

MAC IRWMP  
Project Review Process Results  
January 2022

#	General Project Information			Tier 1, Step 1 Screening			Tier 1, Step 2 Screening		Tier 2, Step 2 Prioritization												
	Entity	Project Name	Project Status	Total Goals	Total State-wide Priors.	Result	Total RMS	Result	Econ. Benefit	Goals Addressed	RMS Integrated	Technical Feasibility	Multi-Agency Benefits	Climate Change Adaptation Benefit	Climate Change Mitigation Benefit	DAC Benefits	Native American Tribal Benefits	No EJ Concerns	Impl. Risk	Best Project for Intended Purpose	Result
1	ARCD	Soil Health & Climate Resilient Agriculture Education Program	Planning/Initial Study	5	1	PASS	3	PASS	High	High	Medium	High	Low	Medium	High	Low	Low	High	High	High	Medium
4a	AWA	Amador Canal Water Conservation Project	Planning/Initial Study	9	7	PASS	14	PASS	High	High	High	High	Low	High	Medium	Medium	Medium	High	High	High	High
4b	AWA	Ione Canal Water Conservation Project	In Design	9	7	PASS	14	PASS	High	High	High	High	Low	High	Medium	Medium	Medium	High	High	High	High
7	AWA	Surface Storage Feasibility Study	Planning/Initial Study	7	7	PASS	10	PASS	High	High	High	High	High	High	Medium	Medium	Medium	High	Medium	Medium	High
12	AWA	Camanche Area Regional Water Supply Project Phase II (CARWSP II)	Conceptual Design	5	7	PASS	10	PASS	High	High	High	High	Medium	Low	Low	High	Low	High	High	High	Medium
13	AWA	Ione Treatment Relocation Planning Study	Conceptual Design	4	7	PASS	7	PASS	High	Medium	High	High	High	Low	Low	Medium	Low	High	High	High	Medium
14	AWA	Upper-Lower Water System Reliability Intertie Project	Planning/Initial Study	3	3	PASS	3	PASS	High	Medium	Medium	High	High	High	Low	Medium	Medium	High	Medium	High	Medium
15	AWA	Lake Camanche Transmission Main Planning Project	Planning/Initial Study and In Environmental	6	7	PASS	6	PASS	High	High	High	High	Medium	Low	Medium	Medium	Low	High	High	High	Medium
18	AWA	Mt. Crossman Tanks Replacement and Consolidation Project	Conceptual Design	7	4	PASS	3	PASS	High	High	Medium	High	High	High	High	High	Low	High	High	High	High
19	AWA	Ione Clearwell Cover Hypalon Replacement Project	In Design	4	4	PASS	3	PASS	High	Medium	Medium	High	High	Medium	Medium	Medium	Medium	High	High	High	High
20	AWA	Lake Camanche Water Service Replacement – Phase IV	Design Complete	6	6	PASS	9	PASS	High	High	High	High	Low	High	Low	High	Low	High	High	High	High
21	AWA	Amador Water Agency Treated Water Supply Study	Planning/Initial Study	8	7	PASS	14	PASS	High	High	High	High	Low	Medium	Low	High	Medium	High	High	High	High
22	AWA	Community Leachfield Groundwater Nitrate Study	Planning/Initial Study	8	7	PASS	13	PASS	High	High	High	High	Low	High	Medium	Medium	Low	High	High	High	High
23	AWA	Martell Wastewater Lift Station Reduction Project	Planning/Initial Study	6	6	PASS	7	PASS	High	High	High	High	Low	Low	High	Medium	Low	High	High	High	Medium
24	AWA	Regional Wastewater Treatment and Recycling Project	Conceptual Design	8	7	PASS	16	PASS	High	High	High	High	High	High	Medium	Medium	Low	High	High	High	High
25	AWA	Lake Camanche Regional Wastewater System	Conceptual Design	8	7	PASS	14	PASS	High	High	High	High	Medium	High	Low	High	Low	High	High	High	High
26a	AWA	Tanner Water Treatment Plant Tanner Filter Media Replacement Project	In Design	6	5	PASS	7	PASS	High	High	High	High	High	Medium	Low	High	Medium	High	High	High	High
26b	AWA	Tanner Water Treatment Plant PLC Upgrade Project	In Design	6	7	PASS	7	PASS	High	High	High	High	High	Medium	Low	High	Medium	High	High	High	High
30	AWA	New York Ranch Reservoir Conservation and Management	Planning/Initial Study	7	8	PASS	16	PASS	High	High	High	High	Medium	Medium	Low	Medium	Medium	High	Medium	High	Medium
32	CCWD	Sheep Ranch Drinking Water Treatment & Distribution Compliance Project	Design Complete	3	3	PASS	12	PASS	Medium	Medium	High	High	Low	High	Low	High	Low	High	High	High	Medium
33	CCWD	West Point Automated Meter Reading Project	Conceptual Design	4	2	PASS	2	PASS	High	Medium	Low	High	Low	Low	Medium	High	Low	High	High	High	Medium
34	CCWD	West Point Water Treatment Plant Drinking Water Compliance Project	Design Complete	3	1	PASS	3	PASS	High	Medium	Medium	High	Low	Medium	Low	High	High	High	High	High	Medium
35	CCWD	Wilson Dam Meadow Restoration and Habitat Enhancement Plan	Planning/Initial Study	5	3	PASS	3	PASS	High	High	Medium	High	Low	High	Low	High	Low	High	High	High	Medium
36	Foothill	Amador Household Water Efficiency Project	Conceptual Design	6	3	PASS	3	PASS	High	High	Medium	High	Low	High	High	Medium	Medium	High	High	High	High
37	Foothill	Mokelumne High Country Meadow Restoration	Planning/Initial Study	8	3	PASS	8	PASS	High	High	High	High	Medium	Medium	High	Medium	Medium	High	High	High	High
38	Foothill	Riparian Noxious Weed Abatement Plan	Planning/Initial Study	3	1	PASS	6	PASS	High	Medium	High	High	Medium	High	Low	Medium	Medium	High	High	High	High
40	Foothill	Upper Mokelumne Watershed Landowner Guide	Planning/Initial Study	7	1	PASS	11	PASS	High	High	High	High	High	Medium	Medium	Medium	Medium	High	High	High	High
41	Jackson	Jackson Creek Sewer Line Relocation - Conceptual Design/Feasibility Study	Planning/Initial Study	2	3	PASS	3	PASS	Medium	Medium	Medium	High	Low	Low	Low	High	Low	High	High	High	Medium
42	UMRWA	Hemlock Forest Restoration Water Yield Project Study	Environmental Review Complete	5	3	PASS	3	PASS	High	High	Medium	High	High	High	Low	Medium	Medium	High	High	High	High
44	UMRWA	North Fork Mokelumne Watershed Erosion Control & Water Quality Restoration Plan	Planning/Initial Study	4	3	PASS	6	PASS	High	Medium	High	High	High	Low	Low	Medium	Medium	High	High	High	Medium
45	UMRWA	North Fork Mokelumne Watershed Erosion Control & Water Quality Restoration Project	Planning/Initial Study	4	3	PASS	6	PASS	Medium	Medium	High	High	High	Low	Low	Medium	Medium	High	High	High	Medium
46	UMRWA	Upper Mokelumne Erosion and Water Quality Assessment and Restoration Plan	Planning/Initial Study and Conceptual Design	5	4	PASS	10	PASS	High	High	High	High	High	Medium	Low	Medium	Medium	High	High	High	High
48	CPUD	Jeff Davis Water Treatment Plant Backwash Recycle Project	Planning/Initial Study	8	8	PASS	7	PASS	High	High	High	High	Medium	High	Medium	Medium	Low	High	Medium	High	High
49	CCWD	Middle Fork Pump Station Retrofit and Raw Water Pipeline Replacement Project - Phased	Conceptual Design (Phase 3) and Design Complete (Phase 1 & 2)	5	3	PASS	4	PASS	High	High	Medium	High	Low	High	Low	Medium	Medium	High	Medium	High	Medium
50	AWA	Rehabilitation and Expansion of Reservoirs - Twin, Meadow, Upper & Lower Blue, and Upper & Lower Bear Lakes	Planning/Initial Study	6	6	PASS	4	PASS	High	High	Medium	High	High	High	Low	Medium	Medium	High	Medium	High	High

