



# Safety on the Move:

Automated Fleet Management and the  
Future of Safety for Contractors

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# Introduction

When contractors think about safety, many focus primarily on their jobsites, where the industry has prioritized safety practices to reduce electrocution, falls from a height and other frequent hazards. Safety concerns regarding equipment and vehicle operations are not always top of mind, but contractors would benefit from prioritizing them more.

## VEHICLE SAFETY ON THE ROADS

Importantly, vehicle safety extends beyond the jobsite. Many contractors maintain and operate fleets of vehicles on the roads as well, where crashes and fatalities are on the rise. The most recent National Highway Traffic Safety Administration (NHTSA) study notes that:

- Traffic fatalities in 2021 were at the highest levels reported since 2005.
- Injuries from traffic accidents increased 9.4% from those experienced in 2020.
- The injury rate per 100 million vehicle miles traveled (BMT) also increased by 1.3%.<sup>1</sup>

## COMMERCIAL VEHICLES ARE AT RISK

Commercial vehicles are not immune to these trends. The NHTSA study shows that fatalities from large-truck crashes increased 17%. However, there was also a notable reduction (7.7%) in injuries in large-truck single-vehicle crashes, the only measure to improve between 2020 and 2021. In addition, according to statistics cited by Dan Murray, senior vice president of ATRI, “passenger car drivers are responsible for over 70% of crashes between commercial vehicles and cars.”<sup>2</sup> Thus, contractors seeking to improve the safety of their vehicles on the roads need data to help their drivers respond effectively to an increasingly difficult driving landscape.

## DATA-DRIVEN FLEET SAFETY

The perceptions of contractors about what they experience and what hazards they face when it comes to their fleet (both onsite construction equipment and vehicles) are essential to understand in order to help the industry take advantage of the technology available to improve safety.

To address this need, Motive has partnered with Dodge Construction Network to research the fleet safety challenges contractors face and what they believe cause those challenges. This report specifically examines how businesses in the construction industry can take advantage of data-driven safety and what they gain from doing so.



<sup>1</sup> Hu, Patricia; Schmitt et al, *Transportation Statistics Annual Report 2022*, United States Department of Transportation, Bureau of Transportation Statistics, <https://doi.org/10.21949/1528354>

<sup>2</sup> Keith, Scott, “Industry stakeholders have high hopes for roadway safety in 2023,” *Fleet Owner*, January 3, 2023, <https://www.fleetowner.com/safety/article/21257257/trucking-safety-trends-to-watch-in-2023>.

# Prevalence and Impact of Fleet Accidents and Near Misses

Some contractors may believe that fleet accidents or near misses happen incidentally, but this study reveals safety incidents happen quite often and can have a significant impact on a contractor's projects and business.

Their experiences with vehicles and construction equipment, though, are very different.

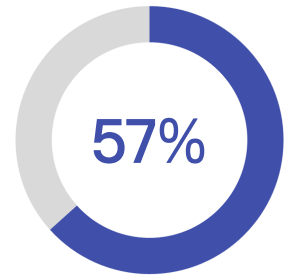
## VEHICLES

More than half of contractors surveyed experience at least one vehicle accident or near miss per year. Among those whose companies experience these events:

- 48% report significant damage to their vehicles.
- 40% report that the accidents result in injuries.

The impacts of these events on their projects and companies are notable:

- **Project Impacts:** As the data below shows, productivity declines and schedule delays are identified by contractors as the top project impacts of vehicle accidents/near misses. They can create additional issues, like lower client satisfaction and or delays on other projects undertaken by the company.
- **Financial Impacts:** Although insurance costs are the most common financial impact, one third of respondents reported a decline in profitability as a result of safety incidents.



