



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	USDA – Plumas National Forest
Name of Primary Contact	Joe Hoffman
Name of Secondary Contact	Nancy Francine
Mailing Address	159 Lawrence Street Quincy, CA 95971
E-mail	jahoffman@fs.fed.us
Phone	530-283-7868
Other Cooperating Agencies / Organizations / Stakeholders	CA Regional Water Quality Control Board (Central Valley) Trout Unlimited (Feather River Chapter) Plumas Fire Safe Council
Is your agency/organization committed to the project through completion? If not, please explain	Yes. Plumas National Forest has identified this work as essential projects for 4 priority watersheds. Each year going forward, PNF will be working to implement the needed road improvements using about \$60,000 of Forest funds. IRWM grant funds would facilitate implementation of the needed road work much quicker than if only Forest funds are used.

II. GENERAL PROJECT INFORMATION

Project Title	UF-7: U.S. Forest Service Road Improvements
Project Category	<input type="checkbox"/> Agricultural Land Stewardship <input type="checkbox"/> Floodplains/Meadows/Waterbodies <input type="checkbox"/> Municipal Services <input type="checkbox"/> Tribal Advisory Committee <input checked="" type="checkbox"/> Uplands/Forest
Project Description (Briefly describe the project, in 300 words or less)	More than 4,000 miles of roads and motorized trails exist on Plumas National Forest. The road and trail network is essential to supporting popular recreation activities in the region and is vital for effective forest management and wildfire suppression. However, forest roads have also been frequently identified as the primary source of fine sediment to streams on National Forest System lands. Fortunately, sedimentation issues are not spread equally across all Forest roads so the problem can largely be addressed by cost-effectively treating a small subset of problem road segments.

	<p>This project will reduce road-generated sediment delivery to streams in four priority watersheds on Plumas National Forest by improving drainage along roughly 80 miles of Forest roads or motorized trails. All of the 260 miles of road in the 4 watersheds will be field surveyed and treatments will target problem road segments.</p> <p>Road treatments will generally fall into two types. One, existing road surface and ditch drainage features will be improved, and new drainage structures added, so that road runoff is effectively dispersed and not concentrated in ditches or rills that run directly to streams. Drainage features to be added include roadway dips, ditch relief culverts, and rocked ford crossings. Second, the potential for large scale erosion of road prisms will be reduced by providing emergency overflow dips at existing stream crossing culverts. These “critical dips” will function when a crossing culvert plugs during a flood, assuring that flood flows will flow directly back into the channel, rather than being diverted down the roadway in an uncontrolled fashion.</p> <p>Roads will be graded and rock surfacing will be installed at key stream crossings. No roads or motorized trails will be closed or obliterated with these treatments.</p>
<p>Project Location Description (e.g., along the south bank of stream/river between river miles or miles from Towns/intersection and/or address):</p>	<p>Roads and trails to be improved are all located in 4 USFS-designated priority watersheds (see attached map). All 4 of these watersheds drain to the “Wild and Scenic” Middle Fork Feather River. Roughly 260 miles of system roads and trails exist in these watersheds. The specific roads to be treated will not be known until all 260 miles are field surveyed and problem spots identified. Past efforts in similar watersheds indicate that roughly 80 miles of road and trail will be improved, with treatments concentrated on problem segments totaling an estimated 60 miles.</p>
<p>Latitude:</p>	<p>See attached map</p>
<p>Longitude:</p>	<p>See attached map</p>

