EAST BAY MUNICIPAL UTILITY DISTRICT

EBMUD Operations

Testimony Summary

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(EBMUD Exhibit 100)


CALIFORNIA
Freeport Project
American River
Pardee and Camanche Reservoirs
SIERRA NEVADA RANGE
Sacramento River
Camanche Reservoir
Pardee Reservoir
Mokelumne River
Camanche Power House
Mokelumne Aqueducts
EBMUD Service Area
San Francisco
San Francisco Bay
Local Storage Reservoirs
San Joaquin River

Water System Overview

- EBMUD operates Pardee and Camanche Reservoirs and facilities in a coordinated and integrated manner to provide water supply benefits and meet a variety of state, federal, and local obligations
- EBMUD manages the system to provide:
  - High quality water to 1.4 million customers
  - Streamflow regulation
  - Fishery requirements
  - Flood control
  - Obligations to downstream diverters
  - Temperature management

Water System Overview – Water Source

- Mokelumne River Watershed
- 577 square miles of protected watershed
- Snow melt provides 90% of our water source
- Supplies EBMUD with up to 325 million gallons of water daily

Mokelumne Aqueducts

Water travels from the Pardee Reservoir through the three Mokelumne Aqueducts to the East Bay

Freeport Regional Water Project

- EBMUD's Mokelumne River supply is insufficient in dry years
- In 1970 EBMUD contracted with USBR to receive Central Valley Project water
- EBMUD, USBR, and SCWA ultimately agreed to divert water from the Sacramento River near Freeport

Freeport Regional Water Authority

- 2002: EBMUD and SCWA formed the Freeport Regional Water Authority
- 2006: EBMUD executed its current long-term renewal contract with USBR for CVP water
  - Dry years only
  - Annual maximum delivery of up to 133,000 acre-feet in any single year
  - No more than 165,000 acre-feet in three consecutive years

Freeport Regional Water Project

- Completed in 2011
- First new source of water for EBMUD since the completion of Camanche and Briones Reservoirs in 1964
- EBMUD funded $483 million of the total $922 million cost to plan, design, and build

Freeport Regional Water Project

- Critical to EBMUD's water supply
- Normal years: approximately 90% of EBMUD water originates in the Mokelumne River, with remainder from local supply
- Almost no local supply in dry years
- EBMUD expects to use Freeport facilities three out of every ten years

Freeport Regional Water Project

- Diverts water from the Sacramento River near Freeport
- Joint facilities owned by FRWA
- EBMUD independently owns and operates facilities that route water to its Mokelumne Aqueducts

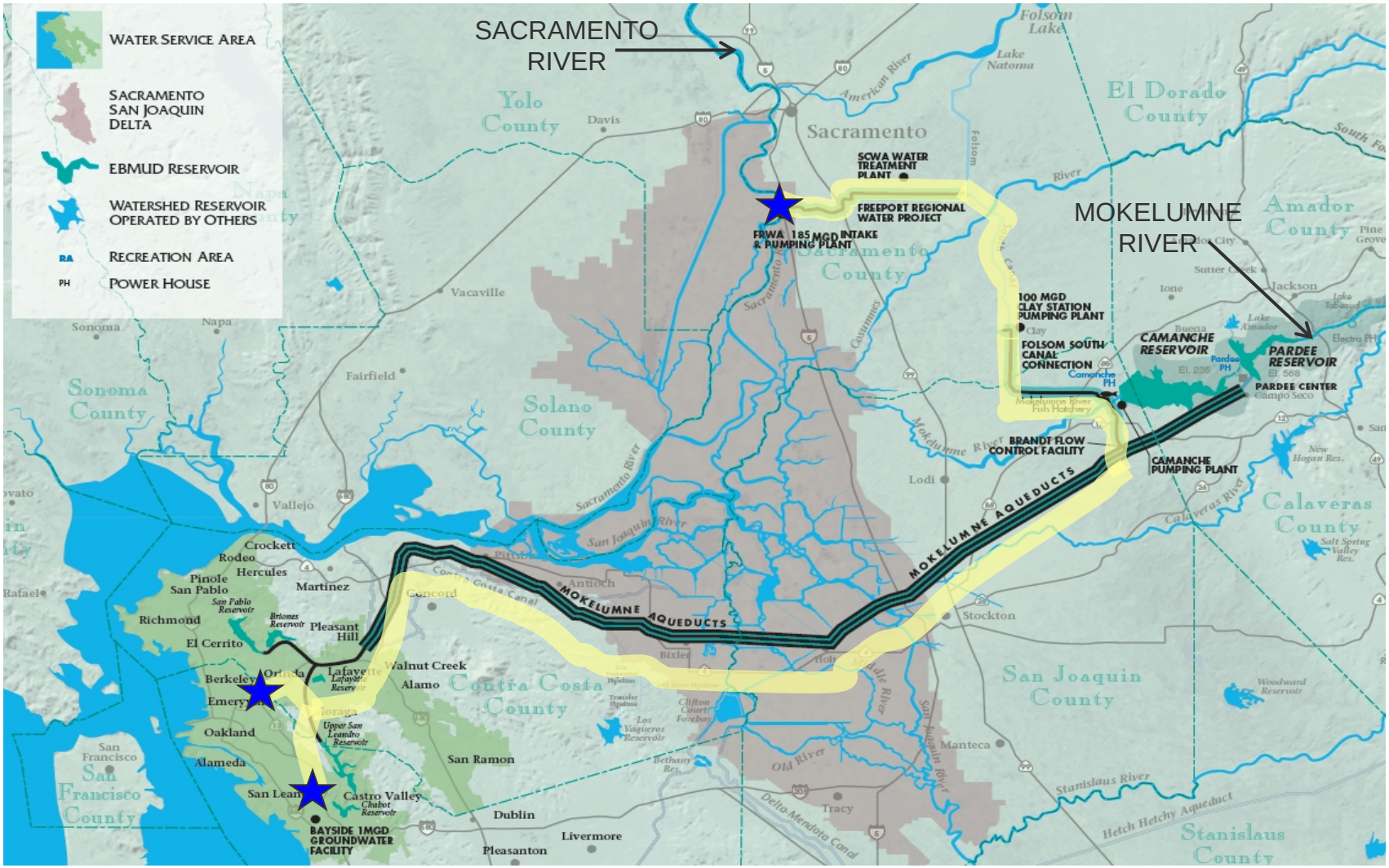
Freeport Regional Water Project Operations

