EARTH ANALYTIC

SCIENCE-BASED GIS SOLUTIONS

SmartFootprint™

www.EarthAnalytic.com

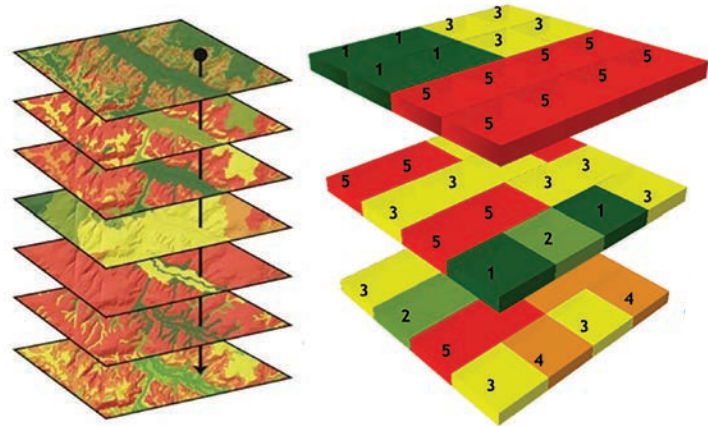# Pipeline Routing, Site Selection, Cost Estimation and Risk Management Tools for Energy

SmartFootprint™ is an extension to ArcGIS designed to assist planning, permitting and construction of energy infrastructure.

SOLUTIONS FOR ENERGY

SmartFootprint™ provides an easy-to-use simulation environment that supports sound decision-making with regard to both onshore and offshore pipeline routing, cost analysis, and risk mitigation, putting advanced tools into the hands of decision-makers at all levels of management.
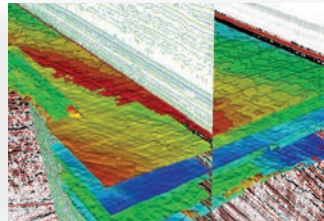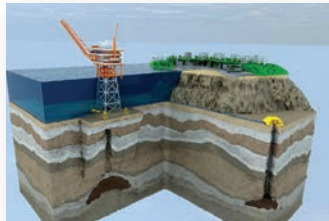
**COST SURFACE GENERATION
VIA WEIGHTED OVERLAY**

SmartFootprint™

- ArcGIS Desktop and ArcGIS Server Solutions
- Hosted web-based solutions (ArcGIS Online/Portal)
- Combined solution includes tools, data and services

Benefits:

- Evaluate alternate scenarios
- Minimize costs and reduce risk
- Maximize planning efficiency
- Optimize permitting and construction scheduling
- Reduce ecological impact

Provides GIS Users:

- Capability to create, analyze, query, investigate, and visualize optimal pipeline routing scenarios
- Accurate estimates for pipeline construction costs
- High-resolution pipeline route elevation profiles
- Detailed crossing reports (e.g., roads, streams, etc.)
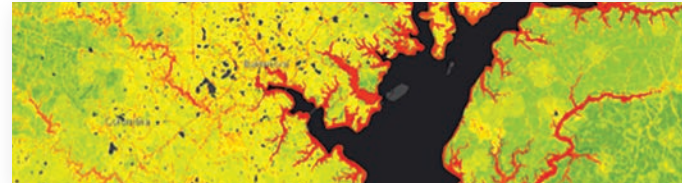- Tools for optimized site selection for energy facilities (e.g., well pads)

Includes:

- Easy-to-use ArcGIS geoprocessing tools and services
- Template ArcMap map documents
- Custom models and tools
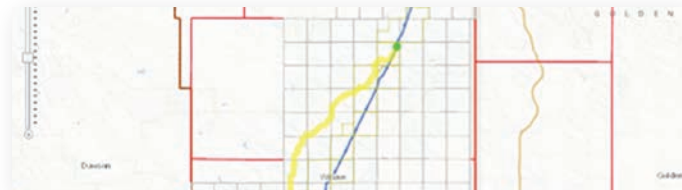
SmartFootprint™

HEAT MAPPER

Weighted overlay toolset for ArcGIS Desktop that generates a hierarchical suite of raster 'cost surfaces', or heat maps, representing relative pipeline route or site location suitability
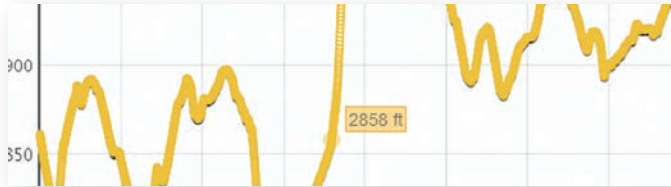
ROUTE FINDER

Pipeline route selection tool that automates route selection through least cost path and corridor analysis
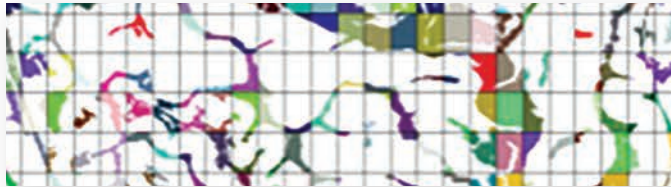
ROUTE INVESTIGATOR

Pipeline route reporting tool that displays and summarizes the type, identification, and stationing of line crossings and provides an itemized estimate of construction costs

☐ None
☐ Very Low
☐ Low
☐ Moderate
☐ High
☐ Very High

ROUTE PROFILER

Pipeline route profile tool that generates an elevation profile and associated data table for a proposed route

SITE FINDER

Site selection tool that delineates and ranks zones of relative suitability for locating well pads or other facilities

SITE INVESTIGATOR

Site assessment tool that characterizes the physiography (e.g., average slope, cut/fill parameters) and relative suitability of zones defined by the Site Finder tool

Data Bundles

SmartFootprint™ Data Bundles are integrated sets of environmental and economic suitability GIS datasets that support optimized planning, construction and management for the energy industry.

- Plug/play input to SmartFootprint™ ArcGIS Server/Desktop Extensions
- Thematic map overlays and web services
- Input to custom GIS workflows

PIPELINE ROUTING

A suite of input datasets and derived criteria rasters (e.g., stream proximity) is used to create a final SmartFootprint™ Route Selection cost surface for the project area.
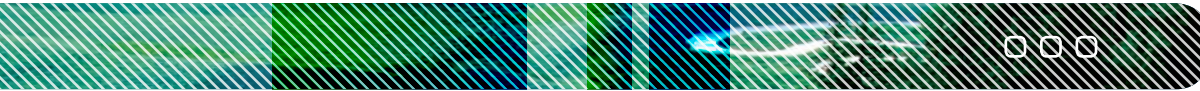
HEAT MAPPER COST SURFACES

Color-coded heat maps combine many environmental and engineering criteria, and are used to guide plans, routes, and facilities construction. Examples:

- Slope
- Transportation
- Land Use & Zoning
- Water Resources
- Protected Lands
- Parcel Size
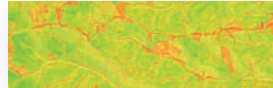- Population Density
- Existing Corridors

SITE SELECTION

A suite of input datasets and derived criteria rasters (e.g., contiguous zones of moderate slope) is used to create a final Well Pad Site Selection SmartFootprint™ cost surface for the project area.

COMBINED COST SURFACES
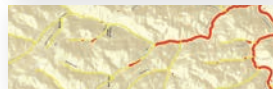
Slope Cost Surface

Transportation Cost Surface

Land Use and Zoning Cost Surface

Water Resources Cost Surface

Combined Cost Surface

Learn more about Earth Analytic at www.EarthAnalytic.com

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