Appendix K: Preliminary Project Assessment

Appendix K provides the MCG-approved preliminary assessment of concepts. This assessment determined if project concepts were feasible, beneficial, attainable, and compatible.

#	Type	Concept Name	Description	Feasible	Beneficial	Attainable	Compatible	Notes
1a	Ecosystem / Habitat Restoration	Upper Mokelumne Anadromous Fish Restoration Sponsor: Foothill Conservancy	Transport anadromous fish above Camanche and Pardee to expand their habitat, improve their resiliency in the face of climate change and enhance upper ecosystems and recreational opportunities.	Yes	Yes	Yes	Yes	
1b	Ecosystem / Habitat Restoration	High Country Meadow Restoration Program Sponsor: Foothill Conservancy	Develop a three-phased program to restore high-elevation meadows to approximate natural function to provide water supply, storage, and ecosystem enhancement benefits. The initial phase of the program would involve mapping, identifying, and assessing potential meadows for restoration. The second phase would include setting goals and opportunities for both the program and for each of the identified meadows. The third and final phase would involve developing an implementation plan and budget for restoring the identified meadows. This implementation plan and budget could then be used to secure funding for implementation of the restorations.	Yes	Yes	Yes	Yes	
1c	Ecosystem / Habitat Restoration	Mokelumne River Day Use Area Floodplain Habitat Restoration Project Sponsor: SJCRCD	This project is intended to restore a portion of the seasonal floodplain habitat located along the stretch of the Mokelumne River downstream of East Bay Municipal Utility District's (EBMUD or the District) Camanche Reservoir by working with willing participants consistent with the Lower Mokelumne River Watershed Stewardship Plan. Floodplain habitat has been lost as a result of mining and modification of geomorphic processes that has taken place since the advent of the gold rush days in the 1800s. Floodplain creation serves to enhance the habitat for juvenile salmonids and other native fish species within the lower Mokelumne. EBMUD owns land immediately downstream of the Camanche Dam that it uses to support the District's water supply operations (EBMUD's Mokelumne River Day Use Area (MRDUA)). Those lands include properties that have deteriorated riparian and aquatic habitat associated with the above-noted historic human modifications. There is an opportunity for the construction of restoration projects on those properties that when implemented	Yes	Yes	Yes	Yes	

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			would improve existing fisheries habitat and provide a degree of flood management.					
1d	Ecosystem / Habitat Restoration	Fish Screens for Riparian Diversions in the Lower Mokelumne Sponsor: *none*	Develop and implement a program to identify and prioritize riparian diversions on the Lower Mokelumne for fish screens. Working with willing landowners, the program would then secure and install fish screens on these riparian diversions to reduce entrainment of fish. Currently, the four largest pumps/diversions are screened, but according to a late 1990's assessment, approximately 60 remain unscreened. Additionally, the California Fish Passage Assessment Database by CalFish identifies over 400 diversions on the main stem of the Mokelumne.	Yes	Yes	Yes	Yes	
1e	Ecosystem / Habitat Restoration	Riparian Restoration Program – Upstream of Pardee Sponsor: Foothill Conservancy	Develop and implement a program that analyzes and addresses riparian restoration needs by identifying potential areas for restoration, identifying partnership opportunities with willing landowners, and developing a funding base for restoration projects that provide benefits to water users. May include removing invasive species and maximizing the habitat value of farm edges.	Yes	Yes	Yes	Yes	
1f	Ecosystem / Habitat Restoration	Riparian Restoration Program – Below Camanche Sponsor: SJCRCD Co-Sponsor: Foothill Conservancy	Support the implementation efforts of the Lower Mokelumne Watershed Stewardship Plan, which analyzes and addresses riparian restoration needs. May include developing a funding base for projects identified in the Plan.	Yes	Yes	Yes	Yes	
2a	Recycled Water	Municipal Recycled Wastewater Recharge Program Sponsor: City of Lodi	Use treated, disinfected wastewater to recharge, either direct or in-lieu, Valley groundwater aquifers. The project should be further fleshed out after the Water Availability Analysis findings are released, which would help identify what municipal recycled water supplies are suitable for recharge, potential downstream impacts of diverting wastewater, and nearby areas potentially feasible for recharge. Uses including consumptive use and seawater intrusion barriers will be considered.	Yes	Yes	Yes	Yes	Challenges may include perception issues and downstream impacts relating to water rights.

