

# Lou Carella

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## **Education**

*BS Civil Engineering,  
Santa Clara University,  
1980*

## **Licenses**

*Civil Engineer,  
California*

## **Professional**

### **Affiliations**

*American Society of Civil  
Engineers*

*American Water Works  
Association*

*Association of California  
Water Agencies*

Lou Carella specializes in the planning and design of large water supply, treatment and distribution projects. Lou's experience includes planning studies for development of new water supply, treatment and transmission systems, as well as the evaluation and modification of existing systems.

- Project manager for the City of Reedley, California, Wastewater Treatment Plant 5-mgd Expansion Project. The project included a new influent pump station, headworks, anoxic basin and recycle pump station, oxidation ditch, secondary clarifiers, effluent pump station, return activated sludge pump station, electrical room, and sludge storage tanks; modifications to existing centrifuge building; yard piping; electrical feed and distribution work; and various site work.
- Project manager for confidential client's wastewater treatment and effluent disposal alternatives study to support future development in the Royal Gorge/Serene Lakes area of the Sierra Mountains, California. The project involved evaluating options and identifying preferred treatment alternatives. The evaluation included discussions with Regional Water Quality Control Board staff and stakeholder agencies. The study also involved developing preliminary wastewater flow projections, preliminary sizing of treatment and effluent reuse facilities, preliminary cost estimates, and identifying the jurisdictional and zoning requirements for the proposed wastewater treatment facility.
- Program manager for construction of the Lopez Water Treatment Plant Upgrade Project for San Luis Obispo County, California. Provided management and communication support during the construction phase. The project included assisting the County and construction manager in resolving change orders and claims; coordinating communication between the County, construction manager, design engineer, and other agencies and stakeholders; monitoring the budget and tracking the progress of the State Revolving

Fund loan process; and maintaining the project schedule.

- Served as program manager for the seismic remediation of Lopez Dam for the County of San Luis Obispo. Managed the engineering, environmental, financial and public information aspects of the project, which involved a \$26 million rehabilitation program for an existing dam. Also coordinated with the five downstream communities whose water supply comes from Lopez Reservoir and with the County of San Luis Obispo who is responsible for the operation of Lopez Reservoir.
- Served as project manager for Contra Costa Water District's Seismic and Reliability Improvement Project. Managed project that evaluated the capacity constraints of the existing system to serve build out year demands, identified capacity improvements to serve that build out demand, and then identified seismic improvements to be constructed with the capacity improvements to improve the seismic reliability of the system at the least overall cost to the District and its customers. The results of this planning effort were recommendations for \$120 million of capacity and seismic improvements for the District's system.
- Project manager for the design of the Marina Coast Water District's Recycled Water Distribution System in Marina, California. The project included the design of approximately 71,000 linear feet of 4-inch through 20-inch ductile iron and PVC pipe, a 4500-gpm booster pump station, and a 1.5-MG prestressed concrete reservoir and customer turnouts. The project was divided into three bid packages. The project had an aggressive schedule for the first construction package, requiring that design be completed in five months. Additional project challenges included determining requirements for five jurisdictional agencies and coordination with ongoing development projects within the City of Marina.

- Assistant program manager for preliminary engineering of Phase 1 of the \$200 million Water Supply Improvements Project for the Tualatin Valley Water District, Beaverton, Oregon.

Responsibilities include planning and program management of improvements for a new 70-mgd water supply which includes 22 miles of 72-inch-diameter pipeline, a pump station, a 20-MG terminal reservoir, and a water treatment plant expansion.

- Project manager for preliminary design of the Canal Encasement Project for the Contra Costa Water District, Concord, California. Preliminary design includes four miles of 120-inch-diameter RCP to replace the existing canal system through eastern Contra Costa County. The project included complicated hydraulics, development of excavation and dewatering plans to accommodate challenging soils, and innovative design of transition structures at both the upstream trash rack and the downstream pump station. A detailed construction schedule and estimate of probable project costs were developed.

- Served as program manager for the Livermore-Amador Valley Water Management Agency's Export Pipeline Facilities Project. Managed \$120 million program consisting of design, permitting and construction of a 41 mgd export pump station; 16 miles of 36-inch-diameter transmission pipeline; and rehabilitation of approximately eight miles of existing 24-inch to 36-inch-diameter transmission pipeline. The project exports secondary treated wastewater from the Livermore-Amador Valley area, across Alameda County (through four cities and unincorporated Alameda County) to the San Francisco Bay. The project includes incorporating the requirements of four major environmental permits including COE, USFWS, BCDC, and State Lands Commission, as well as over a half dozen encroachment permits and Caltrans permits.

