

The Challenge

- **On-line support of an environmental impact statement (EIS)**
- **Effectively communicate the environmental conditions of potential power line routes to**
 - Public
 - Decision-makers
 - Stakeholders
 - Other Interested Parties



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Requirements

- **Display transmission line route alternatives**
- **Answer questions from stakeholders**
- **Easy to use and accessible over the Internet**
- **Expandable, adaptable, and reliable**



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The Solution

- **An integrated web based solution with two major components:**
 - Part 1: Visualization of project impacts through a multimedia 3-D Tour
 - Part 2: Web-based delivery of complex technical and geographical information



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The Benefits

- **Improved communication and trust through accessible information to stakeholders**
- **Succinct visualization of environmental impacts**
- **Provides answers to common stakeholder questions**
- **Simple and easy to use for the general public**
- **Combines multiple data into one location**



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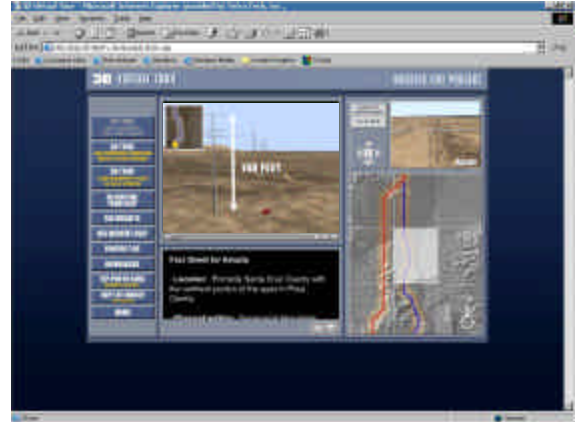
Part 1: 3-D Tour

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- 3-D animated "fly-through" of the landscape elements
- Photography and computer animation
- Illustrate current site characteristics and simulate future conditions



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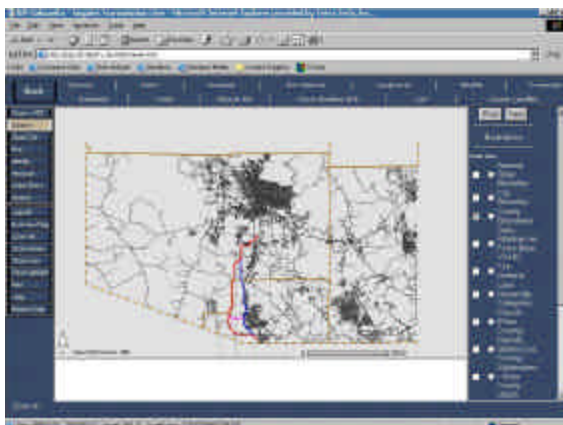


Part 2: Geographical Information

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- Two-dimensional geographic information system (GIS) based maps, data and aerial photography
- User-friendly, intuitive interface
- Provides illustration of various resources
- View threatened & endangered species, vegetation, population, land use, etc.

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3-D Tour Features

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- High bandwidth simulations in both QuickTime and Windows Media player
- Low bandwidth simulations in the form of slides
- Photos in Adobe Acrobat PDF format

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GIS Features

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Multiple data types, including:

- Proposed Transmission Routes
- Boundary (districts, subdivisions, parcels)
- Facilities (fire stations, hospitals, landfills)
- Transportation (roads, airports, railroads)
- Water Resources (lakes, streams, wells)
- USGS Digital Ortho Quarter Quads in both infrared and black & white.



Typical Questions

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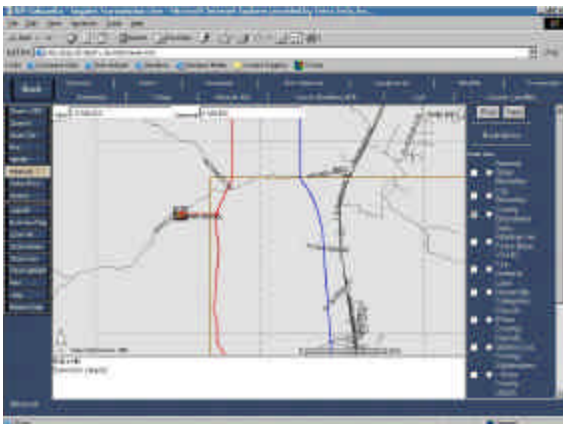
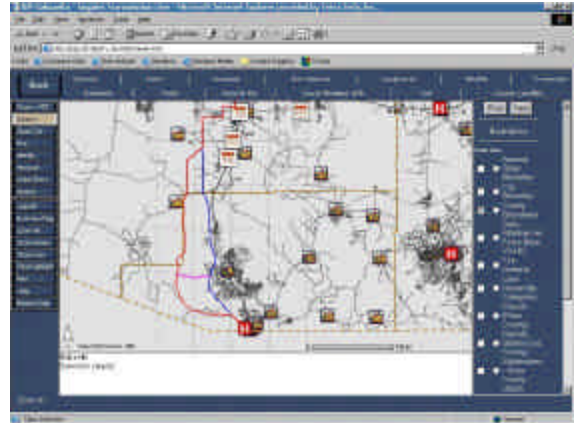
- How close will the transmission line be to my house?
- How close are schools?
- Which airports are nearby?
- Do the transmission routes cross major roadways?
- What habitats will be crossed?



