



Temperance Flat Reservoir Authority Joint Exercise of Powers Agreement

February 28, 2019

Discussion Outline

- Policy Considerations for Water Supply Investment
- Summary of Temperance Flat Reservoir Project
- Status of Project Development
- Next Steps

Policy Considerations for Water Supply Investment

Future Water Supply Demands

- The City needs to develop additional long-term, permanent water supply resources to meet future demands
- Sustainable Groundwater Management Act requires utilization of surface water to increase groundwater levels in North Kings Sub-Basin
- Current Water Supply Entitlements
 - FID Conveyance Agreement
 - 29-percent of FIDs Kings River Entitlement (450,000 AF/Year) = 130,500 AF/Year
 - Friant Division of Central Valley Project (CVP)
 - Class 1 Contractor = 60,000 AF/year
 - Total Surface Water Entitlements
 - (FID Water) + (CVP Water) = 190,500 AF/Year
- Current Total Water Demands
 - 120,000 AF/Year (224 gallons per person per day)
- Current Surface Water Available for Service Area
 - (190,500 AF/Year) – (120,000 AF/Year) = + 70,500 AF/Year

Policy Considerations for Water Supply Investment

Future Water Supply Demands

- Future Population Growth Forecasts (*General Plan, 1.85% Growth Rate, 224 gpcd*)
 - Current Estimated SOI Population = 545,000 (120,000 AF/Year)
 - Forecasted 2035 SOI Population = 771,000 (193,000 AF/Year)
 - Forecasted SOI Buildout Population = 970,000 (243,000 AF/Year)
 - Long-Term Water Supply Gap at Buildout
 - 243,000 AF/Year (Total System Demand)
 - 25,000 AF/Year (Supplement Recharge to Increase Local GW Levels)
 - + 190,500 AF/Year (Current Surface Water Supply Contracts)
- 77,500 AF/Year – Water Supply Deficit at Buildout

Policy Considerations for Water Supply Investment

Future Water Supply Demands

- Current Estimated Water Supply Deficit at Buildout = - 77,500 AF/Year
- Additional Considerations for Population Growth Rate (~current = 1.85%)
 - Impact of High-Speed Rail Connection to San Jose
 - Impact of SGMA Driving Growth to Cities with Access, Rights, and Entitlements to Surface Water
 - Impact of Intensified Economic Development Efforts

