

Commercial Motor Vehicle Safety in Alabama



Paving the Way

Celebrating Alabama's Progress
Certified Public Manager® Program
CPM Solutions Alabama 2025



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Introduction



A commercial motor vehicle (CMV) is defined as a vehicle heavier than a light truck or SUV, including delivery trucks, 18-wheelers, tow trucks, dual trucks, and work trucks (Alabama Department of Transportation, 2020-2023). This definition does not include buses of any type. CMVs are the backbone of Alabama's thriving economy, facilitating the

movement of goods crucial for industries, commerce, and daily life (Alabama Trucking Association, 2023). The Alabama Port Authority and the Port of Mobile, strategically located with access to major interstates, railroads, and waterways, play a vital role in supporting the state's economy. Alabama is growing fast, and freight traffic is expected to be about twice as heavy as passenger traffic, putting strain on the state's highway system (Office of Governor Kay Ivey, 2024).

This paper examines the complex relationship between Alabama's economic prosperity and the importance of CMV safety. We explore the future growth trends in CMV traffic, driven by the expanding operations of the Alabama Port Authority and the Port of Mobile, and analyze the associated strain on the state's transportation network. We detail the substantial investments being made, over \$1 billion in capital expansion projects, to enhance capacity and efficiency across multiple modes, including terminal expansions, harbor deepening, and the development of inland intermodal facilities, all aimed at managing the projected increase in freight volume.

We also analyze current trends in CMV-related fatalities and contributing factors, highlighting the urgent need for comprehensive safety initiatives. While CMVs account for a small percentage of overall crashes, their involvement in fatalities is disproportionately high. We explore the primary causes of these crashes, such as improper lane changes and failure to yield, and examine how factors like increased traffic volume from industrial growth, driver fatigue, inadequate infrastructure, and the surge in e-commerce contribute to the heightened risk.

By understanding these dynamics, including the successes and limitations of existing safety measures and drawing comparisons with initiatives in other states like Louisiana, Michigan, Mississippi, and Tennessee, we can better address the challenges and develop robust strategies. This research aims to inform and enhance Alabama's approach to CMV safety, ensuring that its economic advancement does not come at the cost of lives lost on its roads, thereby fostering a safer and more efficient transportation system for all.



Future Growth Trends in CMV Traffic

Population growth and demographic change are significant factors driving increased CMV traffic, posing challenges to the highway system. Alabama's population is projected to grow by an additional half million people by 2040, contributing to a more rapid increase in vehicle miles traveled (VMT) and registered vehicles than the current rate of roadway capacity expansion. This demographic growth, coupled with an anticipated rise in employment, directly fuels the demand for transportation (Alabama Transportation Institute, 2019). Increased economic demand is a primary determinant of the freight economy, influenced

by key macroeconomic factors such as Gross Domestic Product (GDP) growth, industrial production, retail spending and consumption, inventory restocking, housing, agricultural demand, and auto production. Consumer spending accounts for nearly 70% of U.S. GDP, with goods consumption significantly impacting transportation volumes (Holm, 2020). The rapid growth and reliance on e-commerce have led to a substantial increase in U.S. retail e-commerce sales, driving an undeniable surge in demand for trucking services to ensure quick and reliable product delivery (Tripnet.org, 2023). As Alabama's economy expands, freight traffic is expected to increase at twice the rate of passenger vehicle traffic, with truck shipments originating from or destined for the state projected to rise by approximately 40-46% by 2040, totaling an additional 194 million tons. The presence of efficient and well-maintained transportation infrastructure is considered critical by employers for enabling economic development, expansion, and job creation (Alabama Transportation Institute, 2019). For instance, the Port of Mobile alone

generated an economic impact of \$98.3 billion and supported over 351,000 direct and indirect jobs in Alabama in 2022, underscoring its pivotal role in the state's booming economy and the associated increase in freight demand (Alabama Port Authority, 2022).

