

# Water and Wastewater Engineering

GAI Consultants knows the present and future challenges facing water, wastewater, reclaimed water, and storm water utilities. Providing a unique blend of water and wastewater engineering and consulting services to both public and private clients throughout the United States, our seasoned licensed professionals deliver solutions that work.

**Intricate industry knowledge and proven skills in water engineering mean utilities and their customers benefit from innovative and practical solutions.**

Dedicated to helping communities, utilities, and private developers identify and maximize water supplies, GAI delivers water and wastewater solutions that incorporate options for groundwater, surface water, and potential purchase from nearby communities. We use advanced hydraulic software models to find practical, low cost answers, and our modeling, resource optimization, and permit negotiation strategies guide clients seamlessly

through the consumptive use permitting process. GAI's innovative and creative designs for water infrastructure include raw water intakes and piping, ground wells, and treatment and storage facilities.

To help protect and preserve the environment, GAI designs wastewater infrastructure—collection pipelines, pump stations, force mains, treatment facilities—that produce high quality effluent for reuse and nutrient removal. Reclaiming “used” water is essential to using existing water supplies efficiently. GAI's services for water reuse promote the most versatile use, storage, and transmission options. We take care of public, commercial, and agricultural application site permitting and work with utilities and developers to foster agreements for sharing reuse water resources.

As a standard, GAI's engineers work closely with water clients to select processes that best meet their objectives and resources. Our planning strategies involve advanced hydraulic and process engineering models that optimize future facilities, and scheduling that moves projects forward. And



gai consultants.

Service Profile



GAI’s construction inspectors have many years of hands-on experience working in wastewater facilities.

Water and wastewater utility system projects for capacity expansion or acquisitions that have significant capital needs are often funded with revenue bonds. The terms of the bonds are a function of market conditions and the financial feasibility of the project. GAI prepares written documentation to demonstrate financial feasibility, presents to rating agencies and bond insurers, and assists utilities in securing good

credit ratings, obtaining low-cost bond insurance, and getting the best possible financing terms.

GAI guides utilities on permitting, operations, capital upgrades, and modernizing existing infrastructure. Our water specialists help define and plan for the future through master planning that addresses water, wastewater, and storm water. With limited water resources available, GAI’s value lies in our ability to help clients plan for future growth and determine the optimal use of existing water supplies.

**Water and Wastewater Engineering Services**

- Plant evaluation and operation optimization
- Project procurement strategies
- Capital project planning
- Pilot studies
- System valuation and financing
- Rate and cost of service studies
- Feasibility, financial and capacity analysis reports
- Proposal and grant preparation
- Facility siting
- Permitting assistance
- Raw water intake studies and piping design
- Water treatment facility and ground well design
- Water transport and storage design
- Wastewater collection, treatment, disposal design
- Membrane softening system design
- Reverse osmosis system design
- Effluent disposal and reuse facilities design
- Project start-up

**GAI Services Summary**

- Airport Planning and Design
- Bridge and Structure Inspection and Design
- Coal Combustion Residuals Management
- Construction Inspection and Management
- Cultural Resources Management
- Economic Analyses and Strategies
- Electric Transmission Design and Siting
- Environmental Engineering
- Environmental Studies, Species Studies, Permitting
- Gas Pipeline Surveying and Mapping
- Geographic Information Systems (GIS)
- Geotechnical Engineering and Geology
- Impoundment and Landfill Permitting and Design
- Land Development Engineering
- Landscape Architecture and Design
- Master Planning and Urban Design
- Mechanical, Electrical, Structural Engineering
- Natural Gas FERC Certification and Permitting
- Nuclear Energy Engineering Support
- Right of Way and Appraisal Support
- Land Surveying and Mapping
- Transportation Planning and Design
- Utility Management Consulting
- Water, Stormwater, Wastewater Management

The scope of professional services that are provided by or offered out of each GAI office including, but not limited to, engineering and surveying services, is governed by the professional and business licensing requirements of each individual State or jurisdiction in which the GAI office is located and whether GAI has the requisite professional and business licenses for that State or jurisdiction. Nothing on GAI’s Web Site or marketing materials is intended to be interpreted or construed as offering to perform professional licensed services where prohibited unless the licensing requirements have been met. Engineering services are not offered out of GAI’s Northern Kentucky (Florence) office location. Surveying services are not offered out of GAI’s Illinois location or by our New York subsidiary.