- Project manager for San Luis Obispo County's Chorro Valley Water Transmission Pipeline. Managed the design of pipe required to handle working pressures up to 400 psi, two pressure-reducing stations and the design of turnouts required to serve three contractors of the County. The design and construction for this project included 11.5 miles of 12- to 16-inch-diameter pipeline and connection to four 2.0-MG above grade reservoir. Because the pipeline travels through environmentally and

culturally sensitive areas in the county, the project was highly publicized.

- Served as project manager for the feasibility level planning and preliminary design of a new regional water supply and transmission pipeline for the South San Joaquin Irrigation District. The project included planning of raw water conveyance system, a 36-mgd treatment plant, transmission system, booster stations and storage reservoirs to serve the south county cities presently using groundwater. This project includes \$100 million of water supply facilities to meet the urban demands of the area.

- Served as principal-in-charge for the City of Winters Sewer System Master Plan Project. Responsible for overseeing development of a master plan to include modeling with a GIS interface, in order to allow the city to build a long-term monitoring and management program on a solid technical base. The scope of work includes an operational and budgetary review in order to assure that the city moves forward with operational practices to support pending CMOM regulations.

- As project manager for the Water System Master Plan for the City of Benicia, Managed a master plan evaluating the deficiencies of the existing distribution system for meeting existing and future demands. Lou performed a regulatory and operational audit of the water treatment plant, and developed a prioritized list of capital improvements for the treatment plant and distribution system to be included in the City's ten-year CIP.

- Served as project engineer for updating Contra Costa Water District's 1994 Master Plan to provide sufficient detail to support the development of its revised Facility Reserve Charge (FRC) calculations. The objective of the project was to develop an updated TWMP that both adequately defined the district's distribution system and supported the FRC calculation. Updated TWMP involved developing a new land-use basis for projecting demands in the district's TWSA, updating the district's hydraulic model, confirming the distribution system performance criteria, providing a prioritized list of necessary improvements, establishing cost estimates for improvements, and preparing a new master plan report.

- Served as project manager for the San Luis Obispo County's Drainage and Flood Studies Project. Six communities in the County (Cambria, Cayucos, Nipomo, Oceano, San Miguel, and Santa Margarita) have experienced varying levels of drainage and flood related problems and Lou will lead the effort to identify feasibility level solutions and provide cost estimates to mitigate those problems. Implementation plans will be prepared as well as schedules for recommended alternatives.
- Project engineer for the Del Valle Water Treatment Plant Expansion, Zone 7 Water Agency. Designed the 36 mgd treatment plant expansion including the construction of a 6-MG clearwell storage reservoir. Prepared O&M manual and assisted with plant start-up. Project won a 1991 ACEC Honor Award for Environmental Engineering and a 1991 CEAC Merit Award for Engineering Excellence.
- As project manager, designed the 7.5 mgd Travis AFB Water Treatment Plant which was a conventional treatment plant expansion including ozonation, hydraulic flocculation and GAC filters. Conducted process and capacity assessment of existing facilities. Developed process criteria and preliminary design report for the Travis design.
- As project manager for the Blue Water Project, East Bay Municipal Utility District (EBMUD) managed a two year-long investigation to solve EBMUD's blue water problem in the San Ramon Valley. Prepared a report on the health effects and operational constraints for chlorine in the EBMUD's distribution system.
- Project engineer for the Briones Remote Disinfection Facility Disinfection Alternatives Analysis, EBMUD. The analysis evaluated the advantages and disadvantages of alternative methods of achieving the required disinfection of the Briones Reservoir supply. Twelve alternatives were identified including chlorine gas and sodium hypochlorite.
- Served as project manager for the Santa Clara Valley Water District's Overall Facilities Assessment, Reliability Response and Water Infrastructure Reliability Plan. Managed an overall facilities assessment and reliability response evaluation and development of a system-wide Water Infrastructure Reliability Plan for the district's water

storage, transmission, pumping, treatment and distribution facilities (including portions of the USBRs San Felipe Project). In addition, the project will evaluate facilities of the county's other imported water supplies (DWR and SFPUC) and the district's retail customer systems to assess their impact on the district's system ability to supply and deliver water to its customers. Ultimately, the Water Infrastructure Reliability Project will include a prioritization of regional solutions for improving the reliability of the district system at a board-selected overall lifecycle cost vs. level of service to its customers.

### ***Publications/Presentations***

Carella, L. "New Codes Impacting Storage and Handling of Treatment Chemicals." Presented at the American Water Works Association, Water Quality Division, Technical Session, Fall 1990.