,000+ |
| h. | **Construction/Implementation Contingency** | N/A | N/A | | N/A |
| i. | **Grand Total (Sum rows (a) through (h) for each column)** | $450,000 | TBD | TBD | $450,000+ |

| j. | **Can the Project be phased?** ☒ Yes ☐ No If **yes**, provide cost breakdown by phases | | | |
|---|---|---|---|---|
| | Not exactly a phased project; but $ could be allocated over multi-years for treatment across UFRW | **Project Cost** | **O&M Cost** | **Description of Phase** |
| | First year | 150,000+ | | 1st year of multi-year treatment |
| | Second year | 150,000+ | | 2nd year of multi-year treatment |
| | Third year | 150,000+ | | 3rd year of multi-year treatment |
| | | | | |

| | | |
|---|---|---|
| k. | **Explain how operation and maintenance costs will be financed for the 20-year planning period for project implementation (not grant funded).** | n/a |
| l. | **Has a Cost/Benefit analysis been completed?** | ☐ Yes ☒ No |
| m. | **Describe what impact there may be if the project is not funded (300 words or less)** | Tall Whitetop, sulfur cinquefoil, and Star Thistle infestations have significantly degraded many areas of Northern California resulting in significant economic losses to both private agriculture and public recreation based entities. The commitment of Plumas and Sierra County organizations including the Ag Dept., Sierra |

| | | |
|---|---|---|
| | | Valley RCD, Feather River RCD, NRCS and private landowners has been key to preventing this same scenario of destructive uncontrolled weed infestations in our beautiful watershed. Future funding to sustain a regional weed management project is critical to protecting our water and natural resources. |

*List all sources of funding.
Note: See Project Development Manual, Exhibit B, for assistance in completing this table (http://featherriver.org/documents/).

## VIII. PROJECT STATUS AND SCHEDULE

Please provide a status of the project, level of completion as well as a description of the activities planned for each project stage. If unknown, enter **TBD**.

| Project Stage | Check the Current Project Stage | Completed? | Description of Activities in Each Project Stage | Planned/ Actual Start Date (mm/yr) | Planned/ Actual Completion Date (mm/yr) |
|---|---|---|---|---|---|
| **a. Assessment and Evaluation** | ☒ | ☒ Yes<br>☐ No<br>☐ N/A | Weed identification has been completed by RCD, Ag Dept and Weed Contractor. | TBD by IRWM funding | Current funding expires:<br>Ag Dept - 2015<br>SVRCD - 2016 |
| **b. Final Design** | ☒ | ☐ Yes<br>☒ No<br>☐ N/A | Identification of and securing long-range project funding is ongoing. | | |
| **c. Environmental Documentation (CEQA / NEPA)** | ☒ | ☒ Yes<br>☐ No<br>☐ N/A | Ag Dept is exempt | | |
| **d. Permitting** | ☒ | ☒ Yes<br>☐ No<br>☐ N/A | Weed Control Contractor has obtained required permits for current program. | | |
| **e. Construction Contracting** | ☒ | ☒ Yes<br>☐ No<br>☐ N/A | Existing program is underway with limited funding. | | |
| **f. Construction Implementation** | ☒ | ☒ Yes<br>☐ No<br>☐ N/A | Existing program is underway with limited funding. | | |
| **Provide explanation if more than one project stage is checked as current status** | | | Current noxious weed management programs are in progress through other grant-funded projects. These successful program strategies will be continued and expanded under potential future IRWM grants and guidelines. | | |

| | |
|---|---|
| | Current project contractors and staff are available for continued implementation of a watershed wide weed management program. |

## IX. PROJECT TECHNICAL FEASIBILITY

Please provide any related documents (date, title, author, and page numbers) that describe and confirm the technical feasibility of the project. See www.featherriver.org/catalog/index.php for documents gathered on the UFR Region.

| | |
|---|---|
| **a. List the adopted planning documents the proposed project is consistent with or supported by** (e.g. General Plans, UWMPs, GWMPs, Water Master Plan, Habitat Conservation Plans, TMDLs, Basin Plans, etc.). | General Plan, NRCS landowner contracts, |
| **b. List technical reports and studies supporting the feasibility of this project.** | Cal-Invasive Plant Council website: http://www.cal-ipc.org/<br><br>Prioritizing Regional Response to Invasive Plants in the Sierra Nevada (2011) Plumas-Sierra WMA http://www.cal-ipc.org/ip/mapping/sierra/pdf/3bPlumasSierra.pdf<br><br>UC Davis Weed Research & Information Center http://wric.ucdavis.edu/publications/pubs.htm<br><br>Weed Control in Natural Areas of the Western United States http://www.cal-ipc.org/resources/booksandcds/weedcontrol.php<br><br>Ecology of Weeds and Invasive Plants: Relationship to Agriculture and Natural Resource Management<br><br>Yellow Starthistle Management Guide by Joseph M. DiTomaso, Guy B. Kyser, and Michael J. Pitcairn |
| **c. Concisely describe the scientific basis** (e.g. how much research has been conducted) **of the proposed project in 300 words or less.** | Scientific research and documents by various universities, organizations and agencies have been published on the benefits of noxious weed management and are numerous. A few are listed above. |
| **d. Does the project implement green technology** (e.g. alternate forms of energy, recycled materials, LID techniques, etc.). | ☐ Ys ☐ No ☒ N/A<br>If yes, please describe. |
| **e. Are you an Urban Water Supplier[1]?** | ☐ Yes ☒ No ☐ N/A |
| **f. Are you are an Agricultural Water Supplier[2]?** | ☐ Yes ☒ No ☐ N/A |

| | |
|---|---|
| **g. Is the project related to groundwater?** | ☐ Yes ☐ No ☒ N/A<br>If yes, please indicate which groundwater basin. |

[1] Urban Water Supplier is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually.

[2] Agricultural Water Supplier is defined as a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding the acreage that receives recycled water.

# Climate Change – Project Assessment Checklist

This climate change project assessment tool allows project applicants and the planning team to assess project consistency with Proposition 84 plan standards and RWMG plan assessment standards. The tool is a written checklist that asks GHG emissions and adaptation/resiliency questions.

Name of project: ALS-4: Invasive Weed Management

Project applicant: Plumas-Sierra County Department of Agriculture

## GHG Emissions Assessment

### Project Construction Emissions

*(If you check any of the boxes, please see the attached worksheet)*

- ☐ The project requires nonroad or off-road engines, equipment, or vehicles to complete.
- ☐ The project requires materials to be transported to the project site.
- ☐ The project requires workers to commute to the project site.
- ☐ The project is expected to generate GHG emissions for other reasons.
- ☐ The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

### Operating Emissions

*(If you check any of the boxes, please see the attached worksheet)*

- ☐ The project requires energy to operate.
- ☐ The project will generate electricity.
- ☒ The project will proactively manage forests to reduce wildfire risk.
- ☒ The project will affect wetland acreage.
- ☐ The project will include new trees.
- ☐ Project operations are expected to generate or reduce GHG emissions for other reasons.

# Adaptation & Resiliency Assessment

## Water Supply

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water supply vulnerability issues:

- ☐ Not applicable
- ☐ Reduced snowmelt
- ☐ Unmet local water needs (drought)
- ☒ Increased invasive species

This project is dedicated to reducing the invasive species within the watershed through the attempted eradication of certain invasive species. Fewer invasive species will result in more water in the streams through a reduction in evapotranspiration.

## Water Demand

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water demand vulnerability issues:

- ☒ Not applicable
- ☐ Increasing seasonal water use variability
- ☐ Unmet in-stream flow requirements
- ☐ Climate-sensitive crops
- ☐ Groundwater drought resiliency
- ☐ Water curtailment effectiveness

## Water Quality

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water quality vulnerability issues:

- ☐ Not applicable
- ☒ Increasing catastrophic wildfires
- ☒ Eutrophication (excessive nutrient pollution in a waterbody, often followed by algae blooms and other related water quality issues)
- ☐ Seasonal low flows and limited abilities for waterbodies to assimilate pollution
- ☐ Water treatment facility operations

☒ Unmet beneficial uses (municipal and domestic water supply, water contact recreation, cold freshwater habitat, spawning habitat, wildlife habitat, etc.)

The eradication of invasive weed species will result in the reduction of ladder fuels in the forest, thus preventing wildfires, which contribute materials to waterways. It will prevent eutrophication by allowing water to flow naturally through the wetlands and increase water flow through the reduction in evapotranspiration. The restoration of native species to the wetlands will increase wildlife habitat, spawning habitat, cold freshwater habitat, and result in a higher quality of water contact recreation.

## Flooding

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority flooding vulnerability issues:

☒ Not applicable
☐ Aging critical flood protection
☐ Wildfires
☐ Critical infrastructure in a floodplain
☐ Insufficient flood control facilities

## Ecosystem and Habitat

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority ecosystem and habitat vulnerability issues:

☐ Not applicable
☒ Climate-sensitive fauna or flora
☐ Recreation and economic activity
☐ Quantified environmental flow requirements
☐ Erosion and sedimentation
☒ Endangered or threatened species
☒ Fragmented habitat

The eradication of invasive weed species will result in a reduction of habitat fragmentation. Climate-sensitive fauna or flora and endangered or threatened species will have a better chance of survival through the return of native habitat through the eradication of invasive weed species.

## Hydropower

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority hydropower vulnerability issues:

☒ Not applicable
☐ Reduced hydropower output

ALS-4: Invasive Weed Management

**GHG Emissions Analysis**

**Project Construction Emissions**

☐ The project requires non-road or off-road engines, equipment, or vehicles to complete. If yes:

| Type of Equipment | Maximum Number Per Day | Total 8-Hour Days in Operation | Total $MTCO_2e$ |
|---|---|---|---|
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | **Total Emissions** | **0** |

☐ The project requires materials to be transported to the project site. If yes:

| Total Number of Round Trips | Average Trip Distance (Miles) | Total $MTCO_2e$ |
|---|---|---|
| | | **0** |

☐ The project requires workers to commute to the project site. If yes:

| Average Number of Workers | Total Number of Workdays | Average Round Trip Distance Traveled (Miles) | Total $MTCO_2e$ |
|---|---|---|---|
| | | | **0** |

☐ The project is expected to generate GHG emissions for other reasons. If yes, explain:

| |
|---|
| |

☒ The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

Upper Feather River IRWMP
Project Assessment - GHG Emissions Analysis

ALS-4: Invasive Weed Management

**Project Operating Emissions**

[ ] The project requires energy to operate. If yes:

| Annual Energy Needed | Unit | Total $MTCO_2e$ |
|---|---|---|
| | kWh (Electricity) | **0** |
| | Therm (Natural Gas) | **0** |

[ ] The project will generate electricity. If yes:

| Annual kWh Generated | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

[X] The project will proactively manage forests to reduce wildfire risk. If yes:

| Acres Protected from Wildfire | Total $MTCO_2e$ |
|---|---|
| 42 | **-265** |

*A negative value indicates GHG reductions

[ ] The project will affect wetland acreage. If yes:

| Acres of Protected Wetlands | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

[ ] The project will include new trees. If yes:

| Acres of Trees Planted | Total $MTCO_2e$ |
|---|---|
| 0 | **0** |

*A negative value indicates GHG reductions

[x] Project operations are expected to generate or reduce GHG emissions for other reasons. If yes, explain:

This project will result in the restoration of approximately 640 acres of wetlands due to the removal of noxious weeds which will reduce GHG emissions. This operation of this project requires driving a light truck or ATV for approximately 2,080 miles annually to treat weeds around the region which will generate emissions.

**GHG Emissions Summary**

| | |
|---|---|
| Construction and development will generate approximately: | 0 $MTCO_2e$ |
| In a given year, operation of the project will result in: | -265 $MTCO_2e$ |

# UPPER FEATHER RIVER IRWM

## PROJECT INFORMATION FORM

**Please submit by 5:00 p.m. on August 3, 2015, to UFR.contact@gmail.com**

Please provide information in the tables below:

### I. PROJECT PROPONENT INFORMATION

| | |
|---|---|
| **Agency / Organization** | Sierra Valley Resource Conservation District (SVRCD) |
| **Name of Primary Contact** | Jeff Carmichael – SVRCD Board of Directors |
| **Name of Secondary Contact** | Bill Nunes – SVRCD Board of Directors |
| **Mailing Address** | PO Box 3562, Quincy CA 95971 |
| **E-mail** | sierravalleyrcd@gmail.com or jc.18520@gmail.com |
| **Phone** | (530) 514-4936 |
| **Other Cooperating Agencies / Organizations / Stakeholders** | County of Sierra, County of Plumas, and Sierra Valley Mutual Water Company, U.S. Forest Service |
| **Is your agency/organization committed to the project through completion? If not, please explain** | Yes |

### II. GENERAL PROJECT INFORMATION

| | |
|---|---|
| **Project Title** | ALS-6: Sierra Valley Ag. Water Diversion Efficiency, Improvement |
| **Project Category** | ■ **Agricultural Land Stewardship**<br>☐ **Floodplains/Meadows/Waterbodies**<br>☐ **Municipal Services**<br>☐ **Tribal Advisory Committee**<br>☐ **Uplands/Forest** |
| **Project Description**<br>(Briefly describe the project, in 300 words or less) | The Sierra Valley Water Company operates and maintains a diversion dam and conveyance channel allowing water from the Little Truckee River to be diverted under specific conditions and during a specific season into the Feather River watershed (Sierra Valley). The proposed project is a feasibility study in support of a mechanism for conduit to be installed from the diversion dam for approximately 2.5 miles to significantly increase agricultural water use efficiency and to restore the watercourse ecosystem from Little Truckee Summit to Onion Valley. This project will significantly reduce water loss from the conveyance channel due to seepage and remove significant erosive conditions and sediment loading that is evident along the route of the diversion ditch into Sierra Valley. Current losses are approximately 25% of the water diverted. This project will prevent further scouring and deepening of the channel that is presently over fifteen (15) feet in depth to the watercourse; stop erosion and sedimentation that is annually contributing to a significant impact into the downstream ecosystem and meadows; and make significant contributions to improving water quality. The |

| | |
|---|---|
| | efficiencies in delivery of agricultural water to Sierra Valley under the 1870 water right will also be significantly improved. This is a phased project beginning with the feasibility study. If proven feasibility, phase 2 will include CEQA, and phase 3 implementation. |
| **Project Location Description** (e.g., along the south bank of stream/river between river miles or miles from Towns/intersection and/or address): | T19N R14E Sections 11, 14 & 15 |
| **Latitude:** | 39.49262/39.50815 |
| **Longitude:** | -120.30105/-120.285420 |

## III. APPLICABLE IRWM PLAN OBJECTIVES ADDRESSED

For each of the objectives addressed by the project, provide a one to two sentence description of how the project contributes to attaining the objective and how the project outcomes will be quantified. If the project does not address *any* of the IRWM plan objectives, provide a one to two sentence description of how the project relates to a challenge or opportunity of the Region.

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Restore natural hydrologic functions. | ■ Yes<br>☐ N/A | Reduce/eliminate erosion, down cutting and sedimentation of existing channel and ultimately Feather River System | Sediment Load |
| Reduce potential for catastrophic wildland fires in the Region. | ☐ Yes<br>■ N/A | | |
| Build communication and collaboration among water resources stakeholders in the Region. | ■ Yes<br>☐ N/A | There is an opportunity to enhance and further partnership capacity with the Sierra Valley RCD, Sierra Valley Mutual Water Company, U.S. Forest Service, and representatives of the IRWM | Public Meetings and Partnerships |
| Work with DWR to develop strategies and actions for the management, operation, and control of SWP facilities in the Upper Feather River Watershed in order to increase water supply, recreational, and environmental benefits to the Region. | ☐ Yes<br>■ N/A | | |

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality. | ☐ Yes<br>■ N/A | | |
| Continue to actively engage in FERC relicensing of hydroelectric facilities in the Region. | ☐ Yes<br>■ N/A | | |
| Address economic challenges of municipal service providers to serve customers. | ☐ Yes<br>■ N/A | | |
| Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the RWQC Basin Plan. | ■ Yes<br>☐ N/A | The project will restore ecological function of the riparian and stream system(s) | Acres of riparian habitat and stream miles restored |
| Address water resources and wastewater needs of DACs and Native Americans. | ☐ Yes<br>■ N/A | | |
| Coordinate management of recharge areas and protect groundwater resources. | ☐ Yes<br>■ N/A | | |
| Improve coordination of land use and water resources planning. | ■ Yes<br>☐ N/A | There is an opportunity to enhance and further partnership capacity with the Sierra Valley RCD, Sierra Valley Mutual Water Company, U.S. Forest Service, and representatives of the IRWM | Public Meetings and Partnerships |
| Maximize agricultural, environmental and municipal water use efficiency. | ■ Yes<br>☐ N/A | Implementation of the project will eliminate historic seepage and water delivery loss | Acre Feet delivered to Sierra Valley |
| Effectively address climate change adaptation and/or mitigation in water resources management. | ■ Yes<br>☐ N/A | To improve its resiliency to climate change, this project will replace an unlined ditch subject to approximately 25% water losses with a pipeline that is expected to result in water losses of less than approximately 5%. This allows the Sierra Valley Mutual Water Company to maintain their current level of service to customers with a | Acre Feet delivered to Sierra Valley |

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| | | decrease in consumptive water use. Reducing consumptive water use improves resiliency to climate change variability, the effects of which may decrease availability of surface water through decrease in snowpack and increase in flash precipitation events. | |
| Improve efficiency and reliability of water supply and other water-related infrastructure. | ■ Yes<br>☐ N/A | This project will replace an unlined ditch subject to approximately 25% water losses (from leaks and evaporation) with a pipeline that is expected to result in water losses of less than approximately 5%. This will improve efficiency of water delivery/use by ensuring the final delivery of a higher percentage of diverted water. | Acre Feet delivered to Sierra Valley. Reduce losses from ~25% to 5%. |
| Enhance public awareness and understanding of water management issues and needs. | ■ Yes<br>☐ N/A | There is an opportunity to enhance and further partnership capacity with the Sierra Valley RCD, Sierra Valley Mutual Water Company, U.S. Forest Service, and representatives of the IRWM | Public Meetings and Partnerships |
| Address economic challenges of agricultural producers. | ■ Yes<br>☐ N/A | More efficient delivery of water will result in more consistent and greater production of forage and agricultural crops. This level of increased flow is critical for sustainability during drought years. | Acre Feet delivered to Sierra Valley |
| Work with counties/ communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding. | ■ Yes<br>☐ N/A | Current and demonstrated capacity exists with the Sierra Valley RCD and Sierra County | Partnership with Sierra County and Sierra Valley RCD |

If no objectives are addressed, describe how the project relates to a challenge or opportunity for the Region:

## IV. PROJECT IMPACTS AND BENEFITS

Please provide a summary of the expected project benefits and impacts in the table below or check N/A if not applicable; **do no leave a blank cell.** Note that DWR encourages multi-benefit projects.

| **If applicable, describe benefits or impacts of the project with respect to:** | | |
|---|---|---|
| **a. Native American Tribal Communities** | ■ N/A | |
| **b. Disadvantaged Communities**[1] | ■ N/A | Sierraville (Sierra County) is a designated disadvantaged community and the project is located within this community. This project alone, however, does not address a critical water resource need for the community. |
| **c. Environmental Justice**[2] | ■ N/A | |
| **d. Drought Preparedness** | ☐ N/A | The project will replace an unlined ditch subject to approximately 25% water losses with a pipeline that is expected to result in water losses of less than approximately 5%. |
| **e. Assist the region in adapting to effects of climate change**[3] | ☐ N/A | To improve its resiliency to climate change, this project will replace an unlined ditch subject to approximately 25% water losses with a pipeline that is expected to result in water losses of less than approximately 5%. This allows the SVMWC to maintain their current level of service to customers with a decrease in consumptive water use. Reducing consumptive water use improves resiliency to climate change variability, the effects of which may decrease availability of surface water through decrease in snowpack and increase in flash precipitation events. |
| **f. Generation or reduction of greenhouse gas emissions (e.g. green technology)** | ☐ N/A | This project is a feasibility study and therefore will not impact GHG. However, construction-related GHG emissions reduction strategies will be considered in the design stage of project development. |
| **g. Other expected impacts or benefits that are not already mentioned elsewhere** | ■ N/A | |

[1] A Disadvantaged Community is defined as a community with an annual median household (MHI) income that is less than 80 percent of the Statewide annual MHI. DWR's DAC mapping is available on the UFR website (http://featherriver.org/maps/) .

[2] Environmental Justice is defined as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies. An example of environmental justice benefit would be to improve conditions (e.g. water supply, flooding, sanitation) in an area of racial minorities.

[3] Climate change effects are likely to include increased flooding, extended drought, and associated

| |
|---|
| secondary effects such as increased wildfire risk, erosion, and sedimentation. |

DWR encourages multiple benefit projects which address one or more of the following elements (PRC §75026(a). Indicate which elements are addressed by your project.

| | | | |
|---|---|---|---|
| a. Water supply reliability, water conservation, water use efficiency | ■ Yes ☐ N/A | g. Drinking water treatment and distribution | ☐ Yes ■ N/A |
| b. Stormwater capture, storage, clean-up, treatment, management | ☐ Yes ■ N/A | h. Watershed protection and management | ■ Yes ☐ N/A |
| c. Removal of invasive non-native species, creation/enhancement of wetlands, acquisition/protection/restoration of open space and watershed lands | ■ Yes ☐ N/A | i. Contaminant and salt removal through reclamation/desalting, other treatment technologies and conveyance of recycled water for distribution to users | ☐ Yes ■ N/A |
| d. Non-point source pollution reduction, management and monitoring | ■ Yes ☐ N/A | j. Planning and implementation of multipurpose flood management programs | ☐ Yes ■ N/A |
| e. Groundwater recharge and management projects | ☐ Yes ■ N/A | k. Ecosystem and fisheries restoration and protection | ■ Yes ☐ N/A |
| f. Water banking, exchange, reclamation, and improvement of water quality | ■ Yes ☐ N/A | | |

## V. RESOURCE MANAGEMENT STRATEGIES

For each resource management strategy (RMS) employed by the project, provide a one to two sentence description in the table below of how the project incorporates the strategy. A description of the RMS can be found in Volume 2 of the 2013 California Water Plan (http://featherriver.org/2013-california-water-plan-update/).

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Reduce Water Demand | | |
| Agricultural Water Use Efficiency | ■ Yes ☐ No | Increase water use efficiency through a decrease in water losses in the Ditch that supplies water for agricultural use. |
| Urban water use efficiency | ☐ Yes ■ No | |
| Improve Flood Management | | |
| Flood management | ☐ Yes ■ No | |
| Improve Operational Efficiency and Transfers | | |
| Conveyance – regional/local | ■ Yes ☐ No | Increase water use efficiency through a decrease in water losses in the Ditch that supplies water for agricultural use and down stream flows |
| System reoperation | ☐ Yes ■ No | |
| Water transfers | ☐ Yes ■ No | |
| Increase Water Supply | | |
| Conjunctive management | ■ Yes ☐ No | Reduction in lost surface water from the |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| | | diversion will likely translate to less groundwater pumping for irrigation on fields served by both sources, i.e., will allow for improved conjunctive management by irrigators. |
| Precipitation Enhancement | ☐ Yes ■ No | |
| Municipal recycled water | ☐ Yes ■ No | |
| Surface storage – regional/local | ☐ Yes ■ No | |
| Improve Water Quality | | |
| Drinking water treatment and distribution | ☐ Yes ■ No | |
| Groundwater remediation/aquifer remediation | ☐ Yes ■ No | |
| Matching water quality to water use | ☐ Yes ■ No | |
| Pollution prevention | ■ Yes ☐ No | Reduce/eliminate erosion, down cutting and sedimentation of existing channel and ultimately Feather River System |
| Salt and salinity management | ☐ Yes ■ No | |
| Urban storm water runoff management | ☐ Yes ■ No | |
| Practice Resource Stewardship | | |
| Agricultural land stewardship | ■ Yes ☐ No | Reduce/eliminate erosion, current turbidity levels and increase efficiency of water received to agricultural users. |
| Ecosystem restoration | ■ Yes ☐ No | The project will restore ecological function of the riparian, stream system(s) and aquatic biota |
| Forest management | ☐ Yes ■ No | |
| Land use planning and management | ■ Yes ☐ No | Project will adhere to CEQA/NEPA and Sierra County Land Use Planning. Project under feasibility study involves the orderly and planned use of water resources, with a view to securing the physical and economic well-being of rural communities and producers. |
| Recharge area protection | ☐ Yes ■ No | |
| Sediment management | ■ Yes ☐ No | Reduce/eliminate erosion, current turbidity levels and increase efficiency of water received to agricultural users. |
| Watershed management | ■ Yes ☐ No | Reduce/eliminate erosion, current turbidity levels and increase efficiency of water received to agricultural users. |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| People and Water | | |
| Economic incentives | ☐ Yes ■ No | |
| Outreach and engagement | ■ Yes ☐ No | There is an opportunity to enhance and further partnership capacity with the Sierra Valley RCD, Sierra Valley Mutual Water Company, U.S. Forest Service, and representatives of the IRWM as well as through public scoping. |
| Water and culture | ☐ Yes ■ No | |
| Water-dependent recreation | ■ Yes ☐ No | Project will increase flows and aquatic biota – increased angling opportunities |
| Wastewater/NPDES | ☐ Yes ■ No | |

Other RMS addressed and explanation:

## VI. PROJECT COST AND FINANCING

Please provide any estimates of project cost, sources of funding, and operation and maintenance costs, as well as the source of the project cost in the table below.

**PROJECT BUDGET**

Project serves a need of a DAC?: ☐ Yes ■ No
Funding Match Waiver request?: ☐ Yes ■ No

| | Category | Requested Grant Amount | Cost Share: Non-State Fund Source* (Funding Match) | Cost Share: Other State Fund Source* | Total Cost |
|---|---|---|---|---|---|
| **a.** | **Direct Project Administration** | $15,000 | 0 | 0 | $15,000 |
| **b.** | **Land Purchase/Easement** | 0 | 0 | 0 | 0 |
| **c.** | **Planning/Design/Engineering / Environmental** | $135,000 | 0 | 0 | $135,000 |
| **d.** | **Construction/Implementation** | 0 | 0 | 0 | |
| **e.** | **Environmental Compliance/ Mitigation/Enhancement** | 0 | 0 | 0 | 0 |
| **f.** | **Construction Administration** | 0 | 0 | 0 | 0 |
| **g.** | **Other Costs** | 0 | 0 | 0 | 0 |
| **h.** | **Construction/Implementation Contingency** | 0 | 0 | 0 | 0 |
| **i.** | **Grand Total (Sum rows (a) through (h) for each column)** | $150,000 | 0 | 0 | $150,000 |

| | | | | |
|---|---|---|---|---|
| **j.** | **Can the Project be phased?** ■ **Yes** ☐ **No** If **yes**, provide cost breakdown by phases | | | |
| | | **Project Cost** | **O&M Cost** | **Description of Phase** |
| | **Phase 1** | $150,000 | 0 | Feasibility Study/Analysis |
| | **Phase 2** | $250,000 | 0 | CEQA/NEPA |
| | **Phase 3** | $1,800,000 | 0 | Project Construction & Implementation |
| | **Phase 4** | | | |
| **k.** | **Explain how operation and maintenance costs will be financed for the 20-year planning period for project implementation (not grant funded).** | | Project O&M would be financed by Sierra Valley Mutual Water Company. All current maintenance costs of existing conveyance system are accomplished by Sierra Valley Mutual Water System | |
| **l.** | **Has a Cost/Benefit analysis been completed?** | | ☐ **Yes** ■ **No** (cost-benefit will be addressed in feasibility study) | |
| **m.** | **Describe what impact there may be if the project is not funded (300 words or less)** | | Continuation of approximately 25% water losses to agricultural/livestock producers in Sierra Valley. Without project funding, there will be a higher level of impacts to groundwater during drought events through well development and significant groundwater usage. In addition, the conveyance system is dated 1870 and will continue to lose efficiency at a higher rate in the future if remedial action is not taken in the immediate term. There is also potential for complete catastrophic failure of the ditch if not addressed, which would likely cause substantial reverse of flow/loss of irrigation for the remainder of the season, erosion and substantially increased cost to repair, as well as environmental damage. | |

*List all sources of funding.
Note: See Project Development Manual, Exhibit B, for assistance in completing this table (http://featherriver.org/documents/).

