NV5 GEOSPATIAL

ELECTRIC TRANSMISSION LINE SITING

ACQUIRE ANALYZE ANSWER

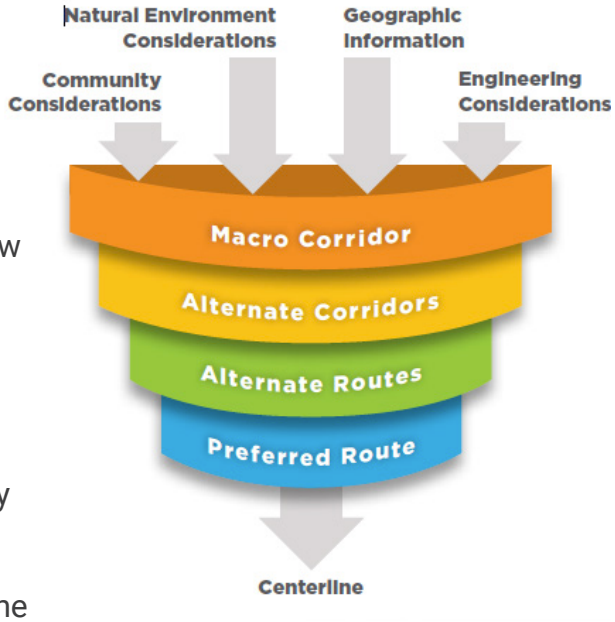
As co-developer of the EPRI-GTC Overhead Transmission Line Siting Methodology, NV5 Geospatial has unmatched expertise in helping electric utilities locate preferred routes for new transmission lines.

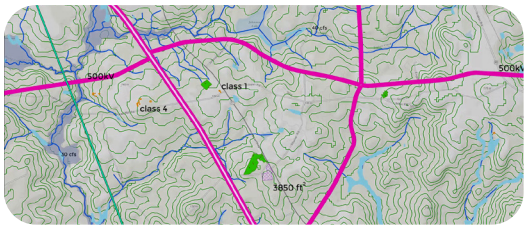
The award-winning methodology has been used to site more than $1 billion in new infrastructure in eight states and three countries.

RIGOROUS APPROACH

The selection of preferred transmission line routes is a growing source of regulatory scrutiny and public debate throughout the world. Siting new power lines requires resolving a complex set of engineering, environmental, and societal issues.

The EPRI-GTC methodology sets the standard for taking any transmission line construction project from initial planning through final route selection. The rigorous step-by-step process facilitates the selection of an optimal route, taking into account the natural environment, built environment, and design and construction concerns.





FASTER, DEFENSIBLE DECISIONS

Electric utilities benefit enormously from a standardized approach to siting selection.

The EPRI-GTC methodology:

- Produces siting decisions that are quantifiable, consistent, transparent, and defensible
- Reduces risks by addressing regulatory scrutiny and stakeholder issues early in the process
- Shortens the planning and permitting cycle
- Improves productivity and analytical capabilities

INDUSTRY-LEADING SITING METHODOLOGY

- Favored by regulators
- Real-world tested in 200+ transmission line projects
- Used in 8 states and internationally
- Featured in national industry publications including *Transmission & Distribution World*, *GeoWorld*, *Electric Transmission Week*, and *Point of Beginning*

EXPERTISE

Data Acquisition
Alternative Route Development
Impact Analysis
Route Selection Analysis
Engineering Surveys
Environmental Compliance
Public Outreach
Digital Renderings

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ELECTRIC TRANSMISSION

LINE SITING

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SITING METHODOLOGY

STEP 1

Identify Macro Corridors

- Identify beginning and end points of proposed transmission line
- Create a digital map of the study area (grid of 100-square-foot cells)
- Assign values to each cell on the map, representing a land use feature, from 1 (most suitable) to 9 (least suitable)
- Calculate optimal paths for three types of suitability surfaces: 1– locating with existing transmission lines, 2 – locating with existing road rights of way, or 3 – crossing less developed areas

STEP 2

Identify Alternate Corridors

- Collect more detailed data within the macro corridors
- Create suitability maps (grid of 15-square-foot cells)
- Define four types of alternate corridors: 1– built environment (human activities and interests), 2 – natural environment (environmental concerns), 3 – engineering requirements (design and construction), and 4 – simple average
- With the input of external stakeholders, set evaluation criteria and rank factors (such as housing density and wetlands and land cover)

STEP 3

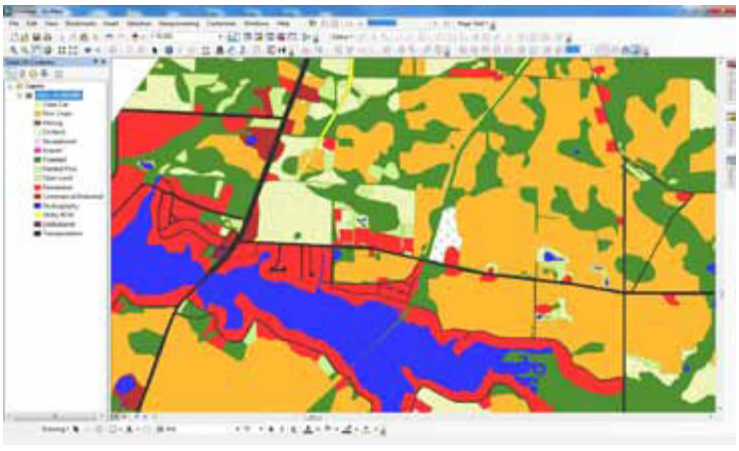
Identify Alternate Routes

- Identify property lines and classify types of buildings within the alternate corridors
- Have utility professionals use their expert judgment to identify alternate routes

STEP 4

Select a Preferred Route

- Review a standard list of metrics (cost, number of houses nearby, etc.) for the alternate routes (metric values are automatically calculated)
- Assign relative weights to community concerns, visual concerns, special permit issues, scheduling risks, and accessibility for construction and maintenance
- Rank top alternate routes, then use expert analysis to identify the preferred route



NV5 Geospatial created the siting methodology in partnership with Georgia Transmission Corporation (GTC) and the Electric Power Research Institute (EPRI). To complement the methodology, we also developed Corridor Analyst®, a GIS software now owned by Trimble.