Emergency Drought Projects

Operations Committee

July 16, 2021
Outline

• Water Supply Projection
• Desalination
• Water Transfers
• Summary
• Next Steps
Water Supply Planning Projection
Drought Project Planning

Scenario based on:
- Actual runoff from 2020-2021
- 20% conservation achieved and maintained
Drought Project Planning

Scenario based on:
• Actual runoff from 2020-2021
• 20%-40% conservation achieved and maintained

Uncertainty

Unusable
Desalination
Desalination Supply Alternatives

Three desalination alternatives evaluated for availability, capacity, cost and schedule

Alternative 1 - Land-Based System

Alternative 2 – Ship/Barge-Based System

Alternative 3 – Full Scale Facility
Ship/Barge Based Systems

- Not readily available
- Capacity
- Construction of docking facilities in SF Bay
- Permitting uncertainty
Land-Based Desal System – 3,600 AF (3.6-MGD)

• 2 Units available for total capacity of 3,600AF (3.6 MGD)
• Containerized
• Pre-engineered
Schedule for Drought Desal Supply

• Power – diesel generators until PG&E upgrade
• Design/build support facilities – 6 to 12 months
• Contracting, shipping, install and startup of desal equipment - 6 to 9 months
• Permitting schedule – 6 to 12 months
• Overall 6 to 12-month schedule
## Conceptual Capital Costs for 3,600 AF (3.6 MGD) Desal Supply

<table>
<thead>
<tr>
<th>MMWD Leased Containerized Desalination Facility</th>
<th>3.6 MGD Containerized System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SWRO Facility Components</strong></td>
<td></td>
</tr>
<tr>
<td>12 Month Leased Equipment Subtotal</td>
<td>$11,100,000</td>
</tr>
<tr>
<td>Additional Support Facilities Subtotal</td>
<td>$8,430,000</td>
</tr>
<tr>
<td>Contractor Markups and 30% Contingency</td>
<td>$4,610,000</td>
</tr>
<tr>
<td><strong>Construction Subtotal</strong></td>
<td><strong>$24,140,000</strong></td>
</tr>
<tr>
<td>Permitting, Engineering, Mgmt Costs</td>
<td>$4,828,000</td>
</tr>
<tr>
<td><strong>Conceptual Project Costs</strong></td>
<td><strong>$28,968,000</strong></td>
</tr>
</tbody>
</table>
Water Transfers
What is a Water Transfer?

• Legal sale of a supply of water between two parties
• Requires seller to take specific actions within the seller’s service area to make water available to the buyer
  • E.g., fallowing of agricultural land to make water available that would have otherwise been used for farming
• Commonly occur in California
Approach

• Identifying potential opportunities for water transfers to provide an emergency drought supply
  • Targeted volume: 10-15 TAF (9 to 13.5 –MGD)

• Evaluating options that would be conveyed through East Bay Agencies facilities with delivery via a Richmond-San Rafael Bridge pipeline.

• Planning assumes transfer would occur in 2\textsuperscript{nd} half of 2022
Timeline
Transfer Process

- Identify Potential Partners
- Develop Terms and Agreements
- Obtain Permits and Approvals
- Water Transfer
Pipeline Planning

- Assess options
- Negotiate terms
- Approve agreements
- Option payment
- Regulatory processes: SWRQCB, CEQA, NEPA, USBR (any or all)
- Call date
- First water

Pipeline Design & Construct

- Verify feasibility
- CEQA
- Authorize design phase
- Advertise for material purchases (pipe, valves, pumps, etc)
- Award purchase contract(s)
- Fabrication of materials
- Design
- Advertise for construction bid(s)
- Award construction contract(s)
- Construct

*indicates Board decision required*
Potential Options for Consideration
Potential Options for Consideration

• Working multiple leads in parallel:
  1. Sacramento River via the Freeport Regional Water Facility
  2. Los Vaqueros (storage and exchange options)
  3. Mokelumne River

• Have met with the following agencies through this effort:
  • Amador Water Agency
  • City of Lodi
  • City of Sacramento
  • Contra Costa Water District
  • EBMUD
  • Glenn-Colusa Irrigation District
  • Placer County Water Agency
  • Regional Water Authority
  • San Juan Water District
  • Woodbridge Irrigation District
  • Yuba County Water Agency
Permits and Approvals for Water Transfer

• Required permits and approvals vary among the transfer options and may include:
  • State Water Resources Control Board
  • United States Bureau of Reclamation
  • California Environmental Quality Act (CEQA) and/or NEPA
Coordination with EBMUD

• EBMUD would be an essential partner for any transfer via Richmond-San Rafael Bridge.

• Agreement with EBMUD would include "wheeling" through EBMUD system as well as storage.
  • "Wheeling" is conveyance of water through EBMUD system
  • Storage needed to even out daily demand variations

• EBMUD staff has expressed willingness to further explore MMWD transfer.
Example: Glenn-Colusa Irrigation District Transfer

• GCID anticipates being able to provide water to MMWD next year. They are doing three water transfers this year (45 TAF).
• Potential to fulfill 10-15 TAF.
• Water made available by land fallowing.
• SWRCB and USBR approval required.
Summary
Summary

Desalination – 3.6 TAF (3.6MGD)

<table>
<thead>
<tr>
<th>Project Component</th>
<th>Cost Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational Cost</td>
<td>$5M - $7M</td>
</tr>
<tr>
<td>Capital Improvements</td>
<td>$25M - $30M</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$30M - $37M</strong></td>
</tr>
</tbody>
</table>

- Project delivery 12 months
- Capacity limited
- Regulatory process not well defined
- No desalination facilities have been constructed in SF Bay

Water Transfers – 15 TAF (13.5 MGD)

<table>
<thead>
<tr>
<th>Project Component</th>
<th>Cost Range</th>
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</thead>
<tbody>
<tr>
<td>Water Purchase and Wheeling</td>
<td>$10M - $18M</td>
</tr>
<tr>
<td>Capital Improvements</td>
<td>$50M - $70M</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$60M - $88M</strong></td>
</tr>
</tbody>
</table>

- Project delivery 12 months
- Capacity adequate
- Regulatory process well defined
- Water Supply Options available
- Hundreds of transfers occur per year in CA
Next Steps
Next Steps

• Continue to pursue water transfer options, focusing on:
  • Glenn Colusa Irrigation District
  • San Juan Water District or Sacramento agency
  • Contra Costa Water District / Yuba Water Agency
  • Placer County Water Agency

• Continue planning of infrastructure to convey water
  • Pipe on bridge
  • West side piping and pumping improvements
  • East side piping and pumping

• Conservation - needed to continue and deepen to provide adequate time to develop and implement project

• Regular updates to the Board