

Assessment of Aviation's Global Emissions



Environmental Modeling of Trans-arctic and Re-routed Flights

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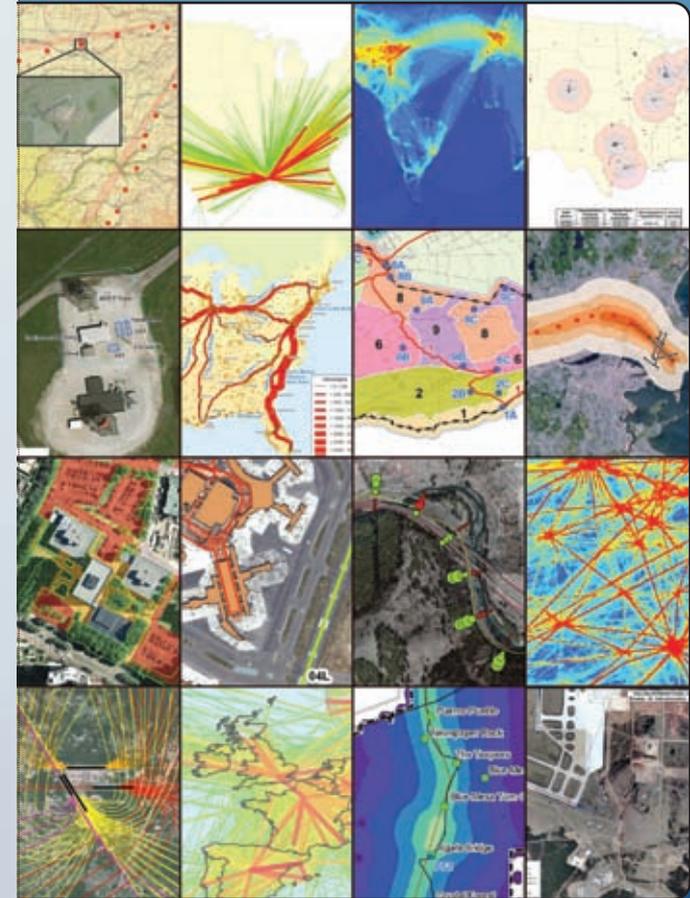


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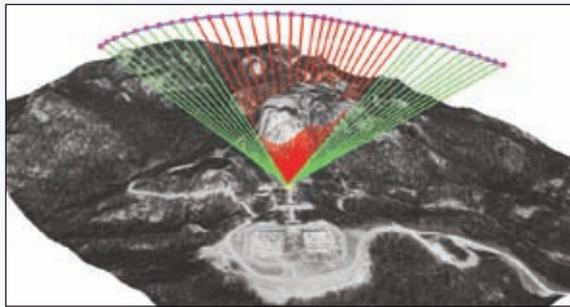
Transportation is inherently spatial. Geographical information systems (GIS) allow us to study data in ways that reveal patterns and that can predict trends. With these capabilities GIS is an invaluable tool for providing insight into many aspects of transportation and provides a 21st century approach for improved transportation analysis and informed decision making.

Volpe's GIS Group

The Volpe GIS Group provides support directly to Volpe sponsors and to others within the Volpe Center to leverage GIS to visualize, analyze, and better understand all aspects of transportation.

The group is comprised of a multidisciplinary staff with over 40 years of combined professional GIS experience, including expertise in:

- Cartography
- Custom Web-Based GIS Solutions
- Database Management Systems
- Open Source GIS
- Remote Sensing
- Software Development and Custom GIS Applications
- Spatial Statistics
- Transportation Modeling
- Training



Mount Rushmore 3D Viewshed Analysis of Air Tour Flight Path to Determine Visitor Impact

Customers and Projects

Federal Aviation Administration

- Assessment of aviation's global emissions
- Developed geospatial asset management system for unmanned facilities
- Aviation Environment Design Tool (AEDT) noise and emissions modeling
- Combined historic maps with current spatial data to aid in locating abandoned underground storage tanks from old FAA beacons
- Modeling of trans-arctic flights
- GIS support for field measurements
- Maps for environmental due diligence audits

Federal Motor Carrier Safety Administration

- Developed web GIS components for FMCSA's "Analysis and Information Online" site

Federal Highway Administration

- Assist with the operation, maintenance, and enhancement of the Office of Planning, Environment, and Realty Geographic Information System (HEPGIS)

Federal Railroad Administration

- Automated geocoding of Railroad Accident/Incident Reporting System (RAIRS) data
- Automated geocoding of Highway-Rail Crossing Inventory data
- Network assignment of Surface Transportation Board Carload Waybill Sample data
- GIS based positive train control risk analysis

Environmental Protection Agency

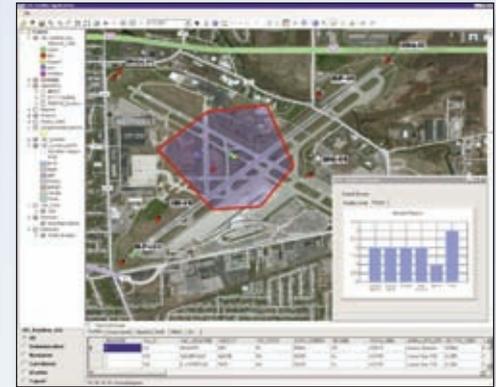
- Developed data and maps of parcel deed restrictions for superfund site reviews

National Park Service

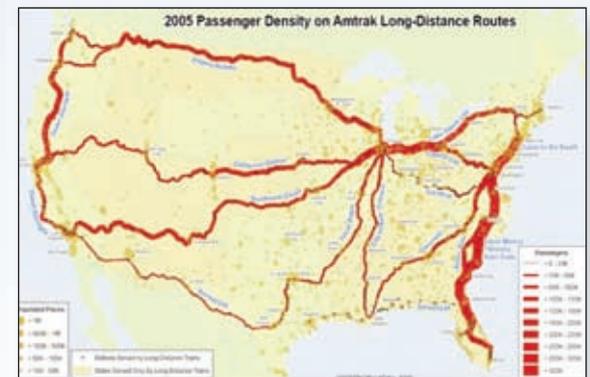
- Custom GIS solutions for National Park Air Tour Management Plans mapping and noise modeling (with FAA)
- 3D modeling of flight paths in various national parks to establish visitor impact
- Frequency of air traffic over national parks

State of Minnesota

- Assessment of roadside carbon sequestration through modified maintenance and management practices



Custom Application for Managing and Analyzing FAA's Unmanned Infrastructure



Network traffic assignment, visualization, and spatial analysis