Increased truck traffic, while vital for the economy, puts pressure on the highway infrastructure (Alabama Transportation Policy Research Center, 2019). Areas like the I-10 Wallace Tunnel and the west half of the I-10 Bayway already experienced average annual daily traffic (AADT) volumes of approximately 75,000 vehicles per day in 2015 and were described as capacity constrained, with traffic delayed for significant portions of each day (CDM Smith, 2018). The projected growth in freight traffic will exacerbate these issues if not addressed (Alabama Transportation Policy Research Center, 2019).

Addressing Growth Challenges and Infrastructure

The Alabama Port Authority is significantly investing in its freight transportation network through the development of intermodal inland facilities, aiming to enhance cargo distribution and reduce reliance on long-haul trucking directly from the port. A new inland intermodal facility in Montgomery, Alabama, served by CSX, is planned to begin operation in 2025, with construction having commenced in February 2025 (Alabama Port Authority Communications, 2024) (Alabama Port Authority Communications, 2025). Additionally, an inland intermodal facility is under development in Decatur, Alabama. This Decatur facility, announced in February 2024 in partnership with CSX Transportation, will establish crucial rail connectivity from the Intermodal Container Transfer Facility (ICTF) at the Port of Mobile to customers in central and northern Alabama (Alabama Port Authority Communications, 2025).

These strategic infrastructure investments are funded through a combination of federal budget appropriations, grants, federal grants, and support from the Alabama State Legislature. The Port also reinvests all revenue beyond operating expenses into improving and expanding its facilities (Alabama Port Authority Communications, 2023). State lawmakers have expressed support, acknowledging the necessity of upgrading various port facilities across the state to facilitate the flow of goods to and from the Port of Mobile (Willis, 2024). A proposed policy option suggests allocating approximately \$10 million from the diesel excise tax specifically for port funding to help the Alabama Port Authority secure substantial federal investment (Alabama Transportation Policy Research Center, 2019). Overall, these strategic investments, exceeding \$1 billion, are

designed to enhance connectivity and capacity across waterway, rail, and highway modes, supporting projected growth in freight traffic and bolstering the Port of Mobile’s contribution to Alabama’s economy (Alabama Port Authority Communications, 2025).

Primary Causes of Commercial Motor Vehicle Fatalities in Alabama

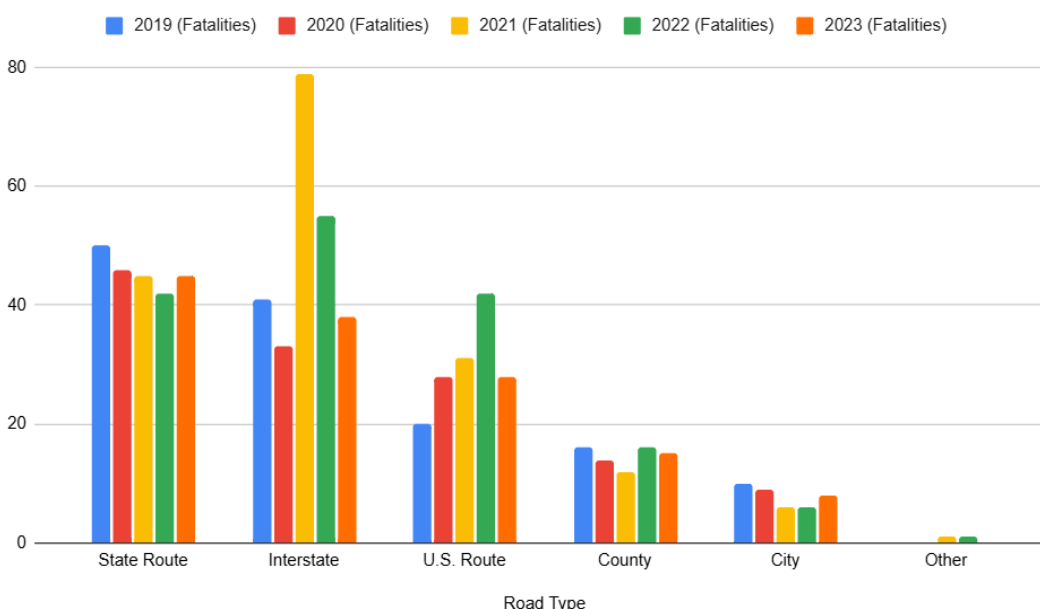
When it comes to improving CMV safety, understanding the root causes of crashes is essential. Alabama consistently ranks among the states with the highest fatal crash rates involving large trucks (Tripnet.org, 2023), making it critical to examine the key contributing factors. Road infrastructure, driver behavior, mechanical failures and road conditions all play a key role in CMV related fatalities, along with other factors.