Question...

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- Where are the closest schools?

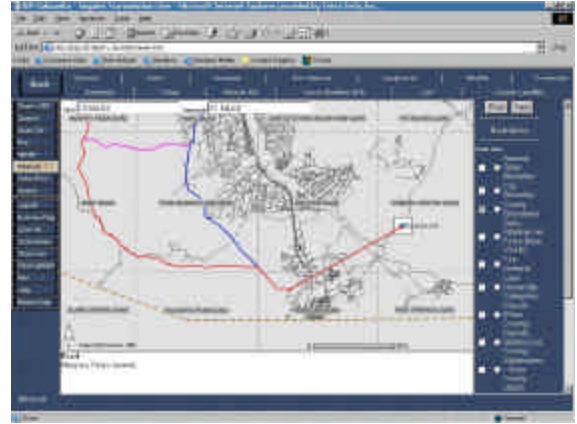
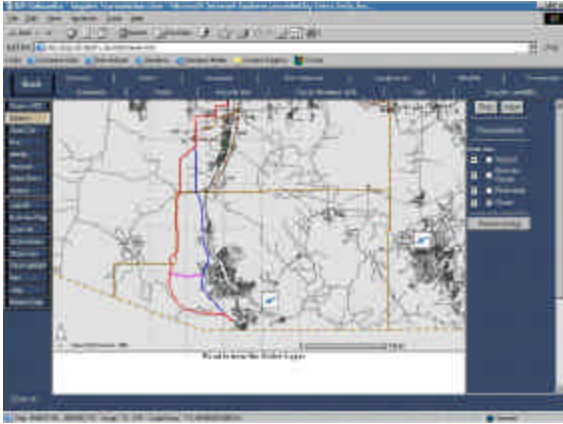


Question...

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- Which airports are nearby?

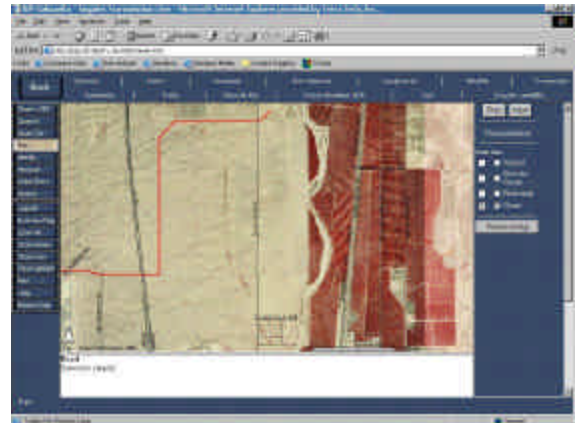




Question...

- **Do the transmission routes cross major roadways?**

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Tools

- **Software**
 - ESRI ArcIMS 3.0
 - Macromedia Flash & JRun
 - Microsoft Windows 2000 Server & Internet Information Services (IIS)
- **Hardware**
 - Dell 2500 PowerEdge Computer

Data Size

- **3-D Tour**
 - 240 MB of Animation Data (Movies)
- **GIS**
 - 470 MB of Geography Data (Shape Files)
 - Over 70 Individual Map Layers
 - 9.3 GB of Photos (DOQQs)

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A Sum Greater than its Parts

- **Several Data Sources are Combined**
 - Tucson Electric Power
 - USGS
 - US Forest Service
 - ESRI Data & Maps 2000 - Media Kit
 - MapInfo Street Pro
 - Pima County Land Information System
- **Low Conversion Effort and Low Cost**

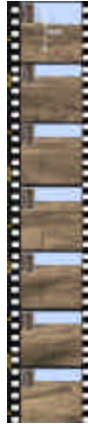
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What other projects could this be applied to? ²⁵

- **Visualizing Census Data**
 - Property Ownership
 - Land-use Information
 - Population Distribution
- **Construction**
 - Transportation: Highway, Rail lines, etc.
 - Pipeline Routes
 - Commercial and Residential Development
- **Land Management**
 - Landscape alteration visual impact analysis
 - Scenic Byways
- **Homeland Security**
 - Vulnerability Analysis
 - Early Warning Systems



Conclusion ²⁶


- **A new approach to viewing and disseminating important EIS support data**
 - Benefits Stakeholders by Combining Disparate Data Sources
 - Simple and Easy to use for the General Public
 - Technically Rich and Robust
 - Expandable, Adaptable, and Reliable



Contact Information ²⁷

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