

Appendix E

Adaptation Measure Preliminary Screening Results

American River Basin Study Interior Region 10 – California-Great Basin



Note: This appendix is a record of analysis for the ongoing study (2018 - 2022). The main report may have updated information that is not reflected in this appendix.















American River Basin Study

Project Evaluation Criteria - Metrics and Scoring

A. Relevancy to Vulnerability Pathways	Score
Ability to address vulnerability	Υ
No/minimal or indirect ability to address vulnerability	N

D. Long-Term Viability - Duration of Benefit	Score
Sustained long-term benefit	Υ
Short-term or diminishing benefit	N

B. Technical Feasibility - Proven Technology	Score
Similar technology/practices already implemented	Υ
New technology/practices, not yet implemented elsewhere	N

D. Long-Term Viability - Benefit Type	Score
Provides primary benefits	Υ
Provides incidental benefits only	N

B. Technical Feasibility - Project Definition	Score
Feasibility or detailed plans	Υ
Conceptual	N

E. Nexus to Reclamation/ Federal Interest	
Connection to Federal interest	Υ
No or indirect connection to Federal interest	N

C. Measurable Quantity of Yield - Regional Benefit	Score
Quantifiable regional benefits	Υ
Localized benefits only	N

F. Local Support for Implementation - Locally Led	Score
Locally led	Υ
Not locally led	N

C. Measurable Quantity of Yield - Demand/Supply	
Benefit	Score
Reduces demand and/or increases supply	Υ
Neither reduces demand nor increases supply	N