From 2019 to 2023, Alabama averaged 142 fatalities annually due to truck-related crashes. According to the Alabama Department of Transportation’s 2022 Crash Facts report (Alabama Department of Transportation, 2020-2023), most truck-involved fatalities occurred on Interstates (34%), followed by U.S. Routes (25.9%), State Roads (25.9%), County Roads (9.9%), and City Roads (3.7%). Some counties are affected more than others. Jefferson, Mobile, and Montgomery counties top the list with the highest number of fatalities, while counties like Crenshaw, Barbour, and Hale reported the fewest (Alabama Department of Transportation, 2020-2023).

Road Infrastructure

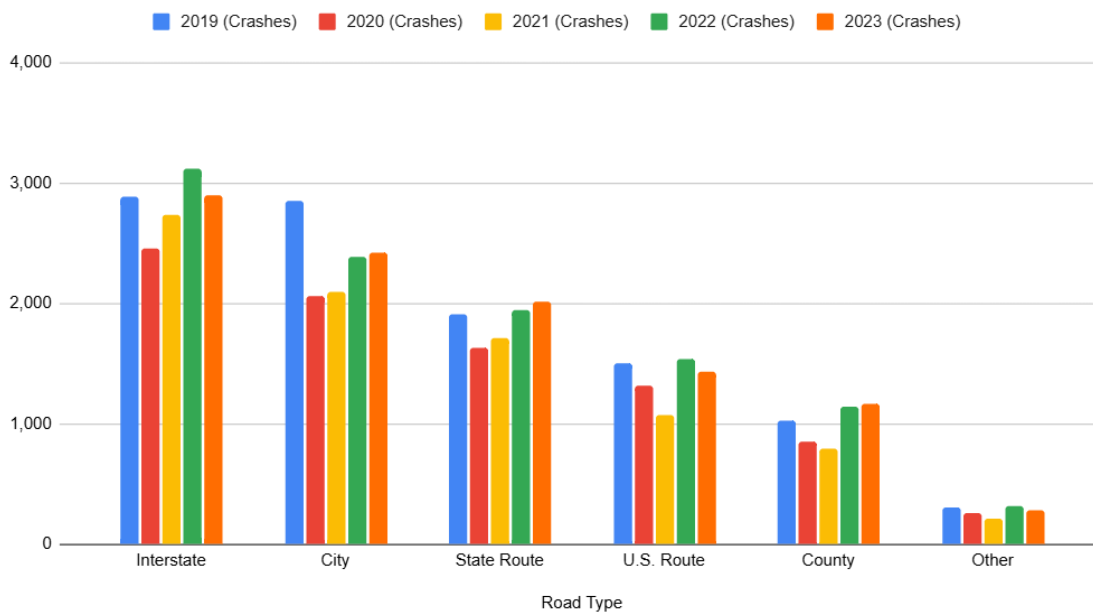
Road Infrastructure (CMV Fatalities From 2019-2023)