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2b	Recycled Water	Constellation Winery Wastewater Reuse Sponsor: *Constellation Winery?* Co-Sponsor: GBA, NSJWCD	Use treated wastewater from the Constellation Winery facility for agricultural irrigation in lieu of groundwater pumping; provide in-lieu groundwater recharge/banking.	Yes	Yes	Yes	Yes	
2c	Recycled Water	Amador County Regional Reuse Sponsor: AWA	Implement aspects of the Amador County Regional Approach for Reuse Study.	Yes	Yes	Yes	Yes	Institutional challenges may be a fatal flaw, but if costs were lower/ offset, some institutional issues would be removed.
2d	Recycled Water	Mokelumne Hill Sanitary District Reclaimed Wastewater Sponsor: CPUD	Reclaim treated wastewater to offset use of Mokelumne surface water. Uses of this water may include ranching or other spray applications.	Yes	Yes	Yes	Yes	What is the amount of this water?
3a	Desalination	Solar-Powered Desalination Sponsor: *none*	Develop a solar-powered desalination project, which may include identifying partners for a cost-sharing program. This desalination facility would clean brackish water from the Delta using solar troughs. The solar panels would create enough heat to separate the salt and water through evaporation. The remaining salt solidifies and can be removed and used in other industries as building materials, metals, or fertilizers. Some systems have a 93% recovery rate and use about 1/5 of the energy used by traditional desalination plants. Cost per acre-foot is cited around $450, but may be greater depending on the location and scale of implementation.	Yes	Yes	Yes	Yes	Where would it be located and how large would it be? A brackish water source is needed; Water Availability Analysis will inform this May not be compatible with the Delta Plan; may be infeasible in the primary zone of Delta
4a	Groundwater Management	Groundwater Banking within the Eastern San Joaquin Groundwater Basin Sponsor: GBA, CCWD	Identify opportunities for direct and in-lieu banking with a variety of sources including Mokelumne River, stormwater, agricultural runoff, etc. Could include gravity infiltration and groundwater injection. Also consider land currently used for farming, with voluntary participation and fair compensation for owners. Geographic scope includes the Eastern San Joaquin Groundwater Basin, including portions of Calaveras County.	Yes	Yes	Yes	Yes	

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4b	Groundwater Management	Amador and Calaveras County Hydrologic Assessment Sponsor: AWA, CCWD Co-Sponsor: JVID	Assess potential for groundwater banking in Amador and Calaveras counties. This could include assessing structure of fractured rock aquifers and age of water, in addition to mapping of sandy soils as a means to inform potential project areas.	Yes	Yes	Yes	Yes	
4c	Groundwater Management	San Joaquin County Groundwater Banking and Exchange Sponsor: GBA, EBMUD	This project is seen as a regional effort whereby one or more partner agencies would obtain a new water right and/or modify an existing water right to enable surface water to be diverted from the Mokelumne River and banked in the Eastern San Joaquin Groundwater Basin for later use by one or more of the partners (and further to improve overdrafted groundwater conditions in the Eastern San Joaquin Groundwater Basin). This project would build upon the recent Demonstration Project efforts between EBMUD and the GBA. Under one scenario, a portion of the Mokelumne River supply would be conveyed through existing and/or new facilities for storage and regional use in the Basin. Various in-lieu and direct recharge projects could be used to recharge water in wet years for extraction in dry years. Recharge could be via recharge basins or direct injection. While the first stage of a project would rely primarily on EBMUD's facilities for conveyance, some new facilities required such as an Intertie with EBMUD's Mokelumne Aqueduct, a new pipeline and pump station that directs water from the aqueducts to the recharge site, and any required facilities to provide treatment as needed prior to injection and or following extraction. Water stored in the Basin would be extracted for use via wells installed within project areas. The quantity extracted could be divided by the partner agencies (upcountry agencies would receive their share via an in-lieu exchange with EBMUD). Groundwater would be sent to the EBMUD service area via connection(s) to EBMUD's Mokelumne Aqueducts. A portion of the quantity stored would remain in the ground to meet SJC's share requirements.	Yes	Yes	Yes	Yes	May be challenging to obtain water rights.

