

Tahoe Sierra IRWM

Project Template

Please provide information in the tables below:

I. Project Proponent Information

Agency/ Organization	Alpine County
Name of Primary Contact	Sarah Green
Name of Secondary Contact	Brian Peters
Mailing Address	50 Diamond Valley Road Markleeville, CA 96120
E-mail	awg.sarah@gmail.com
Phone (###)###-####	530-694-2327
Other Cooperating Agencies/Organizations/Stakeholders	Alpine Watershed Group, Markleeville Public Utility District
Is your agency/organization committed to the project through completion? If not, please explain	Yes

II. General Project Information

Project Title	Markleeville Creek Floodplain Restoration Project	
Project Category	<input checked="" type="checkbox"/> Water Supply/Wastewater <input checked="" type="checkbox"/> Restoration <input checked="" type="checkbox"/> Storm Water/Flood Control	
Project Description (Briefly describe the project, in 300 words or less)	<p>The project will 1) restore the natural stream channel and floodplain to improve geomorphic function and reconnect the stream to its historic floodplain, and 2) relocate and replace aging sewer infrastructure in the floodplain to reduce the threat of water quality impairments from flooding and sewer leaks, 3) construct a storm water capture and infiltration system for highway runoff, and 4) a provide public access and recreations features including walking trails and interpretive signage.</p>	
Project Prioritization:	Total number of projects submitted by your Agency:	1
	Agency Prioritization of this project (e.g., 3 of 5)	1
Does this project contribute to a larger Project (e.g., TMDL, EIP, Phase 2 of 3) ? If so provide description.	<p>Yes. It's in Phase 3 of 3. It is also a restoration priority of Carson River Watershed Adaptive Stewardship Plan (2007) and Carson River Watershed Floodplain Management Plan (2008). It also achieves the Markleeville PUD's sewer facility safety assessment and remediation plans. The project is also a component of the Alpine County Bicycle and Pedestrian Master Plan.</p>	
Political Support – List related MOUs, agreements or TACs currently in place.	<p>MOU with Alpine Watershed Group and Markleeville Public Utility District; MOU with U.S. Forest and Bureau of Land Management regarding land transfer and restoration;</p>	

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	Technical Advisory Committee involved in design review and project planning
Project Location:	
Latitude:	N 38.694861
Longitude:	W 119.777972
Project Location Description (e.g., along the south bank of stream/river between river miles or miles from Towns/intersection and/or address):	Along the northwest bank of Markleeville Creek, just downstream (east) of Highway 89 bridge

III. 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 will be quantified. If the project does not address any of the draft IRWM plan objectives, provide a one to two sentence description of how the project relates to a challenge or opportunity of the Region (see the bottom of page 4).

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)
WQ1 - Meet approved TMDL standards in accordance with the attainment date, and participate in the development of future TMDLs.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A		
WQ2 – Reduce pollutant loads by implementing measures such as stormwater LID retrofits, erosion control/restoration to meet Water Quality Objectives (WQOs) for receiving water bodies established in the Basin Plan within the planning horizon.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Project will reduce the threat of water quality impairments from flooding and sewer leaks; project will install storm water treatment system for Highway 89 runoff; restored floodplain will spread and slow water flows effectively reducing erosion and allow trapping of sediments/nutrients during overbank events	
WQ3 - Implement water quality monitoring programs through planning horizon, and coordinate annually throughout the Region.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Project involves stream monitoring component since 2006, involving stream bioassessment (benthic macroinvertebrates and riparian habitat) and chemical monitoring for pre and post-project comparison	