Fatalities From 2019 to 2023



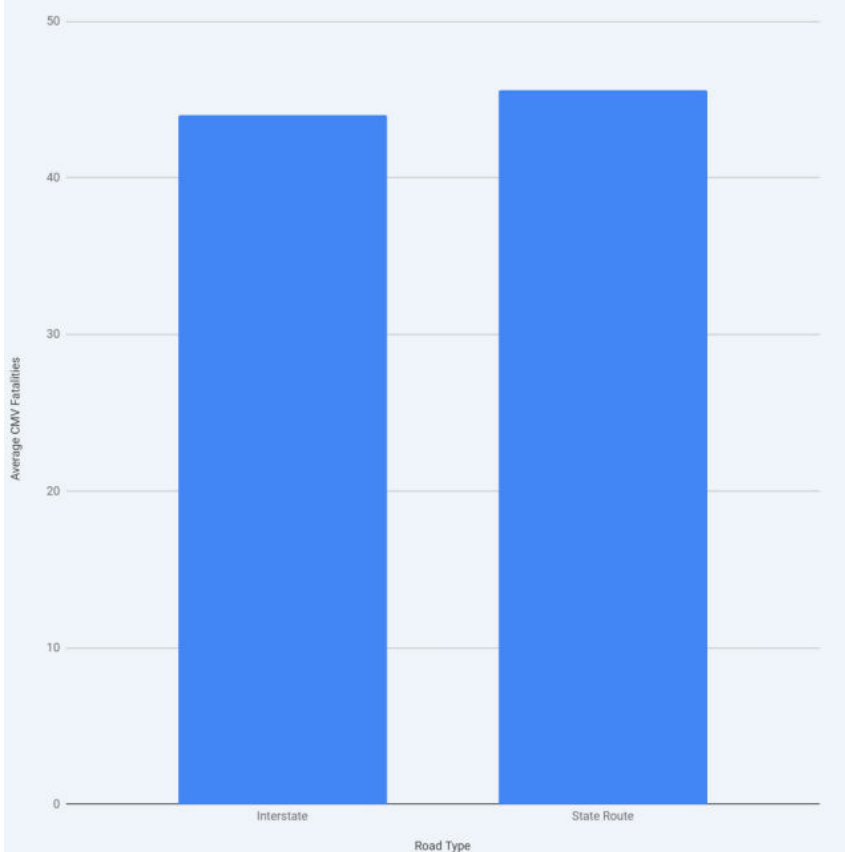
Road Infrastructure (CMV Crashes From 2019-2023)

