

JONATHAN E. JONES, P.E., P.H., BC.WRE CHIEF EXECUTIVE OFFICER CHIEF FINANCIAL OFFICER

CURRENT

Employed by Wright Water Engineers, Inc. (WWE) from June 1981 to the present. Consultant to public and private sector clients on many aspects of surface water and groundwater quantity and quality engineering with emphasis on stormwater quantity and quality; floodplain management; surface water hydrology and statistical hydrology; water resources planning, policy and design; physical and legal water supply, including water rights evaluations and watershed models; dam and reservoir design; groundwater quality and hydrology; interaction between surface water and groundwater; lake and river impact assessment studies; multiple aspects of Federal Clean Water Act including National Pollutant Discharge Elimination System (NPDES) permits and waterbody classifications and numeric standards; municipal and industrial wastewater treatment; erosion/sediment control, channel stability and sediment transport; risk assessment; water classifications and standards; engineering aspects of wetland permitting; and assignments involving Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

EDUCATION

M.E., Civil Engineering, 1981 University of Virginia

B.S., Civil Engineering, 1980 University of Virginia

REGISTRATION Registered Professional Engineer

- Colorado (#22812)
- Arizona (#75180)
- Arkansas (#12766)
- Hawaii (#PE16310)
- Idaho (#P-22031)
- Iowa (#19741)
- Kansas (#15784)
- Kentucky (#27122)
- Maine (#15657)
- Maryland (#4531)
- Massachusetts (#53626)
- Michigan (#6201310313)

- Missouri (#028452)
- Nebraska (#E-9290)
- North Dakota (#10338)
- Ohio (#E-66327)
- Oklahoma (#34475)
- Pennsylvania (PE09249)
- South Dakota (#6551)
- Texas (#88335)
- Washington (#21012673)
- Wisconsin (#45904-6)
- Wyoming (#5072)

National Council of Examiners for Engineering and Surveying (#40434)

Professional Hydrologist (#16-H-8010)

Board Certified Water Resource Engineer (BC.WRE), American Academy of Water Resources Engineers

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REPRESENTATIVE PROJECTS

Stormwater Quantity and Quality Management and Flood Control

International Stormwater Best Management Practice (BMP) Performance Database (www.bmpdatabase.org). On behalf of the American Society of Civil Engineers (ASCE), Urban Water Resources Research Council, and working under grant funding provided by the Water Research Foundation (WRF), the Environmental Protection Agency (EPA), Federal Highway Administration (FHWA), American Public Works Association (APWA), ASCE and others, served as coprincipal investigator/developer of the world's largest scientific database that summarizes urban stormwater BMP performance. This database, which is widely referenced in engineering literature, includes nearly 800 studies, including extensive statistical analyses upstream/downstream water quality data. The team has expanded the Database to include special analysis of management issues for the Chesapeake Bay and agricultural BMP performance under targeted funding from the National Corn Growers Association, the United Soybean Board, and the Water Research Foundation. The Database was also broadened to include the water quality benefits of stream channel restoration projects. The Database contains many technical papers and topic summaries, BMP performance monitoring guidance (prepared under separate funding from EPA) and statistical summaries. For example, the hydrologic performance of LID/GI technology has been featured.

Smoky Hill River Renewal Project Preliminary Design. Provided peer review to HDR in their work on the preliminary design of the renewal project to restore the old channel of the Smoky Hill River through downtown Salina over a reach of approximately seven miles.

Mile High Flood District (MHFD), formerly Urban Drainage and Flood Control District [UDFCD]) and Cities and Counties in the Denver Metropolitan Area. Consultant on wide-ranging stormwater quantity/quality issues from 1981 to the present. Examples include: principal engineer and/or project manager of such documents as Volumes 1, 2, and 3 of the Urban Storm Drainage Criteria Manual (criteria for 42 cities and counties in the Denver Metropolitan area); Big Dry Creek Tributaries Master Plan; Beebe Seep Canal/Barr Lake Master Plan; and a book that reviews the performance of drainage infrastructure in the Denver Metro area in the landmark September 2013 flooding. Prepared the water rights and water quality chapters of the South Platte River Master Plan (through Metropolitan Denver). Advisor to MHFD on draft Phase 1 stormwater NPDES regulations. The Drainage Criteria Manual includes such topics as design rainfall and runoff; planning; policy; law; major drainageways; riprap, vegetated, bioengineered, and other channel design; culverts, storm drains; streets and inlets; floodproofing; and water quality, among others.

Jones Gulch, Colorado, Debris/Flood Flow Evaluation. Evaluated debris flow, flood flow, and hazard potential on Jones Gulch, tributary to the Snake River, at the Keystone Resort in Summit County, Colorado.

EPA Post-construction Stormwater NPDES Regulation and Other Consulting for EPA. Principal-in-charge on subcontract assignment for the Cadmus Group and Geosyntec, Inc., assisting EPA in Washington, D.C., with engineering aspects of the new post-construction stormwater NPDES regulation (2011). Worked as a subconsultant to Tetra Tech, Inc., to assist with development of guidance documents related to urban stormwater quality management and permitting for the EPA in Washington, D.C. For example, served as one of three panelists in a February 2008 webcast concerning how to evaluate BMP performance, in which over 4,000 people from around the United States participated. Assisted Tetra Tech and the EPA with their development of portions of the EPA website pertaining to stormwater quality management and permitting, including the Urban BMP Performance Tool.

State of Colorado. Retained to evaluate the nature and causes of surface water damage at the campus of Colorado State University (CSU) in Fort Collins and state office buildings in Sterling during a July 1997 extreme rainfall event.

ExxonMobil. Assisted on multiple assignments in Colorado and Wyoming related to (for example) stormwater NPDES discharge permitting; planning and design of stormwater BMPs; floodplain evaluation and regulatory floodplain compliance; permitting under Section 404 of the Clean Water Act and ancillary regulatory concerns; debris flow evaluation and flood flow quantification; design of sedimentation basins, detention ponds, culverts and other facilities; dam feasibility design; pipeline crossings of stream channels; water rights and river "transit loss" study; and water supply and wastewater treatment facilities.

City of Springfield and Greene County, Missouri, and Watershed Committee of the Ozarks. Developed stormwater management policies, ordinances, and design criteria manual, working closely with local government staff. Conceptual design of stormwater wetlands. Watershed protection plan preparation. Airport drainage system design review. Design of reservoir sedimentation forebay. Review of long-term stormwater program financial options. Engineering analysis of surface water controls at Springfield municipal solid waste landfill. Integrated plan preparation as consultant to HDR (starting in 2015). Provided peer review for additional work regarding optimizing total municipal expenditures for environmental compliance. Consultation on purchase of flood-prone properties. Hydrologic analysis of various watersheds where it was important to account for channel and pond infiltration and sub-surface contaminant transport.

Stapleton Airport Site Redevelopment Pattern Book. Working on a multidisciplinary team led by Matrix Design Group, served as coauthor of the Stapleton Airport Redevelopment Site Pattern Book, which provides a blueprint for stormwater management for this large site in the Denver Metro area. This book provides guidelines for stormwater quantity and quality management and was the foundation for the drainage system that was constructed as the site was redeveloped. Also performed conceptual design of Westerly Creek channel restoration.

City of Fayetteville, Arkansas. Working as subconsultant to Geosyntec Consultants, Inc., planned and prepared conceptual designs for the retrofitting of four existing storm drainage facilities to provide enhanced phosphorus removal in the Beaver Reservoir watershed and to assist the city with compliance with its municipal NPDES permit.

Town of Manitou Springs, Colorado. Provided peer review of WWE design drawings for channel stabilization and debris basins, including associated planning, permitting, and design tasks.

City of Lincoln, Nebraska. Part of a multidisciplinary team preparing a water quality master plan for the restoration of Antelope Creek in Lincoln, Nebraska in association with municipal NPDES permit. Antelope Creek runs through a highly urbanized area and the University of Nebraska. The water quality in this reach of Antelope Creek has historically reported concentrations of fecal coliform, metals, and other analytes that have exceeded the Nebraska Surface Water Quality Standards, and the Nebraska Department of Environmental Quality has established total maximum daily loads (TMDLs) for this reach of the creek.

Nebraska Storm Drainage Consulting. In conjunction with Olsson Associates Consulting Engineers, prepared major drainageway master plans and storm drainage criteria manual for the City of Lincoln, Nebraska and the Lower Platte South Natural Resource District. Advisor regarding general aspects of local stormwater quantity and quality management program, channel stability and restoration, and sediment transport. Also advised City of Lincoln staff on stormwater NPDES permitting issues and maintenance/upgrading prioritization (subconsultant to JEO Consulting Group).

Kansas Department of Transportation. Evaluated flooding near confluence of Walnut River and Arkansas River, including rainfall and river flow frequency analysis and river hydraulics. Also conducted separate assignment regarding evaluation of feasibility of relocating irrigation ditch near Garden City, Kansas (subconsultant to Burns & McDonnell).

City of Rogers, Arkansas, and Crafton Tull. Consultant on storm drainage criteria, major drainageway master plans, ordinance enactment, erosion and sediment control, channel design alternatives, stormwater quality, financing, and stormwater NPDES regulations.

Simeon Residential Properties, Colorado. Working closely with Simeon (site developer) and downgradient affected parties, designed comprehensive and advanced stormwater quality management plans for two separate developments, Grant Ranch and Chatfield Green (TrailMark), in Littleton, Colorado. Both projects involved the application of numeric discharge standards for stormwater BMPs and provide a high level of protection for downgradient receiving waters (both surface water and groundwater). Worked closely with Carroll & Lange on final design of channels, wetlands, ponds, and other features, including assessment of infiltration and potential effects to downgradient properties. In addition, oversaw confidential assignments for Simeon Properties related to due diligence for various properties related to physical and legal availability of groundwater and surface water, natural hazards, drainage, etc. Provided consultation regarding potential availability of Denver Basin groundwater. Developed water supply from Coal Creek for new golf course near Erie, Colorado. Dam safety evaluations. Evaluation of water supply reliability for potential development property.

Springdale, Arkansas. Evaluated river restoration feasibility as subconsultant to Alta Planning + Design.

Intrawest Resorts, Padre Island, Texas. Evaluated flood hazards (due to hurricanes) for potential development for Intrawest Resorts, including statistical hydrology related to hurricanes, storm surge, and associated flooding.

Intrawest Resorts, Florida, and South Carolina. Assisted Intrawest Resorts with evaluating water engineering aspects of resort developments in Florida and South Carolina.

Houston, Texas, Floodplain Mapping Evaluation and Stormwater Consultation. Reviewed proposed federal flood insurance rate maps (FIRM) prepared by Harris County Flood Control District for major property owners and developers in Houston Metropolitan area. In separate assignments, worked with Harris County Flood Control District on drainage criteria and stormwater BMP performance.

Denver International Airport (DEN). Assisted with preparation of initial storm drainage criteria for DIA, working as subcontractor to Bechtel, and with major drainageway master planning of Lower Box Elder Creek on east side of DEN for Denver, Adams County, and MHFD.

University of Illinois. Assisted Professor Edwin Herricks with design of parking lot BMPs on campus in Urbana–Champaign.

Audubon, Arkansas. Evaluated adequacy of proposed stormwater quality management facilities for potential commercial development in Fayetteville.

Dover–Norriseal, Houston, Texas. Performed onsite and offsite drainage investigation.

Stormwater and Other Bypass Projects. Provided guidance on stormwater and other bypass projects (during construction and/or permanent) for Rocky Flats Site, Chatfield Green residential community, Grant Ranch residential community, Cotter Corporation, MHFD, Summitville Mine (for Colorado Department of Public Health and Environment [CDPHE]), Tippet Ranch, Water Supply and Storage Company, and others. These planning and conceptual design studies included flow-frequency analyses to optimize conveyance capacity and assess system behavior in large events.

Waste Management of Hawaii, Inc., Oahu, Hawaii. Comprehensive investigation of Waimanalo Gulch Sanitary Landfill stormwater management system, including evaluation of stormwater NPDES permit compliance. Evaluation of large rainfall and runoff events (statistical hydrology) that caused flooding at landfill and downslope areas.

Stabilization of Caulks Creek, Wildwood, Missouri. On behalf of the City of Wildwood, Missouri and working closely with Intuition & Logic of St. Louis, served as advisor/reviewer of stream channel stabilization measures that were constructed on Caulks Creek to address severe erosion problems that were threatening to damage a county highway, including flow-frequency, hydraulic, and tractive force analyses.

City and County of Denver. Project manager for preparation of two water quality/drainage-related guidance documents for the City and County of Denver: Denver Water Quality Management Plan in 2004 and Denver Storm Drainage Criteria Manual in 2006.

Los Alamos National Laboratory, New Mexico. Prepared sitewide drainage criteria memorandum that addressed stormwater quantity and quality. Prepared construction-related stormwater pollution prevention plan for RCRA site subject to remediation (site contains transuranic and hazardous wastes and drains to tributaries of the Rio Grande).

San Diego County, California. Consultant regarding revisions to the County Drainage Criteria Manual and implementation of stormwater quality mitigation measures.

City of Beaumont, Texas. Consultant on master drainage planning and drainage criteria development.

Knaust Brothers, New York. Provided engineering review and testimony on adequacy of proposed stormwater quality management facilities for industrial office park in karst setting, including probable migration of stormwater into underground caves.

Great Western Sugar Company, Johnstown, Colorado. Evaluated flood hazard potential (flow-frequency analysis) of Great Western Sugar Company's Johnstown, Colorado facility with respect to floods ranging from the 10-year to 500-year return frequency, along with groundwater contamination studies, land treatment of high-strength industrial wastewater, and field sampling of groundwater quality.

University of Colorado and City of Boulder, Colorado. Coauthored study of environmental impacts of proposed 95-acre University of Colorado Research Park in Boulder, Colorado. Prepared sitewide conceptual drainage plan, which featured large lakes, wetlands, and natural channels. Also, in a separate assignment, analyzed flood hydraulics, regulatory constraints, and specific flood-proofing measures for research buildings located in the Boulder Creek floodway in Boulder. Developed floodwater surface profiles.

Colorado Ski Country, USA. Expert witness for Colorado Ski Country, USA (consortium of all Colorado ski resorts), in hearings involving the Colorado Water Quality Control Commission and staff with the Colorado Water Quality Control Division on water quality standards in wetlands and stormwater NPDES permitting. Also prepared written testimony for Colorado ski resorts that was submitted to the EPA in Washington, D.C., regarding Phase II of stormwater NPDES permitting. Regular consultant to the Colorado ski industry on wide-ranging water resources issues.

Keystone Resort and Keystone—Intrawest, Colorado. Consultant on advanced stormwater quantity and quality management to comply with stringent Summit County phosphorus regulations for Lake Dillon, wastewater treatment and beneficial reuse, Lake Dillon model review (lake impact model), NPDES permitting, erosion and sediment control, water supply/water rights, 404 permits, integrated pest management and pesticide-free golf course design, snow-storage facility design, water quality monitoring, drainage and flood control including drainage channel planning and investigation, debris flow, groundwater supply investigation, interaction of surface water and groundwater, and NPDES permitting.

Bekaert Steel, Arkansas. Performed stormwater quality and NPDES permitting assignment for facility in Bentonville, Arkansas.

UMETCO Minerals Corporation. Prepared industrial NPDES permit renewal for three mines in western Colorado, and a mine near Hot Springs, Arkansas. For these mines, also evaluated surface water hydrology and design of ponds, channels, wetlands, and other facilities to convey and treat runoff from the mines.

City of Salina, Kansas, and "Friends of the (Smoky Hill) River." Performed river restoration feasibility evaluation, including water rights, stormwater quality, 404, 401, and NPDES permit issues, including comprehensive flow-frequency analysis of the river related to low flows, flood flows, and divertible flow, including effects of upstream storage.

Town of McCook, Nebraska. Evaluated surface water runoff from municipal solid waste landfill.

City of Sioux Falls, South Dakota. Performed river restoration feasibility, floodplain permitting, and river water quality analyses, including flow-frequency analysis in context of flood hazard evaluations.

Arkansas City, Kansas, and Kansas Department of Transportation. Evaluated flooding on Walnut River related to construction of a highway, which served as a levee to protect the east side of Arkansas City.

City of Lamar, Colorado. Evaluated nature and causes of flooding along Willow Creek on the east side of the City of Lamar and sanitary sewer system evaluation. Work performed for City and City's insurer, Colorado Intergovernmental Risk Sharing Agency (CIRSA).