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1	ARCD	Soil Health & Climate Resilient Agriculture Education Program	Planning	The project will provide assistance to farmers and ranchers in Amador County to develop and implement carbon farm planning projects. ARCD will work with landowners and partners to provide education and develop demonstration projects to be used to study the effectiveness of management practices. The project will provide education, such as farm tours and workshops about soil health and carbon farm planning.	\$70,000	\$180,000	\$693,179	Medium
4a	AWA	Amador Canal Water Conservation Project	Planning and Implementation	The Amador Canal provides raw water to the Tanner WTP and to customers. The water flows both in an uncovered earthen canal and a 120-year old riveted pipe. This untreated water system has extensive leaks, excessive percolation and is a tremendous waste of water. Piping the Amador Canal will save approximately 1,600 AFY.	\$500,000	\$0	\$500,000	High
4b	AWA	Lone Canal Water Conservation Project	Implementation	The Lone Canal provides raw water to a handful of agricultural customers. The water flows both in an uncovered earthen canal and a 120-year old riveted pipe. This untreated water system has extensive leaks, excessive percolation and is a tremendous waste of water. Piping the Lone Canal will save approximately 650 AFY.	\$500,000	\$0	\$500,000	High
7	AWA	Surface Storage Feasibility Study	Planning	The project will conduct a regional assessment to evaluate the feasibility of constructing additional surface storage, including both on-stream and off-stream storage opportunities in Amador and Calaveras counties. The study would include discussions on location, technical feasibility, economic feasibility, and legal feasibility.	\$250,000	\$0	\$250,000	High
12	AWA	Camanche Area Regional Water Supply Project Phase II (CARWSP II)	Planning and Implementation	Phase II will connect to East Bay Municipal Utility District's treated surface via an intertie valve and would pump the water to two 0.5 MG storage tanks at Tank 9 site. AWA would then be able to abandon wells 6 and 12 and reduce the output of wells 9 and 14 and blend surface water with groundwater. This project would eliminate the contamination issues associated with well overdraft, allow the aquifer to recharge, manage groundwater resources, and provide an adequate supply with better quality to the ratepayers of Lake Camanche.	\$6,500,000	\$70,000	\$7,603,330	Medium
13	AWA	Lone Treatment Relocation Planning Study	Planning	The Lone WTP is an old conventional treatment plant updated in 1986. The plant is at or near its rated capacity. Future demand on this existing plant will place excessive strain on already aging parts, causing increased risk of failure to provide safe drinking water. If these parts fail, pipes and tanks could quickly go dry, risking a loss of firefighting water supply for the service area. A new water treatment plant with a larger capacity is needed to meet the future needs of the service area. The new water treatment plant would be able to expand capacity on-site as needed, with all water treatment being consolidated to the new WTP after construction of the new WTP.	\$500,000	\$0	\$500,000	Medium
14	AWA	Upper-Lower Water System Reliability Intertie Project	Planning	The Upper-Lower Water System Intertie would allow for emergency water from the CAWP system to be transferred to the AWS system in a catastrophic failure of the Tanner WTP. The Tanner WTP is an aging WTP with significantly limited storage capacity. Due to its age, the Tanner WTP regularly must shutdown due to unexpected failures. If shutdowns last more than a few hours, pipes could go dry and drinking water would not be provided to the City of Jackson, City of Plymouth, Drytown City of Sutter Creek, Amador City and the Martell area. This loss of potable water could also cause the failure of the sole water storage tank and contamination of the sole drinking water supply for the cities and areas listed above. In addition a multitude of regulatory violations could result. The study would look at the cost vs benefit of pumping water up to the CAWP system from the AWS system as that type of transfer would be much more expensive than gravity flow down to the AWS system.	\$300,000	\$0	\$300,000	Medium

