

Dr. KARL E. LONGLEY, PE, BCEE

7355 North Pacific Avenue

Fresno, CA 93711

Telephone: *Work* (559) 278-8658 (California Water Institute)

Home (559) 439-0531

Cell (209) 873-0630

E-mail: karl.longley@waterboards.ca.gov (CV Water Quality Control Board)

karll@csufresno.edu (California Water Institute, CSU Fresno),

karllongley@sbcglobal.net (Personal)

EDUCATION

- B.S. in Civil Engineering, The University of New Mexico, Albuquerque, NM, 1960
- M.S. in Sanitary Engineering and Water Resources, The Johns Hopkins University, Baltimore, MD, 1964
- Sc.D., The Johns Hopkins University, Baltimore, MD, 1974

PROFESSIONAL POSITIONS

- Board Member, Central Valley Regional Water Quality Control Board, Nov 1989 - Nov 1997 and Jan 2000 - **Present**; Chairperson, Nov 1992 - Jan 1997, Jan 2007 – Jan 2010 and Jan 2012 – present; Vice-Chairperson, Jan 1991 - Oct 1992, Jan 2001- Jan 2006 and Jan 2011 – Jan 2012.
- Research Engineer and Project Manager, California Water Institute, California State University, Fresno, Jan 2005 -- **Present**; Director, 1990 – Dec 2004.
- Member, Governor's Drinking Water Stakeholder Group, June 2012 -- Present.
- Member, State/Federal Digestor Working Group, May 2011 -- Present.
- Director, American Society of Engineers, Nov 2005 – Nov 2008.
- Board Member, Central Valley Business Incubator, Jan 2004 – Dec 2012.
- Dean, College of Engineering and Computer Science, California State University, Fresno, Jul 1997 – Dec 2004; Interim Dean, Jul 1996 - Jun 1997.
- Dean (Acting), School of Engineering, California State University, Fresno, December 1993 - May 1994.
- Chairperson, Department of Civil and Surveying Engineering, California State University, Fresno, January 1985 - June 1996.
- Professor of Civil Engineering, Civil and Surveying Engineering Department, California State University, Fresno, 1982 - 2004.
- Member, Governor's Environmental Policy Council, State of California, 1993 - Jan 1997.
- Board of Consultants, Agency for Toxic Substances and Disease Registry, U.S. Department of Health and Human Services, Feb 1994 - Feb 1998.

- Partner in Hanna, Longley and Associates, Consulting Civil Engineers and Environmental Planners, Fresno, CA, 1983-1985.
- Civil Engineer, Strauss and Roberts Consulting Civil Engineers, Inc., Porterville and Visalia, CA, 1981-1982.
- Adjunct Associate Professor of Environmental Engineering, The University of Texas at San Antonio, 1976-1981.
- Chief, Health and Environment Division, U.S. Army Medical Laboratory Europe, Federal Republic of Germany, 1978-1981.
- Adjunct Associate Professor, School of Hygiene and Public Health, Tulane University, New Orleans, LA, 1976-1978.
- Chief, Environmental Engineering Branch, Academy of Health Sciences, Fort Sam Houston, TX, 1975-1978.
- Chief, Environmental Engineering Branch, U.S. Army Environmental Hygiene Agency Regional Division, Fort Baker, CA, 1974-1975.
- Chief, Environmental Health Engineering Laboratory Department, U.S. Army, Vietnam, 1970-1971.
- Sanitary Engineer, U.S. Army South, Panama Canal Zone, 1968-1969.
- Staff Sanitary Engineer, Atlantic-Pacific Interoceanic Canal Study Commission, Balboa Heights, Canal Zone, 1966-1968.
- Sanitary Engineer, U.S. Army, various assignments in addition to those listed above in the U.S. and Asia, 1960- 1981.
- Junior Civil Engineer, Department of Water Resources, State of California, 1960.

PROFESSIONAL REGISTRATION (Current)

Registered Professional Engineer, State of California

MILITARY SERVICE:

Environmental Engineer Officer, 2nd Lieutenant to Lieutenant Colonel, U.S. Army, 1960-1981 (active duty); retired July 1981 as U.S. Army Lieutenant Colonel.

