



featherriver.org

UPPER FEATHER RIVER IRWM PROJECT INFORMATION FORM

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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 | Sierraville Public Utility District |
| Name of Primary Contact | Nanci Davis |
| Name of Secondary Contact | Laura Read |
| Mailing Address | PO Box 325, Sierraville, CA 96126 |
| E-mail | nancidavis212@gmail.com |
| Phone | 530-574-8331 |
| Other Cooperating Agencies / Organizations / Stakeholders | |
| Is your agency/organization committed to the project through completion? If not, please explain | Yes |

II. GENERAL PROJECT INFORMATION

| | |
|---|---|
| Project Title | MS-40 Pumphouse Improvement |
| Project Category | <input type="checkbox"/> Agricultural Land Stewardship <input type="checkbox"/> Floodplains/Meadows/Waterbodies <input checked="" type="checkbox"/> Municipal Services <input type="checkbox"/> Tribal Advisory Committee <input type="checkbox"/> Uplands/Forest |
| Project Description (Briefly describe the project, in 300 words or less) | <p>Upgrade pump house to adhere to OSHA standards, to house new pump and new secondary pump, to isolate chlorine storage, to adequately ventilate and heat, to secure from rodent intrusion, to install eye wash station and for electrical and control upgrades.</p> <p>Depending on results of alternative water source analysis it is possible that the pump house would be designed to house a filtration system.</p> |
| Project Location Description (e.g., along the south bank of stream/river between river miles or miles from Towns/intersection and/or address): | NW ¼ NE ¼ of section 25, T.20N. R.14E. MDM US Forest Service Property under the authority of the Federal Land Policy and Management Act - October 21, 1976 Special Use Permit Authorization No SVD106401A |
| Latitude: | 39° 33' 48.06" N |
| Longitude: | 120° 22' 15.88 W |

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. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A | | |
| Reduce potential for catastrophic wildland fires in the Region. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A | A reliable delivery system will provide a more dependable source of fire suppression water to support initial attack activities | |
| Build communication and collaboration among water resources stakeholders in the Region. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A | Will provide more reliable domestic water to SPUD members throughout the town of Sierraville | 134 hook-ups |
| 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. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A | Creates a more dependable water supply for service area. Currently pump often falls out of service and requires maintenance and repair | 300,000 gallons |
| Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A | Provides more efficient chlorination, better monitoring of water quality, more efficient pumping, rodent and pest free environment | |
| Continue to actively engage in FERC relicensing of hydroelectric facilities in the Region. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A | | |
| Address economic challenges of municipal service providers to serve customers. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A | Sierraville residents cannot afford this necessary project without financial assistance. This project creates a more cost effective, energy efficient and, reliable delivery system for this | |

| 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) |
|--|---|--|--|
| | | community. | |
| Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the RWQC Basin Plan. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A | Creates a cleaner and more cost-effective and energy efficient delivery system. | |
| Address water resources and wastewater needs of DACs and Native Americans. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A | Sierraville is a Severely Disadvantaged Community serviced by the SPUD conveyance system. A more reliable conveyance system is needed. | |
| Coordinate management of recharge areas and protect groundwater resources. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A | | |
| Improve coordination of land use and water resources planning. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A | | |
| Maximize agricultural, environmental and municipal water use efficiency. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A | A new pump house will ensure pumping capabilities to meet the needs of the system | |
| Effectively address climate change adaptation and/or mitigation in water resources management. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A | | |
| Improve efficiency and reliability of water supply and other water-related infrastructure. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A | Improves water quality monitoring, improves reliability and energy efficiency of water delivery system. | |
| Enhance public awareness and understanding of water management issues and needs. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A | SPUD will communicate with members about impacts of the improvements and engage and educate the public in water conservation. | |
| Address economic challenges of agricultural producers. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A | | |
| Work with counties/communities/groups to make sure staff capacity exists for actual administration and implementation of grant | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A | SPUD Board of Directors is a volunteer group committed to assuring responsible management of the district. | |

| 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) |
|--------------------------------------|---|--|--|
| funding. | | | |

