



U.S. Department of Transportation
Federal Motor Carrier Safety Administration

2018 Southeast Commercial Motor Vehicle Safety Research Summit

The University of Alabama
Tuscaloosa, Alabama

October 30, 2018

Work Zone Safety and Traffic Incident Management



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Office of Research and Information Technology

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Mission



U.S. Department of Transportation

Federal Motor Carrier Safety Administration

Reduce crashes, injuries, and fatalities involving commercial motor vehicle (CMV) transportation through education, innovation, regulation, enforcement, financial assistance, partnerships, and full accountability.



Snapshot of the CMV Industry

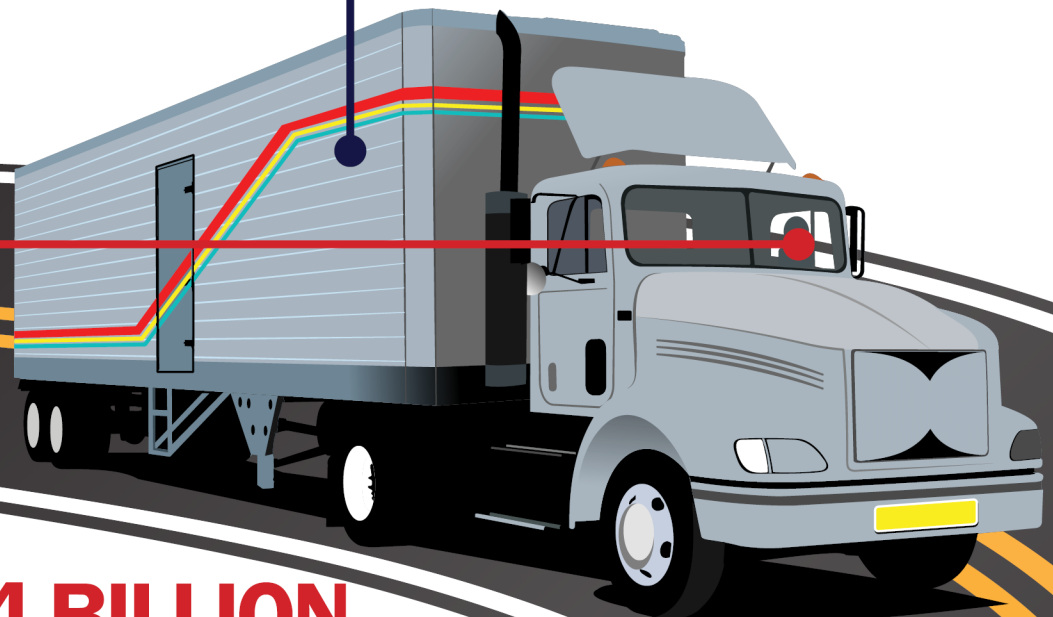
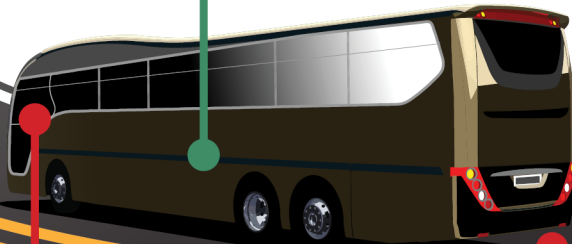
543,061 REGULATED CARRIERS OPERATING
IN THE UNITED STATES IN 2017