City of Ogallala, Nebraska. Evaluated flooding at interchange of Highway 61 and I-80 (in collaboration with Nebraska Department of Roads).

Town of Rocky Ford, Colorado (as requested by municipal insurer, CIRSA). Lake infiltration evaluation.

City of Golden, Colorado. Prepared comprehensive review of nature and causes of flooding in Arapahoe Gulch and a tributary to Kenney's Run during large storms that occurred in June 2004, followed by master plan and preliminary design of improvements for Arapahoe Gulch. Worked on projects in close conjunction with Colorado Water Conservation Board, MHFD, City staff, and neighborhood residents. Findings presented to City Council.

City of Woodland Park, Colorado. Evaluated flooding damages in mobile home park, including assessment of whether recent channel modifications had aggravated flooding.

Fassnight Creek Floodplain Evaluation, Springfield, Missouri. On behalf of Springfield, Missouri Department of Public Works, conducted independent evaluation of proposed floodplain acquisition/channelization project on Fassnight Creek. This included generating peak flows and associated areas of inundation for a range of floods, from frequent to infrequent.

EPA Office of Water in Washington, D.C. Advisor on a variety of issues such as: indicators for monitoring the effectiveness of "wet weather" control measures (1993 for EPA directly and 1995 for the Rensselaerville Institute), national case studies for advanced industrial stormwater management (1993 and 1994), stormwater BMP effectiveness (from 1995 to present), and flow measurement in irrigation systems. Also reviewed 1996 draft version of document Wet Weather Research Plan and Stormwater Pollution Prevention for Industrial Activities and Stormwater Pollution Prevention for Construction Site Activities (focused on erosion and sediment control/channel stability), published by the Office of Wastewater Enforcement and Compliance, EPA. (See "Professional Activities" for additional projects involving EPA.)

Denver Regional Council of Governments. Coauthor of three-volume set of erosion control manuals in 1982 to 1983, which focused on how to prepare erosion control plans, costs of erosion control measures, and design recommendations for control measures best suited to Denver Metro area.

Stormwater-related NPDES Permits and Stormwater Management and Water Quality Consulting. Consultant for such public and private entities as:

- Allstate Consulting Engineers
- ARCO Coal Company
- Aspen Earth Moving Company
- Bad River Band of Lake Superior Chippewa
- Bar S Foods Company
- Bekaert Steel (Bentonville, Arkansas)
- BP
- Cabela's, Inc.
- Cherry Creek Basin Authority (Board Member)
- · City and County of Denver, Colorado
- · City of Lincoln, Nebraska
- City of Rockford, Illinois
- City of Rogers, Arkansas
- City of Salina, Kansas
- City of Springfield, Missouri
- Continental Homes
- Coors Brewing Company
- Crafton Tull Consulting Engineers
- Deltic Timber Company
- EVRAZ Steel
- ExxonMobil
- Frost Creek Development
- Futura Aluminum Company
- Geosyntec Consulting Engineers
- Gunnison Energy Corporation
- Intrawest Resort Development
- J.F. Laing Homes

- Jensen Precast
- JEO Consulting Group
- John Morrell Company
- Johnson County, Kansas
- Keystone Resorts
- L.G. Everist Rock Products
- Laing Village Homes
- Lennar Homes
- Los Alamos National Laboratory
- Mile High Flood District (formerly the Urban Drainage and Flood Control District)
- Monarch Casino
- Oldcastle Precast
- Olsson Associates Consulting Engineers
- Rocky Flats Site (Rockwell, EG&G, and DOE)
- Simeon Residential Properties
- The Boeing Company
- UMETCO (subsidiary of Union Carbide)
- United States Department of Energy
- United States Department of Justice
- United States Environmental Protection Agency
- Vail Associates
- Village Homes
- Waste Management, Inc.
- Watershed Committee of the Ozarks
- Winter Park Resort
- Xcel Energy

River and Stream Hydrology, Hydraulics, Morphology and Channel Stability, Restoration, Permitting, Flood Hazard Management, Water Quality, and for Related Topics:

- Coors Brewing Company (Colorado)
- Coors Brewing Company (Harrisonburg, Virginia)
- City of Pueblo and Pueblo Urban Renewal Authority (Colorado) (subconsultant to Design Studios West)
- Sloan's Lake tributaries (Denver, Colorado) (for Frederick Ross Company)
- City of Lincoln (Nebraska) (subconsultant to Olsson Associates and JEO Consulting Group)
- City of Springfield (Missouri)
- Philips Farm (Columbia, Missouri) (subconsultant to Allstate Consultants)
- City of Wildwood (Missouri)
- Salina (Kansas) (subconsultant to HDR and Design Studios West)
- Sioux Falls (South Dakota)
- HBE Corporation (Missouri) for Adam's Rib Resort (Eagle County, Colorado)
- Havasupai Tribe (Arizona)
- Keystone Resort (Summit County, Colorado)
- Watershed Committee of the Ozarks (Missouri)
- Elvin Sapp, Developer of Phillips Farm (Missouri)
- Crestwood Midstream (North Dakota)
- SM Energy (Texas)

- Copper Mountain Resort (Summit County, Colorado)
- Jordan River (Salt Lake City, Utah)
- Urban Renewal Authority (Town of Estes Park, Colorado) (subconsultant to Design Studios West)
- Santa Susana Field Laboratory (Ventura County, California) (The Boeing Company and the State of California Water Quality Board, Los Angeles Region)
- West Elk Mine (near Paonia, Colorado)
- Springfield–Branson Airport Authority (Springfield, Missouri)
- Intrawest Resort Development
 – Assignments on Padre Island (Texas) Gulf Coast (Florida) and coastal resorts (South Carolina) and ski resorts (Colorado)
- Office of Risk Management and State Attorney General's Office of the State of Colorado
- City of Golden (Colorado)
- Mile High Flood District (formerly Urban Drainage and Flood Control District) (Denver, Colorado)
- Crested Butte Resort (Colorado)
- Aspen Skiing Company and U.S. Forest Service, Aspen District (Colorado)
- Adams County (Colorado)
- City and County of Denver (Colorado)
- City of Rogers (Arkansas) (subconsultant to Crafton Tull)
- Groundwater Management District No. 3 and Associated Ditches of Kansas (Garden City, Kansas)
- Dover–Norriseal (Houston, Texas)
- Vail Associates (Colorado)
- United States Department of Justice and United States Army Corps of Engineers
 –Missouri River
 Watershed (Nebraska, Iowa, Kansas, and Missouri) and Buffalo Bayou Watershed (Texas)
- United States Department of Justice and United States Environmental Protection Agency (New York, Connecticut, and Colorado)
- Schmidt Liquid Trucking (Platte River, Nebraska)
- ExxonMobil (Colorado and Wyoming)
- BP–America (San Juan Basin, Colorado)
- L.G. Everist Rock Products (Summit County, Colorado)
- XTO–San Juan River
- Cherry Creek Basin Water Quality Authority (board member) (Colorado)
- Highlands Ranch Golf Course (Colorado
- Big Dry Creek Watershed Association (Colorado)
- Bad River Band of Lake Superior Chippewa Tribe (Wisconsin)
- Deltic Timber Corporation (Little Rock, Arkansas)
- Tippet Ranch (Gunnison County, Colorado)
- Gunstream Hunting & Fishing Club (Winnsboro, Texas)
- United States Bureau of Reclamation-tributaries related to Garrison Diversion Project (North Dakota)
- Cotter Corporation—Ralston Creek (Jefferson County, Colorado)
- Town of Vail and Colorado Intergovernmental Risk Sharing Agency
- Xcel Energy (Gore Creek, Colorado)
- EVRAZ Steel (Pueblo, Colorado)
- Gunnison Energy Corporation (Colorado)
- UMETCO (subsidiary of Union Carbide) (Colorado and Arkansas)
- Granite Construction (Texas)
- Kansas Department of Transportation
- Homestake Mining Company (South Dakota)
- U.S. Fish and Wildlife Service (Midwest Region) (subconsultant to GEI, Inc.)
- U.S. Department of Energy and its prime contractors at former Rocky Flats Plant Site (Colorado) and Los Alamos National Laboratory (New Mexico)
- State of Kansas Attorney General's Office
- Arkansas City (Kansas)
- University of Colorado
- City of Boulder (Colorado)

- City of Lamar (Colorado)
- Winter Park Resort in Grand County (Colorado)
- Village Homes (Colorado)
- John Laing Homes (Colorado)
- Simeon Residential Properties (Colorado)
- Lennar Homes
- Centex Homes
- Illinois River (Arkansas and Oklahoma) for coalition of local governments in Northwestern Arkansas

Experience With Channel, Lake and Pond, and Other Infiltration and Lining Assessment, Planning and Design, Bypass Channels, and Related Projects. Performed work on multiple assignments for clients involving infiltration monitoring and assessment, and techniques to reduce infiltration such as liners in ponds, lakes, streams, irrigation and water supply ditches, stormwater ditches, landfills, mines, and water quality BMPs for such projects as: Rocky Flats facility in Colorado (former nuclear weapons facility prior to remediation); Santa Susana Field Laboratory in California, a site jointly owned and operated by The Boeing Company, DOE, and National Aeronautics and Space Administration (NASA); Waimanalo Gulch Sanitary Landfill on Oahu, Hawaii, for Waste Management of Hawaii, Inc; ARCO Coal Company at the West Elk Mine in Colorado; Coors Brewing Company in Colorado; irrigation ditches in southwest Colorado owned by various water suppliers and water conservancy districts; Associated Ditches of Kansas and Groundwater Management District No. 3 in Garden City Kansas; City of Springfield, Missouri, Department of Public Works; Simeon Residential Communities in Colorado; lined ponds in various states where questions regarding public safety arose, such as California, Ohio, and Colorado; Copper Mountain Resort and 3-Peaks Development for Intrawest Resorts and Amaco Construction: Farmers Mutual Irrigation Company (FMIC) in Colorado: City of Salina, Kansas, and Friends of the River (Salina based citizens group); Mile High Flood District; Cotter Corporation; UMETCO (mining); Green Gables/Sanderson Gulch; and the Everest Company.

Water Quality

Santa Susana Field Laboratory, California. Selected by The Boeing Company, with review and approval by the State of California Los Angeles Regional Water Quality Board and local environmental groups, to serve as one of five members of the Santa Susana Field Laboratory (SSFL) Surface Water Expert Panel. The SSFL site is approximately 2,500 acres and is located roughly 30 miles northwest of downtown Los Angeles. The site is jointly owned by NASA, Boeing, and DOE. The site was historically used for rocket engine testing and testing of small-scale nuclear reactors. Certain contaminants have been detected in stormwater runoff from the site, including, as examples, dioxin and heavy metals. The Los Angeles Regional Water Quality Board has imposed stringent numeric limits on approximately two to three dozen compounds in stormwater discharges from the site. The role of the panel is to provide advice and guidance on how to plan, design, construct, and maintain stormwater treatment facilities that will best enable discharges to comply with the relevant permit limits. Many challenges arise designing BMPs for their site, including very stringent numeric efficient limits and accounting for stormwater infiltration to groundwater with resulting effects on groundwater chemistry. Pollutant sources include historic rocket engine test facilities, solid waste landfills, other waste disposal locations, a shooting range, and others. Project includes gathering and statistically analyzing flow and water quality data from dozens of locations around site.

Xcel Energy, Arkansas River. Evaluated bacterial loading to tributary of Arkansas River from onsite cooling, stormwater, and wastewater ponds. NPDES permit compliance. Assistance on other Xcel projects involving drainage and stormwater management and permitting.

Rogers, Arkansas Utilities, Northwest Arkansas Regional Planning Commission, Northwest Arkansas Council, and Coalition of Major Municipal NPDES Permit Holders. Performed review of proposed total phosphorus TMDL for the Illinois River, which flows from Arkansas into Oklahoma, including review of water quality modeling for river proposed by EPA Region VI. Assessed economic impacts and NPDES permit implications of alternative regulatory scenarios and statistical analyses of river flow and water quality data. Also worked closely with Arkansas Department of Environmental Quality staff on this project.

Boeing Facilities in Seattle, Washington. Consultant on wide-ranging stormwater quality and receiving water impact issues for The Boeing Company in Seattle, serving as one of three members of an expert panel, with technical support from Geosyntec Consultants. The panel has interacted with EPA Region X staff regarding enforcement of numeric limits for polychlorinated biphenyls (PCBs) in stormwater discharges from North Boeing Field into the Duwamish River, including stormwater quality assessment, BMP planning/design/review, and long-term monitoring, in the context of both CERCLA and the Clean Water Act. The panel assisted Boeing with defining the implications of having to meet strict numeric limits for *E. coli* in stormwater discharges. The panel worked with Boeing staff and consulting engineers to Boeing regarding the design of stormwater treatment facilities for "Plant 2," an approximately 140-acre site that has strict numeric discharge limits under RCRA and the Clean Water Act. Tidal fluctuation issues and utilization of valves to stop tidal backflows have been important considerations. Projects have included statistical analyses of flow and water quality data.

Arizona Wastewater Reuse Study for John Long Homes. Analyzed and quantified the injury to an Arizona developer, John Long Homes, and the taxpayers of Phoenix, Scottsdale, Tempe, Mesa, Glendale, and Youngtown, Arizona, due to Arizona's 1973 Effluent Option Agreement. The study related to the cost of interceptors necessary to transport sewage from outlying areas to a central treatment plant compared to other options for treatment and reuse. The developer sought to construct and operate a decentralized sewage treatment plant to supply reuse water to a golf course and landscaping on development property. The effects of Arizona's Groundwater Management Act and water rights were factors in the study.

State of Florida Stormwater Quality Design Criteria Review. Working initially for Versar, Inc. (EPA consultant) and then for the Center for Watershed Protection as member of an expert panel, reviewed the 2007 report Evaluation of Current Stormwater Design Criteria within the State of Florida for the Florida Department of Environmental Protection. The review focused on the statistical characterization of effluent quality of stormwater control facilities, the feasibility of stormwater treatment goals, the quality of the data from the studies used in the document, and the applicability of studies from areas outside Florida. Submitted a letter report summarizing opinions.

Total Petroleum, Colorado. Consultant on two separate matters involving the CRC refinery on Sand Creek in Commerce City, Colorado. Both cases centered on defining groundwater hydrology and subsurface contaminant movement. Also defined the significance of alleged NPDES violations and receiving water impacts in Sand Creek.

Monarch Casino NPDES (Colorado Discharge Permit System) Permit Feasibility. Working with casino planning and design team to define permitting implications of discharging foundation drain water with potentially elevated metals concentrations into North Clear Creek.

Long Pine Creek Watershed Management Plan, Nebraska. Project principal and reviewer of watershed modeling services for JEO Consulting Group for the Long Pine Creek Watershed in central Nebraska. Review of spreadsheet-based, in-house watershed model to identify sources and quantify the existing volume of annual pollutant loads to the watershed's primary receiving water, Long Pine Creek.

Clear Creek Watershed Management Plan, Nebraska. Served as project principal and reviewer for modeling of the Clear Creek Watershed. Utilized an EPA STEP-L model in conjunction with a lake model (BATHTUB) to reasonably estimate existing pollutant loads to Pibel Lake, the primary receiving waterbody in the watershed. The lake model, which was calibrated and validated utilizing long-term water quality data, was used to calibrate the watershed model so that it could be used to reasonably quantify and identify the primary sources of existing annual pollutant loads from the watershed to the lake.

Philips Farm, Missouri. Consultant (with local engineer Allstate Consultants, Inc.) for development of comprehensive water quality protection plan for proposed 500-acre residential/commercial development known as Philips Farm in Columbia, Missouri. Development located adjacent to two streams (Gans Creek and Clear Creek) that were considered sensitive and subject to stringent discharge requirements.

BP Products North America, Inc., Colorado. Assisted on numerous projects involving water quality and wetlands protection including, for example, evaluation of beneficial surface reuse alternatives for waters produced in association with coal bed methane. In addition, evaluated spills, produced water treatment technologies, and associated NPDES permit considerations.

City of Wildwood, Missouri. Evaluation of nature and causes of water quality degradation in two large residential lakes (Chesterfield Lakes) in the northeast part of Wildwood, including assessment of adequacy of erosion and sediment control practices at approximately 100-acre construction site. Consultant on causes of local stream channel erosion and potential mitigation measures.

City of Rockford, Illinois. Evaluated stormwater NPDES permitting and general issues related to City's stormwater program. Audited City compliance with NPDES permit.