**Experienced  
Vehicle  
Accidents/  
Near Misses**

### Top Project Impacts of Vehicle Accidents/Near Misses



Productivity Decline:  
**57%**



Schedule Delays:  
**39%**

### Top Financial Impacts of Vehicle Accidents/Near Misses



Increased Cost of Insurance:  
**53%**



Decline in Profitability:  
**33%**

# Prevalence and Impact of Fleet Accidents and Near Misses (continued)

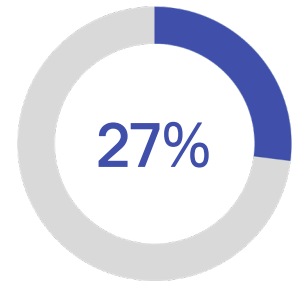
## CONSTRUCTION EQUIPMENT

Accident and near miss prevention and reduction should be a major consideration in a contractor's site safety plans. More than one in four contractors said they experienced accidents or near misses onsite. Fifty-five percent of those said their experience resulted in significant damage to their equipment.

Although safety events involving construction equipment were reported to be less common than those involving vehicles, those who experience equipment accidents reported major impacts as a result.

- Schedule delays and productivity declines were reported by the majority of those who experience equipment incidents.
- Fifty percent reported a negative impact on company profitability.

Because these incidents are less frequent, contractors are often less likely to consider strategies to avoid them. However, having such strategies in place may help contractors avoid serious impacts to their workers, projects and companies.



**Experienced  
Equipment  
Accidents/  
Near Misses**

## TOP CAUSES OF FLEET ACCIDENTS AND NEAR MISSES

Most contractors believe that operator error is the top cause of accidents and near misses for their fleet. However, as noted in the introduction, commercial vehicle operators generally are only at fault for a small fraction of the accidents they're involved in. Fleet safety training should extend beyond simply preventing errors and include defensive driving practices.

### Top Project Impacts of Equipment Accidents/Near Misses



Productivity  
Decline:  
**62%**



Schedule  
Delays:  
**60%**

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### Top Financial Impacts of Equipment Accidents/Near Misses



Decline in  
Profitability:  
**60%**

# Current State of Monitoring Fleet Safety

## METHODS OF TRACKING VEHICLE SAFETY AND DRIVER BEHAVIOR

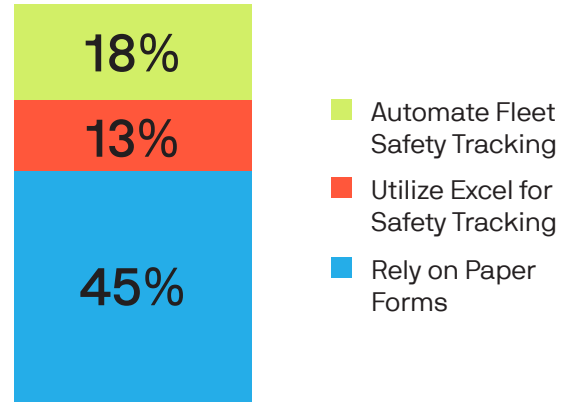
Contractors recognize that tracking fleet safety is vitally important: Over three quarters (76%) do so. However, most still rely on paper forms, and only 62% track driver behavior.

Of the companies that do track driver behavior, 25% use automated data gathering, while only 18% of those that track vehicle safety have automated data gathering for that process. Overall, paper forms are still the most common means of data collection for the rest of the respondents.

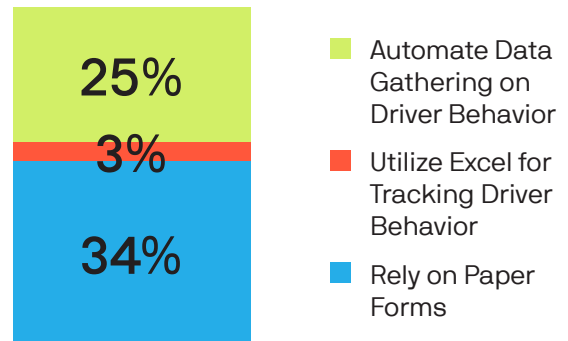
Using automation to track and analyze both vehicle safety and driver behavior would likely have numerous benefits for contractors:

