

CarolloDIGITAL

Solutions for your
digital environment

The Age of **Digital Transformation**

Advancing your organization with a digital transformation means unlocking your data's potential to improve operational efficiencies, increase enterprise visibility and empowerment, and proactively respond to a range of future scenarios.

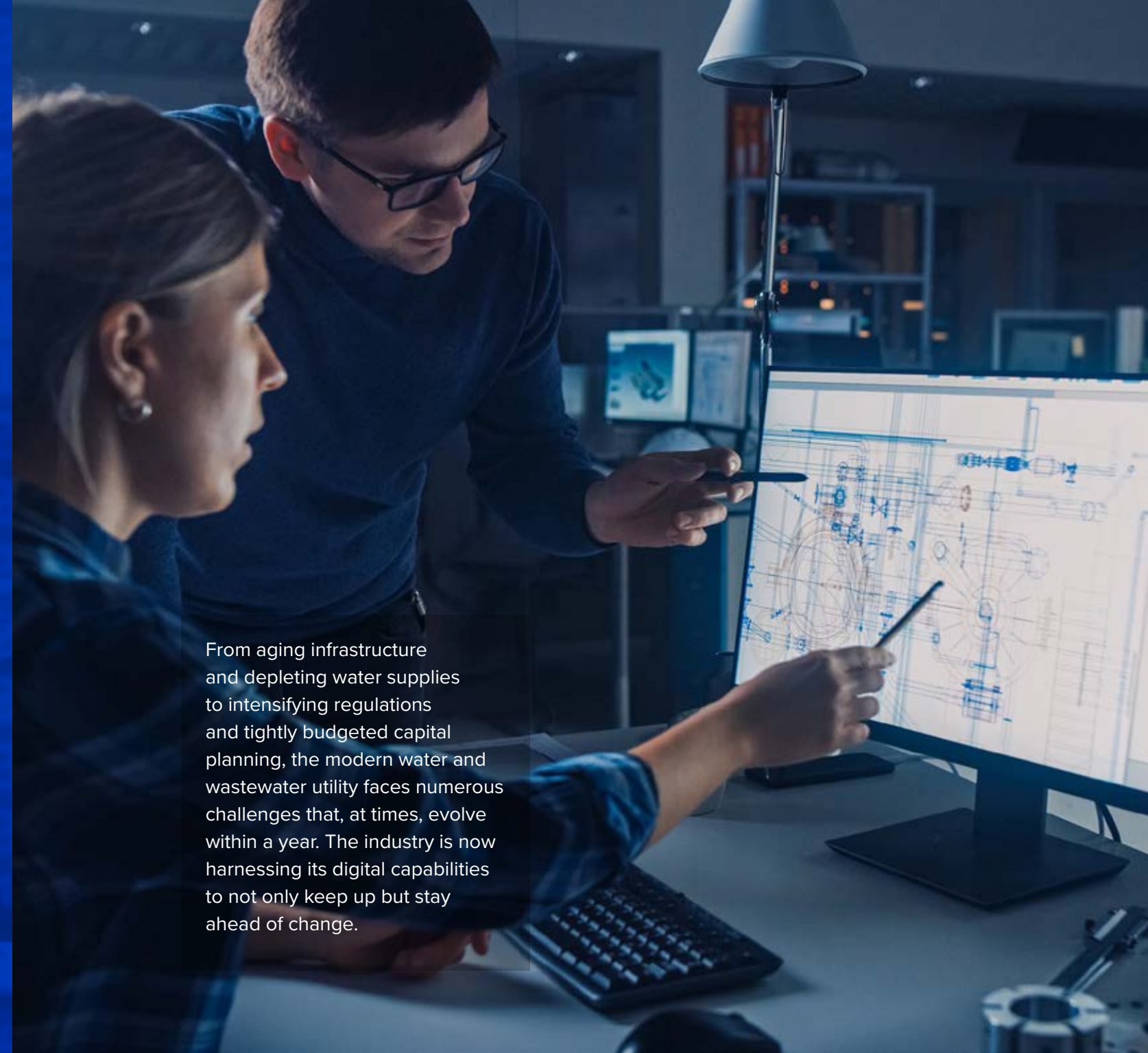
But a digital transformation is often easier said than done. While most collect data, 50% of water utilities say they are capturing less than half of the data available to them, much of which is siloed without clear direction for its use. For many, selecting optimal software and hardware is an endeavor all its own, no less implementing them with integration.