976,161
BUSES REGISTERED IN 2016

596 MILLION
PASSENGER TRIPS IN THE U.S. AND CANADA IN 2015

11.5 MILLION
LARGE TRUCKS REGISTERED IN 2016

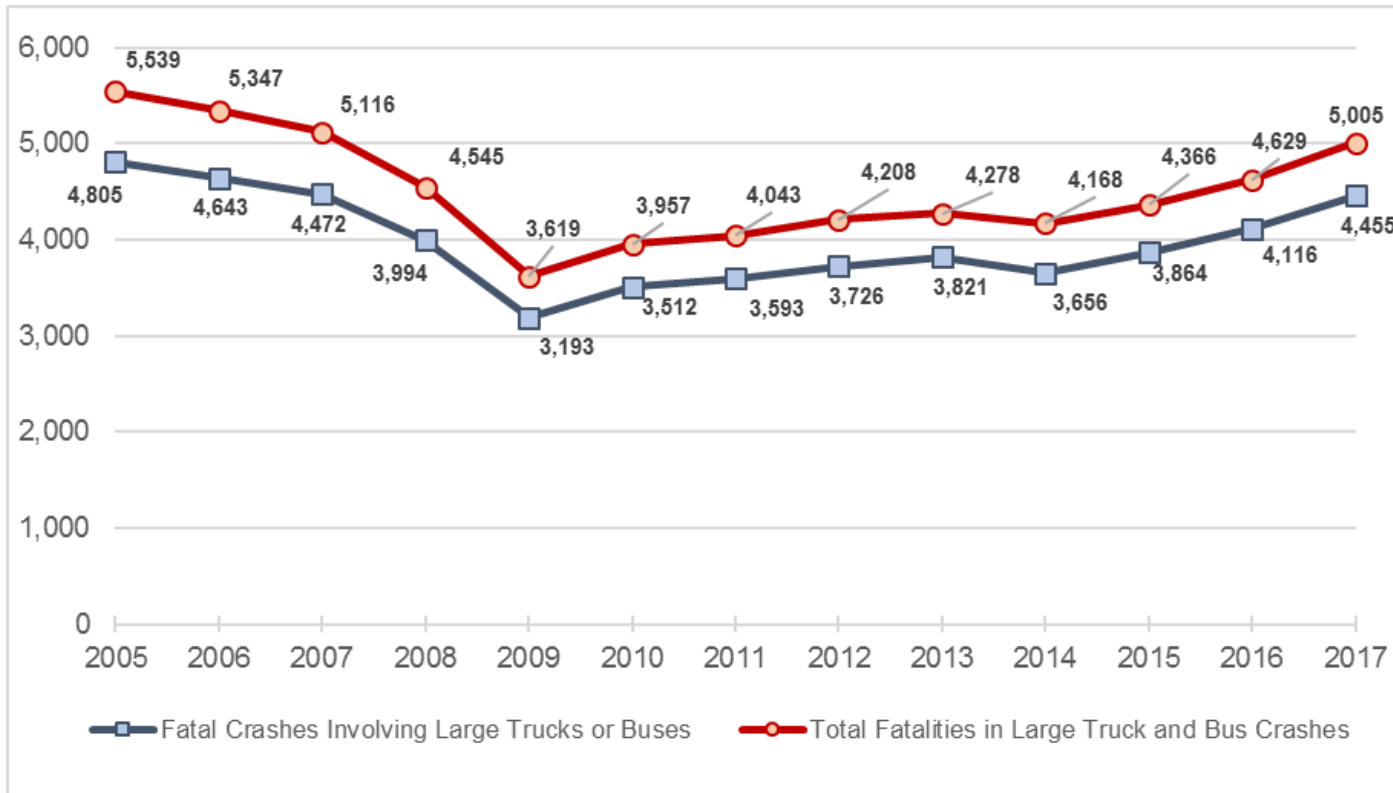
11.6 BILLION TONS
FREIGHT SHIPPED IN THE U.S. IN 2016



6.1 MILLION
CMV DRIVERS (AS OF 2017)

304 BILLION
VEHICLE MILES TRAVELED IN 2016

Large Truck and Bus Fatal Crashes 2005 - 2017



Sources: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS)

Multivehicle Work Zone Crash on Interstate 75 Chattanooga, Tennessee - June 25, 2015



Fatal Crashes by Work Zone

Crash Type	2015	2016	2017
Crashes Involving Large Trucks			
Fatal Crashes in Work Zones	175	187	216
Fatalities in Crashes in Work Zones	195	234	265
All Crashes			
Fatal Crashes in Work Zones	653	687	710
Fatalities in Crashes in Work Zones	711	781	799
Percentage of Fatal Work-Zone Crashes that Involved at Least One Large Truck	26.8%	27.2%	30.4%
Percentage of ALL Fatal Crashes that Involved at Least One Large Truck	11.1%	11.2%	12.4%

Source: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS)