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15	AWA	Lake Camanche Transmission Main Planning Project	Planning	This project will conduct planning reports, acquire land and perform environmental reviews required for the design of a transmission pipeline from well 14 to Tank 10. This transmission line will eliminate for tanks 8, 10, and their associated pump stations, in the distribution system and will provide additional supply, fire flow protection, and storage for the Front Village during peak and summer demands. Currently, in order to allow water to flow into Tanks 8 and 10, their respective booster pump stations must be turned off which reduces domestic pressure and fire protection. This creates fluctuating system water quality and leaves the system vulnerable during firefighting events. This system will convey water by gravity and the elimination of the booster pump stations at 8 and 10 will reduce energy consumption and Greenhouse Gas Emissions. This transmission line will greatly facilitate the objective of providing a uniform water supply throughout the subdivision while eliminating aging and failing infrastructure. Tanks 8 and 10 have a history of water loss and are constructed of redwood and other materials now approaching the end of their useful life. The Amador Water Agency recently provided a short extension of life by placing liners in the tanks. These are expected to have a life expectancy of less than 10 years.	\$500,000	\$0	\$500,000	Medium
18	AWA	Mt. Crossman Tanks Replacement and Consolidation Project	Implementation	This project would include construction of a replacement 600,000 gallon tank, upgrades to the Mt. Crossman pump station and interconnection piping, facilitating the removal of all four existing tanks, 2 distribution pump stations and 2 hydro-pneumatic tanks. The Mt Crossman Tank replacement project would comply with the Department of Public Health's recommendation to eliminate failing tanks within the CAWP system with new, reliable infrastructure thus eliminating sources of potable water contamination, and safety hazards all while greatly reducing O&M costs associated with tank and appurtenance maintenance Pioneer area.	\$11,298,427	\$5,000	\$11,377,236	High
19	AWA	Ione Clearwell Cover Hypalon Replacement Project	Implementation	This project would replace the aging floating cover at the Ione Water Treatment Plant (WTP) treated water storage facility. This cover is made of hypalon (chlorosulphonated polyethylene) and is prone to pinhole leaks on the surface and cracks in the folds where water, debris, bacteria, and dead animals can collect. These contaminants then leach into the drinking water, potentially causing unhealthy side effects. These issues can compromise the public water supply and are possible sources of contamination as identified in various CA DPH annual inspections. The California Department of Public Health no longer allows floating covers to be installed on treated water storage supplies. To maintain this cover, it is necessary to keep small, submersible pumps on top of these covers in order to pump off rain water and reduce the potential for contaminant infiltration through these leaks. Debris from trees, birds, animals, etc. can mix with the standing water on these covers which in turn creates a potent source of contamination for the water supply. This project is a regulatory requirement and a safety hazard in need of immediate replacement to allow the system to continue to provide safe reliable water.	\$500,000	\$6,000	\$594,571	High
20	AWA	Lake Camanche Water Service Replacement - Phase IV	Implementation	This project proposes to replace approximately 90 of the remaining 353 polyethylene ("poly-tube") service laterals within the system. These laterals were originally installed in the late 1970's with a poly-tube that has a tremendously high failure rate and is no longer constructed. These laterals become very brittle and are subject to severe longitudinal cracking. Thus, they regularly leak and fail, causing significant damage to other infrastructure and substantial water losses. This project is anticipated to increase annual water savings by an additional 0.76 million gallons annually for an additional annual water savings of 2.3 AFY.	\$600,000	\$1,250	\$619,702	High
21	AWA	Amador Water Agency Treated Water Supply Study	Planning	Historically, some residents of Amador County along the Amador Canal have utilized untreated (raw) water in their homes for domestic use. They have no access to a potable water supply. This study would look at options to bring a treated water pipeline and in turn provide treated water to those residents. The project would also bring fire flow to the households to provide adequate flow and pressure during a fire. Supplying treated water will eliminate the potential health hazards / concerns that arise from using untreated (raw) water for domestic use. This project encompasses areas within the vicinity of Jackson, Lake Tabeaud, and Pine Grove in Amador County.	\$100,000	\$0	\$100,000	High

