

Barbara Bradley, PE



"It's about transforming the way we treat water, magical life-giving water. Honoring water, people, and wildlife takes concrete form through the technologies and practices we embrace."

"It's about life, not lifestyle. It's about the path to a massively re-constructed and enchanting way of being human."

Barbara Bradley, 2009

EDUCATION

PhD Studies, Environmental Water Policy, University of California, Irvine

MA Environmental Engineering, University of California, Berkeley

BS Civil Engineering (Honors), University of California, Berkeley

BOARDS

California Onsite Wastewater Association (9 years, President 2005-2007)

Berkeley Solid Waste Management Commission (6 years, Chair 1991-1994)

AFFILIATIONS

Water Environment Federation

National Onsite Wastewater Association

REGISTRATION

Registered Civil Engineer
California #C-53105

NOW

Environmental Engineer and Entrepreneur

➤ *2003 – Present: Advanced Onsite Systems, Inc.
Founder & President, Escondido, CA*

Since founding Advanced Onsite Systems (AOS), Barbara has become firmly established as a recognized expert in decentralized wastewater systems. She built a unique niche company with high-demand services for commercial property owners and public agencies. Prior to founding AOS, her expertise in sustainability and talent for systems thinking paved the way for cultural shifts in organizations she worked for and consulted to. Her technical seniority and seasoned project management skills provide the fertile ground for selecting appropriate technical solutions, whether for municipal-sized projects, small treatment systems, engineering practices for sustainability, or integrated multi-disciplinary plans.

Advanced Onsite Systems offers support to diverse project teams for technical studies, planning, design, permitting, and construction support. Barbara's emphasis on stakeholder involvement means that regulatory agencies recognize an open and accountable team player, fostering collaborative solutions.

➤ *2009 – Present: Aqua Alchemy
Co-Founder & Environmental Writer*

Barbara brings her multidisciplinary expertise and professional experience in water and sustainability practices to the broader community to promoting awareness, informing and connecting those who are committed to positive collective change via her new blog.

BEFORE

Environmental Consultant and Project Manager

➤ *2000 – 2003: Senior Project Manager, Nolte Associates*

At Nolte, an ENR Top 500 firm, Barbara effectively delivered sustainable solutions through planning and design of small community and decentralized wastewater treatment systems for public and commercial clients. Due to her pioneering efforts in establishing sustainable development practices, the company successfully integrated sustainability into its standard engineering practices and office systems, and now supports LEED projects.

➤ *1992 – 2000: Sustainable Development Technology
Manager and Project Manager, CH2M HILL*

At CH2M HILL, an ENR Top 5 firm, Barbara co-initiated national sustainable development practices. She created a sustainable development master plan for a California development. She authored sustainability criteria for environmental infrastructure for the bi-national Border Environment Cooperation Commission. She managed wastewater projects, preparing studies and designs for US EPA, International Boundary and Water Commission, US AID, East Bay Municipal Utility District, Vallejo Sanitation and Flood Control District, the San Francisco Airport, City and County of San Francisco, and others.

**Prior: Environmental Consultant & Engineer
Kleinfelder and Richmond Sanitary Service**

At Kleinfelder, a leading professional services firm in natural and built environments, Barbara served as a hazardous waste remediation engineer, investigating subsurface contaminants, designing remediation systems, and removing toxic compounds from soil and groundwater. She prepared hazardous and solid waste recycling and reduction plans for industry and municipalities. For Richmond Sanitary Service, Barbara prepared the preliminary design of the company's first recycling facility and provided engineering unique to landfills.

SELECT SUSTAINABLE DEVELOPMENT PROJECTS

Tijuana Master Plan for Water and Wastewater

Barbara led decision making process using sustainable development criteria for planning comprehensive water and wastewater services for Commission Estatal de Servicios Públicos (CESPT) for the municipalities of Tijuana and Rosarito, Baja California. She guided stakeholders to develop sustainability indicators, criteria for the overall master plan, and evaluation criteria for the infrastructure alternatives. Barbara directed the first-ever environmental impact assessment in Mexico for a master plan under the environmental authority to the State of Baja California.

Border Environment Cooperation Commission

As a project manager and consultant, Barbara authored sustainable development guidelines for environmental infrastructure projects addressing social, environmental, and economic factors suitable for both the United States and Mexico. She developed the BECC's methodology for defining the sustainability aspects of a project and applying sustainability criteria to engineering planning, design, and staff procedures; she developed templates for scopes of work used to integrate explicit sustainability tasks into engineering contracts.

LEED Certifications

From 2006 to 2008, Barbara provided certification for Leadership in Energy and Environmental Design (US Green Building Council) for stormwater treatment systems in California and Ohio.

Sustainable University Master Plan

At the University of California in Merced, Barbara developed integrated water, wastewater, water reuse, and storm water management infrastructure plans for a new community of 25,000 people. She developed the sustainability approach used as the underlying theme for the Community Plan ("County of Merced University Community Plan - A Plan for a Sustainable and Livable Community"). She conducted focus group presentations and provided peer review for water/wastewater-related infrastructure.

