



MENDOCINO COUNTY INLAND WATER AND POWER COMMISSION

STORAGE ALTERNATIVES FORMULATION AND RANKING

OPTIONS UNDER CONSIDERATION FOR ADDITIONAL STORAGE IN THE RUSSIAN RIVER WATERSHED

- USACE study of Lake Mendocino (with potential pipeline for delivery to Potter Valley) – **being studied**
- Tributary storage – **concept study completed**
- Lower Valley on-stream storage – **concept study completed**
- In-valley pond storage – **concept study completed**
- Conjunctive use – **concept study completed**
- Pump back from Lake Mendocino – **concept study completed**
 - *Note: Costs associated with “concept studies” are typically -50%/+100%*



Comparison and Ratings to Characterize Water Management Alternatives (from Jacobs 2024)						
Criteria	Lk Mendo Expand. (Corps)	Tributary Storage	EFRR Dam	In-Valley Ponds	Groundwater Supply	Lake Mendocino Pump-Back System
Annual yield (AF)	5,000 - 20,000	7,000	7,000	5,000	3,500	10,000
Capital cost (\$M)	\$125 to 500M	\$125 to 250M	\$110 to 220M	\$15 to 28M	\$19 to 22M	\$100M
Annual O&M cost (\$)	\$1.2 to 2.5M	\$1.2 to 2.5M	\$1.1 to 2.3M	\$0.2 to 0.3M	\$0.3 to 0.8M	\$0.7M
Cost (\$/AF)	\$1,200 to 2,400	\$1,200 to 2,400	\$1,100 to 2,200	\$201 to 381	\$210 to 370	\$466 to 919
Timing (years)	20+ years	15 years	15 years	5 years	5 years	8 years
Flexibility	Low	Low	Low	Moderate	Moderate	Moderate
Environmental impacts	High	High	High	Low/ Moderate	Low/Moderate	Low/Moderate
Permitting/ legal	High	High	High	Low/ Moderate	Low/Moderate	High
Jurisdiction complexity	High	High	High	Low	Low	Moderate/ High
Phasing potential	Low	Low	Low	Moderate	Moderate	Low
\$/AF = dollars per acre-foot \$M = million dollars						

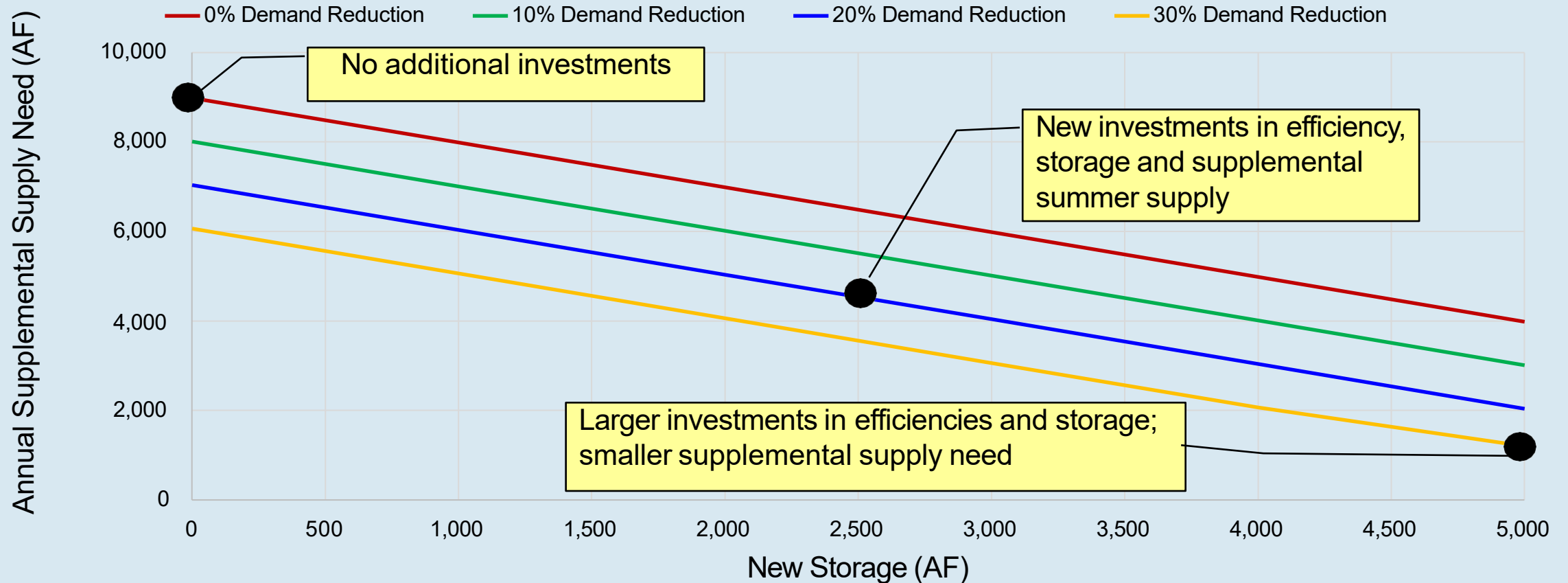
EVALUATION SUMMARY (DRAFT – SUBJECT TO CHANGE)