1 in 5

Water utilities in the U.S. have limited capabilities to digitally manage and share their data, and only about half use that data to make real-time decisions.

From aging infrastructure and depleting water supplies to intensifying regulations and tightly budgeted capital planning, the modern water and wastewater utility faces numerous challenges that, at times, evolve within a year. The industry is now harnessing its digital capabilities to not only keep up but stay ahead of change.





Getting Started with CarolloDIGITAL

Integrated with our technical practices, Carollo's digital services and tools are designed to support all your utility needs with scalability, efficiency, and synthesis among systems.

No matter if you're a small utility that's just begun to digitalize or a large water purveyor looking to advance to the enterprise level, there's a digital strategy for you.

The first step is to identify the right on-ramp to your digital journey. Our offerings break down into four categories that meet every level of digital readiness.



Digital **Apps**

Deliver digital applications that support planning, design, construction and operation of water infrastructure and treatment facilities



Digital **Integration**

Integrate multiple software technologies ranging from work order management, geospatial, modeling, laboratory information and smart water solutions



Digital **Intelligence**

Use data to optimize and automate facility operations, predict infrastructure condition, forecast demand/supply and project capital improvement / construction costs



Digital **Advisor**

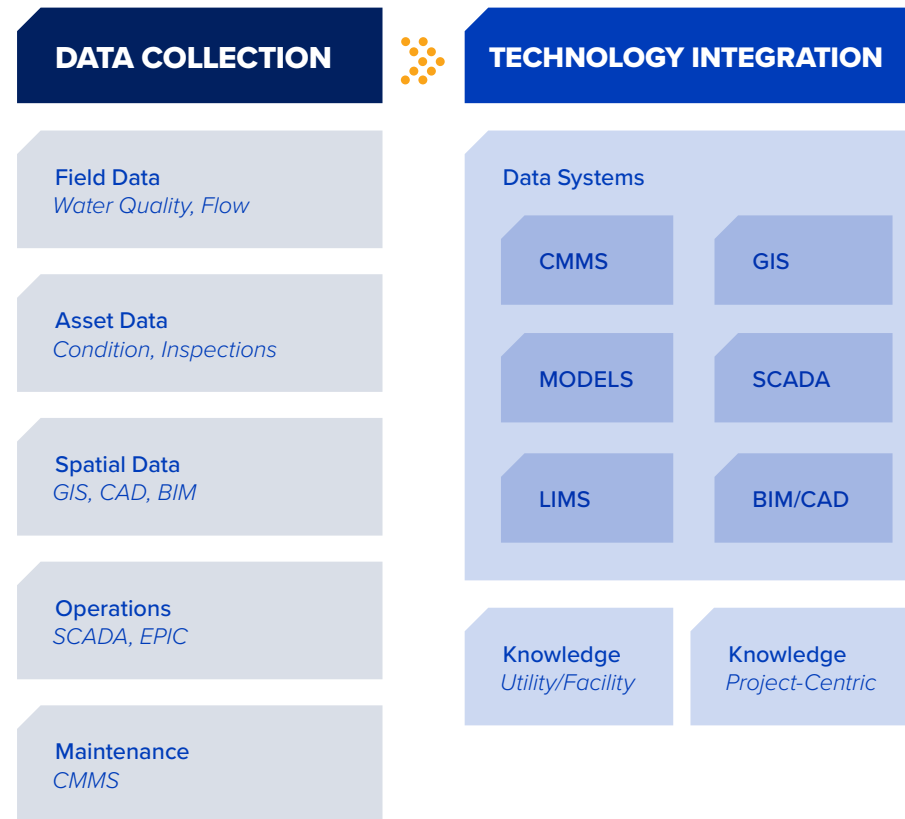
Guide water agencies through the selection and implementation of digital technologies