Fatalities in Work Zone Crashes Involving Large Trucks

	2015	2016	2017
Fatal Crashes Involving Large Trucks in WZ	175	187	216
Total Fatalities in LT WZ Crashes	195	234	265
Pedestrian Fatalities	24	20	26
Bicyclist Fatalities	1	3	1
Fatalities that were Occupants of Vehicles not in-transport	2	1	2
Fatalities that were Occupants of Non-Motor Vehicle Transport Device	0	1	0
Motorcoach Occupant fatalities	0	0	0
"Private Vehicle" Occupant Fatalities (all vehicles except LTs and Motorcoaches)	127	173	196
<i>Passenger Car</i>	56	72	93
<i>Light Truck</i>	57	69	88
<i>Motorcycle</i>	11	19	15
<i>Other Bus Type</i>	2	13	0
<i>Other /Unknown Vehicle Type</i>	1	0	0
Large Truck Occupant Fatalities	41	36	40
<i>Single-Unit Truck (10,000 to 19,500 lbs.)</i>	1	4	4
<i>Single-Unit Truck (19,500 to 26,000 lbs.)</i>	8	2	3
<i>Single-Unit Truck (GVWR>26,000 lbs)</i>	4	3	2
<i>Single-Unit Straight Truck (GVWR unknown)</i>	0	3	1
<i>Truck/Tractor (cab only, or trailing units)</i>	25	21	23
<i>Medium/Heavy Pickup (GVWR > 10,000 lbs, since 2001)</i>	2	1	6
<i>Other / Unknown Large Truck</i>	1	2	1

Source: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS)

WORK ZONE SAFETY CAMPAIGN

- Focus on two objectives: Education & Technology
 - Engaging our partners
 - <https://www.workzonesafety.org/>
 - <https://www.fmcsa.dot.gov/ourroads>
 - Innovative Technology Deployment (ITD) Grant Program for States (85/15 Match) designed to:
 - Improve safety and productivity of CMVs and their drivers
 - Improve data sharing within States and between FMCSA

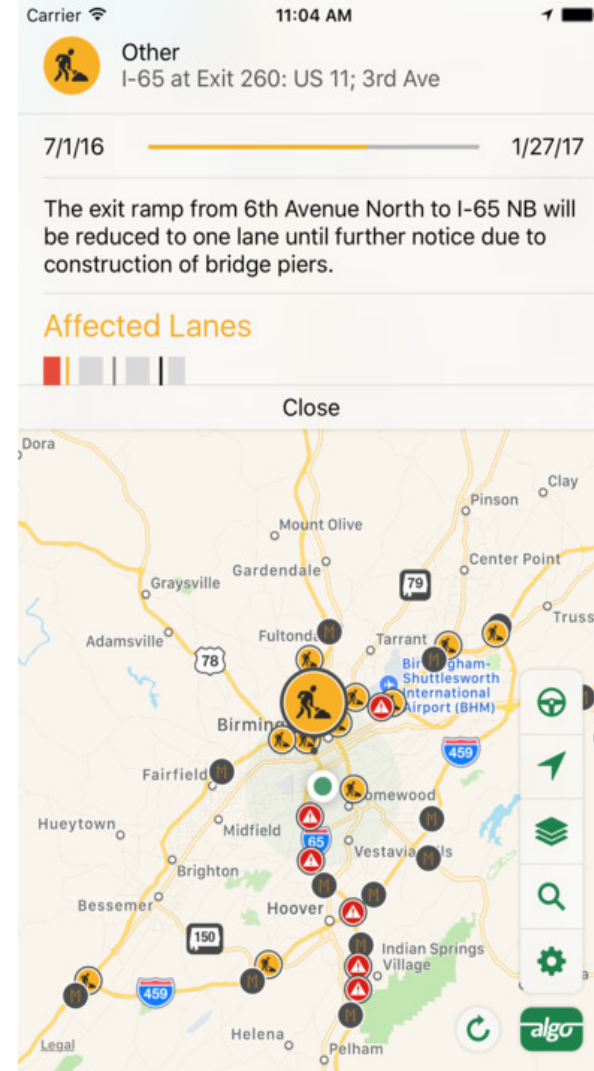
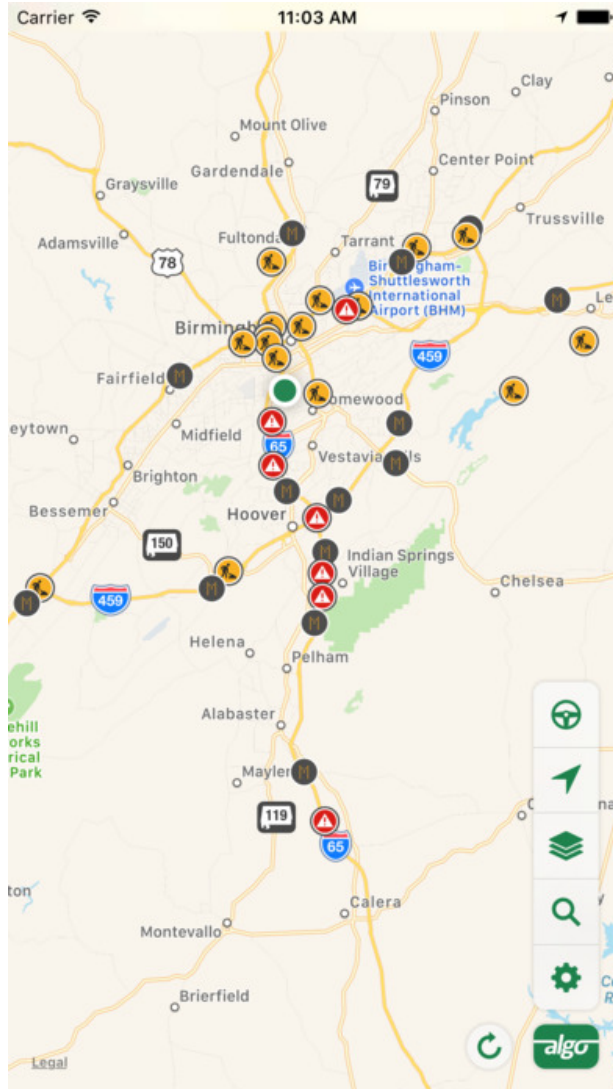
Work Zone Incident Notification System