F. Local Support for Implementation - Local Support	Score
Strong local support	Υ
No or limited local interest	N

MERICAN RIVER I vember 2019	BASIN STUDY										A. Relev	ancy to	Vulnera	ibility Pa	athways			B. Teo		C. Y	ield/		g term bility		us to Re ederal In		ion/	F. Local for formula for the f	or
	Adaptation Measures	A. Relevancy to Vulnerability Pathways	B. Technical Feasibility	C. Measurable Quantity of Yield	D. Long term viability	E. Nexus to Reclamation/ Federal Interest	Implementation	Composite Score (0-6)	Folsom Reservoir is too small for the potential runoff	Large Supply Reliance on One Source (river)	Increasing volume of floods and no levee setback potential	Less reliable water rights/contract entitlements	Operation of Folsom Reservoir for the CVP purposes vs. regional needs	Lack of meaningful groundwater in the foothills	Lack of forest management affecting snowpack retention and fuel management	Regional conjunctive use potential is not fully developed	Inefficient water use for urban and agricultural purposes.	Proven technology or practices	Defined Project	Generate measurable volume on a regional-scale	Reduce demand or increase supply	Long-Term Benefits	Primary Benefit (not incidental)	1.Ability to Deliver Water (Reduce demand on Folsom or increase regulating capacity)	2-3. Other Benefits (Hydroelectric Power and/or Recreation)	4-7.Ecosystem Protection and Enhancement	8.Flood control and/or management	Locally-Led	Local Support/Interest
	Max Score	9	2	2	2	4	2	6																					
1.Improve Demand Management																													
a. Increase agricultural	information management system)	1	1	2	2	1		3.9	N	N	N	N	N	N	N	N	Υ	Υ	N	Υ	Υ	Υ	Υ	Y	N	N	N	Υ	Y
,	Changes to less water intensive crop types with similar or greater economic returns	1	1	2	2	1	2	3.9	N	N	N	N	N	N	N	N	Υ	Υ	N	Υ	Υ	Y	Υ	Υ	N	N	N	Y	
	 Additional water conservation targets beyond requirements and implementation of drought contingency plan consistent with 2018 state legislation adjusted to local conditions. Consider updating demand reduction obligations in the Water Forum Agreement. 	1	1	2	2	1	2	3.9	N	N	N	N	N	N	N	N	Υ	Y	N	Υ	Y	Y	Y	Y	N	N	N	Y	Y
b. Increase urban water use efficiency	 Land use planning and ordinances to reduce urban sprawl and limit outdoor demand. Continue education and awareness of water supply challenges for the public, and planners and policy makers. Reduce reliance on elevated water levels for recreation facilities in lakes/reservoirs 	1	1	2	2	1	2	3.9	N	N	N	N	N	N	N	N	Y	Y	N	Y	Y	Y	Y	Y	N	N	N	Y	Y
	 Seek grant funding for in-home technologies (low-flow indoor fixtures/outdoor irrigation) Increase incentives for water use using fee rate structures tied to use and hydrologic conditions. 	1	1	2	2	1	2	3.9	N	N	N	Ν	Ν	N	Z	Z	Υ	Y	N	Y	Y	Y	Y	Y	N	N	N	Y	Y
iversify Water Supplies																													
	 SRCSD water reuse in south Sacramento county area (urban and agricultural uses) Promote recycled water use in new development. 	2	2	2	2	2	2	4.7	N	Υ	N	Υ	N	N	N	N	N	Υ	Y	Υ	Υ	Υ	Y	Υ	N	Υ	N	Υ	Υ
water reuse	 Consider decentralized scalping plants for recycled water use in areas upstream from SRCSD treatment plant. Promote use of grey water 	0	0	1	1	1	1	1.8	N	N	N	Ν	N	N	Ν	N	N	N	N	Υ	Υ	Y	Y	Υ	N	Υ	N	Υ	Y
	Roseville, Lincoln, El Dorado Irrigation District Recycled water uses and others	2	1	2	2	2	2	4.2	N	Υ	N	Υ	N	Ν	N	N	N	Υ	N	Υ	Υ	Y	Υ	Υ	N	Υ	N	Υ	Υ
b. Stormwater capture	 Implement and maintain local capture for groundwater recharge or direct use (e.g., park irrigation) Promote less impermeable surfaces to increase infiltration to groundwater basin 	5	1	2	2	2	2	4.6	Υ	Υ	N	Υ	Y	N	Ν	Υ	Ν	Y	N	Υ	Υ	Y	Υ	Y	N	Υ	N	Υ	Y
	 Integrate stormwater planning with water supply planning Add new points of diversions on the Sacramento River to facilitate exchanges 	3	1	2	2	2	2	4.3	N	Y	N	Υ	Y	N	N	N	N	Y	N	Y	Y	Y	Y	Y	N	Υ	N	Y	Y
points of delivery	•Acquire new surface water right for areas without alternative sources of water (e.g., foothills)	3	1	2	2	1	2	4.1	N	Y	N	Y	Y	N	N	N	N	Y	N	Y	Y	Y	Y	Y	N	N	N	Y	Y
d. Expand portfolio	 Increase water security of each agency by subscribing all applicable sources of water for regular services or drought contingency use (e.g., address fluoridation) 	4	0	2	2	1	2	3.7	N	Υ	N	Υ	Υ	Υ	N	N	N	N	N	Υ	Υ	Y	Υ	Y	N	N	N	Y	Y
agencies	Maximize consistency between local water right Place of Use and CVP contract service area	1	1	2	2	1	2	3.9	N	N	N	Υ	N	N	N	N	N	Υ	N	Υ	Υ	Υ	Υ	Υ	N	N	N	Y	Υ
nprove Operational Flex	kibility																												
13 STRUCTURA HAVINIA	•Relocate diversions from the American River to Sacramento River	3	1	2	2	2	2	4.3	N	Υ	N	Υ	Y	N	N	N	N	Y	N	Υ	Y	Υ	Y	Y	N	Υ	N	Y	Y
exchange	 Implement within region exchanges among two or more parties (e.g., PCWA-EDCWA for Georgetown Divide Public Utility District delivery) 	4	1	2	2	1	2	4.2	N	Y	N	Υ	Y	N	N	Υ	N	Y	N	Y	Υ	Y	Υ	Υ	N	N	N	Y	Y
h Evnand flevible	•Expand direct/artificial and in-lieu recharge capacity (e.g., aquifer storage and recovery, Cosumnes River, floodplain recharge)	5	1	2	2	2		4.6		Y	N	Y	Y	N	N	Υ	N	Y	N	Y	Y	Y	Y	Y	N	Υ	N	Y	Y
conjunctive use	 Expand intertie and other minor infrastructure for connectivity and redundancy Increase the level of redundancy for alternative water supply use on an as-needed 	4	1	2	2	1		4.2		Υ	N	Υ	Υ	N	N	Υ	N	Υ	N	Y	Υ	Υ	Υ	Y	N	N	N	Y	Y
	 Increase the level of redundancy for alternative water supply use on an as-needed purposes 	4	1	2	2	1	2	4.2	N	Υ	N	Υ	Υ	N	N	Υ	N	Υ	N	Y	Y	Υ	Υ	Υ	N	N	N	Υ	Y