EVRAZ Steel Corporation (Rocky Mountain Steel Mills), Pueblo, Colorado. Performed Use Attainability Analysis of Salt Creek. Industrial NPDES permit renewal. Synthesized stream flows for Salt Creek through industrial site, which was complicated by the nature of infiltration on the site and groundwater-surface water interactions. Section 316b (cooling water intake) rule compliance evaluation and consulting.

Johnson County, Kansas. Working as subconsultant to Olsson Associates, evaluated performance data of multiple BMPs to assist County with NPDES compliance.

Southern Hills Lakes, Springfield, Missouri. Provided assessment of nature and causes of water quality degradation in three lakes on the east side of Springfield, known as Southern Hills Lakes. Prepared action plan for addressing problem. Prepared water balances for lakes, including the potential for large infiltration losses to groundwater since the lakes are situated in limestone. Worked closely with neighborhood residents and presented findings to City Council.

Front Range Energy. Peer reviewed industrial NPDES evaluation related to potential stream standards changes in South Platte River.

National Renewable Energy Laboratory (NREL), Colorado. Performed stormwater BMP performance monitoring at Wal-Mart store in Aurora, Colorado for three years. This included an evaluation of why pond infiltration was not occurring as designed.

Lennar Homes. Assisted with stormwater permitting and onsite stormwater management throughout the United States, with emphasis on Nevada, Arizona, California, and South Carolina.

Centex Homes. Assisted with stormwater NPDES permit compliance in eastern United States.

Vail Associates, Potential Ski Resort in Idaho. Retained by Vail Associates to conceptually evaluate engineering feasibility of potential ski resort near Cascade Reservoir, with emphasis on potential impacts to reservoir.

Pulte Homes. Assisted with evaluation of hydrologic and water quality impacts of transformation of farmland into urban development including mitigation approaches, in eastern state.

National Cooperative Highway Research Program (NCHRP). Subconsultant to Geosyntec Consultants regarding stormwater quality research and report preparation.

Kansas Livestock Association. Assisted with stormwater runoff issues and regulatory review by EPA regional office.

Associated Ditches of Kansas. Assisted with TMDLs on Upper Arkansas River in Kansas, and numerous other planning, permitting and design projects for large-scale surface water and groundwater irrigation facilities. Extensive river flow and water quality frequency analysis, along the river, beginning at Colorado State line and focused on sulfate and TDS.

Little Sac River and Wilson Creek, Missouri. Assisted City of Springfield with evaluation of bacteria TMDL and implications for City NPDES permit.

Wilson Creek Mine, Hot Springs, Arkansas. Beginning in the mid-1990s, worked for UMETCO (subsidiary of Union–Carbide) to plan, design, and implement comprehensive mine reclamation practices, including buried solid waste in part of site. Project has included such features as wetlands, wetland channels, stream channel restoration, spoils regrading, treatment and revegetation, groundwater remediation and subsurface remediation facilities, mechanical water treatment, floodplain evaluation, and others. Reviewed Use Attainability Analysis studies and assisted with NPDES permitting. Statistical hydrology for onsite streams and receiving waters.

Town of Silverthorne, Colorado. Retained by Town to evaluate potential adverse hydrologic impacts to wetlands from existing and proposed residential construction. Investigation included construction of approximately 50 soil test pits and piezometers; interaction of surface water and groundwater; site hydrologic mass balance; groundwater hydraulics in response to development features such as foundation drains, road cuts, etc., and evaluation of measures to mitigate potential hydrologic modifications. Also worked closely with Town on behalf of Intrawest to prepare 1999 water quality and wetland protection ordinance.

Golf Course Water Quality Impact Mitigation Plans. Performed water quality planning for such courses/entities as Applewood (Jefferson County); Keystone River Course; Keystone Ranch Course; Adam's Rib (Eagle County); Maroon Creek Club (Pitkin County); Greene County, Missouri, and The Greens, Springfield, Missouri. Prepared 1996 Golf Course BMP Manual for CDPHE and Denver Regional Council of Governments. All these assignments included assessment of impacts of industrial applications on surface water and groundwater quality.

Cotter Corporation, Jefferson County, Colorado. Assisted regarding design of pipeline to temporarily bypass a creek through a mine site, to enable restoration of mine site to occur, including extensive flow-frequency analysis of Ralston Creek. Development of short-term and long-term mitigation and restoration plans for creek and associated riparian corridor. Assisted with water quality evaluations and NPDES permitting, including evaluation of applicable stream classifications and standards. Made multiple presentations to federal and state regulatory authorities and to Denver Water regarding this project.

Agricultural Water Supply and Water Quality (Both Surface Water and Groundwater) Issues. Consultant on various assignments including nonpoint source pollution, TMDLs, endangered species, and related subjects for ranchers, water right purchasers, and irrigation districts and companies. Representative clients include The Garden City Company (Kansas), Kansas Livestock Association, The Associated Ditches of Kansas, Coors Brewing Company (Coors owns agricultural properties), Greenland Ranch (Douglas County, Colorado), ranches purchased by Colorado Open Lands for historic preservation, and irrigated lands in North Dakota related to the Garrison Diversion project of the U.S. Bureau of Reclamation and cosponsors of the agricultural model of the International Stormwater BMP Database (www.bmpdatabase.org). Many of these projects have included hydrologic modeling in the context of flowwater quality relationships, minimum stream flows, water rights (diversion potential), and threatened/endangered species.

Bentonville, Arkansas TMDL and MS4. Consulted with the Town regarding impacts of potential phosphorus instream standard on NPDES permit as subconsultant to Geosyntec Consultants.

Colorado Stone, Sand, and Gravel Association (Coalition of Colorado Rock Products Companies). Evaluated impacts of new proposed regulation regarding selenium to NPDES discharge permits.

Climax Mining Company, Colorado. Provided testimony regarding statewide water quality standard for selenium.

Kansas City, Kansas. As subconsultant to Design Studios West, provided water quality and drainage planning on Shoal Creek for large, proposed development tract owned by Zion Properties near Kansas City International Airport.

Salt Lake City, Utah Golf Course. Provided saline soils and water supply investigation for golf course in Salt Lake City owned by Zion Properties.

Coalition of Keystone, Breckenridge, Copper Mountain, Vail, Winter Park, and Silver Creek Ski Resorts and L.G. Everist, Inc. Consultant regarding negotiations with Northwest Colorado Council of Governments (NWCCOG) on water quality standards for the NWCCOG jurisdictional area, including Dillon Reservoir. These standards addressed such topics as stormwater quantity and quality management, erosion and sediment control, wetlands protection, protection of hydrologic balance, hazardous materials management, and sensitive watershed development. Earlier assignments included the design of "pound for pound" mitigation plans for proposed ski area development to protect Lake Dillon and phosphorus trading.

Futura Aluminum, Utah. Prepared industrial stormwater NPDES permit.

Copper Mountain Resort, Colorado. Prepared Water Quality Protection Plan for entire base area of resort. Evaluated adequacy of water and wastewater systems in response to projected major growth increases. Designed dewatering facilities for large underground parking areas, including comprehensive groundwater monitoring and modeling effort, and defined relationship between surface flows and groundwater levels. Designed underground parking drainage and pretreatment facilities. Assisted with stormwater quantity and quality design and lake water quality investigations. Acquisition of various NPDES permits. Provided stream impact assessment, including biological monitoring.

State of Utah Department of Environmental Quality. Assisted with preparation of regulation regarding statewide wetland water quality standards as subconsultant to Sear Brown Group.

ARCO Coal Company. Project manager for various assignments in Wyoming (Black Thunder Mine and Coal Creek Mine) and Colorado. Reviewed adequacy of water-related sections of an Environmental Impact Statement for a proposed 3,200-acre expansion of Black Thunder Mine; worked with Colorado Division of Minerals and Geology to design restoration plan for large coal refuse pile on the Purgatoire River west of Trinidad, Colorado; evaluated industrial pond infiltration and groundwater quality issues; evaluated 404 permitting requirements; and performed general water resources consulting, including water rights.

Town of Snowmass, Colorado. Prepared Brush Creek Watershed Plan. Provided comprehensive water quality monitoring program for Town; designed stream channel stabilization and restoration, and interacted on such topics as riparian corridor protection and wetland protection.

Lone Star Landfill, Salt Lake City, Utah. Provided water quality data interpretation for legal counsel (Arnold & Porter) for landfill owner.

City of Winnipeg, Manitoba, Canada. Consultant regarding measures to be implemented to enhance the water quality of 200 lakes within the City of Winnipeg. Project began with assessment of the causes of observed problems and study of receiving water impacts.

Representative Projects Involving Refuse Piles, Mine Tailings and Spoils Piles. Locations included Clear Creek watershed for Coors Brewing Company (Colorado), London Mine (Colorado), coal strip mines (Pennsylvania), ARCO Coal Company (Wyoming and Colorado), tailings along San Miguel River (Colorado), UMETCO (Colorado and Arkansas), Purgatoire River coal refuse piles (Colorado), and Xcel Energy Cameo Power Plant (Colorado). These projects included site water balances, including infiltration through mine waste and potential water quality impacts.

Lowry Landfill, Denver, Colorado. Project manager for a comprehensive surface water monitoring program and surface water hydrology evaluations, including interaction of surface flows with alluvial groundwater. Work conducted as a subcontractor to CH2M-Hill under an EPA Superfund contract. Detailed hydrology/hydraulic analysis of specific flood that transported water onsite.

Jefferson County Commissioners, Colorado Regarding Leyden Landfill. Retained to evaluate the engineering feasibility of reopening and enlarging an existing landfill near the community of Leyden in Jefferson County. Of particular concern to the Commissioners was the potential for contamination of downgradient groundwater resources. This assignment culminated with a report to the Commissioners.

Amako Resort Contractors, Colorado. Prepared dewatering and construction NPDES permits. Assisted with preparation of plans for onsite stormwater management and conveyance.

Lake Eldora Resort, Colorado. Evaluated water quality impacts of ski area development. NPDES permitting.

Silverthorne–Dillon Joint Sewer Authority, Colorado. Evaluated the technical feasibility of using composted, Class "A" municipal sludge for reclaiming mine tailings. Considerations included groundwater, surface water interaction, and contaminant movement.

ASARCO, **Inc.**, **Colorado**. Gave testimony for ASARCO before the Colorado Water Quality Control Commission in 1991 relative to proposed groundwater classifications and standards on the South Platte alluvium in Metropolitan Denver. Testimony addressed water quality data, implications of proposed regulations relative to ongoing clean-up under CERCLA, and generalized aspects of proposed standards for other industries in Denver Metro area. On a separate matter, WWE was selected by ASARCO to be their engineering expert on litigation that involved alleged groundwater contamination—the plaintiffs ultimately dropped this complaint.

Vail Associates, Colorado. Provided water quality monitoring, NPDES permitting, and watershed protection planning and design.

United States Department of Justice (DOJ). Expert testimony for the DOJ on cases involving water quality, hydrology, NPDES permitting, wetlands, and related topics. Additional information available upon request, subject to disclosure restrictions.

Watershed Management

Ozark Cavefish Habitat Assessment. Worked with Crafton Tull, Ozark Underground Laboratory, and The Nature Conservancy to prepare a comprehensive hydrologic assessment and protection plan (as the area urbanizes) for the 20-square-mile Fulbright Spring recharge area in northwest Arkansas. The area provides habitat for a federally listed threatened species of blind cavefish. Our work was developed for such entities as the United States Fish and Wildlife Service, Arkansas Department of Transportation, multiple local governments, and private property owners.

Deltic Timber Corporation and Lake Maumelle Watershed, Little Rock, Arkansas. Advised Deltic Timber regarding the practical implications of limitations related to proposed land development in the Lake Maumelle Watershed Management Plan. Lake Maumelle serves as public water supply for most of the Little Rock Metropolitan area, and the watershed management plan and County development ordinance established a series of stringent development requirements including, as examples, minimum open space and undisturbed land area requirements, compliance with numeric limits on certain constituents in stormwater discharges, and special commitments regarding treatment/discharge of sanitary wastewater. Work involved interaction with representatives of Central Arkansas Water and Pulaski County. Flow-frequency analysis of major tributaries discharging into Lake Maumelle, including associated sediment and nutrient loads.

Cherry Creek Stream Restoration, City of Glendale, Colorado. Worked as part of multidisciplinary team to develop a stream restoration/enhancement plan for the reach of Cherry Creek through Glendale, Colorado, in association with urban redevelopment project.

Sioux Falls, South Dakota. Worked closely with a large group of planners, architects, environmentalists, citizens, and others, and served as subconsultant to Brian Clark + Associates, planning and designing improvements to Big Sioux River through downtown Sioux Falls, South Dakota. Flow-frequency and regulatory floodplain analysis.

Salina, Kansas, Channel Restoration. Working closely with The Friends of the River and the City of Salina, planned and conceptually designed improvements to restore the old channel of the Smoky Hill River through downtown Salina over a reach of approximately seven miles. Design Studios West, Inc., was project planner and landscape architect. Project included extensive statistical analyses of Smoky Hill River.

Catawba Riverkeeper Foundation, Charlotte, North Carolina. Assisted with conceptual evaluation of impacts of proposed interbasin transfer to provide additional water supply for Charlotte suburbs.

The Garden City Company and The Associated Ditches of Kansas. Consultant regarding upper Arkansas subbasin management plan, TMDLs, state water quality standards, endangered species issues, Ogallala Aquifer management plan, Kansas water plan, and general water rights issues. These wide-ranging assignments involved regulatory review, planning, and engineering. The Associated Ditches of Kansas is a coalition of the five major diverters from the Arkansas River in southwestern Kansas. Extensive statistical analysis of River, focused on both high and low flows and river water quality.

Watershed Committee of the Ozarks, City of Springfield Public Works Department, City Utilities and Greene County, Missouri. Prepared the Fulbright Spring Protection Study, which evaluated the existing groundwater and surface water hydrology of Fulbright Spring and its associated watershed, and which suggested a watershed management strategy to protect spring water quality and water supply. Study defined and evaluated risks from significant potential pollutant sources including highways; residential, commercial, and industrial development; golf course; solid waste landfill; and others.

Gunnison Energy Corporation, Colorado. Provided assessment of potential impacts to water resources (groundwater and surface water) of oil and gas development in Gunnison and Delta Counties in Colorado.

Rocky Mountain Shambhala Center, Colorado. Provided water supply development and water rights testimony.

Big Sky Ski Resort, Bozeman, Montana. Conducted consumptive use study for snowmaking system. Analysis was reviewed and approved by multiple Montana regulatory agencies. Analysis was integrated into a water rights application prepared by the resort.

Town of Vail, Vail Valley Consolidated Water Users, Upper Eagle Valley Water and Sanitation District, Vail Associates and others, Colorado. Consultant for the preparation and implementation of the Gore Creek Watershed Management Plan, which provides a blueprint for the future management of the stream.

Big Dry Creek Watershed Association and Gore Creek Watershed Alliance, Colorado. Reviewer of data and documents for two watershed groups in Colorado on wide-ranging, non-point issues, streamflow hydrology, water rights, habitat enhancement, and other subjects.

Aspen Skiing Company—Burnt Mountain Environmental Impact Statement and Other Consulting, Colorado. Consultant for the Aspen Skiing Company regarding the water resources impacts of a 6,600-skier-at-one-time expansion of the Snowmass ski area. Subjects evaluated include adequacy of water rights, land treatment of wastewater, impact on aquatic ecosystems of proposed ski area, channel morphology/stability, changed basin hydrology in response to clear cutting and other development, water quality degradation from point and non-point sources including soil erosion, planning and design of mitigation measures, field sampling and evaluation, endangered species assessment, hydrologic modeling/hydrologic mass balance, and groundwater impacts.