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 checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Forest roads, particularly mid-slope roads, concentrate hillside runoff and intercept ground water flows. Proposed road treatments will disperse runoff so that hillslope drainage patterns will be closer to natural function.	Drainage improved on 80 miles of Forest road and motorized trail
Reduce potential for catastrophic wildland fires in the Region.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Improving road and trail drainage will substantially reduce rutting and improve road drivability. Future road maintenance costs will be substantially reduced. Smooth and well-maintained road access is integral to performing fuel reduction treatments and fighting wildfire.	Forest access improved in 4 priority watersheds totaling 105,000 acres
Build communication and collaboration among water resources stakeholders in the Region.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Local road and motorized trail recreation groups will be consulted so that access to priority roads and trails will be improved. Trout Unlimited will be consulted so that sedimentation will be reduced to priority streams.	Drainage improved on 80 miles of Forest road and motorized trail; sedimentation reduced in roughly 25 miles of perennial streams
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	The four priority watersheds where road access will be improved all drain to the Wild and Scenic Middle Fork Feather River, including the Nelson Creek watershed, the Little North Fork watershed, and the Middle Fork Feather River near Lakes Basin and Claremont Peak. These are all popular recreation areas.	Forest access improved in 4 priority watersheds totaling 105,000 acres that all drain to the Wild and Scenic Middle Fork Feather River
Encourage municipal service	<input type="checkbox"/> 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)
providers to participate in regional water management actions that improve water supply and water quality.	<input checked="" type="checkbox"/> N/A		
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 type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A		
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	The Regional Water Quality Control Board recognizes Forest roads as being the primary source of fine sediment delivery that affects beneficial uses, including spawning habitat, cold freshwater habitat, and wildlife habitat	Fine sediment reduced in roughly 25 miles of perennial streams
Address water resources and wastewater needs of DACs and Native Americans.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	All of the Plumas County communities within and near the 4 priority watersheds to be treated are classified as DACs. Forest recreation is a very popular, inexpensive recreation opportunity enjoyed by these communities. These recreation opportunities will be enhanced by improving road access and wildlife habitat in these watersheds.	Forest access improved on 80 miles of Forest road and motorized trail; sedimentation reduced in roughly 25 miles of perennial streams
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Improved Forest road access will benefit all agencies involved in fuels reduction efforts in these watersheds	Forest access improved in 4 priority watersheds totaling 105,000 acres
Maximize agricultural, environmental and municipal water use efficiency.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A		
Effectively address climate	<input checked="" type="checkbox"/> Yes	By enhancing communities'	Forest access

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)
change adaptation and/or mitigation in water resources management.	<input type="checkbox"/> N/A	ability to address forest fuels and wildland fires, heavy carbon inputs from large wildfires will be reduced	improved in 4 priority watersheds totaling 105,000 acres
Improve efficiency and reliability of water supply and other water-related infrastructure.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A		
Enhance public awareness and understanding of water management issues and needs.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Public understanding will be enhanced regarding how well-drained roads not only improve Forest access but also improve aquatic habitat	Drainage improved on 80 miles of Forest road and motorized trail in 4 popular watersheds
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 funding.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	IRWM grant funds for USFS road improvements will greatly enhance the Forest's limited funding for maintaining and improving Forest access	Drainage improved on 80 miles of Forest road and motorized trail in 4 priority watersheds

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	<input checked="" type="checkbox"/> N/A	
b. Disadvantaged Communities¹	<input type="checkbox"/> N/A	All of the Plumas County communities within and near the 4 priority watersheds to be treated are classified as DACs. Forest recreation is a very popular, inexpensive recreation opportunity enjoyed by these

		communities. These recreation opportunities will be enhanced by improving road access and wildlife habitat in these watersheds.
c. Environmental Justice²	<input checked="" type="checkbox"/> N/A	
d. Drought Preparedness	<input checked="" type="checkbox"/> N/A	
e. Assist the region in adapting to effects of climate change³	<input checked="" type="checkbox"/> N/A	
f. Generation or reduction of greenhouse gas emissions (e.g. green technology)	<input type="checkbox"/> N/A	By enhancing communities' ability to address forest fuels and wildland fires, heavy carbon inputs from large wildfires will be reduced
g. Other expected impacts or benefits that are not already mentioned elsewhere	<input type="checkbox"/> N/A	Improved Forest access Improved aquatic habitat Reduced road maintenance costs

