

GATIR: Securing Pennsylvania's Homeland

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As recent world events have heightened the importance of securing our home fronts from natural disasters and terrorist activities, Governor Rendell is working to make Pennsylvania safer and more secure.

Under Governor Rendell, the state has invested in the development of an application called the Geospatial Analysis of Threats and Incident Reports (GATIR) as part of the state's Enterprise Geospatial Technologies Data Architecture (EGTDA) project.

The secure, Internet-accessible GATIR application provides geospatial technologies (GT) and geospatial information systems (GIS) capabilities that work in conjunction with the Pennsylvania Emergency Management Agency's



(PEMA) Pennsylvania Emergency Incident Response System (PEIRS). PEIRS, an award-winning incident management system, is used by PEMA and county emergency management agencies to record and manage Commonwealth incidents and to coordinate effective responses.

At the heart of the EGTDA project,

the Commonwealth is building a centralized enterprise database for geospatial information that makes data sharing easier and allows Pennsylvania to publish secure and interoperable mapping services through the Internet to share state data with federal agencies, local governments and first responders when an event occurs.

The enterprise geospatial database includes information on geographic locations and characteristics of features and boundaries, such as counties and municipalities, roads, bridges, tunnels, mountains, forests, streams and ponds, buildings, and aerial photography. It will contain important state agency-created geospatial data, as well as enterprise data assets, such as Pennsylvania Map (PAMAP) imagery. PAMAP is a program spearheaded by the Department of Conservation and Natural Resources (DCNR) that will provide high-resolution aerial photography and elevation data for every county in Pennsylvania as part of a seamless digital basemap.

PEIRS users will utilize the geospatial database and GATIR to identify and respond intelligently and quickly to situations. For instance, first responders will be able to generate, save, and print

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intelligent maps that display selected information about an incident and the surrounding landscape and environment, whether it's a road closure, flooding event, or disease outbreak. PEIRS users at different locations will be able to share a common map through GATIR, saving time and resources, and providing for a more efficient and better coordinated response.

The enhanced ability to find incident locations, view interactive maps, print hardcopy maps, and generate reports is expected to help PEIRS users and decision makers at all levels to better coordinate, prevent, and manage emergency situations. MapQuest-like Web services for address geocoding, vehicle routing, and mapping are also being developed as part of the EGTDA project and add other new capabilities to the decision support system.

Funding for EGTDA was made possible through the U.S. Department of Homeland Security's (DHS) 2004 Information Technology Evaluation Program (ITEP) grant to the Bureau of Geospatial Technologies (BGT), in the Governor's Office of Administration, Office for Information Technology (OA/OIT).

It was because of Governor Rendell's leadership that Pennsylvania was one of only 13 states to receive an ITEP grant based on proposed innovative uses of state-of-the-market technology for enhancing state homeland security and demonstrating promise for a national homeland security solu-

tion. BGT was created in OA/OIT by the Rendell Administration in 2003 to coordinate GIS/GT for the Commonwealth.

Upon completion, the EGTDA project and GATIR application will serve as models for DHS and other states, providing valuable information on how geospatial technologies serve the needs of federal, state, and local governments and assist emergency management agencies in sharing static and real-time data to coordinate events that require multiple levels of government cooperation.

GeoDecisions, a Camp Hill-based information technology firm specializing in geospatial solutions, is developing the GATIR application for BGT. The system is based on GeoDecisions' IRRIS(r) technology, a state-of-the-art Web-based transportation security and logistics tool based on the GIS suite of solutions from ESRI(r). IRRIS was originally built for the U.S. military. To date, the federal government has invested more than \$15 million in the technology.

GATIR will provide the Commonwealth with a common operating view of incidents, critical infrastructure, and key assets. For the first time, PEIRS users - from Administration officials to local law enforcement and first responders - can simultaneously view a map of an emergency occurring in real-time and coordinate response efforts.

For example, decision makers could use PEIRS and GATIR to access an interactive map showing the area within five miles of a chemical manufacturing facility where a toxic release incident has been reported in order to analyze the road network and identify optimal rescue routes, identify hospital locations for patient treatment, and determine locations of schools and nursing homes in the area downwind from the facility that might need to be evacuated.

"Geospatial technologies are essential to creating successful and effective public safety and incident response systems to support threat assessment, planning, and response and recovery capabilities," states Stacey White, BGT project manager. "EGTDA is a critical first step in planning and building the necessary geospatial technology data architecture for mapping Pennsylvania's critical infrastructure. This project promotes Commonwealth preparedness for the next major event."

GATIR's ability to work directly with PEIRS to improve access to geospatial data and to visualize emergency incident information will allow Commonwealth agencies and first responders to work together efficiently and effectively to protect her citizens and properties, helping to fulfill one of Governor Rendell's promises for a safer and more secure Pennsylvania.

BGT's website highlights the EGTDA project and other Commonwealth geospatial projects, and can

be accessed at <http://www.gis.state.pa.us>.

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