Crashes From 2019 to 2023

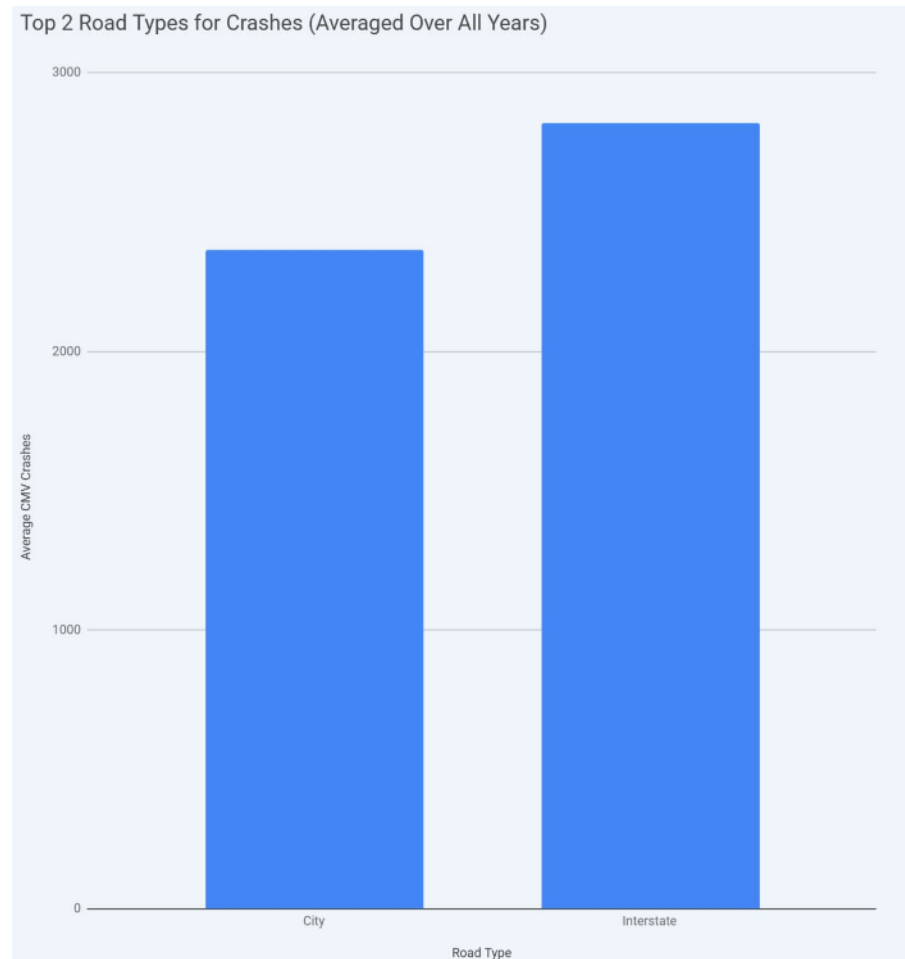


Top 2 by Percentage of CMV Involved Fatalities by Road Type

Top 2 Road Types for Fatalities (Averaged Over All Years)



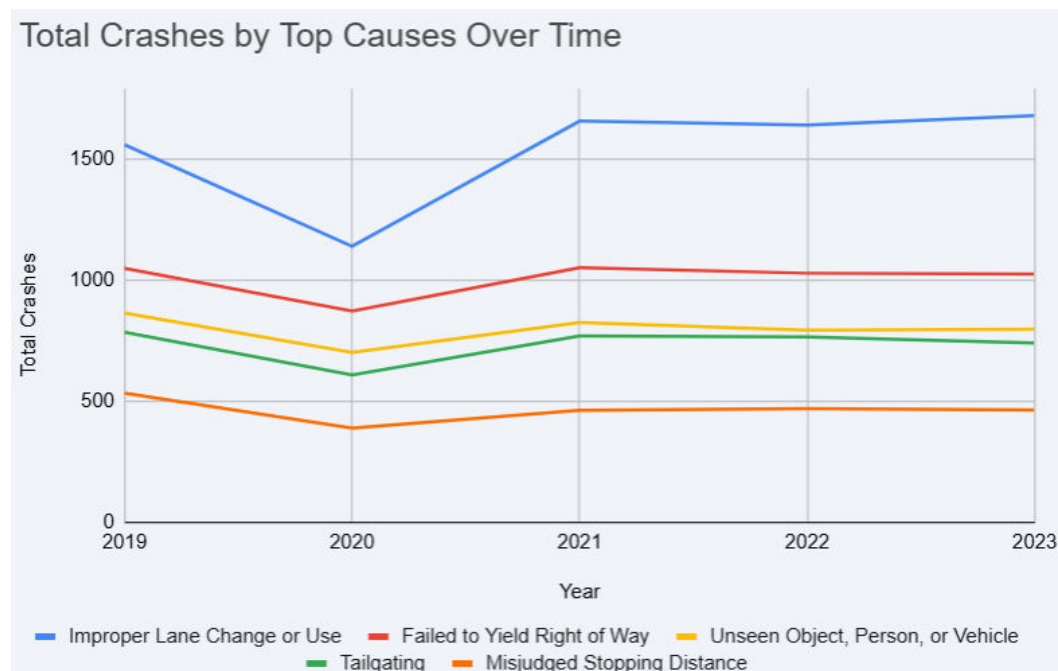
Top 2 by Percentage of CMV Involved Crashes by Road Type



From 2019 to 2023, Interstate roadways consistently had the highest volume of CMV-involved crashes in Alabama. In terms of fatalities, however, the top two road types varied. State Routes frequently led in truck-involved fatalities, accounting for the highest percentages in 2019, 2020, and 2023. Interstate roadways were also a significant risk, having the highest percentage of truck-involved fatalities in 2021 and 2022. (Alabama Department of Transportation, 2019-2023).

CMV Involved Crashes by Driver Behavior

Statistics do not link the cause to the driver of the CMV involved exclusively. It could either be the driver of the CMV or the other party involved.



