

**East/West Portal
Alameda Siphon No. 4
Operations Survey
Sunol, California**

I. Survey Respondent/Presenter:

Name: Mike Weisenberger

II. Why operations staff wanted the project – problems the project was intended to solve:

The project was needed to provide a Hetch Hetchy transmission line across the Calaveras Fault that is designed specifically to survive an earthquake and stay in service. The project also provided redundant chemical feed facilities at Sunol chloramination facility and interconnection of the siphons to provide additional consistency to water quality entering the Irvington Tunnels. We took the opportunity presented by the project and improved our security, s-ill control, and maintenance capabilities

III. Operations during construction:

The project required a shutdown of the Coast Range Tunnel (CRT) stopping all Hetch Hetchy flow to the SFPUC service area. At the same time another project was scheduled to tie in a manifold at the other end of the CRT

IV. How project has affected operations:

The project has improved seismic reliability and operational flexibility, responsiveness, and consistency

The project also upgraded the transmission system maintenance capabilities by improving the coast range tunnel ventilation system and replaced old leaking valves. Also, operationally the project increased supply redundancy via a reconfigured valving system allowing additional flow scenarios across the Sunol Valley

V. Challenges of operating new facilities (e.g., availability of as-builts, documentation, technical training materials):

- Siphon #4 raises the possibility (challenge) of automated and non-automated seismic response routines to be developed and enabled via SCADA
- Siphon interconnections constantly mix the flow entering Irvington Tunnels at Alameda West – however, water quality reliability might benefit from keeping siphon sources split, allowing isolation in one of the tunnels, if out-of-spec

VI. Lessons Learned from an Engineering/Project Management Perspective:

- Develop control strategies early in design
- Plan to commission new systems immediately
- Maximize O&M flexibility in all design – extra benefits are certain to come of it.