

Carolina Zuri, E.I.T., QISP

Senior Engineer



Education and Credentials

M.S., Environmental Engineering, Università degli Studi di Firenze, Florence, Italy, 2010

B.A., Environmental Engineering, Università degli Studi di Firenze, Florence, Italy, 2010

California Industrial General Permit Qualified Industrial Stormwater Practitioner (QISP) (License No. 228)

Engineer in Training, California (License No. 168645)

Continuing Education and Training

Hazardous Waste Operations and Emergency Response 40-Hour Certification (2015, refreshers 2016–present)

First Aid/CPR/AED Certified (2015, refreshers 2016–present)

Industrial Stormwater Compliance Workshop (2015)

Professional Affiliations

Leadership Committee, Women in Environment, Bay Area Chapter

Professional Profile

Ms. Carolina Zuri is an environmental engineer specializing in groundwater and sediment remediation, hydrology, fluvial geomorphology, potable water treatment, and cost estimating. She has more than 5 years of experience focused on evaluating impacts on natural surface water and groundwater systems and on designing hydraulic models, restoration projects, and remediation actions to improve the quality of aquifers and aquatic ecosystems. Ms. Zuri's background also includes geotechnics and geophysics, environmental impact analysis, and environmental health engineering. As a Qualified Industrial Stormwater Practitioner, she provides support for compliance to the current Industrial General Permit, improving existing best management practices (BMPs) and helping design new, advanced BMPs. Ms. Zuri is also part of the leadership committee of the nonprofit organization Women in Environment's Bay Area chapter, managing the communication and mentoring teams.

Relevant Experience

Remediation, Aquifer Restoration, and Water Treatment

Chlorinated Solvent Cleanup Site, South San Francisco, California—Provided support for the pre-design investigation at a site containing a dissolved-phase chlorinated solvent plume underlying multiple properties, to fill existing delineation and hydrogeologic data gaps and refine the conceptual site model. Supported the *in situ* enhanced reductive dechlorination (ERD) design and the remedial action plan for the site.

Former Dry Cleaner Site, Northern California—Project manager for ongoing monitoring and remediation of volatile organic compound (VOC) contamination, under Regional Board oversight. Helped develop the *in situ* ERD design and prepare and submit regulatory documentation.

Litigation Support

Litigation Support Related to Fate and Transport of Contaminants, Superfund Site, Mountain View, California—Project manager for response to EPA claim of historical chlorinated solvent releases to groundwater from sanitary sewers. Conducted a review of



engineering reports and as-built drawings to develop a sewer timeline since 1960s, historical sewer forensic geochemical analyses, hydrogeologic analysis, and focused PRP identification. The results of the investigation and analyses demonstrated that hot spots purported to be from sewer leakage in the 1960s were from other chlorinated solvent sources and newly identified PRPs. Ongoing matter.

Litigation Support, Potable Water Treatment Claims, Fresno County, California, Confidential Client—Project manager for resolution of claims in five cases involving occurrence of 1,2,3-trichloropropane (1,2,3-TCP) in potable groundwater supply wells (e.g., *Del Rey Community Services District vs. The Dow Chemical Company, et al.*, Case No. CGC-12-522921, Superior Court of the State of California in and for the County of San Francisco). Work includes evaluation, design, and cost opinions for installation and operation of long-term potable water wellhead treatment systems and associated infrastructure and claims. Both ongoing and settled matters.

Litigation Support, Potable Water Treatment Claims, Atwater, California, Confidential Clients—Project manager for resolution of a claim associated with occurrence of 1,2,3-TCP in potable groundwater supply wells (*City of Atwater v. Shell Oil Company et al.*, Case No. SCVSS 120627, Superior Court of the State of California for the County of San Bernardino). Work similar to Fresno County cases. Ongoing matter.

Litigation Support, Potable Water Treatment Claims, Tulare County, California, Confidential Clients—Project manager for resolution of claims in seven cases involving the occurrence of 1,2,3-TCP in potable groundwater supply wells (*City of Dinuba vs. The Dow Chemical Company et al.*, Case No. CGC-17-561379, Superior Court of the State of California in and for the County of San Francisco). Retention scope similar to Fresno County cases. Ongoing matter.

Litigation Support, Cement Plant, Seattle, Washington, Confidential Client—Project manager for evaluation of sediment remediation cost estimates to support potential settlement under tolling agreement. Worked on forensic analysis of historical sediment accumulation, and on an independent cost estimate for use in expert report to compare with plaintiff and insurer estimates. Case resolved.

Environmental Remediation—Sediment

Mission Bay Ferry Landing Project, San Francisco, California—Supported the design of an engineered cap to address contaminated sediments at a ferry terminal. Assisted with AutoCAD drawings, specifications, and costing.

Management of Stormwater at Industrial Facilities

Stormwater Compliance Support to Sawmill Compliance Group, Northern California—Project manager for a compliance group of sawmills in northern California. Provided support as QISP to each member of the group. Updated each individual Stormwater Pollution Prevention Plan (SWPPP), reviewed monitoring results, and prepared appropriate documentation for compliance on the California Water Board's Stormwater Multiple Application and Report Tracking System (SMARTS) throughout the stormwater year.