General Water Resources Management, Including Municipal, Agricultural, and Industrial Water Supply, Water Rights, Wastewater, Water Treatment, and Related Topics

Dam/Reservoir Consultation. Representative dam and reservoir projects and clients have included the following (all aspects of dam/reservoir planning; permitting; hydrology, including flow-frequency analysis and calculations of design floods up to the full probable maximum flood; hydraulics; design; maintenance/inspection; emergency preparedness; public safety; and others):

- Coors Brewing Company (Colorado)
- Water Supply and Storage Company (Colorado)
- Mile High Flood District (Colorado)
- ExxonMobil (Colorado)
- U.S. Bureau of Reclamation (North Dakota)
- Olsson Associates Consulting Engineers (Nebraska)
- Donald Dorman, Developer (New Mexico)
- U.S. Fish and Wildlife Service (North and South Dakota) (subconsultant to GEI Consulting Engineers)
- The Boeing Company (California)
- Colorado Intergovernmental Risk Sharing Agency (Colorado)
- Upper Arkansas Water Conservancy District (Colorado)
- Simeon Residential Properties and associated metropolitan districts (Colorado)
- City of Springfield (Missouri)
- Crafton Tull Associates Consulting Engineers (Arkansas, Missouri)
- Intrawest Resorts (Colorado)
- ARCO Coal Company, West Elk Mine (Colorado)
- Union Carbide, UMETCO (Colorado, Arkansas)
- Multiple local governments in Denver Metro area (Colorado)
- Waste Management of Hawaii
- Boy Scouts of America, Denver Area Council (Colorado)
- Laing Village Homes (Colorado)
- Shambhala Mountain Center (Colorado)
- L.G. Everist Rock Products and The Everist Company (Colorado)
- City of Salina (Kansas)
- Garden City Company and El Pomar Foundation (Kansas)
- Pueblo Urban Renewal Authority (subconsultant to Design Studios West) (Colorado)
- Estes Park Urban Renewal Authority (subconsultant to Design Studios West) (Colorado)
- Winter Park Resort (Colorado)
- Town of Idaho Springs (Colorado)
- Cabelas (Nebraska)
- Siegrist Rock Products (Colorado)
- Deltic Timber Company (Arkansas)

Water Supply Consultation. Provided consultation on surface water and/or groundwater supplies for the following representative entities (planning, permitting, statistical analysis focused on drought conditions and divertible flows, raw water quality, masterplanning, and related topics):

- Homestake Mining Company (Lead, South Dakota)
- ExxonMobil (Colorado)
- BP/Amoco (Colorado and Wyoming)
- Coors Brewing Company (Colorado, California, Idaho)
- Adam's Rib Resort (Colorado)
- Arapahoe County Water and Wastewater Authority (Colorado)
- Vail Associates (Idaho)
- Big Sky Resort (Montana)
- U.S. Bureau of Reclamation (North Dakota, California, Nevada, Arizona)
- ARCO Coal Company (Colorado)
- Water Supply and Storage Company (Colorado)
- City of Springfield and Greene County (Missouri)
- University of Colorado
- U.S. Department of Energy (Colorado)
- Denver Area Council of Boy Scouts of America (Colorado)
- · Various Indian tribes including:
 - Umatilla (Oregon)
 - o Hopi (Arizona)
 - o Council of Energy Resource Tribes (Rocky Mountain Region)
- Intrawest Resorts (Florida, South Carolina, Colorado)
- Ski areas (Colorado and Montana, Colorado Ski Country, USA)

Feasibility of utilizing various water sources (stormwater, industrial, and municipal wastewater, untreated river water, etc.) for beneficial reuse including public water supplies, low flow enhancement, habitat restoration, irrigation, aquifer recharge and other purposes:

- City of Springfield (Missouri)
- Prime Contractors to USDOE at former Rocky Flats nuclear weapons facility (Jefferson County, Colorado)
- Groundwater Management District No. 3 and Associated Ditches of Kansas (Garden City, Kansas) in association with Spronk Water Engineers
- Coors Brewing Company (Golden, Colorado)
- John F. Long Properties (Phoenix, Arizona)
- Silverthorne Dillon Joint Sewer Authority (beneficial reuse of municipal sludge) (Colorado)
- Arapahoe County Water and Wastewater Authority (Colorado)
- Cotter Corporation (Colorado)
- BP, San (Juan Basin, Colorado)
- North Shore Energy (Colorado)
- Rocky Mountain Shambhala Center (Colorado)
- Matrix Design Group (Denver, Colorado) for Santa Teresa Development (Santa Teresa, New Mexico, and El Paso, Texas)
- Stapleton Airport Redevelopment Project, as subconsultant to Matrix Design Group
- City of Salina (Kansas)
- Great Western Sugar Company (Colorado)
- UMETCO (Arkansas)
- Laing-Village Homes (Colorado)
- Watershed Committee of the Ozarks
- Simeon Residential Communities for Vista Ridge development (Colorado)
- Work at USEPA from 1979-1981 at USEPA in Innovative and Alternative Wastewater Treatment Branch, Municipal Construction Division, Washington DC (college intern)

Surface Water and Groundwater Monitoring—Guidance, Planning, Program Development/Implementation, and/or Data Interpretation. Assessment of such considerations as treatment efficiency, regulatory compliance, suitability of sources for use in water supplies, wastewater/stormwater reuse, and physical, chemical, and biological impacts of point and nonpoint source discharges (industrial, municipal, stormwater, groundwater) for the following entities.

- International Stormwater BMP Database (www.bmpdatabase.org)—for coalition of organizations including ASCE/EWRI, WRF, APWA, USEPA, FHWA and others and in cooperation with Geosyntec Consultants and MHFD
- USEPA Stormwater BMP Monitoring Manual, for USEPA, working with Geosyntec Consultants
- Prime contractors to USDOE at former Rocky Flats Nuclear Weapons Facility (Jefferson Country, Colorado)
- Los Alamos National Laboratory (New Mexico)
- Coors Brewing Company and Molson-Coors, regarding brewery and associated facilities (Colorado)
- City of Springfield (Missouri)
- Greene County (Missouri)
- Watershed Committee of the Ozarks (Springfield, Missouri)
- Phillips Farm development (Columbia, Missouri) for Allstate Consulting Engineers and Elvin Sapp, Developer
- Multiple Colorado Ski Resorts (as examples: Vail, Keystone, Winter Park, Aspen Skiing Company and Colorado Ski Country USA)
- Proposed Adams Rib Recreation Area, and (as of 2024) Frost Creek Development (Colorado)
- West Elk Mine (Somerset, Colorado)
- City of Lincoln Nebraska and Lower Platte South Natural Resources District (with Olsson Associates)
- Mile High Flood District (formerly Urban Drainage and Flood Control District) and various local governments in Denver Metro area (Colorado)
- Simeon Residential Communities, at Grant Ranch, Trailmark/Chatfield Green, and Vista Ridge developments (Colorado)
- Boeing Corporation, (California and Washington [state]) as member of Expert Panels, with Geosyntec Consultants serving as Panel consultant
- USDOJ on cases (now settled) (New York, Maine, Connecticut, Colorado, Massachusetts, and Washington [state])
- Bad River Band of Lake Superior Chippewa Tribes (Wisconsin)
- Keystone Resorts (Colorado) (owned by Ralston Purina)—helped to develop and implement a
 program to demonstrate "pound for pound" phosphorus "trading" in response to new on-mountain
 and base-area development, in the context of the state regulation that protects water quality in Lake
 Dillon and provides a maximum allowable total phosphorus load. This included numerous projects
 to reduce existing phosphorus loads, and "point to non-point" trading
- Umatilla Tribe (Pendleton, Oregon)
- Council of Energy Resource Tribes (Denver, Colorado)
- Waste Management, Inc. (Hawaii)
- Silverthorne-Dillon Joint Sewer Authority (Colorado)
- City of Salina (Kansas)
- Associated Ditches of Kansas (Garden City, Kansas)
- Garden City Company (Kansas)
- UMETCO (subsidiary of Union Carbide) (projects in Arkansas and Colorado)
- Cotter Corporation (Colorado)
- ARCO Coal Company (projects in Wyoming and Colorado)
- BP (San Juan Basin, Colorado)
- Gunnison Energy Corporation (Colorado)
- LG Everist Rock Products (Colorado)
- John Morrell Corporation (Sioux Falls, South Dakota)
- Great Western Sugar Corporation (Colorado)
- Arapahoe Country Water and Wastewater Authority (Colorado)
- ASARCO (Colorado)

- Rocky Mountain Steel Mills (Pueblo, Colorado)
- Cherry Creek Basin Water Quality Authority (Board Member)
- ASCE Continuing Engineering Education Program—course on water quality impacts with Dr Ed Herricks and Steven Koorse, Esq.
- University of Wisconsin Continuing Engineering Education Program—course on stormwater management, including stormwater quality permit compliance with Dr. Ron Rossmiller and others
- Boy Scouts of America—Denver Area Council
- Rocky Mountain Shambala Center (Colorado)
- Raytheon (Colorado)
- Laing-Village Homes (Colorado)
- Lennar Homes (national)
- Centex Homes (national)
- Pulte Homes (east coast)
- John Long Residential Communities (Arizona)
- Northwest Arkansas Municipal Wastewater Dischargers (Illinois River interstate water quality issue)
- Pitkin Iron (Colorado)
- Golf Courses—"pesticide free" facilities (examples: Applewood for Coors and American Golf, Keystone River Course for Intrawest, and Adams Rib for HBE)
- Coalition of Summit County Ski Resorts and LG Everist (Colorado)
- YMCA of Boulder (Colorado)
- Deltic Timber Company (Little Rock, Arkansas)
- South Platte River downstream working group (Colorado)
- National Renewable Research Laboratory (Colorado)
- Coalition of Northwest Arkansas Local Governments and Arkansas Highway Department for preparation of Cave Springs Recharge Area Protection Plan, as subconsultant to Crafton Tull
- Federal Highway Administration and NCHRP as subconsultant to Geosyntec Consultants
- USEPA Superfund Program Hazardous Waste Sites (subconsultant to CH2M Hill)
- Central Colorado Water Conservancy District
- Stormwater BMP performance evaluation for Johnson County, Kansas, as subconsultant to Olsson Associates

South Platte River Downstream Working Group (Coalition of Littleton, Arapahoe County, Englewood, Sheridan, and others) and the South Platte Greenway Foundation, Colorado. Performed analysis on impacts to South Platte River downstream of Chatfield Dam due to proposed reservoir allocation project and feasibility of providing instream flow in river to benefit water quality and aquatic life.

BP–America, Colorado. Multiple assignments for the Durango, Colorado, Operations Center (San Juan Basin wellfield) related to Colorado water rights evaluation and testimony, determination of tributary versus nontributary groundwater, review of proposed Colorado Oil and Gas Conservation Commission regulations, planning and engineering for water rights augmentation plan, and design of stormwater impoundment.

Santa Teresa Development near Las Cruces, New Mexico. Working as a subconsultant to the Matrix Design Group, assisted with wide-ranging water resources issues related to the potential development of over 10,000 acres near Las Cruces, including wastewater and stormwater NPDES discharge requirements into the Rio Grande, wastewater and water master planning, evaluation of the water rights implications of wastewater reuse, stormwater and floodplain management, and optimizing the cost effectiveness of overall water resources management.

Groundwater Management District No. 3, Garden City, Kansas. Performed conceptual feasibility study of multiple projects to promote water conversation in southwest Kansas.

Intrawest Due Diligence and Site Feasibility Evaluations. Consulted for Intrawest Resorts in Texas, Florida, and South Carolina regarding the feasibility of either purchasing existing resorts or constructing new resorts, from the standpoint of water resources engineering issues such as water supply, wastewater treatment plant design, environmental permitting, floodplain regulation, building construction issues, hurricane storm surge (including statistical analyses of hurricane and storm surge data and floodplain studies).

Homestake Mining Company, South Dakota. Provided quantification of historic municipal water use from 1870s to the present for water system owned and operated by Homestake Mining Company. Expert testimony before state of South Dakota water resources board. Flow-frequency analysis of streams that Homestake diverted from, oriented toward defining flow rates that could potentially be dedicated to instream habitat protection.

Contra Costa Water District, California. Evaluated source water supply as subconsultant to Carollo Engineers.

Eagle's Nest Resort (3 Peaks) Development in Summit County, Colorado. Project manager on assignments related to groundwater investigations; site hydrologic mass balance; landslide evaluation, including field installation of four inclinometers, one dozen piezometers, and numerous test pits; testimony and detailed work with Town of Silverthorne to prepare and implement a Wetland Protection Ordinance; water rights and water supply; water quality and wetland protection and mitigation; and other water resource studies.

Industrial Site Location for Major Food Products Company. Searched multiple western states for suitable location for industrial site in western United States, with dependable supply of high-quality water as primary objective.

Estes Park Urban Renewal Authority, Colorado. Subconsultant to Design Studios West for major river improvements in downtown Estes Park, Colorado.

City of Rocky Ford, Colorado. Groundwater investigation related to water leakage from lake in Town Park.

J.F. Laing Homes and Village Homes, Colorado. Consultant on water supply and water quality impacts and NPDES permit implications for proposed 800-acre golf course/residential development to be located immediately upstream from Aurora Reservoir, which serves as public water supply for City of Aurora. Responsible for planning/conceptual design of major drainageways and stormwater quantity and quality management facilities. Responsible for developing irrigation water supply, including the evaluation of multiple alternatives such as utilization of Denver Basin (nontributary) groundwater, raw water from reservoir, stormwater reuse, and others. In addition, evaluated the feasibility of creating wetlands in onsite arroyos.

Pueblo Urban Renewal Authority, Colorado. Subconsultant to Design Studios West for major river improvements in downtown Pueblo, Colorado, known as Historic Arkansas River Project.

L.G. Everist, Inc., Rock Products, Colorado. Consultant and advisor on wide-ranging topics including wetlands permitting, wetlands banking, surface water and groundwater hydrology, gravel pit lake restoration and reclamation plans, water rights, water supply, environmental permitting, and other subjects.

Cabela's Specialty Retail Company, Sydney, Nebraska. Performed water supply evaluation for major residential development including parks, recreational lakes, irrigation, 404 permitting, and assistance on floodplain permitting and stream channel evaluation.

Wyoming Water Development Commission. Working closely with representatives of the Wyoming Water Development Commission and oil companies, developed streamflow and water quality model for the Powder River Basin in Wyoming, including flow-frequency analysis and statistical analysis of river quality data focused on TDS.

City of Brighton, Colorado. Provided expert testimony regarding the capability of the City of Brighton to provide municipal water supply for the Bromley Park subdivision versus the comparative capability of a local municipal water district. Approach was to perform a side-by-side comparison of the capabilities of the City versus the District on such subjects as suitability of existing infrastructure, past compliance history, financial capability, adequacy of groundwater, surface water supply quantity and quality, staff capabilities, etc.

Mountain Coal Company, Colorado. Prepared permit text for submittal to Colorado Department of Minerals and Geology regarding all aspects of surface water and groundwater quantity and quality impacts associated with mining-induced ground subsidence. Performed assessment and modeling of surface and groundwater hydrology and sediment transport, including effects of storing large quantities of water underground in mined-out panels. Prepared site hydrologic mass balance, landslide evaluations, water rights, and augmentation planning. Performed wastewater treatment feasibility studies and NPDES permit evaluations. Performed river morphology/stability evaluation and design. Performed 404 permitting.

Final Design of Rehabilitation Plans and Specifications for Upper Arkansas Water Conservancy District Dams, Colorado. Developed plans and specifications for the rehabilitation of two high mountain reservoirs.

Infrastructure Projects for Boy Scouts of America, Colorado. Conducted reconnaissance and prepared preliminary and final design projects for lake for the Peaceful Valley Boy Scout Ranch in Elbert County. Formulated water rights augmentation and operation plans. Designed water wells and water supply and wastewater treatment systems.

Lower Colorado River Basin Study for the U.S. Bureau of Reclamation. Analyzed return flow characteristics associated with non-contractual diversions (including wells) from the Colorado River in the reach from Davis Dam to the Mexico border. This included assessing the probable drawdown characteristics of wells in the proximity of the lower Colorado River.

Reconnaissance-Level Dam Study for Water Supply and Storage Company, Colorado. Analyzed 32 potential reservoir sites with respect to geology, hydrology (flood flows, drought flows, analysis of storable flow, flow-frequency analysis), water rights, dam sizing, spillway requirements, and probable environmental impact in the Cache la Poudre basin.

Preliminary Design for Trap Lake II, Colorado. Analyzed proposed reservoir site including water rights, basin yield, flood hydrology, financing, and all civil engineering and environmental issues leading to the preliminary design of a 4,400-acre-foot reservoir with a dam height of 85 feet.

Water Resources Development for ExxonMobil, Colorado. Pump-tested Battlement Mesa Colorado River alluvial supply wells and interpreted data. Categorization and ranking of irrigation water requirements for Battlement Mesa. Performed water supply study. Performed feasibility study of proposed reservoir on Monument Gulch. Performed transit loss studies.

