

Providing Enterprise Access to Roadway Information Systems



With the implementation of a state-of-the-art roadway information system, the Tennessee Department of Transportation (TDOT) provides greater accessibility to the database.

MAINFRAME DATABASE ACCESSIBLE TO FEW EMPLOYEES

The Tennessee Department of Transportation (TDOT) manages over 88,000 miles of roadways and 20,000 bridges. Since 1973, the inventory for the roadways and bridges has been maintained by the Tennessee Roadway Information Management System (TRIMS), an information management system (IMS) mainframe database. In the past, inventory data was only accessible to around 20 employees, and a great deal of knowledge about the structure was required to access the information. It could sometimes take hours or even days for users to receive the reports they needed to support day-to-day operations. TDOT required greater accessibility to their TRIMS data.

THE PROJECT OBJECTIVES:

- Decrease time in generating reports
- Provide TRIMS database access to a wider range of TDOT employees

THE SOLUTION:

In 1997, TDOT management chose Intergraph Corporation to redesign and implement the system as a Microsoft® WindowsNT®-based client-server application. Using a strict project development methodology to design and implement a system that met the needs of all TDOT employees, Intergraph migrated TRIMS from its mainframe database to an Oracle® database while incorporating a PowerBuilder graphical user interface (GUI). TDOT selected Intergraph's GeoMedia® suite of geographic information system (GIS) tools to provide the geographic interface by which employees viewed data. Intergraph redesigned TRIMS with a tabular interface to allow users to query specific database tables. An embedded list of standard queries makes common data easily accessible. Today, any user with access to the system can geographically view a multitude of data, such as road curve and elevation information, crash dates and locations, and maps.

In addition, TRIMS has a new photolog summary screen query tool, which allows users to query and view photolog images while displaying up to three additional views of TRIM

PROFILE:

Name – The Tennessee Department of Transportation (TDOT)

Web site – www.tdot.state.tn.us

Keeping the state moving, the primary goal of the Tennessee Department of Transportation (TDOT), requires a massive and intricate transportation network. The department's mission is to plan, implement, maintain, and manage an integrated transportation system for the movement of people and products, with an emphasis on quality, safety, efficiency, and the environment.

Size – Stretching 88,400 miles, Tennessee's road system could circle the world more than three times. Maintaining these roads requires full dedication to all involved. Other responsibilities of TDOT consist of a wide variety of transportation systems including aviation, public transit, waterways, and railroads. Participation ranges from airport improvements to funding transit buses to planning river ports.

KEY BENEFITS:

- Information accessible to a wider range of employees
- Reduced time in generating reports

PRODUCTS USED:

- Oracle®
- GeoMedia® Suite
- Microsoft® Windows NT®

information. Previously, users had to open up several different reports and query tools and toggle back and forth to look at different data items for the same point on the road. Now, the users can seamlessly view many disparate data items, all for the same point on a route in one interface.

Using the Highway Performance Monitoring System (HPMS), the Federal Highway Administration (FHWA) requires all state departments of transportation to maintain and report data on the extent, condition, performance, and use of the nation's highway system. With the previous process, the FHWA report took several months to prepare. Now, TDOT uses TRIMS to store and manage all HPMS data. TRIMS supports all HPMS sample sections and universe data in a manner consistent with the HPMS application. Using TRIMS to generate the HPMS report greatly reduced manual processing time.

ENTERPRISE-WIDE DATA ACCESS

By using the TRIMS built-in viewer, employees are able to view TDOT's massive reserve of photolog images, which includes front and side pictures or digital images of a section of roadway. Taken every 100th mile on each interstate and state route in Tennessee, these images provide TRIMS users with valuable roadway views of the condition of pavement and hazards. In addition, side images offer information on maintenance of TDOT assets such as guardrails and signage. With the new TRIMS system, digitized photologs in JPEG format are linked to appropriate points on a route, allowing instant display of image and database information for a given location. Within 20 seconds or less, TRIMS users can view the photolog image for a specific roadway location on any Tennessee interstate or state route, without leaving the office. Users can access photolog images in a variety of methods, including a query form, a listing of database records, or by selecting a roadway position on a map. The photolog capability is also available to the TDOT enterprise through a Web browser.

The Route Modification system, a customized tool for maintaining all route changes that occur within the state-maintained highway system, allows TDOT planners to "move," "add," or "delete" a section of roadway and thus move or modify all data associated with the roadway to another location. Since TDOT maintenance and construction personnel are constantly modifying the roadways in Tennessee, the Route Modification System is essential for TDOT planners to keep the roadway data up-to-date.

Regulations from the Governmental Accounting Standards Board (GASB 34) require Departments of Transportation to track information about state-maintained structures and highways. In order to help TDOT comply, all critical changes within TRIMS are tracked. Any data modification that affects the roadway or lane mileage for highways or the deck area of state-maintained structures are recorded. Reports are available in TRIMS to aid in GASB 34 reporting to the Federal Government each year.

Today, more than 700 TDOT employees statewide have access to current data through TRIMS. With data from multiple divisions available enterprise-wide, employees can make mission-critical decisions with confidence. Management often polls employees to identify additional functional improvements, and uses the feedback for regular system enhancements. The phased development and delivery keeps TDOT's Roadway Information Management System on the cutting edge, and system users in the driver's seat.

For more information, visit www.intergraph.com.

ABOUT INTERGRAPH

Intergraph Corporation (NASDAQ: INGR) is the leading global provider of spatial information management (SIM) software. Security organizations, businesses and governments in more than 60 countries rely on the company's spatial technology and services to make better and faster operational decisions. Intergraph's customers organize vast amounts of complex data into understandable visual representations, creating intelligent maps, managing assets, building

and operating better plants and ships, and protecting critical infrastructure and millions of people around the world.



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