Digital Advisor

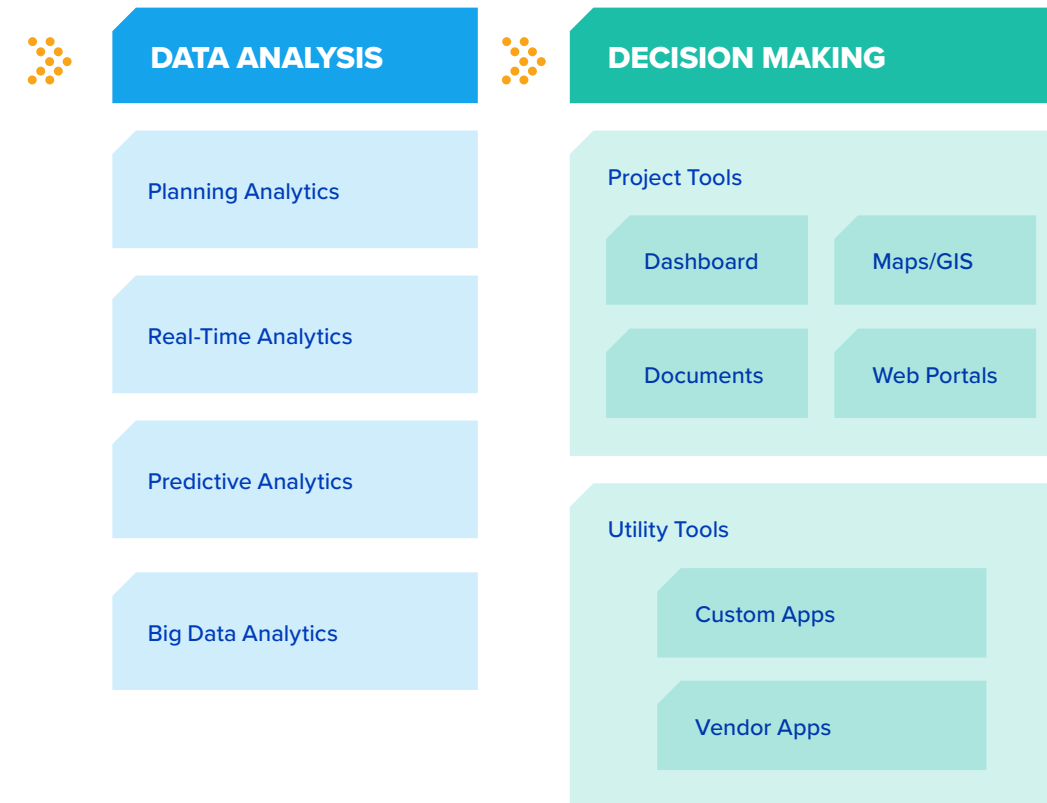
A strong digital strategy begins with a clear plan that answers what, where, when, why, and how.

We guide water agencies through the selection and implementation of digital technologies that best suit their organization, facilities, and goals. Our digital water roadmap helps you define specific milestones, clarify the steps and tools you need to achieve them, and understand their implementation timing against your capital planning schedule.

With a strategic plan in place, you'll know where to target your technology investments and when those expenses are coming up to plan accordingly.



Roadmap to Smart Water Systems



What's included in my digital roadmap?

- Formulated and scalable needs assessments.
- System integration and data management architecture.
- Implementation planning.
- Software and hardware specification, review, evaluation, and selection.