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22	AWA	Community Leachfield Groundwater Nitrate Study	Planning	The Amador Water Agency operates nine small community leachfield systems. Some of these systems' monitoring wells (particularly Wildwood Estates Leachfield System) have showed continuing nitrate level increases over time. The Agency would like to complete a study that analyzes nitrate level rise in all of the community leachfield systems they operate to develop a course of action for the best possible long term solution to minimize nitrate level rise in the systems which might otherwise exceed state levels.	\$100,000	\$0	\$100,000	High
23	AWA	Martell Wastewater Lift Station Reduction Project	Implementation	Martell's wastewater collection system consists of 6 lift stations that convey the wastewater collected from the homes and businesses in Martell to Sutter Creek for treatment and disposal. At least 2 of the lift stations in Martell are at least 35 years old and require an ever increasing amount of maintenance and repair to keep operational. Wastewater in parts of Martell is also pumped twice – from lift station to lift station before being sent to Sutter Creek for treatment and disposal. This project seeks to eliminate double pumping of wastewater by reducing the number of lift stations within the Martell area and expanding the ones that would remain. This would save pumping costs, improve infrastructure reliability and in the end save the Amador Water Agency and its customers money.	\$150,000	\$0	\$150,000	Medium
24	AWA	Regional Wastewater Treatment and Recycling Project	Planning and Implementation	The project will reduce potable water demand by providing recycled water for land disposal on parks, schools, shopping centers, medians, ball fields, golf courses, and various other recreational facilities. This project will further define pipeline alignments, storage sites, pump station layouts, and required upgrades to existing WWTP's. It will also provide engineering cost estimates, and enough information for an environmental review. Providing recycled water improves wastewater treatment efficiency, meets regulatory requirements, and protects surface /ground water resources. This regional plan may involve facility upgrades and will also utilize existing facilities for each existing community. The project will rely heavily on reclamation and reuse for effluent disposal.	\$100,000	\$0	\$100,000	High
25	AWA	Lake Camanche Regional Wastewater System	Planning and Implementation	This project will upgrade the treatment facility to MBR or an equivalent and provide a new lift station and collection line for EBMUD's North Shore Recreation Area. The project will also develop surface discharge and reclamation opportunities, particularly in the Jackson Valley Irrigation District (JVID) service area for agricultural purposes. JVID's seasonal irrigation demand is sufficient to utilize all of the reclamation water. JVID does not have an adequate water supply for all users in their system. This reclaimed supply will reduce their total needed demand and will provide a reliable and sustainable agricultural water supply.	\$17,100,000	\$0	\$17,100,000	High
26a	AWA	Tanner Water Treatment Plant Filter Media Replacement Project	Implementation	The Tanner WTP is a refurbished plant that was reconstructed 30-40 years ago with used materials that were decommissioned and beyond their useful life in a Bay Area water treatment facility. The Tanner plant is in need of major improvements which include all control valves, computer control, and other equipment. It was determined that the best long term solution is to rehabilitate the WTP at the Tanner site. The filter media at the water plant was installed around 2003 and no longer filters the water reliably, causing failures which cause the water treatment plant to shutdown. This loss of potable water could also cause the failure of the sole water storage tank and contamination of the sole drinking water supply for the cities and areas listed above.	\$430,000	\$5,000	\$487,350	High
26b	AWA	Tanner Water Treatment Plant PLC Upgrade	Implementation	The programmable logic controllers at the water treatment plant fail on a regular basis, causing the water treatment plant to shutdown. If shutdowns last more than a few hours, pipes could go dry and drinking water would not be provided to the City of Jackson, City of Plymouth, Drytown City of Sutter Creek, Amador City and the Martell area. This loss of potable water could also cause the failure of the sole water storage tank and contamination of the sole drinking water supply for the cities and areas listed above. In addition a multitude of regulatory violations could result. These 30+ year old computer systems are currently be repaired with used parts purchased off of EBay, as they are no longer in production, but they are becoming almost impossible to find. The programmable logic controllers are in immediate need of replacement or catastrophic failure of the sole potable water supply for the area could be lost.	\$250,000	\$3,000	\$288,350	High

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30	AWA	New York Ranch Reservoir Conservation and Management Study	Planning	A Natural Resource Conservation & Management Plan was completed in 2010. This study identified the need to further investigate water diversions from the upper gulch, role of groundwater, maintenance of existing structures and facilities, dry season conditions, a water management strategy, enhancing conditions for special status species, and upland habitat enhancement. In addition to investigating these key resource management issues, the Water Agency wishes to develop a public access plan and long-term management plan to protect cultural resources. The Water Agency's project is to prepare a study to address these items. In the future, an environmental review will be required to implement the plan and is not a part of this study or project.	\$150,000	\$5,000	\$228,809	Medium
32	CCWD	Sheep Ranch Drinking Water Treatment & Distribution Compliance Project	Implementation	The Sheep Ranch Drinking Water Compliance Project involves upgrading the small water treatment plant that is out of compliance with the State. The Sheep Ranch Water Treatment Plant (WTP) currently produces 30 GPM of treated water via an out-of-date, non-compliant pressure filter, according to the California Department of Public Health (CA DPH). CCWD was first notified in 1993 that the current system is out of compliance and not an approved technology. CADPH recommends current technology to include a membrane filter system with sodium hypochlorite disinfection.	\$4,000,000	\$0	\$4,000,000	Medium
33	CCWD	West Point Automated Meter Reading Project	Planning and Implementation	Existing meters are located in a variety of boxes from plastic to concrete with a plastic, concrete, or metal lid. Two meter-reading staff members drive Jeeps to every customer property, park, get out, walk/hike to the meter, lift the lid, clean out the cobwebs and scoop out the dirt, flip up the meter cap, clean the glass, and type in the meter read to a handheld computer called a Sensus AR5002. That data is later transferred to the District's billing system (Springbrook) after meter routes are completed. This is not an efficient system. It is the District's intent to convert all six of its service areas from the existing, antiquated technology to AMR-equipped units that can be wirelessly read from a vehicle as it drives down the street. The District intends to begin this process in West Point as a "pilot project". Lessons learned from this project will be applied to meter replacements in the rest of the county. The District completed an audit of the West Point area where there about 584 meters serving more than 1,000 people. The District is in the process of putting out an RFP for the West Point pilot project that will include the hardware, software, programming, setup and installation of a radio read meter system for all District meters in West Point.	\$500,000	\$0	\$500,000	Medium
34	CCWD	West Point Water Treatment Plant Drinking Water Compliance Project	Implementation	The West Point Drinking Water Compliance Project is designed to address a current violation with the CA Department Public Health (CA DPH) regarding the lack of a backup filter system for an economically disadvantaged community of more than 1,000 people. Currently, the water treatment process is an absorption clarifier followed by sodium hypochlorite disinfection. However, the West Point Water Treatment Plant does not include a backup water filtration system, as required by CA DPH. The West Point backup filtration system is required to produce potable water for a period of at least two weeks per year. Since there is no backup system, the District is unable to produce potable water if the water plant is taken offline. As a result, the community of West Point was out of potable water for three days during a treatment plant outage through the Fourth of July weekend in 2008, risking both the health and safety of the community and its ability to combat a high risk of wildfire.	\$1,250,000	\$10,000	\$1,400,463	Medium
35	CCWD	Wilson Dam Meadow Restoration and Habitat Enhancement Plan	Planning	The project would develop a comprehensive feasibility study, alternatives analysis, preliminary design plans, and necessary environmental documentation for a future project anticipated to rehabilitate historic Wilson Lake and conjunctively restore the mountain meadow habitat upstream. As part of the final outcome of the effort, CCWD would submit all required permits to implement a preferred alternative project, establishing a phased approach to final constructing a project. After the completion of planning phase proposed in this grant, CCWD would be able to continue to seek funding through other opportunities to implement and construct the preferred alternative.	\$290,000	\$0	\$290,000	Medium
36	Foothill	Amador Household Water Efficiency Project	Planning and Implementation	The Amador Household Water Efficiency Project is intended to implement and expand on the conservation program adopted by the Amador Water Agency in 2010, much of which has not been implemented due to lack of funds. The conservation program is intended to ensure optimal use of the county's developed water supplies while saving ratepayers money on water and energy. It will include residential surveys and assistance, high-efficiency washer rebate program, ultra low-flush toilet replacement program, school education programs, turf replacement program, and rainwater capture program.	\$695,000	\$35,000	\$1,176,769	High