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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)
WQ4 - Ensure that drinking water supplied by public water systems continues to meet Federal and State standards.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A		
WQ5 - Restore degraded streams, wetlands, riparian and upland areas to re-establish natural water filtering processes.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Project site lacks stream bank, riparian and upland vegetation due to past development and alteration; Restored floodplain will reestablish natural water filtering processes, provide ecological benefits of overbanking and establish biogeochemical cycling	1 acre of floodplain reconstructed and riparian vegetation restored
WQ6 - Operate and maintain, build, or replace infrastructure for reliable collection, treatment and disposal of wastewater.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Project will replace aging sewer infrastructure, eliminate all manholes in the floodplain and reduce the threat of water quality impairments from flooding and sewer leaks	700 linear feet of new sewer line through the floodplain; 4 new manholes located outside the floodplain
WS1 - Provide water supply to meet projected demands for a 20-year planning horizon.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A		
WS2 - Operate and maintain, build, or replace infrastructure to reliably supply water.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A		
WS3 - Implement and promote water conservation measures and practices to meet state goals.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A		
GWM1 - Maintain and monitor groundwater supply to assure future reliability.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A		

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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)
GWM2 - Promote groundwater protection activities for high quality groundwater, and advocate for improvements to impacted groundwater quality through public education.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A		
GWM3 - Manage groundwater for multiple uses (e.g. municipal/industrial/agricultural supply and environmental use).	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A		
ER1 - Enhance and restore water bodies, wetlands, riparian areas and associated uplands to support healthy watersheds, viable native fish, wildlife and plant habitats.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Project will enhance degraded streams to support healthy native fish population; reestablishing riparian environment will provide important wildlife habitat and travel corridors; project will recover lost habitat due to site development	400 linear feet of streambank stabilized; 1 acre of floodplain restored
ER2 - Develop and implement programs to prevent the spread of existing invasive species and colonization of potential future invasive species.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Project involves site monitoring and stewardship to prevent any future infestation	5 acres monitored for weed-free status
ER3 - Implement, in coordination with public and private landowners, activities to manage forest health and wildfire risks.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A		

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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)
ER4 - Minimize ecosystem impacts caused by existing and new development.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Sewer system improvements will reduce potential for leaks; phase 1 of the project involved relocating the USFS facility and removing existing structures from the site; phase 3 will remove floodwall which channelizes stream and increases water velocity and bank erosion; project will revegetate erodible soils	700 linear feet of new sewer line through the floodplain; 4 new manholes located outside the floodplain; 250 linear feet of floodwall removed; 2 acres of land revegetated
IWM1 - Conduct local and regional water-related planning activities within the planning horizon as supported by current and future watershed science.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Project applies proven stream and floodplain restoration practices; Technical Advisory Committee guiding all aspects of project design and implementation	2007 Markleeville Creek Restoration Design Report and 2013 Design Plan provide scientific basis
IWM2 - Ensure collaboration among multiple jurisdictions within the Region for information exchange.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Collaboration is an integral part of the project given the multi components of the project – stream restoration, sewer, and public recreation/education; the Technical Advisory Committee provides diverse professional input; public outreach efforts offer valuable community representation	8 natural resource agencies and community groups represented on Technical Advisory Committee

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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)
IWM3 - Increase public education and awareness of watershed functions, protection and restoration needs to encourage stewardship by the public.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Public education component of project will engage community and visitors in learning about watershed resources and hands-on activities to assist with restoration and natural resource protection; volunteers will also be involved in long-term project stewardship through annual restoration projects and ongoing site monitoring	10 watershed stewards monitoring site; 30 volunteers assisting with maintenance; increased natural resource awareness of 100 community members and visitor
IWM4 - Promote activities that reduce flood risk.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Existing flood wall has exacerbated flooding condition at the site and accelerated bank failure downstream; reconstructed floodplain will permit for overbanking and alleviate current flood hazards; project will reduce risk of sewer system inundation due to flooding and reduce risk of sewer pipe failure; reduce flood risk	250 linear feet of floodwall removed; 1 acre of floodplain reconstructed
IWM5 - Address climate change (e.g. water quality, water supply, groundwater recharge, flood management) in local and regional planning efforts and support efforts to continue improving the science.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Restored floodplain will allow stream corridor to accommodate variable flood flows; floodplain will offer some water storage and attenuate stream flow; improved stream bank and riparian area vegetation will provide a carbon bank	1 acre of floodplain reconstructed and riparian vegetation restored
IWM6 - Monitor water storage, release and exchange activities in order to improve coordination with regional planning.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A		