Digital Apps




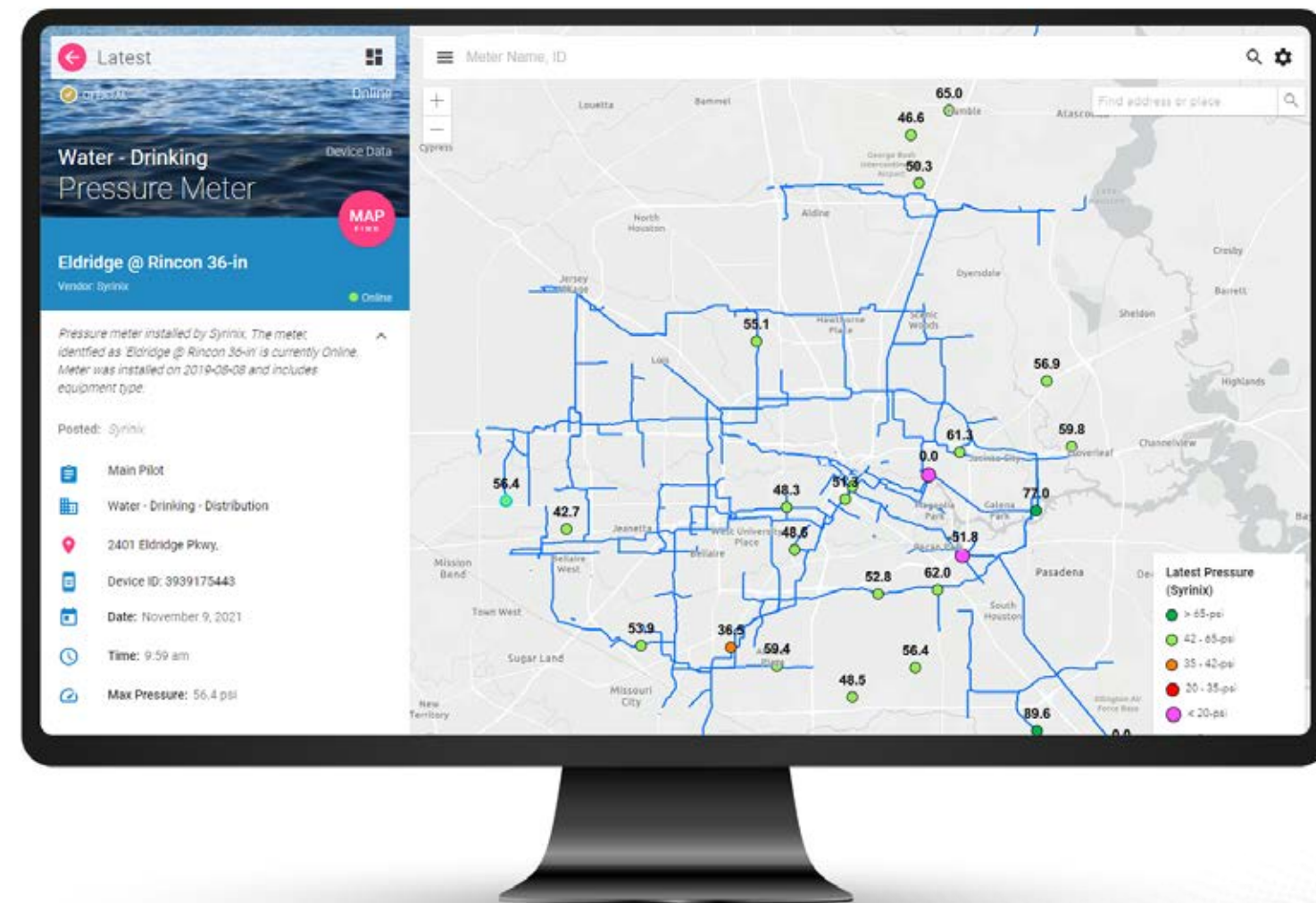
Water's modern challenges are dynamic. To respond effectively in real-time, you require tools that allow various users to extract focused information from a mass of resources.

Carollo's digital applications turn data into decisions that support the efficient planning, design, construction, and operation of water infrastructure and treatment facilities. In addition to a range of ready-to-use apps that align directly with our core engineering and business advisory services, we build custom apps whose framework and brand conform to your specific use case.



Interactive, real-time dashboards

All our apps feature accessible, beautifully designed dashboards that encourage your team to visualize, track, share, and update your digital projects and plans as changes occur. 