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37	Foothill	Mokelumne High Country Meadow Restoration	Planning	The High-Country Meadow Restoration program would develop an implementation/prioritization plan for upper elevation meadows in the Mokelumne River Watershed and move at least 2-5 projects to the conceptual design stage. This would accelerate the rate that meadow restoration projects are completed along the Upper Mokelumne River Watershed because it would make it easier for agencies to identify high-priority meadows that can provide multiple benefits if restored. Developing a meadow assessment system could also help generate support and funding for meadow restoration projects by identifying the benefits that can come from restoration.	\$1,500,000	\$0	\$1,500,000	High
38	Foothill	Riparian Noxious Weed Abatement Plan	Planning	Especially in recent years, noxious and nonnative weeds and plants have been proliferating along Amador and Calaveras County waterways. They include yellow star thistle, oblong spurge, poison hemlock, brooms, and Himalayan blackberry. The nonnative plants are a nuisance to river recreators, can be highly flammable and/or toxic, and can crowd out native plant species that are important for native wildlife, birds and insects. This project proposes to develop maps of noxious weed infestations along local waterways and to work with community and river/water stakeholders to explore eradication options and develop an eradication plan.	\$25,000	\$0	\$25,000	High
40	Foothill	Upper Mokelumne Watershed Landowner Guide	Planning	The project would focus on developing a Landowner's Guide to the Upper Mokelumne Watershed, similar to watershed landowner guides produced in other areas. We would involve diverse stakeholders to develop an illustrated, plain-language guide that would help landowners understand how to reduce sediment and pollution runoff, maximize irrigation efficiency, avoid destructive wildland fires, capture rainwater, adapt to climate change, control noxious weeds, and in general, manage their lands in ways that benefit the water quality and ecosystems of the upper Mokelumne River. The landowner guide would be made available in digital and printed form free of charge to local landowners.	\$50,000	\$500	\$52,106	High
41	Jackson	Jackson Creek Sewer Line Relocation - Conceptual Design/Feasibility Study	Planning	A conceptual design and feasibility study would be prepared to review the possibility removing approximately 10,300 linear feet of sewer mains from Jackson Creek. The objective is two-fold: First, to reduce the potential pollution that can result from wastewater mixing with the creek water. Second, replacement and relocation of the sewer lines will restore the creeks to their natural state.	\$200,000	\$0	\$200,000	Medium
42	UMRWA	Hemlock Forest Restoration Water Yield Project Study	Planning	The project will require an on-the-ground measurement and assessment program that generates data and information specific to the Sierra Nevada. Three main hydrologic hypotheses that are to be tested under this project are changes in stand structure to a lower stand density will enhance snow retention, affect runoff timing, and increase the overall water yield, the magnitude of these changes can be detected and verified using a combination of field measurements in paired catchments and hydrologic modeling, and periodic vegetation treatments will be required to sustain changes in water cycle.	\$0	\$550,000	\$1,008,366	High
44	UMRWA	North Fork Mokelumne Watershed Erosion Control & Water Quality Restoration Plan	Planning	The result of this project will be a planning report entitled "North Fork Mokelumne Watershed Erosion Control and Water Quality Restoration Plan", associated CEQA/NEPA documentation, and construction bid documents. This project will advance the recommendations made in the 2016 report Power Fire GRAIP Watershed Road Assessment. The GRAIP (Geomorphic Road Analysis and Inventory Package) study, prepared by the USFS Rocky Mountain Research Station (Boise, ID), was designed to address the following: (1) Identify the current level of fine sediment delivery from roads to streams in the Bear River, Panther Creek, and upper North Fork Mokelumne River watersheds; (2) Identify the types and sources of road-related hydrogeomorphic risk in the watersheds; (3) Locate and quantify sediment sources and contributions to streams; (4) Select and prioritize future restoration actions to improve watershed conditions.	\$225,000	\$0	\$225,000	Medium
45	UMRWA	North Fork Mokelumne Watershed Erosion Control & Water Quality Restoration Project	Implementation	This project will implement the erosion control and water quality improvements recommended in the final "North Fork Mokelumne Watershed Erosion Control and Water Quality Restoration Plan". In conjunction with the development of that plan, the associated CEQA/NEPA requirements will be fulfilled and construction bid documents prepared.	\$2,000,000	\$0	\$2,000,000	Medium