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 | <input checked="" type="checkbox"/> N/A | |
| b. Disadvantaged Communities ¹ | <input type="checkbox"/> N/A | Sierraville is a Severely Disadvantaged Community dependent solely on SPUD services for drinking water. This project will benefit the community by strengthening the ability to deliver water consistently for the long term. |
| c. Environmental Justice ² | <input type="checkbox"/> N/A | The project provides a safer, more reliable water supply for all of our customers regardless of race, culture or income. |
| d. Drought Preparedness | <input type="checkbox"/> N/A | A more efficient delivery system improves monitoring capabilities and reduces loss from leaks |
| e. Assist the region in adapting to effects of climate change ³ | <input checked="" type="checkbox"/> N/A | |
| f. Generation or reduction of greenhouse gas emissions (e.g. green technology) | <input type="checkbox"/> N/A | The new facility will be designed using energy efficient equipment and fixtures, and supplemented with solar power If feasible. Increased reliability will reduce vehicle use and power generation for operation and maintenance. |

| | | |
|---|--|--|
| <p>g. Other expected impacts or benefits that are not already mentioned elsewhere</p> | <p><input checked="" type="checkbox"/> N/A</p> | |
| <p>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/) .</p> <p>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.</p> <p>³ Climate change effects are likely to include increased flooding, extended drought, and associated secondary effects such as increased wildfire risk, erosion, and sedimentation.</p> | | |

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.

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

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 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Urban water use efficiency | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Creates a more efficient delivery system for the rural community. |
| Improve Flood Management | | |
| Flood management | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Improve Operational Efficiency and Transfers | | |
| Conveyance – regional/local | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Cleaner and more reliable conveyance system. |
| System reoperation | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Improvement of existing operations and management procedures of water facilities to meet needs more efficiently and reliably. |
| Water transfers | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Increase Water Supply | | |
| Conjunctive management | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Precipitation Enhancement | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Municipal recycled water | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Surface storage – regional/local | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Improve Water Quality | | |
| Drinking water treatment and distribution | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Includes installation of safe chlorination system and improves monitoring capabilities |
| Groundwater remediation/aquifer remediation | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Matching water quality to water use | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| Pollution prevention | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Salt and salinity management | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Urban storm water runoff management | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Practice Resource Stewardship | | |
| Agricultural land stewardship | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Ecosystem restoration | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Forest management | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Land use planning and management | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Recharge area protection | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Sediment management | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Watershed management | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |

| Resource Management Strategy | Will the Project incorporate RMS? | Description of how RMS to be employed, if applicable |
|------------------------------|---|--|
| People and Water | | |
| Economic incentives | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Outreach and engagement | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | SPUD regularly distributes newsletters with information about system operation and water conservation efforts, and tips for individuals. |
| Water and culture | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| Water-dependent recreation | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Wastewater/NPDES | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | | | |
| Funding Match Waiver request?: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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 | 10,000 | | | 10,000 |
| b. | Land Purchase/Easement | n/a | | | n/a |
| c. | Planning/Design/Engineering / Environmental | 52,900 | | | 52,900 |
| d. | Construction/Implementation | 154,500 | | | 154,500 |
| e. | Environmental Compliance/Mitigation/Enhancement | 3,500 | | | 3,500 |
| f. | Construction Administration | 5,000 | | | 5,000 |
| g. | Other Costs | 0 | | | 0 |
| h. | Construction/Implementation Contingency | 17,500 | | | 17,500 |
| i. | Grand Total (Sum rows (a) through (h) for each column) | 243,400 | | | 243,400 |
| j. | Can the Project be phased? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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). | From rate-payers monthly payments and reserve – maintenance costs should be reduced as compared to current operation because of increased efficiencies | | |
| l. | Has a Cost/Benefit analysis been completed? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | |
| m. | Describe what impact there may be if the project is not funded (300 words or less) | Continued use of dilapidated, unsafe and unreliable pump house and antiquated equipment. Chlorine storage and use in close proximity to controls will eventually destroy electrical system. During periods of difficult access in winter months the District runs the risk of being unable to refill its storage tank due to not having backup generation onsite, or access to replace the single pump that currently serves the District. If one of these short-term fixes fails SPUD will not be able to supply water for health and safety or fire protection. | | |
| <p>*List all sources of funding. Note: See Project Development Manual, Exhibit B, for assistance in completing this table http://featherriver.org/documents/.</p> | | | | |