- Less time spent filling out forms
- Increased data accuracy and consistency
- Easier access to data when needed
- Easier to track safety trends over time and measure success of fleet safety initiatives
- Increased potential for utilizing artificial intelligence (AI) for proactive (vs. reactive) safety management, based on trends in the data
- More productive coaching opportunities

## 76% of Contractors Track Vehicle Safety



## 62% of Contractors Track Driver Behavior



# Ways in Which Automation Can Help Improve Fleet Safety

Automated data tracking for fleet safety and driver behavior provides multiple opportunities for coaching and support for drivers, operators and supervisors alike, especially when it is enhanced with artificial intelligence.(AI).

## AUTOMATED COACHING WITH VIDEO FOOTAGE PRIORITIZATION

Paper forms only represent the perspective of the employees who complete them and who may not understand ways in which their driving can be safer. This especially applies to defensive driving tactics. By relying on paper forms, supervisors only have a log of incidents at best. This may cause them to miss opportunities for driver coaching.

While dash cam recordings are helpful to identify coaching opportunities, a supervisor would need to review all the footage captured to find those opportunities—not a practical use of their time.

This is where AI has the potential to transform how supervisors identify coachable moments and improve safety.

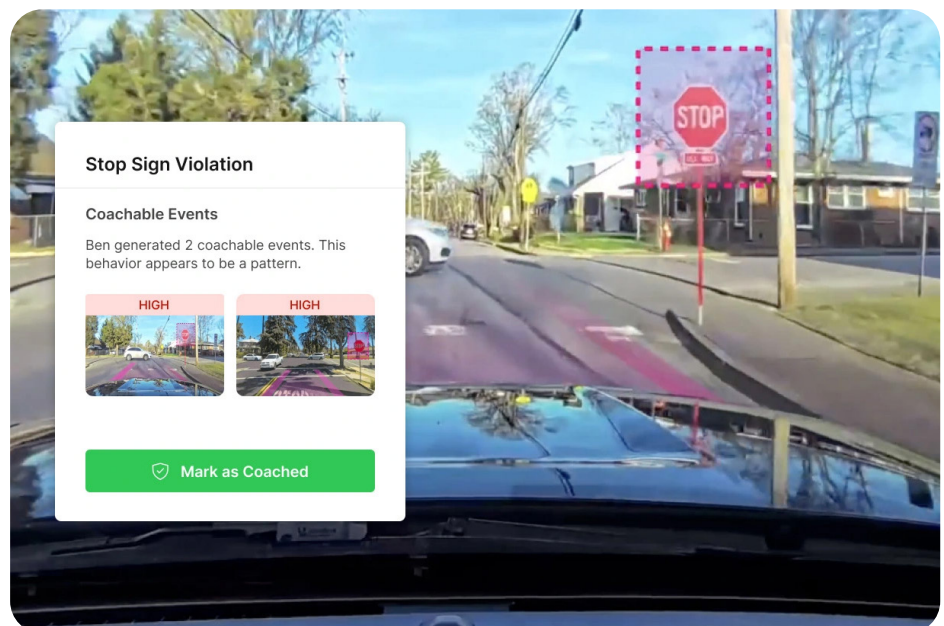
AI-powered dash cams allow supervisors to only see footage that represents risks. An AI dash cam draws on data from drivers across its entire network of users, not just the supervisor's fleet. This allows the camera

to identify driver behavior that can be improved and send those videos to the supervisor to review, which permits the supervisor to focus on only the videos that are most relevant.

However, AI itself is not a coach, and the data it captures is just the first step. Human input on how to improve driver behavior is essential.

- Some AI dash cam vendors provide actionable insights from real safety expert employees with experience with commercial drivers across multiple industries.
- Supervisors can determine the context and the severity of the specific instances captured by the AI dash cam, which can help them focus on the video footage of interest and identify the most relevant portions for coaching opportunities.

