

Driving in the Right Direction

State Efforts to Combat Wrong-Way Driving

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Wrong-way driving, where a driver operates a vehicle the wrong way on a road or highway against the intended flow of traffic, can result in some of the most severe types of crashes [according to the National Transportation Safety Board](#).

The AAA Foundation for Traffic Safety reports that despite accounting for only [3.7% of all fatal crashes](#) on divided highways between 2010 and 2018, these incidents are often fatal as they typically result in head-on collisions.

A [study of wrong-way driving](#) from the Iowa State University Institute for Transportation notes that wrong-way driving can occur on a variety of roadways including divided highways, freeways or arterial roads. These events are often associated with driver confusion resulting from roadways that are challenging to navigate.

[Recent data from the AAA Foundation for Traffic Safety](#) also shows a concerning rise in fatalities related to wrong-way crashes. An average of 500 deaths occurred annually from wrong-way driving crashes on divided highways between 2015 and 2018, a 34% increase from 375 deaths annually from 2010 to 2014. Wrong-way drivers made up 52.8% of fatalities from wrong-way driving crashes followed by their passengers (5.7%) and occupants of other vehicles (41.1%) between 2010 and 2018. These numbers remained elevated as roughly 500 people died in wrong-way crashes annually in 2019 and 2020, according to the [Federal Highway Administration \(FHWA\)](#).

It is important to note that it can be [difficult for state agencies to collect data](#) on the number of wrong-way driving incidents that occur on their highways as drivers may self-correct before a crash occurs. As a result, data on wrong-way driving may not measure the



full scope of the problem.

[Research from the AAA Foundation for Traffic Safety](#) reveals that several factors increase the risk of wrong-way crashes. Alcohol impairment, which can inhibit a driver's ability to follow traffic laws, plays a large role in wrong-way driving crashes. Six in 10 wrong-way crashes between 2010 and 2018 involved an alcohol-impaired driver. Additionally, as an individual's blood alcohol concentration rises, so do their odds of being a wrong-way driver.

Despite driving fewer miles each month, drivers [over 70 years old](#) are also more likely to be wrong-way drivers, according to the AAA Foundation for Traffic Safety. However, [InTrans' study on wrong-way](#)

driving in Iowa reveals younger drivers also had increased involvement in wrong-way driving crashes and notes similar results from studies in Florida and Illinois. On the other hand, the [AAA Foundation for Traffic Safety's data shows](#) that drivers carrying passengers are less likely to be wrong-way drivers as passengers can alert drivers if they are entering a one-way road.

Other characteristics are associated with the frequency of wrong-way driving crashes. For example, [the Texas A&M Transportation Institute's research](#) on wrong-way crashes on certain highway corridors in Texas and Florida revealed that these incidents often take place miles away from the location where the driver entered the road going in the wrong direction. A separate Florida department of transportation study of wrong-way driving in Florida revealed that over half of wrong-way crashes occurred between midnight and 6 a.m.

The [AAA Foundation for Traffic Safety notes](#) interventions such as modifying road design, installing wrong-way driving detection systems, enhancing enforcement efforts and implementing technologies like ignition interlock devices to address impaired driving, may help prevent wrong-way driving or reduce the severity of these crashes.

For example, the Rhode Island Department of Transportation (RIDOT) [began installing wrong-way detection systems](#) in 2015 on specific off-ramps that promptly notify drivers who are heading in the wrong direction by activating flashing signs. The system also notifies Rhode Island State Police if a driver fails to turn around, displays a message on electronic signs to warn other drivers and takes a picture of the vehicle. [RIDOT's latest data](#) shows that one crash and zero fatalities occurred at ramps equipped with the system between May 2015 and July 2022, compared to eight fatalities and sixteen crashes from January 2010 to May 2015, before the technology was installed.

Key Takeaways

- Wrong-way driving incidents, where a driver operates a vehicle the wrong way on a road or highway against the intended flow of traffic, typically result in head-on collisions and are often fatal.
- Several factors may contribute to wrong-way driving, including alcohol impairment, age and time of day.
- Fatalities associated with wrong-way driving are [on the rise](#), prompting state legislatures and agencies to take action, such as installing wrong-way driving detection systems, launching public awareness campaigns and conducting research to better understand wrong-way driving patterns.



A separate Florida department of transportation study of wrong-way driving in Florida revealed that over half of wrong-way crashes occurred between midnight and 6 a.m. (*Getty Images*)

While states must comply with the minimum requirements for wrong-way signs and pavement markings established in the federal [Manual on Uniform Traffic Control Devices](#), they are also deploying additional countermeasures to combat wrong-way driving. The alarming increase in these fatal crashes has prompted legislative action in a few states in 2023. Additionally, state departments of transportation (DOT) have focused on implementing interventions in recent years to effectively decrease the occurrence of wrong-way driving incidents.

State Action

2023 LEGISLATION

Four states—Connecticut, Ohio, Massachusetts and Washington—introduced or enacted legislation in 2023 to address wrong-way driving.

