

WATER SYSTEM IMPROVEMENT PROGRAM

Dan Wade
WSIP Director

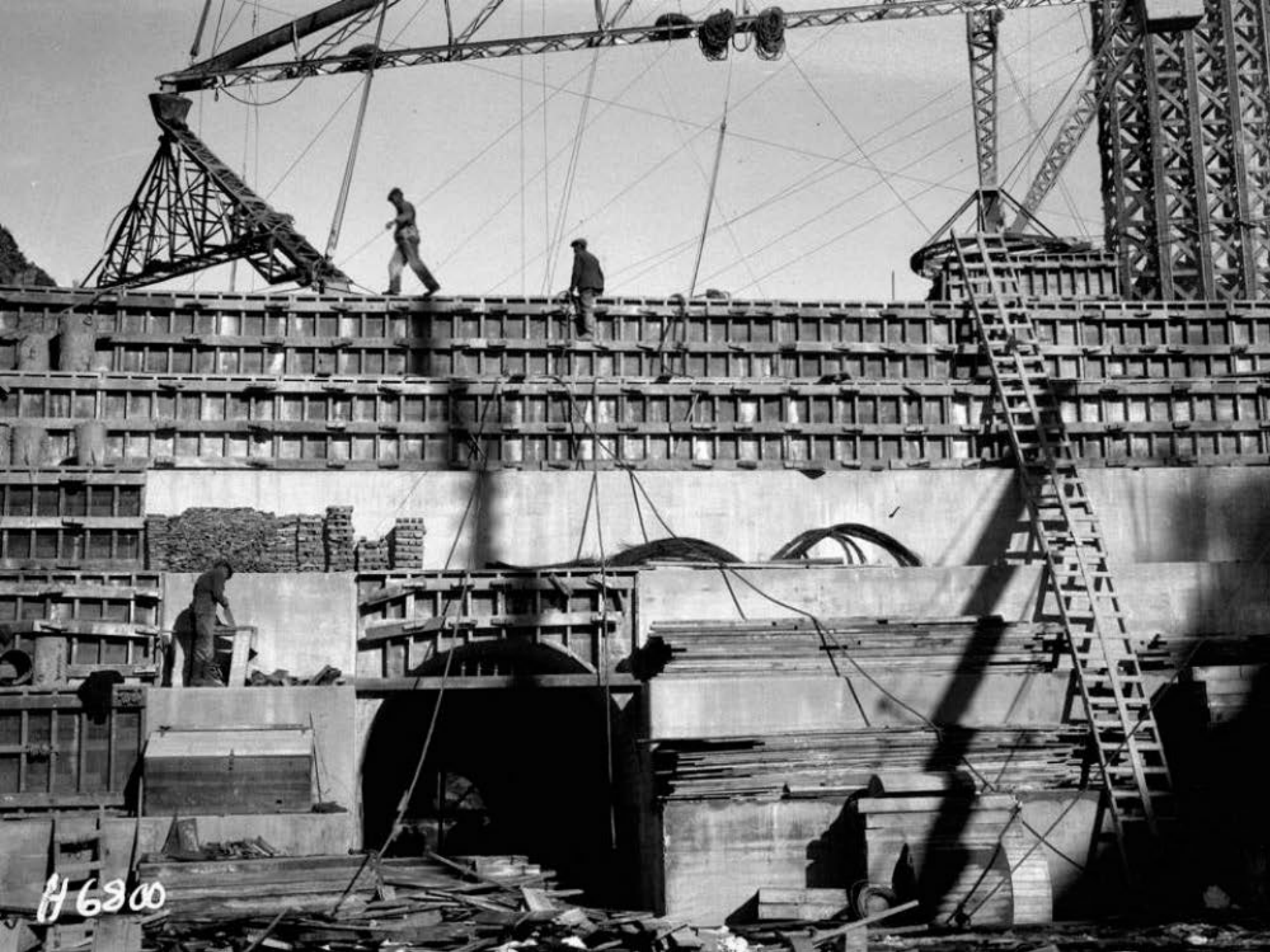


