DATASHEET

Trimble Corridor Analyst Routing Software

KEY BENEFITS

- Implement a more acceptable route selection process
- Easily analyze more information faster and more effectively
- Receive informed, proactive, and constructive input from stakeholders
- Implement a consistent routing process across an organization
- Efficiently document the process for environmental reports
- Make more informed decisions
- Facilitate selection of the most cost-effective routes
- Minimize impacts to people and natural resources

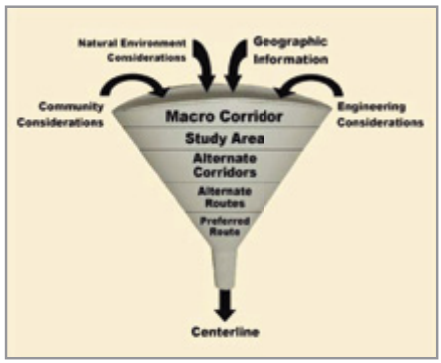
KEY FEATURES

- Assign a numerical suitability value to all mapped features in the study
- Easily modify suitability values based on public input or unique environmental factors
- Assign engineering constraints such as right of way width, maximum turn angle, and minimum run length
- Create a composite suitability map of the study area
- Generate new corridor alternatives using constrained least "cost" path algorithms
- Automatically generate alternative corridor reports including statistics such as total length, number of landowners impacted, number of streams crossed, acreages of land use / land cover impacted, number of houses within a specified distance
- Automatically generate reports summarizing criteria used
- Export reports to the Microsoft® Office Suite
- Corridor Analyst is an extension to ESRI ArcGIS

TRIMBLE CORRIDOR ANALYST ROUTING SOFTWARE

Selection of preferred routes for linear projects is a growing source of public controversy and regulatory scrutiny throughout the world. It requires resolution of complex interactions of engineering, environmental and social concerns. Trimble® Corridor Analyst routing software brings the resources, technology, and equipment to empower our clients to meet these challenges.

Our decision support analysis algorithms give our clients a more acceptable and supportable route selection process. Trimble Corridor Analyst was designed to support and enhance public involvement.



HOW IT WORKS

Worldwide there is a shortage of high voltage transmission lines and demand is expected to grow at least 20 percent in the next decade. The selection of transmission line routes is a growing source of public controversy and regulatory scrutiny throughout the world. Trimble Corridor Analyst breaks down the complex route selection into a four-step process. This siting methodology allows external groups to participate in the process and makes decisions by utility professionals more transparent and credible.

Trimble Corridor Analyst is a GIS based software that maps all geographic features in a study area, assigns numerical suitability values to all features, assigns engineering constraints, generates corridor alternatives using statistically sound algorithms, automatically generates alternative corridor reports, and automatically creates reports summarizing criteria used and values assigned.

A 4-step process

The methodology has three main benefits :

- It produces siting decisions that are more quantifiable, consistent and acceptable
- It improves productivity and analytical capabilities
- It reduces risks by addressing regulatory scrutiny and stakeholder issues

STEP 1: IDENTIFY MACRO CORRIDORS

First the planning staff identifies beginning and end points where a new power line or pipeline is needed. Satellite imagery and data on roads, terrain and existing transmission lines are merged to form one digital map of the study area. This map is comprised of a grid of 100-square-foot cells. Each cell on the map is ranked. Features such as residential land use,

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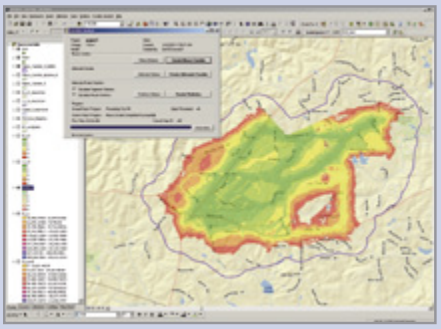
Trimble Corridor Analyst Routing Software

agriculture and wetlands are ranked from 1 (most suitable) to 9 (least suitable). Using the cell values, an algorithm calculates optimal paths for three types of suitability surfaces:

- Locating with existing transmission lines or pipelines
- Locating with existing road rights of way
- Crossing less developed areas

The optimal paths are identified as macro corridors. Combined, the outer boundaries of the macro corridors define the study area.

STEP 2: IDENTIFY ALTERNATIVE CORRIDORS



More detailed data (including aerial photography, detailed land use/land cover, buildings, etc.) are collected to identify alternative corridors within the macro corridors. Using suitability maps comprised of 15 square-foot cells, four types of alternative corridors are defined:

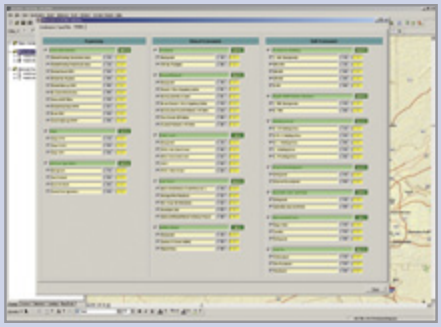
- Built environment—protecting human and cultural resource areas
- Natural environment—protecting plants, animals and aquatic resources
- Engineering requirements—maximizing co-location and minimizing cost and schedule challenges
- Simple Average—composite of the other three collaborative rankings

The utility team and external stakeholders set evaluation criteria and rank factors such as housing density, wetlands and land cover. Stakeholders from government and industry and from civic, homeowner, environmental, and other interest groups are invited to participate in ranking these factors. External stakeholder calibration can be done on a regional, statewide, and local basis.

STEP 3: IDENTIFY ALTERNATIVE ROUTES

Within the alternative corridors, property lines are identified, and buildings, which were digitized earlier in the process, are classified by type, such as occupied house, commercial building, or industrial building. Collecting detailed data after alternative corridors are identified significantly reduces data acquisition costs. In this phase, utility professionals use their expert judgment to identify alternative routes within the corridors defined by stakeholders.

STEP 4: SELECTING A PREFERRED ROUTE



GIS based tools automatically calculate a standardized list of metrics for the alternative routes. Examples of data evaluated include cost, number of houses close to the route, acres of forest in right of way, etc. The alternative route evaluation tool uses data to filter out the top few routes to forward to the expert judgment tool.

Using the expert judgment tool, the utility siting team assigns relative weights to community concerns, visual concerns, special permit issues, scheduling risks and construction, and maintenance accessibility. Then the top route alternatives are ranked using expert analysis to identify a preferred route. Throughout the process, GIS is a productivity tool to aid experts in the decision-making process. It enables siting team members from engineering, land acquisition, environmental and other areas to use map overlays, spreadsheets, reports, and graphic illustrations to make more informed, objective, and accepted decisions.

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YOUR LOCAL TRIMBLE OFFICE OR REPRESENTATIVE

NORTH & SOUTH AMERICA
Trimble Navigation Limited
10355 Westmoor Drive
Suite #100
Westminster, CO 80021
USA
utilitysolutions@trimble.com

EUROPE & AFRICA
Trimble Germany GmbH
Am Prime Parc 11
65479 Raunheim
GERMANY
+49-6142-2100-0 Phone
+49-6142-2100-550 Fax

ASIA-PACIFIC & MIDDLE EAST
Trimble Navigation
Singapore PTE Limited
80 Marine Parade Road
#22-06 Parkway Parade
Singapore, 449269
SINGAPORE
+65-6348-2212 Phone
+65-6348-2232 Fax

Trimble

www.trimble.com