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** ☐ **Floodplains/Meadows/Waterbodies** ☐ **Municipal Services** ☐ **Tribal Advisory Committee** ☐ **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 ☑ N/A	N/A	N/A
Reduce potential for catastrophic wildland fires in the Region.	☑ Yes ☐ 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 ☐ 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 ☑ 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 ☐ 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 ☑ N/A		N/A
Address economic challenges of municipal service providers to serve customers.	☐ Yes ☑ 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 ☐ 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 ☑ N/A	N/A	N/A
Coordinate management of recharge areas and protect groundwater resources.	☑ Yes ☐ 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 ☐ 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 ☐ 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 ☐ 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 ☐ 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 ☐ 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 ☐ 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 ☑ 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 ☑ No ☐ N/A	TBD	7/1/2016	10/1/2016

b. Final Design	☐	☐Yes ☑ No ☐ N/A	TBD	10/1/2016	12/15/2016
c. Environmental Documentation (CEQA / NEPA)	☐	☐ Yes ☑ No ☐ N/A	CEQA will be covered by the sponsoring organizations	10/1/2016	3/1/2017
d. Permitting	☐	☐ Yes ☑ No ☐ N/A	TBD	12/1/2016	1/1/2017
e. Construction Contracting	☐	☐ Yes ☑ No ☐ N/A	TBD	1/1/2017	3/30/2017
f. Construction Implementation	☐	☐ Yes ☑ No ☐ 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. • National Weather Service relies on local weather spotters to fill in their radar gaps. • 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. • 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 • http://alfalfa.ucdavis.edu/subpages/Irrigation/IrrigationBrochure.pdf • http://irrigationefficiency.co.nz/assets/Uploads/Farmers-Guide.pdf • 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 If yes, please describe. 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 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 $MTCO_2e$