CITY OF VALLEJO, CALIFORNIA

Fleming Hill Water Treatment Plant Expansion

HIGHLIGHTS

Water treatment expansion to 42 mgd.

Pre- and intermediate ozonation

Biologically active filtration utilizing GAC/sand media filters to:

- Reduce total organic carbon (TOC).
- Reduce DBP precursors.
- Reduce the overall chlorine demand.
- Improve taste and odor in the finished water.
- Aid in meeting stringent new drinking water regulations.

Small challenging site in a residential area.

Carollo completed a comprehensive plant evaluation that identified the necessary upgrades and expansion for the City of Vallejo Fleming Hill Water Treatment Plant. Upgrades were needed for improved control of water quality to meet stringent new drinking water regulations and to improve plant reliability. Vallejo retained Carollo to design process upgrades to bring the plant capacity from 27 mgd to 42 mgd.

Major treatment plant features and facilities included in the design were:

- Horizontal turbine, three stage flocculation and improved sedimentation.
- Pre- and intermediate ozonation.
- Upgraded and new filters utilizing dual GAC/sand media.
- Chlorine scrubber system and chlorine gas facilities

The design included ozonation upstream of the GAC filters to promote biologically active filtration (BAF). Utilizing a BAF approach has been shown effective in reducing levels of organic compounds, including precursors to disinfectant byproducts (DBP), lowering the chlorine demand later in the disinfection process, and aiding in meeting stringent new drinking water regulations.

Carollo designed the upgrades as well as the new process to fit within the existing constrained residential site. When the construction phase was nearing completion the Carollo team conducted training sessions for the plant operators so that they would be brought up to speed and feel confident about operating the new facilities.

Carollo successfully delivered the $35 million Fleming Hill Water Treatment Plant in a residential neighborhood without interruption of Vallejo's water supply.