San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

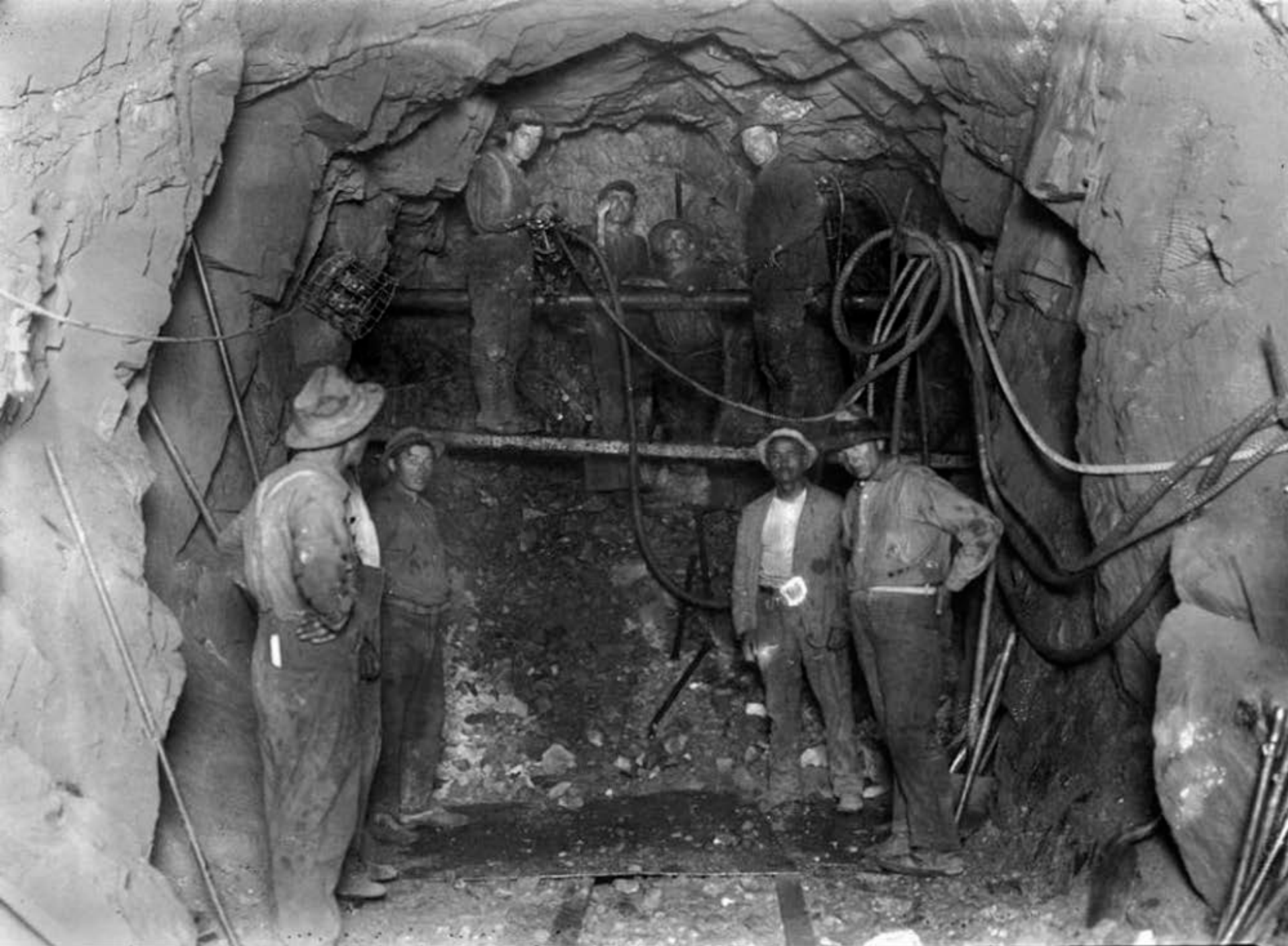