	Irrigation Delivery System Efficiency	On-Farm Demand Management	In Valley Ponds	Tributary Storage	East Fork Russian River Dam	Groundwater Supply	Lk Mendocino Expansion	Lake Mendocino Pump-Back System
Yield	M	M	M	H	H	M	H	M/H
Cost	\$\$	\$\$	\$\$\$	\$\$\$\$\$	\$\$\$\$\$	\$\$\$	\$\$\$\$\$	\$\$\$\$
Timing	5 yrs	5 yrs	5 yrs	15 yrs	15 yrs	5 yrs	20 yrs	8 yrs
Flexibility	M	M/H	M	L	L	M	L	M
Environmental Impacts	L/M	L/M	L/M	H	H	L/M	H	L/M
Permitting/ Legal	L/M	L	L/M	H	H	L/M	H	H
Jurisdiction Complexity	L	M/H	L	H	H	L	H	M/H
Phasing Potential	M/H	H	M	L	L	M	L	L/M

L = low, M = moderate, H = high

PROMISING SOLUTIONS MAY COMBINE DEMAND REDUCTIONS, NEW STORAGE, AND SUPPLEMENTAL SUPPLY

Storage – Supplemental Supply Need Relationship with Varying Demand Reductions



STORAGE NEXT STEPS OPTIONS – COYOTE VALLEY RAISE CONSIDERATIONS

- Challenges:
 - Requires continued Federal appropriations, plus substantial local cost share for studies
 - No certainty of a project in the future, best case has implementation 15 to 20 years out
 - Any project will meet federal requirements, which may or may not fully align with local desires
 - Any future construction will likely require a massive (tens of millions) local cost share

However...

- Opportunities:
 - In the near term, if a federal appropriation can be secured then \$800K of additional work (including preliminary alternative formulation) can be completed due to the Lytton credit
 - A successful federal project would bring benefits including storage and potentially environmental benefits downstream of the dam
 - Federal support means federal cost share
- ***Conclusion: continue to pursue for now***

STORAGE NEXT STEPS OPTIONS

- Cost is no Object
 - Pursue Coyote Valley Raise
 - Develop off-stream storage on a Potter Valley tributary, 10 TAF to 15 TAF
- Cost is Paramount
 - Investigate scalable and incremental options: groundwater and pond storage in Potter Valley
- Everything else
 - Pump back from Lake Mendocino – expensive, and pretty much requires a Lake Mendocino expansion to work
 - Lower Potter Valley on-stream storage – too much land impact
 - Small disbursed tributary storage – perhaps not easier than one large project, and water rights issues if not filled from the Potter Valley Project tunnel.

NEXT STEPS, COST IS NO OBJECT

- USACOE Coyote Valley Dam Raise study:
 - Set aside \$4M for the Corps study cost share, plus
 - Prepare to deploy up to \$1M for legal, consultant and lobbying costs over the next 5 years, and
 - Continue Lobbying efforts to restart and fund the study
 - Ultimately: be prepared for local cost share of up to \$75M towards construction
- Off-Stream Storage in Potter Valley:
 - Raise at least \$2M for the next phases of feasibility and geotech work
 - Prepare to deploy up to \$500K for legal and lobbying costs over the next 4 years
 - Ultimately: be prepared for local cost share of up to \$50M+ towards construction

NEXT STEPS, COST IS PARAMOUNT

- Groundwater storage feasibility assessment:
 - Commit \$2M three to five production wells, plus a handful of monitoring wells.
 - Pump (contributes to local supply), and monitor for two seasons
 - Ultimately: be prepared for local cost share of \$5M to \$20M towards construction, plus potential for individual landowner costs TBD
- Pond Storage in Potter Valley:
 - Raise \$100K to \$200K for the next phases of feasibility site assessment work
 - Ultimately: be prepared for local cost share of \$1M to \$5M towards construction, plus potential for individual landowner costs TBD

POTENTIAL PRIORITIZATION FOR FUTURE WORK

Recommendations for consideration:

- Tier 1: Proceed with funding additional work
 - Corps study (perhaps assuming the study is included in the 2027 budget?)
 - GW investigations
 - Fund legal and lobbying work in support of projects and finding additional funding
 - Two-year cost estimate:
- Tier 2: On hold pending additional grant funds
 - Assessment of off-stream storage in Potter Valley
 - Expansion of existing pond system in Potter Valley

POTENTIAL PRIORITIZATION FOR FUTURE WORK (CONT.)

- Tier 3: On shelf for now
 - Pump back from Lake Mendocino – expensive, and pretty much requires a Lake Mendocino expansion to work
 - Lower Potter Valley on-stream storage – too much land impact
 - Small disbursed tributary storage – perhaps not easier than one large project, and water rights issues if not filled from the Potter Valley Project tunnel.