Alabama

- Funding for the development and rollout of both Android and iOS platforms the Workzone Notification System
- Mobile app accomplished the two objectives:
 - provide rolling reminders to the user as well as estimated distance from the Workzone.
 - collect anonymized feedback such as location, speed and timestamp as well as create a low level analytical tool with the data captured during the time frame.
- Dedicated public website is available at -
<https://algotraffic.com/>

Work Zone Incident Notification System

MOBILE APP



Work Zone Incident Notification System

Arizona

The objectives of the Arizona Work Zone and Incident Electronic Notification Systems are to:

- Develop and demonstrate a work zone warning and alert system using connected vehicle technologies (5.9 GHz DSRC communications) to provide in-vehicle information for commercial vehicle operators.
- Develop and demonstrate the use of connected vehicle systems, including variable speed limits, queue warning, lane closure warning, and vehicle-to-vehicle messages to augment the operation of core ITD capabilities (e.g. electronic bypass and enforcement).
- Project still active.

Work Zone Incident Notification System

In-cab messages can be integrated with:

- ✓ Preclearance
- ✓ Weather Alerts
- ✓ Emergency Alerts
- ✓ Other 511 messages

Partners/Stakeholders

- ✓ ADOT/MCDOT
- ✓ University of Arizona
- ✓ DriveWyze
- ✓ Knight-Swift Transportation



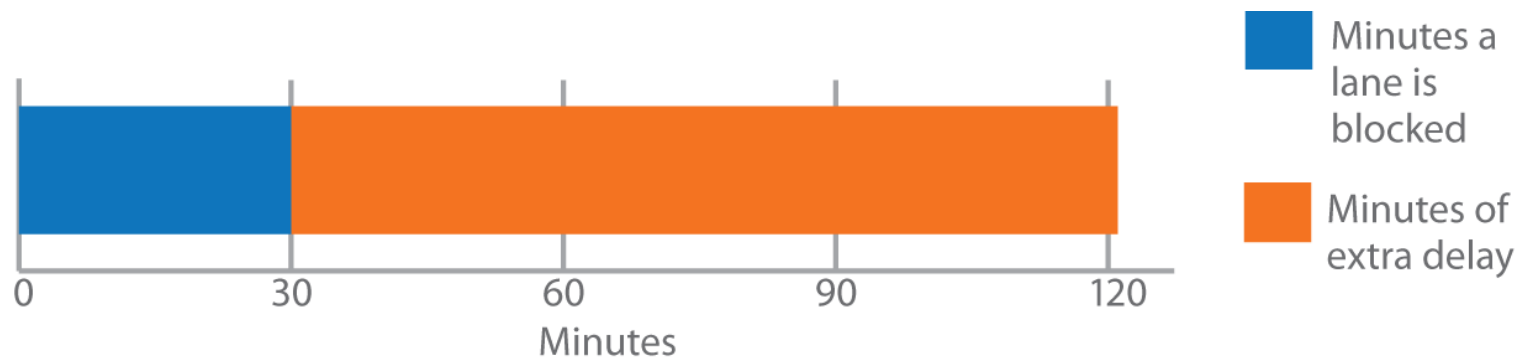
Traffic Incident Management

Traffic Incidents



Traffic incidents are just about anything that happens on or near a roadway that affects traffic.