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

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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.**

If applicable describe benefits or impacts of the project with respect to:		
a. Native American Tribal Community considerations.	<input type="checkbox"/> N/A	Project is being planned in partnership with Washoe Tribe; representative from Washoe Environmental Protection Department serves on Technical Advisory Committee; working to integrate native American historical and cultural interpretive signs
b. Disadvantaged Community considerations¹.	<input checked="" type="checkbox"/> N/A	
c. Environmental Justice ² considerations.	<input checked="" type="checkbox"/> N/A	
d. Assist the Region in adapting to effects of climate change³.	<input type="checkbox"/> N/A	Project will help mitigate potential long-term impacts of climate change as described in IWM5
e. Generation or reduction of greenhouse gas emissions (e.g. green technology).	<input checked="" type="checkbox"/> N/A	
f. Other expected impacts or benefits that are not already mentioned elsewhere.	<input checked="" type="checkbox"/> 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. A map has been provided with the Project Template Instruction for reference.

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.

IV. Resource Management Strategies (RMS)

For each resource management strategy 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 Resource Management Strategies can be found in Volume 2 of the 2009 California Water Plan here: <http://www.waterplan.water.ca.gov/cwpu2009/index.cfm>

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	

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Resource Management Strategy	Will the Project incorporate RMS?	Description, of how RMS to be employed if applicable
Urban Water Use Efficiency	<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 & Groundwater	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Desalination	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Precipitation Enhancement		
Recycled Municipal 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 and Aquifer Remediation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Matching Water Quality to Use	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Pollution Prevention	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Reduced erosion due to stream channelization and decaying floodwall; reduce potential for sewage leaks/spills
Salt and Salinity Management	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Urban Runoff Management	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Storm water treatment system for highway runoff will be installed
Practice Resources Stewardship		
Agricultural Lands Stewardship	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Economic Incentives (Loans, Grants, and Water Pricing)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Ecosystem Restoration	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Provides multiple environmental benefits (chemical, biological, geomorphic and hydrologic)
Forest Management	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Land Use Planning and Management	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Project has been integrated into downtown Markleeville bike and pedestrian plans; helps meet ordinances of the County Code; meets long-standing commitment with U.S. Forest Service to reclaim and remediate property
Recharge Areas Protection	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Water-dependent Recreation	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Will offer stream access, riparian walking trails and natural resource

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Resource Management Strategy	Will the Project incorporate RMS?	Description, of how RMS to be employed if applicable
		interpretive signage
Watershed Management	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	High priority restoration project; addressed in multiple watershed management plans
Improve Flood Management		
Flood Risk Management	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Alleviates and mitigates flood impacts

Note: The following RMS have been omitted from the list: Conveyance-Delta and Surface Storage – CALFED.

Other RMS addressed and explanation:

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V. **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.

a. Project Costs	Requested Grant Amount	Cost Share: Non-State Fund Source (Local/Federal Funding Match)	Cost Share: Other State Fund Source	Total Cost
1. Capital (2013 Dollars)	\$1,750,000	\$50,000 OR <input type="checkbox"/> DAC		\$1,800,000
2. Annual Operations and Maintenance (O&M)		\$5-10,000 annually for general maintenance		
b. Can the Project be phased?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
1. If so provide cost breakdown by phase(s)	Project Cost	O&M Cost	Description of Phase	
Phase 1	\$600,000		Sewer system modifications	
Phase 2	\$1,400,000		Site restoration and sewer activation	
Phase 3				
Phase 4				
c. List secured source(s) of funding for Project cost		Source(s)	Amount	
		District Attorney Trust Fund	\$27,000	
d. List proposed source(s) of unsecured funding and certainty of the sources for Project cost.		Alpine Watershed Group and County staff time	\$23,000	
e. Explain how operation and maintenance costs will be financed for the 25-year planning period for project implementation (not grant funded).		Covered by additional grant funding and partner match		
f. Basis for project cost¹ (e.g. conceptual, planning, bid, etc.)		Technical Specifications for Sewer and Restoration Design Plans		
g. Has a Cost/Benefit analysis been completed?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
h. Please describe what impact there may be if the project is not funded. (300 words or less)		If this project were not to proceed, the existing condition of the project site would continue to jeopardize water quality and the integrity of the stream channel. The floodwall and stream banks will continue to degrade and jeopardize the stability of the sewer lines through that area. Also the sewer manholes will remain in the floodplain and will risk flooding and sewer leaks.		

