

## WSU researcher working to make intersections safer

January 7 2013

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A Wayne State University researcher is part of a federally funded effort that could lead to safer intersections on our nation's roadways.

Timothy Gates, Ph.D., assistant professor of civil and environmental engineering in the College of Engineering, is the lead WSU investigator on a National Cooperative Highway Research Program project that will better illustrate the connection between roadway safety and available sight distance at intersections controlled by [stop signs](#) on the minor streets.

Adequate sight distance is necessary at stop-controlled intersections for drivers to assess when it is safe to enter a major roadway. That distance may be limited by objects or roadway features, such as trees, crops, hills, curves, buildings and parked cars.

The Transportation Research Board is funding the two-year project; WSU's portion of the work is funded by \$75,000. Titled "Safety Impacts of Intersection Sight Distance," the overall project includes a major nationwide data collection effort and is led by Massachusetts-based traffic services firm Vanasse Hangen Brustlin Inc. Portland State University also is a major participant.

Data will be collected in Ohio, North Carolina and Washington, states that were selected to provide diversity among drivers, topographic features and roadway design standards for the 750 intersections included in the sample. Study sites will include divided and undivided [roadways](#) in

rural, suburban and urban settings, and in flat and hilly terrain. Gates and his team will cover 250 locations throughout Ohio, while other project team members will work in North Carolina and Washington.

"Our purpose is to determine if there's truly a relationship between crash occurrence and amount of available sight distance at stop-controlled intersections," Gates said. Such a relationship will be determined using regression modeling techniques that will consider not only the sight distance measured at the intersection, but other factors including traffic volume, area type, topography, speed limit, and visual clutter caused by point objects, such as signs, poles and trees.

"We're trying to fit another piece into the safety puzzle that had not yet been addressed at a nationwide level," Gates said.

The results also will provide the basis for developing uniform guidelines for defining and measuring intersection sight distances.

"Our field data ultimately will be used to develop those guidelines, and the only way to get sight-distance data without a robust set of design plans is to go out and collect it," Gates said. "However, engineers need additional guidance toward performing a sight-distance assessment in the field."

Ultimately, project researchers hope their information can be used by groups like the American Association of State Highway and Transportation Officials, which provides road engineering guidelines for state transportation agencies.

Provided by Wayne State University

Citation: WSU researcher working to make intersections safer (2013, January 7) retrieved 25

April 2024 from <https://phys.org/news/2013-01-wsu-intersections-safer.html>

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