## VIII. PROJECT STATUS AND SCHEDULE

Please provide a status of the project, level of completion as well as a description of the activities planned for each project stage. If unknown, enter **TBD**.

| Project Stage | Check the Current Project Stage | Completed? | Description of Activities in Each Project Stage | Planned/ Actual Start Date (mm/yr) | Planned/ Actual Completion Date (mm/yr) |
|---|---|---|---|---|---|
| **a. Assessment and Evaluation** | ■ | ☐ Yes<br>■ No<br>☐ N/A | | 11/01/2015 | 10/31/2016 |
| **b. Final Design** | ☐ | ☐ Yes<br>☐ No<br>■ N/A | | Pending Assessment Completion | |

| | | | | | |
|---|---|---|---|---|---|
| **c. Environmental Documentation (CEQA / NEPA)** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | | Pending Assessment Completion | |
| **d. Permitting** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | | Pending Assessment Completion | |
| **e. Construction Contracting** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | | Pending Assessment Completion | |
| **f. Construction Implementation** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | | Pending Assessment Completion | |
| **Provide explanation if more than one project stage is checked as current status** | | | | | |

## IX. PROJECT TECHNICAL FEASIBILITY

Please provide any related documents (date, title, author, and page numbers) that describe and confirm the technical feasibility of the project. See www.featherriver.org/catalog/index.php for documents gathered on the UFR Region.

| | |
|---|---|
| **a. List the adopted planning documents the proposed project is consistent with or supported by** (e.g. General Plans, UWMPs, GWMPs, Water Master Plan, Habitat Conservation Plans, TMDLs, Basin Plans, etc.). | TROA EIR/EIS and the Truckee River Operating Agreement; Settlement Agreement by and between SPPCo, Washoe County Water Conservation District, Sierra Valley Water Company; Water Quality Plan for the Lahontan Region; California DWR Bulletin 118 and the Northeastern Counties Investigation. Sierra Valley Groundwater Management District-Management Plan and annual updates; the DWP Environmental Study for Sierra Valley dated 1973; the Upper Feather River Watershed (UFRW) Irrigation Discharge Management Program dated 2007 |
| **b. List technical reports and studies supporting the feasibility of this project.** | Numerous studies and reports have been prepared and published regarding the Sierra Valley and the importance of the 1870 water right and inter-basin transfer of water. While no reports exist that propose a conduit or pipeline project for the first 2.5 miles of the diversion ditch, these reports, without exception, stress the importance of the diversion of agricultural water to the Sierra Valley as being critical for |

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| | sustaining agricultural operations, preserving habitat and wildlife and bird species that exist in the headwaters of the Feather River at Sierra Valley, and the need to make improvements to watercourse conditions to avoid further erosion, channel scour and deepening, and sediment loading. Such studies include but are not limited to the Sierra Valley Groundwater Management District-Management Plan and annual updates; the DWP Environmental Study for Sierra Valley dated 1973; the Upper Feather River Watershed (UFRW) Irrigation Discharge Management Program dated 2007; History of Water – Eastern Sierra Nevada-Recovery and Protection-UC Berkeley Study on the Long Term Diversion of the Little Truckee; TROA EIR/EIS and the Truckee River Operating Agreement; Settlement Agreement by and between SPPCo, Washoe County Water Conservation District, Sierra Valley Water Company; Water Quality Plan for the Lahontan Region; California DWR Bulletin 118 and the Northeastern Counties Investigation; SCS Reports for Sierra Valley; and Biological Baseline Analysis for the Sierra Valley Marsh prepared by SF State University Field Campus. The proposed feasibility study will provide additional specific data illustrating the need and benefits of the proposed project. |
| **c. Concisely describe the scientific basis** (e.g. how much research has been conducted) **of the proposed project in 300 words or less.** | The methodology proposed by lining an existing water conveyance system that is currently an earthen ditch via a pipe or by concrete is a time-tested and valid approach to reduce/eliminate water loss by seepage. This project will replace an unlined ditch subject to approximately 25% water losses with a pipeline that is expected to result in water losses of less than approximately 5%.<br><br>Under phase one, the Sierra Valley Resource Conservation District will |

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| | retain a qualified team of consultants with demonstrated experience and success in agricultural water conveyances and watercourse restoration dynamics to outline options to convey the water in an efficient and environmentally sensitive manner. The project will be a "gravity flow" project without any need for pumping or other intrusive features along the existing watercourse. The goal of the project at completion will be for the length of approximately 2.5 miles to be contained in a conveyance conduit so that little to no surface evidence be in existence and the degradation that has occurred over the last decades by scouring and channel erosion be eliminated in entirety and fully restored. Reports needed and prepared will be site analyses and mapping, alternative project scopes (including no project alternative), design and engineering options for the feasible alternatives identified complete with alignment options and cost estimates. |
| **d. Does the project implement green technology** (e.g. alternate forms of energy, recycled materials, LID techniques, etc.). | ■ Yes ☐ No ■ N/A<br>If yes, please describe.<br>Construction-related green technology strategies will be considered in the design stage of project development. |
| **e. Are you an Urban Water Supplier[1]?** | ☐ Yes ■ No ☐ N/A |
| **f. Are you are an Agricultural Water Supplier[2]?** | ■ Yes ☐ No ☐ N/A<br><br>Sierra Valley Mutual Water Company |
| **g. Is the project related to groundwater?** | ☐ Yes ■ No ☐ N/A<br>If yes, please indicate which groundwater basin. |

[1] Urban Water Supplier is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually.

[2] Agricultural Water Supplier is defined as a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding the acreage that receives recycled water.

# Climate Change – Project Assessment Checklist

This climate change project assessment tool allows project applicants and the planning team to assess project consistency with Proposition 84 plan standards and RWMG plan assessment standards. The tool is a written checklist that asks GHG emissions and adaptation/resiliency questions.

Name of project: ALS-6: Sierra Valley Agricultural Water Diversion Efficiency & Improvement

Project applicant: Sierra Valley Resource Conservation District

## GHG Emissions Assessment

### Project Construction Emissions

*(If you check any of the boxes, please see the attached worksheet)*

- ☐ The project requires nonroad or off-road engines, equipment, or vehicles to complete.
- ☐ The project requires materials to be transported to the project site.
- ☐ The project requires workers to commute to the project site.
- ☐ The project is expected to generate GHG emissions for other reasons.
- ☐ The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

### Operating Emissions

*(If you check any of the boxes, please see the attached worksheet)*

- ☐ The project requires energy to operate.
- ☐ The project will generate electricity.
- ☐ The project will proactively manage forests to reduce wildfire risk.
- ☐ The project will affect wetland acreage.
- ☐ The project will include new trees.
- ☐ Project operations are expected to generate or reduce GHG emissions for other reasons.

# Adaptation & Resiliency Assessment

## Water Supply

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water supply vulnerability issues:

☒ Not applicable
☐ Reduced snowmelt
☐ Unmet local water needs (drought)
☐ Increased invasive species

Project is a Feasibility Study only. No construction or Greenhouse Gas emissions associated with this project.

## Water Demand

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water demand vulnerability issues:

☒ Not applicable
☐ Increasing seasonal water use variability
☐ Unmet in-stream flow requirements
☐ Climate-sensitive crops
☐ Groundwater drought resiliency
☐ Water curtailment effectiveness

Project is a Feasibility Study only. No construction or Greenhouse Gas emissions associated with this project.

## Water Quality

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water quality vulnerability issues:

☒ Not applicable
☐ Increasing catastrophic wildfires
☐ Eutrophication (excessive nutrient pollution in a waterbody, often followed by algae blooms and other related water quality issues)
☐ Seasonal low flows and limited abilities for waterbodies to assimilate pollution
☐ Water treatment facility operations
☐ Unmet beneficial uses (municipal and domestic water supply, water contact recreation, cold freshwater habitat, spawning habitat, wildlife habitat, etc.)

Project is a Feasibility Study only. No construction or Greenhouse Gas emissions associated with this project.

## Flooding

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority flooding vulnerability issues:

- ☒ Not applicable
- ☐ Aging critical flood protection
- ☐ Wildfires
- ☐ Critical infrastructure in a floodplain
- ☐ Insufficient flood control facilities

Project is a Feasibility Study only. No construction or Greenhouse Gas emissions associated with this project.

## Ecosystem and Habitat

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority ecosystem and habitat vulnerability issues:

- ☒ Not applicable
- ☐ Climate-sensitive fauna or flora
- ☐ Recreation and economic activity
- ☐ Quantified environmental flow requirements
- ☐ Erosion and sedimentation
- ☐ Endangered or threatened species
- ☐ Fragmented habitat

Project is a Feasibility Study only. No construction or Greenhouse Gas emissions associated with this project.

## Hydropower

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority hydropower vulnerability issues:

- ☒ Not applicable
- ☐ Reduced hydropower output

Project is a Feasibility Study only. No construction or Greenhouse Gas emissions associated with this project.

featherriver.org



# UPPER FEATHER RIVER IRWM

## PROJECT INFORMATION FORM

**Please submit by 5:00 p.m. on August 3, 2015, to UFR.contact@gmail.com**

Please provide information in the tables below:

### I. PROJECT PROPONENT INFORMATION

| | |
|---|---|
| **Agency / Organization** | Sierra Valley Resource Conservation District |
| **Name of Primary Contact** | Bill Nunes – SVRCD Board Chairman |
| **Name of Secondary Contact** | Jeff Carmichael– SVRCD Board of Directors |
| **Mailing Address** | PO Box 3562, Quincy CA 95971 |
| **E-mail** | sierravalleyrcd@gmail.com or bnunes1964@gmail.com |
| **Phone** | (530) 994-3222 |
| **Other Cooperating Agencies / Organizations / Stakeholders** | County of Sierra, County of Plumas, and County of Lassen |
| **Is your agency/organization committed to the project through completion? If not, please explain** | Yes. The Sierra Valley Resource Conservation District (SVRCD) was established in 1947, and is one of the oldest Special Districts in California, to coordinate local conservation and restoration programs since the 1940's. Resource Conservation Districts (RCDs) were organized for the purposes of soil, water and related natural resource conservation. Categories of focused interest for the Sierra Valley RCD include natural disaster readiness & prevention, agricultural stability, sustainable urban development, wildlife habitat, recreation, watershed management, protection of water quality and quantity, and the optimum treatment of each resource and lands according to the need. The SVRCD has demonstrated success with this wide variety of resource challenges. |

### II. GENERAL PROJECT INFORMATION

| | |
|---|---|
| **Project Title** | ALS-7: Sierra Valley RCD Resource Management Plan |
| **Project Category** | ■ **Agricultural Land Stewardship**<br>☐ **Floodplains/Meadows/Waterbodies**<br>☐ **Municipal Services**<br>☐ **Tribal Advisory Committee**<br>☐ **Uplands/Forest** |
| **Project Description**<br>(Briefly describe the project, in 300 words or less) | The proposed project will result in a "Resource Management Plan" for the Sierra Valley Resource Conservation District that will have a similar effect as a County General Plan has to counties and their respective land use programs. The Resource Management Plan will include the district organizational information, financial information, district |

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| | services contemplated, a funding component, project review guidelines, education and outreach programs, process for plan updating, and a process for adopting and updating priorities for the many chapters of the plan that define the role and interests of the Resource Conservation District including but not limited to regulatory issues (GRAP, Irrigated Lands, etc.) agriculture incentives and improving productivity, drought, water conservation and water supply, forest health and fire issues, land assessment, invasive species, soil conservation, fish and wildlife and habitat, conservation easements, recreation, wetland conservation, agricultural work plans, preservation of working landscapes, coordination with agencies, and other like subjects. |
| **Project Location Description** (e.g., along the south bank of stream/river between river miles or miles from Towns/intersection and/or address): | Please See Attached Map of Sierra Valley RCD Boundaries. The Sierra Valley RCD boundaries include portions of Sierra, Plumas, and Lassen Counties. |
| **Latitude:** | See Above Notes |
| **Longitude:** | See Above Notes |

## III. APPLICABLE IRWM PLAN OBJECTIVES ADDRESSED

For each of the objectives addressed by the project, provide a one to two sentence description of how the project contributes to attaining the objective and how the project outcomes will be quantified. If the project does not address *any* of the IRWM plan objectives, provide a one to two sentence description of how the project relates to a challenge or opportunity of the Region.

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Restore natural hydrologic functions. | ■ Yes<br>☐ N/A | Restore and enhance watershed conditions (Restoration of stream Sinuosity, reduce sedimentation & turbidity, retard erosional processes, improvement of meadow and rangelands, restoration of upland forest communities) | -Maintenance of TMDL's<br>-Stream Miles enhanced<br>-Wetland Acre enhanced<br>-Fuels Acres Treated<br>- Water quality improved (turbidity) |
| Reduce potential for catastrophic wildland fires in the Region. | ■ Yes<br>☐ N/A | Reduction of catastrophic fuel loading within and adjacent to WUI's | Fuels Acres Reduced |
| Build communication and collaboration among water resources stakeholders in the Region. | ■ Yes<br>☐ N/A | There is an opportunity to enhance and further partnership capacity with the Sierra Valley RCD, Sierra Valley Mutual Water Company, U.S. Forest Service, | Public Meetings and Partnerships |

| | | | |
|---|---|---|---|
| | | and Sierra County Fire Safe Council | |
| Work with DWR to develop strategies and actions for the management, operation, and control of SWP facilities in the Upper Feather River Watershed in order to increase water supply, recreational, and environmental benefits to the Region. | ■ Yes<br>☐ N/A | Implementation of BMP's Increasing the efficiency of the water conveyance systems. | Sediment Load and Water Delivery |
| Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality. | ☐ Yes<br>■ N/A | | |
| Continue to actively engage in FERC relicensing of hydroelectric facilities in the Region. | ☐ Yes<br>■ N/A | | |
| Address economic challenges of municipal service providers to serve customers. | ☐ Yes<br>■ N/A | | |
| Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the RWQC Basin Plan. | ■ Yes<br>☐ N/A | The project will assist in identifying and prioritizing projects which restore/improve ecological function of surface water resources (riparian and stream system(s)) | Acres of riparian habitat and stream miles enhanced/restored |
| Address water resources and wastewater needs of DACs and Native Americans. | ☐ Yes<br>■ N/A | | |
| Coordinate management of recharge areas and protect groundwater resources. | ■ Yes<br>☐ N/ A | Coordination and establishment of prioritization of projects in partnership with Sierra Valley Groundwater Management District | |
| Improve coordination of land use and water resources planning. | ■ Yes<br>☐ N/A | There is an opportunity to enhance and further partnership capacity with NRCS, U.S. Forest Service, Sierra County Firesafe Council, Counties of Sierra, Lassen & Plumas. This SVRCD Resource Management Plan will be a resource for any future updates to Plumas, Sierra and Lassen County General Plans. | Public Meetings and Partnerships |

| | | | |
|---|---|---|---|
| Maximize agricultural, environmental and municipal water use efficiency. | ■ Yes<br>☐ N/A | Development and prioritization of projects which further promote efficiency of water conservation and distribution for agricultural water purveyors. | Water Control Structures Improved & Improvements to Water Conveyance Systems |
| Effectively address climate change adaptation and/or mitigation in water resources management. | ■ Yes<br>☐ N/A | Development and coordination of priority projects which focus on consumptive water use improvements which ultimately improve resiliency to climate change variability. | Water Control Structures Improved & Improvements to Water Conveyance Systems |
| Improve efficiency and reliability of water supply and other water-related infrastructure. | ■ Yes<br>☐ N/A | Development and prioritization of projects which further promote efficiency of water conservation and distribution for agricultural water purveyors. | Development of Workshops for Water Efficiency Techniques for Agricultural Producers,<br>Water Control Structures Improved & Improvements to Water Conveyance Systems |
| Enhance public awareness and understanding of water management issues and needs. | ■ Yes<br>☐ N/A | Furtherance of partnership capacity with the Sierra Valley RCD, Sierra Valley Mutual Water Company, U.S. Forest Service, NRCS and representatives of the IRWM in establishing workshops, seminars, and CA UC System Staff which further promote efficiency of water conservation and distribution for agricultural water purveyors. | Public Meetings and Partnerships<br><br>Development of Workshops for Water Efficiency Techniques for Agricultural Producers |
| Address economic challenges of agricultural producers. | ■ Yes<br>☐ N/A | The project will assist in furthering identified pathways and processes for agricultural producers for grants and funds through state and federal programs for producers. | Public Meetings and Partnerships<br><br>Development of Agricultural Incentive Workshop |
| Work with counties/ communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding. | ■ Yes<br>☐ N/A | Current and demonstrated capacity exists with the Sierra Valley RCD and Sierra County | Partnership with Sierra County and Sierra Valley RCD |

If no objectives are addressed, describe how the project relates to a challenge or opportunity for the Region:

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| |

## IV. PROJECT IMPACTS AND BENEFITS

Please provide a summary of the expected project benefits and impacts in the table below or check N/A if not applicable; **do no leave a blank cell.** Note that DWR encourages multi-benefit projects.

| **If applicable, describe benefits or impacts of the project with respect to:** | | |
|---|---|---|
| **a. Native American Tribal Communities** | ■ N/A | |
| **b. Disadvantaged Communities**[1] | ☐ N/A | Yes, many communities within the Sierra Valley RCD boundaries are designated disadvantaged communities, including Calpine CDP, Sierraville CDP, Sierra Brooks CDP, Loyalton City CDP, and Chilcoot-Vinton CDP. SVRCD has been tasked by Sierra and Plumas County Boards of Supervisors to oversee water-related issues in this region. |
| **c. Environmental Justice**[2] | ■ N/A | |
| **d. Drought Preparedness** | ☐ N/A | The project specifically focuses on the development of a large-scale plan that will tier to all aspects of drought preparedness techniques and methodologies for agricultural producers in providing tools and techniques via the establishment of workshops, conferences and field seminars. The Resource Management Plan will serve as a pathway for identifying projects for technical assistance for agricultural producers incorporating all aspects of drought preparedness through a multitude of program areas (livestock production, crop production, water conservation and water supply, forest health and fire issues, land assessment, invasive species, soil conservation, fish and wildlife and habitat, conservation easements, recreation, wetland conservation, agricultural work plans, preservation of working landscapes, etc.) |

| | | |
|---|---|---|
| **e. Assist the region in adapting to effects of climate change[3]** | ☐ N/A | The development of the Resource Management Plan will incorporate measures and considerations (coordination with local/state and federal agencies) which assist livestock producers and land managers with tools and techniques that assist in adapting to the effects of climate change. |
| **f. Generation or reduction of greenhouse gas emissions (e.g. green technology)** | ☐ N/A | The development of the Resource Management Plan will incorporate measures and considerations which assist livestock producers and land managers with tools and techniques which assist in the reduction of GHG emissions. |
| **g. Other expected impacts or benefits that are not already mentioned elsewhere** | ☐ N/A | The Resource Management Plan will include the district organizational information, financial information, district services contemplated, a funding component, project review guidelines, education and outreach programs, process for plan updating, and a process for adopting and updating priorities for the many chapters of the plan that define the role and interests of the Resource Conservation District, including but not limited to regulatory issues (GRAP, Irrigated Lands, etc) agriculture incentives and improving productivity, drought, water conservation and water supply, forest health and fire issues, land assessment, invasive species, soil conservation, fish and wildlife and habitat, conservation easements, recreation, wetland conservation, agricultural work plans, preservation of working landscapes, coordination with agencies, and other like subjects. |

[1] A Disadvantaged Community is defined as a community with an annual median household (MHI) income that is less than 80 percent of the Statewide annual MHI. DWR's DAC mapping is available on the UFR website (http://featherriver.org/maps/) .

[2] Environmental Justice is defined as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies. An example of environmental justice benefit would be to improve conditions (e.g. water supply, flooding, sanitation) in an area of racial minorities.

[3] Climate change effects are likely to include increased flooding, extended drought, and associated secondary effects such as increased wildfire risk, erosion, and sedimentation.

DWR encourages multiple benefit projects which address one or more of the following elements (PRC §75026(a). Indicate which elements are addressed by your project.

| | | | |
|---|---|---|---|
| a. Water supply reliability, water conservation, water use efficiency | ■ Yes ☐ N/A | g. Drinking water treatment and distribution | ☐ Yes ■ N/A |
| b. Stormwater capture, storage, clean-up, treatment, management | ■ Yes ☐ N/A | h. Watershed protection and management | ■ Yes ☐ N/A |
| c. Removal of invasive non-native species, creation/enhancement of wetlands, acquisition/protection/restoration of open space and watershed lands | ■ Yes ☐ N/A | i. Contaminant and salt removal through reclamation/desalting, other treatment technologies and conveyance of recycled water for distribution to users | ☐ Yes ■ N/A |
| d. Non-point source pollution reduction, management and monitoring | ■ Yes ☐ N/A | j. Planning and implementation of multipurpose flood management programs | ■ Yes ☐ N/A |
| e. Groundwater recharge and management projects | ■ Yes ☐ N/A | k. Ecosystem and fisheries restoration and protection | ■ Yes ☐ N/A |
| f. Water banking, exchange, reclamation, and improvement of water quality | ■ Yes ☐ N/A | | |

## V. RESOURCE MANAGEMENT STRATEGIES

For each resource management strategy (RMS) employed by the project, provide a one to two sentence description in the table below of how the project incorporates the strategy. A description of the RMS can be found in Volume 2 of the 2013 California Water Plan (http://featherriver.org/2013-california-water-plan-update/).

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Reduce Water Demand | | |
| Agricultural Water Use Efficiency | ■ Yes ☐ No | The development of the Resource Management Plan will focus on measures, considerations and processes which assist livestock producers and land managers with tools and techniques with agricultural water use efficiency. |
| Urban water use efficiency | ☐ Yes ■ No | |
| Improve Flood Management | | |
| Flood management | ■ Yes ☐ No | The development of the Resource Management Plan will focus on measures, considerations and processes which assist livestock producers and land managers with tools and techniques for flood management. |
| Improve Operational Efficiency and Transfers | | |
| Conveyance – regional/local | ■ Yes ☐ No | The development of the Resource Management Plan will focus on measures, |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| | | considerations and processes which assist livestock producers and land managers with tools and techniques with water conveyance systems. |
| System reoperation | ☐ Yes ■ No | |
| Water transfers | ☐ Yes ■ No | |
| Increase Water Supply | | |
| Conjunctive management | ■ Yes ☐ No | The development of the Resource Management Plan will focus on measures, considerations and processes which assist livestock producers and land managers with tools and techniques for efficient conjunctive management of surface water and ground water. |
| Precipitation Enhancement | ☐ Yes ■ No | |
| Municipal recycled water | ☐ Yes ■ No | |
| Surface storage – regional/local | ■ Yes ☐ No | The development of the Resource Management Plan will focus on measures, considerations and processes which assist livestock producers and land managers with tools and techniques for surface storage efficiencies and development of new storage supplies. |
| Improve Water Quality | | |
| Drinking water treatment and distribution | ☐ Yes ■ No | |
| Groundwater remediation/aquifer remediation | ☐ Yes ■ No | |
| Matching water quality to water use | ■ Yes ☐ No | The development of the Resource Management Plan will focus on measures, considerations and processes which assist communities, livestock producers and land managers with tools and techniques for matching water quality to water use |
| Pollution prevention | ■ Yes ☐ No | The development of the Resource Management Plan will focus on measures, considerations and processes which assist livestock producers and land managers with tools and techniques for pollution prevention and non-point surface discharge. |
| Salt and salinity management | ☐ Yes ■ No | |
| Urban storm water runoff management | ☐ Yes ■ No | |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Practice Resource Stewardship | | |
| Agricultural land stewardship | ■ Yes ☐ No | The foundation of agricultural land stewardship is the principal driver of the development of the Resource Management Plan |
| Ecosystem restoration | ■ Yes ☐ No | The foundation of ecosystem restoration is one of the principal drivers of the development of the Resource Management Plan |
| Forest management | ■ Yes ☐ No | The development of the Resource Management Plan will focus on measures, considerations and processes which assist land managers with tools and techniques for forest and fuels management |
| Land use planning and management | ■ Yes ☐ No | Project will involve many stakeholders including County Planning Departments. SVRCD Plan will inform future General Plan updates in the planning area. Project adheres to CEQA/NEPA and Sierra, Plumas, and Lassen County Land Use Planning Policies and Regulations. |
| Recharge area protection | ■ Yes ☐ No | The development of the Resource Management Plan will focus on measures, considerations and processes which assist agricultural producers, land managers with tools and techniques that benefit groundwater recharge. |
| Sediment management | ■ Yes ☐ No | The development of the Resource Management Plan will focus on measures, considerations and processes which assist agricultural producers and land managers with tools and techniques that benefit water quality and reduce sediment loading and improve turbidity. |
| Watershed management | ■ Yes ☐ No | The foundation of watershed management is one of the principal drivers of the development of the Resource Management Plan |
| People and Water | | |
| Economic incentives | ■ Yes ☐ No | The project will assist in furthering identified pathways and processes for agricultural producers for grants and funds through state and federal programs for producers. |
| Outreach and engagement | ■ Yes ☐ No | There is an opportunity to enhance and further partnership capacity with agricultural producers, land managers, NRCS, FSA, Sierra Valley Groundwater Management District, |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| | | Counties of Sierra, Lassen, & Plumas, BLM, CA DFW, U.S. Forest Service, CA DWR, CA WQCB and representatives of the IRWM as well as through public scoping, outreach and workshop programs. |
| Water and culture | ■ Yes ☐ No | There is an opportunity to enhance and further partnership capacity with agricultural producers, land managers, and the citizens of Sierra, Lassen and Plumas Counties through public scoping, outreach and workshop programs. This planning effort incorporates many goals that to help preserve historic ranches, an important cultural heritage of the region. |
| Water-dependent recreation | ■ Yes ☐ No | There is an opportunity to enhance and further partnership capacity with agricultural producers, land managers, and the citizens of Sierra, Lassen and Plumas Counties through public scoping, outreach and workshop programs in the maintenance and improvement of water quality which is vital to water dependent recreational activities and to the economies of the communities within the SVRCD boundaries. Opportunities for bird watching, kayaking, fishing and other agritourism will be considered in the planning effort. |
| Wastewater/NPDES | ■ Yes ☐ No | The development of the Resource Management Plan will focus on measures, considerations and processes which assist agricultural producers and land managers with tools and techniques with benefit water quality and reduce sediment loading which ultimately yield improvements to 303D Listed Watershed Conditions. |

Other RMS addressed and explanation:

## VI. PROJECT COST AND FINANCING

Please provide any estimates of project cost, sources of funding, and operation and maintenance costs, as well as the source of the project cost in the table below.

**PROJECT BUDGET**

Project serves a need of a DAC?: ■ Yes ☐ No
Funding Match Waiver request?: ■ Yes ☐ No

| | Category | Requested Grant Amount | Cost Share: Non-State Fund Source* (Funding Match) | Cost Share: Other State Fund Source* | Total Cost |
|---|---|---|---|---|---|
| a. | **Direct Project Administration** | $15,000 | 0 | 0 | $15,000 |
| b. | **Land Purchase/Easement** | 0 | 0 | 0 | 0 |
| c. | **Planning/Design/Engineering / Environmental** | $140,000 | 0 | 0 | $140,000 |
| d. | **Construction/Implementation** | 0 | 0 | 0 | |
| e. | **Environmental Compliance/ Mitigation/Enhancement** | 0 | 0 | 0 | 0 |
| f. | **Construction Administration** | 0 | 0 | 0 | 0 |
| g. | **Other Costs** | 0 | 0 | 0 | 0 |
| h. | **Construction/Implementation Contingency** | 0 | 0 | 0 | 0 |
| i. | **Grand Total (Sum rows (a) through (h) for each column)** | $155,000 | 0 | 0 | $155,000 |

| j. | **Can the Project be phased?** ☐ **Yes** ■ **No** If **yes**, provide cost breakdown by phases | | | |
|---|---|---|---|---|
| | | **Project Cost** | **O&M Cost** | **Description of Phase** |
| | **Phase 1** | $155,000 | 0 | District Resource Management Plan Development |
| | **Phase 2** | N/A | | |
| | **Phase 3** | N/A | | |
| | **Phase 4** | N/A | | |

| | | |
|---|---|---|
| k. | **Explain how operation and maintenance costs will be financed for the 20-year planning period for project implementation (not grant funded).** | O&M Costs not Applicable – Final Product is District Resource Management Plan |
| l. | **Has a Cost/Benefit analysis been completed?** | ☐ **Yes** ■ **No** |
| m. | **Describe what impact there may be if the project is not funded (300 words or less)** | The district has no current resource management plan and operates from outdated, often obsolete, and dated studies and analyses and in many cases, said documents do not reflect the current priorities of the district nor the direction the Board of Directors wishes to pursue in its discharging of the duties and obligations of the district business. The district is |

| | | |
|---|---|---|
| | | a resource, is a source of funding and technical assistance, is a source of advocacy, and is a true partner in realizing the resource strategies of the IRWMP. Without project funding, the fundamental objectives of the Sierra Valley RCD as well as the UFR IRWMP would be marginalized. |

*List all sources of funding.
Note: See Project Development Manual, Exhibit B, for assistance in completing this table (http://featherriver.org/documents/).