SAN FRANCISCO: APRIL 1906



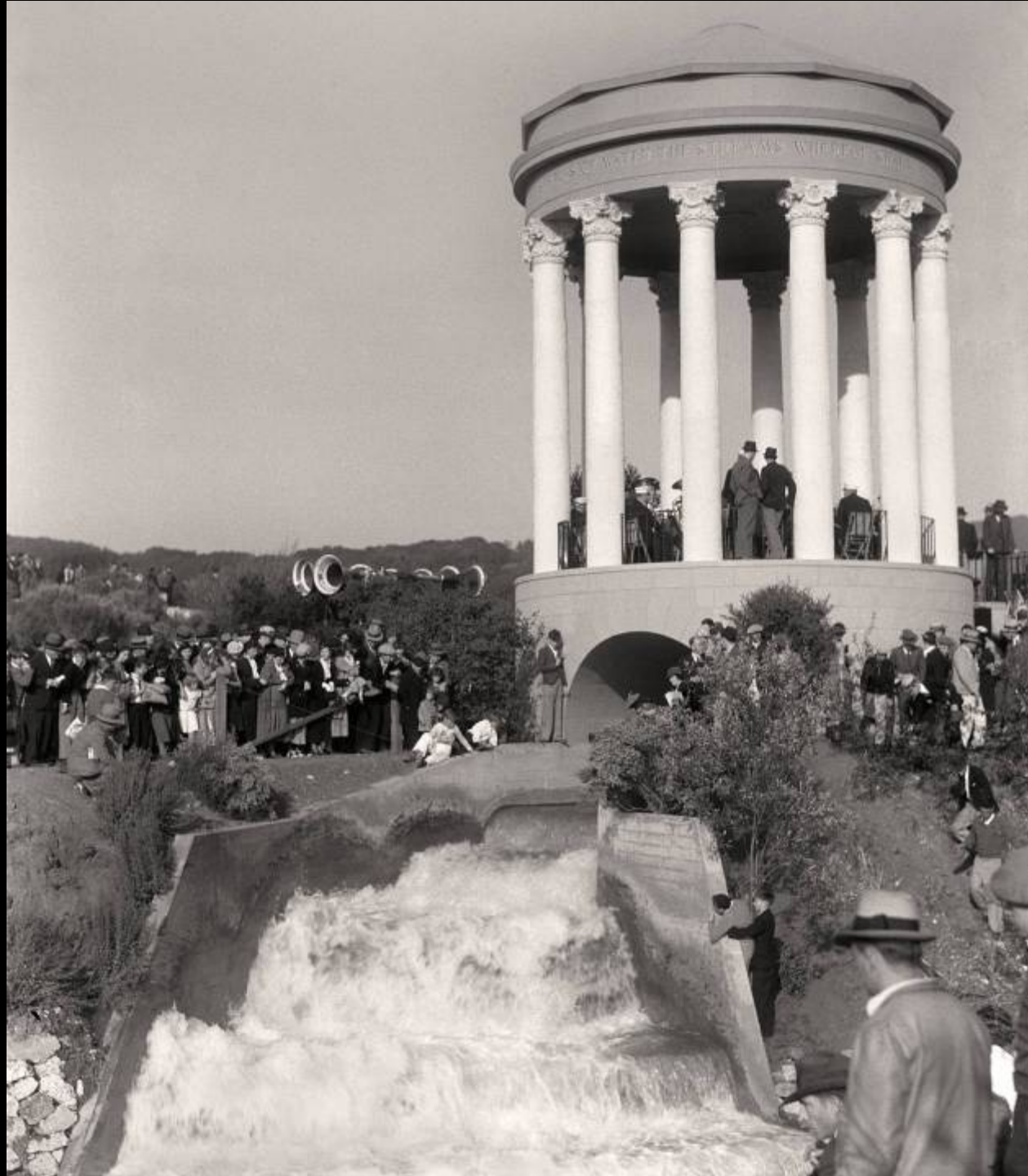
MAGNITUDE 7.9