- Jointly owned and operated intake and pumping station located at the Freeport Bend can divert up to 185 million gallons of water per day
- 13-mile joint pipeline extends from the intake to a bifurcation area
- Water is routed through independently owned pipelines to SCWA or EBMUD facilities

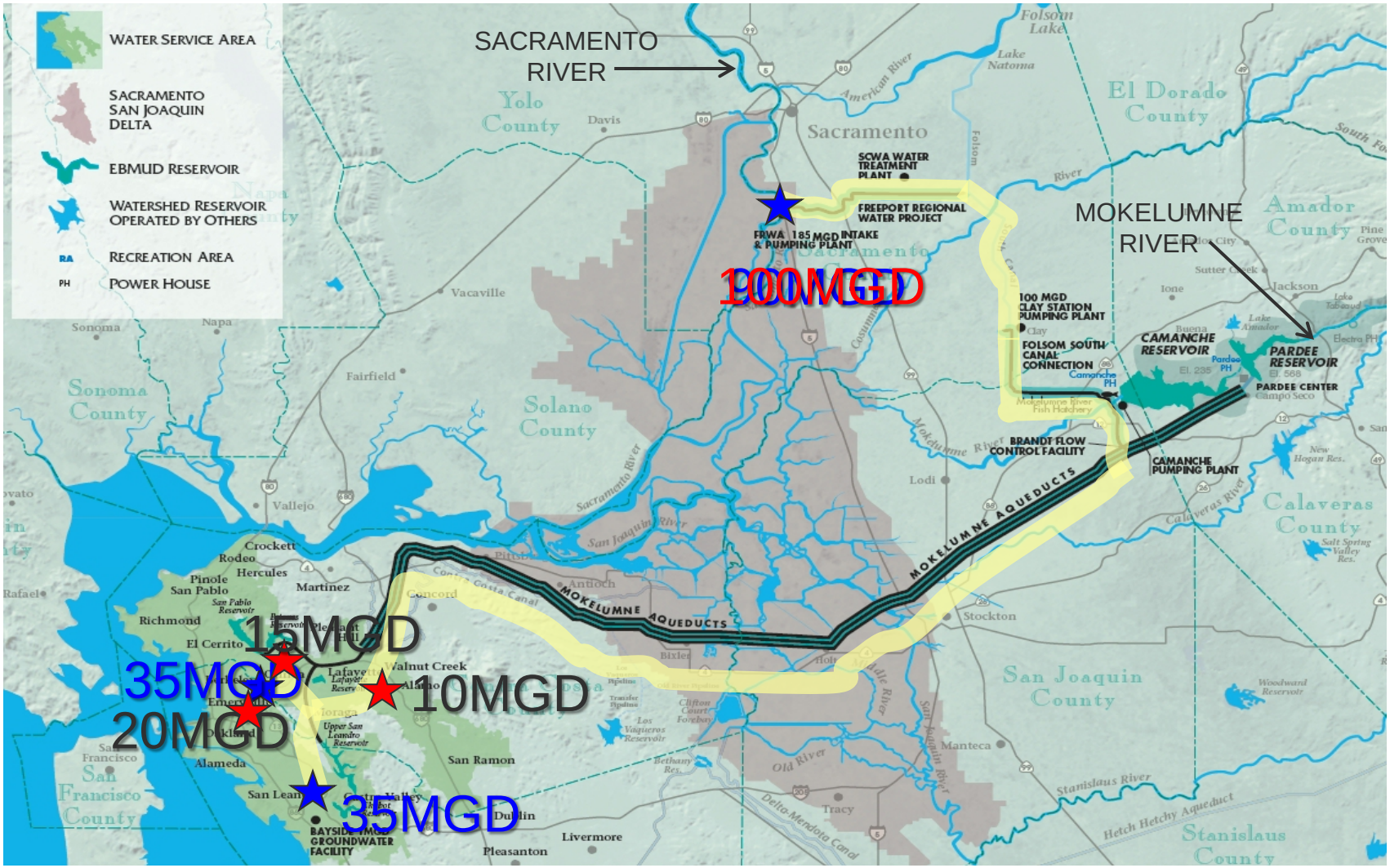
Freeport Regional Water Project Operations