## VIII. PROJECT STATUS AND SCHEDULE

Please provide a status of the project, level of completion as well as a description of the activities planned for each project stage. If unknown, enter **TBD**.

| Project Stage | Check the Current Project Stage | Completed? | Description of Activities in Each Project Stage | Planned/ Actual Start Date (mm/yr) | Planned/ Actual Completion Date (mm/yr) |
|---|---|---|---|---|---|
| **a. Assessment and Evaluation** | ■ | ☐ Yes<br>■ No<br>☐ N/A | The duration of this project will be 18 months to 24 months from the date of project funding and approval. The project and development of the Resource Management Plan will include the following milestones:<br><br>Outreach and public meetings by the RCD Board of Directors to define issues, solicit ideas, identify priorities, and understand the needs of the district from the perspective of public and private landowners | 09/01/2015 | 04/31/2017 |

| | | | | | |
|---|---|---|---|---|---|
| | | | Create scope of work and solicit proposals for preparation of the Resource Management Plan<br><br>Execute services agreement and staffing resources to complete the scope of work and the Resource Management Plan<br><br>Conduct additional outreach and public involvement during the course of Resource Management Plan preparation, and conduct intensive workshops with the Board of Directors to assure familiarity with the governing laws, regulatory framework, and content of the proposed Resource Management Plan<br><br>Adopt plan and conduct workshops throughout the district; make presentations to the respective Boards of Supervisors, US Forest Service, and other critical stakeholders within the district that | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | have jurisdiction over land use decisions and land management on public and private lands. | | |
| **b. Final Design** | ☐ | ☐ Yes<br>☐ No<br>☐ N/A | N/A | | |
| **c. Environmental Documentation (CEQA / NEPA)** | ☐ | ☐ Yes<br>☐ No<br>☐ N/A | N/A | | |
| **d. Permitting** | ☐ | ☐ Yes<br>☐ No<br>☐ N/A | N/A | | |
| **e. Construction Contracting** | ☐ | ☐ Yes<br>☐ No<br>☐ N/A | N/A | | |
| **f. Construction Implementation** | ☐ | ☐ Yes<br>☐ No<br>☐ N/A | N/A | | |
| **Provide explanation if more than one project stage is checked as current status** | | | | | |

## IX. PROJECT TECHNICAL FEASIBILITY

Please provide any related documents (date, title, author, and page numbers) that describe and confirm the technical feasibility of the project. See www.featherriver.org/catalog/index.php for documents gathered on the UFR Region.

| | |
|---|---|
| **a. List the adopted planning documents the proposed project is consistent with or supported by** (e.g. General Plans, UWMPs, GWMPs, Water Master Plan, Habitat Conservation Plans, TMDLs, Basin Plans, etc.). | Sierra Valley Coordinated Resource Management Plan (2002), Sierra Valley Watershed Assessment (2005), IRWM – Upper Feather River Watershed Plan (2005), Sierra County General Plan, Lassen County General Plan, Plumas County General Plan, Tahoe National Forest – Land & Resource Management Plan, Sierra Valley RCD – Watershed Action Plan (2007), Water Quality Plan for the Lahontan Region; California DWR Bulletin 118 and the Northeastern Counties Investigation. Sierra Valley Groundwater Management District-Management Plan and annual updates; the DWP Environmental Study for Sierra |

| | |
|---|---|
| | Valley dated 1973; the Upper Feather River Watershed (UFRW) Irrigation Discharge Management Program (2007) |
| **b. List technical reports and studies supporting the feasibility of this project.** | Numerous studies and reports have been prepared and published regarding the Sierra Valley. Such studies include but are not limited to the Sierra Valley Groundwater Management District-Management Plan and annual updates; the DWP Environmental Study for Sierra Valley dated 1973; the Upper Feather River Watershed (UFRW) Irrigation Discharge Management Program dated 2007; Water Quality Plan for the Lahontan Region; California DWR Bulletin 118 and the Northeastern Counties Investigation; SCS Reports for Sierra Valley; and Biological Baseline Analysis for the Sierra Valley Marsh prepared by SF State University Field Campus. The proposed feasibility study will provide additional specific data illustrating the need and benefits of the proposed project. |
| **c. Concisely describe the scientific basis** (e.g. how much research has been conducted) **of the proposed project in 300 words or less.** | There is a wealth of studies and analyses that have been undertaken in Sierra Valley (plans & studies listed above). The District Resource Management Plan will incorporate the findings and data from all technical, social, economic, and environmental studies/plans to produce a "plan" which is fully consistent with RCD Management Plans across the nation. |
| **d. Does the project implement green technology** (e.g. alternate forms of energy, recycled materials, LID techniques, etc.). | ■ Yes ☐ No ■ N/A<br>If yes, please describe.<br><br>The development of the Resource Management Plan will incorporate measures and considerations which assist livestock producers and land managers with tools and techniques which assist in the reduction of GHG emissions. |

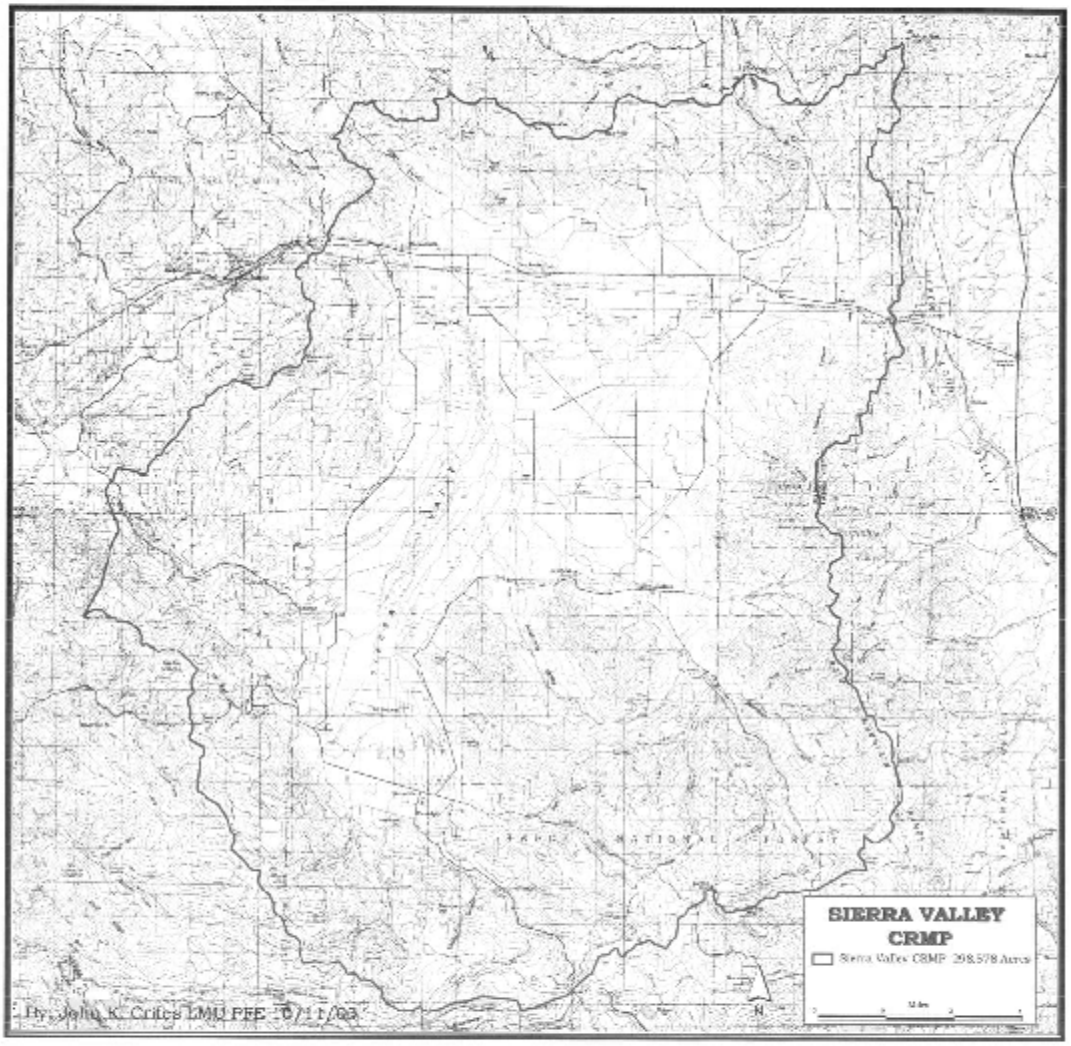
| | |
|---|---|
| **e. Are you an Urban Water Supplier[1]?** | ☐ Yes ☐ No ■ N/A |
| **f. Are you are an Agricultural Water Supplier[2]?** | ☐ Yes ☐ No ■ N/A |
| **g. Is the project related to groundwater?** | ■ Yes ☐ No ☐ N/A<br>If yes, please indicate which groundwater basin.<br><br>**Middle Fork Feather River HUC 180201232** |

[1] Urban Water Supplier is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually.

[2] Agricultural Water Supplier is defined as a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding the acreage that receives recycled water.

**Map of Sierra Valley Boundary**

**Boundary & Topography**



# Climate Change – Project Assessment Checklist

This climate change project assessment tool allows project applicants and the planning team to assess project consistency with Proposition 84 plan standards and RWMG plan assessment standards. The tool is a written checklist that asks GHG emissions and adaptation/resiliency questions.

Name of project: ALS-7: Sierra Valley RCD Resource Management Plan

Project applicant: Sierra Valley Resource Conservation District

## GHG Emissions Assessment

### Project Construction Emissions

*(If you check any of the boxes, please see the attached worksheet)*

- ☐ The project requires nonroad or off-road engines, equipment, or vehicles to complete.
- ☐ The project requires materials to be transported to the project site.
- ☐ The project requires workers to commute to the project site.
- ☐ The project is expected to generate GHG emissions for other reasons.
- ☒ The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

### Operating Emissions

*(If you check any of the boxes, please see the attached worksheet)*

- ☐ The project requires energy to operate.
- ☐ The project will generate electricity.
- ☐ The project will proactively manage forests to reduce wildfire risk.
- ☐ The project will affect wetland acreage.
- ☐ The project will include new trees.
- ☐ Project operations are expected to generate or reduce GHG emissions for other reasons.

# Adaptation & Resiliency Assessment

## Water Supply

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water supply vulnerability issues:

- ☒ Not applicable
- ☐ Reduced snowmelt
- ☐ Unmet local water needs (drought)
- ☐ Increased invasive species

Project is a planning effort only. No construction or Greenhouse Gas emissions associated with this project.

## Water Demand

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water demand vulnerability issues:

- ☒ Not applicable
- ☐ Increasing seasonal water use variability
- ☐ Unmet in-stream flow requirements
- ☐ Climate-sensitive crops
- ☐ Groundwater drought resiliency
- ☐ Water curtailment effectiveness

Project is a planning effort only. No construction or Greenhouse Gas emissions associated with this project.

## Water Quality

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water quality vulnerability issues:

- ☒ Not applicable
- ☐ Increasing catastrophic wildfires
- ☐ Eutrophication (excessive nutrient pollution in a waterbody, often followed by algae blooms and other related water quality issues)
- ☐ Seasonal low flows and limited abilities for waterbodies to assimilate pollution
- ☐ Water treatment facility operations

☐ Unmet beneficial uses (municipal and domestic water supply, water contact recreation, cold freshwater habitat, spawning habitat, wildlife habitat, etc.)

Project is a planning effort only. No construction or Greenhouse Gas emissions associated with this project.

## Flooding

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority flooding vulnerability issues:

☒ Not applicable
☐ Aging critical flood protection
☐ Wildfires
☐ Critical infrastructure in a floodplain
☐ Insufficient flood control facilities

Project is a planning effort only. No construction or Greenhouse Gas emissions associated with this project.

## Ecosystem and Habitat

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority ecosystem and habitat vulnerability issues:

☒ Not applicable
☐ Climate-sensitive fauna or flora
☐ Recreation and economic activity
☐ Quantified environmental flow requirements
☐ Erosion and sedimentation
☐ Endangered or threatened species
☐ Fragmented habitat

Project is a planning effort only. No construction or Greenhouse Gas emissions associated with this project.

## Hydropower

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority hydropower vulnerability issues:

☒ Not applicable
☐ Reduced hydropower output

Project is a planning effort only. No construction or Greenhouse Gas emissions associated with this project.

featherriver.org



# UPPER FEATHER RIVER IRWM

## PROJECT INFORMATION FORM

**Please submit by 5:00 p.m. on August 3, 2015, to UFR.contact@gmail.com**

Please provide information in the tables below:

### I. PROJECT PROPONENT INFORMATION

| | |
|---|---|
| **Agency / Organization** | Feather River Resource Conservation District |
| **Name of Primary Contact** | Nils Lunder |
| **Name of Secondary Contact** | Willo Vieira |
| **Mailing Address** | |
| **E-mail** | Lunder.nils@gmail .com, willovieira@countyofplumas.com |
| **Phone** | (530) 258-6936 cell Nils, 530-283-6126 Willo |
| **Other Cooperating Agencies / Organizations / Stakeholders** | TBD |
| **Is your agency/organization committed to the project through completion? If not, please explain** | Yes |

### II. GENERAL PROJECT INFORMATION

| | |
|---|---|
| **Project Title** | ALS-8: UFR Weather Monitoring Infrastructure |
| **Project Category** | ☑ **Agricultural Land Stewardship**<br>☐ **Floodplains/Meadows/Waterbodies**<br>☐ **Municipal Services**<br>☐ **Tribal Advisory Committee**<br>☐ **Uplands/Forest** |
| **Project Description** (Briefly describe the project, in 300 words or less) | This project will establish a weather station in each valley area that will provide real-time internet-accessible temperature, precipitation, humidity, soil moisture, wind speed, and solar radiation information to ranchers, water masters and municipalities. |
| **Project Location Description** (e.g., along the south bank of stream/river between river miles or miles from Towns/intersection and/or address): | A weather station would be located in Chester, Indian Valley, American Valley, Mohawk Valley, and Sierra Valley areas. |
| **Latitude:** | |
| **Longitude:** | |

## III. APPLICABLE IRWM PLAN OBJECTIVES ADDRESSED

For each of the objectives addressed by the project, provide a one to two sentence description of how the project contributes to attaining the objective and how the project outcomes will be quantified. If the project does not address *any* of the IRWM plan objectives, provide a one to two sentence description of how the project relates to a challenge or opportunity of the Region.

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Restore natural hydrologic functions. | ☐Yes<br>☑ N/A | N/A | N/A |
| Reduce potential for catastrophic wildland fires in the Region. | ☑ Yes<br>☐ N/A | Knowing the actual soil moisture of an area could allow for the better distribution of fire resources. | N/A |
| Build communication and collaboration among water resources stakeholders in the Region. | ☑ Yes<br>☐ N/A | Outreach and collaboration with local stakeholders will be needed to determine optimum locations for each weather station. Once online, the weather stations will provide definitive data so different entities can collaborate on how the resource of water can be best utilized. Weather stations would allow for water usage based on real, rather than perceived needs. | N/A |
| Work with DWR to develop strategies and actions for the management, operation, and control of SWP facilities in the Upper Feather River Watershed in order to increase water supply, recreational, and environmental benefits to the Region. | ☐Yes<br>☑ N/A | N/A | N/A |
| Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality. | ☑ Yes<br>☐ N/A | Weather stations would allow municipal service providers to encourage their clients to make wise water decisions encouraging watering based on need thus improving the water supply through conservation. | N/A |

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Continue to actively engage in FERC relicensing of hydroelectric facilities in the Region. | ☐ Yes<br>☑ N/A | | N/A |
| Address economic challenges of municipal service providers to serve customers. | ☐ Yes<br>☑ N/A | | N/A |
| Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the RWQC Basin Plan. | ☑ Yes<br>☐ N/A | Weather station will be a tool for managers to use in the protection, restoration, and enhancement of surface and groundwater resources. | N/A |
| Address water resources and wastewater needs of DACs and Native Americans. | ☐Yes<br>☑ N/A | N/A | N/A |
| Coordinate management of recharge areas and protect groundwater resources. | ☑ Yes<br>☐ N/A | Accurate regional rainfall data will enhance coordinated management of recharge areas. | N/A |
| Improve coordination of land use and water resources planning. | ☑ Yes<br>☐ N/A | Accurate rainfall data will aid in determining recommended/allowed population densities for a given area. | N/A |
| Maximize agricultural, environmental and municipal water use efficiency. | ☑ Yes<br>☐ N/A | Weather stations would show how much water the soil actually needs on given day. | N/A |
| Effectively address climate change adaptation and/or mitigation in water resources management. | ☑ Yes<br>☐ N/A | Weather stations would allow for the tracking of the effects of climate for a given region allowing communities to be nimble in their water management. | N/A |
| Improve efficiency and reliability of water supply and other water-related infrastructure. | ☑ Yes<br>☐ N/A | Weather stations would greatly improve irrigation efficiency for both municipalities and agriculture. | N/A |
| Enhance public awareness and understanding of water management issues and needs. | ☑ Yes<br>☐ N/A | The weather stations would allow all to see the amount of water received and the amount of water the soil needs. | N/A |
| Address economic challenges of agricultural producers. | ☑ Yes<br>☐ N/A | Weather stations would result in economic benefits for ranchers as they would know when to water for their area. | N/A |

| Upper Feather River IRWM Objectives: | Will the project address the objective? | Brief explanation of project linkage to selected Objective | Quantification (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Work with counties/communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding. | ☐ Yes<br>☑ N/A | | N/A |

If no objectives are addressed, describe how the project relates to a challenge or opportunity for the Region:

## IV. PROJECT IMPACTS AND BENEFITS

Please provide a summary of the expected project benefits and impacts in the table below or check N/A if not applicable; **do not leave a blank cell.** Note that DWR encourages multi-benefit projects.

| If applicable, describe benefits or impacts of the project with respect to: | | |
|---|---|---|
| **a. Native American Tribal Communities** | ☑ N/A | |
| **b. Disadvantaged Communities**[1] | ☑ N/A | |
| **c. Environmental Justice**[2] | ☐ N/A | The information on the weather stations would be available to everyone with access to an internet connection. |
| **d. Drought Preparedness** | ☐ N/A | The weather stations will be able to monitor the severity of the drought for a given area |
| **e. Assist the region in adapting to effects of climate change**[3] | ☐ N/A | Weather stations will allow for the tracking and monitoring of climate change in each of the different valley ecosystems. |
| **f. Generation or reduction of greenhouse gas emissions (e.g. green technology)** | ☐ N/A | The weather stations will be solar powered. They will help ranchers and municipalities conserve electricity and diesel fuel by pumping only the amount of water needed. |
| **g. Other expected impacts or benefits that are not already mentioned elsewhere** | ☑ N/A | |

| | | |
|---|---|---|
| | | |

[1] A Disadvantaged Community is defined as a community with an annual median household (MHI) income that is less than 80 percent of the Statewide annual MHI. DWR's DAC mapping is available on the UFR website (http://featherriver.org/maps/) .
[2] Environmental Justice is defined as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies. An example of environmental justice benefit would be to improve conditions (e.g. water supply, flooding, sanitation) in an area of racial minorities.
[3] Climate change effects are likely to include increased flooding, extended drought, and associated secondary effects such as increased wildfire risk, erosion, and sedimentation.

DWR encourages multiple benefit projects which address one or more of the following elements (PRC §75026(a). Indicate which elements are addressed by your project.

| | | | |
|---|---|---|---|
| a. Water supply reliability, water conservation, water use efficiency | ☑ Yes ☐ N/A | g. Drinking water treatment and distribution | ☐ Yes ☑ N/A |
| b. Stormwater capture, storage, clean-up, treatment, management | ☑ Yes ☐ N/A | h. Watershed protection and management | ☑ Yes ☐ N/A |
| c. Removal of invasive non-native species, creation/enhancement of wetlands, acquisition/protection/restoration of open space and watershed lands | ☐ Yes ☑ N/A | i. Contaminant and salt removal through reclamation/desalting, other treatment technologies and conveyance of recycled water for distribution to users | ☐ Yes ☑ N/A |
| d. Non-point source pollution reduction, management and monitoring | ☐ Yes ☑ N/A | j. Planning and implementation of multipurpose flood management programs | ☑ Yes ☐ N/A |
| e. Groundwater recharge and management projects | ☑ Yes ☐ N/A | k. Ecosystem and fisheries restoration and protection | ☑ Yes ☐ N/A |
| f. Water banking, exchange, reclamation, and improvement of water quality | ☑ Yes ☐ N/A | | |

## V. RESOURCE MANAGEMENT STRATEGIES

For each resource management strategy (RMS) employed by the project, provide a one to two sentence description in the table below of how the project incorporates the strategy. A description of the RMS can be found in Volume 2 of the 2013 California Water Plan (http://featherriver.org/2013-california-water-plan-update/).

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Reduce Water Demand | | |
| Agricultural Water Use Efficiency | ☑ Yes ☐ No | Precipitation and soil moisture data will aid in the efficient use of water. |
| Urban water use efficiency | ☑ Yes ☐ No | Precipitation and soil moisture data will aid in the efficient use of water. |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Improve Flood Management | | |
| Flood management | ☑ Yes ☐ No | Real time precipitation data will aid in the declaration and response to area floods and aid in the protection of critical infrastructure in a floodplain. |
| Improve Operational Efficiency and Transfers | | |
| Conveyance – regional/local | ☐ Yes ☑ No | |
| System reoperation | ☑ Yes ☐ No | Precipitation and soil moisture data will aid in managing the distribution of water. |
| Water transfers | ☐ Yes ☑ No | |
| Increase Water Supply | | |
| Conjunctive management | ☑ Yes ☐ No | Precipitation and soil moisture data will aid in managing the distribution of water and will aid in decision-making surrounding use of surface water vs. groundwater. |
| Precipitation Enhancement | ☐ Yes ☑ No | |
| Municipal recycled water | ☑ Yes ☐ No | Precipitation and soil moisture data will help determine when reclaimed water will be needed. |
| Surface storage – regional/local | ☑ Yes ☐ No | Weather stations will aid in determining likely areas for locating surface storage. |
| Improve Water Quality | | |
| Drinking water treatment and distribution | ☑ Yes ☐ No | Weather stations will aid in determining communities at risk for dry wells. |
| Groundwater remediation/aquifer remediation | ☐ Yes ☑ No | |
| Matching water quality to water use | ☑ Yes ☐ No | Weather stations will help determine where reclaimed water may be needed for agricultural purposes. |
| Pollution prevention | ☐ Yes ☑ No | |
| Salt and salinity management | ☐ Yes ☑ No | |
| Urban storm water runoff management | ☑ Yes ☐ No | Weather station will aid in determining the amount of storm water entering the system. |
| Practice Resource Stewardship | | |
| Agricultural land stewardship | ☑ Yes ☐ No | Weather stations will give the agricultural community a tool to aid in the more efficient use of water. The information provided by the weather stations will also aid livestock producers in determining the time that a given number of animal units can feed in an area before overgrazing results. |
| Ecosystem restoration | ☐ Yes ☑ No | |
| Forest management | ☑ Yes ☐ No | Accurate precipitation data will aid in the management of forest pests and in the |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| | | prediction of fire danger. |
| Land use planning and management | ☑ Yes ☐ No | Accurate precipitation data will aid in the determining of population densities that can be supported in a given area. |
| Recharge area protection | ☐ Yes ☑ No | |
| Sediment management | ☑ Yes ☐ No | Accurate precipitation and soil moisture data will aid in determining the amount of soil that may be moved in a weather event. |
| Watershed management | ☑ Yes ☐ No | Accurate weather data will aid in the use, conservation and distribution of water in a watershed. |
| People and Water | | |
| Economic incentives | ☐ Yes ☑ No | |
| Outreach and engagement | ☑ Yes ☐ No | A portion of the requested funding for the project includes a public outreach and training component. |
| Water and culture | ☐ Yes ☑ No | |
| Water-dependent recreation | ☑ Yes ☐ No | The recreational quality of the water can be determined by monitoring the precipitation data. |
| Wastewater/NPDES | ☐ Yes ☑ No | |

Other RMS addressed and explanation:

## VI. PROJECT COST AND FINANCING

Please provide any estimates of project cost, sources of funding, and operation and maintenance costs, as well as the source of the project cost in the table below.

**PROJECT BUDGET**

Project serves a need of a DAC?: ☐Yes ☑No
Funding Match Waiver request?:☐Yes ☑No

| | Category | Requested Grant Amount | Cost Share: Non-State Fund Source* (Funding Match) | CostShare: Other State Fund Source* | Total Cost |
|---|---|---|---|---|---|
| **a.** | **Direct Project Administration** | $25,000 | TBD | TBD | $25,000 |
| **b.** | **Land Purchase/Easement** | TBD | TBD | TBD | TBD |
| **c.** | **Planning/Design/Engineering /Environmental Documentation** | 12,000 | TBD | TBD | 12,000 |

| | | | | | |
|---|---|---|---|---|---|
| **d.** | **Construction/Implementation** | 45,200 | TBD | TBD | 45,200 |
| **e.** | **Environmental Compliance/ Mitigation/Enhancement** | TBD | TBD | TBD | TBD |
| **f.** | **Construction Administration** | TBD | TBD | TBD | TBD |
| **g.** | **Other Costs** | 298,000 | TBD | TBD | 298,000 |
| **h.** | **Construction/Implementation Contingency** | TBD | TBD | TBD | TBD |
| **i.** | **Grand Total (Sum rows(a) through (h) for each column)** | $380,200 | TBD | TBD | $380,200 |

| **j.** | **Can the Project be phased?** ☐Yes ☑ No If **yes**, provide cost breakdown by phases | | | |
|---|---|---|---|---|
| | | **Project Cost** | **O&M Cost** | **Description of Phase** |
| | **Phase 1** | | | |
| | **Phase 2** | | | |
| | **Phase 3** | | | |
| | **Phase 4** | | | |

| | | |
|---|---|---|
| **k.** | **Explain how operation and maintenance costs will be financed for the 20-year planning period for project implementation (not grant funded).** | Operation and maintenance costs will be minimal but could be covered by a subscription or through a community services district. |
| **l.** | **Has a Cost/Benefit analysis been completed?** | ☐Yes ☑ No |
| **m.** | **Describe what impact there may be if the project is not funded (300 words or less)** | Precipitation amounts and needs will continue to be estimated inaccurately for our areas resulting in gross differences in what has actually occurred. Unwarranted residential and agricultural will continue to occur. Difficulties will continue in groundwater and land use development and management. |

*List all sources of funding.
Note: See Project Development Manual, Exhibit B, for assistance in completing this table (http://featherriver.org/documents/).

## VIII. PROJECT STATUS AND SCHEDULE

Please provide a status of the project, level of completion as well as a description of the activities planned for each project stage. If unknown, enter **TBD**.

| Project Stage | Check the Current Project Stage | Completed? | Description of Activities in Each Project Stage | Planned/Actual Start Date (mm/yr) | Planned/Actual Completion Date (mm/yr) |
|---|---|---|---|---|---|
| **a. Assessment and Evaluation** | ☑ | ☐ Yes<br>☑ No<br>☐ N/A | TBD | 7/1/2016 | 10/1/2016 |

| | | | | | |
|---|---|---|---|---|---|
| **b. Final Design** | ☐ | ☐Yes<br>☑ No<br>☐ N/A | TBD | 10/1/2016 | 12/15/2016 |
| **c. Environmental Documentation (CEQA / NEPA)** | ☐ | ☐ Yes<br>☑ No<br>☐ N/A | CEQA will be covered by the sponsoring organizations | 10/1/2016 | 3/1/2017 |
| **d. Permitting** | ☐ | ☐ Yes<br>☑ No<br>☐ N/A | TBD | 12/1/2016 | 1/1/2017 |
| **e. Construction Contracting** | ☐ | ☐ Yes<br>☑ No<br>☐ N/A | TBD | 1/1/2017 | 3/30/2017 |
| **f. Construction Implementation** | ☐ | ☐ Yes<br>☑ No<br>☐ N/A | TBD | 4/1/2017 | 4/30/2017 |
| **Provide explanation if more than one project stage is checked as current status** | | | | | |

## IX. PROJECT TECHNICAL FEASIBILITY

Please provide any related documents (date, title, author, and page numbers) that describe and confirm the technical feasibility of the project.See www.featherriver.org/catalog/index.php for documents gathered on the UFR Region.

| | |
|---|---|
| **a. List the adopted planning documents the proposed project is consistent with or supported by** (e.g. General Plans, UWMPs, GWMPs, Water Master Plan, Habitat Conservation Plans, TMDLs, Basin Plans, etc.). | TBD |
| **b. List technical reports and studies supporting the feasibility of this project.** | • Rainfall/climatic data for our area is not accurate.<br>• National Weather Service relies on local weather spotters to fill in their radar gaps.<br>• Davis Scientific Instruments can provide the complete weather station system for each site that would be accessible by the area water users via the internet or cell phone connection.<br>• No California Irrigation Management Information System stations exist for the Watershed. The nearest one is located on the east side of Susanville. |

| | |
|---|---|
| | • http://rangelandwatersheds.ucdavis.edu/main/projects/irrigated_pasture_mgmt.htm<br>• http://alfalfa.ucdavis.edu/subpages/Irrigation/IrrigationBrochure.pdf<br>• http://irrigationefficiency.co.nz/assets/Uploads/Farmers-Guide.pdf<br>• http://maxa.maf.govt.nz/sff/about-projects/search/01-234/index.htm |
| **c. Concisely describe the scientific basis** (e.g. how much research has been conducted) **of the proposed project in 300 words or less.** | TBD |
| **d. Does the project implement green technology** (e.g. alternate forms of energy, recycled materials, LID techniques, etc.). | ☑ Yes ☐No ☐ N/A<br>If yes, please describe.<br>Solar power |
| **e. Are you an Urban Water Supplier[1]?** | ☐ Yes ☑ No ☐ N/A |
| **f. Are you are an Agricultural Water Supplier[2]?** | ☐ Yes ☑ No ☐ N/A |
| **g. Is the project related to groundwater?** | ☐ Yes ☐ No ☑ N/A<br>If yes, please indicate which groundwater basin. |

[1] Urban Water Supplier is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually.
[2] Agricultural Water Supplier is defined as a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding the acreage that receives recycled water.

# Climate Change – Project Assessment Checklist

This climate change project assessment tool allows project applicants and the planning team to assess project consistency with Proposition 84 plan standards and RWMG plan assessment standards. The tool is a written checklist that asks GHG emissions and adaptation/resiliency questions.

Name of project: ALS-8: UFR Weather Monitoring Infrastructure

Project applicant: Feather River Resource Conservation District

## GHG Emissions Assessment

### Project Construction Emissions

*(If you check any of the boxes, please see the attached worksheet)*

- ☐ The project requires nonroad or off-road engines, equipment, or vehicles to complete.
- ☑ The project requires materials to be transported from outside of the UFR watershed.
- ☐ The project requires workers from outside of the UFR watershed.
- ☐ The project is expected to generate GHG emissions for other reasons.
- ☐ The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

### Operating Emissions

*(If you check any of the boxes, please see the attached worksheet)*

- ☑ The project requires energy to operate.
- ☑ The project will generate electricity.
- ☐ The project will proactively manage forests to reduce wildfire risk.
- ☐ The project will affect wetland acreage.
- ☐ The project will include new trees.

# Adaptation & Resiliency Assessment

## Water Supply

Describe how the project makes the watershed more resilient to one or more of the following high priority water supply vulnerability issues:

- ☐ Not applicable
- ☐ Reduced snowmelt
- ☑ Unmet local water needs (drought)
- ☐ Increased invasive species

The weather stations will be able to accurately gauge the amount of water received, soil moisture and evapotranspiration.

## Water Demand

Describe how the project makes the watershed more resilient to one or more of the following high priority water demand vulnerability issues:

- ☐ Not applicable
- ☑ Increasing seasonal water use variability
- ☐ Unmet in-stream flow requirements
- ☑ Climate-sensitive crops
- ☑ Groundwater drought resiliency
- ☐ Water curtailment effectiveness

With accurate on-demand weather information, water use can be adjusted so water is used only when needed. Thus, more water will be available for other uses.

## Water Quality

Describe how the project makes the watershed more resilient to one or more of the following high priority water quality vulnerability issues:

- ☐ Not applicable
- ☐ Increasing catastrophic wildfires
- ☐ Eutrophication (excessive nutrient pollution in a waterbody, often followed by algae blooms and other related water quality issues)
- ☐ Seasonal low flows and limited abilities for waterbodies to assimilate pollution
- ☐ Water treatment facility operations
- ☐ Unmet beneficial uses (municipal and domestic water supply, water contact recreation, cold freshwater habitat, spawning habitat, wildlife habitat, etc.)