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Project No.	Project Proponent	Project Name	Project Type	Project Description	Capital Cost	Annual O&M Cost	Present Value Cost	Prioritization
46	UMRWA	Upper Mokelumne Erosion and Water Quality Assessment and Restoration Plan	Planning	This goal of this project is to reduce sedimentation in watershed streams and other water bodies and the associated adverse impacts to water quality and aquatic resources from by eliminating or mitigating sources of erosion. The project would develop a three-phase program in the 380,000-acre Mokelumne River Watershed upstream of Pardee Reservoir. Gullies from road and trail drainage (open and closed for use) and any other eroding surfaces that deliver significant amounts of sediment to watershed streams will be the primary targets for this program as they typically are the biggest contributors to water quality degradation and adverse impacts on river aquatic resources. The program would consist of six elements: (1) establish an inter-agency work group of federal (e.g. USFS) state (e.g. F&W) and local (counties/water agencies) and interested stakeholders e.g. ACGG to serve as an advisory committee, (2) review existing literature, available ariel photography and other sources of relevant information and develop an inventory and assessment methodology, (3) conduct the inventory and assessment, (4) prepare restoration/improvement strategies and plans, (5) set priorities and develop an implementation and restoration action plan, and (6) seek partners and funding for implementation projects.	\$250,000	\$0	\$2,000,000	High
48	CPUD	Jeff Davis Water Treatment Plant Backwash Recycle Project	Planning and Implementation	This project proposes to build the infrastructure necessary to recycle approximately 28 million gallons per year of filter backwash water at the Jeff Davis Water Treatment Plant (WTP). The District's current water treatment process takes raw water from its sole source, a pump station located at the confluence of the South Fork Mokelumne and Licking Fork. Water is pumped from this location to the Jeff Davis Reservoir located at the District's WTP property. Jeff Davis Reservoir has a capacity of approximately 2,000 acre-feet and is fed to the water treatment plant located immediately downstream of the reservoir's dam. Once water passes through the treatment train it is piped to an onsite clearwell until it is ready to be delivered to the system. The WTP houses 6 gravity flow media filters that require backwash 2-3 times a week depending on demand and water quality. The filters are backwashed simultaneously, and all backwash wastewater is currently routed to two onsite settling ponds which work in series to settle sediment before water is discharged to a downstream watercourse. Over time, the settling ponds have become less effective due to a number of factors including changes to the treatment, demand increase, and increased need for backwashing. As these ponds have become less effective, lower quality water has been discharged to the downstream waterway. The proposed recycled backwash project will consist of constructing a pump station and force main pipeline from the backwash ponds to the Jeff Davis Reservoir. Additionally, it will install measures to improve the efficiency of the backwash ponds.	\$2,000,000	\$0	\$2,000,000	High
49	CCWD	Middle Fork Pump Station Retrofit and Raw Water Pipeline Replacement Project - Phase 1: Intake Improvements, Phase 2: Supply Pipeline Upgrade, and Phase 3: Additional Control Systems.	Implementation	Calaveras County Water District's (CCWD) Middle Fork Mokelumne Pumping Station (Middle Fork PS) conveys raw water diverted from the Middle Fork Mokelumne River to the West Point Water Treatment Plant for use in CCWD's West Point Service Area (West Point). The Middle Fork PS is a key supplemental water supply for West Point when its primary Bear Creek diversions are unavailable – typically during late-summer and autumn months – or when drought conditions require utilization of previously stored water via CCWD water supply agreements with external agencies. The Middle Fork Pump Station Retrofit and Raw Water Pipeline Replacement Project (Project) is comprised of the following three phases: Phase 1 (Intake Improvements): Repair portions of the Middle Fork PP intake in the riverbed, as well as to clean out potential sediments loads to improve raw water intake efficiencies. Phase 2 (Supply Pipeline Upgrade): Install a uniformly upgraded raw raw water supply pipeline from the Middle Fork PP to the West Point Water Treatment Plant, to reduce distribution redundancies and other system inefficiencies (e.g., Acorn Pumping Plant booster pump). Phase 3 (Additional Control Systems): Installation of SCADA, telemetry, and other instrumentation systems for increased West Point monitoring and control capabilities for the Middle Fork PP and connected Bummerville Regulating Reservoir and Bear Creek Diversion.	\$3,920,000	\$0	\$3,920,000	Medium
50	AWA	Rehabilitation and Expansion of Reservoirs – Twin, Meadow, Upper & Lower Blue, and Upper & Lower Bear Lakes	Planning	The Agency Water System is owned and operated by the Amador Water Agency. AWA has agreements in place to utilize the water right for the drinking water of its communities and store that water in PG&E reservoirs. AWA intends to study the potential of rehabilitating and expanding the upper reservoirs for increase water storage capacity in light of climate change and the higher temperatures and less source drinking water available with decrease snow melt. Drought conditions have restricted the available water supply and storage in the CAWP water system, potentially leaving the water system without a water source. Expanding storage would increase drought reliability and supply.	\$150,000	\$0	\$150,000	High