Arrowhead Springs Resort

Barbara developed a sustainability evaluation methodology and led a sustainable development master plan for new mixed-use development. She defined guiding principles with stakeholders, identified sustainability targets, evaluated appropriate technological solutions through a three-tiered sustainability analysis, and recommended credible, achievable

CLIENT TYPES

- > Municipalities
- > Special Districts
- > Engineering and Planning Firms
- > Redevelopment/development
- > Shopping Centers
- > Mobile Homes and RV Parks
- > Restaurants

PUBLICATIONS & PRESS

"In the Work Place." American Liquid Waste Magazine. Interview. February 2009.

"California Tackles Nitrogen from Onsite Wastewater Systems." Southwest Hydrology. July/August 2009.

"Water without Borders" Monograph, and recommendations to Congress. Border Institute IV Symposium, Southwest Center for Environmental Research and Policy (SCERP) and San Diego State University. Nov. 2003.

"Decision Making for Sustainable Development of Wastewater Infrastructure," Chapter in *Innovative Developments in Wastewater Treatment*. EPA Region 7. January, 2003.

"Evaluation of Onsite Wastewater Treatment Technologies Using Sustainable Development Criteria" Dr. G. Tchobanoglous, Dr. Glenn T. Daigger, Dr. A. Robert Rubin. *Clean Technologies and Environmental Policy* Vol. 4 Nr. 2 Sept. 2002. Springer-Verlag, Berlin.

"Sustainable Water and Wastewater Management Along the Mexico-United States Border" Published monograph, recommendations to Congress. Border Institute II Symposium, Southwest Center for Environmental Research and Policy (SCERP) and San Diego State University. Mar. 2002.

"Sustainable Development Approach Can Be Useful for Water Utilities" front page articles. *Utility Executive* and *Watershed and Wet Weather*. WEF. February 2001 issues.

"Tidal Marsh Restored in Record Time." Front page article. *Land and Water*, p 10-12. March/April, 2000.

Quoted. *Wall Street Journal*, 2000

Quoted. *Engineering News Record*, 2000

TRAINER OF SUSTAINABLE DEVELOPMENT & ALTERNATIVE WASTEWATER TECHNOLOGIES

- > United States: California, Arizona, Texas
- > Mexico
- > El Salvador
- > Hong Kong

INTERESTS & PASSIONS

- > Solving infrastructure challenges using sustainability principles
- > Collaborative brainstorming on multi-disciplinary teams
- > Balancing wildlife and human needs

SELECT PRESENTATIONS SUSTAINABILITY & WASTEWATER MANAGEMENT

“Frontiers in Water Science.” Environmental Engineering, San Diego State University, San Diego, CA. April 16, 2009.

“The Making of a Good O&M Manual.” Conference, California Onsite Waster Treatment Association. March, 2009.

“Sustainable Development and the Role of Onsite Wastewater Treatment.” Calif. On-site Wastewater Treatment Assoc. 3/2008.

“Water Sustainability: Policy Innovation and Conditions for Adaptive Learning,” with Dr. Helen Ingram. Michigan State University Sustainable Michigan Endowed Project Academy. November 11, 2005.

“Advanced Onsite Treatment and Dispersal Offers New Solution for Mobile Home Parks,” Tenth National Symposium on Individual and Small Community Sewage Systems Proceedings. 3/21/2004. Pp. 506-513.

“Water Infrastructure Decision Making for the Triple Bottom Line,” So. California Water Infrastructure Fourth Annual Water Resources Institute Conference. 2/26/2004.

“Decentralized Treatment Offers Cost Effective Reuse for a Sustainable New Community,” WateReuse Symposium XVI Replenishing America: Water Reuse for Tomorrow’s Youth, 9/8-11/2001. San Diego, CA.

“As usual you are way ahead of me. Thanks for staying on top of things.”

*CEO Steve Dahlberg
The Kissel Company*

goals to create a benchmark community. Analyses covered water, energy, materials, solid waste, transportation, human communities, biological resources, building systems, and appropriate siting.

US AID El Salvador

As project manager for US AID in El Salvador, Barbara developed two-day training for public agencies and non-profits in appropriate wastewater treatment for villages. She developed a tiered system for selecting technologies based on access to running water and sewers and financial conditions. She interviewed several community leaders, examined working and non-working treatment systems, and developed Spanish language program led by the former and first Minister of the Environment of El Salvador.

SELECT WASTEWATER PROJECTS: DECENTRALIZED

State Law AB 885, CA

As a consultant to the State Water Resources Control Board, Barbara provided multi-year technical expertise, supporting development of first-ever statewide regulations and programmatic EIR for onsite wastewater treatment.

Trancas Country Market, Malibu, CA

Barbara designed 20,000 gpd secondary treatment system with denitrification and UV disinfection, permitting, field investigations, and groundwater modeling for a complex shopping center with restaurants and outlying commercial proprietries. She successfully negotiated regulatory discharge limits and other requirements with RWQCB and City. LEED certification pending.

Palm Springs Aerial Tramway, Palm Springs, CA

Barbara provided complete permitting, design, and construction support services under a design-build contract for three secondary treatment systems with denitrification; two for freezing conditions within Mount San Jacinto State Park and Wilderness and one for extreme heat conditions, all near potable water supply creeks. Two systems serve multi-use buildings with restaurants. Permits approved by Colorado River RWQCB, Riverside County, and City of Palm Springs.