Digital Integration

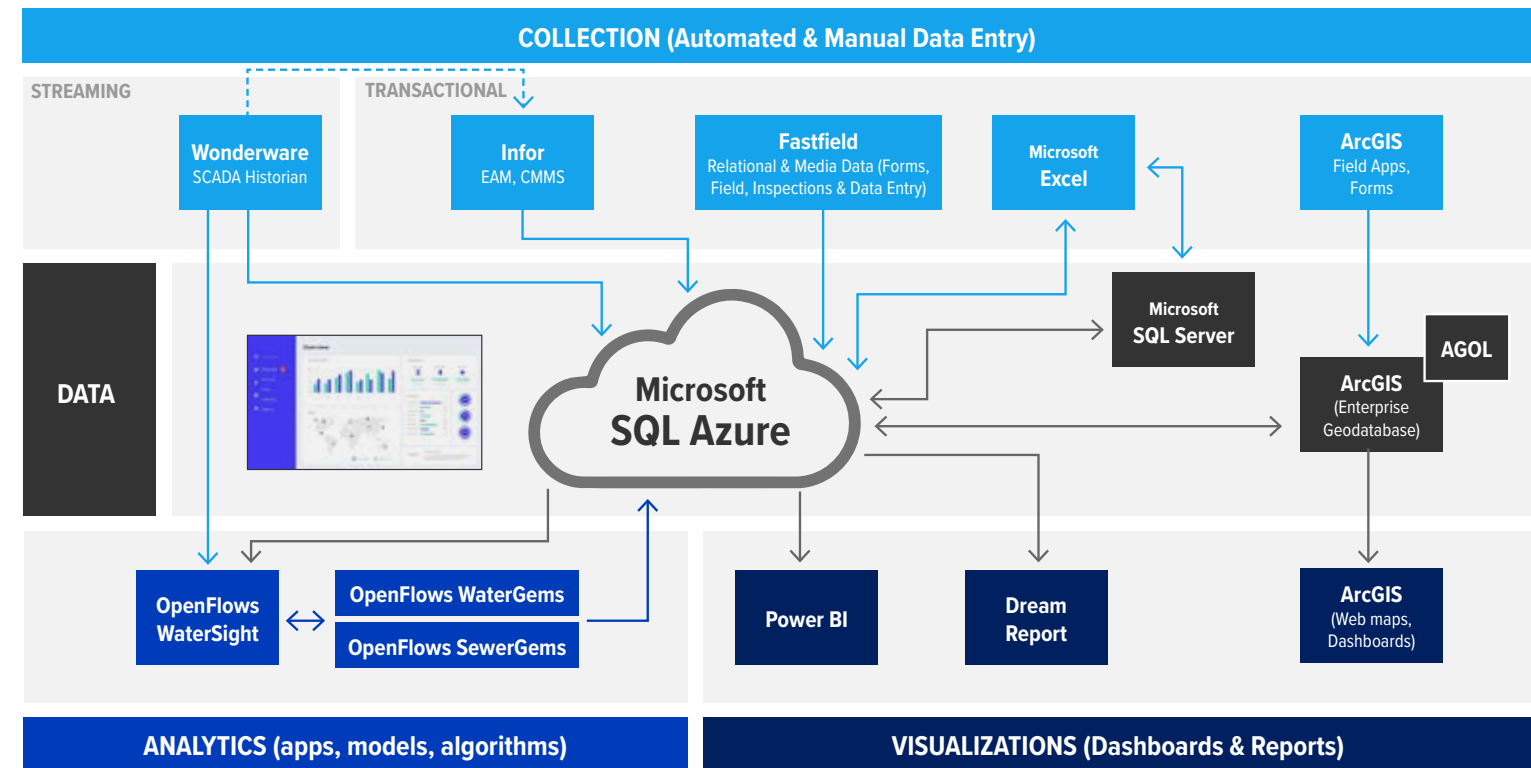


Selecting the right commercial software is one thing but implementing and connecting multiple systems is a known technical challenge.

