



By Bill Wilson  
Editorial Director

# Is there a right way?

Cities search for answers to prevent deadly type of crash

**W**hen it comes to preventing wrong-way accidents, Milwaukee County, Wis., does not yet know which direction it is heading.

With a pilot program now soaking in data in the outskirts of the city of brews, an initiative spearheaded by the Milwaukee County Sheriff's Department and the Wisconsin Department of Transportation (WisDOT) could go any way. However, following a pair of gruesome accidents involving wrong-way drivers in late 2012, officials believed a major movement needed to happen.

"We had not been able to determine with any high degree of certainty exactly which ramps [wrong-way drivers] were getting on and off, and we are trying to find out if there were flaws in design and placement that is now leading to this," Michael Pyritz, spokesperson for WisDOT, told *ROADS & BRIDGES*. "Is it just unfamiliarity creating some of this? Is it a situation where we have some drivers who are

impaired? Then we also had a couple of situations where the confusion seems to be linked more towards the age of the driver."

Wrong-way driving has been infesting America's roadways ever since the first path was carved, and the problem certainly is not confined to the upper Midwest. Ongoing incidents made the dangerous driving impossible to ignore, and a strong push by the traffic-safety community has plopped the problem squarely on the desk of officials on Washington. In mid-December, the National Transportation Safety Board (NTSB) released a special investigative report on wrong-way driving that covered the following areas:

- Wrong-way collisions—The report defines the problem, examines the NTSB history with these types of collisions and surveys the data and research concerning wrong-way driving collisions;
- NTSB investigations—This report summarizes nine NTSB wrong-way collision investigations;
- Characterization of wrong-way driving—The report considers the components of

wrong-way collisions and uses data, research and NTSB investigative work to summarize these types of collisions; and

- Countermeasures—The report provides recommendations to address wrong-way collisions.

## Several wrongs make an initiative

On Oct. 9, 2012, Milwaukee County Sheriff David Clarke Jr. used stills of twisted metal—the aftermath of wrong-way collisions—to announce his intention to untangle any mystery behind the cause. At the time of Clarke’s press conference, his office had responded to 29 wrong-way incidents in 2012. Over the last six years, Milwaukee County has recorded an average of 33 wrong-way driving incidents annually.

“There is no greater danger to motorists than an oncoming car traveling at highway speeds,” Clarke said. “The sense of urgency when the call comes in is at a fever pitch.”

If there was one, Clarke wanted a solution, and announced a pilot study involving nine ramps in Milwaukee County’s freeway system armed with pole-mounted radar detectors. The technology has created a link directly to the Sheriff’s Department. If a wrong-way incident is playing out, local authorities will be alerted.

Using \$55,000 in federal highway safety-improvement funds, the Sheriff’s Department, working with WisDOT, planted the motion detectors in the following locations:

- I-794 at N. Lincoln Memorial Drive;
- I-94 at Hawley Road;
- I-43 at N. Green Bay Ave.;
- I-94 at N. General Mitchell Blvd.;
- Southbound Miller Park Way at Frederick Miller Way;
- Southbound U.S. 41 at W. State Street and N. Alois Street;
- Northbound U.S. 41 at W. State Street and W. Martin Drive;
- Northbound I-43 at N. 6th Street and West Kilbourn Ave.;
- Northbound Miller Park Way at Frederick Miller Way.

The pilot program kicked into action right before Thanksgiving and will last

one year. WisDOT will look over the first set of results in mid-February, and from there the agency and the Sheriff’s Department will work backward, looking at evidence from cameras, arrest records and other data to try to come up with solid conclusions.

Two of the locations also will carry flashing LED “WRONG WAY” signs. The position of the posted warnings have been changed as well. WisDOT traditionally places the signs fairly close to the ramp entrance. With the pilot study, the flashing LED signs have been placed deeper into the ramp, and two are being used instead of just one.

“One of the other things we are looking for is how they react with these signs,” said Pyritz. “Is it something where they see the sign, stop and do a U-turn?”

Pyritz said one preventive measure that could surface at the conclusion of the pilot program is the use of dynamic message signs to warn motorists that a wrong-way driver is coming, like they are used to announce accidents and Amber Alerts. WisDOT, however, does not want to create a state of panic with the wrong-way alerts, which would cause motorists to make rash decisions thinking they are seeing a violator and reacting in a negative fashion.