- EBMUD routes up to 100 MGD from the joint pipeline through:
  - Gerber Pipeline
  - Folsom South Canal (pursuant to an easement)
  - Clay Station Raw Water Pumping Plant
  - Folsom South Canal Pipeline
  - Camanche Raw Water Pumping Plant
  - Brant Flow Splitting Facility, where it joins the Mokelumne Aqueducts

Freeport Regional Water Project Operations



Freeport Regional Water Project Operations



Potential Operational Impacts from the WaterFix Project

EBMUD would be required to make immediate operational changes should the WaterFix Project cause:

- Low or reverse flows on the Sacramento River near the Freeport Project intake
- Damage to any of EBMUD's facilities

Overview of Operational Issues

- Full shutdown
- Partial shutdown
- Chemical feed adjustment
- Coordination with other entities
- Time to resume full service
- Impact ability to deliver needed water to East Bay

Potential Impact on the Freeport Regional Water Project

The Freeport Project intake can be negatively impacted by downstream discharges from Sacramento Regional County Sanitation District

- Freeport Project intake will shut off when treated effluent from Regional San's discharge facility travels 0.9 miles upstream / dilution ratio exceeds 0.1%

FRWP Operational Mandates

Ernst Schuetz

To protect against potential discharges, operating requirements are incorporated into:

- ✓ Freeport Regional Water Association control strategies
- ✓ SWRCB's Division of Drinking Water permits

Complete Shutdown

When a reverse flow event lasts more than a few hours, all Freeport Project facilities and downstream pumping plants must be shut down

Complete Shutdown

- Results in serial disruptions to water system pumping operations
- Restart is delayed by the time required for water to flow through the system
- Delivery of water to Upper San Leandro Reservoir is delayed for at least 48 hours due to PG&E requirements
- Additional operational issues in shutdown and restart

Partial Shutdown

To avoid complete shutdowns, EBMUD developed an operating procedure

- Only an option for brief reverse flow events
- Still requires operational adjustments

Operational Concerns

- The Freeport Project facilities are not yet used to full capacity
- Currently, EBMUD can make up for “lost” water from reverse flow events
- EBMUD and SCWA anticipate using the Freeport Project facilities more over time
- Reduction in down time will limit ability to recover water lost to reverse flow events

Water System Overview – Water Source

Should the WaterFix Project cause an increase in the frequency or duration of reverse flow events, EBMUD's ability to deliver to its customers and meet operational objectives would be substantially compromised

Mokelumne Aqueduct Shutdown

Damage to EBMUD's Mokelumne Aqueducts would be catastrophic

Mokelumne Aqueduct Shutdown

- Damage to the Mokelumne Aqueducts caused by the WaterFix Project would cut off EBMUD's entire water supply from the Mokelumne and Sacramento Rivers
- Complete shutdown of the Mokelumne Aqueducts would leave EBMUD with only a 180-day water supply

Conclusion

EBMUD's operations are complex under normal operating conditions






Conclusion

Potential impacts on EBMUD's facilities or water supply caused by the construction or operation of the WaterFix Project could potentially jeopardize:

- the health and safety of EBMUD's 1.4 million customers
- the environment
- the East Bay economy