

Water/Wastewater  
Planning, Design &  
Construction



Water/Wastewater  
Engineering Services

# Water/Wastewater Planning, Design & Construction

When you work with Cardno, you get a single point of contact for all aspects of Water and Wastewater engineering.



Cardno is a professional services company offering a wide range of integrated engineering, infrastructure, environmental, scientific consulting, and field services to provide the expertise and operational efficiencies that support public and private sector clients.

## **A Smart Use of Water Resources**

More and more communities are turning to highly treated wastewater effluent, called reclaimed water, to meet their water resource needs. Reclaimed water offers communities two significant benefits: it conserves fresh water resources and the reclaimed water reduces wastewater effluent discharged into the environment.

## **Comprehensive, Up-to-Date Service**

With so much experience in the field of reclaimed water, Cardno professionals are able to assist clients with a variety of projects, including studies, designs, construction, operation and maintenance. We can also help clients obtain reclaimed water permits. To provide the highest level of service, we stay current with reclaimed water regulations and actively participate

in public education regarding wastewater treatment and disposal.

Look to Cardno for complete reclaimed water services, including:

- > Master Planning and Feasibility Studies
- > Storage Tank and Pump Station Design
- > Distribution System Design
- > Hydraulic Modeling
- > Rate Studies
- > Grant Applications
- > Ground Water Monitoring for Reclaimed Water Permit Compliance
- > Augmentation Studies
- > SCADA Systems/Remote Monitoring
- > Reclaimed Water Ordinance Assistance
- > Peer Review and Value Engineering Studies
- > Asset Management / Geographic Information Systems (GIS)
- > Wastewater Treatment
- > Chloride Studies

## **Wastewater Process Design**

Cardno provides wastewater engineering services related to Water Resource Recovery Facility (WRRF) planning, design, and CEI services. Our professionals include engineers, designers, construction managers, and wastewater treatment plant operators.

We assist our clients with planning, design, permitting, capacity and condition assessment, and construction administration. We offer expertise in design and optimization

of advanced wastewater treatment (AWT) for nutrient removal (TN,TP).

- > Biological Nutrient Removal
- > Process Modeling (Biowin, GPS-X, Simba#, Sumo)
- > Biosolids Handling
- > Anaerobic Digestion
- > Fog/Septic Handling

## **Pipeline Condition Assessment & Rehabilitation**

Cardno knows when and how to use low-tech and high-tech techniques to assess the condition of pipelines.

- > Internal Inspection CCTV
- > Smoke Testing
- > Broadband Electromagnetic (BEM)
- > Ultrasonic

We can then apply the appropriate rehabilitation technology.

- > Cured-in-Place Pipe (CIPP)
- > Underground Coatings & Linings
- > Sliplining
- > Pipe Bursting
- > Close-fit Pipe
- > Thermoformed Pipe
- > Lateral & Manhole Rehabilitation

## **Expertise in POTWs and SSOs**

Cardno is extremely well-versed in government regulations affecting publicly owned treatment works (POTW). One



particular area of focus for Cardno is sanitary sewer system overflows (SSO), which are a nationwide problem caused by aging infrastructure, increased population/demand, and leaks and breaks in collection systems. These overflows often result in violations of the EPA Clean Water Act.

### **Infrastructure Assessment, Planning, Design, & Rehabilitation**

Cardno professionals provide depth of experience and technical expertise for all aspects of water, wastewater, and reclaimed water projects – including collection, treatment, transmission, and reuse.

- > Master Planning, Feasibility Studies, Capital Improvement Planning
- > Capacity & Condition Assessment Studies
- > Hydraulic Modeling
- > Storage & Pumping Station Design/ Rehabilitation
- > Pipeline Design/Rehabilitation
- > Water/Wastewater Treatment & Reuse
- > Odor Studies & Management
- > Asset Management/Geographic Information Systems (GIS)
- > Peer Review & Value Engineering

### **Pioneering CMOM Solutions**

Cardno is a leader in performing Capacity, Management, Operations & Maintenance (CMOM) self-audits for POTW owners, as mandated by the EPA. In fact, we submitted the first MOM self-audit in Florida — one

of the first in the country. By directing sewer system self-audits into a sewer system management program, POTW owners can satisfy EPA requirements, cure sewer system overflows, consolidate existing information, modernize facilities and focus on their CMOM program. Cardno's expertise in sanitary sewer evaluation studies (SSES) and sewer system evaluation and management programs (SSEMP) includes:

- > Project Management / Coordination
- > System Evaluation
- > Field Surveying
- > System Mapping
- > Hydraulic Modeling and Analysis
- > Best Management Practices
- > Cleaning and Long-Term Maintenance Management Plans
- > Pipeline Assessment/Rehabilitation
- > In-House Certified Pipeline Assessment and Certification Program (PACP), Manhole Assessment and Certification Program (MACP), and Lateral Assessment and Certification Program (LACP) Users and Trainers
- > Asset Management / Geographic Information Systems (GIS)
- > Flow Monitoring, Smoke Testing, CCTV, MH Inspection

### **Trenchless Technology**

Cardno is an industry leader with proven success in the applications of Trenchless Technology. Cardno engineers are

experienced with the following trenchless technology methods:

- > Horizontal Auger Boring
- > Horizontal Directional Drilling
- > Microtunneling
- > Trenchless Rehabilitation of Existing Pipelines
- > Cured-in-Place Pipe (CIPP)
- > Underground Coatings & Linings
- > Sliplining
- > Pipe Bursting
- > Point Source Repair
- > Lateral Rehabilitation
- > Manhole Rehabilitation

### **Why Cardno? Value & Integrity**

We're here to provide utility engineering to mitigate risk for your next project. Our job is to help reduce uncertainties and keep your project moving forward. With decades of experience, top notch equipment and processes, and hundreds of clients working with us over the years, you can be confident that your project will be handled with the attention it deserves.

Each of our assignments are tailored to the ultimate needs of our client and their project. We ensure that clients get value for money by recommending scopes and pricing that will get the results desired in the most economical manner. We treat each assignment as another way to prove our value as a long term partner in your organization's success.

## About Cardno

Cardno is a global provider of integrated professional services which enrich the physical and social environment for the communities in which we live and work. Our team of multidisciplinary specialists around the world has more than 70 years' experience in designing, developing and delivering sustainable projects and community advancement programs. Cardno is listed on the Australian Securities Exchange (ASX: CDD).

## Cardno's Commitment to Zero Harm

*Cardno*  
**ZERO  
HARM**  
EVERY JOB. EVERY DAY.

Cardno's goal is to always conduct our business in a way that protects our people, clients, visitors and members of the public from harm. In an effort to move toward the ultimate objective of zero harm, we are committed to implementing safety systems and awareness throughout our operations globally.