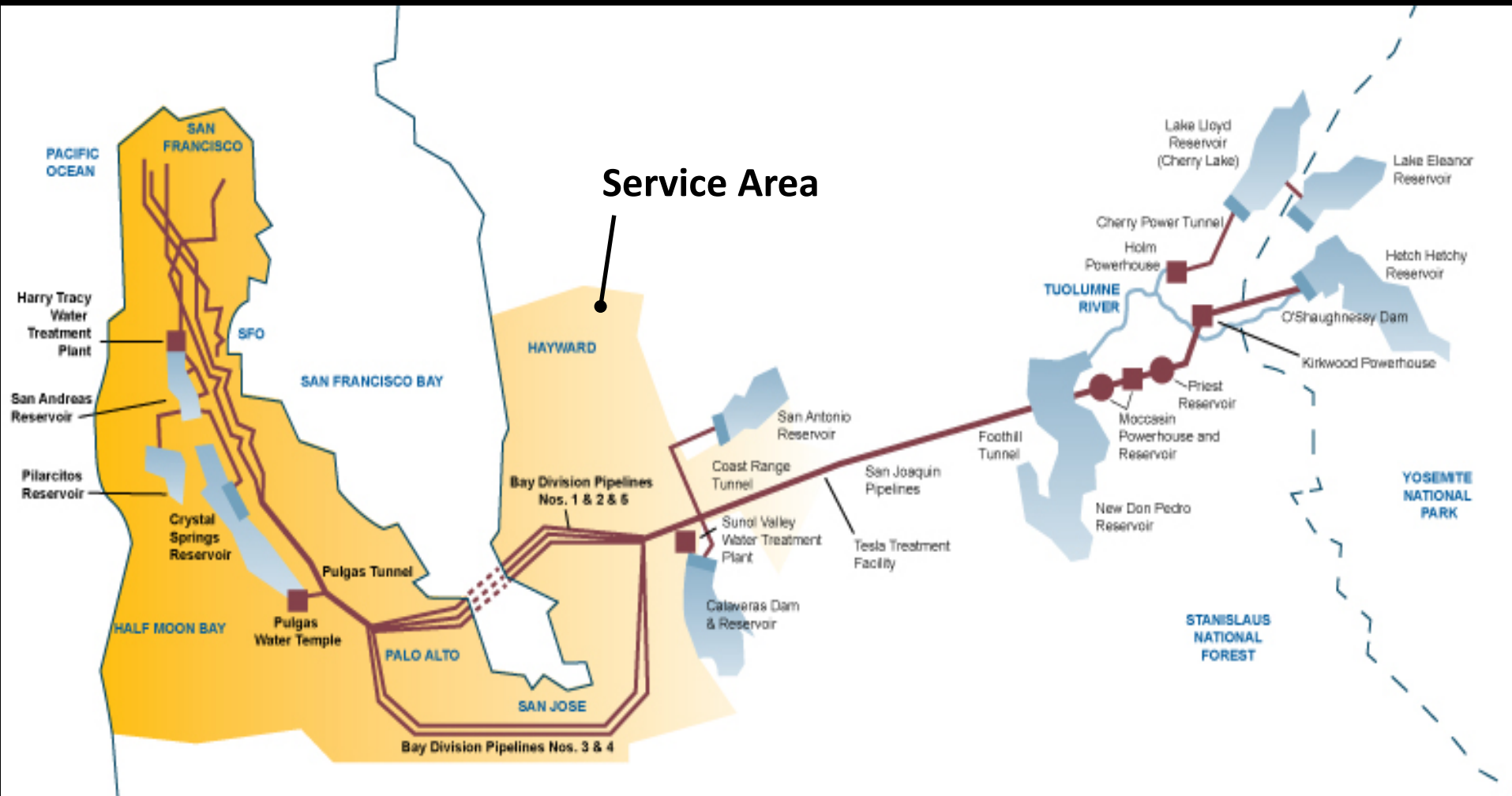
H6800



5300 8-6-18 Face of Priest Tunnel - 500 ft. in.



