

# Statement of Qualifications



Water Supply Reliability  
and Water Footprinting



**ENTRIX**

Down to Earth. Down to Business.™



Increasing financial, regulatory and public pressures to manage water footprints are creating new issues for industry regarding reliability, cost and quality. Knowing your water footprint and its implications has become a business imperative.

For more than 25 years, ENTRIX has helped companies to manage, protect, and optimize their water resources. ENTRIX bridges a critical inside-knowledge gap for businesses seeking to ensure sustainability and improved reliability of their water resources and to reduce their overall usage and water discharge footprint.

ENTRIX consultants have long-standing client relationships with municipalities, water districts, and federal, state, and non-governmental public agencies, as well as with private industry. Most of our consultants in the field are not ivory tower scientists—they joined ENTRIX from industry or from regulatory and other public agencies, allowing us to directly import institutional knowledge and decision-making into the ENTRIX team. This combination of real world experience and scientific fundamentals provides our private-sector clients with technical information that is scientifically solid, agency compliant, and that protects your water supply interests.

## Water Resource Pressures

As greater water demands accrue to limited water supplies, increased regulations are being enacted at federal, state and regional levels. The U.S. EPA's National Water Program Strategy: Response to Climate Change identified 46 specific actions that the National Water Program will take in the areas of drinking water, water quality, watershed protection and water infrastructure. Water conflicts continue to arise and persist. Examples are present across the nation, and include such matters as Georgia's ongoing fight with Tennessee over access to water supplies in the Tennessee River, endangered species concerns affecting supply diversions from California's Bay-Delta, and the lengthy litigation associated with the reduced flow in the over-allocated Lower Colorado River. Planning, regulatory and management approaches are being retooled to accommodate this new normal.

## ENTRIX Water Services

- Water Footprinting
- Watershed Resource Management and Ecosystem Protection
- Water Supply Planning and Development
- Water Quality Management
- Clean Water Act Compliance
- Water Reuse and Minimization
- Water Supply Planning and Development
- Groundwater Management
- Climate Change Analyses
- Regulatory and Permitting Support
- Natural Resource Economics and Valuation
- Wetlands and Habitat Restoration
- Environmental / Public Affairs Communications

*The ENTRIX combination of real world experience and technical leadership helps clients to maintain their competitive advantage in an ever-changing environment.*



Following are some sustainable-water supply projects recently undertaken by ENTRIX teams across the country:

### Aquifer Drought Management

ENTRIX provided aquifer analysis services to establish drought-condition groundwater yield at a California nuclear power facility, and also to specify additional locations for groundwater pumping if drought conditions persist or worsen.

### Enhanced Groundwater Recharge

ENTRIX prepared technical studies to support a water utility property acquisition that would expand groundwater recharge facilities to accommodate bigger but less frequent storms.

### Irrigation Water Supply Alternatives

ENTRIX provided an assessment of water supply alternatives to a client as part of pre-acquisition due diligence of an agricultural operation that had had its imported water supply cutback by 30% because of drought conditions. We provided cost-effective alternatives focused on irrigation efficiency, groundwater development and water treatment.

### Aquifer Storage and Recovery

ENTRIX conducted a study to evaluate and implement aquifer storage and recovery in the United Arab Emirates. The client, partially motivated by climate change concerns, asked us to examine whether excess water available only during periods of low demand could be stored in a deep aquifer for recovery during high demand periods.

### Groundwater Storage

A client whose water supply was being affected by significant salt water intrusion required an alternative freshwater source. We developed a system to store more than a billion gallons of fresh water in an aquifer system that formerly contained highly brackish water.

### Groundwater Alternative Supply Assessment

ENTRIX provided pre-acquisition due diligence to characterize a food processing facility's increasingly challenging groundwater supply issues, including water quality, alternative water sources, and risks of stringent regulatory restrictions for the facility's discharge effluent.

### Surface-Groundwater Alternatives Analysis

ENTRIX is determining environmental flow requirements and basin water supply to assess future potential surface water withdrawals and appropriate levels of capital improvement in aquifer storage and recovery. The surface water supply analysis includes innovative methods for projecting surface water supply risk.





Our senior consultants and scientists, many of whom come from industry and from regulatory and other public agencies, have a strong understanding of both the science and business imperatives of water reliability and the pressures brought to bear by the public sector and other stakeholders. Our consultants understand how to support your environmentally-sound stewardship while protecting your ROI.

## Water Resource Science and Management:

**John R. Jansen, Ph.D.**  
*Senior Geoscientist*

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Dr. Jansen is a Senior Managing Hydrogeologist with over 25 years of experience in his field; he has a wealth of experience in groundwater resource development, engineering and environmental geophysics, groundwater modeling, and wellhead protection. He previously worked nationally as an independent ground water consultant and as the senior geoscientist for an international well construction contractor. Dr. Jansen has conducted over 200 ground water resource investigations throughout the United States and Mexico. He is the author of numerous publications and presentations on groundwater related topics including the borehole geophysics section in the upcoming third edition of *Groundwater and Wells*, and holds three patents on well rehabilitation, horizontal drilling, and in-situ radium treatment.