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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A	g. Drinking water treatment and distribution	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A
b. Stormwater capture, storage, clean-up, treatment, management	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	h. Watershed protection and management	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A
c. Removal of invasive non-native species, creation/enhancement of wetlands, acquisition/protection/restoration of open space and watershed lands	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	i. Contaminant and salt removal through reclamation/desalting, other treatment technologies and conveyance of recycled water for distribution to users	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A
d. Non-point source pollution reduction, management and monitoring	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	j. Planning and implementation of multipurpose flood management programs	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A

e. Groundwater recharge and management projects	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A	k. Ecosystem and fisheries restoration and protection	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A
f. Water banking, exchange, reclamation, and improvement of water quality	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Urban water use efficiency	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Improve Flood Management		
Flood management	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Improve Operational Efficiency and Transfers		
Conveyance – regional/local	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
System reoperation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Groundwater remediation/aquifer remediation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Matching water quality to water use	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Pollution prevention	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Forest road construction and management to reduce delivery of fine sediment
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Curtailing nonpoint source pollution (fine sediment) to aquatic habitats
Forest management	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Road management for erosion control
Land use planning and	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Improving road and trail access for forest

Resource Management Strategy	Will the Project incorporate RMS?	Description of how RMS to be employed, if applicable
management		management and recreation
Recharge area protection	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Sediment management	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Preventing movement of sediment into waterways from forest roads
Watershed management	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Improving water quality and aquatic habitat in streams
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	Engaging recreation groups to improve the Forest transportation system
Water and culture	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Enhanced communication with forest recreation groups
Water-dependent recreation	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Improving recreation access; improving fisheries and aquatic habitat
Wastewater/NPDES	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Curtailling nonpoint source pollution (fine sediment)

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 type="checkbox"/> Yes <input checked="" 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		\$15,000 (USFS)		\$15,000
b.	Land Purchase/Easement				
c.	Planning/Design/Engineering / Environmental	\$90,000(eng, contract prep)	\$80,000 (USFS survey & NEPA)		\$170,000
d.	Construction/Implementation	\$800,000			\$800,000
e.	Environmental Compliance/ Mitigation/Enhancement				
f.	Construction Administration	\$35,000	\$25,000 (USFS)		\$60,000
g.	Other Costs				