## Flooding

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority flooding vulnerability issues:

- [x] Not applicable
- [ ] Aging critical flood protection
- [ ] Wildfires
- [ ] Critical infrastructure in a floodplain
- [ ] Insufficient flood control facilities

## Ecosystem and Habitat

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority ecosystem and habitat vulnerability issues:

- [ ] Not applicable
- [ ] Climate-sensitive fauna or flora
- [ ] Recreation and economic activity
- [x] Quantified environmental flow requirements
- [ ] Erosion and sedimentation
- [ ] Endangered or threatened species
- [ ] Fragmented habitat

With local Weather Stations, the moisture input into the watershed can be accurately measured and quantified.

## Hydropower

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority hydropower vulnerability issues:

- [x] Not applicable
- [ ] Reduced hydropower output

Upper Feather River IRWMP

Project Assessment - GHG Emissions Analysis

ALS-8: - UFR Weather Monitoring Infrastructure

**GHG Emissions Analysis**

**Project Construction Emissions**

[X] The project requires non-road or off-road engines, equipment, or vehicles to complete. If yes:

| Type of Equipment | Maximum Number Per Day | Total 8-Hour Days in Operation | Total $MTCO_2e$ |
|---|---|---|---|
| Tractors/Loaders/Backhoes | 1 | 4 | 1 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | **Total Emissions** | **1** |

[X] The project requires materials to be transported to the project site. If yes:

| Total Number of Round Trips | Average Trip Distance (Miles) | Total $MTCO_2e$ |
|---|---|---|
| 4 | 80 | **0** |

[ ] The project requires workers to commute to the project site. If yes:

| Average Number of Workers | Total Number of Workdays | Average Round Trip Distance Traveled (Miles) | Total $MTCO_2e$ |
|---|---|---|---|
| | | | **0** |

[ ] The project is expected to generate GHG emissions for other reasons. If yes, explain:

[ ] The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

ALS-8: - UFR Weather Monitoring Infrastructure

**Project Operating Emissions**

☐ The project requires energy to operate. If yes:

| Annual Energy Needed | Unit | Total $MTCO_2e$ |
|---|---|---|
| | kWh (Electricity) | **0** |
| | Therm (Natural Gas) | **0** |

☒ The project will generate electricity. If yes:

| Annual kWh Generated | Total $MTCO_2e$ |
|---|---|
| 5 | **0** |

*A negative value indicates GHG reductions

☐ The project will proactively manage forests to reduce wildfire risk. If yes:

| Acres Protected from Wildfire | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

☐ The project will affect wetland acreage. If yes:

| Acres of Protected Wetlands | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

☐ The project will include new trees. If yes:

| Acres of Trees Planted | Total $MTCO_2e$ |
|---|---|
| 0 | **0** |

*A negative value indicates GHG reductions

☐ Project operations are expected to generate or reduce GHG emissions for other reasons. If yes, explain:

**GHG Emissions Summary**

| | |
|---|---|
| Construction and development will generate approximately: | 2 $MTCO_2e$ |
| In a given year, operation of the project will result in: | 0 $MTCO_2e$ |

# UPPER FEATHER RIVER IRWM

## PROJECT INFORMATION FORM

**Please submit by 5:00 p.m. on August 3, 2015, to UFR.contact@gmail.com**

Please provide information in the tables below:

### I. PROJECT PROPONENT INFORMATION

| | |
|---|---|
| **Agency / Organization** | University of California Cooperative Extension |
| **Name of Primary Contact** | Holly George |
| **Name of Secondary Contact** | |
| **Mailing Address** | 208 Fairgrounds Road, Quincy, CA 95971 |
| **E-mail** | hageorge@ucanr.edu |
| **Phone** | 530-283-6262 |
| **Other Cooperating Agencies / Organizations / Stakeholders** | USDA Natural Resource Conservation Service, Sierra Valley Resource Conservation District (RCD), Feather River RCD |
| **Is your agency/organization committed to the project through completion? If not, please explain** | UCCE is committed to working with NRCS, SVRCD, FRRCD and other interested parties. |

### II. GENERAL PROJECT INFORMATION

| | |
|---|---|
| **Project Title** | ALS-9: Soil Health Assessment |
| **Project Category** | ☒ **Agricultural Land Stewardship**<br>☐ **Floodplains/Meadows/Waterbodies**<br>☐ **Municipal Services**<br>☐ **Tribal Advisory Committee**<br>☐ **Uplands/Forest** |
| **Project Description**<br>(Briefly describe the project, in 300 words or less) | Soils in montane meadows contribute greatly to ecosystem function by regulating essential ecosystem services including water regulation, sequestration of greenhouse gasses, vegetation productivity, and other biogeochemical processes. A lack of understanding of the effects of human management practices on essential biogeochemical processes can lead to degradation and loss of ecosystem services. Plant-soil interactions are at the core of global biogeochemical cycles and a key determinant of terrestrial feedbacks to both drought and climate change. As California enters its fourth year of drought, it is imperative to understand how weather extremes, and/or different land, agriculture & livestock management practices affect soil ecosystem processes.<br><br>This project proposes to further the understanding of the |

| | |
|---|---|
| | impacts of management practices on soil health through a combination of research and community outreach. NRCS defines **soil health** as the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans. Improving soil health and resiliency has the potential to increase agricultural productivity, restore natural hydrologic functions, and mediate local responses to climate change.<br><br>This project will consist of three phases; Phase 1 will include the establishment of a baseline for soil health of agricultural lands in the Upper Feather River Watershed and link with the statewide Soil Health Network. Phase 2 will involve research on the effects of different land management practices on targeted soil biogeochemical processes. Phase 3 will consist of region-wide outreach and education.<br><br>A collaborative team of local producers, resource managers and regional scientists will determine the final list of measurements to be assessed as well as the sampling locations, methods, and frequency.<br><br>Project collaborators will work with local stakeholders to identify ecosystem processes that need to be targeted for improvement.<br>**Please read Step 1 form on this topic for full details.** |
| **Project Location Description** (e.g., along the south bank of stream/river between river miles or miles from Towns/intersection and/or address): | Various locations across the Upper Feather River Watershed initially focused on private agricultural lands |
| **Latitude:** | TBD |
| **Longitude:** | TBD |

## III. APPLICABLE IRWM PLAN OBJECTIVES ADDRESSED

For each of the objectives addressed by the project, provide a one to two sentence description of how the project contributes to attaining the objective and how the project outcomes will be quantified. If the project does not address *any* of the IRWM plan objectives, provide a one to two sentence description of how the project relates to a challenge or opportunity of the Region.

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Restore natural hydrologic functions. | ■ Yes<br><br>☐ N/A | Healthy soils increase effective precipitation so if management improves, so does effective | TBD |

| Upper Feather River IRWM Objectives: | Will the project address the objective? | Brief explanation of project linkage to selected Objective | Quantification (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| | | precip…water holding capacity | |
| Reduce potential for catastrophic wildland fires in the Region. | ☐ Yes<br>■ N/A | | |
| Build communication and collaboration among water resources stakeholders in the Region. | ■ Yes<br>☐ N/A | Increased soil health and associated benefits can be impetus for communication & collaboration across the Region | TBD |
| Work with DWR to develop strategies and actions for the management, operation, and control of SWP facilities in the Upper Feather River Watershed in order to increase water supply, recreational, and environmental benefits to the Region. | ☐ Yes<br>■ N/A | | |
| Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality. | ☐ Yes<br>■ N/A | | |
| Continue to actively engage in FERC relicensing of hydroelectric facilities in the Region. | ☐ Yes<br>■ N/A | | |
| Address economic challenges of municipal service providers to serve customers. | ☐ Yes<br>■ N/A | | |
| Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the RWQC Basin Plan. | ■ Yes<br>☐ N/A | Soil Health is integral part of watershed function and needs to be better understood by all users in the watershed | TBD |
| Address water resources and wastewater needs of DACs and Native Americans. | ■ Yes<br>☐ N/A | Soil health and associated benefits is a need of ALL in UFR | TBD |
| Coordinate management of recharge areas and protect groundwater resources. | ■ Yes<br>☐ N/A | Better understanding of soil function may impact location & management of recharge areas | TBD |
| Improve coordination of land use and water resources planning. | ■ Yes<br>☐ N/A | Improved understanding of management on ecosystem services should impact planning | TBD |

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Maximize agricultural, environmental and municipal water use efficiency. | ■ Yes<br>☐ N/A | Better understanding of impacts of management practices on ecosystem and hydrologic function should lead to increased efficiencies | TBD |
| Effectively address climate change adaptation and/or mitigation in water resources management. | ■ Yes<br>☐ N/A | Healthy functioning soils are more capable of sequestering GHG | TBD |
| Improve efficiency and reliability of water supply and other water-related infrastructure. | ☐ Yes<br>■ N/A | | |
| Enhance public awareness and understanding of water management issues & needs. | ■ Yes<br>☐ N/A | Community ed & outreach are crucial components to support on-the-ground solutions | TBD |
| Address economic challenges of agricultural producers. | ■ Yes<br>☐ N/A | Economically viable ag practices that can improve ecosystem functions is part of Phase 3 | TBD |
| Work with counties/ communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding. | ■ Yes<br>☐ N/A | Part of this project is to build skillset of diverse stakeholders to incorporate soil health assessment into planning, implementation & monitoring. Actual grant requests will include capacity for staff admin | TBD |

If no objectives are addressed, describe how the project relates to a challenge or opportunity for the Region:

| |
|---|
| This project addresses numerous objectives as well as Issues and Potential Projects identified by the UFR Ag Workgroup at their March 11, 2015 meeting. |

## IV. PROJECT IMPACTS AND BENEFITS

Please provide a summary of the expected project benefits and impacts in the table below or check N/A if not applicable; **do no leave a blank cell.** Note that DWR encourages multi-benefit projects.

| **If applicable, describe benefits or impacts of the project with respect to:** | | |
|---|---|---|
| **a. Native American Tribal Communities** | ☐ N/A | Goal is to protect and enhance healthy & economic viability of working landscapes which would include Native Americans. |
| **b. Disadvantaged Communities**[1] | ☐ N/A | Most of UFR is DAC so this project should have positive impacts on communities. |
| **c. Environmental Justice**[2] | ☐ N/A | Building communication/collaboration among water resource stakeholders across the UFR Region is critical component of this project. |
| **d. Drought Preparedness** | ☐ N/A | Develop a comprehensive measure of the health of agricultural soils throughout the Region that can be used to assess the effects of agricultural management practices on watershed resiliency including drought. |
| **e. Assist the region in adapting to effects of climate change**[3] | ☐ N/A | We will coordinate with 2015 California Healthy Soils Initiative to provide guidance on soil management based on the *Climate Change Handbook for Agricultural Water Management*. |
| **f. Generation or reduction of greenhouse gas emissions (e.g. green technology)** | ☐ N/A | Improved soil health over time increases the ability to sequester GHG especially carbon |
| **g. Other expected impacts or benefits that are not already mentioned elsewhere** | ☐ N/A | |

[1] A Disadvantaged Community is defined as a community with an annual median household (MHI) income that is less than 80 percent of the Statewide annual MHI. DWR's DAC mapping is available on the UFR website (http://featherriver.org/maps/) .

[2] Environmental Justice is defined as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies. An example of environmental justice benefit would be to improve conditions (e.g. water supply, flooding, sanitation) in an area of racial minorities.

[3] Climate change effects are likely to include increased flooding, extended drought, and associated secondary effects such as increased wildfire risk, erosion, and sedimentation.

DWR encourages multiple benefit projects which address one or more of the following elements (PRC §75026(a). Indicate which elements are addressed by your project.

| | | | |
|---|---|---|---|
| a. Water supply reliability, water conservation, water use efficiency | ■ Yes ☐ N/A | g. Drinking water treatment and distribution | ☐ Yes ■ N/A |
| b. Stormwater capture, storage, clean-up, treatment, management | ■ Yes ☐ N/A | h. Watershed protection and management | ■ Yes ☐ N/A |
| c. Removal of invasive non-native species, creation/enhancement of wetlands, acquisition/protection/restoration of open space and watershed lands | ■ Yes ☐ N/A | i. Contaminant and salt removal through reclamation/desalting, other treatment technologies and conveyance of recycled water for distribution to users | ☐ Yes ■ N/A |
| d. Non-point source pollution reduction, management and monitoring | ■ Yes ☐ N/A | j. Planning and implementation of multipurpose flood management programs | ■ Yes ☐ N/A |
| e. Groundwater recharge and management projects | ■ Yes ☐ N/A | k. Ecosystem and fisheries restoration and protection | ■ Yes ☐ N/A |
| f. Water banking, exchange, reclamation, and improvement of water quality | ☐ Yes ■ N/A | | |

## V. RESOURCE MANAGEMENT STRATEGIES

For each resource management strategy (RMS) employed by the project, provide a one to two sentence description in the table below of how the project incorporates the strategy. A description of the RMS can be found in Volume 2 of the 2013 California Water Plan (http://featherriver.org/2013-california-water-plan-update/).

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Reduce Water Demand | | |
| Agricultural Water Use Efficiency | ■ Yes ☐ No | Assessing soil health and impacts of management should lead to improved ag water use efficiency. Improved soil health should increase water holding capacity & effective precipitation |
| Urban water use efficiency | ☐ Yes ■ No | |
| Improve Flood Management | | |
| Flood management | ■ Yes ☐ No | The condition of the soil surface determines whether rainfall infiltrates or runs off. If it enters the soil it may be stored and later taken up by plants, it may move into groundwater or move laterally through the earth, appearing later in springs. This partitioning of rainfall determines whether a rainstorm results in a replenishing rain or a damaging flood. |
| Improve Operational Efficiency and Transfers | | |
| Conveyance – regional/local | ☐ Yes ■ No | |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| System reoperation | ☐ Yes ■ No | |
| Water transfers | ☐ Yes ■ No | |
| Increase Water Supply | | |
| Conjunctive management | ■ Yes ☐ No | Improved understanding of management impacts on soil health should lead to implementation of practices that improve conjunctive management across UFR |
| Precipitation Enhancement | ☐ Yes ■ No | |
| Municipal recycled water | ■ Yes ☐ No | This project should aid in management of lands receiving municipal recycled water |
| Surface storage – regional/local | ■ Yes ☐ No | Understanding soil health functions should impact surface storage site & management |
| Improve Water Quality | | |
| Drinking water treatment and distribution | ☐ Yes ■ No | |
| Groundwater remediation/aquifer remediation | ☐ Yes ■ No | |
| Matching water quality to water use | ■ Yes ☐ No | Soils have important direct and indirect impacts on agricultural productivity, water quality, and the global climate. We need to know more so we can do better job of matching water quality to water use |
| Pollution prevention | ■ Yes ☐ No | Improved soil health means less erosion, sedimentation and runoff |
| Salt and salinity management | ■ Yes ☐ No | Knowing soil health characteristics should help inform management re: salt/salinity |
| Urban storm water runoff management | ☐ Yes ■ No | |
| Practice Resource Stewardship | | |
| Agricultural land stewardship | ■ Yes ☐ No | Soils are the storehouses for water and nutrients. Plants draw on these stores as needed to produce roots, stems, leaves, and, eventually, food and fiber for human consumption. Soils—and the biological, chemical, and physical processes they make possible—are a fundamental resource on which the productivities of agricultural and natural ecosystems depend. |
| Ecosystem restoration | ■ Yes ☐ No | Depending on how they are managed, soils can be important sources or sinks of carbon dioxide and other gases, also known as greenhouse gases, that contribute to the so-called greenhouse effect. Soils store, degrade, or immobilize nitrates, phosphorus, pesticides, and other substances that can become air or water pollutants. |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Forest management | ■ Yes ☐ No | Soil health assessment & management are equally important to forest management |
| Land use planning and management | ■ Yes ☐ No | Better understanding of soil health/function and management impacts should lead to better land use decisions |
| Recharge area protection | ■ Yes ☐ No | Understanding soil health/function has direct impact on recharge area management |
| Sediment management | ■ Yes ☐ No | Preventing soil loss by improved management is key to improving soil health |
| Watershed management | ■ Yes ☐ No | Soil is the basis of the watershed, thus soil health/function & watershed management are intimately linked. |
| People and Water | | |
| Economic incentives | ■ Yes ☐ No | This project seeks funding to assist with cost of implementing management changes |
| Outreach and engagement | ■ Yes ☐ No | Education, outreach and engagement are critical components of this project for management & policy changes to be made |
| Water and culture | ■ Yes ☐ No | Improved communication, collaboration of all stakeholders in the UFR are related to soil health |
| Water-dependent recreation | ☐ Yes ■ No | |
| Wastewater/NPDES | ☐ Yes ■ No | |

Other RMS addressed and explanation:

| |
|---|
| |

## VI. PROJECT COST AND FINANCING

Please provide any estimates of project cost, sources of funding, and operation and maintenance costs, as well as the source of the project cost in the table below.

**PROJECT BUDGET**

Project serves a need of a DAC?: ☐ Yes ■ No Not that I'm currently aware of; but should benefit them.
Funding Match Waiver request?: ☐ Yes ■ No

| | Category | Requested Grant Amount | Cost Share: Non-State Fund Source* (Funding Match) | Cost Share: Other State Fund Source* | Total Cost |
|---|---|---|---|---|---|
| a. | **Direct Project Administration** | $580,000 – 800,000 | TBD | TBD | $580,000 – 800,000 |
| b. | **Land Purchase/Easement** | N/A | N/A | N/A | N/A |
| c. | **Planning/Design/Engineering / Environmental** | N/A | N/A | N/A | N/A |
| d. | **Construction/Implementation** | N/A | N/A | N/A | N/A |
| e. | **Environmental Compliance/ Mitigation/Enhancement** | N/A | N/A | N/A | N/A |
| f. | **Construction Administration** | N/A | N/A | N/A | N/A |
| g. | **Other Costs** | TBD | TBD | TBD | TBD |
| h. | **Construction/Implementation Contingency** | N/A | N/A | N/A | N/A |
| i. | **Grand Total (Sum rows (a) through (h) for each column)** | $580,000 – 800,000 | TBD | TBD | $580,000 – 800,000 |

| j. | **Can the Project be phased?** ■ **Yes** ☐ **No** If **yes**, provide cost breakdown by phases | | | |
|---|---|---|---|---|
| | | **Project Cost** | **O&M Cost** | **Description of Phase** |
| | **Phase 1** | $100,000 – 200,000 | | Baseline Assessment |
| | **Phase 2** | $400,000 – 500,000 | | New Research |
| | **Phase 3** | $80,000 – 100,000 | | Outreach and Education |
| | **Phase 4** | | | |

| | | |
|---|---|---|
| k. | **Explain how operation and maintenance costs will be financed for the 20-year planning period for project implementation (not grant funded).** | Local RCDs in conjunction with UCCE could seek grant funding to support on-the-ground projects and with landowners across the UFRW |
| l. | **Has a Cost/Benefit analysis been completed?** | ☐ **Yes** ■ **No** |
| m. | **Describe what impact there may be if the project is not funded (300 words or less)** | We won't know real impacts of management on soil health/function without baseline data and land/water managers, policy makers and the public won't understand the relationship of soil health and watershed management without education, outreach and engagement. |

*List all sources of funding.
Note: See Project Development Manual, Exhibit B, for assistance in completing this table (http://featherriver.org/documents/).

## VIII. PROJECT STATUS AND SCHEDULE

Please provide a status of the project, level of completion as well as a description of the activities planned for each project stage. If unknown, enter **TBD**.

| Project Stage | Check the Current Project Stage | Completed? | Description of Activities in Each Project Stage | Planned/ Actual Start Date (mm/yr) | Planned/ Actual Completion Date (mm/yr) |
|---|---|---|---|---|---|
| **a. Assessment and Evaluation** | ■ | ☐ Yes<br>■ No<br>☐ N/A | Baseline Assessment<br>New Research<br>Outreach and Education | TBD | TBD once funding is identified |
| **b. Final Design** | ☐ | ☐ Yes<br>☐ No<br>■ N/A | | | |
| **c. Environmental Documentation (CEQA / NEPA)** | ☐ | ☐ Yes<br>☐ No<br>■ N/A | Research should be CEQA exempt | | TBD |
| **d. Permitting** | ☐ | ☐ Yes<br>☐ No<br>■ N/A | | | |
| **e. Construction Contracting** | ☐ | ☐ Yes<br>☐ No<br>■ N/A | | | |
| **f. Construction Implementation** | ☐ | ☐ Yes<br>☐ No<br>■ N/A | | | |
| **Provide explanation if more than one project stage is checked as current status** | | | | | |

## IX. PROJECT TECHNICAL FEASIBILITY

Please provide any related documents (date, title, author, and page numbers) that describe and confirm the technical feasibility of the project. See www.featherriver.org/catalog/index.php for documents gathered on the UFR Region.

| | |
|---|---|
| **a. List the adopted planning documents the proposed project is consistent with or supported by** (e.g. General Plans, UWMPs, GWMPs, Water Master Plan, Habitat Conservation Plans, TMDLs, Basin Plans, etc.). | We will coordinate with the *2015 California Healthy Soils Initiative* to provide guidance on soil management based on the *Climate Change Handbook for Agricultural Water Management*. Others TBD |
| **b. List technical reports and studies supporting the feasibility of this project.** | Please refer to studies listed in Step 1 Project Summary Form for this project as some work has been done in other areas and need for us to do in the UFR |
| **c. Concisely describe the scientific basis** (e.g. how much research has been conducted) **of the proposed project in 300 words or less.** | This is an assessment, monitoring and outreach effort of soil health across agricultural areas of the UFRW:<br>**Phase 1** is establishment of a comprehensive set of baseline data for soil health at representative agricultural sites across the watershed. A collaborative team of local producers, resource managers and regional scientists will determine the final list to be assessed as well as the sampling locations, methods, and frequency. Results will be combined with existing data to create a comprehensive overview of current soil conditions. Project collaborators will work with local stakeholders to identify ecosystem processes that need to be targeted for improvement.<br><br>Once the soil health baseline has been established and the targeted ecosystem processes identified, **Phase 2** will involve working with researchers to design studies that measure the impacts of different agricultural management practices and/or restoration on the targeted ecosystem processes.<br><br>**Phase 3** includes community outreach and education about the impact of land management practices on ecosystem services including results of the baseline |

| | |
|---|---|
| | study and practical tool kits for soil health assessment. The objective is to build the skillset of resource professionals & land owners/managers to incorporate soil health assessment into their planning process, educate them on practical steps that can be taken to improve ecosystem services, and provide them with easy-to-use monitoring tools. Outreach efforts will be designed to support on-the-ground solutions through the use of case studies, producer-to-producer education, and practical implementation strategies. |
| **d. Does the project implement green technology** (e.g. alternate forms of energy, recycled materials, LID techniques, etc.). | ☐ Yes ☐ No ■ N/A<br>If yes, please describe. |
| **e. Are you an Urban Water Supplier[1]?** | ☐ Yes ■ No ☐ N/A |
| **f. Are you are an Agricultural Water Supplier[2]?** | ☐ Yes ■ No ☐ N/A |
| **g. Is the project related to groundwater?** | ☐ Yes ☐ No ■ N/A<br>If yes, please indicate which groundwater basin. |

[1] Urban Water Supplier is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually.

[2] Agricultural Water Supplier is defined as a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding the acreage that receives recycled water.

# Climate Change – Project Assessment Checklist

This climate change project assessment tool allows project applicants and the planning team to assess project consistency with Proposition 84 plan standards and RWMG plan assessment standards. The tool is a written checklist that asks GHG emissions and adaptation/resiliency questions.

Name of project: ALS-9: Soil Health Assessment

Project applicant: University of California Cooperative Extension

## GHG Emissions Assessment

### Project Construction Emissions

*(If you check any of the boxes, please see the attached worksheet)*

☐ The project requires nonroad or off-road engines, equipment, or vehicles to complete.
☐ The project requires materials to be transported to the project site.
☐ The project requires workers to commute to the project site.
☐ The project is expected to generate GHG emissions for other reasons.
☒ The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

### Operating Emissions

*(If you check any of the boxes, please see the attached worksheet)*

☐ The project requires energy to operate.
☐ The project will generate electricity.
☐ The project will proactively manage forests to reduce wildfire risk.
☐ The project will affect wetland acreage.
☐ The project will include new trees.
☒ Project operations are expected to generate or reduce GHG emissions for other reasons.

# Adaptation & Resiliency Assessment

## Water Supply

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water supply vulnerability issues:

- ☐ Not applicable
- ☐ Reduced snowmelt
- ☒ Unmet local water needs (drought)
- ☐ Increased invasive species

Over time, improved Soil Health via changes in management should improve water holding capacity of many local soils increasing effective precipitation and aiding in resiliency.

## Water Demand

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water demand vulnerability issues:

- ☐ Not applicable
- ☒ Increasing seasonal water use variability
- ☐ Unmet in-stream flow requirements
- ☒ Climate-sensitive crops
- ☐ Groundwater drought resiliency
- ☐ Water curtailment effectiveness

Increase water-holding capacity by increasing organic matter, cover and possibly the types of crops.

## Water Quality

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water quality vulnerability issues:

- ☐ Not applicable
- ☐ Increasing catastrophic wildfires
- ☒ Eutrophication (excessive nutrient pollution in a waterbody, often followed by algae blooms and other related water quality issues)
- ☐ Seasonal low flows and limited abilities for waterbodies to assimilate pollution
- ☐ Water treatment facility operations
- ☒ Unmet beneficial uses (municipal and domestic water supply, water contact recreation, cold freshwater habitat, spawning habitat, wildlife habitat, etc.)

Healthier soils with better plant growth are going to do a better job of holding/removing sediments, filtering, etc. With improved Soil Health there could be less sedimentation which is a benefit to multiple uses.

## Flooding

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority flooding vulnerability issues:

- ☒ Not applicable
- ☐ Aging critical flood protection
- ☐ Wildfires
- ☐ Critical infrastructure in a floodplain
- ☐ Insufficient flood control facilities

## Ecosystem and Habitat

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority ecosystem and habitat vulnerability issues:

- ☐ Not applicable
- ☒ Climate-sensitive fauna or flora
- ☐ Recreation and economic activity
- ☐ Quantified environmental flow requirements
- ☒ Erosion and sedimentation
- ☐ Endangered or threatened species
- ☐ Fragmented habitat

It is hoped/anticipated that over time there will be some changes in management we will see some improvement in Soil Health (increased sequestration of GHG, water holding capacity and reduced erosion/sedimentation) resulting in more resiliency. These anticipated changes will take some time.

## Hydropower

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority hydropower vulnerability issues:

- ☒ Not applicable
- ☐ Reduced hydropower output

ALS-9: Soil Health Assessment

**GHG Emissions Analysis**

**Project Construction Emissions**

☐ The project requires non-road or off-road engines, equipment, or vehicles to complete. If yes:

| Type of Equipment | Maximum Number Per Day | Total 8-Hour Days in Operation | Total $MTCO_2e$ |
|---|---|---|---|
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | **Total Emissions** | **0** |

☐ The project requires materials to be transported to the project site. If yes:

| Total Number of Round Trips | Average Trip Distance (Miles) | Total $MTCO_2e$ |
|---|---|---|
| | | **0** |

☐ The project requires workers to commute to the project site. If yes:

| Average Number of Workers | Total Number of Workdays | Average Round Trip Distance Traveled (Miles) | Total $MTCO_2e$ |
|---|---|---|---|
| | | | **0** |

☐ The project is expected to generate GHG emissions for other reasons. If yes, explain:

| |
|---|
| |

☒ The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

ALS-9: Soil Health Assessment

**Project Operating Emissions**

☐ The project requires energy to operate. If yes:

| Annual Energy Needed | Unit | Total $MTCO_2e$ |
|---|---|---|
| | kWh (Electricity) | **0** |
| | Therm (Natural Gas) | **0** |

☐ The project will generate electricity. If yes:

| Annual kWh Generated | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

☐ The project will proactively manage forests to reduce wildfire risk. If yes:

| Acres Protected from Wildfire | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

☐ The project will affect wetland acreage. If yes:

| Acres of Protected Wetlands | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

☐ The project will include new trees. If yes:

| Acres of Trees Planted | Total $MTCO_2e$ |
|---|---|
| 0 | **0** |

*A negative value indicates GHG reductions

☒ Project operations are expected to generate or reduce GHG emissions for other reasons. If yes, explain:

Improved Soil Health should result in an increase in sequestration of GHG, more organic matter with better water holding capacity; more cover which will reduce erosion and sedimentation.