Reservoir and Lake Water Quality Assessments and Feasibility Studies. Representative clients include: ExxonMobil (Colorado); City of Springfield (Missouri); Bowles Metropolitan District (Colorado); City of Winnipeg (Manitoba, Canada); Coors Brewing Company (Colorado); Water Supply and Storage Company (Colorado); City of Rockford and Forest Preserve District (Illinois); ARCO Coal Company (Colorado); McStain Residential Communities (Colorado); City of Boulder (Colorado); City and County of Denver (Colorado); U.S. Department of Energy (Golden); and Simeon Residential Properties (Colorado).

General Engineering Work for Irrigation/Ditch Companies. Wide-ranging engineering investigations (water supply, inflow/outflow analysis, consumptive use studies, water rights evaluations, design of ditch facilities such as measuring devices, bank protection, headgates, turnouts, and other facilities) for such entities as the Garden City Company (Garden City, Kansas); Associated Ditches of Kansas (southwest Kansas); Groundwater Management District No. 3 (Kansas); coalition of Kansas interests on the Republican River (northwest Kansas); FMIC Ditch (Colorado Springs, Colorado); Water Supply and Storage Company (Fort Collins, Colorado); various ditches in which the Coors Brewing Company has significant ownership stakes; and ditches at various mountain resorts and ski areas in western Colorado.

Slope Stability Investigations, Colorado. Evaluated water engineering aspects of slope stability investigations at Three Peaks development in Summit County, Colorado; Maryland Creek Ranch in Summit County; Keystone Resort in Summit County; and the West Elk Mine in Delta County.

Ground Subsidence Caused by Coal Mining, Colorado. Performed subsidence evaluations for West Elk Mine in Colorado, ARCO Coal, Arch Coal, and Weld County Landfill.

Coors Brewing, Ceramics, Glass, and Real Estate Companies, Colorado. Project manager, managing principal, senior engineer, or staff engineer for the following representative projects:

- Clear Creek water quality and habitat investigations
- Groundwater supply investigations, including surface water-groundwater interaction (both water quality and quantity) and testimony
- Water rights implications of relocating historic spring diversions
- Clear Creek "Cosmic" Agreement to resolve longstanding water quality issues (testimony in water court)
- Chicago Creek Reservoir enlargement (testimony in water court)
- Coors Augmentation Plan and various water rights exchanges
- NPDES permitting
- Stormwater quantity and quality management projects including drainage criteria/standards
- Groundwater classifications and standards, groundwater contamination studies, groundwater management strategies, and groundwater supply/hydrology (testimony in administrative hearings)
- Mine water discharges—feasibility issues associated with using discharges as replacement sources, given metals concentrations
- Assessment of unlined lake inflows and outflows in response to changing streambeds and alluvial groundwater conditions
- Standley Lake water quality study
- Drainage and erosion control plans for 400-acre Coors Technology Center
- Water resources evaluation of Great Western Sugar Company's Johnstown, Colorado, high fructose corn syrup plant with respect to water rights, groundwater, and surface water hydrology, wastewater treatment, and water supply of the Town of Johnstown
- Rolling Hills Country Club, Welch Ditch landslide
- Preliminary and final design of multiple dams and reservoirs
- Testimony regarding water quality classifications, standards, data, receiving water impacts, and related topics for Clear Creek and South Platte River
- Dam and reservoir inspections
- Coors Clear Creek water rights operations computer model
- Various water rights evaluations
- Cooling water system evaluation
- Pesticide-free golf course design and monitoring (Applewood)
- Drought and flood risk assessment
- Detailed review of stormwater and erosion control plans for numerous developments adjoining Coors' properties
- Engineering assessment of the feasibility of utilizing the Coors Parfet clay pits, located in the City
 of Golden, Colorado, for the disposal of fly ash for the Public Service Company of Colorado

General Water and Wastewater Treatment Experience:

- BP (Colorado)
- Northshore, Inc. (Colorado)
- Coors Brewing Company (Colorado)
- UMETCO (Arkansas)
- ARCO Coal Company (Colorado)
- Great Western Sugar Company (Colorado)
- Summit County Ski Resorts (Colorado)
- Homestake Mining Company (Colorado)
- John Morell Company (South Dakota)

- Northwest Arkansas municipal wastewater discharges
- City of Springfield (Missouri)
- Boeing Company (Washington)
- Rocky Mountain Steel Mills (Colorado)
- Xcel Energy (Colorado)
- Boy Scouts of America (Denver Area Council)
- YMCA of Boulder (Colorado)
- Rocky Mountain Shambhala Center (Colorado)

Rocky Flats Site (Former Rocky Flats Plant Site) in Denver, Colorado (Kaiser–Hill, Inc., Rockwell International, EG&G, Inc., Rocky Mountain Remediation Services, and U.S. Department of Energy). Project manager and/or managing principal for the following representative assignments:

- Surface water hydrology, sediment yield and sediment transport modeling, and report preparation focused on the amount of offsite export of plutonium and other radioactive constituents
- Flow-frequency analysis of onsite and offsite streams and ditches for various current and future site water management strategies
- Testimony on stream classifications and standards before the Colorado Water Quality Control Commission
- Testimony before the Colorado Water Quality Control Commission on site-specific groundwater classifications and standards
- Principal author of the Rocky Flats Surface Water Management Plan, a document designed to bring Rocky Flats into full compliance with all local, state, and federal surface water regulatory requirements
- Principal auditor of proposed engineering facilities and associated costs for the roughly \$100 million
 Option B project, consisting of dams, reservoirs, pipelines, pump stations, new raw water supplies, new water treatment plant, and other features to protect and replace downstream public water supplies
- Written testimony regarding biomonitoring standards
- Written testimony regarding statewide organic standards
- Written and verbal testimony regarding radionuclide standards, treatability, and economic impacts.
- Principal engineer for Rocky Flats Drainage and Flood Control Master Plan, a comprehensive drainage and flood control plan for 10-square-mile site, which included numerous sites regulated by CERCLA and RCRA, solid waste landfills, wastewater treatment plants, and extensive industrial infrastructure
- Consultant on stormwater-related and sanitary wastewater treatment plant NPDES permit matters
- A-, B-, and C- series and Landfill Pond Interim Measures and Interim Remedial Action Plan
- Pond and basin infiltration assessment
- Consultant on water rights
- Groundwater contamination characterization, movement, interception, and treatment
- Gravel mine impacts on localized groundwater hydrology
- Auditor of groundwater monitoring program (approximately 500 wells), which resulted in deletion of over 100 wells and streamlined monitoring, at considerable cost savings
- Principal engineer on Rocky Flats Watershed Management Plan, which focuses on erosion and sediment control, channel stability, and pesticide management and selection
- In meetings with representatives of the cities of Broomfield and Westminster and in testimony before the Colorado Water Quality Control Commission, addressed questions regarding probable groundwater pollution sources on the Rocky Flats site, including, for example, the solar ponds, existing landfill, proposed landfill, 881 hillside, and various other operable units
- Assistance with various aspects of facility NPDES permit compliance

Adam's Rib Recreational Area, Colorado. Consultant for the Adam's Rib Recreational Area on water supply, wetland, and water quality issues pertaining to the development of a 2,000-acre resort originally planned to accommodate 10,000 users, including 9,000 skiers at one time. Broad work categories include:

- Comprehensive groundwater monitoring
- Vassar Meadow and Joe Goode Meadow hydrologic mass balances
- Section 401 of Clean Water Act permit
- Section 402 of Clean Water Act permit and wastewater treatment plant design
- Section 404 of Clean Water Act permit
- Pesticide-free golf course
- Statistical hydrology and special studies, including flow-frequency analysis, regarding surface water and groundwater hydrology
- Preparation of Water Quality Mitigation Plan for the entire development, a document which addresses all known point and non-point source pollution impacts of the development in the context of Colorado's water quality regulations
- Characterization of wetland functions under the 404(b)(1) guidelines
- All aspects of physical and legal water supply and impacts on minimum streamflows
- Many written and verbal presentations to the EPA, USACE, U.S. Forest Service, Colorado Division
 of Wildlife, U.S. Fish and Wildlife Service, Colorado Water Quality Control Division, environmental
 organizations, and other groups on the issues described above along with general water resources
 planning matters
- Erosion/sediment control and stream channel stability engineering design to meet no net/sediment increased performance standard, sediment transport, debris flows, channel stability protection, design, and management
- NPDES permitting
- Assessment of potential effects of 2 MGD municipal wastewater discharge on downstream municipal water intake

Native American Tribes. Project manager for such tasks as: vulnerability assessments of tribal water supplies, risk assessment of pesticide usage; stream and river hydrology, hydraulics, and assessments; adequacy of proposed erosion and sediment controls; formulation of groundwater and surface water sampling programs and mitigation strategies to address observed problems; development of water supplies; overview of environmental laws; and likely adverse water quality impacts of existing or proposed industrial/commercial development. Projects were completed for the following tribes:

- Bad River Band of Lake Superior Chippewa
- Umatilla Indian Tribe (Oregon)
- Hopi Tribe (Arizona)
- Council of Energy Resource Tribes in Denver (technical staff for 52 Indian tribes)
- Rosebud Sioux
- Native American Rights Fund (NARF)
- Other (confidential, available upon request)

Wetlands

Representative clients/projects for work associated with planning, permitting, design and performance evaluation of wetlands under Sections 401, 402, and 404 of the Federal Clean Water Act, along with "waters of the United States" issues, include, as examples:

- Coors Brewing Company/Molson Coors (Golden, Colorado)
- City of Glendale (Colorado)
- City of Sioux Falls (South Dakota)
- Kansas Groundwater Management District No. 3
- Deltic Timber Corporation (Arkansas)

- ARCO Coal Company (Gillette, Wyoming and Paonia, Colorado)
- Municipalities on South Platte River downstream of Chatfield Reservoir (Denver Metro area)
- Smoky Hill River channel restoration (Salina, Kansas)
- Amazon Ditch Company (Garden City, Kansas)
- Frontier Ditch Company (Syracuse, Kansas)
- City of Springfield, Missouri and Greene County, Missouri
- Grant Ranch Residential Development (Littleton, Colorado)
- Chatfield Green Residential Development (Littleton, Colorado)
- Aspen–Snowmass Ski Resort (Pitkin County, Colorado)
- Adam's Rib Resort (Eagle County, Colorado)
- Colorado Ski Country USA (Coalition of Colorado Ski Areas)
- International Stormwater BMP Database developed for ASCE, APWA, WRF, FHWA, EPA, and others regarding wetland pollutant removal capabilities
- Mile High Flood District and multiple Denver area municipalities regarding major drainageway master plans
- Maryland Creek Ranch (Summit County, Colorado)
- Three Peaks Resort (Summit County, Colorado)
- Town of Silverthorne (Colorado)
- Santa Susana Field Laboratory (Ventura County, California) (for The Boeing Company)
- Winter Park Resort (Grand County, Colorado)
- UMETCO (subsidiary of Union Carbide) regarding Wilson Mine (near Hot Springs, Arkansas)
- L.G. Everist Rock Products (Colorado)
- City of Lincoln and Lower Platte South Natural Resources District (subconsultant to Olsson Associates, JEO Consulting Group, and EA Engineering) regarding stormwater master plans and drainage criteria involving wetlands (Nebraska)
- ExxonMobil regarding Darby Mountain (Wyoming) and Piceance Basin (Colorado)
- Cotter Corporation (Jefferson County, Colorado)
- EVRAZ Steel Mill (Pueblo, Colorado)
- Keystone Ranch Golf Course (Summit County, Colorado)
- Xcel Energy (Eagle County, Colorado)
- Town of Vail (Colorado)
- Lake Catamount Resort (Routt County, Colorado)
- Coalition of local governments in Northwest Arkansas and Northwest Arkansas Regional Council
 of Governments
- Water Supply and Storage Company (Fort Collins, Colorado)
- West Elk Coal Mine (Paonia, Colorado)
- State of Utah as subconsultant to Sear Brown Group
- United States Department of Energy and prime contractors at Rocky Flats Environmental Technology Site (Jefferson County, Colorado)
- Rocky Mountain Shambhala Center (near Red Feather Lakes, Colorado)
- University of Colorado
 –Boulder and City of Boulder (Colorado)
- Watershed Committee of the Ozarks (Springfield, Missouri)
- City and County of Denver (Colorado)
- Intrawest Resorts regarding Frostfire Wetlands (near Keystone, Colorado)
- Phillips Farm Residential/Commercial Development (Columbia, Missouri)

Expert Testimony

Qualified as expert witness in federal and state courts and in formal administrative and regulatory hearings for plaintiffs and defendants in the following areas from 1984 to the present:

- Stormwater Quantity and Quality Management (Construction and Post-Construction)
- · Water Classifications and Standards and NPDES Permitting
- Receiving Water Impact Analysis
- Public Health Implications of Standards Exceedances

- Surface Water and Groundwater Hydrology and Interrelationships
- Water Quality and Pollution Control (Surface Water and Groundwater)
- Flood Hazard Mitigation and Stormwater Quantity and Quality Management
- Municipal, Industrial and Agricultural Water Supply
- Water Rights/Water Supply/Water Demand/Basin Modeling
- Hydraulics
- Engineering Design and Cost Estimating
- Erosion and Sediment Control, Channel Stability, and Sediment Transport

INSTRUCTOR FOR PROFESSIONAL DEVELOPMENT COURSES, SEMINARS AND CONFERENCE WORKSHOPS

Conferences offered by the ASCE, Urban Watersheds Research Institute (UWRI), University of Wisconsin Extension Service, Continuing Legal Education, American Society of Landscape Architects (ASLA) and University of Colorado at Denver Department of Continuing Engineering Education. Subject matter addressed included:

- Overview of Environmental Laws
- Erosion and Sediment Control and Channel Stability
- Receiving Water Impacts of Pollutant Discharges and NPDES Permitting
- General Surface Water and Groundwater Quantity and Quality Issues
- Stormwater Quality Management
- Urban Hydrology
- Design of Urban Drainage Systems
- Hydrology and Hydraulics
- Floodplain Management
- Multipurpose Drainage Design
- Risk Assessment and Benefit/Cost Analysis

OTHER EXPERIENCE

U.S. Environmental Protection Agency, Washington, D.C., 1979 to 1981 (approximately 1/3 time while a college student.) Performed comparison of engineering and economic feasibility of land treatment with other forms of municipal wastewater treatment, including surface and subsurface contaminant transport. Prepared guidance for communities concerning acceptable application rates of municipal sludge from the standpoint of nitrate loading. Prepared guidance for communities concerning fee simple acquisition versus leasing of land required for land treatment wastewater systems. Prepared reports relating to "innovative and alternative" forms of wastewater treatment. Investigated reclamation of strip-mined areas in Pennsylvania utilizing domestic sludge as a fertilizer and soil conditioner. Assessed onsite wastewater treatment.

PROFESSIONAL ACTIVITIES

<u>Author</u> of Chapter 1, Evolution of Urban Stormwater Management, for the upcoming update of the ASCE/UWRRC Engineering *Manual of Practice No 77, Design and Construction of Urban Stormwater Management Systems*. 2022.

Member of the American Academy of Water Resources Engineers Bylaws Committee. 2022-present.

<u>Member</u> of Expert Panel for Great Lakes Water Authority regarding causes and mitigation approaches for flooding in Detroit, Michigan (Professor Glen Daigger, P.E., of University of Michigan, Chairman). 2021–2022.

<u>Engineering Reviewer and Advisor</u> on *Working Water: Reinventing the Storm Drain* by William Wenk, Wenk Associates Planners and Landscape Architects. 2020–2021.

<u>Vice Chair</u> of American Water Works Association Standards Committee that developed AWWA G560 Standard—Stormwater Management for Water Utilities. This standard was published in 2022. Chairman: Chi Ho Sham. 2018–present.

<u>Reviewer</u> of technical paper regarding construction site stormwater BMP practices published by *Journal* of *Irrigation and Drainage Engineering*. May 2021.

<u>Liaison</u> between the Association of State Dam Safety Officials and engineering faculty nationally on campaign to increase awareness and understanding of the risks posed by low head dams. 2021.

Panel Member on Florida Atlantic University 2021 Annual Environmental Science Retreat. April 2021.

Reviewer of "Engineering's Public-Protection Predicament," Stuart Walesh. 2021.

<u>Commencement Speaker</u> for the Department of Civil, Environmental and Architectural Engineering at the University of Colorado–Boulder. May 2020.

Member of the Task Committee and Reviewer of the update of Manual of Practice 77, Design and Construction of Urban Stormwater Management Systems. Urban Water Resources Research Council. 2020.