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h.	Construction/Implementation Contingency	\$75,000			\$75,000
i.	Grand Total (Sum rows (a) through (h) for each column)	\$1,000,000	\$120,000		\$1,120,000
j.	Can the Project be phased? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide cost breakdown by phases				
		Project Cost	O&M Cost	Description of Phase	
	Phase 1	\$80,000		Field Survey / NEPA	
	Phase 2	\$90,000		Engineering / Contract Prep	
	Phase 3	\$475,000		Treat roads in 2 watersheds	
	Phase 4	\$475,000		Treat roads in 2 watersheds	
k.	Explain how operation and maintenance costs will be financed for the 20-year planning period for project implementation (not grant funded).	Road and trail treatments will be maintained using USFS road maintenance funds. Partnerships will be sought to help with maintenance of motorized trails.			
l.	Has a Cost/Benefit analysis been completed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Formal cost/benefit analysis has not been done. However, the cost effectiveness of improving road drainage to reduce sedimentation and future road maintenance is well established in published literature.			
m.	Describe what impact there may be if the project is not funded (300 words or less)	Plumas National Forest has designated these watersheds as being 4 of the Forest's 8 priority watersheds. The Forest is committed to completing these road treatments since they are essential projects of the action plans to improve watershed condition. However, Forest funds to implement such road improvements are limited. Beginning in 2016, the Forest will be committing at least \$60,000 per year toward this effort. If this IRWM proposal were funded, the treatments could be completed by 2017 or 2018. Without grant funding, the road improvements will take a decade or more to complete.			
<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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Some road surveys have been completed		Complete by November 2016
b. Final Design	<input type="checkbox"/>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Engineers will need to design treatments for problem roads		Complete by Nov 2016 (with grant funding) or Nov 2017 (without grant funding)
c. Environmental Documentation (CEQA / NEPA)	<input type="checkbox"/>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Plumas NF specialists will document NEPA compliance		Complete by Nov 2016 (with grant funding) or Nov 2017 (without grant funding)
d. Permitting	<input type="checkbox"/>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Will be addressed in the NEPA timeframe		
e. Construction Contracting	<input type="checkbox"/>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Engineers will develop contract solicitations and secure contractors (four separate contracts)		Complete by Aug 2017 (with grant funding) or Aug 2025 (without grant funding)
f. Construction Implementation	<input type="checkbox"/>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Four separate construction contracts (one for each watershed)		Complete by Nov 2017 (with grant funding) or Nov 2026 (without 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	- Plumas National Forest Land and Resource Management Plan
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<p>Plans, UWMPs, GWMPs, Water Master Plan, Habitat Conservation Plans, TMDLs, Basin Plans, etc.).</p>	<p>- CA RWQCB Central Valley Basin Plan - USFS Ecological Restoration Leadership Intent for Region 5</p>
<p>b. List technical reports and studies supporting the feasibility of this project.</p>	<p>- MacDonald & Coe: "Road sediment production and delivery: processes and management" - USFS, San Dimas Tech Center: "Water / Road Interaction Technology Series" - Bilby, et al: "The generation and fate of road-surface sediment in forested watersheds" - Reid & Dunne: "Sediment Production from forest road surfaces" - USDA PNW-GTR-509: "Forest roads: a synthesis of scientific information"</p>
<p>c. Concisely describe the scientific basis (e.g. how much research has been conducted) of the proposed project in 300 words or less.</p>	<p>See technical reports and studies above</p>
<p>d. Does the project implement green technology (e.g. alternate forms of energy, recycled materials, LID techniques, etc.).</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A If yes, please describe.</p>
<p>e. Are you an Urban Water Supplier¹?</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p>f. Are you are an Agricultural Water Supplier²?</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p>g. Is the project related to groundwater?</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A If yes, please indicate which groundwater basin.</p>
<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. 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>	

