

Case Study - Wrong Way Driver

Nevada, U.S.A.

Viion's solution was 80 percent effective in stopping wrong-way drivers



Viion's intelligent wrong-way driver warning and detection system uses a unique combination of video analytics and radar to reduce the chance of a false trigger

One wrong turn that changes everything

In the United States alone, between 300 and 400 people are killed each year due to wrong way driving (WWD) accidents, which represent roughly one per cent of all fatal accidents nationwide.

Wrong-way collisions occur relatively infrequently, accounting for only 3 percent of accidents on high-speed divided highways, however they are 27 times more fatal than other types of collisions.

Data has shown driver impairment, primarily from alcohol use, medically-related problems that pertain to older drivers, as well as international drivers who are unfamiliar with local traffic signage.

The 50-year-old challenge

Early efforts to curb WWD incidents were crude, at best. In California, a system deployed between 1965 and 1966, involved six mechanical and electromechanical devices (curb, rumble strip, gate, collapsing plate, and tire puncturing and arresting gear) for preventing wrong-way movements. Between 1971 and 1978, California used hidden cameras of wrong-way entries on approximately 4,000 statewide exit ramps. It wasn't until 1998 when directional sensors were used by the state of New Mexico to detect wrong-way movement on the I-40 exit ramp.

Today, modern systems detect a vehicle going the wrong way early-on, then send out visual signals (usually in the

Client name: Nevada Department of Transportation

Products: Viion WWD580, TrafficCam

Industry: Wrong Way Driver Alert & Detection

Location: Reno, Nevada, U.S.A.



Viion WWD580



Viion TrafficCam

form of very bright LED lights) to drivers that they are going the wrong way and in immediate danger. Such systems may also provide notifications to traffic management staff or law enforcement as well. Traffic management crews may use electronic displays to warn other drivers on the highway that a vehicle may be coming toward them in the opposite direction – allowing them time ample time to slow down or take evasive action if needed.

Of course, the key to successful WWD detection systems is to provide a reliable way to detect vehicles driving the wrong way. Unfortunately, that is not always the case, as systems that rely on radar detection alone have been prone to generating false alarms; leading to an overall mistrust of these systems and a reluctance on behalf of government agencies to deploy them.

Our wrong-way driver solution

When it came to finding a solution for wrong way drivers, there is little room for error; the solution must work as efficiently as possible, as a minute of time gained can make all the difference between life and death.

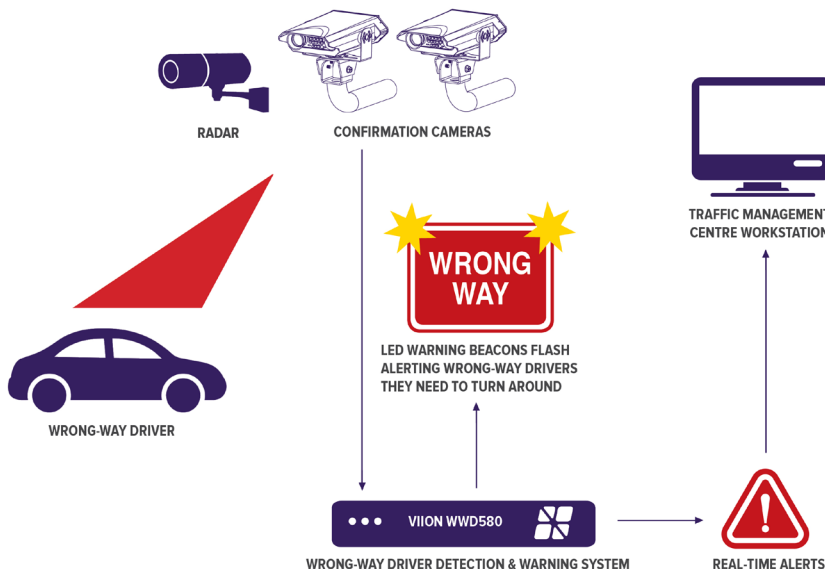
As a more effective solution was still needed, Viion worked on developing a system that does not solely rely on radar; instead, it takes microwave-based radar detection and combines it with video analytics to create a dual-confirmation system for detecting wrong-way driver occurrences.

This unique combination is what separates Viion’s solution from other wrong-way driver systems as it signifi-

cantly minimizes the chance of generating false detections (or triggering) – making it a more effective wrong way driver detection system. And what better place to test our wrong-way driver solution than Nevada, which has the highest WWD-related accidents per capita in the United States.

Between 2005 and 2015, the Nevada Department of Transportation (NDOT) reported 279 crashes that resulted in 41 fatalities and 125 injuries statewide, all caused by drivers going the wrong way.

Thanks to its detection success rate, the State of Nevada chose Viion’s WWD system as the main solution with 34 sites deployed near Reno, and one deployment near Las Vegas.



Quick wrong-way driving facts:

- Wrong-way collisions occur more frequently at night; 78 percent of fatal wrong-way collisions occurred between 6 p.m. and 6 a.m.
- A disproportionate number of wrong-way collisions occur on the weekends
- Most wrong-way collisions occur in the lane closest to the median (number one lane)
- There are almost 2 ½ times more wrong-way drivers for ages 70–79, and almost 30 times more for ages above 80