Carollo's digital integration services bring clarity to this process by pinpointing a comprehensive strategy that meets your requirements for system connectivity.

Beyond configuring vendor applications with minimal custom code, our digital solutions focus on efficiency-enhancing integration. We forward a digital integration framework (DIF) with cost-effective, web-service-based architecture that supports data extraction, transformation, and loading (ETL) between multiple applications and data sources.

In the process, we'll build a library of ETL routines and software information to add to your organization's institutional knowledge.



Integrated data for informed decision making

Resilient O&M relies on multiple software systems to capture an accurate picture of system performance and deliver holistic recommendations for timely response.

What can be integrated?

- Supervisory control and data acquisition (SCADA).
- Computerized maintenance management system (CMMS).
- Geographic information system (GIS).
- Laboratory information management system (LIMS).
- Building information modeling (BIM) and 3D modeling.
- Enterprise asset management (EAM) software.
- Computer-aided design (CAD) drawings.
- Advanced metering infrastructure (AMI) data.

Digital Intelligence



Advanced data science garners real-time and predictive insights that help optimize and automate treatment processes as well as forecast demand and supply, infrastructure condition, future capital improvement expenditures, and more.

By utilizing advanced situational and decision-making intelligence tools, we can take risk assessments, planning, and response to the next level, projecting potential failures and facilitating a proactive approach to prevention that provides unparalleled operational control.

We leverage decades of lessons learned to optimize smart water systems, enhancing your level of service and providing your teams with the foresight to operate with stability and respond with confidence.



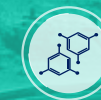
Today's intelligent systems leverage advancements in data and computer science to get the most out of big datasets.

We define digital intelligence as the merging of Carollo's water engineering expertise with advanced data analytics.



Defining Intelligent Tools

- **Artificial intelligence (AI):** Machine intelligence that combines computer science and robust datasets to solve problems.
- **Machine learning (ML):** A branch of AI and computer science that uses data and algorithms to improve its accuracy over time.
- **Digital twins:** Interactive digital replica of real-world assets, systems, and their behaviors used for controlled decision-making.
- **Internet of Things (IoT):** A system of connected devices, such as sensors, that can compile various data points to generate actionable information.



FLOC / SED	
ALUM	50
FLOC AID	3.99
LIME	27.09
NaOH	0

PRE SED	
CD mg/L	0
ALUM mg/L	0
PAC mg/L	10
CO2 mg/L	30



How Does CarolloDIGITAL fit into your project life-cycle?

CarolloDIGITAL's solutions are adaptive so you can build your digital future brick by brick or all at once. But how do they fit with your ongoing utility and business functions?

Digital advisory, applications, integration, and intelligence mean something different for every stage of your project life-cycle. We organize our digital solutions and tools by the tasks you're implementing to complete at those stages.

Solutions at every stage

CarolloDigital gives you control over every aspect of your project so you can transition smoothly between stages, track key metrics, and build protocols that best serve your teams for the long term.

PROJECT LIFE-CYCLE

Plan-it

- Master Planning
- Demand Tracking
- Hydraulic Modeling
- Water Quality Analysis
- Condition Assessment
- Asset Management
- R&R Planning

Design-it

- BIM/CAD Integration
- SCADA Design
- P&ID Automation
- Drawing Management
- Document Control
- Design-Build Data Management

Build-it

- Project Information
- Construction Management
- Change Order Tracking
- BIM Implementation
- Drone / Site Surveys
- Field Investigation Apps
- Public Information Systems

Operate-it

- CMMS, SCADA, LIMS
- Software Selection
- Software Implementations
- Electronic Ops Manuals
- Real-Time Ops Modeling
- Intelligent Water Systems
- Performance Metrics

A Partnership for **Empowerment**

CarolloDIGITAL gives you a digital portal to 90 years of Carollo's unparalleled experience, expertise, and research in water— anytime, anywhere. With digital solutions at the ready, your organization's potential is limitless.



Ready to get started?

Contact

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