Supervisors are not the only ones to gain valuable insights on driver behavior from the AI analysis of dashboard camera footage. Some systems also allow drivers to review their flagged videos. This gives them the opportunity to assess their performance and change their behavior without manager intervention.

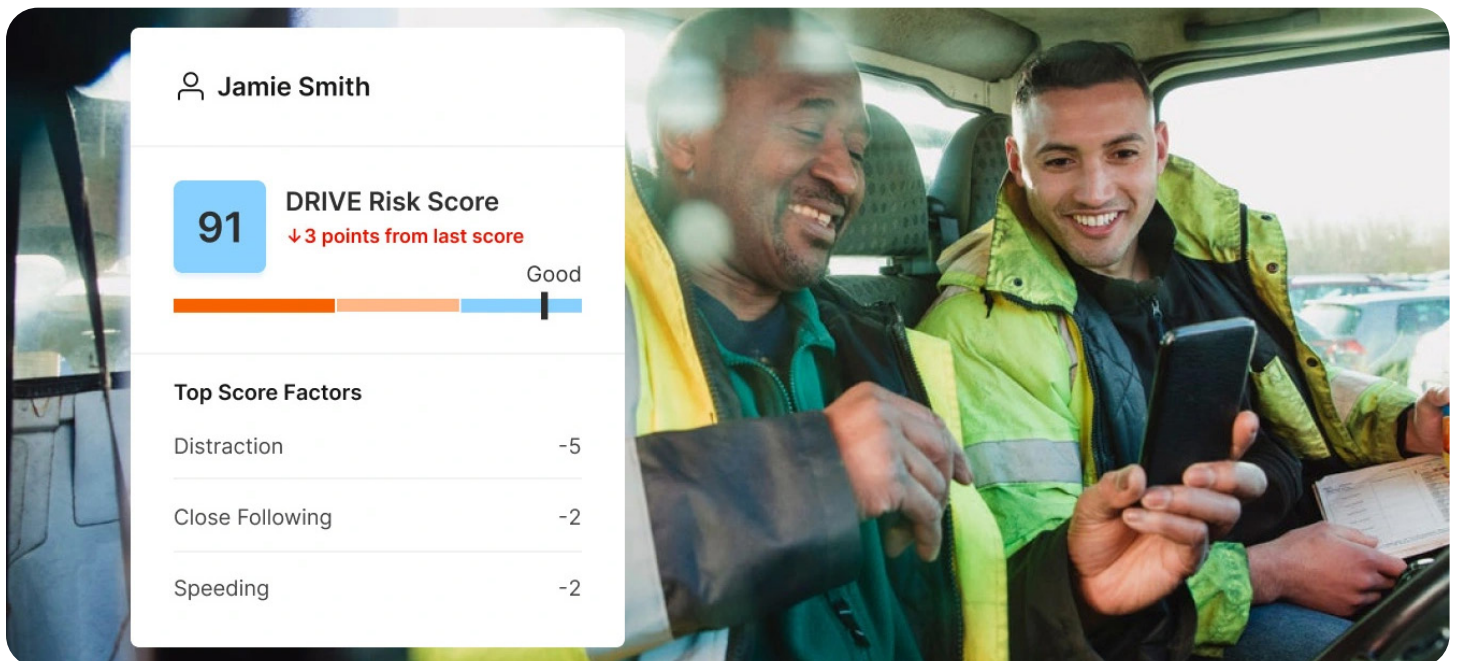


# Ways in Which Automation Can Help Improve Fleet Safety (continued)

## COACHING REPORTS

In addition to identifying individual coaching opportunities, automation can also help track performance trends and allow companies to gauge the effectiveness of their coaching efforts over time.

- Individual performance: Establishing reports can be a key component to creating incentives for safer behavior. Automating performance measurement, rather than relying on driver reports of incidents and near misses, results in more accurate performance reports. This can be particularly helpful for determining qualified recipients of an incentive program.
- Overall performance: Construction companies can share data on improved safety performance with their insurance provider to show their commitment to improving fleet safety.