As for the cause of wrong-way incidents, Pyritz said it could be broken down into two categories: driver impairment and driver confusion. There are still a large number of roads surrounding the city of Milwaukee that were designed in the 1940s, and there also has been a high degree of new construction. Elderly driving could be another culprit, and driver confusion could be curbed by simply

adding the right type of signage. Along with the flashing LED “WRONG WAY” signs, clear signs indicating the entrance of ramps could help as well.

Retroreflectivity and the evolution of engineering are virtually powerless against drunken driving, which is responsible for the most lethal form of wrong-way driving. Andrew Berholz,

a member of the Wisconsin chapter of ATSSA and executive vice president of TAPCO, which is supplying the pilot study with the flashing LED signs, believes the drunken-driving culture of the state of Wisconsin could be the biggest hurdle to clear. Wisconsin is one of the most lenient states when it comes to DUI violators, and the local breweries and long line of tavern businesses keep local and state politicians from doing much about it.

Some type of grassroots effort needs to be established. According to Berholz, AM 620 is on the airwaves with its wrong-way driving campaign, and the *Milwaukee Journal-Sentinel* recently did a series of stories on the subject.

“It has started, but it is going to take years to try and change the behavior,” Berholz, who would like to see a three-strikes-and-you’re-out punishment go into place for drunken drivers, told ROADS & BRIDGES.

San Antonio also is ramping up efforts to stop wrong-way drivers and has a couple of pilot projects on U.S. 281 and I-35 that have been gathering data since 2011. Warnings of wrong-way driving have been transmitted by TransGuide system operators on dynamic message signs, and flashing LED “WRONG WAY” signs also have been used. In addition, the San Antonio Police Department has trained and equipped all traffic section officers with spike strips in an attempt to stop offenders, and dispatchers use an emergency tone when dispatching reports of wrong-way drivers. The audible signal is used to help maximize officer awareness and increase response time.

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There were 14 documented events on U.S. 281 in 2011 where a 9-1-1 caller alerted the San Antonio Police Department of a wrong-way driver and officers apprehended the suspect. Through March and December of 2011 of the wrong-way incidents that occurred 80% were at night and 45% happened between 2 a.m. and 4 a.m.

## On a national level

The NTSB special investigative report, titled "Wrong-Way Driving," came up with a number of conclusions, including the following:

- Wrong-way collisions occur most often at night and during weekends; they also tend to take place in the lane closest to the median;
- Driving while impaired by alcohol is the primary cause (more than 60%) of wrong-way driving collisions;
- Based on state sign inventory results and investigative examples, controlled-access highway exit ramp signs in some locations are not sized and placed in compliance with the current FHWA Manual on Uniform Traffic Control Devices (MUTCD);
- To reduce wrong-way errors, traffic-control devices should be designed to make exit ramps readily distinguishable from entrance ramps;
- Individual state efforts have identified effective wrong-way driving countermeasures, but there is limited federal

guidance for the use of proven strategies to prevent wrong-way driving;

- Wrong-way monitoring programs provide an effective means of identifying wrong-way collision trends;
- Most of the methods available to stop a wrong-way vehicle involve a high degree of risk and may put law enforcement officers and other motorists in jeopardy; and
- Providing navigation system alerts that inform drivers of wrong-way movements onto controlled-access highway exit ramps before they reach mainline traffic could enhance safety.

The NTSB is asking the FHWA to work with the National Highway Traffic Safety Administration to identify efforts to reduce the involvement of older drivers in wrong-way collisions and publish the findings in a report that includes consideration of Strategic Highway Safety Plan countermeasures that have been effective. The FHWA also needs to develop a manual states can use when implementing strategies and

countermeasures, and the agency must revise the MUTCD to address issues of signage and channelization to reduce instances of wrong-way movements. The NTSB also would like to see the FHWA develop a Highway Safety Improvement Program policy memorandum for use by state DOTs to establish wrong-way monitoring programs.

NTSB also wants the American Association of State Highway & Transportation Officials to revise the Policy on Geometric Design of Highways and Streets to address issues of ramp design and pavement channelization in order to reduce wrong-way occurrences, and is pushing for the acceleration of the widespread implementation of Driver Alcohol Detection System for Safety technology. Developing a set of standards for global positioning system wrong-way navigation alerts also was recommended. **R&B**

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