HETCH HETCHY REGIONAL WATER SYSTEM



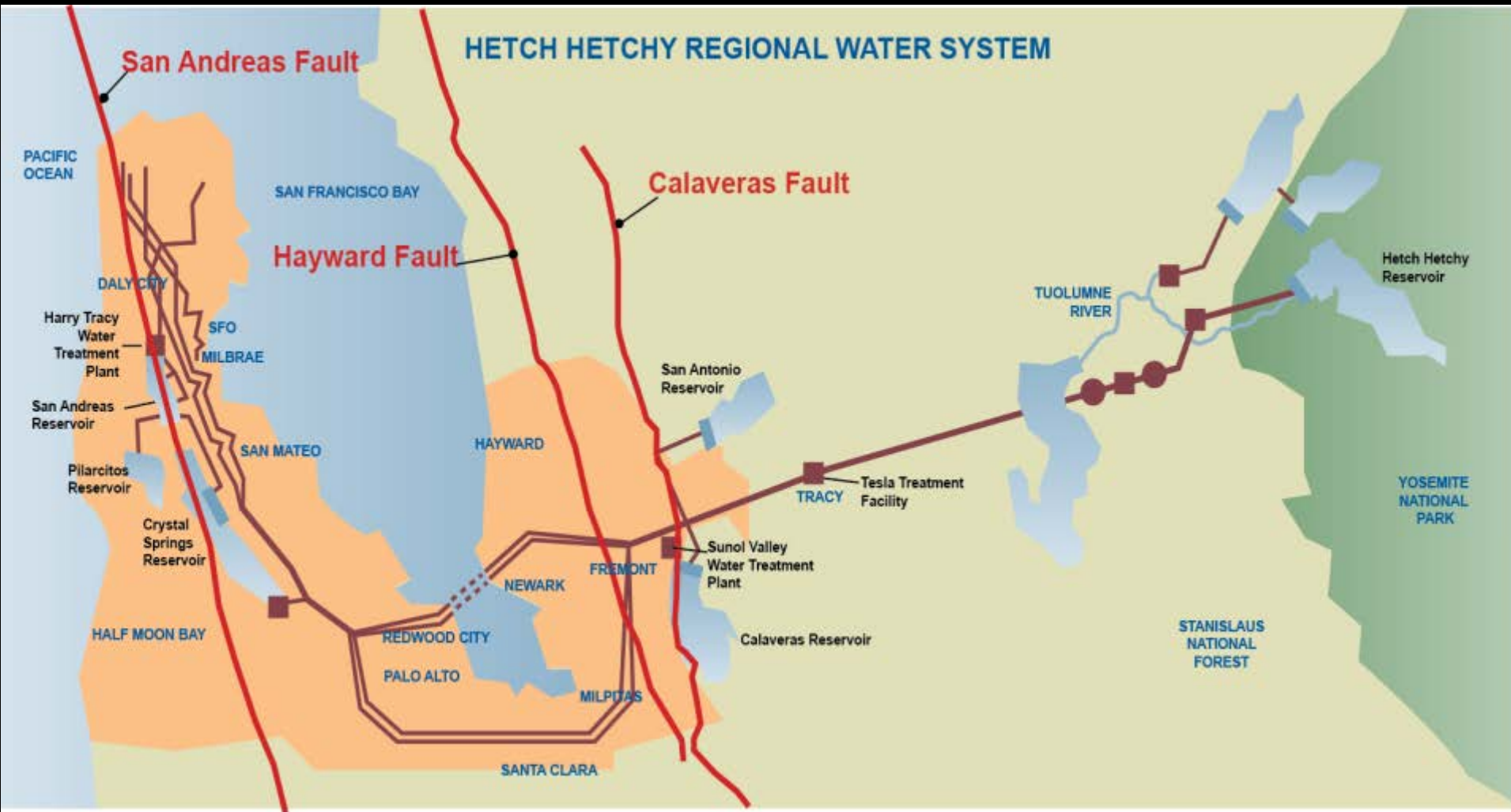
WHY FIX THE SYSTEM?