With these factors, the City's Water Supply Deficit may approach 100,000 AF/Year

Policy Considerations for Water Supply Investment

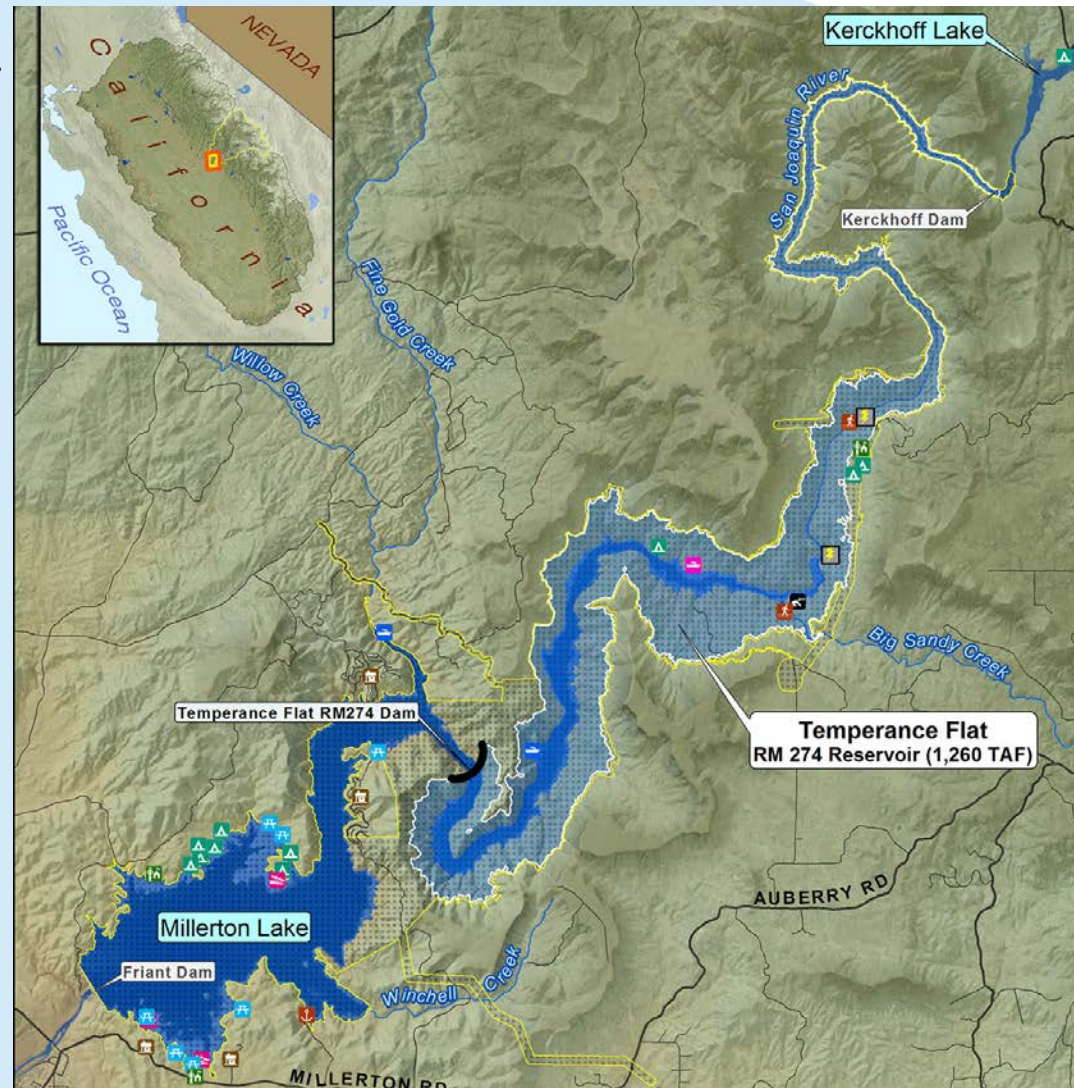
Water Supply Investment Options

- Temperance Flat Reservoir
- Big Dry Creek Reservoir – convert from flood control facility to water supply storage facility
- Direct Potable Reuse – Toilet-to-Tap
- Permanent Purchase of Surface Water Supply Rights from Other Water Agencies
- Other – always, and continuously, considering other options

Temperance Flat Reservoir

Basic Information

- Roller-Compacted Concrete Dam at River Mile 274 (665 ft tall) upstream of Friant Dam
- 1.26 million acre feet (MAF) storage
- \$2.8 Billion (2018 Dollars), total estimated capital cost
- Schedule
 - Bureau of Reclamation is finalizing Feasibility Study and EIS/EIR
 - Currently, refining Operations Plan and Participation Plan
 - Estimated Construction 2024 to 2033



Temperance Flat Reservoir

Preliminary Operational Concept

San Joaquin River Inflow that Currently Spills at Friant Dam

(Continue historical deliveries to users on Friant-Kern and Madera Canals, and flows for San Joaquin River Restoration Program)

Exchanges from East Side Water Sources

Inflow

Inflow

Exchanges from West Side Water Sources

East Side Accounts

Other Accounts

West Side Accounts

Friant Kern and Madera Canal Water Users

Refuge Water Supply, Fish Habitat, & Recreation
(including Bureau of Reclamation & State of California Proposition 1 agencies)

Could be exchanged via San Joaquin River

Temperance Flat Reservoir

Participants



Temperance Flat Reservoir

Next Steps

- Finalize the determination of the benefits resulting from new reservoir (*wildlife habitat, water supply, recreational, water quality, flood control, etc.*)
- Define cost values to assign to benefits (*not all benefits have equal value*)
- Finalize reservoir operations based on individual investor supply and demand profiles
- Identify potential operations plan including risks (*i.e. law of unintended consequences*), and mitigation measures and costs to address identified risks
- Finalize commitments from participants for purchasing storage capacity and agreeing to final operations plan.

Questions