Paradise Cove Mobile Home Park, Malibu, CA

As the project manager for 280-unit mobile home park, Barbara led design and permitting of the \$4M wastewater collection, treatment, and disposal system (60,000 gpd secondary disinfected). She selected a STEP collection system for low construction cost and an AdvanTex secondary treatment with UV disinfection. Process units were divided into two treatment trains, allowing for redundancy and ease of maintenance.

Feasibility Study, Bluff, Utah

Barbara prepared extensive feasibility study for distributed wastewater system suitable for remote, geographically-divided community by important wildlife river. She developed several low-tech options and cost estimates using rigorous evaluation system.

"I look forward to working together with you for many more years. You are the consummate cool professional with a kind person underneath."

*Commercial Developer Dan Bercu
Trancas Market LLC*

Barbara Bradley, PE

Hanson Elementary School, Ramona, CA

Barbara developed the design, plans, and specifications for an onsite wastewater treatment and disposal system with most all components located underground, allowing for dual use of frontage for parking. Effluent was disposal using subsurface drip.

Paradise Cove Beach Cafe, Malibu, CA

Barbara designed and permitted an onsite treatment system to handle a 20,000 gpd high-strength waste stream with wide seasonal fluctuations. She used an equalized flow process with secondary treatment, nutrient removal, and disinfection with disposal using seepage pits and subsurface drip dispersal. By equalizing the flow, she was able to keep the flow below a trigger level for substantially more challenging permitting.

SELECT RECYCLED WATER PROJECTS

City of Fillmore, Fillmore, CA

Barbara designed and provided construction support for multiple large-scale subsurface drip irrigation systems to AECOM team using 2 million gallons per day of recycled water to irrigate a new park and several school grounds.

Tract 17168, Twenty Nine Palms, CA

Barbara designed subsurface drip system in city of Twenty Nine Palms to provide subsurface irrigation in public street parkways using secondary treated wastewater from a new 175-home subdivision (Tract 17168).

SELECT WASTEWATER PROJECTS: MUNICIPAL

Yosemite Slough-South Basin Watershed Restoration Project

Co-author of Cal-Fed funded community-based environmental plan applying an environmental justice context. Identified appropriate technical alternatives for improving water quality, access to, and use of restored habitats and natural areas within the Yosemite Slough/San Francisco Bay watershed for the Bayview-Hunters Point community.

San Francisco International Airport

Designed solids handling upgrades for airport wastewater treatment plant using belt filter presses and improvements to sludge drying beds.

City and County of San Francisco

Prepared compendium of publicly-acceptable alternative technologies for storm water management and wastewater conveyance and treatment for the combined storm drain and sewer system. Identified economically efficient, technically-feasible technologies for multiple redundancy in treatment and conveyance control.

Vallejo Sanitation and Flood Control Wastewater Treatment Plant

Barbara engineered design details, drawings, and specifications for lime-stabilization solids processing facility at 29 mgd plant, including scum and sludge removal systems, pumping, storage, piping and site improvements.

"A Sustainable Development Case for Onsite Wastewater Treatment" with Dr. George Tchobanoglous, Dr. Glen T. Daigger, and Dr. Bob Rubin. American Society of Agricultural Engineers. March 12-14, 2001.

"Searching for Sustainability in a New University Campus: A Conceptual Plan for Integrated Water-Related Infrastructure Systems" with George S. Nolte, Jr. American Consulting Engineers Council conference on Sustainability, Marco Island, FL. 2/13/2001.

"Metrics and Methodology for Sustainable Development," American Consulting Engineers Council Conference on Sustainability, Marco Island, FL. February 13-14, 2001.

"Estudios Iniciales para la Planta Internacional de Tratamiento de Aguas Residuales." Sistemas Lagunares Avanzados en Tratamiento de Aguas Residuales, IX Taller Binacional de Transferencia de Tecnología. Tijuana, Mexico. 9/19-20/2000.

"A Sustainable Development Approach to Wastewater Infrastructure." with Dr. Glen T. Daigger. Water Environment Federation WEFTEC 2000. Anaheim, CA., 10/15/2000.

"Sustainable Communities and Onsite Wastewater Treatment." Now and When: Future of Onsite Wastewater Treatment, California. Wastewater Training and Research Center, California State University, Chico, CA. Presented 7/2000 (Pomona, CA), 9/2000 (Sacramento, CA).

"Decision Making for Sustainable Development of Water Infrastructure." with Dr. Glen T. Daigger. US EPA 6th National Drinking Water and Wastewater Treatment Technology Transfer Workshop, Kansas City, MO. August 2-4, 1999.

"Improved Pond Wastewater Treatment Technologies Produce Higher Quality Effluents at Modest Cost." with Dr. Glen Daigger and Ian Law. Proceedings. WEFTEC Asia 98, Singapore, March 8-11, 1998.

INTERNATIONAL PERSPECTIVE

Nineteen years residency in Europe, the Middle East, and India