INTEGRATED WATER RESOURCE MANAGEMENT for Sustainable Oil & Gas Operations

Engineering services to maximize the value of your water resources, reduce operational risks, meet regulatory requirements, and enhance your bottom line.
Carollo Engineers completed the foundation, electrical and process piping design for the installation of a clarifier/thickener system to supply process water for use at the refinery. Work included piping, electrical, I&C and structural design for the installation of a system including filtration, clarification, sludge thickening and dewatering, polymer and chemical feed systems including disinfection. Deliverables included complete and detailed bill of materials for all components for field assembly by a contractor.

RPS plc. (RPS) and Carollo Engineers Inc. (Carollo) teamed up, on behalf of the Valero Refinery, to document the City of Three Rivers (City) existing water supply strategies, identify risks to existing water supply, and propose feasible alternatives for water supply that are available to the City now and in the future. The City will use our report as an organization and planning tool for the execution of a short-term water supply backup strategy but also as a solid foundation for understanding long-term strategies that could be economically viable to the City in future years.

Effective Water Management... Your Success Depends on it.

Water is essential to oil and gas productions, yet supplies are scarce, competition is fierce, and public scrutiny over water practices is severe. Today, more than ever, refineries need effective water management to succeed. At Carollo, we help oil and gas clients solve complex water challenges and maintain responsible water resource management throughout the water lifecycle. Our clients benefit from our services tailored to drive reliability, efficiency, and overall profitability during site development, exploration, production, and discharge.
For more than 85 years, we have dedicated ourselves to advancing the application of water science and technology for sustainable water supplies. With more than 25,000 public and private sector water and wastewater projects to our name, our engineers and scientists offer integrated, proven capabilities for your varying production needs.

- **Water supply planning and master plans** to optimize water resources and achieve maximum water value.
- **Comprehensive water use assessments** with plans for maximizing water usage, reducing risks, and avoiding costly impacts that could lead to unscheduled shutdowns.
- **Best value water and wastewater treatment solutions** through holistic planning, efficient design, and construction management offerings.
- **Advanced treatment technologies** that meet your specifications for process water and water quality.
- **Cost effective initiatives** for water recycling to minimize impacts on fresh water supplies.
- **Creative public-private partnerships** for mutual community and oil and gas processing facility benefits.
- **Best management practices and strategies** for reducing water footprints, waste, and discharge.
- **Permitting support** to help you achieve and maintain compliance.
- **Blue Plan-It® Decision Support System** is a fully customizable simulation and optimization modeling tool to help our clients manage their complete water systems in order to cost effectively evaluate, optimize, expand, and/or modify your water solution needs.

Our goal is to be an integral partner in cost effectively managing your water and wastewater. Doing so allows us to develop long-term strategies to help you address your triple bottom line, avoid expensive solutions, and ensure efficiency and compliance.

As your engineering partner, we will focus on your water so you can focus on your core business.
Oil & Gas Industry Water Management Services

As a full-service water consulting firm, Carollo is equipped to address the varying and multi-faceted aspects of your water supply, treatment, recovery and disposal needs. We integrate experts from our specialized practice groups into each project to deliver total water resource management solutions.

Water Supply
- Source Water Planning
- Water Use Assessments
- Optimization Studies
- Treatment Evaluations, Piloting, and Process Selections including:
  - Membranes
  - Desalting and Brine Management
  - Softening
  - Biological Treatment
  - UV Disinfection
  - Conventional Treatment
- Hydraulic Modeling
- Facility Design
- Computation Fluid Dynamics (CFD) Modeling
- Permitting
Project Management and Delivery
- Turnkey Delivery (Design-build or progressive design-build)
- Owner’s Advisor
- Construction Management and Inspection

Other Services
- Asset Management
- Risk Evaluation and Management
- Electronic O&M Manuals

Wastewater
- Treatment Evaluations and Process Selection
- Facility Design
- Water Reuse Planning & Design
- Alternative Energy Solutions
- Permitting

Water Reuse
- Strategic Planning and Design
- Permitting and Compliance
- Optimization Strategies for Economic Sustainability
Trusted Water Experts for Reliable Solutions

Water is our focus, our business, our passion. Since all of our work focuses on water, we offer sound, trust-worthy services and value few can match. Carollo provides an experienced and skilled planning, design, construction support, start-up, and commissioning team. As your engineering partner, we will manage your water so you can manage your core business.

UNPARALLELED EXPERTISE
Projects with complex water challenges require experts who know water. While other engineering firms cater to multiple markets, water is all we do. This singular focus means you will collaborate with the best and brightest water professionals who share your goals for optimizing your water and wastewater systems, while minimizing your capital and operational costs. Our staff includes civil, structural, electrical, mechanical, and I&C engineers along with planners, architects, CAD designers, programmers, and construction managers. With our technical expertise and institutional knowledge, we put our clients ahead of the curve.

INNOVATIVE, VALUABLE SOLUTIONS
At Carollo, we combine creativity, applied research, and technology with sound engineering to deliver cost-effective and valuable solutions. Carollo's Research Group supports projects with cutting-edge treatment technologies, improved operations practices, and insights on major trends in the water and wastewater industry. Our in-house research capabilities and team of industry-leading engineers allow us to evaluate your unique water requirements and provide answers that maximize productivity, minimize your water footprint, and help avoid costly issues. Our Sustainability Group rounds out our services with strategies that integrate sustainable principles into all that we do.

SUPERIOR SERVICE AND PERFORMANCE
Engineering News Record consistently ranks Carollo among the nation’s top design firms for water and wastewater engineering design services. We achieve this status through our consistent commitment to quality service and our track-record of delivering tailored, high-performing water management systems. We take tremendous pride in helping some of the top municipal and industrial clients in the world solve their most important water challenges.
One Firm for All Your Water Management Needs

Carollo Engineers is an environmental engineering and management consulting firm that provides planning, design, and construction management services for sustainable water and wastewater solutions. Our staff includes civil, structural, electrical, chemical, mechanical, environmental, and instrumentation and control engineers, as well as planners, financial analysts, architects, and CAD designers, and construction managers – all experts dedicated to water.

Carollo’s Research Group supports projects with cutting-edge treatment technologies, improved operations practices, and insights on major trends in the water and wastewater industry. Our Sustainability Group rounds out our services with strategies that integrate sustainable principles into all we do.

Most of our 45 offices throughout the United States are located in areas with heavy oil and gas operations activity, allowing us to provide local, dedicated teams to meet your water project needs.