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 | <input checked="" type="checkbox"/> | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Review with water system operator of problems of existing pump house; alternative water source analysis | 4/15 | 1 month after securement of grant funding |
| b. Final Design | <input checked="" type="checkbox"/> | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | | 5/15 | 1 month after securement of grant funding |
| c. Environmental Documentation (CEQA / NEPA) | <input type="checkbox"/> | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Internal scoping has been completed by the Forest Service. An Environmental Assessment/Categor | | |

| | | | | | |
|--|--------------------------|--|--|---|--|
| | | | ical Exclusion (documented in a Decision Memo) is expected soon | | |
| d. Permitting | <input type="checkbox"/> | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | | 5/15 | 8/15 |
| e. Construction Contracting | <input type="checkbox"/> | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | | | |
| f. Construction Implementation | <input type="checkbox"/> | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Construct new building and underground piping. Install new pump and new secondary pump. Install new service panel and electrical panels and motor controls. Isolate chlorine storage, adequately ventilate and heat structure. Install eye wash station, | 1 month after securement of grant funding | 3 months after securement of grant funding |
| 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.). | SPUD General Plan |
| b. List technical reports and studies supporting the feasibility of this project. | Water System Upgrades report. Preliminary Engineering Report from Walters Engineering |
| c. Concisely describe the scientific basis (e.g. how much research has been conducted) of the proposed project in 300 words or less. | Licensed water system operator has defined the need based on his expertise and familiarity with the current system condition. Operator has consulted with the District's current engineer, including preliminary sketches of proposed new facilities. District board has evaluated proposed upgrades with operator and engineer and researched building structure options. |
| d. Does the project implement green technology (e.g. alternate forms of energy, recycled materials, LID techniques, etc.). | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A If yes, please describe. Increased energy efficiency supplemented with solar |
| e. Are you an Urban Water Supplier¹? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A |
| f. Are you are an Agricultural Water Supplier²? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A |
| g. Is the project related to groundwater? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A If yes, please indicate which groundwater basin. |
| <p>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.</p> <p>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.</p> | |

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: MS-40 Pumphouse Improvements

Project applicant: Sierraville Public Utility 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/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

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.)

Building and outdated and current size of building does not allow adequate space for OSHA requirements for chlorination facilities or additional pump. Pump House is in a remote area for which winter access is difficult. Pumping redundancy and backup generation is needed to maintain reliability in winter months. Electrical equipment is outdated and must be brought up to current codes. A new building would maximize efficiency in heating and cooling, saving on overall energy costs.

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

MS-40: Pumphouse Improvement

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 ₂ e |
|------------------------------|------------------------|--------------------------------|---------------------------|
| Tractors/Loaders/Balckhoes | 1 | 5 | 1 |
| Dumpers/Tenders | 1 | 3 | 0 |
| Other Construction Equipment | 1 | 1 | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| Total Emissions | | | 2 |

The project requires materials to be transported from outside of the UFR watershed. If yes:

| Total Number of Round Trips | Average Trip Distance (Miles) | Total MTCO ₂ e |
|-----------------------------|-------------------------------|---------------------------|
| 6 | 60 | 1 |

The project requires workers from outside of the UFR watershed. If yes:

| Average Number of Workers | Total Number of Workdays | Average Round Trip Distance Traveled (Miles) | Total MTCO ₂ e |
|---------------------------|--------------------------|--|---------------------------|
| 4 | 20 | 50 | 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.

Upper Feather River IRWMP
Project Assessment - GHG Emissions Analysis

MS-40 Pumphouse Improvement

Project Operating Emissions

The project requires energy to operate. If yes:

| Annual Energy Needed | Unit | Total MTCO ₂ e |
|----------------------|---------------------|---------------------------|
| 9,000 | kWh (Electricity) | 2 |
| | Therm (Natural Gas) | 0 |

The project will generate electricity. If yes:

| Annual kWh Generated | Total MTCO ₂ e |
|----------------------|---------------------------|
| | 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 ₂ e |
|-------------------------------|---------------------------|
| | 0 |

*A negative value indicates GHG reductions

The project will affect wetland acreage. If yes:

| Acres of Protected Wetlands | Total MTCO ₂ e |
|-----------------------------|---------------------------|
| | 0 |

*A negative value indicates GHG reductions

The project will include new trees. If yes:

| Acres of Trees Planted | Total MTCO ₂ e |
|------------------------|---------------------------|
| | 0 |

*A negative value indicates GHG reductions

GHG Emissions Summary

| | |
|---|-----------------------|
| Construction and development will generate approximately: | 3 MTCO ₂ e |
| In a given year, operation of the project will result in: | 2 MTCO ₂ e |