END OF USEFUL LIFE



LACK OF REDUNDANCY

3 MAJOR EARTHQUAKE FAULTS



IT'S NOT "IF" BUT "WHEN"



San Francisco 1906



Hayward 1868



Loma Prieta 1989

HOW THE PROGRAM STARTED

- Ongoing master planning efforts
- Tipping Point: Loma Prieta
- Political Pressure ➡ State Legislation
- 2002 ballot measures
- Refinement of project scopes schedules, and budgets
- Adoption of Level of Service Goals



OUR GOALS

Seismic Reliability

Delivery Reliability

Water Quality

Water Supply



WATER SYSTEM IMPROVEMENT PROGRAM

- 83 Projects
 - 2 dams
 - 3 tunnels
 - 3 treatment facilities
 - Pipelines, pump stations, reservoirs, tanks, etc.
- 7 Counties
- \$4.8 Billion
- 2016 Completion
(except for 3 projects)

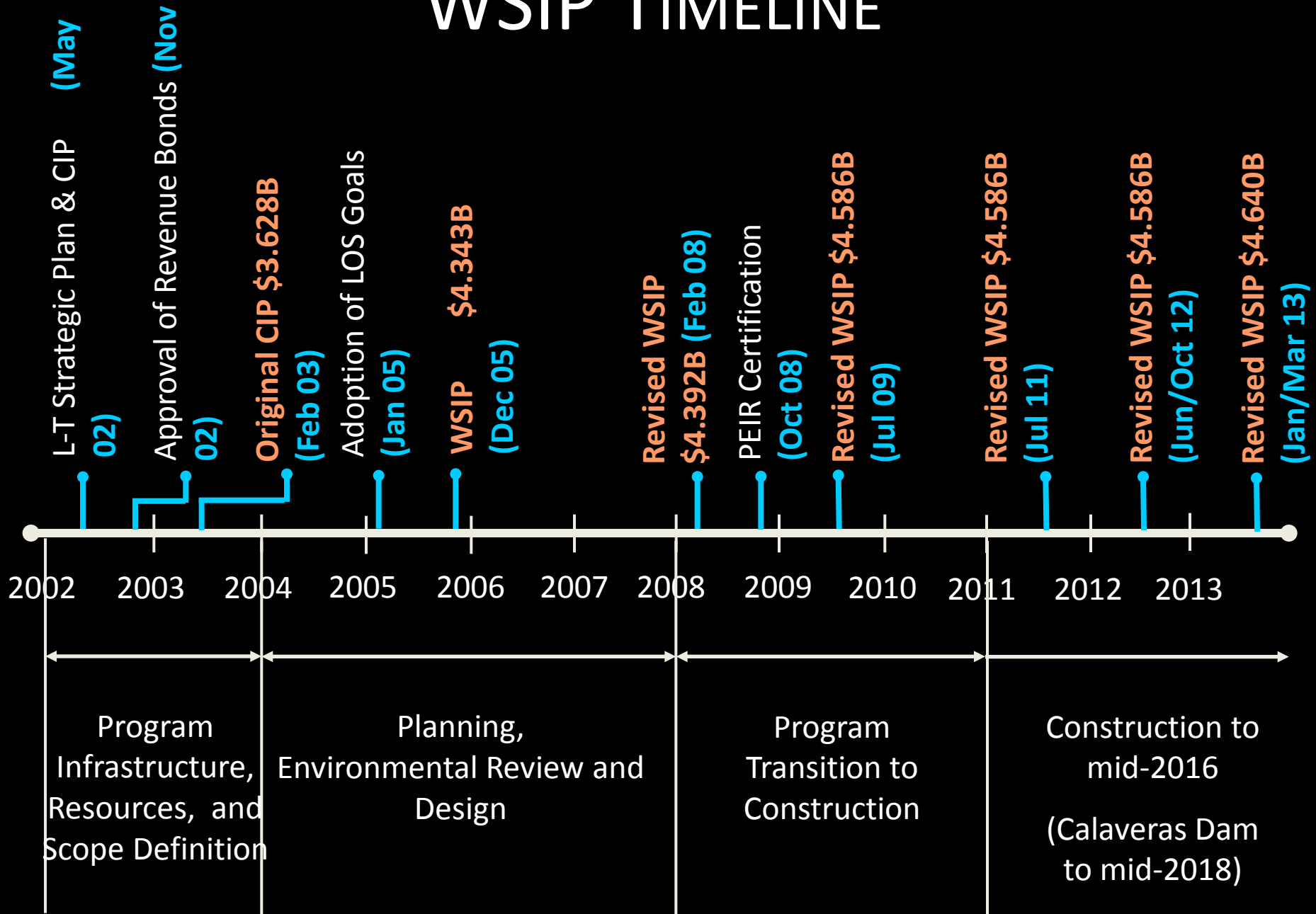


OUR CHALLENGES

- Political landscape
- Institutional boundaries
- Environmental requirements
- System operation
- Wide geographic area
- Densely populated areas



WSIP TIMELINE



OVERALL MANAGEMENT APPROACH

- City-led program through matrix organization
- 3-Tier organizational structure
- Integration of consultants
- Use of state-of-the-art technology
- Key implementation strategies
 - Environmental
 - Contracting
 - Transparency



ENVIRONMENTAL STRATEGY

- Commitment and stewardship
- Pre-Construction
 - Review
 - Permitting
- Construction
 - Mitigation
 - Monitoring / Reporting



CONTRACTING

- Promoting local jobs
- Project Labor Agreement