PROFESSIONAL ORGANIZATIONS (CURRENT)

- Board Certified Environmental Engineer, American Academy of Environmental Engineers
- Member (including Past Director), American Society of Civil Engineers (ASCE) and, Member, ASCE's Environmental & Water Resources Institute
- Member, American Water Works Association

- Member, Water Environment Federation
- Senior Fellow, California Council on Science and Technology

EXPERIENCE

I have over 50 years of experience as a sanitary and water resources engineer directly supervising or conducting studies of water quality, industrial waste control, hazardous waste management, air quality management, and water and wastewater treatment and design, environmental assessment and policy development or further developing and imparting my technical knowledge to students as a civil and environmental engineering faculty member.

Typical professional activities as principal investigator and/or responsible engineer include:

- The determination of environmental impacts associated with wastewater management and water supply.
- The preparation of water, wastewater, and stormwater master plans for municipalities.
- The determination of critical factors and their quantitative influence on the inactivation of coliform in high-rate disinfected wastewater periodically discharged to bodies of water such as San Francisco Bay.
- The preparation of a solicited proposal, and the subsequent conduct and reporting of a study for the U.S. Environmental Protection Agency regarding the removal of toxic organic materials from groundwater.
- Working with local government entities for the planning and conduct of a major groundwater contamination study.
- The development and conduct of a major study plan for the determination of feasible alternative treatment methods for removing selenium from selenium-contaminated waters and soils.
- The preparation of draft environmental impact reports for land development projects.
- The planning, supervision, and completion of comprehensive operational and optimization studies of water systems for both the U.S. Army and the private sector.
- The supervision and conduct of industrial waste, water, wastewater, and hazardous waste surveys in the United States and overseas locations for both the U.S. Army and the private sector.

MANAGEMENT

As the Dean (June 1997 – December 2004) and Interim Dean (July 1996 - May 1997), of the College of Engineering and Computer Science, California State University, Fresno, I was responsible for a school with four departments, eight academic programs, and critical ancillary activities including the computer laboratories, the MESA/MEP program (from the MESA website, *“One of the country's most innovative and successful programs, MESA works with*

thousands of educationally disadvantaged students so they excel in math and science and graduate with math-based degrees”), and the Engineering Research Institute. My responsibilities included but were not limited to initiating or responding to personnel actions, determining and implementing budget actions, providing strong oversight for resources management, providing leadership on curriculum matters, and supervising the day-to-day activities of the school. Two important accomplishments were the initiation of an Advanced Manufacturing Center to serve San Joaquin Valley industry, and the development of a center for undergraduate and graduate engineering in the Antelope Valley using distance learning technology and resident faculty.

As the Chairperson (January 1985 - June 1996), Civil and Surveying Engineering and Construction Department, California State University, Fresno, I was responsible for a department with four academic programs (bachelor of science degree granting programs in civil engineering, surveying engineering, and construction management, and a master of science degree granting program in civil engineering) and fifteen full-time faculty members, several part-time faculty members, a full-time administrative assistant, and one to two part-time clerical personnel. My responsibilities include initiating or responding to personnel actions, determining budget requirements, allocating resources, providing leadership on curriculum matters, scheduling classes, and supervising the day-to-day activities of the department.

As the Acting Associate Dean (August 1990-August 1992), I was responsible for the oversight of all School of Engineering administrative actions pertaining to the academic performance of engineering students and the recruitment of engineering students I was the coordinator of the University's Master of Science of Engineering program (options in Mechanical Engineering and Electrical Engineering) conducted at Edwards Air Force Base. I was the supervisor of the Director of the School of Engineering's Engineering Research Institute. I was also responsible for seeking out research opportunities and developing and recommending to the Dean of the School of Engineering plans for furthering the School's involvement in research and development.

As a Board Member of the Central California Regional Water Quality Control Board, my service is from November 1989 to November 1997 and from February 2000 to the present. I was the Chairperson, Nov 1992 - Jan 1997, Jan 2007 – Jan 2010 and Jan 2012 – present; Vice-Chairperson, Jan 1991 - Oct 1992, Jan 2001- Jan 2006 and Jan 2011 – Jan 2012.

