

## Collisions involving stationary and disabled vehicles: A deadly, growing and *preventable* safety problem

Emergency Safety Solutions, Inc. interpretation of Impact Research Report: “Frequency and Cost of Crashes, Fatalities and Injuries Involving Disabled Vehicles” – Aug. 2020 (Report Authors: Rebecca Spicer, George Bahouth, Amin Vahabaghaie, Rebecca Drayer)

### High-Level Report Analysis

- It’s no secret America’s roadways can be a dangerous place. Motor vehicle crashes are the leading cause of death in the U.S. for people aged 1-54.
- What may surprise most motorists, however, is the high degree of danger they face when their vehicle becomes disabled – requiring them to pull over to the side of the road to await help or attempt to fix the issue themselves.
- A new study by Impact Research quantifies, for the first time, the extent of crashes and related fatalities and injuries involving stationary or disabled vehicles along the roadway.
- Unfortunately, the statistics are alarming – and trending in the wrong direction. Even more troubling: most of these crashes are largely *preventable*.
- The magnitude of this growing safety problem had not previously been quantified. Prior to 2014, U.S.-level datasets lacked the level of detail needed to identify these cases.
- While the burden of these crashes, injuries and fatalities is significant, the report reveals how they may be prevented or mitigated through a combination of solutions such as:
  - More conspicuous hazard lighting and/or notification of disabled vehicles to approaching traffic
  - Expanded use of policies like Move-Over laws
  - Improved traffic management in hazardous situations

### Research Method:

Using the Fatality Analysis Reporting System and Crash Report Sampling System (two key components of the National Highway Traffic Safety Administration’s crash data collection program), the study defines three crash types where insufficient conspicuity of a disabled vehicle resulted in injury or death:

1. Moving vehicle strikes a disabled vehicle (including secondary collisions/multi-car pile ups)
2. Pedestrian (primarily a motorist who has exited their vehicle or a Good Samaritan who is providing aid) is struck while tending to a disabled or stopped vehicle
3. Vehicle departs roadway and crashes unnoticed, and rescue is delayed significantly

### Key Findings:

- Between 2016 and 2018, an **estimated average of 71,693 people annually were involved in low conspicuity crashes involving stationary and disabled vehicles** – including 566 fatalities and 14,371 injured
- Crashes involving motorists and Good Samaritans attending to disabled vehicles are especially tragic, with **nearly 300 people killed in crashes of this type each year** (cases increased 27% since 2014)
- A significant number of people die or are injured in low conspicuity events every year – an estimated 1.55 deaths and nearly 40 injuries per day

- Pedestrian deaths increased 3.4% since 2017 and have increased 42% since 2008
  - These pedestrian fatalities occur overwhelmingly after dark (76%) and away from intersections (74%)
- **Estimated \$8.8 billion in annual societal costs** (economic costs of medical payments and wage losses, in addition to value of quality of life lost due to death or disability) across these crash types
- Several countermeasures help reduce the incidence and severity of crash scenarios studied:
  - Lighting features on vehicles are an important contributor to making disabled vehicles more conspicuous while communicating emergencies and hazards – **especially enhanced hazard or emergency-based lighting**
  - Other countermeasures include **traffic incident management and control policies, Move-Over laws** and **public education**

**Additional Report Background Information:**

- **Drivers rely heavily on visual inputs to safely navigate U.S. roadways. Early recognition and interpretation of threats by drivers can prevent or mitigate the severity of a crash.**
  - The conspicuity of stopped or disabled vehicles on and off the road is critical in recognizing and responding to an emergency or hazard
  - One notable technique is to increase conspicuity through enhanced hazard lighting
  - Vehicle occupants – in particular motorists who have exited a disabled vehicle in low conspicuity emergency situations – are at high risk of being struck by another vehicle
- **Traffic incident management and control seeks to detect and remove incidents and restore traffic capacity as safely and as quickly as possible**
  - Most states have guidelines for emergency scene management and traffic control with the objective of providing a safe work environment for incident responders
  - These guidelines (or protocols) were developed in response to an increasing trend in emergency responder deaths and serious injuries resulting from traffic incidents that occur secondary to an event they are responding to
  - The guidelines cover issues like emergency vehicle lighting, incident management area establishment, and public communications
- **In recent years, attention has been given to emergency medical services and police officers killed when responding to crashes on the side of the road – but they only protect occupants of disabled vehicles *after* emergency vehicles arrive**
  - Move-Over laws exist in all 50 states to mitigate this problem for emergency responders and law enforcement officers – but only six states also extend this protection to disabled passenger vehicles with hazard lights on
  - The laws vary by state, but in general require motorists to move over and/or change lanes to give safe clearance to emergency responders and law enforcement officers, and other responders to disabled vehicles, such as tow trucks
  - Move-Over laws and traffic incident management practices are designed to protect emergency responders, workers and others who are stopped on the side of the road – they are in effect once emergency responders arrive
  - However, technologies designed to increase conspicuity that are triggered at the time of the crash or incident would protect much earlier and could therefore have an enhanced effect
- This study presents a conservative estimate of the number of deaths and injuries that might be prevented by increased conspicuity during and immediately following an emergency event