



# Emergency Drought Projects Update

October 5<sup>th</sup>, 2021



# Overview

- Drought Projects Summary
- Conservation
- Partnering with SCWA
- Desalination
- Status to-date of Emergency Intertie Project
- Next Steps

# Water Supply Projects Summary

- **Fog Harvesting** – Limited capacity makes it unsuitable for larger volumes
- **Solar Desalination** – Land required not available in Marin
- **Excavating reservoirs** – 10,000 AF = 16.1 M cubic yards (>400,000 truck loads)
- **Water by truck, barge or rail** – Limited capacity, cost & logistics, considering as last resort
- **Ground Water Storage and Recovery** – longer term opportunity, no near term solution for drought
- **Recycled Water** – Residential Fill station, commercial hauling, expansion of purple pipe
- **Sonoma Water** - Collaborate on all opportunities to address the drought
- ✓ **Desalination** – timing dictates temporary, capacity limited
- ✓ **Emergency Intertie** – feasibility established and pursuing project design
- ✓ **Conservation** – Continue as top priority, improve, refine and enhance

# Options to Address Current Drought

Option	Pro	Con
Conservation	<ul style="list-style-type: none"> <li>• Long term savings</li> <li>• Multi benefits</li> </ul>	<ul style="list-style-type: none"> <li>• Uncertainty on level that can be reached and timeframe</li> </ul>
Collaborate with Sonoma - Winter Water Ground water pumping	<ul style="list-style-type: none"> <li>• Minimal infrastructure required</li> <li>• Potential long term availability</li> <li>• Builds on long standing relationship w/ Sonoma Water</li> </ul>	<ul style="list-style-type: none"> <li>• Schedule uncertain</li> <li>• Limited capacity in dry years</li> <li>• Allocation for MMWD uncertain</li> </ul>
Emergency Intertie Project	<ul style="list-style-type: none"> <li>• Diversification – multiple sources of water</li> <li>• Resilience</li> </ul>	<ul style="list-style-type: none"> <li>• High capital cost</li> <li>• Dependency on others</li> </ul>
Desalination	<ul style="list-style-type: none"> <li>• Proven technology</li> <li>• Security in water supply</li> </ul>	<ul style="list-style-type: none"> <li>• High capital cost</li> <li>• Temporary facility</li> <li>• Limited capacity</li> </ul>

# Partnering with SCWA

- Winter Water Concept – precipitation increases flow in the river beyond streamflow requirements that excess flow can be used and volume is dependent on rainfall quantity. SCWA Analysis indicates minimal capacity in a dry year. Continuing to collaborate with SCWA.
- Restore Groundwater – wells can be rehabilitated and brought on line for total capacity up to 5-6 MGD. *Allocation for MMWD unknown.*
- Longer term Aquifer Storage & Recovery may be a good fit – store water in wet years and withdraw in dry, *capacity of aquifer and allocation of that water for MMWD is unknown.*



## Rapid Deployment Desalination System

- Engineered & prefabricated to meet the schedule
- Desal Pilot demonstrated that this established water treatment technology provides safe and reliable drinking water
- Capacity to 3.6 to 5.4-MGD is available subject to equipment availability
- To preserve as an option likely requires near term agreement with financial commitment to secure the desalination system

Osmoflo Desal Plant



Desal Pilot Plant (2005/2006)



# Desalination Progress Update

- Permitting activities:
  - Regional Water Quality Control Board – met to outline permitting approach
  - Division of Drinking Water – met to discuss water quality and treatment approach
  - Scheduled project introduction meetings in October with other key agencies and stakeholders
- Detailed schedule and roadmap to project delivery is under development
- Desalination Equipment remains available

# Conceptual Capital Costs for Emergency 5.4 MGD Desal Supply

MMWD Leased Containerized Desalination Facility	
SWRO Facility Components	3.6 MGD Containerized System
12 Month Leased Equipment Subtotal	\$17,000,000
Additional Support Facilities Subtotal	\$8,430,000
Contractor Markups and 30% Contingency	\$4,610,000
<b>Construction Subtotal</b>	<b>\$30,400,000</b>
Permitting, Engineering, Mgmt Costs	\$4,828,000
<b>Conceptual Project Costs</b>	<b>\$34,868,000</b>



# Emergency Intertie Project Alignment



# Emergency Intertie Project Update

- MOU with EBMUD to allow us to conduct engineering studies to finalize approach before developing the wheeling agreement – ***(Board Authorization October 5)***
- Agreement with Contra Costa Water District to allow storage and possible exchange of transfer water – ***(Board Authorization October 19)***
- Negotiations with transfer water suppliers are may be brought to board in 4 to 6 weeks.
- Project Engineering – Technical feasibility established and we are pursuing contract amendment for final design of pipe segment on the bridge – ***(Board Authorization Oct 5).***
- Selected alignment on the bridge is under the upper deck
- Requests for quotations for pre-purchase of materials have been issued.

# Next Step Pre-purchase of Materials - October 19

- Estimated cost range \$18M to \$25M
  - 50,000 ft of pipe - \$12M-\$15M
  - Pump stations - \$4M - \$6M
  - Tanks - \$2M – \$4M
- Just under 50% of the pipe can be re-purposed for pipe replacement projects:
  - Southern Marin Line – (19,200 ft)
  - San Quentin Pump Station Bottle neck – (7,700 ft)
  - Kent Lake to Alpine pipeline – (c miles)
- Purchase spec includes language for manufacturer to assist District in reselling pipe or using materials
- Pump stations can be used for emergency response at a number of locations
- Tanks can be deployed as replacements or retained for emergency response

# Fiscal Impacts - Preliminary Estimates

Project Cost Estimate [Million]	\$60	\$90
Term [Years]	30	30
Rate [%]	4.06	4.06
Debt Service [Million]	\$2.90	\$4.35
Rate Increase to support project	2.77	4.16

# Emergency Intertie - Key Milestones

- ✓ August 30 – Amendments for feasibility work and 30% design to support CEQA – (\$2.2M)
- October 5 – Authorize full Design for pipe segment on bridge – (\$1.25M)
- October 5 – Authorize MOU with East Bay Municipal Utility District
- October 19 – Authorize Agreement with Contra Costa Water District
- October 19 – Authorize Pre purchase of Material – (~\$20M)
- December 2 – Bond sale
- January 2022 – Award Construction – (~\$40M)

# Next Steps

- Continuing efforts to develop Emergency Intertie Project & Rapid Deployment for Desalination to ensure these both remain viable options
- Regular Updates to the board
- Conservation – continuing to develop programs, additional incentives and reduce demand