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4d	Groundwater Management	NSJWCD Infrastructure Improvements Sponsor: NSJWCD	Improve the infrastructure for reliable surface water delivery to the North San Joaquin Water Conservation District so the District can utilize existing water rights and its agricultural customers can reduce reliance on groundwater sources. The largest of these projects includes rebuilding the southern pump station and southern distribution system, and rebuilding the northern distribution system.	Yes	Yes	Yes	Yes	Groundwater management should be demonstrated
5a	Water Conservation	Regional Urban Water Conservation Program Sponsor: UMRWA, GBA, City of Lodi	Reduce demand through implementation of efficient urban water use practices. This program includes submitting a regional conservation plan for funding. The funding received would then be distributed among agencies to fund their individual plans. Plan elements may include initiating a pilot program with funding available to encourage residents to replace existing water reliant landscaping and utilize landscaping BMP's to reduce runoff and improve water quality; increasing irrigation efficiency; metering and billing based on water use; leak detection; rainwater capture; stormwater capture; education and outreach regarding lawn and landscape watering needs.	Yes	Yes	Yes	Yes	
5b	Water Conservation	Amador Canal Conversion to Pipeline Sponsor: AWA	Placement of a pipeline in or along the 18 mile Amador Canal to conserve an estimated 1,500 AF of water annually.	Yes	Yes	Yes	Yes	
5c	Water Conservation	Regional Agriculture Conservation Program Sponsor: SJCRCD	Increase irrigation efficiency; A program which would work with growers and agencies to test and evaluate agricultural management practices for irrigation water management efficiency.	Yes	Yes	Yes	Yes	Mobile Efficiency Labs have been implemented in the lower watershed with DWR; additional programs will be implemented. It may be difficult to quantify expected savings.

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6a	Stormwater Management and Flood Control	Cosgrove Creek Flood Management Project Sponsor: *none*	Solve flood control issues at Cosgrove Creek to allow flood waters to naturally recharge the aquifer. Project could potentially include recreational components and involve utilizing a 50-acre lot owned by CCWD for recharge purposes.	Yes	Yes	Yes	Yes	
6b	Stormwater Management and Flood Control	Mokelumne Stormwater Capture and Reuse Sponsor: Calaveras County	Analyze stormwater runoff within the Mokelumne Hill area, including the ditches that ultimately flow into the Mokelumne River.	Yes	Yes	Yes	Yes	Could be downstream impacts that need to be considered.
6c	Stormwater Management and Flood Control	Mokelumne Floodplain Management Plan - Camanche to Below Woodbridge Dam Sponsor: SJCRCD	In coordination with the Lower Mokelumne Watershed Stewardship Plan, work with willing landowners to create set back levees, re-configure side channels, and/or increase riparian buffer areas in the Mokelumne River from Camanche to Woodbridge Dam to maximize available habitat for salmonids and (in some cases) restore some floodplain function and promote groundwater storage.	Yes	Yes	Yes	Yes	Challenge may be not in constructing the new levees, but in taking down existing levees, thereby taking on liability for downstream flood damages.
7a	Surface Storage	PG&E Storage Recovery Sponsor: AWA, *CCWD?*	Evaluate the feasibility of removing silt and sediment from behind PG&E dams.	Yes	Yes	Yes	Yes	
7b	Surface Storage	Raise Lower Bear Reservoir Feasibility Update and Preliminary Engineering Sponsor: AWA, JVID	Evaluate the feasibility of enlarging Lower Bear Reservoir by raising the existing dam (embankment) by 32 feet to increase surface water storage capacity within the upper Mokelumne River watershed. This feasibility study would be a continuation of previous studies and serve to address previously unanswered questions and unresolved issues. Previous studies performed on behalf of Amador Water Agency suggest that Lower Bear Reservoir would provide 18,300 Acre Feet of additional Yield (Willard, 2005). In addition to modifications to the dam itself, other facilities that would need to be constructed include an updated intake structure and spillway. Also note that the project would require the relocation of adjacent roads and existing recreation facilities. An operational scheme for an enlarged reservoir would need to be prepared to determine how much yield could be realized for the partners that elect to take part in the project.	Yes	Yes	Yes	Yes	