- Delivery methods
- Changing San Francisco's contracting environment
 - Automation ➡ Efficiency
 - Pre-qualification Program
 - Contract incentives
 - Risk allocation



PROGRAM TRANSPARENCY

Transparency + Accountability = Public Trust

- Reaching out to stakeholders
- Accountability to oversight bodies
- Reviews by independent panels
- Extensive reporting
- WSIP Website (sfwater.org/wsip)
- Use of social media   

A FEW LESSONS LEARNED

- **Program Controls**
 - Standardization and common understanding
- **Quality Management**
 - Make it a priority in all phases of implementation
- **Risk Management**
 - An integral part of day-to-day management
- **Change Management**
 - Comprehensive investigations key
 - Meet early /often with Operations
 - Control scope creep requests



COST OF CHANGE



Planning



Early Design



Late Design



Construction



Post Construction

STRONG CM – A MUST



Paul Gambon

Operations Manager



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OPERATIONAL DESIGN INPUT

- Level of Service focus
- Operational facility upgrades: WTPs, Pump Stations, UV, Tunnels, Pipelines, etc.
- Operations participation in project scoping and design review



LOGISTICAL PLANNING WAS KEY

- Liaisons:
highly experienced senior operators
- Monthly Shutdown Meetings: PM's and Operations Reps
- Shutdown Matrix/
Wall Chart
(visual/indispensable!)
- Contingency Planning