Economic Feasibility Analysis  
January 2022

Project No.	Project Name	Capital Cost	Annual O&M Cost	Project Life (years)	Project Basis / Year	Possible Funding Sources	Present Value Costs	Cost Score <sup>1</sup>		Benefits (Goals)	B:C <sup>2</sup>	Economic Benefit #4 <sup>3</sup>
1	Soil Health & Climate Resilient Agriculture Education Program	\$70,000	\$180,000	4	N/A	Grants	\$693,719	High	1	5	5.0	High
4a	Amador Canal Water Conservation Project	\$500,000	\$0	2	N/A	Grants and Loans	\$500,000	High	1	9	9.0	High
4b	Ione Canal Water Conservation Project	\$500,000	\$0	50	N/A	Grants and Loans	\$500,000	High	1	9	9.0	High
7	Surface Storage Feasibility Study	\$250,000	\$0	2	N/A	Grants and Loans	\$250,000	High	1	7	7.0	High
12	Camanche Area Regional Water Supply Project Phase II (CARWSP II)	\$6,500,000	\$70,000	50	2012	Grants and Loans	\$7,603,330	Medium	2	5	2.5	High
13	Ione Treatment Relocation Planning Study	\$500,000	\$0	2	N/A	Grants and Loans	\$500,000	High	1	4	4.0	High
14	Upper-Lower Water System Reliability Intertie Project	\$300,000	\$0	2	N/A	Grants and Loans	\$300,000	High	1	3	3.0	High
15	Lake Camanche Transmission Main Planning Project	\$500,000	\$0	2	N/A	Grants and Loans	\$500,000	High	1	6	6.0	High
18	Mt. Crossman Tanks Replacement and Consolidation Project	\$11,298,427	\$5,000	50	N/A	Grants and Loans	\$11,377,236	Medium	2	7	3.5	High
19	Ione Clearwell Cover Hypalon Replacement Project	\$500,000	\$6,000	50	N/A	Grants and Loans	\$594,571	High	1	4	4.0	High
20	Lake Camanche Water Service Replacement – Phase IV	\$600,000	\$1,250	50	N/A	Grants and Loans	\$619,702	High	1	6	6.0	High
21	Amador Water Agency Treated Water Supply Study	\$100,000	\$0	50	N/A	Grants and Loans	\$100,000	High	1	8	8.0	High
22	Community Leachfield Groundwater Nitrate Study	\$100,000	\$0	2	N/A	Grants and Loans	\$100,000	High	1	8	8.0	High
23	Martell Wastewater Lift Station Reduction Project	\$150,000	\$0	50	N/A	Grants and Loans	\$150,000	High	1	6	6.0	High
24	Regional Wastewater Treatment and Recycling Project	\$100,000	\$0	2	N/A	Grants and Loans	\$100,000	High	1	8	8.0	High
25	Lake Camanche Regional Wastewater System	\$17,100,000	\$0	50	N/A	Grants and Loans	\$17,100,000	Medium	2	8	4.0	High
26a	Replacement Project	\$430,000	\$5,000	20	N/A	Grants	\$487,350	High	1	6	6.0	High
26b	Tanner Water Treatment Plant PLC Upgrade Project	\$250,000	\$3,000	25	N/A	Grants	\$288,350	High	1	6	6.0	High
29	Fishery Habitat Improvements	\$100,000	\$0	2	N/A	Grants and Loans	\$100,000	High	1	6	6.0	High
30	New York Ranch Reservoir Conservation and Management	\$150,000	\$5,000	50	N/A	Grants and Loans	\$228,809	High	1	7	7.0	High
32	Sheep Ranch Drinking Water Treatment & Distribution Compliance Project	\$4,000,000	\$0	50	2015	Grants, Customer Rates	\$4,000,000	Medium	2	3	1.5	Medium
33	West Point Automated Meter Reading Project	\$500,000	\$0	20	2018-19	Customer Rates	\$500,000	High	1	4	4.0	High
34	West Point Water Treatment Plant Drinking Water Compliance Project	\$1,250,000	\$10,000	40	N/A	Customer Rates, Operations Budget	\$1,400,463	High	1	3	3.0	High
35	Wilson Dam Meadow Restoration and Habitat Enhancement Plan	\$290,000	\$0	50	2015	Customer Rates, Operations Budget	\$290,000	High	1	5	5.0	High
36	Amador Household Water Efficiency Project	\$695,000	\$35,000	30	2010	Foundation and Corporate Funding	\$1,176,769	High	1	6	6.0	High
37	Mokelumne High Country Meadow Restoration	\$1,500,000	\$0	3	N/A	Grants	\$1,500,000	High	1	8	8.0	High
38	Riparian Noxious Weed Abatement Plan	\$25,000	\$0	1	N/A	Grants, RCD Funds	\$25,000	High	1	3	3.0	High
40	Upper Mokelumne Watershed Landowner Guide	\$50,000	\$500	5	N/A	Grants, Foundation and Corporate Funding, I	\$52,106	High	1	7	7.0	High
41	Jackson Creek Sewer Line Relocation - Conceptual Design/Feasibility Study	\$200,000	\$0	2	N/A	City Funds, Grants	\$200,000	High	1	2	2.0	Medium
42	Hemlock Forest Restoration Water Yield Project Study	\$0	\$550,000	2	N/A	Grants, Foundation and Corporate Funding, I, and Private Capital (previously)	\$1,008,366	High	1	5	5.0	High
44	North Fork Mokelumne Watershed Erosion Control & Water Quality Restoration Plan	\$225,000	\$0	2	N/A	Grants	\$225,000	High	1	4	4.0	High
45	Quality Restoration Project	\$2,000,000	\$0	2	N/A	Grants	\$2,000,000	Medium	2	4	2.0	Medium
46	Upper Mokelumne Erosion and Water Quality Assessment and Restoration Plan	\$250,000	\$0	2	2015	Participating Agency Contributions	\$250,000	High	1	5	5.0	High
48	Jeff Davis Water Treatment Plant Backwash Recycle Project	\$2,000,000	\$0	50	N/A	Grants and Loans	\$2,000,000	Medium	2	8	4.0	High
49	Middle Fork Pump Station Retrofit and Raw Water Pipeline Replacement Project - Phased	\$3,920,000	\$0	50	N/A	CIP and Grants	\$3,920,000	Medium	2	5	2.5	High
50	Rehabilitation and Expansion of Reservoirs - Twin, Meadow, Upper & Lower Blue, and Upper & Lower Bear Lakes	\$150,000	\$0	50	N/A	Grants and Loans	\$150,000	High	1	6	6.0	High