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7c	Surface Storage	Surface Storage Regional Assessment Sponsor: UMRWA	Conduct a regional assessment to evaluate the feasibility of the constructing additional surface storage in Amador and Calaveras Counties. The study would include discussions on location, technical feasibility, political feasibility, environmental feasibility, and legal feasibility.	Yes	Yes	Yes	Yes	
7d	Surface Storage	Re-operation of Existing Storage Sponsor: UMRWA	Feasibility study to assess capability to re-operate existing storage to store water for consumptive use in addition to hydropower. The study would include a discussion on legal, environmental, political, and technical feasibility, as well as address the issue of flood control capabilities.	Yes	Yes	Yes	Yes	
8a	Local Infrastructure	Jeff Davis Water Treatment Plant Replacement Sponsor: CPUD	Evaluate the feasibility of replacing the existing Jeff Davis Water Treatment Plant (WTP), a sand filter water treatment plant, with a state of the art membrane filtration plant. The Jeff Davis WTP was designed in 1970 and is oversized for the current and projected District demands. The project would reduce backwash water requirements which would reduce Mokelumne water needs.	Yes	Yes	Yes	Yes	
8b	Local Infrastructure	Rehab of Transmission Main Sponsor: CPUD	Conduct a study to determine the benefits of replacing all or a portion of the transmission main that conveys treated water from the Jeff Davis WTP to Mokelumne Hill, Paloma, and San Andreas. The study would include assessment of areas that are reaching life expectancy, areas of water loss, and recommendations for rehabilitation. Upon completion of the study, replace or line the recommended areas of the current transmission main. The transmission main was installed in the 1970's and has had one large repair since that time. Replacing or lining the transmission main will increase the life expectancy, and likely improve efficiencies and reduce water loss.	Yes	Yes	Yes	Yes	
8c	Local Infrastructure	Barney Way Septic System Conversion Sponsor: CCWD	Hook existing residences along Barney Way either into the public sewer system or implement a community septic vault system to improve water quality of the Mokelumne River. This project would evaluate both options to	Yes	Yes	Yes	Yes	

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			determine and implement the most cost-effective conversion. Barney Way sits alongside the northern side of the Middle Fork of the Mokelumne off of Highway 26, downstream of Schaads Dam.					
8d	Local Infrastructure	Lake Camanche Village Recycled Water Project Sponsor: AWA	A feasibility study for converting from existing wastewater treatment ponds to a recycled water plant in the Camanche Village area to allow for recycled water to be used locally.	Yes	Yes	Yes	Yes	
9a	Policies and Initiatives	Land Use Coordination Sponsor: Calaveras Planning Coalition, MyValleySprings.com	Develop a program to improve coordination between willing water agencies and land use agencies.	Yes	Yes	Yes	Yes	
9b	Policies and Initiatives	State Wild and Scenic River Designation Sponsor: *none*	Develop language for and draft a position statement that would encourage the designation of the reach between Salt Springs Dam and Pardee Reservoir under the State Wild and Scenic Rivers system. Each MCG member organization would sign, approve, or otherwise show support for this position statement.	Pending	Pending	Pending	Pending	Depending on the outcome of the Wild and Scenic legislation currently being considered, the MCG will revisit this.
9c	Policies and Initiatives	Sustainable Forest - Watershed Management Project Sponsor: *none*	Draft a resolution for MokeWISE members in support of scientifically proven forest practices that protect the Mokelumne Watershed by 1) thinning to reduce the risk and impacts of wildfires, 2) reducing erosion and sediment yield into stream courses, and 3) improving water management	Yes	Yes	Yes	Yes	
9d	Policies and Initiatives	Watershed Coordinator Sponsor: SJCRCD	Support funding efforts for the establishment of local Watershed Coordinator positions.	Yes	Yes	Yes	Yes	

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9e	Policies and Initiatives	Groundwater Management Tools Sponsor: GBA	Identify additional options for the Eastern San Joaquin Groundwater Basin Authority to more effectively manage groundwater levels.	Yes	Yes	Yes	Yes	
9f	Policies and Initiatives	Mixed-Use Project Concept for Calaveras County Mokelumne Reservation Sponsor: *CCWD?*	Evaluate the legal feasibility of and options for allowing CCWD/CPUD to assign all or a portion of Calaveras County's area of origin reservation on the Mokelumne. In addition to consumptive uses, evaluate other potential beneficial uses of the water, including fish, wildlife, and recreation. This may also include evaluating the feasibility of both new and previously proposed projects.	Yes	Yes	Yes	Yes	
9g	Policies and Initiatives	MokeWISE Public Interest Profile Enhancement Project (PIPE) Sponsor: *none*	Support an informal, non-regulatory process among stakeholders that will help regional entities be better prepared to seek appropriations approval from the State Water Board. These processes may include developing a list of public interest criteria which can be used to evaluate proposed water uses.	Yes	Yes	Yes	Yes	