Utility Optimization
Technical Innovation + Business Savvy

Utilities are constantly challenged to improve performance despite limited resources. Red Oak offers a powerful combination of technical expertise and business acumen to help utilities meet this challenge.

Delivering exceptional levels of service to customers while facing challenges around availability of capital resources, aging infrastructure, and flat or declining revenues requires a thorough understanding of utility-wide best practices and their potential to help achieve utility optimization. At Red Oak, this fundamental knowledge of utilities’ core services is the foundation of our pathway approach to providing high-value business solutions to utilities — from strategy to planning, and from implementation to measurable results.

The success of any improvement effort also depends upon the dedication and commitment of the utility’s entire organization. By forming a strategic alliance with every level of the utility organization, we help to collectively implement cost-saving and innovative solutions.

For over a decade, Red Oak Consulting, an ARCADIS group specializing in management and technology consulting, has helped hundreds of utilities address their challenges by creating technically-based business solutions. With capabilities enhanced by the insight, innovation and experience of ARCADIS’ global organization, we help clients and their communities develop and implement best practices to achieve lasting solutions.

With access to over 300 ARCADIS offices and best practices around the globe, Red Oak provides internationally recognized management consulting services to government and industry.
Red Oak routinely considers the entire organization, from business planning and capital delivery to operation and maintenance and customer service, to identify revenue enhancement and cost-reduction opportunities.

Our technical, financial, and business specialists perform comprehensive diagnostics of many utility functions using proven international protocols. We start every analysis by developing an interactive financial model as a framework for identifying “quick wins” and longer-term opportunities.

We uncover potential revenue enhancement and cost-saving opportunities through in-depth study of organizational effectiveness, rate sufficiency, cost of service, project and program delivery methods, supply chain management, chemical and power consumption and operational processes. Extending well beyond a budget level analysis, we drill down to examine what is driving each of the budget line items.

Red Oak provides services in virtually all facets of a utility’s business cycle, determining whether utility programs are aligned with its mission, capital projects are suitably prioritized and delivered, operation and maintenance is being optimized, and staff is properly deployed.

Clear and concise evaluation, planning, financing and asset management strategies provide a “roadmap” for successful revenue programs.
Program Enhances Revenues, Cuts Costs

With the demand for water steadily increasing, the City of Virginia Beach needed to minimize the cost of water services. After developing financial and operational models, our expert team focused on the most significant cost components to identify potential savings.

We evaluated purchased treated water activities, ensuring compliance with the wholesale service agreement. Our asset management program cut operating costs by transitioning operations from reactive to preventative maintenance and prioritizing capital spending. We established performance measures and benchmarked the City’s performance against other municipalities to identify opportunities for further improvement.

Ultimately, the City reduced wholesale water costs by over $3 million over a five year period, and established a sustainable management approach to reduce costs, enhance revenues, and ensure equitable water and sewer rates reflecting the true cost of service.
Red Oak helps preserve valuable infrastructure investments and optimizes performance through industry-leading asset management and operational improvement strategies. Our ultimate goal is to maximize limited funds so utilities can deliver important capital programs.

We apply a systematic approach to asset management that relies on front-line condition assessments, criticality analyses, failure probabilities, and affordability measures, coupled with a thorough evaluation of infrastructure performance and compliance history.

We cover all the bases, from evaluating your current assets to defining your program needs, and monitoring overall performance to defining maintenance, repair and replacement needs. With this knowledge, we help develop a specific program geared toward your unique business drivers and challenges, one that meets your customer service and regulatory compliance goals.

When operational initiatives are unable to address asset management goals and system performance requirements, we help utilities develop a businesslike approach to capital improvement programs. This ensures that all major capital projects are prioritized through a formal and clearly defined process. With Red Oak’s connection to vast ARCADIS technical resources, the proposed capital programs will be innovative and aligned with the best worldwide strategies.

