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** ☐ **Floodplains/Meadows/Waterbodies** ☐ **Municipal Services** ☐ **Tribal Advisory Committee** ☐ **Uplands/Forest**
Project Description (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. 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. **Plan Components**: Shall include, at minimum, state-mandated format and contents: • A description of the physical setting and characteristics of the aquifer system. • Historical data, groundwater levels, ground water quality, subsidence, groundwater-surface water interaction, a discussion of historical and projected water demands and supplies. • A map that details the area of the basin and boundaries. • A map identifying existing and potential recharge areas that substantially contribute to the recharge of the basin. • Measurable objectives, as well as interim milestones in increments of five years, to achieve the sustainability goal in the basin within 20 years. • A planning and implementing horizon. • The monitoring and management of groundwater levels, water quality, groundwater quality degradation, and inelastic land surface subsidence. • A summary of the type of monitoring. • The monitoring protocols. • A description of the consideration of other applicable local government plans and how the GSP may affect those plans. 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 ☐ 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 ■ N/A		
Build communication and collaboration among water resources stakeholders in the Region.	■ Yes ☐ 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 ■ N/A		
Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality.	■ Yes ☐ 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 ■ 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 ■ N/A		
Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the RWQC Basin Plan.	■ Yes ☐ 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 ■ 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 ☐ 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 ☐ 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 ☐ 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 ☐ 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 ☐ 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 ☐ N/A	The GSP project includes outreach and public / stakeholder input.	117,700 acres
Address economic challenges of agricultural producers.	■ Yes ☐ 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 ☐ 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 **SVGMD**: • Prepare RFP and hire consultant; • Provide information to and oversee consultant work; • Help facilitate gathering stakeholder/public input and public communications efforts. **Consultant**: • Review relevant historical data, documents and models; • Conduct or oversee necessary additional research; • 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. **SVGMD**: • Provide information to and oversee consultant work; • Help facilitate gathering stakeholder/public input and public communications efforts. **Consultant**: • Encourage and collect stakeholder and public input; • 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. **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 ■ No ☐ 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 (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 ■ No ☐ 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 ☐ No ■ N/A			
d. Permitting	☐	☐ Yes ☐ No ■ N/A			
e. Construction Contracting	☐	☐ Yes ☐ No ■ N/A			
f. Construction Implementation	☐	☐ Yes ☐ No ■ 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). **In short**: Much data and modeling will be available to feed into the development of the GSP. Following is a list of source studies: • CA DWR Bulletin 118, Sacramento River Hydrologic Region • Technical Report on 2003-2005 Hydrogeologic Evaluation for Sierra Valley • Technical Report on 2005-2011 Hydrogeologic Evaluation for Sierra Valley • Technical Report on 2012-2014 Hydrogeologic Evaluation for Sierra Valley • 2005 Sierra Valley Aquifer Tests • Upper Middle Fork Physically Based Water Management Tool – Dr. M. Levent Kavvas, UC Davis (in development) • 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 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 If yes, please indicate which groundwater basin. 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 $MTCO_2e$