**Paul Leonard**  
*Vice President and  
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Mr. Leonard has 25 years of experience managing and performing environmental assessments, restoration, and permitting related to energy, utility, transmission, land, and water resource development projects. He regularly manages the activities of multi-disciplinary teams of hydrologists, water quality experts, planners, recreation specialists, and other environmental and resource specialists on large and complex projects. Mr. Leonard is a nationally recognized water resource specialist in hydroelectric project licensing, NEPA compliance, watershed studies, and instream flow investigations. His watershed planning experience includes watershed characterization and study design, GIS mapping and analysis, water quality and hydrologic analysis and modeling, stream habitat and biological assessment, non-point source pollution BMPs and control strategies, managing expert panels and consensus-building.



**Timothy J. Thompson, P.G.**  
*Vice President*



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Mr. Thompson's 25-years of professional background and education provide a broad base of experience in water resource science, regulatory issues and project management. He is active in numerous projects for both private-sector and public-sector clients focused on water quality issues; water rights; water resource planning; water quantity and water quality modeling; reclaimed water utilization, conjunctive use and artificial recharge; constructed wetlands; stormwater and surface water quality modeling and monitoring; stormwater treatment, TMDL and BMP evaluation; cost evaluations; and regulatory compliance. He has provided leadership in all facets of corporate management, client development, technical program development and implementation, and project administration.

**Daniel R. Tormey, Ph.D., P.G.**  
*Vice President and  
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Dr. Tormey is a geologist, geochemist, and engineer with well-developed skills in framing and analyzing environmental issues, and in communicating complex ideas to a wide range of audiences. Dr. Tormey has served as a technical expert in the fields of contaminant fate and transport and remediation, hydrology and sediment transport, coastal dynamics, and environmental aspects of power generation. He has served as project manager/task manager for important assignments in the electric utility and transmission industry. In 2001, he was appointed by the U.S. Secretary of Agriculture, under the advice of the National Academy of Sciences, to serve as sediment and physical sciences expert on the Scientific Advisory Board that guides development of the management plan for the newly-created Giant Sequoia National Monument. He was also recently appointed Executive in Residence at California Polytechnic University, San Luis Obispo's Natural Resource Management Department.

**Michael J. Waldron, P.G.**  
*Senior Consultant*



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Mr. Waldron has more than 20 years of experience in the water resources and environmental resource management fields and has served as project manager for numerous water supply and water management projects. Mr. Waldron has experience in the permitting, design and construction management of Aquifer Storage and Recovery (ASR) systems, most recently for a state-funded, regional water-management demonstration program. He has extensive environmental, water supply and wastewater management permitting and construction management experience, and also has conducted dozens of geological investigations for environmental hazards, historical-contamination assessment and remedial method evaluations. In addition, Mr. Waldron has performed economic and hydrogeologic screening and feasibility evaluations for desalination concentrate-management alternatives. He has experience in alternative water source development, including deep, brackish (alternative) water supply wells. He has extensive mechanical integrity experience and has conducted sand-source studies and rehabilitation at wellfields in unconsolidated and consolidated aquifers.



## Environmental Economics:

Douglas J. MacNair, Ph.D.

*Vice President*

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Dr. MacNair is an environmental economist with extensive natural resource damage assessment (NRDA) experience. He has managed numerous human-use NRD assessments involving both original data collection and benefits transfer techniques. He has designed recreational surveys, managed large-scale data collections, designed and estimated econometric models, and participated in negotiations with trustees. Dr. MacNair has over 25 years of experience. His research has been published in Land Economics, Forest Economics, and Marine Resource Economics.

## Water Management Planning and Environmental Restoration:

Terry A Clark, AICP, PMP  
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Mr. Clark, has over 25 years of professional project management experience in Florida in the environmental and water supply planning arena. He managed the project manager and team for the first water supply plan found in compliance with the State of Florida regional water supply planning legislation passed in 1995. Mr. Clark has extensive technical and management experience in the water management planning and environmental restoration arena, demonstrated talent for facilitating solutions from diverse groups, commitment to employee participation and communication, community and regional plans embraced by decision makers and stakeholders.

## Public Affairs/Environmental Communications:

Jude Schneider  
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Ms. Schneider is an environmental communications consultant with an emphasis on public affairs and community outreach. She works closely with clients to establish messaging that encourages consensus by providing clarity, transparency, and a shared language for discussion. She disseminates such messages by creating collateral; working directly with the media, community leaders and third-party advocates; and training executives to be their company's public face. Ms. Schneider is seasoned at crisis response; adept at finding common ground with critics; clarifying controversial points of view; and lowering the volume on public debate.



ENTRIX provides integrated, science-based strategic environmental and natural resource management consulting services, which combine economics, science, engineering, technology and regulatory knowledge. Our core expertise includes:

- Water Resources Management
- Natural Resource Management
- Environmental and Natural Resource Liability Management (ENRLM)
- Toxicology
- Permitting and Compliance
- Resource Economics
- Product Safety and Regulatory Compliance
- Restoration Engineering
- Civil and Environmental Engineering
- Planning
- Litigation Support
- Socioeconomics
- Environmental and Public Affairs Communications
- GIS, CAD, Photogrammetry and Mapping

Founded in 1984, ENTRIX provides services in 31 offices in the United States, as well as in Ecuador, Peru, and Canada. With expertise in dozens of specialized environmental areas, ENTRIX provides turn-key solutions to complex environmental challenges.



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ENTRIX is committed to conserving and restoring our natural resources and the environment. We practice stewardship through the conduct of our business, the development of our staff, and the services we provide our clients.