By integrating Red Oak’s strengths with the vast technical and operational experience of ARCADIS, we provide an effective, comprehensive approach that addresses reliability of aging infrastructure, growth and capacity, and priority of needed investments.
Asset Management Improves Performance, Minimizes Risk

The Columbus Department of Public Utilities (CDPU), one of the largest U.S. public water, wastewater and power utilities, needed major capital improvements to comply with regulatory mandates. To help streamline CDPU’s infrastructure programs, Red Oak designed a unified asset management approach.

Focusing on proactive maintenance and replacement of assets, the approach also incorporates financial, social, and environmental considerations in all business decisions. It included water system planning and modeling, risk-based asset analysis, service level criteria, maintenance system enhancements, and overall capital program management.

The end result is a utility-wide, risk-based framework for analysis, planning, and program management. Our services helped CDPU save millions of dollars by channeling infrastructure funds to critical assets while meeting defined service levels and maintaining overall rate stability.
Effective risk management relies on a protocol that quickly identifies the most critical risks to the utility’s viability or mission and a detailed mitigation plan that includes monitoring performance, defining internal and external impacts, and prioritizing spending to maximize the benefits of the plan.

Identifying and managing risk is a challenge at every level of a utility that can jeopardize your mission. Red Oak addresses risk issues and helps utilities use prudent risk management approaches for decision-making platforms.

Because every part of your organization contributes to its success, risk resides everywhere. In effect, each department is already managing risks through their policies, procedures and actions. Our goal is to help your organization be more effective by establishing an integrated, risk-based decision-making approach that focuses on the key risks that could threaten the viability or mission of the utility.

Central to the success of our risk management consulting practice is our ability to gather, organize and extract the right data to determine both the probability and the consequence of failure. Our statistical modeling of potential risks allows organizations to focus in on the most important risks and make informed decisions on their risk management strategies.

Ultimately, when your management team understands the common elements inherent in different types of risk, they can implement an integrated risk management strategy using a coherent and comprehensive risk framework, one based on quantifiable probabilities and consequences of failure. With this holistic approach, you can better define your organization’s true overall risk profile, and assess the effectiveness of individual actions.
Security Initiatives Preserve Utility Objectives

Located in an area subject to extreme weather events, and in close proximity to an international border, and an international airport, Dallas Water Utilities (DWU) needed help to evaluate risks to its mission associated with its critical infrastructure and operations.

Red Oak specialists performed a comprehensive assessment of the vulnerability of DWU’s water and wastewater systems and operations. We worked with DWU to develop a baseline risk profile and to establish risk reduction goals. We then helped DWU define an effective plan to mitigate the identified risks. To support future recovery efforts, we prepared DWU staff to respond to natural or man-made emergencies, including a customized training program meeting Federal standards. To finance needed investment, we assisted DWU in securing over $8 million in grants for equipment, training, and warning systems.

Red Oak’s work with DWU, which began with a regulatory response, minimized both security and business risks, ultimately evolving into a true partnership.
Red Oak has a singular approach to innovative solutions — strategy must precede structure. To this end, our strategic planning process identifies and prioritizes short- and long-term goals, and then evaluates options to improve performance and achieve goals.

Our specialists develop creative enterprise models, working among a broad spectrum of your stakeholder groups — policy makers and board members, executive staff, key managers and discipline leaders, legal and financial advisors, service providers and contractors, financiers, governmental agencies, and customers. We can help define, procure, implement and monitor innovative programs, which may include outsourcing elements, asset transfers, private equity and creative financing arrangements, and revamped organizational structures.

Any time new strategies are implemented, it is critical to monitor and measure performance. We understand how to develop useful performance indicators or contract provisions to facilitate measuring the success of new programs. Innovation requires dedicated follow-through, and we ensure that your organization reaps the maximum benefits of any new arrangements.

Utilities routinely explore creative options, from public-private-partnerships or integrated project delivery methods, to organizational transformation initiatives, financing alternatives, or emerging technologies. In every case, Red Oak uses a thoughtful review process to help you make the right decision.

