Geosyntec consultants

WATER SUPPLY & RESILIENCE

Geosyntec helps clients understand and improve the reliability and resilience of their water supply, offering a range of services:

- Water Supply Assessment and Planning
- Water Rights
- Water Quality and Source Water Protection
- Engineering Design and Implementation
- Watershed and Environmental Analysis
- Computational Modeling
- Regulatory Compliance

For more information
geosyntec.com/markets/water/water-supply-and-wastewater

Geosyntec helps communities, municipalities, and businesses expand and strengthen their water supply systems. We help organizations adapt to changing watershed conditions, meet increasing demand, and prepare for future water-related challenges.

With years of experience in hydrology, water rights, infrastructure design, and water-supply resilience planning, we offer a comprehensive range of solutions to secure water supply reliability.

WHY WATER SUPPLY RESILIENCE MATTERS

CLIMATE IMPACTS

Droughts, extreme rainfall events, and temperature shifts are altering natural water cycles, affecting water availability.

CHANGING DEMAND

Increased demand for clean, reliable water, in both urban and rural areas, calls for forward-thinking solutions.

REGULATORY COMPLIANCE

Local, state, and federal regulatory frameworks for water rights, water quality, and water supply planning continue to evolve.

RISK MANAGEMENT

Water disruptions, whether due to environmental or infrastructure challenges, pose significant operational and financial risks for clients in the public and private sectors.

OUR SERVICES

WATER SUPPLY RESILIENCE PLANNING

We work closely with you to assess your water supply challenges and develop a strategy that addresses near-term and long-term solutions to the changing landscape of water supply, water demand, and regulatory compliance. Our planning services are as follows:

- Hydrological modeling and forecasting, including coupled groundwater and surface water models and optimization of existing supply
- Risk assessments and vulnerability analysis, including source-water protection, groundwater recharge management, conveyance and treatment systems, and infrastructure geohazards
- Water conservation and demand management strategies
- Water source portfolio diversification planning (including recycled water, desalination, stormwater harvesting, conservation)

WATER SUPPLY INFRASTRUCTURE DEVELOPMENT & OPTIMIZATION

Resiliency means ensuring your water infrastructure is robust and efficient. We evaluate existing systems and propose innovative solutions for improving capacity, reliability, and sustainability:

- Aquifer storage and recovery (ASR) and infiltration systems
- Water treatment systems, including wellhead and agricultural treatment
- Pipelines, canals, and storage systems
- Wellfield rehabilitation and optimization

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DROUGHT & EMERGENCY RESPONSE

We develop actionable plans to ensure continuous water supply during times of stress, such as droughts, natural disasters, or supply interruptions:

- Drought and flood scenario modeling, including long-term forecasting and event-based simulations
- Contingency planning and risk management frameworks, including probabilistic failure analysis
- Development of emergency water sources, including wells, water storage and distribution systems
- Coordination with local and state emergency services for disaster preparedness and response

REGULATORY SUPPORT

We address water supply resilience issues across multiple regulatory frameworks including water rights, water quality, land-use, and environmental regulatory processes:

- Water rights due diligence and permitting strategies
- Source water quality monitoring, reporting, and trend analysis
- Water resources management as part of land use planning for urban, rural, and agricultural landscapes
- Contaminant source evaluations and impacts to water supply, including PFAS
- Ecosystem resiliency and in-stream flow compliance

PUBLIC ENGAGEMENT & EDUCATION

Community buy-in is often critical to the success of a water resiliency project. We support community engagement in many ways:

- Stakeholder engagement workshops
- Public education programs and materials on sustainable water management
- Policy recommendations and advocacy support

LET'S TALK ABOUT YOUR WATER FUTURE

Investing in water resilience today means securing a reliable and sustainable water supply for tomorrow. Let Geosyntec help you navigate the complexities of water management and prepare your systems for future challenges.

OUR APPROACH

ASSESS

We begin with a comprehensive analysis of your current water supply situation, climate vulnerability, and infrastructure condition.

PLAN

Based on our findings, we design a customized water-supply resilience strategy that aligns with your needs, budget, and long-term goals.

IMPLEMENT

We help execute the plan, securing funding and permits and overseeing the installation of new systems.

MONITOR & OPTIMIZE

Our ongoing support helps keep your water systems resilient, adaptive, and compliant with evolving regulations.

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