

ENERGY, WATER, AND ENVIRONMENTAL SOLUTIONS FOR DATA CENTERS

Our forward-thinking engineers, environmental experts, and strategic planners are working together to deliver integrated solutions that drive data center infrastructure forward.

Geosyntec partners with clients to de-risk complex projects and mitigate challenges while identifying opportunities to accelerate site development, achieve compliance, and maximize sustainability outcomes. We support clients in site selection, due diligence, and developing projects that meet the demands of rapidly expanding digital infrastructure.

Through smart planning, design and engineering, and our experience in greenfield and brownfield infrastructure and energy development projects, our multidisciplinary teams deliver solutions aligned with regulatory mandates, decarbonization goals, water conservation, and informed site development objectives to position our clients for long-term success.

SERVICES



Energy Solutions

- Owner's Engineer and Agent
- Renewables
- Battery Energy Storage Systems
- District Energy and Microgrids
- Nuclear and Fuel Cells
- Geothermal/Ground Source Heating and Cooling
- Carbon/Greenhouse Gas Strategies
- Grid Expansions
- Transmission Routing Studies



Water Management

- Groundwater and Hydrologic Modeling
- Water Treatment Design
- Water Rights Acquisition and Transfer
- Water Banking and Mitigation
- Water Storage
- Stormwater and Industrial Wastewater Management and Treatment
- Wastewater Treatment and Permitting
- Stormwater Pollution Prevention Planning
- Spill Prevention, Control, and Countermeasures Planning



Land Development & Environmental

- Transactional, Technical, and Environmental Due Diligence
- Civil and Geotechnical Engineering
- Feasibility Studies
- Brownfields/Greenfields Redevelopment and Land Revitalization
- Environmental Site Assessments
- Site Remediation
- Property Portfolio Management
- Permitting and Compliance
- Geohazard Evaluations
- Structural Engineering
- Construction Dewatering
- Slope Stabilization
- Flood Control

We focus on the efficient delivery of resilient infrastructure and sustainable resource solutions across energy and digital sectors—accelerating performance, reducing risk, and maximizing return on investment.

ENERGY, WATER, AND ENVIRONMENTAL SOLUTIONS FOR DATA CENTERS CASE STUDIES



DUE DILIGENCE & ECOLOGICAL SUPPORT FOR DATA CENTER DEVELOPMENT United States Gulf Coast

Geosyntec is providing due diligence support for multiple proposed data center development projects to evaluate the suitability of large contiguous properties at proposed greenfield, brownfield, and power colocation sites. Our environmental and technical due diligence work includes evaluation of environmental, ecological, and archaeological concerns; water supply studies; Phase I environmental site assessments (ESA); permitting and risk assessments; existing asset assessments; and associated site development activities. We are also providing permitting and engineering support through project execution with a focus on schedule and budget.



BROWNFIELD AND GREENFIELD ENVIRONMENTAL AND TECHNICAL DUE DILIGENCE MULTIPLE LOCATIONS, UNITED STATES

Geosyntec provided investor due diligence for environmental and technical aspects of planned power and data center colocation projects including permitting and public participation risks, existing conditions assessments, greenhouse gas (GHG) modeling and regional air quality assessments, hydrogeologic and water supply evaluations, geotechnical support, and site development critical issues analyses. Geosyntec considered investor objectives and commitments in the context of the siting opportunities to develop preliminary risk registers and recommendations for future phases.



SITE DEVELOPMENT FOR BATTERY STORAGE | EASTERN UNITED STATES

In support of adding grid capacity for data center development, Geosyntec is preparing engineering, procurement, and construction bid packages for the development of multiple battery energy storage system (BESS) sites in the eastern United States. Our services include environmental due diligence and Phase I environmental site assessments, conceptual civil and electrical design, noise baseline assessments and modeling, Energy Assistance Fund (EAF)/State Environmental Quality Review (SEQR) applications, and local permitting support. In addition to grid expansion, Geosyntec is assisting the client with evaluating behind-the-meter colocation opportunities with data centers. To date, Geosyntec has supported the development of nine BESS facilities for this client.



DATA CENTER COOLING TOWER WATER MANAGEMENT SUPPORT | ARIZONA

Geosyntec assessed the technical and regulatory feasibility of connecting the site to the local/regional reclaimed water network. Our team assisted with evaluating alternative approaches for online conductivity monitoring to improve operations including the reverse osmosis system operations for the cooling water supply, increase sustainability, and satisfy increased water demand from facility expansion. Geosyntec is working with local agencies to develop regulatory guidance for reclaimed water use in evaporative cooling systems, creating a legal pathway for reclaimed water use that is currently not permitted. Geosyntec also drafted a design for water reuse from rooftop adiabatic cooling units with an upcoming planned construction, projected to decrease facility water consumption by up to 6%.



DATA CENTER EXPANSION WATER SUPPLY SUPPORT | WASHINGTON

Geosyntec is completing a water rights due diligence assessment and water rights permitting strategy for an existing data center operation in Washington state. Under this project, Geosyntec is providing an overview of the likely validity of the water rights portfolio and comparing the water rights authority to historical water use and future anticipated water demands. Where excess authority exists, Geosyntec is tasked with preparing a plan for protecting the water from relinquishment and monetization of the asset. Where water supply deficits exist compared to anticipated demands, Geosyntec is supporting identification and acquisition of additional water rights.

About Geosyntec

Geosyntec is a consulting and engineering firm that works with private and public sector clients to address new ventures and complex problems involving our environment, natural resources, and civil infrastructure.

With a combined staff exceeding 2,800 engineers, scientists, and related technical and project support personnel, we serve our clients from more than 130 offices in the United States, Canada, the United Kingdom, Ireland, Sweden, Finland, Spain, Saudi Arabia, the United Arab Emirates, and Australia.

Geosyntec
consultants