

Electric Distribution Lines

Distribution lines, critical to the nation's electric infrastructure, support the on-demand electricity that flows directly from substation to consumer. The electric utilities responsible for installing and maintaining distribution grids need dependable distribution solutions and they trust GAI Consultants with their design, upgrade, expansion, and overhead to underground conversion projects.

Dedicated professionals and full-service capabilities mean clients' expectations are met with results-oriented solutions for reliable energy distribution.

Multiple engineering disciplines are required to design distribution lines—from load analysis and route evaluation to design development and construction management. GAI has comprehensive abilities in overhead line/structure, underground line/manhole, infrastructure hardening, and overhead to underground conversion design. We deliver efficient and reliable power delivery results.

Our skilled specialists also analyze structures and line load, and design underground rerouting.

GAI understands the need to design systems that incorporate hardening and resiliency measures so systems are less susceptible to physical damage and can recover from damage quickly. Our project experience in system line upgrades and overhead to underground installations is valuable for clients pressed to meet the high demand for new lines, expansions, and hardening.

GAI's line analysis and design capabilities include route selection, pole loading analysis, equipment selection, and design engineering. Our start-to-finish involvement begins with project initialization, continues through energizing the line, and follows up with training and maintenance plans.

Hardening existing distribution lines requires that feeders be prioritized based on critical customer impact. GAI also analyzes current pole and line loading, designs pole replacements, and updates obsolete equipment for results-oriented solutions.



gai consultants®

Service Profile



Traveling along millions of miles of line, electricity is generated and distributed upon demand, and GAI helps energy clients meet that demand. Our distribution line services are complemented by in-house capabilities in transmission and substation engineering, surveying, permitting, routing, and traffic

control engineering. With proven experience and a successful record of designing and implementing power delivery systems, GAI's dedicated team of engineers offers a broad range of services for overhead and underground distribution lines.

Electric Distribution Lines Services

- Overhead feeder/lateral design (up to 69kV)
- Underground feeder design (up to 69kV)
- Route evaluation and selection
- Line and transformer loading analysis
- Infrastructure hardening
- Feeder prioritization and modifications
- Surveying
- Structural analysis
- Structural design (new manholes and expansions)
- Commercial and residential development
- Right-of-Way acquisition assistance
- Transmission line coordination
- Feeder modifications
- Conductor replacement
- Transmission line structure distribution underbuild accommodations
- Material procurement
- Environmental and governmental permitting
- Regulatory compliance
- Project estimating (labor, material, engineering)
- Work Order Inspections
- Construction monitoring
- Public information workshops
- Cable replacement
- Underground rerouting
- Overhead to underground conversions

GAI Services Summary

- Airport Planning and Design
- Bridge and Structure Inspection and Design
- Coal Combustion Residuals Management
- Construction Inspection and Management
- Cultural Resources Management
- Economic Analyses and Strategies
- Electric Transmission Design and Siting
- Environmental Engineering
- Environmental Studies, Species Studies, Permitting
- Gas Pipeline Surveying and Mapping
- Geographic Information Systems (GIS)
- Geotechnical Engineering and Geology
- Impoundment and Landfill Permitting and Design
- Land Development Engineering
- Landscape Architecture and Design
- Master Planning and Urban Design
- Mechanical, Electrical, Structural Engineering
- Natural Gas FERC Certification and Permitting
- Nuclear Energy Engineering Support
- Right of Way and Appraisal Support
- Land Surveying and Mapping
- Transportation Planning and Design
- Utility Management Consulting
- Water, Stormwater, Wastewater Management

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