<u>Panel Member</u> on American Society for Civil Engineers Headquarters LID Parking Lot Retrofit Sustainability Leadership and Demonstration Project. 2020.

Member (2016–present) and Chair (2019–2023) of the American Academy of Water Resources Engineers Awards Committee, which evaluates nominees for three different categories of awards.

Annual <u>Guest Lecturer</u> for University of Colorado–Boulder Department of Civil, Environmental and Architectural Engineering "Senior Design" class. Lead Instructor: Professor Matthew Morris. 2012–2019, 2021–2022.

<u>Interviewee</u> (along with B. Jones) for Stewart, Brett. "The importance of teaching and learning fundamental skills" in *Communiqué*, AXA XL Newsletter. March 2020.

<u>Member</u> of the Board of Directors for the Green Infrastructure Center, Charlottesville, Virginia. May 2018–present.

Organizer, Moderator, and Presenter for a seminar on Overview of Water Quality Regulations and Compliance provided by the Urban Watersheds Research Institute, in Denver, Colorado. February 2017.

<u>Member</u> of Advisory Board and <u>Associate Editor</u> of *IMPACT* magazine, a publication of the American Water Resources Association (AWRA). Associate editor of multiple issues.

Member of Steering Committee for Colorado State University's Colorado Stormwater Center. 2017.

Member of Board of Directors, Urban Watersheds Research Institute, Denver, Colorado. 2006–2021.

<u>Chairman</u> of National Committee that prepared *Public Safety Guidance for Urban Stormwater Facilities* for the ASCE, APWA, National Association of Floodplain and Stormwater Management Agencies, Water Environment Foundation (WEF), ASLA, American Planning Association, and AWRA, 2012–2014.

<u>Member</u> of Board of Advisors, University of Colorado–Boulder, Department of Civil and Environmental Engineering, 2009–2013.

<u>Invited Member</u> of three-person panel on Stormwater Management Challenges, Annual Meeting of ASLA, Denver, November 2014.

<u>Member</u> of Expert Panel Regarding Santa Susana Field Laboratory Stormwater Runoff. Panel assesses stormwater runoff and water quality issues at an industrial site in Southern California that must meet strict numeric standards for multiple constituents, 2008–present.

<u>Reviewer</u> of Guidelines for Evaluating and Selecting Modifications to Existing Roadway Drainage Infrastructure to Improve Water Quality in Ultra-Urban Areas. National Cooperative Highway Research Program, Transportation Board, National Research Council, Washington, D.C., 2012.

<u>Invited Panelist</u> of Chesapeake Bay TMDL Urban Retrofit Innovation Roundtable: Next Generation LID/GI Technology and Financing Solutions: The National Experience. Sponsored by EPA Region III and LID Center, Inc., and chaired by Mr. Larry Coffman in Annapolis, Maryland, April 21–22, 2012.

Reviewer of *Pathogens in Urban Stormwater Systems* prepared by Urban Water Resources Research Council Pathogens in Wet Weather Flows Technical Committee, Environmental and Water Resources Institute, ASCE, August 2014.

Member of blue-ribbon panel that reviewed the WEF/ASCE Manual of Practice 87 Design of Urban Stormwater Controls, 2011.

<u>Member</u> of Board of Directors of American Academy of Water Resources Engineers, three-year term, October 1, 2007–September 30, 2010.

<u>Member</u> (appointed by the Governor of Colorado) of the Cherry Creek Basin Water Quality Authority Board of Directors from 2006 to 2010. Testimony before the Colorado Water Quality Control Commission on behalf of the Authority Board regarding adjustments to existing water quality standards in Cherry Creek Reservoir, 2010.

Reviewer of the guidance manual *Urban Stormwater BMP Performance Monitoring* for EPA, WE&RF Federal Highway Administration and Environmental and Water Resources Institute of ASCE, published October 2009 and available on the website of the International BMP Database.

<u>Chapter Writer</u> of *Colorado Floodplain and Stormwater Criteria Manual*, published by the Colorado Water Conservation Board, 2008.

<u>Editor</u> of *Great Works on Urban Water Resources (1962–2001)*, published by ASCE and Environmental and Water Resources Institute, 2006.

Reviewer for the guidance manual *Urban Stormwater BMP Performance Monitoring* for EPA, WE&RF Federal Highway Administration and Environmental and Water Resources Institute of ASCE, published October 2009 and available on the website of the International BMP Database (www.bmpdatabase.org).

Invited Reviewer for the Journal of Hydrology, 2006.

<u>Conference Chairman</u> of *Experiences with Urban Stormwater BMPs in Colorado* Cosponsored by Denver UDFCD and CASFM, April 9, 2003.

<u>Cochairman</u> of the Conference: *Linking Stormwater BMP Designs and Performance to Receiving Water Impact Mitigation*, Snowmass Village, Colorado, sponsored by the United Engineering Foundation, Environmental and Water Resources Institute of ASCE and EPA. (Proceedings available from ASCE, Reston, Virginia), August 2001.

<u>Advisory Committee Member</u> to the University of Virginia and Colorado State University Departments of Civil and Environmental Engineering.

<u>Member</u> of the research team conducting a study for the WE&RF titled Protocol for *Wet Weather Effect Assessment and Technology Performance Evaluation*, 1999.

<u>Member</u> of Conference Organizing Committee for the 1998 ASCE symposia in Chicago, Illinois, Coordination: Water Resources and Environment and Water Resources: A New Era for Coordination.

<u>Coauthor</u> of policy statement that emerged from symposia, which was signed by approximately 15 senior members of ASCE regarding National Water Resources Policy, titled *A New Approach to Coordination of Water Development and Environmental Regulations*. Published by AWRA, 1999.

<u>Technical Reviewer</u> of Chapter 8 Engineering (Codes, Standards, Practices, Control, and Protection Works), in the *Final Report of the Second National Assessment of Research Needs in Natural Disasters*. Published by the National Science Foundation, 1998.

Contributing Author of the reference *Urban Runoff Quality Management*, published by WE&RF and ASCE (WE&RF MOP No. 23 and ASCE MOP No. 87), 1998.

<u>Invited Member</u> of Technical Review Committee for the Land and Water Fund Stormwater facility construction project in Boulder, Colorado (1 of 25 national pilot projects selected by the National Geographic Society), 1997–1998.

<u>Instructor</u> at the WE&RF Workshop on Research Needs in Urban Stormwater on October 5, 1996, at the Annual Meeting of the WEF in Dallas, Texas, June 1997.

<u>Invited Instructor</u> for the Emerging Trends in Stormwater Quality Workshop at the National Precast Concrete Association Annual Convention in Denver, Colorado, February 1997.

<u>Presenter</u> at Town of Snowmass Village Seminar on Sediment and Erosion Control Techniques and Regulatory Requirements at the Snowmass Village Conference Center, October 10, 1996.

<u>Member</u> of the research team selected by the EPA to prepare the *Guidance Manual for Integrated Wet Weather Flow Collection and Treatment Systems for Newly Urbanized Areas.* Project directed by Dr. James Heaney with the University of Colorado, Boulder, 1998.

Reviewer of submittals to the WE&RF publication titled Water Environment Research (1997–1999).

<u>Chairman and Principal Author</u> of the ASCE and WEF Manual of Practice for the Design and Construction of Urban Stormwater Management Systems (ASCE MOP No. 77). A Task Committee of approximately 100 engineers from around the United States and Canada prepared this document (724 pages), which was jointly published by ASCE and WEF, 1992.

<u>Chairman</u> of the ASCE Urban Water Resources Research Council (1992 to 1996) and Secretary of Council, 1989–1992. Also, <u>member</u> of Special Committee (four members) of ASCE Water Resources Planning and Management Division to evaluate the future role of this Division, given ASCE's 1996 Strategic Plan for the future.

<u>Reviewer</u> of the McGraw–Hill *Handbook of Hydrology*; David R. Maidment, Principal Editor, published by McGraw–Hill, 1993.

<u>Reviewer</u> for WE&RF and ASCE of various draft technical and policy documents prepared by the EPA and USACE, early to mid-1990s.

<u>Invited Reviewer</u> of draft EPA document titled Wet Weather Research Plan (invited by the EPA), through the ASCE Urban Water Resources Research Council, August 1996.

<u>Session Chairman and Conference Co-organizer</u> of Effects of Watershed Development and Management on Aquatic Ecosystems with cosponsors ASCE, Engineering Foundation, and EPA (including financial support) held at the Snowbird Resort in Utah, August 4–9, 1996.

<u>Conference Organizing Committee Member and Session Chair</u> of Effects of Watershed Development and Management on Aquatic Ecosystems, funded by the EPA, APWA, and United Engineering Foundation, Snowbird, Utah, 1996.

<u>Chairman</u> of the Planners, Engineers and Waterways Conference sponsored by ASCE, AWRA, American Water Works Association, Colorado Division of Wildlife, ASLA, APWA, UDFCD, Denver Regional Council of Governments, and other organizations, Denver, Colorado, February 1996.

<u>Reviewer</u> of *Greenways*, *A Guide to Planning, Design and Development*. By C.A. Flink and R. M. Searns and published by the Conservation Fund, 1995.

<u>Reviewer</u> of USACE *Handbook for Stormwater Pollution Prevention Plans* at the request of the Civil Engineering Research Foundation in 1995.

<u>Presenter</u> of Seminar on *Stormwater-Related NPDES Permitting and its Relationship to Comprehensive Stormwater Management* at the Annual Meeting of the ASLA, San Antonio, Texas, October 1994.

<u>Session Chairman</u> of *Stormwater NPDES Related Monitoring Needs*. Conference sponsored by the EPA, Engineering Foundation, and ASCE in Crested Butte, Colorado, August 1994.

<u>Chairman</u> of a national conference titled *National Water Resources Regulation—Where Is the Pendulum Now?* sponsored by ASCE, American Bar Association (ABA), EPA, U.S. Geological Survey, USACE, AWRA, American Geophysical Union, APWA and others, held in Washington, D.C., January 31–February 1, 1994.

<u>Liaison</u> between the ASCE Urban Water Resources Research Council and ASCE's Water Resources Planning and Management Division for the organization of the Annual Meeting of the ASCE Water Resources Planning & Management Division in Seattle, Washington, May 1993.

Reviewer for the Irrigation and Drainage Engineering journal published by ASCE, 1991–1994.

<u>Conference Cochairman</u> of the *Effects of Urban Runoff on Receiving Systems: An Interdisciplinary Analysis of Impacts, Monitoring and Management*, Mount Crested Butte, Colorado. Sponsored by the Engineering Foundation, American Association of Civil Engineers (ASCE) and Water Pollution Control Federation (WPCF) with speaker funding provided by EPA, August 4–9, 1991

<u>Program Cochairman</u> of Colorado Environmental Regulation—Where Is the Pendulum Now? Two-day conference in Denver, Colorado, sponsored by the Colorado Bar Association, ASCE, APWA, AWRA, Water Pollution Control Agency, Central Ground Water Authority, CHWS, and Urban Drainage and Flood Control District, April 24–25, 1991.

<u>Invited Engineering Consultant</u> to provide verbal and written presentation titled Technical and Engineering Aspects of EPA Stormwater NPDES Regulations prepared for the Utility Water Act Group, a consortium of American Electrical Power Companies, February 1991.

Technical Reviewer for Van Nostrand Reinhold Publishing Company, New York, 1991.

<u>Control Group Member</u> of the ASCE Task Committee to Evaluate Impacts to Aquatic Life Forms Posed by Urban Runoff Pollution, 1990–1991.

Advisor to the WEF and ASCE on Continuing Engineering Education Programs, 1989–1991.

Technical Reviewer for Prentice-Hall, 1990.

<u>Consultant</u> to State of Colorado Board of Registration for Professional Engineers and Land Surveyors for the investigation of professional practice charges against professional engineers, late 1980s.

<u>Program Chairman</u> of the Denver Metropolitan Area Urban Runoff Quality Conference held at the Stapleton Airport Holiday Inn (cosponsored by ASCE, APWA, AWRA, and Denver Urban Drainage and Flood Control District, October 1988.

Member, Conference Organizing Committee and Session Chairman of the ASCE and Engineering Foundation EPA Conference on Urban Runoff Quality Mitigation Measures held at Trout Lodge in Potosi, Missouri, July 1988.

<u>Reviewer</u> of professional papers for the ASCE *Journal of Water Resources Planning and Management Division*, 1986 and 1987.

<u>Session Chairman</u> of the ASCE/Engineering Foundation/EPA Conference: Urban Runoff Quality: Its Impacts, Quality and Enhancement. Henniker, New Hampshire, 1986.

AWARDS

<u>2022 EWRI Lifetime Achievement Award</u> presented at the World Environmental and Water Resources Congress in Atlanta, Georgia, June 5–8, 2022.

<u>2022 EWRI UWRRC Founders Award</u> presented at the World Environmental and Water Resources Congress in Atlanta, Georgia, June 5–8, 2022.

<u>2018 Outstanding Stormwater Research Project Award</u> from the California Stormwater Quality Association for the International Stormwater BMP Database.

<u>2013 Outstanding Stormwater BMP Implementation Award</u> from the California Stormwater Quality Association for a biofilter system at the Santa Susana Field Laboratory (SSFL) site in Ventura County to the SSFL Surface Water Expert Panel (of which Mr. Jones is a member), Geosyntec Consultants, Inc., and The Boeing Company.

<u>2011 Honor Award for Planning</u> from the Colorado Chapter of the ASLA for WWE's work with Design Studios West on the Smoky Hill River Renewal Master Plan.

<u>2007 Land Stewardship Award</u> and the <u>2007 President's Award of Excellence in Design</u> from the Colorado Chapter of the ASLA for WWE's work with Design Studios West on the Estes Park Riverwalk.

<u>2006 Engineering Excellence Honor Award</u> from the American Consulting Engineers Council of Nebraska for the urban drainage study WWE performed for the City of Lincoln, Nebraska as a subconsultant to JEO Consulting Group along with Black & Veatch and the Heartland Center for Leadership Development.

<u>2005 Award for Outstanding Service</u> from the Environmental and Water Resources Institute Urban Water Resources Research Council.

<u>2003 ASCE State-of-the-Art Civil Engineering Award</u> for development of the EPA/ASCE International Stormwater BMP Database. Corecipients Eric Strecker, P.E., Geosyntec, and Ben Urbonas, P.E., UDFCD.

Corporate and Staff Awards for Wright Water Engineers, Inc. Chief Executive Officer and major owner of WWE, which has received various awards including the 1996 Colorado Ethics in Business Award, 1999 Society of Financial Professionals National Ethics Award and project and staff awards from such organizations as the American Consulting Engineers Council, CASFM, and CDPHE. (See WWE website www.wrightwater.com] for more information.)

<u>Honorary Member of Chi Epsilon</u>, inducted December 4, 2013. Nominated jointly by the University of Virginia and the University of Colorado.

REPRESENTATIVE PRESENTATIONS

<u>Presenter</u> on 2022 International Stormwater BMP Database Status Update with copresenter Jane Clary, 2022 EWRI World Congress Meeting, Atlanta, Georgia, June 2022.

<u>Presenter</u> on Engaging and Working with Experts at Natural Resource and Energy Litigation conference hosted by the Foundation for Natural Resources and Energy Law in Santa Fe, New Mexico. May 5–6, 2022.

<u>Coauthor</u> of Use of the State Department of Transportation Portal to the International Stormwater BMP Database with copresenters Marc Leisenring, Paul Hobson, Daniel Pankani, Lucas Ngyuen, Jane Clary, Haley Rogers, and Eric Strecker. Prepared for AASHTO Committee on Environment and Sustainability as part of NCHRP Project 25-25, Task 120, National Cooperative Highway Research Program. March 2020.

<u>Coauthor</u> of International Stormwater BMP Database: WRF Lunch and Learn with copresenters Harry Zhang, P.E. Ph.D., Jane Clary, Marc Leisenring, P.E., and Eric Strecker, P.E. Water Research Foundation. September 2018.

<u>Presenter</u> of Engineering and Scientific Approaches for Evaluating the Relative Permanence of a Hydrologic Connection with copresenters Noah Greenberg and Natalie Phares at Annual Meeting of Society of Wetland Scientists. May 31, 2018.

<u>Invited Presenter</u> of Case Studies of Public–Private Partnerships Around the United States at Kansas City Water Congress Annual Meeting. February 6, 2018.