Board Members are responsible for overseeing a number of activities including the development of basin plans, issuing waste discharge requirements, taking enforcement action against violators, and monitoring water quality. The Central Valley Regional Water Quality Control Board carries out State and federal law and is guided by policies established by the State Water Resources Control Board. As the chairperson of the Board, I represented the Board to the public and to local, state, and federal legislative and executive bodies. Additionally, as chairperson I was responsible for budget, personnel, and planning functions.

As the Manager of the Engineering Research Institute's San Joaquin Valley Water Research Center (July 1987-1990), I was the supervisor of a laboratory manager and approximately six

full-time and part-time employees. I was the principal organizer of this program and contributed significantly to the growth this center achieved. The San Joaquin Valley Water Research Center was the forerunner of the present California Water Institute.

As the Chief, Preventive Medicine Division, Tenth Medical Laboratory (1978- 1981), I was responsible for supervising five departments that were staffed with approximately forty individuals including engineers, physicians, nurses, chemists, industrial hygienists, audiologists, and entomologists. This organization functioned as a regional public health department, and was responsible for the fiscal, planning, and leadership functions necessary for the coordination and execution of comprehensive public health programs within those parts of Western Europe where United States Army personnel was stationed, primarily West Germany, Italy, and Belgium.

RESEARCH

My research experience, both in and out of government, has been focused primarily on development and application of engineering and scientific principles to environmental pollution control. Examples of these activities follow:

- I was responsible for the planning and conduct of research projects evaluating the use of stabilization ponds in tropical areas (1977-1980).
- I conducted considerable research pertaining to disinfection processes and phenomena (the improved use of ozone, chlorine dioxide, and various forms of chlorine for the rapid disinfection of water and wastewater) including one federally funded project that evaluated the role of mixing for optimization of chlorine disinfection of wastewater. Subsequent funding was received from industrial sources that resulted in the design and evaluation of three devices for introducing chlorine into a wastewater stream under optimal mixing conditions. Two of these devices were then marketed (1972-1974 and 1975-78).
- I was responsible for directing an Environmental Protection Agency funded research that evaluated the optimization of a chloramination process, and Department of Defense funded research that evaluated the effect of selected halogens on reverse osmosis membrane materials (1978).
- I developed of materials pertaining to water research and data collection and utilization needs for the 2013 Update to the California Water Plan.
- I the research director (2015-2017) for the development of the CSUID dynamic model (an adaption of the Hoffman Model) to predict salinity transport in the soil profile.
- I am the research director (2013-**present**) for an evaluation, including field trials, of the use of vapor compression desalination for the treatment drainage waters with elevated concentrations (approx.. 3,000 mg/L) of total dissolved solids.

Other related activities include:

I was the principle investigator for a U.S. Environmental Protection Agency funded project focused on developing drinking water supplies for economically disadvantaged communities (2012 – 2014, \$15,000).

I was the responsible investigator for a U.S. Environmental Protection Agency funded project with the objectives of determining carbon use data for a number of pesticides and the evaluation of the institutional and jurisdictional factors associated with point-of-use water treatment devices for the removal of pesticides from groundwater (1985-1989; \$130,000).

Another project for which I was the responsible investigator was funded by the California Department of Water Resources and has as its objective the determination of synthetic organic compounds in groundwater and the relationship of these compounds to their agricultural usage (July 1987-1990; \$331,000).

I was the project manager for the study, "Microbial Volatilization of Selenium from Soil in Agricultural Evaporation Ponds," a 205(j) project with funding by the State Water Resources Control Board in cooperation with local agencies to California State University Fresno and University of California Riverside (1988 - 1990; \$344,000).

I was the project manager for the study, "Determination of Selenium in Soils from Experimental Sites in Kesterson Reservoir," a project funded by the U.S. Bureau of Reclamation to University of California Riverside and subcontracted to California State University Fresno (1987-1990; \$60,000).

I was the responsible investigator for the "West Bakersfield Ground Water Quality Management Study," a project funded by the State Water Resources Control Board (1988-1990; \$100,000).