Stormwater Permit Compliance Audit and Recommendations, Davenport, California—Provided support for an audit of stormwater improvements at an operating sawmill to bring it into compliance with California’s Industrial General Permit. Examined stormwater flow patterns, stormwater discharge locations, areas of industrial activity, and potential stormwater pollutant source areas at the facility. Developed a list of recommended, new and modified, stormwater BMPs.

River Restoration

Ardenwood Creek Flood Protection and Restoration Project, Newark, California—Analyzed topographic data and determined areas where available data were poor or nonexistent. Performed extensive data collection of topography and bathymetry within relevant channels of the project area and in the surrounding floodplain. Supported the design phase of three Ardenwood Creek reaches and mitigation wetlands; provided drawings and 3-dimensional surface renderings using AutoCAD Civil 3D.

Fish Creek Fish Passage Project, Humboldt, California—Reviewed the fish passage guidelines for adult and juvenile salmonids, to support the design a single-bay box culvert with a structure that allows for improved fish passage. Produced AutoCAD structural drawings with 3-dimensional surface renderings, profiles, and detail layouts.

San Gregorio Large Woody Debris (LWD) Design Alternatives, San Gregorio, California—Assisted in developing a Hydrologic Engineering Center river analysis system (HEC-RAS) 1-dimensional hydraulic model to identify typical channel depths and velocities, for design of LWD structure alternatives for fish-rearing habitat opportunities. Provided technical AutoCAD Civil 3D drawings of the structures.

Yellowjacket Creek Fish Passage Restoration, Sonoma County, California—A historical water diversion structure created an impassable barrier over the past several decades. In close coordination with National Oceanic and Atmospheric Administration Fisheries staff, provided strategic planning and fish passage design expertise to restore access for sensitive salmonids to several miles of Yellowjacket Creek. Collected topographic survey data, participated in the design of a structure to restore hydraulic conditions suitable for juvenile and adult salmonid passage, and produced AutoCAD 3-dimensional surface renderings and detailed drawings.

Geomorphological Evaluation of Redwood Creek, Sonoma Valley, California—Performed field analyses (cross sections, longitudinal profile, and pebble counts) to determine the river processes and the reasons for failure of some preexisting restoration projects, which led to the construction of artificial structures in the riverbed and their destruction by the river itself.

Modeling

Stanislaus River Floodplain Inundation Model Critique, California—Collected data; created a hydrologic model using SMS and SRH-2D modeling software. Built a geographic information system to develop a floodplain habitat model to correlate flows and inundated areas.



Modeling Review of Salinas River Stream Maintenance Program (SMP) Draft Environmental Impact Report (EIR), Salinas, California— Assisted The Nature Conservancy (TNC) in reviewing the existing HEC-RAS model of the Salinas Valley to evaluate the SMP draft EIR. Developed a 2-dimensional hydrodynamic model of the valley to develop an approach for TNC to assess floodplain reconnection alternatives for combined flood risk reduction and restoration.

Hydrodynamics and Sediment Transport Model Comparison for Toce River and Pallanza Bay, Lago Maggiore, Italy— Reviewed the existing environmental fluid dynamics code (EFDC) model of the area and updated the model based on most recent data. Assisted with interpreting the field hydrodynamic and sediment transport measurements data with the EFDC model results. Helped compare EFDC model results with the results of Stanford University’s updated unstructured nonhydrostatic terrain-following adaptive Navier-Stokes simulator (SUNTANS) model of Pallanza Bay.

Analysis of Big Data

Sacramento–San Joaquin System Reoperation Study, California— Analyzed hydrologic model run output data to help identify potential options for reoperation of the state’s flood control and water supply system, to meet water supply reliability standards, reduce flood hazard, and protect and restore ecosystems. Based on Bay-Delta and Central Valley ecosystem studies, developed a number of custom metrics (using the Palantir Metropolis platform) to evaluate the effects that the available model scenarios predicted for the most common Central Valley animal and plant species. Suggested different scenarios based on preliminary results.

Bay Delta Conservation Plan Review, California— Using Palantir Metropolis, organized and manipulated output data from the California Department of Water Resources CalSim model (with different alternatives for the State Water Project and Central Valley Project), to help panel members compare modeling results and assist them in formulating assumptions and conclusions.

Publications

Stein E., M. Cover, C. O’Reilly, J.J. Hayes, A.E. Fetscher, R.A. Ambrose, L.S. Fong, R. Guardado, C. Solek, G.M. Kondolf, C. Alford, and C. Zuri. 2011. Evaluation of stream condition indicators for determining effects of direct hydromodification via stream bank armoring. Prepared for the State Water Resources Control Board. Technical Report 643. Southern California Coastal Water Research Project, Costa Mesa, CA.

Rinaldi M., N. Surian, F. Comiti, M. Bussetini, B. Lastoria, and C. Zuri. 2011. Guida illustrata alle risposte: Manuale tecnico-operativo per la valutazione e il monitoraggio dello stato morfologico dei corsi d’acqua. Istituto Superiore per la Protezione e la Ricerca Ambientale. Roma, Italia.