- › They create unsafe situations and put lives at risk, and cause delays.
- › They compromise our safety, and cost us time and money everyday.



Traffic Incident Management Helps Everyone



- **Traffic Incident Management**
Responders work together as a team to respond safely and quickly.
 - › Firefighters
 - › Law enforcement officers
 - › EMS responders
 - › Transportation / Safety Service Patrols
 - › Maintenance crews
 - › Towing and recovery
 - › 911/Dispatch



Photo: Shutterstock



Responder Struck-By Fatalities

In a typical year, the following number of responders are struck and killed:

- 10 Law Enforcement Officers
- 4 Fire and Rescue Personnel
- An estimated 40 Towing and Recovery Professionals
- Several transportation professionals from DOTs, Public Works, and Safety Service Patrol Programs

You Can Help!



You can help spread the word in your community using the Traffic Incident Management Public Outreach Toolkit Products. They are freely available and customizable:

The collage features several key products from the Traffic Incident Management Public Outreach Toolkit:

- Memorandum:** A document titled "Free Tools for Boosting Traffic Safety in Your Community" from the Federal Highway Office of Transportation Operations Director. It discusses the value of Traffic Incident Management (TIM) and provides guidance on how to introduce it to the community.
- Posters:** Large posters with the slogan "Traffic Incident Management Because Time Matters" and "safe reliable travel smooth fast response timely cost-saving".
- Brochures:** Various brochures explaining the benefits of TIM, such as "Traffic incidents create unsafe situations, put lives at risk, and cause delays." and "Traffic incidents create unsafe situations, put lives at risk, and cause delays. Know your role:".
- Infographic:** A graphic showing that "Americans burn more than 2.8 billion gallons every year stuck in incident-related traffic" and that "Computers lose nearly a full workweek (36 hours) sitting in traffic congestion every year".
- Checklist:** A checklist titled "Know your role:" with three items:
 - 1 Move your car to a safe place – out of the travel lanes – if you are involved in an incident, and there are no injuries.
 - 2 When you see flashing lights ahead of you, you need to slow down and/or move over. You can be ticketed for failing to do this.
 - 3 Help keep your loved ones safe and avoid a ticket. Tell your friends and family about these laws.

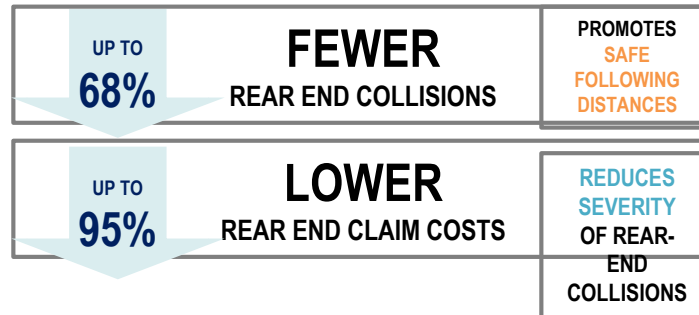
http://www.ops.fhwa.dot.gov/eto_tim_pse/timtoolbox/

3-Year Average of Fatal Crashes Where a Large Truck Rear-ended Another Vehicle

- Average Highway Fatalities – **36,808**
- Average Large Truck Crash Fatalities – **4,408**
 - **12%** of Total Highway Fatalities occurred in crashes involving a large truck
- Large Truck Rear-end Crash Fatalities – **474**
 - **11%** of Total Large Truck Crash Fatalities involved a truck rear-ending another vehicle
- Large Truck Rear-end Work Zone Crash Fatalities – **70**
 - **15%** of Large Truck Rear-end Crash Fatalities occurred in a work zone

Advanced Driver Assistance Systems

IMPROVED HIGHWAY SAFETY COLLISION MITIGATION WITH ACTIVE BRAKING



Traffic Safety Applies to All Traffic



Do your part by enforcing traffic safety laws for ALL vehicles on the road.

www.fmcsa.dot.gov/traffickenforcement

Thank You