**GHG Emissions Summary**

| | |
|---|---|
| Construction and development will generate approximately: | 0 $MTCO_2e$ |
| In a given year, operation of the project will result in: | 0 $MTCO_2e$ |

# UPPER FEATHER RIVER IRWM

## PROJECT INFORMATION FORM

**Please submit by 5:00 p.m. on August 3, 2015, to UFR.contact@gmail.com**

Please provide information in the tables below:

### I. PROJECT PROPONENT INFORMATION

| | |
|---|---|
| **Agency / Organization** | Sierra Valley Groundwater Management District |
| **Name of Primary Contact** | Carl Genasci, Board Chair |
| **Name of Secondary Contact** | Juliana Walsh |
| **Mailing Address** | PO Box 102, Sierraville, CA 96126 |
| **E-mail** | sierravalleygmd@sbcglobal.net |
| **Phone** | 530-994-3707 |
| **Other Cooperating Agencies / Organizations / Stakeholders** | TBD – likely to include SVRCD, Municipal water companies in the valley, other agricultural groundwater users |
| **Is your agency/organization committed to the project through completion? If not, please explain** | Yes |

### II. GENERAL PROJECT INFORMATION

| | |
|---|---|
| **Project Title** | ALS-10: Sierra Valley Groundwater Sustainability Plan |
| **Project Category** | ☒ **Agricultural Land Stewardship**<br>☐ **Floodplains/Meadows/Waterbodies**<br>☐ **Municipal Services**<br>☐ **Tribal Advisory Committee**<br>☐ **Uplands/Forest** |
| **Project Description**<br>(Briefly describe the project, in 300 words or less) | The Sierra Valley Groundwater Management District (SVGMD) is the state-identified Groundwater Sustainability Agency for the Sierra Valley Groundwater Basin, as defined in California's Sustainable Groundwater Management Act of 2014 and DWR's Bulletin 118. As such, SVGMD is tasked with the preparation of a 20-year horizon Groundwater Sustainability Plan (GSP) for this medium-priority basin. This project will involve contracting with a qualified consultant/consulting firm to complete the Sierra Valley Groundwater Sustainability Plan prior to the legislated deadline of January 31, 2022.<br><br>CA DWR reports indicate declines in groundwater levels and artesian well production along the east and northeast side of the valley in addition to poor quality water in the west-central side of valley (boron, fluoride, arsenic, & sodium). SVGMD monitoring well reports show groundwater levels dropping in the Valley since the mid-1990s. Further, drought and climate |

| | |
|---|---|
| | change both indicate the need for a sustainable management plan.<br><br>**Plan Components**: Shall include, at minimum, state-mandated format and contents:<br>• A description of the physical setting and characteristics of the aquifer system.<br>• Historical data, groundwater levels, ground water quality, subsidence, groundwater-surface water interaction, a discussion of historical and projected water demands and supplies.<br>• A map that details the area of the basin and boundaries.<br>• A map identifying existing and potential recharge areas that substantially contribute to the recharge of the basin.<br>• Measurable objectives, as well as interim milestones in increments of five years, to achieve the sustainability goal in the basin within 20 years.<br>• A planning and implementing horizon.<br>• The monitoring and management of groundwater levels, water quality, groundwater quality degradation, and inelastic land surface subsidence.<br>• A summary of the type of monitoring.<br>• The monitoring protocols.<br>• A description of the consideration of other applicable local government plans and how the GSP may affect those plans.<br><br>This project supports all five UFR IRWM Goals. |
| **Project Location Description** (e.g., along the south bank of stream/river between river miles or miles from Towns/intersection and/or address): | Sierra Valley Groundwater Basin (No. 5-12.01), technically defined in California's 1980 SB-1391. |
| **Latitude:** | |
| **Longitude:** | |

## III. APPLICABLE IRWM PLAN OBJECTIVES ADDRESSED

For each of the objectives addressed by the project, provide a one to two sentence description of how the project contributes to attaining the objective and how the project outcomes will be quantified. If the project does not address *any* of the IRWM plan objectives, provide a one to two sentence description of how the project relates to a challenge or opportunity of the Region.

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Restore natural hydrologic functions. | ■ Yes<br><br>☐ N/A | The Groundwater Sustainability Plan (GSP) is required by state law to address "The monitoring | The Sierra Valley Groundwater Basin covers 117,700 |

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| | | and management of groundwater levels, water quality, groundwater quality degradation, and inelastic land surface subsidence" as well as "identifying existing and potential recharge areas that substantially contribute to the recharge of the basin," all of which are important to manage and restore natural hydrologic functions. | acres / 184 square miles, per DWR Bulletin 118 |
| Reduce potential for catastrophic wildland fires in the Region. | ☐ Yes<br>■ N/A | | |
| Build communication and collaboration among water resources stakeholders in the Region. | ■ Yes<br>☐ N/A | The proposed project includes significant outreach to gather stakeholder/public input during the GSP development. | 117,700 acres, including Valley ranches and communities of Chilcoot, Vinton, Beckwourth, Sattley, Calpine, Sierraville and Loyalton. |
| Work with DWR to develop strategies and actions for the management, operation, and control of SWP facilities in the Upper Feather River Watershed in order to increase water supply, recreational, and environmental benefits to the Region. | ☐ Yes<br>■ N/A | | |
| Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality. | ■ Yes<br>☐ N/A | Several municipal wells exist in Sierra Valley. Providers will need to participate in development of the plan. | |
| Continue to actively engage in FERC relicensing of hydroelectric facilities in the Region. | ☐ Yes<br>■ N/A | | |

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Address economic challenges of municipal service providers to serve customers. | ☐ Yes<br>■ N/A | | |
| Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the RWQC Basin Plan. | ■ Yes<br>☐ N/A | The GSP is required to be a 20-year plan with measurable objectives to achieve sustainability for groundwater resources in the basin, including prevention of "undesirable results," including chronic lowering groundwater level, degraded water quality, land subsidence, depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses. | 117,700 acres |
| Address water resources and wastewater needs of DACs and Native Americans. | ☐ Yes<br>■ N/A | There are several Disadvantaged Communities in Sierra Valley (per 2010 Census data) – Chilcoot, Vinton, Sierraville and Sattley, residents of which rely on groundwater resources. No severe threats known, however. | Chilcoot, Vinton, Sierraville and Sattley |
| Coordinate management of recharge areas and protect groundwater resources. | ■ Yes<br>☐ N/A | The GSP is required to be a 20-year plan with measurable objectives to achieve sustainability for groundwater resources in the basin, which will include addressing recharge areas and protection of groundwater resources. | 117,700 acres |
| Improve coordination of land use and water resources planning. | ■ Yes<br>☐ N/A | The GSP will be the first effort ever undertaken to coordinate and manage groundwater sustainability in Sierra Valley, which is inextricably tied to land use and very likely to surface water/use, as well. The GSP must also consider existing General Plans in the two counties and vice versa. | 117,700 acres |

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Maximize agricultural, environmental and municipal water-use efficiency. | ■ Yes<br>☐ N/A | Efficiency of all uses of groundwater in the Sierra Valley basin will be addressed. | 117,700 acres |
| Effectively address climate change adaptation and/or mitigation in water resources management. | ■ Yes<br>☐ N/A | The GSP will include plans to sustainably manage groundwater resources and will be informed by extensive data sets currently under development, including the Upper Middle Fork Physically Based Water Management Tool (Dr. M. Levent Kavvas, UC Davis), which models climate change effects on groundwater availability in the Sierra Valley basin. | 117,700 acres |
| Improve efficiency and reliability of water supply and other water-related infrastructure. | ■ Yes<br>☐ N/A | The theory is… A sustainably managed water supply will be a more reliable water supply. | 117,700 acres |
| Enhance public awareness and understanding of water management issues and needs. | ■ Yes<br>☐ N/A | The GSP project includes outreach and public / stakeholder input. | 117,700 acres |
| Address economic challenges of agricultural producers. | ■ Yes<br>☐ N/A | Because agricultural producers are the majority users of the groundwater in the basin, the GSP, in its goal to sustainably manage groundwater resources, will necessarily address economic challenges of producers. | 117,700 acres |
| Work with counties/ communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding. | ■ Yes<br>☐ N/A | The SVGMD has little staff (one part-time secretary). This project will be a monumental undertaking. We have included a contract project manager in the budget for this purpose, in addition to the consultant firm/team preparing the plan. | 117,700 acres |

If no objectives are addressed, describe how the project relates to a challenge or opportunity for the Region:

| |
|---|
| N/A |

## IV. PROJECT IMPACTS AND BENEFITS

Please provide a summary of the expected project benefits and impacts in the table below or check N/A if not applicable; **do no leave a blank cell.** Note that DWR encourages multi-benefit projects.

| **If applicable, describe benefits or impacts of the project with respect to:** | | |
|---|---|---|
| **a. Native American Tribal Communities** | ■ N/A | |
| **b. Disadvantaged Communities**[1] | ☐ N/A | There are several Disadvantaged Communities in Sierra Valley (per 2010 Census data) – Chilcoot, Vinton, Sierraville and Sattley. The GSP includes planning for sustainable management of the groundwater resources serving these communities. |
| **c. Environmental Justice**[2] | ■ N/A | |
| **d. Drought Preparedness** | ☐ N/A | Groundwater resources are particularly important during drought conditions. The GSP will address potential impacts of drought. |
| **e. Assist the region in adapting to effects of climate change**[3] | ☐ N/A | The Upper Middle Fork Physically Based Water Management Tool will be used to model Sierra Valley groundwater availability based on 15 different climate change scenarios. By using this data, as well as historic surface-to-groundwater and pumping data collected by DWR and the District, the GSP will project and plan for groundwater availability patterns, thereby helping the region adapt to projected climate changes. |
| **f. Generation or reduction of greenhouse gas emissions (e.g. green technology)** | ■ N/A | Potentially… |
| **g. Other expected impacts or benefits that are not already mentioned elsewhere** | ■ N/A | **Key Outcome**: Sierra Valley Groundwater Sustainable Management plan compliant with California Sustainable Groundwater Management Act of 2014 in place to sustainably manage Sierra Valley groundwater resources for long-term water supply reliability and multiple economic, social, and environmental benefits for current and future beneficial uses. |

[1] A Disadvantaged Community is defined as a community with an annual median household (MHI) income that is less than 80 percent of the Statewide annual MHI. DWR's DAC mapping is available on the UFR website (http://featherriver.org/maps/) .
[2] Environmental Justice is defined as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies. An example of environmental justice benefit would be to improve conditions (e.g. water supply, flooding, sanitation) in an area of racial minorities.
[3] Climate change effects are likely to include increased flooding, extended drought, and associated secondary effects such as increased wildfire risk, erosion, and sedimentation.

DWR encourages multiple benefit projects which address one or more of the following elements (PRC §75026(a). Indicate which elements are addressed by your project.

| | | | |
|---|---|---|---|
| a. Water supply reliability, water conservation, water use efficiency | ■ Yes ☐ N/A | g. Drinking water treatment and distribution | ☐ Yes ■ N/A |
| b. Stormwater capture, storage, clean-up, treatment, management | ☐ Yes ■ N/A | h. Watershed protection and management | ■ Yes ☐ N/A |
| c. Removal of invasive non-native species, creation/enhancement of wetlands, acquisition/protection/restoration of open space and watershed lands | ■ Yes ☐ N/A | i. Contaminant and salt removal through reclamation/desalting, other treatment technologies and conveyance of recycled water for distribution to users | ■ Yes ☐ N/A |
| d. Non-point source pollution reduction, management and monitoring | ☐ Yes ■ N/A | j. Planning and implementation of multipurpose flood management programs | ☐ Yes ■ N/A |
| e. Groundwater recharge and management projects | ■ Yes ☐ N/A | k. Ecosystem and fisheries restoration and protection | ■ Yes ☐ N/A |
| f. Water banking, exchange, reclamation, and improvement of water quality | ■ Yes ☐ N/A | | |

## V. RESOURCE MANAGEMENT STRATEGIES

For each resource management strategy (RMS) employed by the project, provide a one to two sentence description in the table below of how the project incorporates the strategy. A description of the RMS can be found in Volume 2 of the 2013 California Water Plan (http://featherriver.org/2013-california-water-plan-update/).

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Reduce Water Demand | | |
| Agricultural Water Use Efficiency | ■ Yes ☐ No | Ag Water Use Efficiency will be a critical strategy to achieve groundwater sustainability. |
| Urban water use efficiency | ☐ Yes ■ No | No technically urban areas, but municipal groundwater use should be addressed in the plan. |
| Improve Flood Management | | |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Flood management | ☐ Yes ■ No | |
| Improve Operational Efficiency and Transfers | | |
| Conveyance – regional/local | ☐ Yes ■ No | |
| System reoperation | ☐ Yes ■ No | |
| Water transfers | ☐ Yes ■ No | |
| Increase Water Supply | | |
| Conjunctive management | ■ Yes ☐ No | The GSP will include conjunctive management data and planning strategies to achieve groundwater sustainability. |
| Precipitation Enhancement | ☐ Yes ■ No | |
| Municipal recycled water | ■ Yes ☐ No | The GSP will consider the extent to which municipal recycled water can be used to offset groundwater use. |
| Surface storage – regional/local | ☐ Yes ■ No | |
| Improve Water Quality | | |
| Drinking water treatment and distribution | ☐ Yes ■ No | |
| Groundwater remediation/aquifer remediation | ☐ Yes ■ No | |
| Matching water quality to water use | ☐ Yes ■ No | |
| Pollution prevention | ☐ Yes ■ No | |
| Salt and salinity management | ☐ Yes ■ No | |
| Urban storm water runoff management | ☐ Yes ■ No | |
| Practice Resource Stewardship | | |
| Agricultural land stewardship | ■ Yes ☐ No | Agricultural land stewardship embodies the practice of planning for and protecting groundwater (a natural resource). This Resource Management Strategy will be vital to planning for sustainably managed groundwater in Sierra Valley. |
| Ecosystem restoration | ☐ Yes ■ No | |
| Forest management | ☐ Yes ■ No | |
| Land use planning and management | ■ Yes ☐ No | The GSP will be developed incorporating the understanding of this RMS, as defined by "The orderly and planned use of (groundwater)… resources… with a view to securing the physical, economic and social efficiency, health and well-being of… rural communities." The GSP is required to include "A description of the consideration of other applicable local government plans and how the GSP may affect those plans," which, would include the Plumas and Sierra County General Plans, as well as the Sierra Valley RCD Resource Management Plan, and special districts in the |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| | | basin. |
| Recharge area protection | ■ Yes ☐ No | Groundwater resources cannot be sustainably managed without protecting recharge areas; therefore, this RMS will be critical to the preparation of the GSP. |
| Sediment management | ☐ Yes ■ No | |
| Watershed management | ■ Yes ☐ No | Groundwater resources and their interplay with interconnected surface water resources are key components of the watershed. Watershed management strategies will be fundamental to the GSP. |
| People and Water | | |
| Economic incentives | ☐ Yes ■ No | |
| Outreach and engagement | ■ Yes ☐ No | This project includes significant outreach to gather stakeholder/public input during the GSP development and review stages. |
| Water and culture | ☐ Yes ■ No | |
| Water-dependent recreation | ☐ Yes ■ No | |
| Wastewater/NPDES | ☐ Yes ■ No | |

Other RMS addressed and explanation:

| |
|---|
| |

## VI. PROJECT COST AND FINANCING

Please provide any estimates of project cost, sources of funding, and operation and maintenance costs, as well as the source of the project cost in the table below.

**PROJECT BUDGET**

Project serves a need of a DAC?: ■ Yes ☐ No
Funding Match Waiver request?: ■ Yes ☐ No

| | Category | Requested Grant Amount | Cost Share: Non-State Fund Source* (Funding Match) | Cost Share: Other State Fund Source* | Total Cost |
|---|---|---|---|---|---|
| **a.** | **Direct Project Administration** | $60,000 | possible | | $60,000 |
| **b.** | **Land Purchase/Easement** | | | | |
| **c.** | **Planning/Design/Engineering / Environmental** | $500,000 | | possible?? | $500,000 |
| **d.** | **Construction/Implementation** | $12,000 | | | $12,000 |
| **e.** | **Environmental Compliance/ Mitigation/Enhancement** | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **f.** | **Construction Administration** | | | | |
| **g.** | **Other Costs** | | | | |
| **h.** | **Construction/Implementation Contingency** | | | | |
| **i.** | **Grand Total (Sum rows (a) through (h) for each column)** | $572,000 | possible | possible | $572,000 |

**j.** **Can the Project be phased?** ■ **Yes** ☐ **No** If **yes**, provide cost breakdown by phases

| | **Project Cost** | **O&M Cost** | **Description of Phase** |
|---|---|---|---|
| **Phase 1** | $286,000 | | **Inputs** – data/research/model review, stakeholder inputs<br>**SVGMD**:<br>• Prepare RFP and hire consultant;<br>• Provide information to and oversee consultant work;<br>• Help facilitate gathering stakeholder/public input and public communications efforts.<br>**Consultant**:<br>• Review relevant historical data, documents and models;<br>• Conduct or oversee necessary additional research;<br>• Encourage and collect stakeholder and public input. |
| **Phase 2** | $286,000 | | **Outputs** – drafting plan, stakeholder reviews, edits, adoption, publish. Potential revisions following DWR review of adopted plan.<br>**SVGMD**:<br>• Provide information to and oversee consultant work;<br>• Help facilitate gathering stakeholder/public input and public communications efforts.<br>**Consultant**:<br>• Encourage and collect stakeholder and public input;<br>• Prepare, edit and finalize the Sierra Valley GSP. |

| | | | | |
|---|---|---|---|---|
| | | | | • Submit to DWR. Respond to/remedy any deficiencies identified by DWR. |
| | **Phase 3** | | | |
| | **Phase 4** | | | |
| **k.** | **Explain how operation and maintenance costs will be financed for the 20-year planning period for project implementation (not grant funded).** | | SVGMD fees will cover normal district operations. The Sustainable Groundwater Management Act requires the District to take on significant additional duties, including annual reporting, enforcement of the plan, regular review and updates, etc. We do not currently know how we will fund these additional activities in the 20-year horizon. | |
| **l.** | **Has a Cost/Benefit analysis been completed?** | | ☐ **Yes** ■ **No** | |
| **m.** | **Describe what impact there may be if the project is not funded (300 words or less)** | | **From the state of CA**: Violation of state law (Sustainable Groundwater Management Act of 2014 – AB-1739, SB-1168, SB-1319). Probationary status designation by State Water Resources Control Board. State intervention and the development of a State Board- created interim plan. Fees.<br>**On the ground**: Potential depletion of groundwater resources, concentration of contaminants, negative agricultural producer impacts, increased conversion of land to non-agricultural uses, etc. | |

*List all sources of funding.
Note: See Project Development Manual, Exhibit B, for assistance in completing this table (http://featherriver.org/documents/).

## VIII. PROJECT STATUS AND SCHEDULE

Please provide a status of the project, level of completion as well as a description of the activities planned for each project stage. If unknown, enter **TBD**.

| Project Stage | Check the Current Project Stage | Completed? | Description of Activities in Each Project Stage | Planned/ Actual Start Date (mm/yr) | Planned/ Actual Completion Date (mm/yr) |
|---|---|---|---|---|---|
| **a. Assessment and Evaluation** | ■ | ☐ Yes<br>■ No<br>☐ N/A | Hire Project Manager. Prepare and issue RFP. Hire consultant team, workplan agreement, etc. Consultant review of existing data sets, reports, research and models on | 2016<br><br>(It's really TBD, but to give an idea…) | 2017 |

| | | | | | |
|---|---|---|---|---|---|
| | | | Sierra Valley surface and groundwater. Additional research, data collection, as needed. Gather stakeholder input. Draft plan. | | |
| **b. Final Design** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | Draft plan review with stakeholders. Edit. Final Draft. Submit to DWR. Additional edits, as needed. Publish. | 2017 | 2018 |
| **c. Environmental Documentation (CEQA / NEPA)** | ☐ | ☐ Yes<br>☐ No<br>■ N/A | | | |
| **d. Permitting** | ☐ | ☐ Yes<br>☐ No<br>■ N/A | | | |
| **e. Construction Contracting** | ☐ | ☐ Yes<br>☐ No<br>■ N/A | | | |
| **f. Construction Implementation** | ☐ | ☐ Yes<br>☐ No<br>■ N/A | | | |
| **Provide explanation if more than one project stage is checked as current status** | | | | | |

## IX. PROJECT TECHNICAL FEASIBILITY

Please provide any related documents (date, title, author, and page numbers) that describe and confirm the technical feasibility of the project. See www.featherriver.org/catalog/index.php for documents gathered on the UFR Region.

| | |
|---|---|
| **a. List the adopted planning documents the proposed project is consistent with or supported by** (e.g. General Plans, UWMPs, GWMPs, Water Master Plan, Habitat Conservation Plans, TMDLs, Basin Plans, etc.). | California's Sustainable Groundwater Management Act of 2014 (not really a planning document, but it's the law mandating this project be completed) |
| **b. List technical reports and studies supporting the feasibility of this project.** | Periodic Technical Reports on Hydrogeologic Evaluation of Sierra Valley |
| **c. Concisely describe the scientific basis** (e.g. how much research has been conducted) **of the proposed project in 300 words or less.** | The SVGMD has been collecting extraction data and surface-to-water depth data from monitored wells for many years. Periodic Technical Reports on Hydrogeologic Evaluation have been completed and published. UC Davis is |

| | |
|---|---|
| | developing a model to improve understanding of the interaction of complex water systems, to forecast the effects of such phenomena as climate change and population growth, to test the effects of proposed changes in operations and policy, and to compare management alternatives. Burkhard Bohm has been contracted to study the recharge sources, quality, age, surface/ groundwater interactions and more of water in the Upper Middle Feather River Watershed (by end of 2015).<br>**In short**: Much data and modeling will be available to feed into the development of the GSP. Following is a list of source studies:<br>• CA DWR Bulletin 118, Sacramento River Hydrologic Region<br>• Technical Report on 2003-2005 Hydrogeologic Evaluation for Sierra Valley<br>• Technical Report on 2005-2011 Hydrogeologic Evaluation for Sierra Valley<br>• Technical Report on 2012-2014 Hydrogeologic Evaluation for Sierra Valley<br>• 2005 Sierra Valley Aquifer Tests<br>• Upper Middle Fork Physically Based Water Management Tool – Dr. M. Levent Kavvas, UC Davis (in development)<br>• Sierra Valley Well Assessment and Basin Management Plan - Burkhard Bohm (in development) |
| **d. Does the project implement green technology** (e.g. alternate forms of energy, recycled materials, LID techniques, etc.). | ☐ Yes ■ No ☐ N/A<br>If yes, please describe. |
| **e. Are you an Urban Water Supplier[1]?** | ☐ Yes ■ No ☐ N/A |
| **f. Are you are an Agricultural Water Supplier[2]?** | ☐ Yes ■ No ☐ N/A |
| **g. Is the project related to groundwater?** | ■ Yes ☐ No ☐ N/A<br>If yes, please indicate which groundwater basin.<br>Sierra Valley 5-12.01 (+ Chilcoot sub-basin) |

[1] Urban Water Supplier is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually.
[2] Agricultural Water Supplier is defined as a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding the acreage that receives recycled water.

# Climate Change – Project Assessment Checklist

This climate change project assessment tool allows project applicants and the planning team to assess project consistency with Proposition 84 plan standards and RWMG plan assessment standards. The tool is a written checklist that asks GHG emissions and adaptation/resiliency questions.

Name of project: ALS-10: Sierra Valley Groundwater Sustainability Plan

Project applicant: Sierra Valley Groundwater Management District

## GHG Emissions Assessment

### Project Construction Emissions

*(If you check any of the boxes, please see the attached worksheet)*

- ☐ The project requires nonroad or off-road engines, equipment, or vehicles to complete.
- ☐ The project requires materials to be transported to the project site.
- ☒ The project requires workers to commute to the project site.
- ☐ The project is expected to generate GHG emissions for other reasons.
- ☐ The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

### Operating Emissions

*(If you check any of the boxes, please see the attached worksheet)*

- ☐ The project requires energy to operate.
- ☐ The project will generate electricity.
- ☐ The project will proactively manage forests to reduce wildfire risk.
- ☐ The project will affect wetland acreage.
- ☐ The project will include new trees.
- ☐ Project operations are expected to generate or reduce GHG emissions for other reasons.

# Adaptation & Resiliency Assessment

## Water Supply

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water supply vulnerability issues:

- ☐ Not applicable
- ☐ Reduced snowmelt
- ☒ Unmet local water needs (drought)
- ☒ Increased invasive species

The Groundwater Sustainability Plan will help ensure that groundwater in the basin is actively managed and not subject to overdraft and therefore can continue to serve community wells, private homeowner wells and agricultural functions into the future during drought and non-drought years.

The plan may also contribute to declines in invasive plant species that thrive in parched soils.

## Water Demand

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water demand vulnerability issues:

- ☐ Not applicable
- ☒ Increasing seasonal water use variability
- ☒ Unmet in-stream flow requirements
- ☐ Climate-sensitive crops
- ☒ Groundwater drought resiliency
- ☒ Water curtailment effectiveness

The Sierra Valley Groundwater Sustainability Plan will address overdraft occurring during seasonal irrigation in order to attain sustainability of groundwater resources in the basin. By law, the plan must also address surface water-groundwater interactions, which may well contribute to increased flow in the upper Middle Fork Feather River headwaters and channels. Surface water curtailment effectiveness may depend on sources of groundwater being available for stock and crops.

## Water Quality

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water quality vulnerability issues:

- ☐ Not applicable
- ☐ Increasing catastrophic wildfires
- ☐ Eutrophication (excessive nutrient pollution in a waterbody, often followed by algae blooms and other related water quality issues)
- ☒ Seasonal low flows and limited abilities for waterbodies to assimilate pollution

☐ Water treatment facility operations

☒ Unmet beneficial uses (municipal and domestic water supply, water contact recreation, cold freshwater habitat, spawning habitat, wildlife habitat, etc.)

The Sierra Valley Groundwater Sustainability Plan has the potential to affect surface water flows and therefore unmet beneficial uses, such as riparian habitat in the Valley's freshwater marshes, through planning around surface-groundwater interactions.

## Flooding

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority flooding vulnerability issues:

☒ Not applicable

☐ Aging critical flood protection

☐ Wildfires

☐ Critical infrastructure in a floodplain

☐ Insufficient flood control facilities

## Ecosystem and Habitat

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority ecosystem and habitat vulnerability issues:

☒ Not applicable

☐ Climate-sensitive fauna or flora

☐ Recreation and economic activity

☐ Quantified environmental flow requirements

☐ Erosion and sedimentation

☐ Endangered or threatened species

☐ Fragmented habitat

## Hydropower

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority hydropower vulnerability issues:

☒ Not applicable

☐ Reduced hydropower output

ALS-10: Sierra Valley Groundwater Sustainability Plan

**GHG Emissions Analysis**

**Project Construction Emissions**

☐ The project requires non-road or off-road engines, equipment, or vehicles to complete. If yes:

| Type of Equipment | Maximum Number Per Day | Total 8-Hour Days in Operation | Total $MTCO_2e$ |
|---|---|---|---|
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | **Total Emissions** | **0** |

☐ The project requires materials to be transported to the project site. If yes:

| Total Number of Round Trips | Average Trip Distance (Miles) | Total $MTCO_2e$ |
|---|---|---|
| | | **0** |

☒ The project requires workers to commute to the project site. If yes:

| Average Number of Workers | Total Number of Workdays | Average Round Trip Distance Traveled (Miles) | Total $MTCO_2e$ |
|---|---|---|---|
| 2 | 20 | 300 | **4** |

☐ The project is expected to generate GHG emissions for other reasons. If yes, explain:

| |
|---|
| |

☒ The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

ALS-10: Sierra Valley Groundwater Sustainability Plan

**Project Operating Emissions**

☐ The project requires energy to operate. If yes:

| Annual Energy Needed | Unit | Total $MTCO_2e$ |
|---|---|---|
| | kWh (Electricity) | **0** |
| | Therm (Natural Gas) | **0** |

☐ The project will generate electricity. If yes:

| Annual kWh Generated | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

☐ The project will proactively manage forests to reduce wildfire risk. If yes:

| Acres Protected from Wildfire | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

☐ The project will affect wetland acreage. If yes:

| Acres of Protected Wetlands | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

☐ The project will include new trees. If yes:

| Acres of Trees Planted | Total $MTCO_2e$ |
|---|---|
| 0 | **0** |

*A negative value indicates GHG reductions

☒ Project operations are expected to generate or reduce GHG emissions for other reasons. If yes, explain:

There is potential for this project to reduce GHG emissions, if, for example, agricultural pumping (and therefore electricity consumption) is reduced. Overall, the plan itself is not expected to impact GHG.

**GHG Emissions Summary**

| | |
|---|---|
| Construction and development will generate approximately: | 4 $MTCO_2e$ |
| In a given year, operation of the project will result in: | 0 $MTCO_2e$ |

# UPPER FEATHER RIVER IRWM

## PROJECT INFORMATION FORM

**Please submit by 5:00 p.m. on August 3, 2015, to UFR.contact@gmail.com**

Please provide information in the tables below:

### I. PROJECT PROPONENT INFORMATION

| | |
|---|---|
| **Agency / Organization** | Sierra Valley Resource Conservation District |
| **Name of Primary Contact** | Jeff Carmichael – SVRCD Board of Directors |
| **Name of Secondary Contact** | Bill Nunes – SVRCD Board of Directors |
| **Mailing Address** | PO Box 3562, Quincy CA 95971 |
| **E-mail** | sierravalleyrcd@gmail.com or bnunes1964@gmail.com |
| **Phone** | (530) 994-3222 |
| **Other Cooperating Agencies / Organizations / Stakeholders** | County of Sierra, County of Plumas, and County of Lassen |
| **Is your agency/organization committed to the project through completion? If not, please explain** | Yes. The Sierra Valley Resource Conservation District (SVRCD) was established in 1947, and is one of the oldest Special Districts in California, to coordinate local conservation and restoration programs since the 1940's. Resource Conservation Districts (RCDs) were organized for the purposes of soil, water and related natural resource conservation. Categories of focused interest for the Sierra Valley RCD include natural disaster readiness & prevention, agricultural stability, sustainable urban development, wildlife habitat, recreation, watershed management, protection of water quality and quantity, and the optimum treatment of each resource and lands according to the need. The SVRCD has demonstrated success with this wide variety of resource challenges. |

### II. GENERAL PROJECT INFORMATION

| | |
|---|---|
| **Project Title** | ALS-11: Cold Stream AG & Fire Storage Impoundment |
| **Project Category** | ■ **Agricultural Land Stewardship**<br>☐ **Floodplains/Meadows/Waterbodies**<br>☐ **Municipal Services**<br>☐ **Tribal Advisory Committee**<br>☐ **Uplands/Forest** |
| **Project Description**<br>(Briefly describe the project, in 300 words or less) | The Sierra Valley Water Company operates and maintains a diversion dam and conveyance channel allowing water from the Little Truckee River to be diverted under specific conditions and during a specific season into the Feather River watershed (Sierra Valley). This inter-basin transfer allows water to be diverted for irrigation purposes in Sierra Valley |

| | |
|---|---|
| | (Sierra and Plumas Counties) between the months of March and September each year. While water is available as of March 15, peak irrigation need for this water and timing for optimizing the resource occurs later in the season. As a result, the water allotment is currently underutilized due to timing.<br><br>The concept is consideration of an earthen dam located in a feasible location within the Coldstream drainage south of Sierraville to store agricultural water enabling better utilization and more efficient use of available supplies, provide flood control and water storage for fire suppression that is accessible, functional and reliable. Also included within the concept for consideration is a small hydro electric plant. Limited recreational opportunities may occur but the first phase of this undertaking is a technical feasibility study. This phase will identify engineering and geotechnical findings, mapping and soil/water conditions, biological conditions, and issues of concern to the consideration of future phasing of the project. |
| **Project Location Description** (e.g., along the south bank of stream/river between river miles or miles from Towns/intersection and/or address): | T19N R15E Sections 29 & 32 |
| **Latitude:** | 39.5598265/39.552084 |
| **Longitude:** | -120.3257879/-120.332912 |

## III. APPLICABLE IRWM PLAN OBJECTIVES ADDRESSED

For each of the objectives addressed by the project, provide a one to two sentence description of how the project contributes to attaining the objective and how the project outcomes will be quantified. If the project does not address *any* of the IRWM plan objectives, provide a one to two sentence description of how the project relates to a challenge or opportunity of the Region.

