

Project Experience

SCADA Communication System Study, SCADA Communication System Phase 1 Design, and Construction Support Services, and SCADA Communication System Phase 2 Design, and Construction Support Services Placer County Water Agency, Auburn, CA

Timberline Engineering conducted a communication study that provided the direction regarding point-to-multipoint communications for the expansion of PCWA's SCADA system. The study encompassed both raw water and treated water facilities, including eight water treatment plants, wells, tanks, pump stations and pressure reducing stations. The thrust of this study was to evaluate the Agency's SCADA communication requirements and options and to recommend the best alternative or combination of alternatives for reaching widely dispersed remote sites.

As part of the evaluation of different communication media for SCADA system applications, Timberline considered standard licensed 900 MHz MAS radio, unlicensed 900 MHz spread spectrum radio, VHF/UHF radio, and analog and digital telephone. The analyses included map studies, path profiles and calculations, field verification, and life-cycle cost analysis. Timberline compared alternatives and selected 900 MHz spread spectrum radio as the best media to meet the Agency's near- and long-term needs. However, with the FCC's opening of the new 932/941 MHz MAS frequency band, Timberline assisted the Agency in obtaining a licensed MAS channel to be used in conjunction with unlicensed spread spectrum radio.



AUBURN TOWER - BEFORE AND AFTER (PHOTOSIMULATION)

Timberline's support on this FCC licensing effort involved applying for an MAS station at the Sunset Water Treatment Plant in Roseville, CA. The proposed system will operate in accordance with the new rules contained in FCC Document No. 99-415. Timberline was responsible for data gathering, topographic map studies, coverage analyses, frequency coordination, and preparation and tracking of the FCC license application package. The FCC package included transmittal and justification letter, comple-

tion of the new FCC Form 601, including schedules and supplements, system description and frequency coordination statements.

Timberline also developed generic specifications and installation details for use as guidelines in developing and implementing the recommended communication alternative in future SCADA systems. The study analysis results, findings, and recommendations were documented in a technical report.

Following the study phase of the project, Timberline prepared bid documents for the construction of a communication facility for the MAS station at the Sunset plant. The facility design included a tower, shelter, emergency generator, and grounding system. This construction package also included removal of an existing County tower at the project site and incorporation of the existing communication equipment used by the County police, fire department, and schools into the new communication tower/facility. This project is presently under construction.

At present, Timberline is preparing the bid documents for construction of a second MAS station, this one located at the Auburn WTP. This facility will be similar to the Sunset MAS station, with the exception that it will operate utilizing unlicensed spread spectrum radio technology. For use in preparing documentation required by the California Environmental Quality Act (CEQA), Timberline developed photosimulations of the Auburn site reflecting the construction of the new MAS tower.

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