## BENCHMARKING DRIVER PERFORMANCE

With the majority of the construction industry either not tracking driver performance data or relying on paper forms to do so, it is nearly impossible for supervisors and project or company leadership to gauge how their drivers perform compared with other companies. Automating safety data collection with a company with broad, multi-sector experience can help a contractor compare their drivers' performance with those at other organizations.

Knowing how their drivers rank in driver performance, compared with other companies across the industry, lets contractors better determine the types and degree of training their drivers need.

Benchmark scores can also be used to motivate drivers to improve on their own, or can be used for an incentive system. In turn, this can help with driver retention.

The labor shortage and decline in commercial vehicle drivers are acute issues for all industrial markets. Any opportunity to improve retention can lessen the impact on construction businesses.



# Fleet Maintenance and Safety

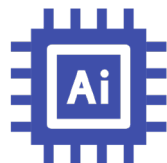
Another opportunity to improve fleet safety that is underutilized by the majority of contractors is to automate maintenance through fleet management software and apps, and AI capabilities that can predict maintenance needs.

Currently, only 25% of contractors report using either of these tools. Instead, most rely on manual means or general software (such as Excel) to manage the maintenance of their fleet. Keeping the fleet in good condition is an essential aspect of safety that can easily be taken for granted. Equipment that does not function properly has a much higher chance of putting operators and others working around it at risk.

## Impact of Automating Fleet Maintenance on Safety



**66%**  
of contractors experience safety issues due to the need for improved fleet maintenance.



**75%**  
of contractors do not yet use software designed to manage equipment or AI to predict maintenance needs.



**80%**  
of the contractors using software to manage equipment or AI to predict maintenance report that it improves safety on their projects.

Automation can help keep issues with equipment from falling through the cracks by:

- Providing a clear maintenance schedule and a way to track the maintenance record of equipment.
- Providing fault code alerts so that those responsible for keeping up the equipment know when something needs to be addressed.
- Systems can also link into vehicles' built-in self-diagnostic systems (OBD-2) to provide those charged with maintaining those vehicles with real-time information on any issues that arise.



# Methodology

The contractor study findings presented in this report are based on original research conducted with 155 contractors by Dodge Construction Network (DCN). The research was conducted as an online survey in February and March 2023.

## RESPONDENT SAMPLE

Study participants were recruited using the Dodge Contractor Panel, contractor lists provided by Dodge DCN and a third-party list.

## RESPONDENT COMPANY PROFILE

Four types of contractors were identified as targets for the research by DCN and Motive:

- Mechanical Plumbing Contractors (40 respondents)
- Electrical Contractors (40 Respondents)
- Concrete Contractors (40 Respondents)
- Single-Family Home Builders (35 Respondents)

Respondents were required to be located in the US and be at least moderately familiar with equipment and/or vehicle management processes. Concrete contractors had the following additional requirements: They were required to be either specialty trade contractors that offer poured concrete foundation and structure services, specialty trade contractors that offer precast concrete/masonry services or general construction companies/heavy civil engineering contractors that self-perform concrete on at least 50% of their projects.