CMV involved crashes in Alabama show varying annual totals, with a consistent primary cause. From 2019 to 2023, the total number of truck-involved crashes was 10,486 in 2019, decreased to 8,579 in 2020, then rose to 10,588 in 2021. In 2022, there were 10,452 truck-involved crashes, slightly declining to 10,210 in 2023. Across this period, the leading primary cause for truck-involved crashes consistently remained "Improper Lane Change or Use". This highlights a specific area of driver behavior that frequently contributes to these incidents on Alabama roadways (Alabama Department of Transportation, 2019-2023).

Driver behavior is a critical factor in CMV safety, with many fatal crashes linked to distracted or fatigued driving (Burns, Cunningham, & Mackey, P.C., n.d.). Common unsafe practices contributing to these incidents include fatigue from long hours, cellphone use (talking, texting, scrolling), eating and drinking, and multitasking with in-cab controls like radio or GPS. Aggressive driving, encompassing speeding, tailgating, ignoring signs, and misjudging stopping distances, also leads to severe outcomes. To address these issues, the Federal Motor Carrier Safety Administration (FMCSA) has enacted mandatory rest regulations aimed at combating fatigue and enhancing safety compliance (Burns, Cunningham, & Mackey, P.C., n.d.).

Defective Equipment & Mechanical Failures

Defective equipment consistently contributes to a notable portion of CMV involved crashes in Alabama, as indicated by the "Primary Cause of All Crashes with Truck Involvement" data across several years. While the specific numbers fluctuate annually, this factor typically accounts for 4.0% to 4.3% of all truck-involved incidents. For example, in 2019, 417 CMV crashes were attributed to defective equipment, representing 4.0% of the total (Alabama Department of Transportation, 2019-2023).

Mechanical failure is a significant cause of CMV crashes, stemming from the considerable wear and tear trucks endure (Sawa, 2024). Key issues include faulty brakes, which impede safe stopping; tire problems like blowouts or underinflation, leading to loss of control; steering malfunctions hindering safe maneuvering; and powertrain breakdowns causing sudden stops or stalls. Additionally, overloaded or shifting cargo can result in rollovers, particularly on curves or in high winds. Preventing these mechanical failures relies heavily on routine maintenance and thorough pre-trip safety inspections.

Roadway Conditions

Road conditions and infrastructure design significantly influence crash risk, particularly in high-traffic corridors like Interstates I-65 and I-20, which see heavy truck volumes and increased collision potential. Rural roads present unique hazards such as narrow lanes, poor visibility, and wildlife crossings. Furthermore, some roads are inadequately designed for the weight and volume of modern freight traffic, while adverse weather conditions like rain, fog, snow, and ice drastically reduce visibility and traction, increasing crash likelihood. While driver behavior, equipment failure, other motorists, and road conditions all contribute to CMV fatalities, Alabama's data highlights a pressing need for continued improvement in highway safety (Burns, Cunningham, & Mackey, P.C., n.d.):

Inadequate Road Infrastructure and Truck Parking

Alabama's infrastructure has struggled to keep pace with the growing number of CMVs. The TRIP report highlights a national shortage of truck parking, a problem acutely felt in Alabama as freight traffic rises (Rocky Moretti, News Release: Rate of Alabama Fatal Crashes Involving Large Trucks Among Highest in Nation, 2023). Insufficient parking forces drivers to park unsafely or drive beyond safe limits, increasing crash risks. Additionally, the Alabama Law

Enforcement Agency emphasizes the need for better infrastructure investment to improve highway safety and freight efficiency (ALEA.gov, 2023).

Transportation System Management and Operations (TSMO)

Transportation System Management and Operations (TSMO) is an integrated program designed to optimize existing transportation infrastructure performance by implementing systems, services, and projects that preserve capacity while enhancing security, safety, and reliability. Prioritizing cost-effective operational improvements, TSMO strategies are generally low-cost and implementable within two to three years, maximizing the utility of current facilities before new capacity additions are needed. Its core objective is to make the most effective use of existing highway capacity and complement new road projects by directly addressing both recurring and non-recurring congestion. TSMO's broad scope integrates diverse strategies like traffic surveillance, demand and work zone management, emergency response, and traveler information services, requiring multi-agency coordination across all modes and geographic areas to proactively manage traffic and respond to events, while also considering freight community needs (AECOM, 2021).