<sup>1</sup> Cost score based on PV cost ranges: <\$2m = High; \$2-20m = Medium; >\$20m = Low

<sup>2</sup> Benefit Cost based on total number of goals divided by cost score

<sup>3</sup> Final score based on BC: 2.5+ = High; 1.5 - 2.0 = Medium; 0 - 1.4 = Low

MAC Plan Projects by Category  
January 2022

Project No.	Project Proponent	Project Name	Project Type	Prioritization	Total Present Value Cost
<b>Water - Transmission</b>					
4a	AWA	Amador Canal Water Conservation Project	Planning and Implementation	High	\$500,000
4b	AWA	Ione Canal Water Conservation Project	Implementation	High	\$500,000
14	AWA	Upper-Lower Water System Reliability Intertie Project	Planning	Medium	\$300,000
15	AWA	Lake Camanche Transmission Main Planning Project	Planning	Medium	\$500,000
30	AWA	New York Ranch Reservoir Conservation and Management Study	Planning	Medium	\$228,809

Project No.	Project Proponent	Project Name	Project Type	Prioritization	Total Present Value Cost
<b>Water - Supply</b>					
7	AWA	Surface Storage Feasibility Study	Planning	High	\$250,000
12	AWA	Camanche Area Regional Water Supply Project Phase II (CARWSP II)	Planning and Implementation	Medium	\$7,603,330
20	AWA	Lake Camanche Water Service Replacement - Phase IV	Implementation	High	\$619,702
21	AWA	Amador Water Agency Treated Water Supply Study	Planning	High	\$100,000
50	AWA	Rehabilitation and Expansion of Reservoirs – Twin, Meadow, Upper & Lower Blue, and Upper & Lower Bear Lakes	Planning	High	\$150,000

Project No.	Project Proponent	Project Name	Project Type	Prioritization	Total Present Value Cost
<b>Water - Treatment</b>					
13	AWA	Ione Treatment Relocation Planning Study	Planning	Medium	\$500,000
24	AWA	Regional Wastewater Treatment and Recycling Project	Planning and Implementation	High	\$100,000
25	AWA	Lake Camanche Regional Wastewater System	Planning and Implementation	High	\$17,100,000
26a	AWA	Tanner Water Treatment Plant Tanner Filter Media Replacement Project	Implementation	High	\$487,350
26b	AWA	Tanner Water Treatment Plant PLC Upgrade	Implementation	High	\$288,350
32	CCWD	Sheep Ranch Drinking Water Treatment & Distribution Compliance Project	Implementation	Medium	\$4,000,000
34	CCWD	West Point Water Treatment Plant Drinking Water Compliance Project	Implementation	Medium	\$1,400,463
48	CPUD	Jeff Davis Water Treatment Plant Backwash Recycle Project	Planning and Implementation	High	\$2,000,000

MAC Plan Projects by Category  
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49	CCWD	Middle Fork Pump Station Retrofit and Raw Water Pipeline Replacement Project - Phase 1: Intake Improvements, Phase 2: Supply Pipeline Upgrade, and Phase 3: Additional Control Systems.	Implementation	Medium	\$3,920,000
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Project No.	Project Proponent	Project Name	Project Type	Prioritization	Total Present Value Cost
<b>Water - Distribution</b>					
18	AWA	Mt. Crossman Tanks Replacement and Consolidation Project	Implementation	High	\$11,377,236
19	AWA	Ione Clearwell Cover Hypalon Replacement Project	Implementation	High	\$594,571

Project No.	Project Proponent	Project Name	Project Type	Prioritization	Total Present Value Cost
<b>Wastewater - Disposal</b>					
22	AWA	Community Leachfield Groundwater Nitrate Study	Planning	High	\$100,000
23	AWA	Martell Wastewater Lift Station Reduction Project	Implementation	Medium	\$150,000

Project No.	Project Proponent	Project Name	Project Type	Prioritization	Total Present Value Cost
<b>Water - Conservation</b>					
33	CCWD	West Point Automated Meter Reading Project	Planning and Implementation	Medium	\$500,000
36	Foothill	Amador Household Water Efficiency Project	Planning and Implementation	High	\$1,176,769

Project No.	Project Proponent	Project Name	Project Type	Prioritization	Total Present Value Cost
<b>Environmental Resources</b>					
1	ARCD	Soil Health & Climate Resilient Agriculture Education Program	Planning	Medium	\$693,179
35	CCWD	Wilson Dam Meadow Restoration and Habitat Enhancement Plan	Planning	Medium	\$290,000
37	Foothill	Mokelumne High Country Meadow Restoration	Planning	High	\$1,500,000
38	Foothill	Riparian Noxious Weed Abatement Plan	Planning	High	\$25,000
40	Foothill	Upper Mokelumne Watershed Landowner Guide	Planning	High	\$52,106
42	UMRWA	Hemlock Forest Restoration Water Yield Project Study	Planning	High	\$1,008,366
44	UMRWA	North Fork Mokelumne Watershed Erosion Control & Water Quality Restoration Plan	Planning	Medium	\$225,000

MAC Plan Projects by Category  
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45	UMRWA	North Fork Mokelumne Watershed Erosion Control & Water Quality Restoration Project	Implementation	Medium	\$2,000,000
46	UMRWA	Upper Mokelumne Erosion and Water Quality Assessment and Restoration Plan	Planning	High	\$2,000,000

Project No.	Project Proponent	Project Name	Project Type	Prioritization	Total Present Value Cost
<b>Other</b>					
41	Jackson	Jackson Creek Sewer Line Relocation - Conceptual Design/Feasibility Study	Planning	Medium	\$200,000