## Project Types

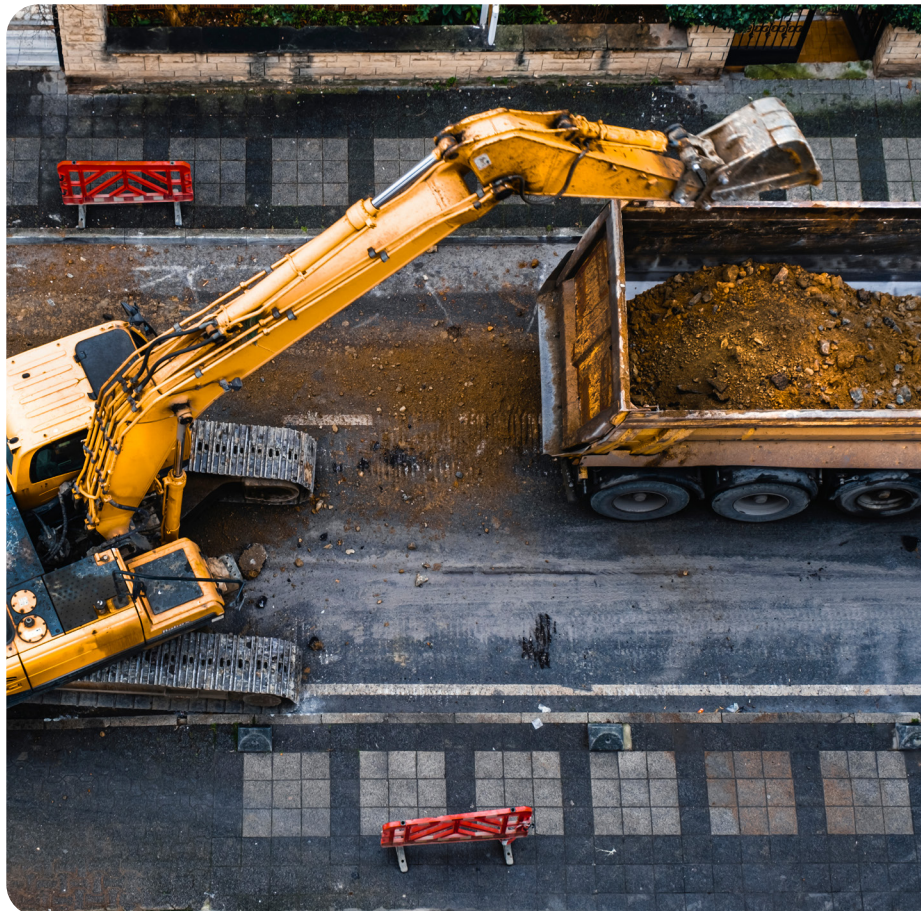
The top project types that represent at least 25% of the total workload for the respondents are commercial/institutional (61%), single-family residential (52%), industrial (30%), multifamily residential (30%), and water/sewer lines and related structures (11%). Other project types cited by less than 10% of respondents include land subdivision, highways, streets and bridges, transportation and related structures, and other heavy and civil engineering construction.

## Company Size by Annual Construction Volume

- Less Than \$10M: 61%
- \$10M to \$49M: 29%
- \$50M and Over: 10%

## RESPONDENT JOB ROLE

- C-Level/Owner/Partner: 50%
- Vice President/Director Level: 12%
- Manager-Level (Includes Project Manager, Safety Manager, etc.): 24%
- Estimator: 12%
- Other: 2%