1. For the grant application a detailed project cost estimate will need to be provided with the following cost categories; per the IRWM PSP for Round 2, Implementation Grants: Direct Project Administration, Land Purchase/Easement, Planning/Design/Engineering/Environmental Documentation, Construction/Implementation, Environmental Compliance/Mitigation/Enhancement, Construction Administration, Other Costs, and Construction/Implementation Contingency.

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VI. 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 type="checkbox"/> Yes	<input type="checkbox"/>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Preliminary planning, community outreach and project assessment		December 2013
b. Final Design	<input type="checkbox"/>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sewer and Restoration Design Plans complete		December 2014
c. Environmental Documentation (CEQA/NEPA)	<input type="checkbox"/>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Project Description, Initial Study and Mitigated Negative Declaration complete		December 2014
d. Permitting	<input checked="" type="checkbox"/>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Necessary permitting packages being developed	January 2017	August 2017
e. Construction Contracting	<input type="checkbox"/>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		January 2018	May 2018
f. Construction Implementation	<input type="checkbox"/>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		June 2018	December 2019

Provide explanation if more than one project stage is checked as current status	
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VIII. Project Technical Feasibility

Please provide any related documents (date, title, author, and page numbers) that describe and confirm the technical feasibility of the project.

a. List the adopted planning documents the proposed project is consistent with or supported by (e.g. General Plans, UWMPs, GWMPs, Water Master Plans, Habitat Conservation Plans, TMDLs, Basin Plans, etc.)	Upper Carson River Watershed Stream Corridor Condition Assessment (2004), Carson River Watershed Adaptive Stewardship Plan (2007), Carson River Watershed Floodplain Management Plan (2008)
b. List technical reports and studies supporting the feasibility of this project	2007 Markleeville Creek Restoration Design Report and 2013 Design Plan provide hydro-geomorphic analysis and modeling
c. Concisely describe the scientific basis (e.g. how much research has been conducted) of the proposed project in 300 words or less.	Environmental consultants have conducted hydraulic and geomorphic assessment, collected supplemental observations of site geomorphology, hydraulics and vegetation, validated flood model for existing conditions and done engineering review of sewer system modifications. As mentioned above, the project has been identified as a restoration priority in multiple watershed assessments.
d. Does the project implement green technology (e.g. alternate forms of energy, recycled materials, LID techniques, etc.)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
1. If so please describe	
e. If you are an Urban Water Supplier¹:	
1. Have you completed an Urban Water Management Plan and submitted to DWR?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
2. Are you in compliance with AB1420?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
3. Do you comply with the water meter requirements (CWC §525)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
4. If the answer to any of the questions above is "no", do you intend to comply prior to receiving project funding	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
	Provide Explanation if necessary:
f. If you are an Agricultural Water Supplier²:	
1. Have you completed and submitted an AWMP (due 12/31/12)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
2. If not, will you complete and submit an AWMP prior to receiving project funding?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
	Provide Explanation if necessary:

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g. If the project is related to groundwater:	
1. Has a GWMP been completed and submitted for the subject basin?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
2. If not will a GWMP be completed within 1 year of the grant submittal date?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

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.