In January 2023, Connecticut state Rep. Quentin Williams was struck and killed by a wrong-way driver hours after being sworn in for his third term in the legislature. The tragedy spurred significant legislative action in the state, leading to the introduction of at least nine bills on wrong-way driving. The legislature enacted a bill ([HB 6746](#)) that requires the Department of Transportation to implement wrong-way driving countermeasures, including detection and notification systems on at least 120 high-risk highway exit ramps, rumble strips on exit ramps to alert wrong-way drivers and a public awareness campaign to alert the public on actions to take when encountering a vehicle driving in the wrong direction. The bill also requires driver education programs in secondary schools and driver schools to include a discussion on reducing wrong-way drivers. The other eight bills introduced focused on implementing wrong-way driving countermeasures and public awareness but failed to pass.



Williams

Ohio enacted a bill ([HB 23](#)) which appropriates up to \$50,000 to contract a third-party service to conduct a wrong-way driving study across the state. The study will collect data at certain locations to understand incorrect driving patterns and other factors that could lead to wrong-way driving. The results of the study may be used to implement wrong-way driving interventions to prevent or mitigate occurrences of wrong-way driving.

Massachusetts ([HB 3435](#)) introduced a bill that would require the Department of Transportation, alongside the Executive Office of Public Safety and Security, to adopt and implement a program to mitigate the effects of wrong-way driving in the state. The program may include new highway safety technology, changes to highway design and capital improvements. The ways and means house and senate committees and house and senate co-chairs of the joint committee on transportation must receive the details of the program and make it publicly available by June 30, 2024. As of June 2023, the bill is pending.

Washington enacted a transportation appropriations bill ([HB 1125](#)), which directs the Washington Transportation Commission to review strategies and technologies implemented in other states used to prevent and respond to wrong-way crashes.

STATE DOT ACTION

State departments of transportation in states such as Arizona, Delaware and Florida have also taken recent action to implement programs and conduct research to drive down wrong-way driving events.

Arizona ([A.R.S. § 28-694](#)) enacted a law in 2018 requiring wrong-way driving offenders to complete traffic survival school educational sessions and pay a \$500 fine. To prevent such incidents, [the Arizona Department of Transportation \(ADOT\) piloted](#) the use of illuminated warning signs and thermal detection cameras in the Phoenix Metro Area from 2018 to 2019. Whenever a camera detected a wrong-way driver, ADOT and the Department of Public Safety received an alert to dispatch troopers to the vehicle and activate highway “wrong way” alert signs. The pilot showed that 88% of drivers self-corrected on an exit ramp before entering the freeway. ADOT has [kept the cameras in place](#) and is working to deploy more wrong-way detection systems in certain roadway corridors statewide.

The [Federal Highway Administration](#) recognized ADOT's efforts by granting the agency the Infrastructure and Operational Improvements Award for the wrong-way driver detection system in 2019. ADOT also continues to focus on infrastructure improvements, such as larger "wrong-way" and "Do Not Enter" signs to deter wrong-way drivers.

The Delaware Department of Transportation (DelDOT) implemented a wrong-way driving [pilot program](#) in 2023 in response to an increase in wrong-way driving crashes in 2022, when seven crashes claimed 12 lives. Specifically, the agency is testing a wrong-way driving detection and alert system on an off-ramp on State Route 1. When the alert system detects wrong-way vehicles, it causes red lights to flash on the "wrong-way" and "do not enter" signs, and the two installed cameras alert DelDOT's transportation management center to dispatch state police and put a message on signs to alert nearby drivers. The Department of Transportation plans to monitor the system and evaluate its effectiveness.

The Florida Department of Transportation's Wrong-Way Driving [Initiative](#) conducts research on wrong-way driving which supports the implementation of countermeasures to prevent wrong-way driving in the state. The research includes a statewide wrong-way crash [study](#) that evaluated recent wrong-way crashes such as common driving conditions, drivers and high crash locations, as well as reviews of various countermeasures. The initiative also published other studies including [research](#) testing and evaluating freeway wrong-way driving detection systems, and a [comparison](#) of countermeasures for reducing wrong-way driving entries on a highway or street designed for through traffic. The initiative also found 520 wrong-way driving hotspots and determined that the "wrong-way sign" highlighted by light-emitting diodes (LED) was the most effective countermeasure. Finally, the initiative includes an education component to increase awareness of wrong-way driving crashes and how drivers can respond to a wrong-way driver.

Did You Know?

- Drivers license holders from a different state are [less likely to be wrong-way drivers](#), perhaps because they may be more cautious due to their unfamiliarity with local roadways.
- Installing flashing signs alerting drivers they are driving the wrong-way on a highway corridor in San Antonio, Texas, resulted in a [38% decrease](#) in wrong-way driving events.
- State agencies have learned that a range of countermeasures to mitigate wrong-way driving are [effective and generally low-cost](#); however, these factors depend on roadway characteristics, land use and demographics.

Additional Resources:

- [Fatal Wrong-Way Crashes on Divided Highways](#), AAA Foundation for Traffic Safety
- [Systemic Approach to Wrong Way Driving Safety](#), AASHTO
- [Wrong-Way Driving Crashes](#), FHWA
- [State Ignition Interlock Laws](#), NCSL



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