University laboratory important source of crash data

WISCONSIN TOPS

TRAFFIC OPERATIONS & SAFETY LABORATORY

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Resources

http://www.topslab.wisc.edu/
Website link for Wisconsin Traffic Operations and Safety (TOPS) Laboratory

http://transportal.cee.wisc.edu/
Link to WisTransPortal data crash request resources.

TRANSPORTATION RESEARCH and advanced data management exemplify the work of the Wisconsin Traffic Operations and Safety (TOPS) Laboratory on the UW–Madison campus. Its efforts hold great promise for local government officials around the state who want and need to base budget decisions for road safety improvements on reliable facts.

The TOPS Lab is a joint effort launched almost five years ago by the University of Wisconsin Department of Civil and Environmental Engineering and the Wisconsin Department of Transportation. TOPS researchers explore ways to gather, archive and manage information critical to creating safer transportation systems. They also map and analyze that information, and develop applications that help users effectively retrieve and apply what they learn.

The TIC-sponsored Safety Circuit Rider project *(see story page 3)* collaborates with the TOPS Lab to connect local roads officials with this source of important safety data.

TOPS Lab Deputy Director Todd Szymkowski says while the lab began by addressing traffic operations and safety issues primarily at the state level, collaboration on the Safety Circuit Rider pilot is a welcome chance to expand TOPS visibility as a crash data resource for local governments.

"Our mission is to research practical ways for the people in charge of the roads to improve the safety of *all* our roads and manage them better," explains Szymkowski. "And because TOPS researchers combine real-world experience as professionals in the field with academic credentials, we understand the need out there for information tools that contribute real value to the decision-making process."

Real-time access to data

An important product introduced in 2006 was the crash-data component of the WisTransPortal. It is a powerful data management system used to collect, archive and deliver valuable transportation data from a variety of sources. The system gives state and local governments access to current and historical crash data from a centralized source. The goal was to create a "data hub" that supports multiple applications in traffic safety and operations.

Xiao Qin, Assistant Scientist and Traffic Safety Program Manager for the TOPS Lab, says the archived record of all reported crashes catalogs each incident using over 50 attributes. These include crash location, time and severity of crash, amount of damage, object hit and driver behavior.

Availability of the data in this form helps state officials meet a federal safety reporting requirement. It also is a plus for Qin and his colleagues as they work on specific projects to identify crash "hot spots" and develop tools that accurately code reported crashes to a map. Analysis of data generated this way, for example, can help officials build adequate safety measures into road construction projects.

Qin notes that safety is a top priority for everyone concerned with road maintenance in Wisconsin, a major factor in transportation planning at all levels. Yet, before TOPS, there were few systematic ways to identify problem traffic areas. "Now to have such comprehensive information available means decision makers can plan and then take appropriate measures to reduce the type and severity of crashes."

Pilot tests data value in safety planning

For this reason, Qin sees the Circuit Rider pilot as a benefit to both local governments and TOPS researchers.

"Having the Circuit Riders on the spot to review crash data with local officials, go through the data analysis steps and assist with identifying safety improvements gives us a chance to test the process. Can the contents of the database become really usable in safety planning? How will local governments handle the data? What results will they get?"

He adds that every local government—not only those working with a Circuit Rider—can request specific crash records through the TOPS Lab right now. Qin and his group process the requests within one to three weeks depending on complexity and volume.

The crash data request process begins at the WisTransPortal page (http://transportal.cee.wisc.edu/) on the TOPS website. Follow the Data Services link to the Crash Data Resource page where visitors can choose to submit a simple request form or request a login account for direct access to data and retrieval tools. Users specify a time period for crashes of interest and a list of locations that can be as broad as an entire county or as narrow as a single intersection.

Good information, sound investment

Szymkowski calls the merging of concrete data with safety planning a sound investment of time and money. He hopes more local governments realize this as they work with the resources of the TOPS Lab.

"Lots of small communities do a good job dealing with safety issues, even where the person in charge of roads wears many hats," Szymkowski says. "TOPS can fill a need where local governments lack the expertise in-house to gather and evaluate data in a way that justifies critical safety improvements. We're ready to do that." ■