Local Support E. Nexus to Reclamation/ AMERICAN RIVER BASIN STUDY D. Long-term C. Yield A. Relevancy to Vulnerability Pathways for Feasibility Viability **Federal Interest** November 2019 **Implementatio** Score (0-6) cal Support/Interest **Adaptation Measures** Max Score •Improve and increase upper watershed storage (e.g., Alder Creek Reservoir) Ν Ν Ν Ν 3.8 Ν Ν Ν •Folsom Dam raise for flood storage and upstream reservoir outlet modifications 2 2 Ν Ν Ν Ν Ν Ν Ν Υ •Groundwater banks (federally recognized or not) 4.6 Ν Ν Ν Ν Υ Ν N Ν 2 Υ 3.8 Υ Minimum carryover storage in Folsom Lake 2 2 Υ Ν Ν Ν Ν Ν Ν Υ Ν N Ν Ν Υ 1 . Increase water 2 4.6 plement Flood-MAR (e.g., create wetlands along Cosumnes river) Ν Ν Ν Ν Ν storage and their Improve flood management capacity of the American River to maintain 200-year flood 0 2.2 Ν Ν Ν Ν Ν Ν Ν Ν Ν Ν Ν Υ integrated operation otection (e.g., levee raise) Maintain infrastructure (dams, stormwater, wastewater, transportation) in flood-prone 1.9 Ν Ν Ν Ν Ν Ν Ν Ν Ν Υ Ν Ν Ν Ν •Forecast-based flood operations (Folsom Operations Manual, coordination with 0 2 2.3 Ν Ν Ν Ν Ν Ν Ν pstream reservoirs) 4.Improve Resource Stewardship Improve forest and biomass management practices and funding to reduce fire risk and mprove snowpack and water retention, and protect source water (e.g., mechanical fuel Ν Ν 2.5 Ν Ν Ν Ν Ν Ν a. Improve Headwaters reduction, land use standard modifications to enable natural fuel reduction via grazing, and Forest Health healthy conifer cover retention, ecosystem connectivity improvement) Υ •Headwater meadows restoration and protection for water retention 3.1 N Ν Ν Ν Ν Ν Ν Ν Ν Ν •Modified Lower American River Flow Management Standards 4.3 Ν Ν Ν Ν 2 Ν Ν Ν Ν Ν Υ Υ b. Improve Lower support implementation of the Water Forum Habitat Management Element (e.g., Ν Ν American River 2.8 Ν Ν Ν Ν Ν Ν abitats for fish and endangered species, gravel replenishment) **Ecosystem** Folsom Temperature Control Device 3.1 Ν Ν Ν Ν Ν Ν Ν Ν Υ Secure Institutional Agreements to Enable Flexibility •CVP American River Division LTWS contracts, etc. and possible CVP contract a. Resolve all pending 4.3 Ν Ν Ν Federal contracts and American River Basin CVPIA accelerated water transfer agreement 4.2 Ν Ν Ν Ν agreements 2.9 Common data management, monitoring network and reporting Ν Ν Ν Ν Ν Ν Ν Ν Ν N Ν Ν Υ Υ 2.7 Ν Ν Ν Ν Ν Ν Ν Ν Ν Ν Ν asin-wide integrated resources planning (including upper and lower watershed) 0 b. Regional framework support and update the Water Forum Agreement to address potential climate change 3.1 Υ for transparency & Ν Ν Ν Ν Collaboration 2.8 Ν Ν Ν Ν N Ν Υ dentify and implement innovative finance structures to incentivize sharing of resources 0 Υ Ν Ν Ν Ν Ν •Water marketing supporting tools and management framework 0 3.3 Ν N N N Ν Ν

Key: CVP = Central Valley Project

LTWS = Long-Term Water Service

CVPIA = Central Valley Project Improvement Act

PCWA = Placer County Water Agency

EDCWA = El Dorado County Water Agency

SRCSD= Sacramento Regional County Sanitation District