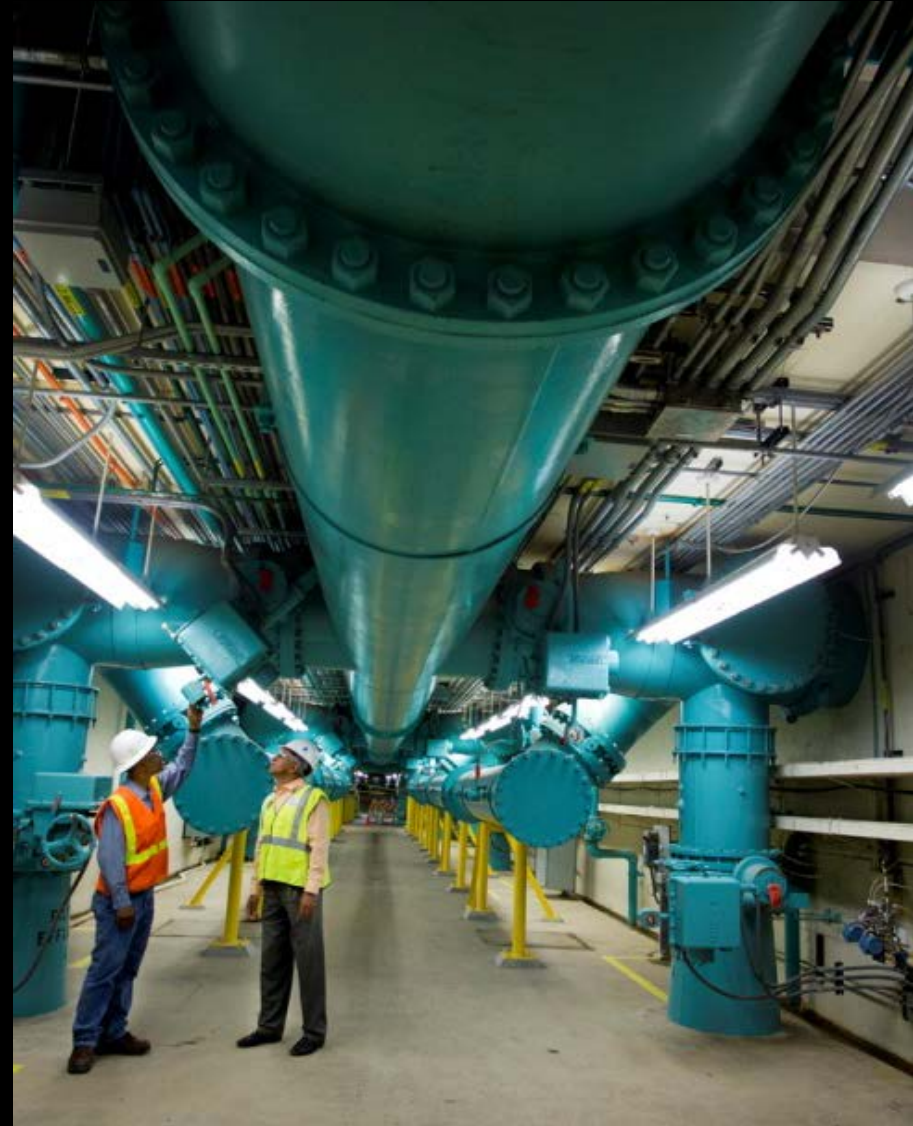
MAJOR SHUTDOWNS

- 2010 Coast Range Tunnel: severed main source
- 2011 Crystal Springs Bypass Tunnel: split system
- Bay Tunnel: commissioning
- Harry Tracy WTP: 7 years of back to back shutdowns



ONGOING STAFF INVOLVEMENT

- Design Reviews
- Weekly Operations Plans
- Operations support during construction: SORs, LO/TOs, etc.
- Training
- Deliverables: As Builts/
O&Ms/Equipment Data
Sheets/SOPs
- Post-WSIP?





You are here

3. Alameda East Portal

4. Alameda West Portal

Hetch Hetchy Aqueduct

2. Sunol Valley
Water Treatment Plant

1. Calaveras Dam

BDPLs 1, 2 and 5

BDPLs 3 and 4