<u>Coauthor</u> of Summary of EWRI Public Safety Guidance for Urban Stormwater Facilities with copresenters Charles Rowney, P.Eng, and Ben Urbonas, P.E., at EWRI Operation & Maintenance of Stormwater Control Measures Specialty Conference. November 7, 2017.

<u>Coauthor</u> of Considerations for Evaluations of *Relatively Permanent* Water Status. Presented by coworkers Natalie Phares and Noah Greenberg at Annual USEPA Region 8 Wetlands Conference. October 3–5, 2017.

<u>Coauthor</u> of Low Impact Development Retrofit after 20 Years at a Boulder, Colorado, Office Building. Presented by coauthor Natalie Phares at Colorado Association of State Floodplain Managers 2017 Annual Conference, Breckenridge Colorado. September 20, 2017.

<u>Coauthor</u> of International Stormwater BMP Database New Tools for a Long-Term Resource with copresenters Jane Clary, Eric Strecker, P.E., Marc Leisenring, P.E., and Harry Zhang, P.E., Ph.D. May 2017.

Integrated Stormwater Management for Highway and Transportation Sector: Database and Modeling Tools, Part 1: International Stormwater BMP Database: What's in it for DOTs? with copresenters Jane Clary, Marc Leisenring, P.E., Eric Strecker, P.E., and Harry Zhang, P.E., Ph.D. April 2017.

<u>Coauthor</u> of International Stormwater BMP Database: New Tools for a Long-term Resource, Great Lakes and St. Lawrence Green Infrastructure Conference, Integrated Stormwater Management from Duluth to Quebec with copresenters Jane Clary, Marc Leisenring, P.E., Eric Strecker, P.E., and Harry Zhang, P.E., Ph.D. Detroit, Michigan. March 2017.

<u>Coauthor</u> of Stream Restoration Crediting Guidance and Database. Water Environment & Reuse Foundation Webinar with copresenters Brian Bledsoe, P.E., Ph.D., Rod Lammers, Jane Clary, Marc Leisenring, P.E., Eric Strecker, P.E., Scott Struck, Ph.D., and Adam McGuire. October 26, 2016.

<u>Coauthor</u> of Urban Stormwater BMP Database Tools and Performance Analysis Findings. WEF Technical Conference (WEFTEC), New Orleans, Louisiana with copresenters Eric Strecker, P.E., Marc Leisenring, P.E., and Jane Clary. September 27, 2016.

<u>Coauthor</u> of Agricultural BMP Database: Initial Performance Findings. WEFTEC, New Orleans, Louisiana with copresenters Jane Clary, Eric Strecker, P.E., and Marc Leisenring, P.E. September 27, 2016.

<u>Coauthor</u> of Development of a Stream Restoration Practices Database: Initial Progress. WEFTEC, New Orleans, Louisiana with copresenters Brian Bledsoe, P.E., Ph.D., Eric Strecker, P.E., Scott Struck, Ph.D., Marc Leisenring, P.E., Jane Clary, Rod Lammers, and Adam McGuire. September 27, 2016.

<u>Coauthor</u> of the Agricultural BMP Database—A Growing Repository of Field Performance Data. EWRI 10th International Drainage Symposium, Minneapolis, Minnesota with copresenters Marc Leisenring, P.E., Eric Strecker, P.E., and Jane Clary. September 9, 2016.

<u>Coauthor</u> of International Stormwater BMP Database 20 Years Later: Developing a Centralized Resource for BMP Performance. EWRI Annual Congress, West Palm Beach, Florida with copresenters Jane Clary, Eric Strecker, P.E., Scott Struck, Ph.D., Marc Leisenring, P.E., Adam McGuire, Brian Bledsoe, P.E., Ph.D., Rod Lammers, Robert Pitt, P.E., Ph.D., and Alex Maestre, P.E., Ph.D. May 2016.

<u>Presenter</u> on the Agricultural BMP Database and its Application to Watershed Management Plans. Nebraska Water Resources Association Monthly Roundtable Meeting, Lincoln, Nebraska with copresenter Adam Rupe of JEO Consulting Group. February 10, 2016.

<u>Coauthor</u> of Making the Most of National Water Quality and BMP Performance Databases as Tools to Address Nutrient Challenges: Urban Stormwater BMP Database. AWRA Annual Conference, Special Session 107, Denver, Colorado with copresenters Eric Strecker, P.E., Marc Leisenring, P.E., and Jane Clary. November 16–19, 2015.

<u>Coauthor</u> of Stream Restoration: A New BMP Database Module That May Support Water Quality Crediting. AWRA Annual Conference, Special Session 107, Denver, Colorado with copresenters Brian Bledsoe, P.E., Ph.D., Eric Strecker, P.E., Scott Struck, Ph.D., Marc Leisenring, P.E., Jane Clary and Rod Lammers. November 16–19, 2015.

<u>Presenter</u> on Water Quality Forum: Nutrient Trading—Recent Additions to the *International Stormwater BMP Database* that will Facilitate Trading. 60th Annual Midwest Groundwater Conference in Bentonville, Arkansas. October 13–15, 2015.

<u>Presenter</u> on Results of the Recharge Area Study—Cave Springs Cave, Arkansas with copresenters Tom Aley (Ozark Underground Laboratory) and Tom Hopper (Crafton Tull). 60th Annual Midwest Groundwater Conference in Bentonville, Arkansas. October 13–15, 2015.

<u>Coauthor</u> of Stormwater BMP Performance: What Every Landscape Architect Should Know. Annual Meeting and Expo of the American Association of Landscape Architects, Denver, Colorado, with copresenters Heather Whitlow (Landscape Architecture Foundation), Bill Wenk (FASLA, Wenk Associates), and Jason Berner (EPA). November 21–24, 2014.

<u>Coauthor</u> of Developing a Consolidated Resource for Agricultural BMP Performance. Association of Clean Water Administration and the State of Iowa (with Support from the EPA) Confined Animal Feeding Operation National Roundtable, Des Moines, Iowa, with copresenters Theresa Conner (WE&RF), Jane Clary (WWE), and Eric Strecker and Marc Leisenring (Geosyntec Consultants). October 7–9, 2014.

<u>Presenter</u> at Colorado Intergovernmental Risk Sharing Agency and Wright Water Engineers, Inc., 2013 Colorado Flood Seminar, Conclusions and Lessons Learned. November 19, 2013.

<u>Member of Panel</u> on Governmental and Business Land Use Development at the Restoration of Our Rivers Conference of the Illinois River Watershed Partnership, Bentonville, Arkansas. October 3, 2013.

<u>Presenter</u> at A Watershed Event conference at the Watershed Committee of the Ozarks, Springfield, Missouri. The Economic Benefits of River Restoration with Don Brandes of Matrix Design Group. October 2, 2013.

<u>Presenter</u> to the University of Colorado Department of Civil, Architectural, and Environmental Engineering faculty regarding future trends in the workplace related to engineering graduates and what qualities employers are seeking in engineering graduates. May 14, 2013.

<u>Coauthor</u> of seminar at the World Environmental and Water Resources Congress, Showcasing the Future, Cincinnati, Ohio. One-half day seminar on Effective Use of the International Stormwater BMP Database with copresenters Jane Clary, Andrew Earles, Eric Strecker, Marcus Quigley, Marc Leisenring, and Aaron Poresky. May 20–22, 2013.

<u>Presenter</u> at the 8th Annual WE&RF Research Forum, Stormwater BMP Performance: A Summary of Current Knowledge, at the Chicago Hilton, with Eric Strecker. January 29–30, 2013.

<u>Coauthor</u> of paper presented at the 8th Annual Conference of the California Stormwater Quality Association, Solving the Stormwater Compliance Puzzle, at the Hilton San Diego at Mission Bay, Adaptive Stormwater Management at an Industrial Site with Numeric Effluent Limits: Santa Susana Site, with Brandon Steets, P.E., and Megan Otto, P.E., of Geosyntec Consultants and Robert Pitt, Ph.D., P.E., BCEE, D.WRE, University of Alabama. November 5–7, 2012.

<u>Presenter</u> at The Restoration of Our Rivers: A National and Regional Perspective on Urban Stormwater, sponsored by the Illinois River Watershed Partnership, Crystal Bridges Museum, Bentonville, Arkansas, Urban Stormwater and Riverfront Restoration, with Donald H. Brandes, Jr., RLA, Vice President, Matrix Design Group, Inc., and Northwest Arkansas Water Quality Issues—Past and Emerging Environmental and Engineering Issues. Regional Case Study: City of Rogers, Arkansas with Tom Hopper, Chairman of the Board, Crafton Tull. October 3–4, 2012.

<u>Presenter</u> at Current Issues in Storm Water Management at Lorman Education Services in Denver, Colorado. June 13, 2012 and February 29, 2008.

<u>Presenter</u> at New Storm Water Regulations and Techniques seminar at the Georgia Institute of Technology (Georgia Tech) sponsored by the Georgia Tech Hispanic Alumni Network and the Georgia Tech Water Alliance. April 16, 2012.

<u>Presenter</u> at Rocky Mountain Land Use Institute, The Wilderness City: Nature, Culture and Economy in the Next West, Annual Conference. The Economic Development of River Restoration. Presented with Donald Brandes of Design Studios West and Thomas Martin of ConsultEcon, Inc. March 1–2, 2012.

<u>Presenter/Panel Member</u> of Managing Fecal Coliform Conference: Science and Solutions to Regulatory Challenges. Washington Stormwater Center. Member of Interactive Panel: Techniques, Design, Equipment, Caveats, and Pitfalls. Puyallup, Washington. October 20, 2011.

<u>Presenter</u> of Stormwater Treatment Planning for an Industrial Permit with Numeric Limits. California Stormwater Quality Association (<u>www.casqa.org</u>) 7th Annual Stormwater Conference in Monterey, California. Presentation was given with Brandon Steets, P.E., of Geosyntec, Robert Pitt, Ph.D., P.E., of the University of Alabama, and Michael Stenstrom, Ph.D., P.E., of UCLA and included a Panel question and answer session regarding stormwater control planning for site with numeric action limits/numeric effluent limits. September 26–28, 2011.

<u>Presenter</u> for Santa Susana Field Laboratory Expert Panel. Presentations at multiple public meetings and Los Angeles Region Water Quality Board hearings from 2009 through 2014 in Ventura County, California. Also presentations on Panel activities and advanced stormwater management practices at annual meetings of California Association of Stormwater Quality Agencies (CASQA). 2011 and 2012.

<u>Guest Lecturer</u> for University of Colorado–Boulder, Department of Civil and Environmental Engineering, Senior Design Class. 2010 and 2011.

<u>Guest Speaker</u> for University of Colorado–Boulder, Student Chapter of ASCE. From School to Work. February 7, 2011.

<u>Presenter</u> at WE&RF Green Infrastructure Webcast. Quantifying Performance, Costs, and Multiple Benefits. December 7, 2010.

<u>Seminar</u> at UCLA Rocky Flats Environmental Test Site Closure Approach, seminar for graduate and undergraduate students and faculty of the Department of Civil and Environmental Engineering. November 30, 2010.

<u>Speaker</u> at the meeting of the Kansas City Chapter of APWA, Emerging Trends in Water Resources. July 15, 2009.

<u>Presenter</u> at the 2009 ASLA Colorado Spring Conference: Tools for Change, Keeping It Clean Trends in Water Resources at the University of Denver. May 15, 2009.

<u>Speaker</u> on Interstate Water Supply/Quality Conflicts and Consensus at the conference, Our Water Future: A Regional View—Sharing Information, Exchanging Ideas, sponsored by the Tri-State Water Coalition, Missouri State University and the Watershed Committee of the Ozarks, Joplin, Missouri. September 11–12, 2008.

<u>Speaker</u> at American Ecological Engineering Society Conference on Urban Stormwater Quality Management: Contemporary Issues at Beyond Wetlands: Engineering the Landscape. Conference of the American Ecological Engineering Society, Virginia Polytechnic Institute and State University, Blacksburg, Virginia. June 11, 2008.

<u>Keynote Speaker</u> at the Missouri Floodplain and Stormwater Managers Association conference, Lake of Ozarks, Missouri. April 8, 2008.

<u>Presenter</u> at EPA BMP Performance Webcast (webcast slides can be downloaded from EPA Stormwater NPDES Permit website). February 6, 2008.

<u>Presenter</u> at Seminar on Emerging Issues in Water Resources Engineering, EPA Research Laboratory, Edison, New Jersey. January 31, 2008.

<u>Presenter</u> on Positive Signs for American Watersheds in 2005, at the meeting of AWRA in Tucson, Arizona, regarding National Water Policy Dialogue, with copresenter Jane Clary. February 2005.

<u>Presenter</u> on Overview of Volumes 1 and 2 of the June 2001 Urban Storm Drainage Criteria Manual. Annual Meeting of the Colorado Association of Stormwater and Floodplain Managers (CASFM), Steamboat Springs, Colorado, with copresenter Ken MacKenzie. September 2001.

<u>Presenter</u> on Best Management Practices for Development Projects in the Rocky Mountains at the Inaugural Session of the Water Congress of the ASCE Environmental and Water Resources Institute, Orlando, Florida, Washington, D.C., with copresenter T. Andrew Earles. May 20–24, 2000.

<u>Coauthor</u> of Case Studies of Local Strategies for Control of Non-Point Source Pollution in Colorado (USA), NATO Advanced Research Workshop on Source Controls, St. Marienthal, Germany, with coauthors T. Andrew Earles and Wayne F. Lorenz. November 8–12, 2000.

<u>Presenter</u> on Development of National Stormwater BMP Database. Southeast Stormwater Manager's Conference, Orlando, Florida, with coauthors Jane Clary, John O'Brien, Ben Urbonas, Eric Strecker, and Marcus Quigley. June 28, 2000.

<u>Presenter</u> on Western United States Water Rights, at Watershed '99—Watershed Management Policy, Science and Technology, a forum at the Doubletree Hotel, Charlottesville, Virginia, sponsored by the University of Virginia School of Engineering and Applied Science and National Taipei University of Technology, Taiwan, ROC, cosponsored by EPA Office of International Activities, National Taiwan University and Overseas Chinese Environmental Engineers and Scientists Association. April 8–9, 1999.

<u>Presenter</u> on Overview of Stormwater Quantity and Quality Management—Regulatory and Engineering Considerations at the ASLA—Colorado Section Annual Meeting, Vail, Colorado. September 1994.

<u>Presenter</u> of Citizen Initiatives from Around the United States to Protect Water Resources, luncheon talk prepared for the Annual Meeting of the Watershed Committee of the Ozarks, Springfield, Missouri. July 1993.

<u>Presenter</u> on Colorado Environmental Regulation: Where Is the Pendulum Now? Introduction and Perspective. Colorado Environmental Regulation: Where Is the Pendulum Now? Symposium sponsored by the APWA, ASCE, and others, Denver, Colorado. April 24–25, 1991.

<u>Presenter</u> of Overview of a Potential Water Quality-Monitoring Program for the Colorado Ski Industry. Workshop of the Colorado Ski Country and U.S. Forest Service, Snowmass, Colorado with copresenter C.H. Hendricks. June 1983.

<u>Presenter</u> on The Implications of Altering Selected Regulations of the United States Environmental Protection Agency Pertaining to Land Treatment of Wastewater and Land Application of Sludge, at Virginia Section of the Water Pollution Control Federation, Natural Bridge, Virginia. April 1981.

<u>Presenter</u> on Is There a Future for Innovative and Alternative Technology in Wastewater Treatment? at Virginia Section ASCE Annual Conference, Old Dominion University, Virginia. May 1980.