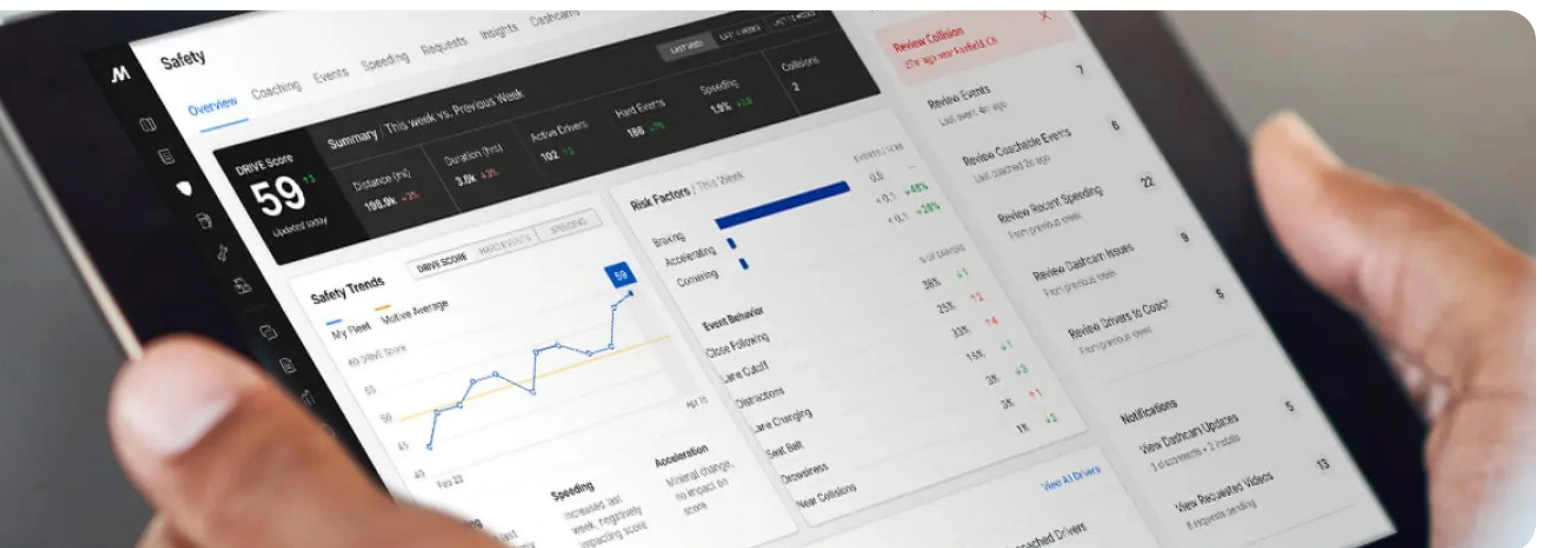
# Note From Motive and Resources

Work environment conditions and macroeconomic pressures have never been more complicated. Now more than ever, managers need visibility into what's actually happening with their operations and options for how to improve their employees' safety practices.

We build solutions that help companies create world-class safety programs that drive real change. Our AI-powered devices and applications help businesses prevent accidents, improve unsafe vehicle operating habits, and automate their operations, allowing them to grow without compromising safety, productivity or profitability.

Learn more about the benefits of safety programs and the technology that makes them effective:

- [VTTI AI Dash Cam Study](#)  
*Virginia Tech Transportation Institute (VTTI) conducted a comprehensive study on the performance of on-road driver monitoring systems from three leading vendors: Lytx, Samsara, and Motive.*
- [The 2023 State of Safety Report](#)  
*Motive surveyed more than 1,100 businesses to understand how fleets think about safety and what they're doing to improve it. This multi-industry study reveals that many fleets still view safety as a cost center, even though recent research proves otherwise.*
- [The ultimate guide to fleet safety programs](#)  
*Prioritizing safety is critical to driver protection and overall fleet safety. This step-by-step guide explores the ROI of fleet safety programs and how managers can build their own.*
- [Report: IDC Computer Vision for Fleet Vehicle](#)  
*This report from IDC examines how leading fleet management solution providers are pivoting towards cameras and computer vision-based approaches to align with the evolving needs of fleet managers.*



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## About Motive

Motive builds technology to improve the safety, productivity and profitability of businesses that power the physical economy. The Motive Automated Operations Platform combines IoT hardware with AI-powered applications to automate vehicle and equipment tracking, driver safety, compliance, maintenance, spend management and more. Motive serves more than 120,000 businesses, across a wide range of industries, including trucking and logistics, construction, oil and gas, food and beverages, field services, agriculture, passenger transit and delivery. Visit [gomotive.com](http://gomotive.com) to learn more.



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## About Dodge Construction Network

Dodge Construction Network is a solutions technology company providing an unmatched offering of data, analytics and industry-spanning relationships to generate the most powerful source of information, knowledge, insights and connections in the commercial construction industry. The company powers longstanding and trusted industry solutions to timely connect and enable decision-makers across the entire commercial construction ecosystem. For more than a century, Dodge Construction Network has empowered construction professionals with the information they need to build successful, growing businesses. To learn more, visit [construction.com](http://construction.com).