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Restore natural hydrologic functions. | ☐ Yes<br>■ N/A | | |
| Reduce potential for catastrophic wildland fires in the Region. | ■ Yes<br>☐ N/A | Readily accessible water for initial attack and long term suppression fire suppression actions | Acre Feet of water available for fire suppression actions |
| Build communication and collaboration among water resources stakeholders in the Region. | ■ Yes<br>☐ N/A | There is an opportunity to enhance and further partnership capacity with the Sierra Valley RCD, CALFIRE, | Public Meetings and Partnerships |

| | | | |
|---|---|---|---|
| | | Sierra Valley Mutual Water Company, U.S. Forest Service, and local Volunteer Fire Departments | |
| Work with DWR to develop strategies and actions for the management, operation, and control of SWP facilities in the Upper Feather River Watershed in order to increase water supply, recreational, and environmental benefits to the Region. | ■ Yes<br>☐ N/A | Implementation of BMP's Increasing the efficiency and timing of storage and of the water conveyance systems. | Sediment Load and Water Delivery |
| Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality. | ☐ Yes<br>■ N/A | | |
| Continue to actively engage in FERC relicensing of hydroelectric facilities in the Region. | ☐ Yes<br>■ N/A | | |
| Address economic challenges of municipal service providers to serve customers. | ☐ Yes<br>■ N/A | | |
| Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the RWQC Basin Plan. | ■ Yes<br>☐ N/A | Implementation of BMP's Increasing the efficiency of the storage and timing of water delivery will steward the continued use of the land though allowing the efficient conveyance of water to flow to support agricultural use and support aquatic biota during drought years. | The impoundment will serve as a settling pond, reducing sediment load entering lower diversions and channels. The impoundment will also serve this function in its flood-control capacity, by enabling a controlled release, reducing sediment carrying capacity. Later season release of water from the impoundment into the channels will be of lower temperature due to deep water storage, possibly lowering |

| | | | |
|---|---|---|---|
| | | | temperatures in downstream channels and reducing the likelihood of eutrophication/other warm water issues in a cold water fishery. |
| Address water resources and wastewater needs of DACs and Native Americans. | ☐ Yes<br>■ N/A | | |
| Coordinate management of recharge areas and protect groundwater resources. | ■ Yes<br>☐ N/ A | Increasing the efficiency of storage and timing of water delivery to agricultural water purveyors will ultimately assist groundwater recharge and long term affects to groundwater | Water Delivery<br><br>Groundwater Recharge levels |
| Improve coordination of land use and water resources planning. | ■ Yes<br>☐ N/A | There is an opportunity to enhance and further partnership capacity with NRCS, U.S. Forest Service, CALFIRE, Sierra Valley Mutual Water Company, CA DWR, County of Sierra and local Volunteer Fire Department. | Public Meetings and Partnerships |
| Maximize agricultural, environmental and municipal water use efficiency. | ■ Yes<br>☐ N/A | Increasing the efficiency of the storage and timing of water delivery will steward the continued use of the land though allowing the efficient conveyance of water to flow to support agricultural use. This especially critical during drought years. | Improvements in flows to Water Conveyance Systems (Acre Feet Delivered) |
| Effectively address climate change adaptation and/or mitigation in water resources management. | ■ Yes<br>☐ N/A | Development of storage facilities to store water is a critical component in addressing the potentially effects of climate change and outlined as a critical step within the recent CA State Water Bond. | Acre Feet of water available for continuance of agricultural production and fire suppression actions |
| Improve efficiency and reliability of water supply and other water-related infrastructure. | ■ Yes<br>☐ N/A | Development of storage facilities to store water is a critical component in addressing the potential effects of climate change and outlined as a critical step within the recent CA State Water Bond. | Acre Feet of water available for continuance of agricultural production and fire suppression actions |

| | | | |
|---|---|---|---|
| Enhance public awareness and understanding of water management issues and needs. | ■ Yes<br>☐ N/A | Furtherance of partnership capacity with the Sierra Valley RCD, Sierra Valley Mutual Water Company, U.S. Forest Service, NRCS, CALFIRE, CA DWR, County of Sierra, and local Volunteer Fire Departments. | Public Meetings and Partnerships |
| Address economic challenges of agricultural producers. | ■ Yes<br>☐ N/A | Development of storage facilities to store water is a critical component in addressing the potentially disastrous effects of drought to agricultural producers in ensuring a reliable source of water for agricultural operations. | Acre Feet of water available for continuance of agricultural operations& production. |
| Work with counties/ communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding. | ■ Yes<br>☐ N/A | Current and demonstrated capacity exists with the Sierra Valley RCD, CA DFW, Sierra Nevada Conservancy, Sierra County, US. Forest Service, and NRCS | Partnerships with the Sierra Valley RCD, Sierra Valley Mutual Water Company, U.S. Forest Service, NRCS, CALFIRE, CA DWR, County of Sierra, and local Volunteer Fire Departments. |

If no objectives are addressed, describe how the project relates to a challenge or opportunity for the Region:

| |
|---|
| |

## IV. PROJECT IMPACTS AND BENEFITS

Please provide a summary of the expected project benefits and impacts in the table below or check N/A if not applicable; **do no leave a blank cell.** Note that DWR encourages multi-benefit projects.

| **If applicable, describe benefits or impacts of the project with respect to:** | | |
|---|---|---|
| **a. Native American Tribal Communities** | ■ N/A | |
| **b. Disadvantaged Communities**[1] | ☐ N/A | The community of Sierraville is a designated disadvantaged community. This impoundment could be utilized to capture additional run-off and stormwater as a potential primary or secondary source of municipal water for Sierraville, which is currently having water supply issues. |
| **c. Environmental Justice**[2] | ■ N/A | |

| | | |
|---|---|---|
| **d. Drought Preparedness** | ☐ N/A | Development of storage facilities to store water is a critical component in addressing the potential effects of drought and specifically targeted as a priority within the State of California Drought Management Plan. Later-season release of water via the impoundment will mitigate the effects of drought with water supply for agriculture as well as the ecosystem. |
| **e. Assist the region in adapting to effects of climate change[3]** | ☐ N/A | Development of storage facilities to store water is a critical component in addressing the potential effects of climate change and outlined as a critical step and priority within the recent CA State Water Bond. Later-season release of water via the impoundment will mitigate the effects of climate change with water supply for agriculture and the ecosystem. |
| **f. Generation or reduction of greenhouse gas emissions (e.g. green technology)** | ☐ N/A | The development of the Coldstream Agricultural and Fire Storage Improvement Project Feasibility Analysis will incorporate measures and considerations which assist in the reduction of GHG emissions. For example, wildfire suppression activity using the impoundment as much-needed dip site could prevent a small fire from becoming catastrophic (and thereby creating GHG on a large scale). In addition, sustained later season water release will improve wetland riparian plant production, which will be able to sequester additional carbon. |
| **g. Other expected impacts or benefits that are not already mentioned elsewhere** | ☐ N/A | This proposed storage reservoir or impoundment addresses all of the approved goals of the IRWMP Management Group in that it can improve water quality and water supply availability; it can protect and improve the health of the environment through more consistent and sustained flows to support existing wetlands and ecosystems through timed and controlled release of available water supply. It would also provide storage of water for fire suppression efforts to contain local wildfires early, thereby preventing catastrophic events |

| | | |
|---|---|---|
| | | such as the Cottonwood fire of 1994 and many others since. It can promote the economic conditions of the region by providing additional water storage for agricultural operations and for limited recreational opportunities, and it has direct correlation to preserving working landscapes in Sierra Valley. Correlation to the IRWM Objectives include: 2, 3, 4, 13, 14, 16, 17, 18. Resource Management Strategies 1, 3, 8, 13, 24, and 26 are all well-served by this proposed project. |

[1] A Disadvantaged Community is defined as a community with an annual median household (MHI) income that is less than 80 percent of the Statewide annual MHI. DWR's DAC mapping is available on the UFR website (http://featherriver.org/maps/) .
[2] Environmental Justice is defined as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies. An example of environmental justice benefit would be to improve conditions (e.g. water supply, flooding, sanitation) in an area of racial minorities.
[3] Climate change effects are likely to include increased flooding, extended drought, and associated secondary effects such as increased wildfire risk, erosion, and sedimentation.

DWR encourages multiple benefit projects which address one or more of the following elements (PRC §75026(a). Indicate which elements are addressed by your project.

| | | | |
|---|---|---|---|
| a. Water supply reliability, water conservation, water use efficiency | ■ Yes ☐ N/A | g. Drinking water treatment and distribution | ☐ Yes ■ N/A |
| b. Stormwater capture, storage, clean-up, treatment, management | ■ Yes ☐ N/A | h. Watershed protection and management | ■ Yes ☐ N/A |
| c. Removal of invasive non-native species, creation/enhancement of wetlands, acquisition/protection/restoration of open space and watershed lands | ■ Yes ☐ N/A | i. Contaminant and salt removal through reclamation/desalting, other treatment technologies and conveyance of recycled water for distribution to users | ☐ Yes ■ N/A |
| d. Non-point source pollution reduction, management and monitoring | ■ Yes ☐ N/A | j. Planning and implementation of multipurpose flood management programs | ■ Yes ☐ N/A |
| e. Groundwater recharge and management projects | ■ Yes ☐ N/A | k. Ecosystem and fisheries restoration and protection | ■ Yes ☐ N/A |
| f. Water banking, exchange, reclamation, and improvement of water quality | ■ Yes ☐ N/A | | |

## V. RESOURCE MANAGEMENT STRATEGIES

For each resource management strategy (RMS) employed by the project, provide a one to two sentence description in the table below of how the project incorporates the strategy. A description of the RMS can be found in Volume 2 of the 2013 California Water Plan (http://featherriver.org/2013-california-water-plan-update/).

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Reduce Water Demand | | |
| Agricultural Water Use Efficiency | ■ Yes ☐ No | Increasing the efficiency of the storage and timing of water delivery will steward the continued use of the land though allowing the efficient conveyance of water to flow to support agricultural use. This especially critical during drought years. |
| Urban water use efficiency | ☐ Yes ■ No | |
| Improve Flood Management | | |
| Flood management | ■ Yes ☐ No | The proposed reservoir will provide multiple benefits specific to flood control for the town of Sierraville especially the prevention of erosion and sedimentation and related impacts upon downstream residential properties which occurred during the floods of 1986 and 1997. |
| Improve Operational Efficiency and Transfers | | |
| Conveyance – regional/local | ■ Yes ☐ No | The Sierra Valley Water Company operates and maintains a diversion dam and conveyance channel allowing water from the Little Truckee River to be diverted under specific conditions and during a specific season into the Feather River watershed (Sierra Valley). This inter-basin transfer allows water to be diverted for irrigation purposes in Sierra Valley (Sierra and Plumas Counties) between the months of March and September each year. While water is available as of March 15, peak irrigation need for this water and timing for optimizing the resource occurs later in the season. As a result, the water allotment is currently underutilized due to timing. The construction of the storage facility would allow for the utilization of stored agricultural water enabling better utilization through timing and more efficient use of available supplies. |
| System reoperation | ☐ Yes ■ No | |
| Water transfers | ■ Yes ☐ No | The Sierra Valley Water Company operates and maintains a diversion dam and conveyance channel allowing water from the Little Truckee |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| | | River to be diverted under specific conditions and during a specific season into the Feather River watershed (Sierra Valley). This inter-basin transfer allows water to be diverted for irrigation purposes in Sierra Valley (Sierra and Plumas Counties) between the months of March and September each year. While water is available as of March 15, peak irrigation need for this water and timing for optimizing the resource occurs later in the season. As a result, the water allotment is currently underutilized due to timing. The construction of the storage facility would allow for the utilization of stored agricultural water enabling better utilization through timing and more efficient use of available supplies. |
| Increase Water Supply | | |
| Conjunctive management | ■ Yes ☐ No | Increasing the efficiency of storage and timing of water delivery to agricultural water purveyors will ultimately assist groundwater recharge and long-term affects to groundwater |
| Precipitation Enhancement | ☐ Yes ■ No | |
| Municipal recycled water | ☐ Yes ■ No | |
| Surface storage – regional/local | ■ Yes ☐ No | The proposed storage reservoir or impoundment addresses all of the approved goals of the IRWMP Management Group in that it can improve water quality and water supply availability/storage; it can protect and improve the health of the environment through more consistent and sustained flows to support existing wetlands and ecosystems through timed and controlled release of available water supply |
| Improve Water Quality | | |
| Drinking water treatment and distribution | ☐ Yes ■ No | |
| Groundwater remediation/aquifer remediation | ☐ Yes ■ No | |
| Matching water quality to water use | ■ Yes ☐ No | The town of Sierraville is having water supply issues and is looking at the possibility of drilling a municipal well. The impoundment has the potential to serve as a clean source (e.g., no arsenic – which is an issue in other nearby municipal wells) water source for the town. This water will also be of a suitable quality for fire suppression activities, as well as |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| | | agriculture.<br>Project matches water of cooler temperatures to instream and ecosystem uses. |
| Pollution prevention | ■ Yes ☐ No | The storage reservoir would assist in alleviating the existing levels of erosion, sedimentation and turbidity, while increasing later-season flow rates which will improve dilution of any contaminants entering the system. This action would benefit water quality and reduce sediment loading which ultimately reduce likelihood of 303D Listed Watershed Conditions. |
| Salt and salinity management | ☐ Yes ■ No | |
| Urban storm water runoff management | ☐ Yes ■ No | |
| Practice Resource Stewardship | | |
| Agricultural land stewardship | ■ Yes ☐ No | The storage reservoir project is directly correlated to the IRWM Objectives include: 2, 3, 4, 13, 14, 16, 17, and 18. Resource Management Strategies 1, 3, 8, 13, 24, and 26 are all well-served by this proposed project. |
| Ecosystem restoration | ■ Yes ☐ No | The storage reservoir project is directly correlated to the IRWM Objectives include: 2, 3, 4, 13, 14, 16, 17, and 18. Resource Management Strategies 1, 3, 8, 13, 24, and 26 are all well-served by this proposed project. |
| Forest management | ■ Yes ☐ No | The storage reservoir would provide a readily accessible water source for initial attack and long term suppression fire suppression actions. Ultimately, the project would assist with an expedient increase in initial attack response time and therefore a reduction in forested land lost due to the effects of catastrophic wildfire. |
| Land use planning and management | ■ Yes ☐ No | Project adheres to CEQA/NEPA and Sierra County Land Use Planning Policies and Regulations. The feasibility study will include input from a variety of stakeholders, including water rights holders, County Planning Department, environmental advocates and more, all of which will contribute to the planning process. |
| Recharge area protection | ■ Yes ☐ No | Increasing the efficiency of storage and timing of water delivery to agricultural water purveyors will ultimately assist groundwater recharge and long term affects to groundwater |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Sediment management | ■ Yes ☐ No | The storage reservoir would assist in alleviating the existing levels of erosion, sedimentation and turbidity. This action would benefit water quality and reduce sediment loading which ultimately yield improvements to/prevention of 303D Listed Watershed Conditions. |
| Watershed management | ■ Yes ☐ No | The storage reservoir would assist in alleviating the existing levels of erosion, sedimentation and turbidity. This action would benefit water quality and reduce sediment loading which ultimately yield improvements to/prevention of 303D Listed Watershed Conditions. Better watershed management will be accomplished via later-season release of water to the Sierra Valley wetland areas. |
| People and Water | | |
| Economic incentives | ☐ Yes ■ No | There is an opportunity to foster a reliable and dependable water source for the agricultural producers in Sierra Valley. Livestock production and agricultural operation opportunities and camping opportunities which remains increasingly vital to the economies of the communities within Sierra County. (checking no, but leaving text, as there is potential for economic stimulation – just doesn't meet more narrow definition of using fines, rebates, loans, etc.) |
| Outreach and engagement | ■ Yes ☐ No | There is an opportunity to enhance and further partnership capacity with agricultural producers, land managers, NRCS, FSA, Sierra Valley Groundwater Management District, Sierra County, BLM, CA DFW, CA DWR, U.S. Forest Service, CA DWR, CA WQCB and representatives of the IRWM as well as through public scoping and outreach programs. |
| Water and culture | ■ Yes ☐ No | There is an opportunity to enhance and further partnership capacity with agricultural producers, land managers, and the citizens of Sierra County through public scoping and outreach programs. Helps preserve historic ranches by improving adjudicated water delivery. Support for bird watchers. |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Water-dependent recreation | ■ Yes ☐ No | There is an opportunity to further enhance water dependent recreation with the potential development of additional angling opportunities and camping opportunities which remains increasingly vital to the economies of the communities within Sierra County. |
| Wastewater/NPDES | ☐ Yes ■ No | |

Other RMS addressed and explanation:

## VI. PROJECT COST AND FINANCING

Please provide any estimates of project cost, sources of funding, and operation and maintenance costs, as well as the source of the project cost in the table below.

**PROJECT BUDGET**

Project serves a need of a DAC?: ■ Yes ☐ No
Funding Match Waiver request?: ■ Yes ☐ No

| | Category | Requested Grant Amount | Cost Share: Non-State Fund Source* (Funding Match) | Cost Share: Other State Fund Source* | Total Cost |
|---|---|---|---|---|---|
| a. | Direct Project Administration | $30,000 | 0 | 0 | $30,000 |
| b. | Land Purchase/Easement | 0 | 0 | 0 | 0 |
| c. | Planning/Design/Engineering / Environmental | $270,000 | 0 | 0 | $270,000 |
| d. | Construction/Implementation | 0 | 0 | 0 | |
| e. | Environmental Compliance/ Mitigation/Enhancement | 0 | 0 | 0 | 0 |
| f. | Construction Administration | 0 | 0 | 0 | 0 |
| g. | Other Costs | 0 | 0 | 0 | 0 |
| h. | Construction/Implementation Contingency | 0 | 0 | 0 | 0 |
| i. | Grand Total (Sum rows (a) through (h) for each column) | $300,000 | 0 | 0 | $300,000 |

| j. | Can the Project be phased? ■ Yes ☐ No If **yes**, provide cost breakdown by phases | | | |
|---|---|---|---|---|
| | | Project Cost | O&M Cost | Description of Phase |
| | Phase 1 | $300,000 | 0 | This task will be a detailed engineering analysis |

| | | | | |
|---|---|---|---|---|
| | | | | supported by geotechnical work and soil/hydrology analyses required for the evaluation of any proposed water impoundment. This analysis involves extensive mapping, field work, and design considerations that adapt the impoundment to on-the-ground conditions. It is estimated that two seasons of field work that will involve geotechnical testing and study as well as biological baseline studies will be a requirement. The result of this phase will be a complete feasibility study supported by field work, testing and analysis as well as engineering alternatives, mapping, and cost estimates for evaluation and determination of phase 2 of this three phase project and whether it will be undertaken and/or pursued. |
| | **Phase 2** | Contingent on Results of Phase I | 0 | Phase 2: This phase would be the preparation of specific engineering design plans using a preferred alternative from the phase one study and would include the preparation of the required CEQA/NEPA analysis. The CEQA/NEPA analyses would be undertaken only if the phase one results proved feasible, cost effective, and environmentally sound. This phase is estimated to require 24 months. |
| | **Phase 3** | Contingent on Results of Phase I | 0 | Phase 3: This phase would be permitting, final design, bidding, and construction. This phase is estimated to require 24 months. |
| | **Phase 4** | N/A | | |

| | | |
|---|---|---|
| **k.** | **Explain how operation and maintenance costs will be financed for the 20-year planning period for project implementation (not grant funded).** | Future operation and maintenance costs would generated by the Sierra Valley Mutual Water Company Shareholder Fees |
| **l.** | **Has a Cost/Benefit analysis been completed?** | ☐ **Yes** ■ No |
| **m.** | **Describe what impact there may be if the project is not funded (300 words or less)** | The availability or more specifically the lack of availability of water within the State of California has reached a critical level. Given the continued and future impacts of climate change, the availability of water for the production of agricultural crops, livestock production, and fire suppression has reached a level where conservation measures are only a part of the key solution. Ultimately there is a need for additional reservoir storage capacity across the State, as noted within the California Drought Management Plan as well as the 2015 California Water Bond. This project would contribute to our State's goal in developing additional storage capacity. Without the additional storage capacity given the current future impacts of climate change, livestock operations, agriculture production, fire suppression capabilities as well as the economic vitality of Sierra and Plumas County would be marginalized. |

*List all sources of funding.
Note: See Project Development Manual, Exhibit B, for assistance in completing this table (http://featherriver.org/documents/).

## VIII. PROJECT STATUS AND SCHEDULE

Please provide a status of the project, level of completion as well as a description of the activities planned for each project stage. If unknown, enter **TBD**.

| Project Stage | Check the Current Project Stage | Completed? | Description of Activities in Each Project Stage | Planned/ Actual Start Date (mm/yr) | Planned/ Actual Completion Date (mm/yr) |
|---|---|---|---|---|---|
| **a. Assessment and Evaluation** | ■ | ☐ Yes<br>■ No<br>☐ N/A | This task will be a detailed engineering analysis supported by geotechnical work and soil/hydrology analyses required for the evaluation of any proposed water impoundment. This analysis involves | 09/01/2015 | 09/31/2017 |

| | | | | | |
|---|---|---|---|---|---|
| | | | extensive mapping, field work, and design considerations that adapt the impoundment to on-the-ground conditions. It is estimated that two seasons of field work that will involve geotechnical testing and study as well as biological baseline studies will be a requirement. The result of this phase will be a complete feasibility study supported by field work, testing and analysis as well as engineering alternatives, mapping, and cost estimates for evaluation and determination of phase 2 of this three phase project and whether it will be undertaken and/or pursued. | | |
| **b. Final Design** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | This phase would be the preparation of specific engineering design plans using a preferred alternative from the phase one study and would include the preparation of the required CEQA/NEPA | 10/01/17 | 10/01/19 |

| | | | | | |
|---|---|---|---|---|---|
| | | | analysis. The CEQA/NEPA analyses would be undertaken only if the phase one results proved feasible, cost effective, and environmentally sound. This phase is estimated to require 24 months. (Concurrent Action with CEQA/NEPA) | | |
| **c. Environmental Documentation (CEQA / NEPA)** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | This phase would be the preparation of specific engineering design plans using a preferred alternative from the phase one study and would include the preparation of the required CEQA/NEPA analysis. The CEQA/NEPA analyses would be undertaken only if the phase one results proved feasible, cost effective, and environmentally sound. This phase is estimated to require 24 months. (Concurrent Action with CEQA/NEPA) | 10/01/17 | 10/01/19 |
| **d. Permitting** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | This phase would be permitting, final design, bidding, and construction. This phase is estimated to require 24 months. (Concurrent Action with Project Stage | 10/02/19 | 10/02/21 |

| | | | | | |
|---|---|---|---|---|---|
| | | | D, E, & F) | | |
| **e. Construction Contracting** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | This phase would be permitting, final design, bidding, and construction. This phase is estimated to require 24 months. (Concurrent Action with Project Stage D, E, & F) | 10/02/19 | 10/02/21 |
| **f. Construction Implementation** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | This phase would be permitting, final design, bidding, and construction. This phase is estimated to require 24 months. (Concurrent Action with Project Stage D, E, & F) | 10/02/19 | 10/02/21 |
| **Provide explanation if more than one project stage is checked as current status** | | | | | |

## IX. PROJECT TECHNICAL FEASIBILITY

Please provide any related documents (date, title, author, and page numbers) that describe and confirm the technical feasibility of the project. See www.featherriver.org/catalog/index.php for documents gathered on the UFR Region.

| | |
|---|---|
| **a. List the adopted planning documents the proposed project is consistent with or supported by** (e.g. General Plans, UWMPs, GWMPs, Water Master Plan, Habitat Conservation Plans, TMDLs, Basin Plans, etc.). | Sierra Valley Coordinated Resource Management Plan (2002), Sierra Valley Watershed Assessment (2005), IRWM – Upper Feather River Watershed Plan (2005), Sierra County General Plan, Lassen County General Plan, Plumas County General Plan, Tahoe National Forest – Land & Resource Management Plan, Sierra Valley RCD – Watershed Action Plan (2007), Water Quality Plan for the Lahontan Region; California DWR Bulletin 118 and the Northeastern Counties Investigation. Sierra Valley Groundwater Management District-Management Plan and annual updates; the DWP Environmental Study for Sierra Valley dated 1973; the Upper Feather River Watershed (UFRW) Irrigation |

| | |
|---|---|
| | Discharge Management Program (2007) |
| **b. List technical reports and studies supporting the feasibility of this project.** | Numerous studies and reports have been prepared and published regarding the Sierra Valley. Such studies include but are not limited to the Sierra Valley Groundwater Management District-Management Plan and annual updates; the DWP Environmental Study for Sierra Valley dated 1973; the Upper Feather River Watershed (UFRW) Irrigation Discharge Management Program dated 2007; Water Quality Plan for the Lahontan Region; California DWR Bulletin 118 and the Northeastern Counties Investigation; SCS Reports for Sierra Valley; and Biological Baseline Analysis for the Sierra Valley Marsh prepared by SF State University Field Campus. The proposed feasibility study will provide additional specific data illustrating the need and benefits of the proposed project. |
| **c. Concisely describe the scientific basis** (e.g. how much research has been conducted) **of the proposed project in 300 words or less.** | Phase 1 (Feasibility Analysis) is consideration of an earthen dam located in a feasible location within the Coldstream drainage south of Sierraville to store agricultural water enabling better utilization and more efficient use of available supplies, provide flood control and water storage for fire suppression that is accessible, functional and reliable. Also included within the concept for consideration is a small hydro electric plant. Limited recreational opportunities may occur but the first phase of this undertaking is a technical feasibility study. <u>This phase will identify engineering and geotechnical findings, mapping and soil/water conditions, biological conditions, and issues of concern to the consideration of future phasing of the project.</u> |

| | |
|---|---|
| **d. Does the project implement green technology** (e.g. alternate forms of energy, recycled materials, LID techniques, etc.). | ■ Yes ☐ No ☐ N/A<br>If yes, please describe.<br><br>The development of the Feasibility Analysis will incorporate measures and considerations which assist in the reduction of GHD emissions. |
| **e. Are you an Urban Water Supplier[1]?** | ☐ Yes ☐ No ■ N/A |
| **f. Are you are an Agricultural Water Supplier[2]?** | ☐ Yes ☐ No ■ N/A |
| **g. Is the project related to groundwater?** | ■ Yes ☐ No ☐ N/A<br>If yes, please indicate which groundwater basin.<br><br>**Middle Fork Feather River HUC 180201232** |

[1] Urban Water Supplier is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually.

[2] Agricultural Water Supplier is defined as a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding the acreage that receives recycled water.

# Climate Change – Project Assessment Checklist

This climate change project assessment tool allows project applicants and the planning team to assess project consistency with Proposition 84 plan standards and RWMG plan assessment standards. The tool is a written checklist that asks GHG emissions and adaptation/resiliency questions.

Name of project: ALS-11: Cold Stream Agricultural & Fire Storage Impoundment

Project applicant: Sierra Valley Resource Conservation District

## GHG Emissions Assessment

### Project Construction Emissions

*(If you check any of the boxes, please see the attached worksheet)*

- ☐ The project requires nonroad or off-road engines, equipment, or vehicles to complete.
- ☐ The project requires materials to be transported to the project site.
- ☐ The project requires workers to commute to the project site.
- ☐ The project is expected to generate GHG emissions for other reasons.
- ☐ The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

### Operating Emissions

*(If you check any of the boxes, please see the attached worksheet)*

- ☐ The project requires energy to operate.
- ☐ The project will generate electricity.
- ☐ The project will proactively manage forests to reduce wildfire risk.
- ☐ The project will affect wetland acreage.
- ☐ The project will include new trees.
- ☐ Project operations are expected to generate or reduce GHG emissions for other reasons.

# Adaptation & Resiliency Assessment

## Water Supply

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water supply vulnerability issues:

- ☒ Not applicable
- ☐ Reduced snowmelt
- ☐ Unmet local water needs (drought)
- ☐ Increased invasive species

Project is a Feasibility Study only. No construction or Greenhouse Gas emissions associated with this project.

## Water Demand

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water demand vulnerability issues:

- ☒ Not applicable
- ☐ Increasing seasonal water use variability
- ☐ Unmet in-stream flow requirements
- ☐ Climate-sensitive crops
- ☐ Groundwater drought resiliency
- ☐ Water curtailment effectiveness

Project is a Feasibility Study only. No construction or Greenhouse Gas emissions associated with this project.

## Water Quality

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water quality vulnerability issues:

- ☒ Not applicable
- ☐ Increasing catastrophic wildfires
- ☐ Eutrophication (excessive nutrient pollution in a waterbody, often followed by algae blooms and other related water quality issues)
- ☐ Seasonal low flows and limited abilities for waterbodies to assimilate pollution
- ☐ Water treatment facility operations

☐ Unmet beneficial uses (municipal and domestic water supply, water contact recreation, cold freshwater habitat, spawning habitat, wildlife habitat, etc.)