PUBLICATIONS

- (Note: Some of the publications described in this section were presented at conferences.)
 - Pitt, R., M. Colyar, J. Wokurka, A. Questad, S. Isaac, B. Steets, R. Gearheart, J. Jones, M. Josselyn, and M. Stenstrom, 2024a. Monitoring Trends of Regulated Outfall Water Quality over Twenty-Five Years at a Historical Industrial Site; Part 1: Diverse Set of Site Management and Stormwater Controls. Submitted.
 - Pitt, R., M. Colyar, J. Wokurka, A. Questad, S. Isaac, B. Steets, R. Gearheart, J. Jones, M. Josselyn, and M. Stenstrom, 2024b. Monitoring Trends of Regulated Outfall Water Quality over Twenty-Five Years at a Historical Industrial Site; Part 2: Outfall Stormwater Quality Improvements in Response to Site Changes and Controls. Submitted.
 - Pitt, R., Otto, M., Questad, A., Isaac, S., Colyar, M., Steets, B., Gearheart, R., Jones, J., Josselyn, M., Stenstrom, M.K. and Costa, P., 2022. Performance Changes during Long-Term Monitoring of Full-Scale Media Filter Stormwater Controls at an Industrial Site. *Journal of Sustainable Water in the Built Environment*, 8(1), p.04021019.
 - Sham, C.H., J.E. Jones, H.M. Rogers, S.F. Kribs, N. Grigg, F. Kurtz, and G. Conley. 2022. A New Standard: AWWA Develops Its First Stormwater Management Standard. *Stormwater*, Fall.
 - Bledsoe, B., R. Lammers, J.E. Jones, J.K. Clary, A. Earles, M. Leisenring, S. Struck, and E. Strecker. 2022. Stream Restoration as a BMP: Crediting Guidance. Water Research Foundation. Project No. 5057.
 - Pitt, R., M. Otto, A. Questad, S. Isaac, M. Colyar, B. Steets, R. Gearheart, J. Jones, M. Josselyn, M. Stenstrom, S. Clark, and J. Wokurka. 2021. Laboratory Media Test Comparisons to Long-term Performance of Biofilter and Media Filter Treatment-train Stormwater Controls. *Journal of Sustainable Water in the Built Environment*, 7(4): 04021015.
 - Pitt, R., M. Otto, A. Questad, S. Isaac, M. Colyar, B. Steets, R. Gearheart, J. Jones, M. Josselyn, M. Stenstrom, S. Clark, P. Costa, and J. Wokurka. 2020. Can Laboratory Column Studies Really Predict Field-scale BMP Performance? A Comparison of 10 Years of Field-scale Performance Data with Original Bench-Scale Test Results. California Stormwater Quality Association Conference. September.
 - Bodine, E., J.E. Jones, T. Downing, J. Miriovsky, and L. Jha. 2020. The Engineering Basics of Planning, Designing & Constructing Singletrack Bike Trails. *APWA Reporter*. Vol. 87, No. 7. July.
 - Jones, J.E., J.K. Clary, E. Strecker, M. Leisenring, and H. Zhang. 2019. International Stormwater Database Technical Paper. *AIH Bulletin*. Vol. 35, No. 1. Summer.
 - Jones, J.E., J.K. Clary, E. Strecker, M. Leisenring, and H. Zhang. 2019. International Stormwater Database 2019 Update. *EWRI Currents*. Vol. 21, No. 2. Spring.
 - Jones, J.E., N. Phares, W. Wenk, J. Figueroa, M. Figurski, and E. Barnes. 2018. 20 Year Engineering Assessment of LID Facility in Boulder, Colorado. *Stormwater Magazine*. January/February.
 - Tillack, S., J.E. Jones, M. Shoulders, and R. Merry. 2017. Adam's Rib Water Quality Monitoring and Mitigation Plan in Eagle, Colorado. *Proceedings of Colorado Association of Stormwater and Floodplain Managers Annual Conference*, September 19–21. Denver, Colorado.

- Leisenring, M., J.K. Clary, B. Bledsoe, R. Lammers, E. Strecker, and J.E. Jones. 2017. Stream Restoration as a BMP: Development of a National Performance Database and Crediting Guidance. *Proceedings of the Water Environment Federation Technical Exhibition and Conference (WEFTEC)*, September 30–October 4, Chicago, Illinois.
- Clary, J., Jones, J.E., Strecker, E., and Leisenring, M., Zhang, H. 2017. International Stormwater BMP Database: New Tools for a Long-Term Resource, WEFTEC, Chicago, Illinois. October 2.
- Bledsoe, B., R. Lammers, J.E. Jones, J.K. Clary, E. Strecker, and M. Leisenring. 2017. Stream Restoration BMP Database: Version 1.0 Summary Report. WE&RF.
- Bledsoe, B., R. Lammers, J.E. Jones, J.K. Clary, A. Earles, E. Strecker, M. Leisenring, S. Struck, and A. McGuire. 2016. Stream Restoration as a BMP: Crediting Guidance. Water Environment & Reuse Foundation: WERF1T13.
- Leisenring, M., J.K. Clary, E. Strecker, and J.E. Jones. 2016. The Agricultural BMP Database—A Growing Repository of Field Performance Data. *Proceedings of 10th International Drainage Symposium*, University of Minnesota Water Resources Center, American Society of Agricultural and Biological Engineers, Minneapolis, Minnesota. September.
- Jones, J.E. 2016. Introduction. *Impact Magazine—Drought: Response, Adaptation and Long Term Planning in a Changing Environment.* Vol. 18, No. 2, March. American Water Works Association.
- Clary, J.K. and J.E. Jones. 2015. Developing a Consolidated Resource for BMP Performance Studies. *World Water: Stormwater Management*. Vol. 3, Issue 3, June/July.
- Jones, J.E. 2015. Introduction. *Impact Magazine—Water and Energy Resource Development.* Vol. 17, No. 2. American Water Works Association. March.
- Jones, J.E., Editor and Chair, Task Committee for Public Safety for Urban Stormwater Management Facilities. 2014. *Public Safety Guidance for Urban Stormwater Facilities*. B.R. Urbonas, P.E., D.WRE, Vice-chair, and A.C. Rowney, Ph.D., P.Eng, D.WRE, Secretary. Sponsored by ASCE/Environmental Water Resources Institute (EWRI) (led by the Urban Water Resources Research Council); WEF; National Association of Flood & Stormwater Management Agencies; APWA; AWRA; and American Planning Association. ASCE Press: Reston, Virginia.
- Clary, J.K., E. Strecker, J.E. Jones, and M. Leisenring. 2014. Developing a Centralized Resource for Agricultural BMP Performance. *Proceedings of World Environmental & Water Resources Congress*. Portland, Oregon. June.
- Jones, J.E., B.R. Urbonas, and A.C. Rowney. 2014. New Guidance from EWRI Protecting Public Safety at Urban Water Facilities. *EWRI Currents*. Vol. 16, No. 1. Winter.
- Clary, J., J.E. Jones, M. Leisenring and E. Strecker. 2014. Enhancements to the International BMP Database. *APWA Reporter*. Vol. 81, No. 2. February.
- Jones, J.E. 2014. Potential Factors Affecting Agricultural Water Resources Management. *Water Resources IMPACT*. Vol. 16, No. 1. January.
- Urban Drainage and Flood Control District and Wright Water Engineers, Inc. 2014. A September to Remember: The 2013 Colorado Flood within the Urban Drainage and Flood Control District. CreateSpace Independent Publishing Platform. Aug 26.
- Earles, A., J.E. Jones, S. Tillack, K. Wright, and K. MacKenzie. 2013. Denver Metropolitan Area Fares Well During Severe Precipitation Event in September 2013. *Flood Hazard News*. Urban Drainage and Flood Control District; Denver. Vol. 43, No 1. December.

- Otto, M., P. Hobson, R. Kampalath, B. Steets, R. Pitt, J.E. Jones, M. Stenstrom, R. Gearheart, M. Josselyn, and D. Taege. 2013. A New Statistical Methodology. *Stormwater*. Vol. 14, No. 6. September.
- Jones, J.E., A.C. Rowney, and B.R. Urbonas. 2013. Public Safety at Stormwater Management Facilities. *The Stormwater Report.* Vol. 3, No. 5. May 2. http://stormwater.wef.org/2013/05/public-safety-at-stormwater-management-facilities/.
- Clary, J., B. Steets, J.E. Jones, E. Strecker, and M. Leisenring. 2012. Fecal Indicator Bacteria Reduction in Urban Runoff: Updates from the BMP Database and Lessons Learned from TMDL Implementation. *Stormwater.* Vol. 13, No. 7. October.
- Jones, J.E., J. Clary, E. Strecker, M. Quigley, and J. Moeller. 2012. BMP Effectiveness for Nutrients, Bacteria, Solids, Metals, and Runoff Volume: *International Stormwater BMP Database* Reaches the 500-BMP Milestone. *Stormwater*. Vol. 13, No. 2. March/April.
- Brandes, D.H., J.E. Jones, and T.J. Martin. The Economic Development of Riverfront Restoration. Presented at The Wilderness City: Nature, Culture and Economy, in the *Proceedings of Next West, 21st Annual Rocky Mountain Land Use Institute Conference*, Sturm College of Law. University of Denver, March 1 and 2, 2012.
- Clary, J., M. Leisenring, A. Poresky, A. Earles, and J.E. Jones. 2011. BMP Performance Analysis Results for the International Stormwater BMP Database. *Bearing Knowledge for Sustainability: Proceedings of the 2011 World Environmental and Water Resources Congress.* Palm Springs, California. May.
- Clary, J., M. Quigley, A. Poresky, A. Earles, E. Strecker, M. Leisenring, and J.E. Jones. 2011. Integration of Low Impact Development into the International Stormwater BMP Database. *Journal of Irrigation and Drainage Engineering*. Vol. 137, No. 3. March.
- Guo, J.C.Y., J.E. Jones, and A. Earles. 2010. Method of Superimposition for Suction Force on Trash Rack. *Journal of Irrigation and Drainage Engineering*. Vol. 136, No. 11. November.
- Clary, J., M. Quigley, A. Earles, J.E. Jones, E. Strecker, and A. Poresky. 2010. Expanding the International Stormwater BMP Database Reporting, Monitoring and Performance Analysis Protocols to Include Low Impact Development (Part 1). *Proceedings of the 2010 International Low Impact Development Conference*, San Francisco. April 11–14.
- Clary, J. and J.E. Jones. 2010. Challenges in Attaining Recreational Water Quality: Can the Standards Be Met? *IMPACT*. Published by AWRA. Vol. 12, No. 2. March.
- Jones, J.E. 2010. Zero Impact Development. IMPACT. Published by AWRA. March. Vol. 12, No. 2.
- Guo, J.C.Y. and J.E. Jones. 2010. Pinning Force during Closure Process at Blocked Pipe Entrance. *Journal of Irrigation and Drainage Engineering*. Vol. 136, No. 2. February.
- Clary, J., J.E. Jones, and A. Earles. 2009. Trends in Water Resources Changing the Landscape. *Colorado Green.* Vol. 25, No. 6. November/December.
- Clary, J.K., T.A. Earles, J.E. Jones, J.E. O'Brien, and B.R. Urbonas. 2009. Expanding the International Stormwater BMP Database Reporting, Monitoring and Performance Analysis Protocols to Include Low Impact Development. *Proceedings of CASFM 20th Annual Conference*, Crested Butte, Colorado. September.
- Clary, J., M. Quigley, A. Earles, M. Leisenring, E. Strecker, and J.E. Jones. 2009. Integration of Low Impact Development Studies into the International Stormwater BMP Database. *Great Rivers: Proceedings of ASCE Environmental and Water Resources Institute, World Environmental and Water Resources Congress.* Kansas City, Missouri. May 17–21.

- Clary, J., J.E. Jones, and B.R. Urbonas. 2009. Challenges in Attaining Recreational Stream Standards for Bacteria: Setting Realistic Expectations for Management Policies and BMPs. *Great Rivers: Proceedings of ASCE Environmental and Water Resources Institute World Environmental and Water Resources Congress*. Kansas City, Missouri. May 17–21.
- Clary, J., J.E. Jones, M. Quigley, and E. Strecker. 2008. The International Stormwater BMP Database: What's in it for You? *Proceedings of Environmental and Water Resources Institute World Congress*. Honolulu, Hawaii. May.
- Clary, J., C. Haines, and J.E. Jones. 2008. Green Building Alternatives to Rainwater Harvesting in Colorado. U.S. Green Building Council, *Colorado Chapter Newsletter*. May.
- Clary, J., J.E. Jones, B.R. Urbonas, M. Quigley, E. Strecker, and T. Wagner. 2008. Can Stormwater BMPs Remove Bacteria? New Findings from the International Stormwater BMP Database. *Stormwater*. Vol. 9, No. 3. May/June.
- Jones, J.E., T. A. Earles, J. O'Brien, M. Claffey, and S. Kribs. 2008. You Were Collecting Stormwater Samples and *What* Happened? *Stormwater*. Vol. 9, No. 2. March/April.
- Jones, J.E., J. Clary, E. Strecker, and M. Quigley. 2008. 15 Reasons You Should Think Twice Before Using Percent Removal to Assess BMP Performance. *Stormwater*. Vol. 9, No. 1. January/February.
- Strecker, E., J. Clary, M. Quigley, and J.E. Jones. 2007. International Stormwater BMP Database Update. *The Water Report.* November 15.
- Clary, J., M. Quigley, J.E. Jones, and E. Strecker. 2007. International Stormwater BMP Database Enhancements and Updated Findings. *Proceedings of WEFTEC 80th Annual Water Environment Federation Technical Exhibition and Conference*. San Diego, California. October 13–17.
- Clary, J., J.E. Jones, E. Strecker, and M. Quigley. 2007. Coalition Enhances International Stormwater BMP Database. American Water Resources Institute (AWRI) *Currents*. Vol. 9, No. 4. Fall.
- Clary, J., J.E. Jones, E. Strecker, and M. Quigley. 2007. Assessing Performance: Using BMP Database Protocols. *Urban Water Management*. July.
- Jones, J.E., T.A. Earles, and S. Kribs. 2007. Water Quality Protection for Development in Mountainous Areas. *Proceedings of the 5th International Conference on Urban Watershed Management and Mountain River Protection and Development*. Chengdu, China. April 3–5.
- Earles, T.A., J.E. Jones, J.E. Clary, and D. Rapp. 2006. Consideration of Residual Floodplain and Onsite Detention in Watershed Master Planning. *Proceedings of Colorado Association of Stormwater and Floodplain Managers Annual Conference*. Glenwood Springs, Colorado. September 27–29.
- Jones, J.E., D. Rapp, W. Wenk, and P. Thomas. 2006. Impediments to Innovative Urban Water Resources Management. *Proceedings of Colorado Association of Stormwater and Floodplain Managers Annual Conference*. Glenwood Springs, Colorado. September 27–29.
- Jha, L., D. Biesecker, J.E. Jones, J.E.D. Johnson, and S. Kribs. 2006. Drainage Improvement Prioritization in Lincoln, Nebraska. *Stormwater*. Vol. 7, No. 3. May/June.
- Clary, J.K., J.E. Jones, E.S. Strecker, and M. Quigley. 2006. Documented Performance: International Database Helps Improve Selection and Design of Stormwater Best Management Practices. *Civil Engineering News*. February.
- Jones, J.E., J. Guo, B.R. Urbonas, and R. Pittinger. 2006. Safety at Urban Stormwater Ponds. *Stormwater.* Vol. 7, No. 1. January/February.

- Jones, J.E., T. A. Earles, T. Browning, B. Hyde, D. Hartman, B. DeGroot, and B.R. Urbonas. 2005. Flood Hazard Notification on Small Tributaries Not Mapped by FEMA. *Proceedings of Colorado Association of Stormwater and Floodplain Managers Annual Conference*. Steamboat Springs, Colorado. September 21–23.
- Farahmandi, S., B.R. Urbonas, A. Sorrel, T. Christianson, J.E. Jones, and J. Clary. 2005. City and County of Denver Storm Drainage Criteria Manual Update. *Proceedings of Colorado Association of Stormwater and Floodplain Managers Annual Conference*. Steamboat Springs, Colorado. September 21–23.
- Baus, T., J.E. Jones, J.E. Wulliman, and P. Thomas. 2005. Denver Water Quality Management Plan: Process Overview and Lessons Learned. *Proceedings of Emerging Technologies and Practices in Urban Stormwater Management*. Urban Drainage and Flood Control District. Denver. April 28.
- Jones, J.E., T.A. Earles, E.A. Fassman, E.E. Herricks, B. Urbonas, and J.K. Clary. 2005. Urban Storm-Water Regulations—Are Impervious Area Limits a Good Idea? *Journal of Environmental Engineering*. ASCE. February.
- Earles, T.A., and J.E. Jones. 2004. Colorado (USA) Water Rights: Ideas for China. *Proceedings of the* 4th International Conference on Watershed Management, ASCE, Environmental & Water Resources Institute Shenzhen, China. December 13–15.
- Baus, Terry, J.E. Jones, and J.K. Clary. 2004. Overview of Denver Water Quality Protection Plan. Proceedings of the 2004 Annual Meeting of the Colorado Association of Stormwater and Floodplain Managers. September.
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PERSONAL

Sits on the Board of Trustees of the Frasier Meadows Retirement Community. June 2016–present.

Married since 1981. Three children, born in 1988, 1991, and 1997.

Eagle Scout.