By applying technical expertise and business acumen Red Oak delivers innovative programs, garnering stakeholder and regulatory approvals as well as financial support and stability.
Full-Service Contracting Expedites Project Delivery

The San Diego County Water Authority (SDCWA) needed to develop a new treatment system to meet increasing demands and address water purchase limitations.

To develop and deliver the new 100 mgd Twin Oaks Valley Water Treatment Plant, Red Oak applied a comprehensive design-build-operate (DBO) strategy addressing technical, financial, legal, business, and operational challenges. Working closely with SDCWA, our work included all project phases from pilot testing, preliminary design and permitting, to a fully integrated design-build-operate procurement process, including developing a balanced service contract with specifications, performance requirements, and contractual incentives.

Procured, designed and constructed within four years, and well below projected cost estimates, the $157 million facility is California’s largest DBO water treatment facility and one of the nation’s largest submerged membrane water treatment plants, recognized as a model for project management and delivery.
Red Oak helps utilities identify and implement technologies to improve business performance. By transforming data into useful information, we help you reach your productivity and accountability objectives.

Streamlining and standardizing business processes can instantly create value. Red Oak enables you to optimize processes by eliminating redundant functions that do not add value. We align your business processes and strategic plans, leveraging leading-edge tools and industry best practices to create sustainable systems.

Information is the lifeblood of any organization. In order to select the right technologies, Red Oak chooses those that best meet the identified business objectives of the utility. These objectives are used to define the functional and technical requirements so as to promote alignment and accountability. This yields systems that will be embraced by users, eliminating frustration and developing partnerships within the organization. By creating useful platforms, we provide an information technology environment that supports continuous improvement and gives management the right leverage to maximize their organization’s effectiveness and efficiency.

From program management information systems, computerized maintenance management, and enterprise resource planning (ERP), to compliance management or customer service systems, Red Oak initially focuses on business blueprinting — mapping work within the organization or department. The result is systems that improve service levels and provide business intelligence.

Red Oak analyzes business objectives to promote alignment and accountability in the selection and implementation of technology systems. This comprehensive and value driven approach makes utilities more effective and efficient.
Harnessing Technologies Meets Business Objectives

The Birmingham Water Works Board (BWWB) has faced mounting business, operational, financial, and compliance challenges typical of large water and wastewater utilities, and lacked the modern-day tools needed to meet their business objectives and the demands of the 700,000 people they serve.

Red Oak’s comprehensive approach integrated technology planning with strategic business and capital program planning to define a set of technologies that would meet their business objectives, provide an improvement in customer service levels, and a measurable return on the investment. Candidate systems were evaluated and prioritized around available capital funding which was significantly limited by ongoing and essential compliance and infrastructure improvements. The result was a patient approach to transform the utility into a best practice organization that effectively harnesses technologies.

After more than a decade of work, Red Oak’s approach and support has enabled BWWB to define and stay on its pathway to achieving its objectives by using effective technologies to meet performance goals.
Partnering with You to Create Lasting Solutions

Integrated solutions based on sound technical and business objectives provide the foundation of Red Oak’s sustainable optimization strategies. Our approach unleashes the embedded expertise of a utility’s organization, and complements such inherent knowledge with the experience of the ARCADIS global network. In partnership with our clients, we help optimize existing operations, transforming organizations for the benefit of all stakeholders, and ultimately delivering enduring solutions that address challenges for today and for the future.
ARCADIS is an international company providing consultancy, design, engineering and management services in infrastructure, water, environment and buildings. We enhance mobility, sustainability and quality of life by creating balance in the built and natural environments. ARCADIS develops, designs, implements, maintains and operates projects for companies and governments. With 21,000 employees and more than $3.2 billion in revenues, the company has an extensive international network supported by strong local market positions. ARCADIS supports UN-HABITAT with knowledge and expertise to improve the quality of life in rapidly growing cities around the world.

U.S. Statistics
- 160+ offices
- 6,200 employees

Global Statistics
- 21,000 employees
- Over 300 offices in more than 38 countries