Project is a Feasibility Study only. No construction or Greenhouse Gas emissions associated with this project.

## Flooding

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority flooding vulnerability issues:

☒ Not applicable
☐ Aging critical flood protection
☐ Wildfires
☐ Critical infrastructure in a floodplain
☐ Insufficient flood control facilities

Project is a Feasibility Study only. No construction or Greenhouse Gas emissions associated with this project.

## Ecosystem and Habitat

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority ecosystem and habitat vulnerability issues:

☒ Not applicable
☐ Climate-sensitive fauna or flora
☐ Recreation and economic activity
☐ Quantified environmental flow requirements
☐ Erosion and sedimentation
☐ Endangered or threatened species
☐ Fragmented habitat

Project is a Feasibility Study only. No construction or Greenhouse Gas emissions associated with this project.

## Hydropower

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority hydropower vulnerability issues:

☒ Not applicable
☐ Reduced hydropower output

Project is a Feasibility Study only. No construction or Greenhouse Gas emissions associated with this project.

# UPPER FEATHER RIVER IRWM

## PROJECT INFORMATION FORM

**Please submit by 5:00 p.m. on August 3, 2015, to UFR.contact@gmail.com**

Please provide information in the tables below:

### I. PROJECT PROPONENT INFORMATION

| | |
|---|---|
| **Agency / Organization** | Sierra Valley RCD / UC Cooperative Extension |
| **Name of Primary Contact** | Rick Roberti , Kristi Jamason |
| **Name of Secondary Contact** | Tom Getts (UCCE Weed Ecologist/Cropping System Farm Advisor), Holly George |
| **Mailing Address** | Sierra Valley RCD, PO Box 3562, Quincy, CA 95971<br><br>UC Cooperative Extension, Attn: Holly George, 208 Fairgrounds Road, Quincy, CA 95971<br><br>UC Cooperative Extension, Attn. Tom Getts, 707 Nevada Street, Susanville, CA 96130 |
| **E-mail** | sierravalleyrcd@gmail.com, market.ready.k.jamason@gmail.com, hageorge@ucanr.edu, tjgetts@ucanr.edu |
| **Phone** | Rick: 530-249-4988; Holly: 530-283-6262; Tom: 530-251-2650 |
| **Other Cooperating Agencies / Organizations / Stakeholders** | UC Davis, willing producers in Sierra Valley (TBD) |
| **Is your agency/organization committed to the project through completion? If not, please explain** | Yes |

### II. GENERAL PROJECT INFORMATION

| | |
|---|---|
| **Project Title** | ALS-12: Alfalfa Alternative |
| **Project Category** | ☒ **Agricultural Land Stewardship**<br>☐ **Floodplains/Meadows/Waterbodies**<br>☐ **Municipal Services**<br>☐ **Tribal Advisory Committee**<br>☐ **Uplands/Forest** |
| **Project Description**<br>(Briefly describe the project, in 300 words or less) | In Sierra Valley, and possibly other groundwater basins in the UFRW, alfalfa production is prevalent and is currently a lucrative crop. (Water-intensive alfalfa hay represents 30-40% of field crops (by value) grown in Plumas and Sierra Counties, according to the 2011 Crop Report.) It is also a water-intensive crop grown in an arid region. With less snowpack (and therefore less water predicted to be available), and in view of |

| | |
|---|---|
| | prolonged drought, climate change and dropping groundwater levels and overdraft observed in the monitored Sierra Valley basin*, alternative production possibilities that maintain the agricultural heritage of the watershed without increasing risks to producer viability, community values and natural resources, need to be explored. This concept proposal includes feasibility research and systematic exploration and experimentation (pilot testing) of alternative crops and methodologies to existing alfalfa production and methods employed in Sierra Valley that could be accomplished without too much upset to the operations and viability of producers.<br><br>This project supports the following UFR IRWM Goals:<br>✓ Protect and improve the economy of the region and provide healthy and adequate water and wastewater treatment for all citizens, including disadvantaged communities and Native Americans.<br>✓ Protect and enhance the health and economic viability of working landscapes.<br><br>*During 2005-2011, metered pumpage averaged about 7,800 acre-feet per year, and in 2012-14, 12,200 acre-feet, well over the estimated safe yield: "Metered pumpage records indicate that the safe yield is about 6,000 acre-feet per year in the part of the valley now tapped by large-capacity supply wells" – *Technical Reports on Hydrogeologic Evaluation for Sierra Valley – 2003-5, 2005-11 and 2012-14.* |
| **Project Location Description** (e.g., along the south bank of stream/river between river miles or miles from Towns/intersection and/or address): | Sierra Valley – on the property of willing ranchers (TBD). Once preliminary feasibility possibilities (crops/methods) have been explored with UCCE/UC Davis, one or more ranchers will be recruited to participate in the pilot study. These ranchers could be located in Sierra County or Plumas County in Sierra Valley. |
| **Latitude:** | TBD |
| **Longitude:** | TBD |

## III. APPLICABLE IRWM PLAN OBJECTIVES ADDRESSED

For each of the objectives addressed by the project, provide a one to two sentence description of how the project contributes to attaining the objective and how the project outcomes will be quantified. If the project does not address *any* of the IRWM plan objectives, provide a one to two sentence description of how the project relates to a challenge or opportunity of the Region.

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Restore natural hydrologic | ☐ Yes | | |

| Upper Feather River IRWM Objectives: | Will the project address the objective? | Brief explanation of project linkage to selected Objective | Quantification (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| functions. | ■ N/A | | |
| Reduce potential for catastrophic wildland fires in the Region. | ☐ Yes<br>■ N/A | | |
| Build communication and collaboration among water resources stakeholders in the Region. | ■ Yes<br>☐ N/A | Feasibility study will engage producers, UCCE, Sierra Valley Groundwater Management District, Sierra Valley RCD and County Ag and Planning Departments in conversations around water conservation | TBD |
| Work with DWR to develop strategies and actions for the management, operation, and control of SWP facilities in the Upper Feather River Watershed in order to increase water supply, recreational, and environmental benefits to the Region. | ☐ Yes<br>■ N/A | | |
| Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality. | ☐ Yes<br>■ N/A | | |
| Continue to actively engage in FERC relicensing of hydroelectric facilities in the Region. | ☐ Yes<br>■ N/A | | |
| Address economic challenges of municipal service providers to serve customers. | ☐ Yes<br>■ N/A | | |
| Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the RWQC Basin Plan. | ☐ Yes<br>■ N/A | | |
| Address water resources and wastewater needs of DACs and Native Americans. | ☐ Yes<br>■ N/A | | |

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Coordinate management of recharge areas and protect groundwater resources. | ■ Yes<br>☐ N/A | Project is expected to protect groundwater resources by offering alfalfa producers a viable alternative crop or irrigation method that requires less pumping of groundwater. | This will depend on the feasibility study and subsequent interest by Sierra Valley ranchers in the alternatives identified. |
| Improve coordination of land use and water resources planning. | ■ Yes<br>☐ N/A | Project explores options for decreasing groundwater usage, which supports water resource planning. | TBD. Sierra Valley covers 184 square miles or 117,700 acres. |
| Maximize agricultural, environmental and municipal water-use efficiency. | ■ Yes<br>☐ N/A | The project will explore alternative crops and growing methods to existing alfalfa hay production to improve water-use efficiency. | Will be determined by project – pilot will indicate water savings per irrigated acre. |
| Effectively address climate change adaptation and/or mitigation in water resources management. | ■ Yes<br>☐ N/A | The project seeks alternative crops that can be grown in the arid, ~5000' elevation Sierra Valley with the reduced water resources anticipated as a result of climate change. | Alternatives identified in feasibility study will address anticipated changes in climate and water availability. |
| Improve efficiency and reliability of water supply and other water-related infrastructure. | ■ Yes<br>☐ N/A | Pilot projects may test infrastructure improvements for irrigation efficiency in alfalfa, as well as alternative crops. Improved efficiency will generate more reliable supply. | Number of acres where irrigation system efficiency changes are implemented TBD. |
| Enhance public awareness and understanding of water management issues and needs. | ☐ Yes<br>■ N/A | | |
| Address economic challenges of agricultural producers. | ■ Yes<br>☐ N/A | Future surface and groundwater shortages may necessitate reductions in alfalfa production, which would hurt local growers economically. This project seeks to identify and prove economically feasible alternatives that can be employed to reduce these negative impacts on agricultural producers. | TBD – Feasibility research will address economic comparability of alternatives to alfalfa |

| Upper Feather River IRWM Objectives: | Will the project address the objective? | Brief explanation of project linkage to selected Objective | Quantification (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Work with counties/ communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding. | ■ Yes<br>☐ N/A | Funding request includes support of a project manager. | Project manager, University of CA support |

If no objectives are addressed, describe how the project relates to a challenge or opportunity for the Region:

| |
|---|
| |

## IV. PROJECT IMPACTS AND BENEFITS

Please provide a summary of the expected project benefits and impacts in the table below or check N/A if not applicable; **do not leave a blank cell.** Note that DWR encourages multi-benefit projects.

| If applicable, describe benefits or impacts of the project with respect to: | | |
|---|---|---|
| **a. Native American Tribal Communities** | ■ N/A | |
| **b. Disadvantaged Communities**[1] | ■ N/A | There are several Disadvantaged Communities in Sierra Valley (per 2010 Census data) – Chilcoot, Vinton, Sierraville and Sattley. Most of the ranches in Sierra Valley have addresses in one of these communities. Helping these ranchers remain economically viable creates positive economic (and social) impact on the surrounding communities by putting children in the schools, patronage of local businesses, etc. |
| **c. Environmental Justice**[2] | ■ N/A | |
| **d. Drought Preparedness** | ☐ N/A | Project explores agricultural options that require less irrigation water, giving growers alternatives during drought. |
| **e. Assist the region in adapting to effects of climate change**[3] | ☐ N/A | Project explores agricultural options that require less irrigation water during the summer/growing season. Potential anticipated impacts of climate change on water are: alterations in precipitation patterns, lower snowpack levels resulting |

| | | |
|---|---|---|
| | | in less water storage, change in availability and time of surface irrigation water, extended drought, etc. Project may also explore increasing yields from existing fields. Increased yields and less water-intensive crops would provide more flexible agricultural options in the area for an uncertain climate in the future. |
| **f. Generation or reduction of greenhouse gas emissions (e.g. green technology)** | ☐ N/A | The project would investigate less water-intensive cropping systems, which would require less ground water pumping, and in turn reduce the amount of fossil fuel energy used to pump the ground water. |
| **g. Other expected impacts or benefits that are not already mentioned elsewhere** | ☐ N/A | The issue of alfalfa clearly extends beyond Sierra Valley. Alternatives identified and proven could have beneficial impacts well beyond the project area. |

[1] A Disadvantaged Community is defined as a community with an annual median household (MHI) income that is less than 80 percent of the Statewide annual MHI. DWR's DAC mapping is available on the UFR website (http://featherriver.org/maps/) .

[2] Environmental Justice is defined as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies. An example of environmental justice benefit would be to improve conditions (e.g. water supply, flooding, sanitation) in an area of racial minorities.

[3] Climate change effects are likely to include increased flooding, extended drought, and associated secondary effects such as increased wildfire risk, erosion, and sedimentation.

DWR encourages multiple benefit projects which address one or more of the following elements (PRC §75026(a). Indicate which elements are addressed by your project.

| | | | |
|---|---|---|---|
| a. Water supply reliability, water conservation, water use efficiency | ■ Yes ☐ N/A | g. Drinking water treatment and distribution | ☐ Yes ■ N/A |
| b. Stormwater capture, storage, clean-up, treatment, management | ☐ Yes ■ N/A | h. Watershed protection and management | ■ Yes ☐ N/A |
| c. Removal of invasive non-native species, creation/enhancement of wetlands, acquisition/protection/restoration of open space and watershed lands | ■ Yes ☐ N/A | i. Contaminant and salt removal through reclamation/desalting, other treatment technologies and conveyance of recycled water for distribution to users | ☐ Yes ■ N/A |
| d. Non-point source pollution reduction, management and monitoring | ☐ Yes ■ N/A | j. Planning and implementation of multipurpose flood management programs | ☐ Yes ■ N/A |
| e. Groundwater recharge and management projects | ■ Yes ☐ N/A | k. Ecosystem and fisheries restoration and protection | ☐ Yes ■ N/A |
| f. Water banking, exchange, reclamation, and improvement of water quality | ☐ Yes ■ N/A | | |

## V. RESOURCE MANAGEMENT STRATEGIES

For each resource management strategy (RMS) employed by the project, provide a one to two sentence description in the table below of how the project incorporates the strategy. A description of the RMS can be found in Volume 2 of the 2013 California Water Plan (http://featherriver.org/2013-california-water-plan-update/).

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Reduce Water Demand | | |
| Agricultural Water Use Efficiency | ■ Yes ☐ No | The Agricultural Water Use Efficiency RMS is the core of the proposal. The project will seek more water-efficient alfalfa hay production methods and/or alternatives to alfalfa production with lower water demands and minimal disruption to existing operations, as well as solid/equivalent returns. |
| Urban water use efficiency | ☐ Yes ■ No | |
| Improve Flood Management | | |
| Flood management | ☐ Yes ■ No | |
| Improve Operational Efficiency and Transfers | | |
| Conveyance – regional/local | ☐ Yes ■ No | |
| System reoperation | ☐ Yes ■ No | |
| Water transfers | ☐ Yes ■ No | |
| Increase Water Supply | | |
| Conjunctive management | ■ Yes ☐ No | Feasibility studies may employ conjunctive management strategies, such as flooding alfalfa fields in winter. |
| Precipitation Enhancement | ☐ Yes ■ No | |
| Municipal recycled water | ■ Yes ☐ No | Feasibility studies may employ increased use of recycled municipal water for alfalfa production. |
| Surface storage – regional/local | ☐ Yes ■ No | |
| Improve Water Quality | | |
| Drinking water treatment and distribution | ☐ Yes ■ No | |
| Groundwater remediation/aquifer remediation | ☐ Yes ■ No | |
| Matching water quality to water use | ☐ Yes ■ No | |
| Pollution prevention | ☐ Yes ■ No | |
| Salt and salinity management | ☐ Yes ■ No | |
| Urban storm water runoff management | ☐ Yes ■ No | |
| Practice Resource Stewardship | | |
| Agricultural land stewardship | ■ Yes ☐ No | Continuing stewardship of agricultural land in Sierra Valley depends on producers being able to adjust to changing environmental and market conditions. This project utilizes the |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| | | agricultural land stewardship RMS by proactively seeking solutions to water shortages that likely will result from ongoing depletion of groundwater resources due to overdrafting, drought, and climate change. These factors, if left unaddressed, will make agricultural land more susceptible to development and conversion to other uses. |
| Ecosystem restoration | ☐ Yes ■ No | |
| Forest management | ☐ Yes ■ No | |
| Land use planning and management | ☐ Yes ■ No | |
| Recharge area protection | ■ Yes ☐ No | |
| Sediment management | ☐ Yes ■ No | |
| Watershed management | ■ Yes ☐ No | Stewardship of groundwater resources is a key component of watershed management. |
| People and Water | | |
| Economic incentives | ☐ Yes ■ No | |
| Outreach and engagement | ☐ Yes ■ No | |
| Water and culture | ☐ Yes ■ No | |
| Water-dependent recreation | ☐ Yes ■ No | |
| Wastewater/NPDES | ☐ Yes ■ No | |

Other RMS addressed and explanation:

## VI. PROJECT COST AND FINANCING

Please provide any estimates of project cost, sources of funding, and operation and maintenance costs, as well as the source of the project cost in the table below.

**PROJECT BUDGET***

Project serves a need of a DAC?: ☐ Yes ■ No (Yes, but not in the sense of contaminated drinking water or severe threat to health…)

Funding Match Waiver request?: ☐ Yes ■ No

| | Category | Requested Grant Amount | Cost Share: Non-State Fund Source* (Funding Match) | Cost Share: Other State Fund Source* | Total Cost |
|---|---|---|---|---|---|
| a. | **Direct Project Administration** | $30,000 | | | $30,000 |
| b. | **Land Purchase/Easement** | N/A | | | $0 |
| c. | **Planning/Design/Engineering / Environmental** | $75,000 | | In-kind possible? | $75,000 |
| d. | **Construction/Implementation** | | ** | | |
| e. | **Environmental Compliance/ Mitigation/Enhancement** | N/A | | | $0 |
| f. | **Construction Administration** | N/A | | | $0 |
| g. | **Other Costs** | $25,000 | | | $25,000 |
| h. | **Construction/Implementation Contingency** | | | | |
| i. | **Grand Total (Sum rows (a) through (h) for each column)** | $130,000 | | Possible in-kind (research) | $130,000 |

** This is very much a guess. Depends on interest, in what, whether we can get UC staff to contribute time…

*Producer's labor, equipment, electricity for watering…

| | | | | |
|---|---|---|---|---|
| j. | **Can the Project be phased?** ■ **Yes** ☐ **No** If **yes**, provide cost breakdown by phases | | | |
| | | **Project Cost** | **O&M Cost** | **Description of Phase** |
| | **Phase 1** | | | Research, feasibility study of alternative crops/cropping systems (gain an understanding of existing research – whether UC Davis, UNR, other land grant colleges, USDA, etc., have done any pertinent research – e.g., explore perennial grain research of The Land Institute in Salina, Kansas, sainfoin research, quinoa, etc. Evaluate options against the following preferred criteria (can |

| | | | | |
|---|---|---|---|---|
| | | | | be adjusted):<br><br>• Compatible growing conditions (environmental/ season length, etc.);<br>• Yields within X% of current alfalfa crop value or function (meaning that some % of local alfalfa production goes to feeding local cattle – so a compatible crop might be found that can meet that function without necessarily being of equal monetary value);<br>• Alternative crops (including for direct human consumption) that could be grown with existing irrigation/planting/harvesting equipment?<br>• Similar labor requirements / non-annual crop possibly – perennial grains/forage?<br>• Requires less water<br>• Minimal amendments/inputs required<br>• Compatible with alfalfa production and/or grazing (incorporating the needs of ranches that put up hay for their own cattle vs. those that produce alfalfa mostly to sell)<br><br>Initial pilot design. |
| | **Phase 2** | | | Recruiting rancher participants, refining pilot design, evaluation design & implementing alternatives with technical assistance |
| | **Phase 3** | | | Technical assistance & Evaluation |
| | **Phase 4** | | | |
| **k.** | **Explain how operation and maintenance costs will be financed for the 20-year planning period for project implementation (not grant funded).** | | Not applicable. This is a feasibility study and pilot test only. If a suitable alternative to alfalfa production is found, the theory is that it will pay for itself on the market. | |
| **l.** | **Has a Cost/Benefit analysis been completed?** | | ☐ **Yes** ■ **No** (feasibility study / pilot) | |
| **m.** | **Describe what impact there may be if the project is not funded (300 words or less)** | | Significant domestic and international economic incentives exist today to keep producers growing water-intensive alfalfa hay in Sierra Valley. If we do not secure and apply resources to study and prove alternatives, we can expect this pattern to continue, resulting in significant | |

| | | |
|---|---|---|
| | | competition for limited water resources and continued declines in the surface-to-groundwater levels that have been documented in monitoring wells in the Valley. Potentially also more and deeper well installation. |

*List all sources of funding.
Note: See Project Development Manual, Exhibit B, for assistance in completing this table (http://featherriver.org/documents/).

## VIII. PROJECT STATUS AND SCHEDULE

Please provide a status of the project, level of completion as well as a description of the activities planned for each project stage. If unknown, enter **TBD**.

| Project Stage | Check the Current Project Stage | Completed? | Description of Activities in Each Project Stage | Planned/ Actual Start Date (mm/yr) | Planned/ Actual Completion Date (mm/yr) |
|---|---|---|---|---|---|
| **a. Assessment and Evaluation** | ■ | ☐ Yes<br>■ No<br>☐ N/A | Literature/Research review; Feasibility evaluation & documentation of alternatives; Pilot design; Recruitment of rancher participants | TBD | TBD |
| **b. Final Design** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | Refinement of pilot design and evaluation methodology with ranchers; signed agreements | TBD | TBD |
| **c. Environmental Documentation (CEQA / NEPA)** | ☐ | ☐ Yes<br>☐ No<br>■ N/A | Unlikely to be required unless some truly unusual idea surfaces… | | |
| **d. Permitting** | ☐ | ☐ Yes<br>☐ No<br>■ N/A | | | |
| **e. Construction Contracting** | ☐ | ☐ Yes<br>☐ No<br>■ N/A | | | |
| **f. Construction Implementation** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | Pilot testing of new cropping systems. Evaluation of water savings, economic return, producer satisfaction. Report. | TBD | TBD |

| | |
|---|---|
| **Provide explanation if more than one project stage is checked as current status** | |

## IX. PROJECT TECHNICAL FEASIBILITY

Please provide any related documents (date, title, author, and page numbers) that describe and confirm the technical feasibility of the project. See www.featherriver.org/catalog/index.php for documents gathered on the UFR Region.

| | |
|---|---|
| **a. List the adopted planning documents the proposed project is consistent with or supported by** (e.g. General Plans, UWMPs, GWMPs, Water Master Plan, Habitat Conservation Plans, TMDLs, Basin Plans, etc.). | The Plumas County General Plan is supportive of maintaining viable agriculture in the region. |
| **b. List technical reports and studies supporting the feasibility of this project.** | Perennial grain research of The Land Institute in Salina, KS.<br><br>UC Davis research on alfalfa water use "HOW MUCH WATER DOES ALFALFA REALLY NEED?"<br><br>Sainfoin ((*Onobrychis viciifolia*) research (as an alternative forage to alfalfa) of Montana State University Western Ag Research Center.<br><br>("New Interest in Sainfoin")<br><br>Strategies for the Improvement of Water-Use Efficient Irrigated Alfalfa Systems, Dan Putnum<br><br>Etc. A thorough review of existing studies, research, etc. is part of the project. |
| **c. Concisely describe the scientific basis** (e.g. how much research has been conducted) **of the proposed project in 300 words or less.** | Individual pockets of research on various crop alternatives, irrigation alternatives exist, groundwater recharge via flooding alfalfa fields in dormant times (winter/spring). The project would review and sift through that research in order to determine likely possibilities that meet the criteria defined above under section VI.j. |
| **d. Does the project implement green technology** (e.g. alternate forms of energy, recycled materials, LID techniques, etc.). | ☐ Yes ■ No ☐ N/A<br>If yes, please describe.<br><br>It's possible it might… |
| **e. Are you an Urban Water Supplier[1]?** | ☐ Yes ■ No ☐ N/A |
| **f. Are you are an Agricultural Water Supplier[2]?** | ☐ Yes ■ No ☐ N/A |

| | |
|---|---|
| **g. Is the project related to groundwater?** | ■ Yes ☐ No ☐ N/A<br>If yes, please indicate which groundwater basin.<br>**Sierra Valley Basin No. 5-12.01** |

[1] Urban Water Supplier is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually.

[2] Agricultural Water Supplier is defined as a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding the acreage that receives recycled water.

# Climate Change – Project Assessment Checklist

This climate change project assessment tool allows project applicants and the planning team to assess project consistency with Proposition 84 plan standards and RWMG plan assessment standards. The tool is a written checklist that asks GHG emissions and adaptation/resiliency questions.

Name of project: ALS 12: Alfalfa Alternative

Project applicant: Sierra Valley Resource Conservation District/UC Cooperative Extension

## GHG Emissions Assessment

### Project Construction Emissions

*(If you check any of the boxes, please see the attached worksheet)*

- ☐ The project requires nonroad or off-road engines, equipment, or vehicles to complete.
- ☐ The project requires materials to be transported to the project site.
- ☐ The project requires workers to commute to the project site.
- ☐ The project is expected to generate GHG emissions for other reasons.
- ☒ The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

### Operating Emissions

*(If you check any of the boxes, please see the attached worksheet)*

- ☒ The project requires energy to operate.
- ☐ The project will generate electricity.
- ☐ The project will proactively manage forests to reduce wildfire risk.
- ☐ The project will affect wetland acreage.
- ☐ The project will include new trees.
- ☐ Project operations are expected to generate or reduce GHG emissions for other reasons.

# Adaptation & Resiliency Assessment

## Water Supply

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water supply vulnerability issues:

- ☐ Not applicable
- ☐ Reduced snowmelt
- ☒ Unmet local water needs (drought)
- ☐ Increased invasive species

The intent of the project is to reduce irrigation water needs and usage for existing agricultural producers of alfalfa, which will help the region adapt for both drought and climate change.

## Water Demand

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water demand vulnerability issues:

- ☐ Not applicable
- ☒ Increasing seasonal water use variability
- ☐ Unmet in-stream flow requirements
- ☒ Climate-sensitive crops
- ☒ Groundwater drought resiliency
- ☐ Water curtailment effectiveness

Alfalfa hay is a water-thirsty crop, production of which relies almost entirely on groundwater in this region. Identifying suitable alternative crops meeting the criteria established in the project proposal and/or more efficient irrigation methods for this crop will reduce seasonal water use, help reduce water need during drought years, and potentially offer climate change resiliency for crops/producers in the region.

## Water Quality

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water quality vulnerability issues:

- ☐ Not applicable
- ☐ Increasing catastrophic wildfires
- ☐ Eutrophication (excessive nutrient pollution in a waterbody, often followed by algae blooms and other related water quality issues)
- ☐ Seasonal low flows and limited abilities for waterbodies to assimilate pollution
- ☐ Water treatment facility operations

☐ Unmet beneficial uses (municipal and domestic water supply, water contact recreation, cold freshwater habitat, spawning habitat, wildlife habitat, etc.)

## Flooding

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority flooding vulnerability issues:

☐ Not applicable
☐ Aging critical flood protection
☐ Wildfires
☐ Critical infrastructure in a floodplain
☐ Insufficient flood control facilities

## Ecosystem and Habitat

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority ecosystem and habitat vulnerability issues:

☐ Not applicable
☐ Climate-sensitive fauna or flora
☐ Recreation and economic activity
☐ Quantified environmental flow requirements
☐ Erosion and sedimentation
☐ Endangered or threatened species
☐ Fragmented habitat

## Hydropower

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority hydropower vulnerability issues:

☐ Not applicable
☐ Reduced hydropower output

ALS-12: Alfalfa Alternative

**GHG Emissions Analysis**

**Project Construction Emissions**

[X] The project requires non-road or off-road engines, equipment, or vehicles to complete. If yes:

| Type of Equipment | Maximum Number Per Day | Total 8-Hour Days in Operation | Total $MTCO_2e$ |
|---|---|---|---|
| Tractors/Loaders/Backhoes | 1 | 16 | 4 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | **Total Emissions** | **4** |

[X] The project requires materials to be transported to the project site. If yes:

| Total Number of Round Trips | Average Trip Distance (Miles) | Total $MTCO_2e$ |
|---|---|---|
| 4 | 80 | **0** |

[ ] The project requires workers to commute to the project site. If yes:

| Average Number of Workers | Total Number of Workdays | Average Round Trip Distance Traveled (Miles) | Total $MTCO_2e$ |
|---|---|---|---|
| | | | **0** |

[ ] The project is expected to generate GHG emissions for other reasons. If yes, explain:

[ ] The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

ALS-12: Alfalfa Alternative

**Project Operating Emissions**

☐ The project requires energy to operate. If yes:

| Annual Energy Needed | Unit | Total $MTCO_2e$ |
|---|---|---|
| | kWh (Electricity) | **0** |
| | Therm (Natural Gas) | **0** |

☐ The project will generate electricity. If yes:

| Annual kWh Generated | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

☐ The project will proactively manage forests to reduce wildfire risk. If yes:

| Acres Protected from Wildfire | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

☐ The project will affect wetland acreage. If yes:

| Acres of Protected Wetlands | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

☐ The project will include new trees. If yes:

| Acres of Trees Planted | Total $MTCO_2e$ |
|---|---|
| 0 | **0** |

*A negative value indicates GHG reductions

☒ Project operations are expected to generate or reduce GHG emissions for other reasons. If yes, explain:

If lower water-usage crops or methods are proven through the feasibility study and pilot, then they will require less water pumping, which translate to less energy/electricity consumption, thereby reducing GHG emissions. Technical support for the feasibility study may require UCCE staff travel from Susanville and possibly Davis on occasion.