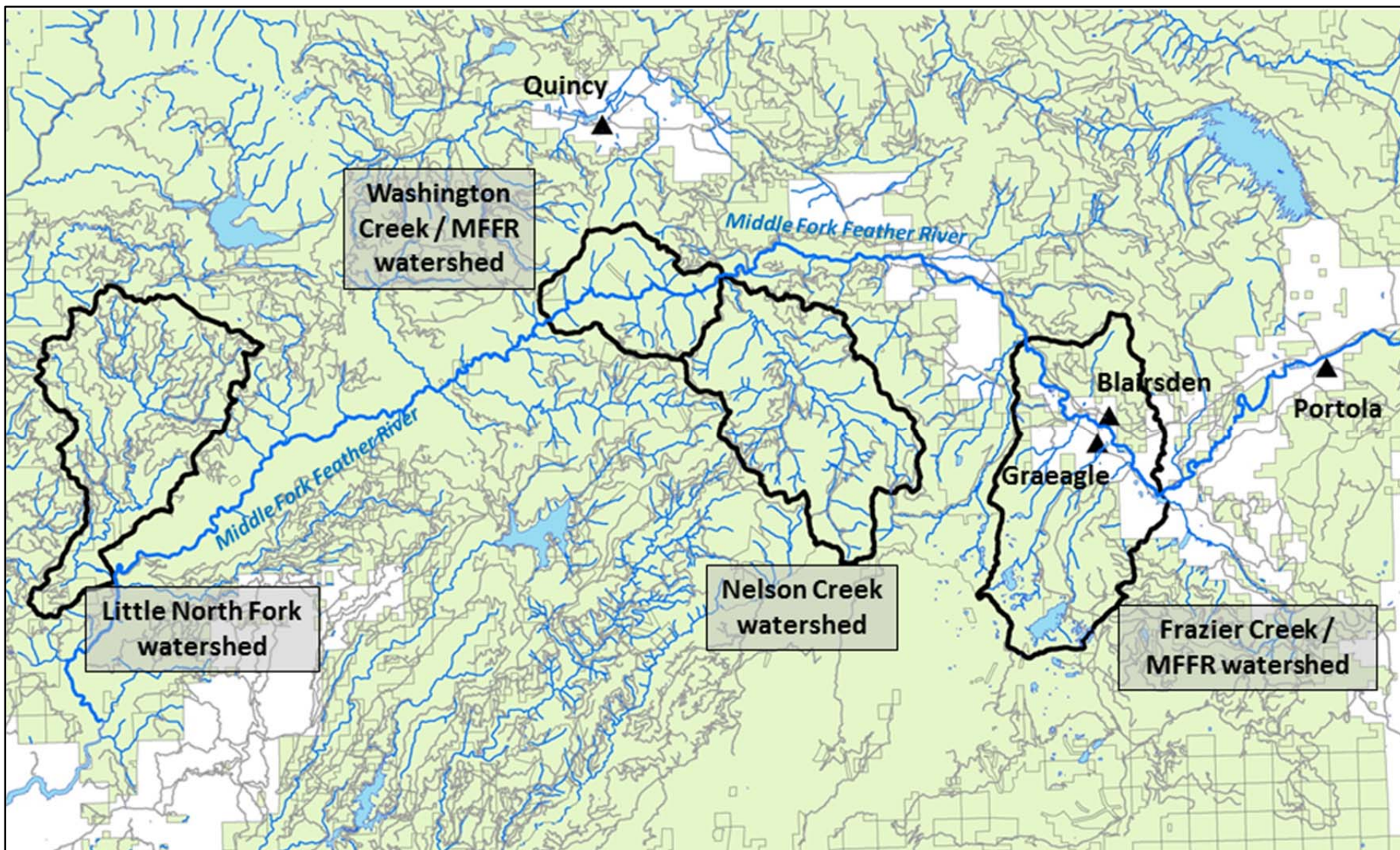


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Location Map for IRWM Proposal: U.S. Forest Service Road Improvements Project

Heavy black lines delineate the boundaries of the 4 priority watersheds to be treated. Forest roads and motorized trails are shown with light gray lines.



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: UF-7: USFS Road Improvements

Project applicant: USDA-Forest Service, Plumas National Forest

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

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.)

These road treatments are necessary to implement fuel reduction treatments on Plumas National Forest by satisfying Best Management Practices required by State of California water resource control boards to reduce water quality impacts along forest roads utilized for fuel reduction work. In addition, by improving road access, the capacity to effectively suppress and contain wildfires will be improved.

The additional acreage of forest protected from catastrophic wildfire as a result of these fuel reduction treatments and improved firefighting access is difficult to predict. For the purpose of this assessment, the additional acres protected from catastrophic wildfire are conservatively estimated to be 500 acres.

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 project will reduce erosion from National Forest System Roads and delivery of fine sediment to streams within designated priority watersheds.

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

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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
Crawler Tractors	1	80	34
Tractors/Loaders/Bac khoes	1	80	22
Dumpers/Tenders	1	80	2
Excavators	1	20	9
Graders	1	80	39
			0
			0
			0
			0
			0
Total Emissions			106

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

Total Number of Round Trips	Average Trip Distance (Miles)	Total MTCO ₂ e
100	80	12

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 ₂ e
10	80	80	22

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.

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Project Operating Emissions

The project requires energy to operate. If yes:

Annual Energy Needed	Unit	Total MTCO ₂ e
	kWh (Electricity)	0
	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
500	-3,150

*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	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:	140 MTCO ₂ e
In a given year, operation of the project will result in:	-3,150 MTCO ₂ e