**GHG Emissions Summary**

| | |
|---|---|
| Construction and development will generate approximately: | 5 $MTCO_2e$ |
| In a given year, operation of the project will result in: | 0 $MTCO_2e$ |

# UPPER FEATHER RIVER IRWM

## PROJECT INFORMATION FORM

**Please submit by 5:00 p.m. on August 3, 2015, to UFR.contact@gmail.com**

Please provide information in the tables below:

### I. PROJECT PROPONENT INFORMATION

| | |
|---|---|
| **Agency / Organization** | Sierra Wildlife Habitat & Community Foundation (SWHCF) and Sierra Valley Resource Conservation District (SVRCD) |
| **Name of Primary Contact** | Rick Roberti, SWHCF / SVRCD Board of Directors |
| **Name of Secondary Contact** | Bill Nunes, SVRCD Board Chairman |
| **Mailing Address** | P.O. Box 693 Loyalton, CA 96118 |
| **E-mail** | mailto:rickroberti@yahoo.com |
| **Phone** | (530) 249-4988 / Rick Roberti |
| **Other Cooperating Agencies / Organizations / Stakeholders** | Feather River Land Trust, CA DWR, NRCS, UCCE, and Landowners |
| **Is your agency/organization committed to the project through completion? If not, please explain** | Yes. |

### II. GENERAL PROJECT INFORMATION

| | |
|---|---|
| **Project Title** | ALS-13: Little Last Chance Lake |
| **Project Category** | ■ **Agricultural Land Stewardship**<br>■ **Floodplains/Meadows/Waterbodies**<br>☐ **Municipal Services**<br>☐ **Tribal Advisory Committee**<br>**Uplands/Forest** |
| **Project Description**<br>(Briefly describe the project, in 300 words or less.) | The building of Frenchman Dam in the early 1960s has been a great benefit to many in Eastern Plumas County and beyond, but it has also changed water flow, especially on the lower end of the Little Last Chance Creek. Even before the dam, irrigation used water that would have historically found its way to Little Last Chance Lake. This project will restore and enhance 450 acres of wetland and sub-irrigated meadows back to how this land was before the creek was altered. Since the building of the dam, Little Last Chance Lake is full of water only on extremely wet years, and the water most often dries up long before summer is over. There is no longer enough late winter or early spring runoff below the dam to fill the Little Last Chance Lake with approximately 320 - 500 acre-feet of water. The overall project plan is to restore Little Last Chance |

| | |
|---|---|
| | Lake in Sierra Valley to a year-round water supply for wildlife and native vegetation, and to provide drinking water for wildlife and livestock.<br><br>Phase 1 will be a feasibility study evaluating the best source of water, securing landowner and other stakeholder MOUs, evaluating roadside pullouts, arts and recreation involvement and other aspects of the project. This phase will include CEQA if required.<br><br>Phase 2 of the project is to pump early-season supplemental water to the Little Last Chance Lake, possibly from the Middle Fork Feather River near Marble Lane in Sierra Valley, to restore a year-round water supply for wildlife and native vegetation, as well as to provide drinking water for wildlife and livestock. When the lake is filled, it creates approximately 200 acres of open water (with depths up to four feet deep) and over 250 acres of meadow alongside the lake and below its outlet.<br><br>Phase 3 of the project proposes to construct up to five new wetland areas, or ponds, on property owned by Carmichael Ranch, DS Ranches, the Feather River Land Trust, and Roberti Ranch by bringing water from the Little Last Chance Lake to the above-mentioned properties. The size of the ponds would be 1-3 acres wide in diameter and they would be constructed parallel to County Road A24, between Heriot Lane and Highway 70. This land, which was flooded and irrigated with early spring runoff before the 1960s, currently receives virtually no water, especially in dry years. Today sagebrush and non-native plants exist where meadows, ditches and canals were once filled with water and waterfowl.<br><br>General tasks that will be completed:<br>• Assessment and evaluation of project concept with NRCS assistance.<br>• Securing source of water, e.g., meeting with DWR to apply for a supplemental right to divert water from Middle Fork Feather River.<br>• Obtain signed agreements between all landowners involved in project.<br>• Finalize design and budget.<br>• Set project schedule and timeline.<br>• Develop bid documents.<br>• Select contractors. |
| **Project Location Description** (e.g., along the south bank of stream/river between river miles or miles from | Little Last Chance Lake is a lake in Plumas County, CA, with an elevation of 4,882 feet, or 1,488 meters above sea level. The lake is about 6 miles southeast of Beckwourth and is located one mile east of the intersection of County Road A24 and Marble Hot Springs |

| | |
|---|---|
| Towns/intersection and/or address): | Road.<br>For a map of the location of Little Last Chance Lake, see:<br>Map: |
| **Latitude:** | 39.7762779 |
| **Longitude:** | -120.3033733 |

## III. APPLICABLE IRWM PLAN OBJECTIVES ADDRESSED

For each of the objectives addressed by the project, provide a one to two sentence description of how the project contributes to attaining the objective and how the project outcomes will be quantified. If the project does not address *any* of the IRWM plan objectives, provide a one to two sentence description of how the project relates to a challenge or opportunity of the Region.

| **Upper Feather River IRWM Objectives:** | **Will the project address the objective?** | **Brief explanation of project linkage to selected Objective** | **Quantification** (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| Restore natural hydrologic functions. | ■ Yes<br>☐ N/A | Little Last Chance Lake will be restored to its natural level, and water exiting the lake will restore wetlands that once existed prior to the construction Frenchman Reservoir. | Approximately 450 acres of meadows/wetlands will be restored. |
| Reduce potential for catastrophic wildland fires in the Region. | ☐ Yes<br>■ N/A | N/A | N/A |
| Build communication and collaboration among water resources stakeholders in the Region. | ■ Yes<br>☐ N/A | Stakeholders will need to collaborate together to make this project feasible. Communication between landowners and the Department of Water Resources will be crucial to the success of this project. | -Meetings<br>-Partnerships<br>-Contracts |
| Work with DWR to develop strategies and actions for the management, operation, and control of SWP facilities in the Upper Feather River Watershed in order to increase water supply, recreational, and environmental benefits to the Region. | ■ Yes<br>☐ N/A | Stakeholders/landowners will work with DWR (local watermaster) to acquire the permits necessary to pump the water to the lake. | Up to a 1,000 acre-feet of water could be used depending on the availability of supplemental water. |
| Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality. | ☐ Yes<br>■ N/A | N/A | N/A |
| Continue to actively engage in FERC relicensing of | ☐ Yes | N/A | N/A |

| Upper Feather River IRWM Objectives: | Will the project address the objective? | Brief explanation of project linkage to selected Objective | Quantification (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| hydroelectric facilities in the Region. | ■ N/A | | |
| Address economic challenges of municipal service providers to serve customers. | ☐ Yes<br>■ N/A | N/A | N/A |
| Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the RWQC Basin Plan. | ■ Yes<br>☐ N/A | By filling the lake with water it will enhance the quality of the surface water for a longer period of time and help groundwater recharge. Having water in the lake well into or through the summer season will enhance beneficial uses for fish and wildlife (including nesting season for water-dependent avian species), recreation (e.g., birdwatching) and livestock. | Approximately 450 acres of meadows/wetlands will be restored. |
| Address water resources and wastewater needs of DACs and Native Americans. | ☐ Yes<br>■ N/A | N/A | N/A |
| Coordinate management of recharge areas and protect groundwater resources. | ■ Yes<br>☐ N/A | Water in the lakes will help with localized areas of recharge. | Possibly up to 1000 acre-feet of water will remain in Sierra Valley, as opposed to the water leaving our county. |
| Improve coordination of land use and water resources planning. | ■ Yes<br>☐ N/A | Local landowners will work with agencies such as NRCS, SVRCD, UCCE, DWR, to improve coordination of land use and water resources planning. | Landowner will make a plan with listed agencies and complete projects as needed. |
| Maximize agricultural, environmental and municipal water use efficiency. | ■ Yes<br>☐ N/A | Restored meadows and wetlands will benefit both agriculture and the environment. | Approximately 450 acres of meadows/wetlands will be restored. |
| Effectively address climate change adaptation and/or mitigation in water resources management. | ■ Yes<br>☐ N/A | The restoration of the wetland will potentially improve resiliency to climate change variability in the normally dry area of Sierra Valley. | Instead of dry land in summer, water will be in the lake surrounded by healthy meadows. |
| Improve efficiency and | ■ Yes | A full lake will provide a reliable | Water lasting |

| Upper Feather River IRWM Objectives: | Will the project address the objective? | Brief explanation of project linkage to selected Objective | Quantification (e.g. acres of streams/wetlands restored or enhanced) |
|---|---|---|---|
| reliability of water supply and other water-related infrastructure. | ☐ N/A | livestock water supply, which will in turn reduce pumping costs and demand for groundwater. | through the summer will provide adequate protection for young waterfowl until they are able to fly, as well as recharge to groundwater in local area. |
| Enhance public awareness and understanding of water management issues and needs. | ■ Yes<br>☐ N/A | Many birders and wildlife enthusiasts who visit Little Last Chance Lake will learn about good stewardship and management of wildlife water. | -Educational tours<br>-Tourism |
| Address economic challenges of agricultural producers. | ■ Yes<br>☐ N/A | One of the benefits of this project is that agricultural producers would have stock water for livestock throughout the spring and summer, as well as healthier meadows for grazing. | Ranchers play a big role in our local economy, and good stewardship of meadows is a benefit to all. |
| Work with counties/ communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding. | ■ Yes<br>☐ N/A | This project will rely heavily on the collaboration of many agencies and stakeholders. SVRCD and FRLT do have the capacity to administer and implement the grant funding. | |

If no objectives are addressed, describe how the project relates to a challenge or opportunity for the Region:

| |
|---|
| N/A |

## IV. PROJECT IMPACTS AND BENEFITS

Please provide a summary of the expected project benefits and impacts in the table below or check N/A if not applicable; **do no leave a blank cell.** Note that DWR encourages multi-benefit projects.

| **If applicable, describe benefits or impacts of the project with respect to:** | | |
|---|---|---|
| **a. Native American Tribal Communities** | ■ N/A | N/A |
| **b. Disadvantaged Communities**[1] | ■ N/A | This project will potentially have an impact on the following local disadvantaged communities: Loyalton, Vinton, Chilcoot, Calpine, Sierraville, Sierra Brooks and Portola. The completed project will attract tourists (especially birders) to Sierra Valley, and as a result, the disadvantaged communities listed above will benefit economically due to tourism. https://gis.water.ca.gov/app/boundaries/ Checked N/A due to project not providing a critical water supply or wastewater need for a DAC. |
| **c. Environmental Justice**[2] | ■ N/A | N/A |
| **d. Drought Preparedness** | ☐ N/A | Water that would normally leave Sierra Valley in late winter and early spring will be stored in Little Last Chance Lake and will in turn benefit landowners and wildlife especially during dry years, as well as helping to recharge underground aquifers. |
| **e. Assist the region in adapting to effects of climate change**[3] | ☐ N/A | The project will assist in water storage in Plumas County and create meadows, which will contribute to a healthy ecosystem. |
| **f. Generation or reduction of greenhouse gas emissions (e.g. green technology)** | ☐ N/A | Project is expected to use solar pump(s), with year-round energy production but only seasonal energy use. |
| **g. Other expected impacts or benefits that are not already mentioned elsewhere** | ☐ N/A | Phase 1 of the project is to restore the Little Last Chance Lake by bringing supplemental water into the lake. The outcome from this project will be that water will remain in the lake long enough for waterfowl to raise their young until they begin to fly. The lake will once again be a thriving wildlife habitat, which will benefit wildlife, stewards of the land, and the local economy in Plumas and Sierra counties. Furthermore, a full lake will |

| | | |
|---|---|---|
| | | create healthy surrounding meadow and riparian areas. The new wetlands constructed in Phase 2 along County Road A-24 will be strategically placed and designed to attract birders to our area from around California and beyond. Birders already know what a true gem Sierra Valley is for viewing birds, but find it difficult to watch birds from public roads. The wetland areas created in this project for viewing would have off-road access ("pullouts") to offer both safety and good viewing access. |

[1] A Disadvantaged Community is defined as a community with an annual median household (MHI) income that is less than 80 percent of the Statewide annual MHI. DWR's DAC mapping is available on the UFR website (http://featherriver.org/maps/) .
[2] Environmental Justice is defined as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies. An example of environmental justice benefit would be to improve conditions (e.g. water supply, flooding, sanitation) in an area of racial minorities.
[3] Climate change effects are likely to include increased flooding, extended drought, and associated secondary effects such as increased wildfire risk, erosion, and sedimentation.

**DWR encourages multiple benefit projects, which address one or more of the following elements (PRC §75026(a). Indicate which elements are addressed by your project.**

| | | | |
|---|---|---|---|
| a. Water supply reliability, water conservation, water use efficiency | ■ Yes ☐ N/A | g. Drinking water treatment and distribution | ☐ Yes ■ N/A |
| b. Storm water capture, storage, cleanup, treatment, management | ■ Yes ☐ N/A | h. Watershed protection and management | ■ Yes ☐ N/A |
| c. Removal of invasive non-native species, creation/enhancement of wetlands, acquisition/protection/restoration of open space and watershed lands | ■ Yes ☐ N/A | i. Contaminant and salt removal through reclamation/desalting, other treatment technologies and conveyance of recycled water for distribution to users | ☐ Yes ■ N/A |
| d. Non-point source pollution reduction, management and monitoring | ■ Yes ☐ N/A | j. Planning and implementation of multipurpose flood management programs | ☐ Yes ■ N/A |
| e. Groundwater recharge and management projects | ■ Yes ☐ N/A | k. Ecosystem and fisheries restoration and protection | ■ Yes ☐ N/A |
| f. Water banking, exchange, reclamation, and improvement of water quality | ☐ Yes ■ N/A | | |

## V. RESOURCE MANAGEMENT STRATEGIES

For each resource management strategy (RMS) employed by the project, provide a one to two sentence description in the table below of how the project incorporates the strategy. A description of the RMS can be found in Volume 2 of the 2013 California Water Plan (http://featherriver.org/2013-california-water-plan-update/).

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Reduce Water Demand | | |
| Agricultural Water Use Efficiency | ■ Yes ☐ No | Less underground pumping for stock water; more groundwater recharge |
| Urban water use efficiency | ☐ Yes ■ No | N/A |
| Improve Flood Management | | |
| Flood management | ■ Yes ☐ No | The lake would be able to operate as a flood control area under certain situations. |
| Improve Operational Efficiency and Transfers | | |
| Conveyance – regional/local | ■ Yes ☐ No | A conveyance ditch would need to be established to transfer water from the Middle Fork River to Little Last Chance Lake. |
| System reoperation | ■ Yes ☐ No | Will improve existing water management (including repair of an impoundment dam and storage of supplies of water when high for later use) to improve ecosystem and agricultural beneficial uses |
| Water transfers | ☐ Yes ■ No | |
| Increase Water Supply | | |
| Conjunctive management | ■ Yes ☐ No | Having the use of the surface water from the lake will reduce the need to pump groundwater for stock watering |
| Precipitation Enhancement | ☐ Yes ■ No | N/A |
| Municipal recycled water | ☐ Yes ■ No | N/A |
| Surface storage – regional/local | ■ Yes ☐ No | The project will provide water to a lake that currently runs dry by late spring. |
| Improve Water Quality | | |
| Drinking water treatment and distribution | ☐ Yes ■ No | N/A |
| Groundwater remediation/aquifer remediation | ☐ Yes ■ No | N/A |
| Matching water quality to water use | ☐ Yes ■ No | The water will benefit livestock production & wildlife habitat. |
| Pollution prevention | ☐ Yes ■ No | N/A |
| Salt and salinity management | ☐ Yes ■ No | N/A |
| Urban storm water runoff management | ☐ Yes ■ No | N/A |
| Practice Resource Stewardship | | |
| Agricultural land stewardship | ■ Yes ☐ No | The plan will help to restore native plants and grasses and eradicate non-native species. |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|---|---|---|
| Ecosystem restoration | ■ Yes ☐ No | It will help return the lake and its surrounding area in to a more sustainable habitat. |
| Forest management | ☐ Yes ■ No | N/A |
| Land use planning and management | ■ Yes ☐ No | Landowners would work with UCCE and/or NRCS to prepare a management plan for areas affected in this proposal. Phase 3 of the project will require extensive coordination with Plumas County Planning and Roads. Concept would help implement goals of new Plumas County General Plan. |
| Recharge area protection | ■ Yes ☐ No | The project will help to establish the recharge area that has been lost for several years. |
| Sediment management | ☐ Yes ■ No | N/A |
| Watershed management | ■ Yes ☐ No | Water will remain in the local watershed. |
| People and Water | | |
| Economic incentives | ☐ Yes ■ No | Results of the plan will include: more forage for livestock, habitat for wildlife, and some recharge of underground water, benefitting economic viability of ranches. Project does not, however, include concept of loans, rebates, etc. |
| Outreach and engagement | ■ Yes ☐ No | Outreach with adjacent and directly involved landowners, arts and environmental organizations, county staff and many other stakeholders. Project has education components – wildlife, showing kids and other visitors how good agricultural water stewardship can create great wildlife habitat, etc. |
| Water and culture | ■ Yes ☐ No | Provides support for a fifth-generation historic cattle ranch (formerly a dairy) and would further provide agritourism opportunities to educate visitors and other community members about historic cultural values in the area. Though few have ever seen Little Last Chance Lake, those who have marvel at the abundance and wide variety of waterfowl drawn to unique body of water. |
| Water-dependent recreation | ■ Yes ☐ No | Birding has become a very popular pastime in the region, and this project would reestablish wetland areas. Road pullouts envisioned would provide additional access for recreation/birders. |
| Wastewater/NPDES | ☐ Yes ■ No | N/A |

Other RMS addressed and explanation:

| |
|---|
| N/A |

## VI. PROJECT COST AND FINANCING

Please provide any estimates of project cost, sources of funding, and operation and maintenance costs, as well as the source of the project cost in the table below.

**PROJECT BUDGET**

Project serves a need of a DAC?: ☐ Yes ■ No
Funding Match Waiver request? : ☐ Yes ■ No (This could change)

| | Category | Requested Grant Amount | Cost Share: Non-State Fund Source* (Funding Match) | Cost Share: Other State Fund Source* | Total Cost |
|---|---|---|---|---|---|
| **a.** | **Direct Project Administration** | $30,000 | | | $30,000 |
| **b.** | **Land Purchase/Easement** | N/A | | | N/A |
| **c.** | **Planning/Design/Engineering /Environmental** | $30,000 | | | $30,000 |
| **d.** | **Construction/Implementation** | | | | |
| **e.** | **Environmental Compliance/ Mitigation/Enhancement** | $200,000 | | | $200,000 |
| **f.** | **Construction Administration** | | | | |
| **g.** | **Other Costs (**Misc. Expenses) | $5,000 | | | $5,000 |
| **h.** | **Construction/Implementation Contingency** | | | | |
| **i.** | **Grand Total (Sum rows (a) through (h) for each column)** | $265,000 | | | $265,000 (Phase 1 only) |

| | | | | |
|---|---|---|---|---|
| **j.** | **Can the Project be phased? ■ Yes ☐ No** If **yes**, provide cost breakdown by phases | | | |
| | | **Project Cost** | **O&M Cost** | **Description of Phase** |
| | **Phase 1** | $265,000 | | Feasibility study, engineering, CEQA |
| | **Phase 2** | TBD (highly dependent on water source determined feasible) | | One possible scenario:<br>1. Diversion dam and ditch: This will bring water from the source to the pump.<br>2. Solar Pump and installation (platform, concrete work, and discharge pipe) (pump capable of pumping 4,000 to 5,000 gallons per minute would need to |

| | | | | |
|---|---|---|---|---|
| | | | | purchased and set up)<br>3. Conveyance Ditch:<br>4. Existing lake enhancement: Dirt levee will be built using material from ditch along Carmichael and Ramelli border fence.<br>5. Dam repair: The purpose of the dam and levee is to retain water longer on the south side of the Lake, which typically dries up sooner.<br>6. Culverts: Two 36-inch culverts (each 20 ft. long) on the west side of County Road A24 for ditch crossings. Includes:<br>- Two 36-inch culverts (each 20 ft. long) for County Road A24 to get water from one side of the road to the other.<br>- A 36-inch culvert (20 ft. long) will be needed on the east side of County Road A24 for landowner crossing<br>- Two 30-inch (20 ft. long) culverts for overflow ditch on the northwest corner of the Lake on Roberti and DS Ranches properties.<br>7. Fencing: Fence will be needed around the pump and the solar plant. Fence on the levee between the Carmichael and Ramelli properties<br>8. Alternate overflow ditch:<br><br>On extremely wet years when the Little Last Chance Lake is full and Frenchman Dam is spilling, this ditch (approximately one mile long) will serve as a relief canal to avoid flooding. |
| | **Phase 3** | TBD | | Phase 3 of the project will create an avenue (ditches) from Little Last Chance Lake overflow ditch to the viewing ponds. Also included in this phase of the project will be to design and engineer viewing ponds (wetlands) along County Road A24. Another goal will be to create access off of County Road A24 for parking and viewing of wildlife in newly created wetlands (which will be on private land). Creating new wildlife habitat, such as nesting islands, owl boxes, and the introduction of native plants and shrubs around Little Last Chance Lake is another component |

| | | | | |
|---|---|---|---|---|
| | | | | of Phase 2. The possibility of building more storage capacity in the Lake itself will be examined. |
| | **Phase 4** | N/A | | |
| **k.** | **Explain how operation and maintenance costs will be financed for the 20-year planning period for project implementation (not grant funded).** | | After the project is completed, the landowners will be responsible for operation and maintenance costs. | |
| **l.** | **Has a Cost/Benefit analysis been completed?** | | ☐ **Yes** ■ **No** | |
| **m.** | **Describe what impact there may be if the project is not funded (300 words or less)** | | A valuable wetland area in Sierra Valley would be restored and enhanced as a result of this project. If the project is not funded the Little Last Chance Lake will continue to deteriorate and the possibility for economic development in disadvantaged communities through tourism may be lost. | |

*List all sources of funding.
Note: See Project Development Manual, Exhibit B, for assistance in completing this table (http://featherriver.org/documents/).

## VIII. PROJECT STATUS AND SCHEDULE

Please provide a status of the project, level of completion as well as a description of the activities planned for each project stage. If unknown, enter **TBD**.

| Project Stage | Check the Current Project Stage | Completed? | Description of Activities in Each Project Stage | Planned/ Actual Start Date (mm/yr) | Planned/ Actual Completion Date (mm/yr) |
|---|---|---|---|---|---|
| **a. Assessment and Evaluation** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | Currently the status of the project is in the conceptual phase and it will need design work and engineering evaluation before the onset of the project. | TBD | 6 months |
| **b. Final Design** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | | TBD | 6 months |
| **c. Environmental Documentation (CEQA / NEPA)** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | | TBD | 6 months |
| **d. Permitting** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | | TBD | |
| **e. Construction Contracting** | ☐ | ☐ Yes<br>■ No<br>☐ N/A | | TBD | |
| **f. Construction Implementation** | ☐ | ☐ Yes<br>■ No | | TBD | |

| | | | | | |
|---|---|---|---|---|---|
| | | ☐ N/A | | | |
| **Provide explanation if more than one project stage is checked as current status** | | | N/A | | |

## IX. PROJECT TECHNICAL FEASIBILITY

Please provide any related documents (date, title, author, and page numbers) that describe and confirm the technical feasibility of the project. See www.featherriver.org/catalog/index.php for documents gathered on the UFR Region.

| | |
|---|---|
| **a. List the adopted planning documents the proposed project is consistent with or supported by** (e.g. General Plans, UWMPs, GWMPs, Water Master Plan, Habitat Conservation Plans, TMDLs, Basin Plans, etc.). | The Plumas County General Plan is supportive of agriculture and wildlife, knowing that both are critical to the ecosystem and economy of Eastern Plumas County. |
| **b. List technical reports and studies supporting the feasibility of this project.** | DWR has records associated with the Little Last Chance Lake dating back to the 1930s.<br><br>The technical merit and feasibility of this project will be documented through letters of support from Plumas County Audubon Society, Ducks Unlimited, Plumas-Sierra County Farm Bureau, and other organizations regarding the importance of this wildlife area and the proposed project. |
| **c. Concisely describe the scientific basis** (e.g. how much research has been conducted) **of the proposed project in 300 words or less.** | There are volumes of research data proving the benefits of wetlands and well-functioning meadows. |
| **d. Does the project implement green technology** (e.g. alternate forms of energy, recycled materials, LID techniques, etc.). | ■ Yes ☐ No ☐ N/A<br>If yes, please describe.<br>The project will utilize solar energy to pump water for wildlife and livestock. |
| **e. Are you an Urban Water Supplier[1]?** | ☐ Yes ■ No ☐ N/A |
| **f. Are you are an Agricultural Water Supplier[2]?** | ☐ Yes ■ No ☐ N/A |
| **g. Is the project related to groundwater?** | ■ Yes ☐ No ☐ N/A<br>If yes, please indicate which groundwater basin.<br>Sierra Valley |

[1] Urban Water Supplier is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually.

[2] Agricultural Water Supplier is defined as a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding the acreage that receives recycled water.

# Climate Change – Project Assessment Checklist

This climate change project assessment tool allows project applicants and the planning team to assess project consistency with Proposition 84 plan standards and RWMG plan assessment standards. The tool is a written checklist that asks GHG emissions and adaptation/resiliency questions.

Name of project: ALS-13: Little Last Chance Lake

Project applicant: Sierra Wildlife Habitat & Community Foundation (SWHCF) and (SVRCD)

## GHG Emissions Assessment

### Project Construction Emissions

*(If you check any of the boxes, please see the attached worksheet)*

☒ The project requires nonroad or off-road engines, equipment, or vehicles to complete.
☒ The project requires materials to be transported to the project site.
☒ The project requires workers to commute to the project site.
☐ The project is expected to generate GHG emissions for other reasons.
☐ The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

### Operating Emissions

*(If you check any of the boxes, please see the attached worksheet)*

☒ The project requires energy to operate.
☒ The project will generate electricity.
☐ The project will proactively manage forests to reduce wildfire risk.
☒ The project will affect wetland acreage.
☒ The project will include new trees.
☒ Project operations are expected to generate or reduce GHG emissions for other reasons.

# Adaptation & Resiliency Assessment

## Water Supply

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water supply vulnerability issues:

- ☐ Not applicable
- ☐ Reduced snowmelt
- ☒ Unmet local water needs (drought)
- ☒ Increased invasive species

A year-round water supply will benefit wildlife, livestock, and help the surrounding wetland and meadows to be healthier (like they used to be).

## Water Demand

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water demand vulnerability issues:

- ☐ Not applicable
- ☒ Increasing seasonal water use variability
- ☐ Unmet in-stream flow requirements
- ☐ Climate-sensitive crops
- ☐ Groundwater drought resiliency
- ☒ Water curtailment effectiveness

The lake has been going dry by late spring. By staying full through summer, the waterfowl hatch survival rate will be much greater. Meadows will function properly and wildlife and livestock will have stock water, reducing the need to pump water from wells.

## Water Quality

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority water quality vulnerability issues:

- ☐ Not applicable
- ☐ Increasing catastrophic wildfires
- ☒ Eutrophication (excessive nutrient pollution in a waterbody, often followed by algae blooms and other related water quality issues)
- ☒ Seasonal low flows and limited abilities for waterbodies to assimilate pollution
- ☐ Water treatment facility operations
- ☒ Unmet beneficial uses (municipal and domestic water supply, water contact recreation, cold freshwater habitat, spawning habitat, wildlife habitat, etc.)

Water is life. When this 200-plus acre wetland functions properly, it's alive with wildlife and it will be an extraordinary wetland home to thousands of birds. When dry, it's bare ground and susceptible to wind erosion.

## Flooding

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority flooding vulnerability issues:

- ☒ Not applicable
- ☐ Aging critical flood protection
- ☐ Wildfires
- ☐ Critical infrastructure in a floodplain
- ☐ Insufficient flood control facilities

## Ecosystem and Habitat

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority ecosystem and habitat vulnerability issues:

- ☐ Not applicable
- ☐ Climate-sensitive fauna or flora
- ☒ Recreation and economic activity
- ☐ Quantified environmental flow requirements
- ☒ Erosion and sedimentation
- ☒ Endangered or threatened species
- ☒ Fragmented habitat

Little Last Chance Lake is a special place for birding. People come from everywhere to see birds in Sierra Valley. Several listed and threatened species summer in Sierra Valley. Irrigation and winter and spring storage at Frenchman Reservoir limits the water in Little Last Chance Lake.

## Hydropower

Describe how the project makes the watershed (more/less) resilient to one or more of the following high priority hydropower vulnerability issues:

- ☒ Not applicable
- ☐ Reduced hydropower output

ALS-13: Little Last Chance Lake

**GHG Emissions Analysis**

**Project Construction Emissions**

[X] The project requires non-road or off-road engines, equipment, or vehicles to complete. If yes:

| Type of Equipment | Maximum Number Per Day | Total 8-Hour Days in Operation | Total $MTCO_2e$ |
|---|---|---|---|
| Scrapers | 15 | 15 | 231 |
| | | | 0 |
| Tractors/Loaders/Backhoes | 20 | 20 | 109 |
| Excavators | 14 | 14 | 86 |
| | | | 0 |
| Tractors/Loaders/Backhoes | 2 | 2 | 1 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | **Total Emissions** | **426** |

[X] The project requires materials to be transported to the project site. If yes:

| Total Number of Round Trips | Average Trip Distance (Miles) | Total $MTCO_2e$ |
|---|---|---|
| 10 | 12 | **0** |

[X] The project requires workers to commute to the project site. If yes:

| Average Number of Workers | Total Number of Workdays | Average Round Trip Distance Traveled (Miles) | Total $MTCO_2e$ |
|---|---|---|---|
| 3 | 20 | 10 | **0** |

[ ] The project is expected to generate GHG emissions for other reasons. If yes, explain:

[ ] The project does not have a construction phase and/or is not expected to generate GHG emissions during the construction phase.

ALS-13: Little Last Chance Lake

**Project Operating Emissions**

[X] The project requires energy to operate. If yes:

| Annual Energy Needed | Unit | Total $MTCO_2e$ |
|---|---|---|
| 74 | kWh (Electricity) | **0** |
| | Therm (Natural Gas) | **0** |

[X] The project will generate electricity. If yes:

| Annual kWh Generated | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

[ ] The project will proactively manage forests to reduce wildfire risk. If yes:

| Acres Protected from Wildfire | Total $MTCO_2e$ |
|---|---|
| | **0** |

*A negative value indicates GHG reductions

[ ] The project will affect wetland acreage. If yes:

| Acres of Protected Wetlands | Total $MTCO_2e$ |
|---|---|
| 400 | **-1,732** |

*A negative value indicates GHG reductions

[ ] The project will include new trees. If yes:

| Acres of Trees Planted | Total $MTCO_2e$ |
|---|---|
| 200 | **-37,200** |

*A negative value indicates GHG reductions

[ ] Project operations are expected to generate or reduce GHG emissions for other reasons. If yes, explain:

Solar panels will operate year-round generating far more energy than that needed for temporary seasonal pump usage.

**GHG Emissions Summary**

| | | |
|---|---|---|
| Construction and development will generate approximately: | 427 | $MTCO_2e$ |
| In a given year, operation of the project will result in: | -38,932 | $MTCO_2e$ |