TSMO significantly contributes to CMV safety through various integrated strategies (Carson, 2010). Traffic Incident Management, a core TSMO component, is crucial for CMV safety by quickly detecting and removing incidents to safely and efficiently restore traffic capacity, which is vital for reducing secondary crashes, particularly given the significant roadway blockages large trucks can cause (Carson, 2010).

The Alabama Department of Transportation (ALDOT) has created a TSMO Program Plan to help make Alabama's transportation network safer and more efficient. The plan focuses on using technology and teamwork to improve how traffic moves across the state. It also lays out strategies to incorporate TSMO solutions into everyday policies and procedures to support smoother and more reliable travel (National Operations Center for Excellence, 2019).

Safety Initiatives for Alabama

In recent years, Alabama has made measurable progress in improving CMV safety, earning national recognition for its efforts. Backed by collaboration between state and federal partners, this trend stands in contrast to the nationwide rise in fatal truck-related crashes. However, Alabama faces serious concerns ahead including new laws that could limit enforcement and the

expected increase in freight movement through 2050. Continued work in safety education, research, and infrastructure will be critical to sustaining the improvements already made.

Collaborative Partnerships



(Insurance Institute for Highway Safety, 2025)

Improving CMV safety doesn't happen in a vacuum. One of the most effective ways to tackle the challenges of reducing CMV-related crashes and fatalities is through partnerships. Partnerships bring together organizations with shared goals and different perspectives. Just as Alabama and other states develop state-specific strategies to make roadways safer, national organizations are working together to build a broader network of support and action. These partnerships offer valuable insight and support that strengthen what individual states are already doing.

Two of the most influential groups working in the CMV safety space are the Commercial Vehicle Safety Alliance (CVSA) and the Insurance Institute for Highway Safety (IIHS). Both organizations focus on preventing traffic fatalities, but each brings a unique lens. The CVSA is a non-profit that connects CMV safety officials across North America from federal and state agencies to local and provincial enforcement as well as key players in the trucking industry (Commercial Vehicle Safety Alliance, 2025). Their efforts concentrate specifically on commercial vehicles and how to keep them operating safely on the roads.

On the other hand, the IIHS, while not limited to commercial vehicles, conducts research and shares critical data to reduce injuries and deaths from all motor vehicle crashes (Insurance Institute for Highway Safety, 2025). Their work often overlaps with the CVSA, especially in areas like crash avoidance technologies and vehicle safety features.

What's significant is that both organizations share a vision of zero traffic fatalities. A goal that is also reflected in state-level strategies like those seen in Michigan's Safe System Approach and Louisiana's Destination Zero Deaths. The IIHS's 30X30 strategic plan is built around reducing roadway deaths by 30% by the year 2030, aligning with the global Vision Zero framework that

originated in Sweden more than 25 years ago (Harkey, 2025). As part of this plan, IIHS has identified commercial vehicle safety as a key area of focus. This includes evaluating crash-avoidance technology and improving standards like side underride protection for trailers, building on their past work with rear underride guards (Harkey, 2025).

The CVSA is also helping lead the Road to Zero Coalition, which aims to eliminate all roadway deaths in the U.S. by 2050. The coalition's strategy includes visible enforcement, focused education campaigns, and renewed attention to driving behavior, all elements that complement Alabama's own safety efforts and those of neighboring states (Commercial Vehicle Safety Alliance, 2018). In 2018, the coalition held a dedicated session on CMV safety, reinforcing the importance of including heavy vehicles in broader safety conversations.

CVSA also takes a hands-on approach through targeted inspection and enforcement programs. Under the North American Standard Inspection Program, specially trained inspectors conduct CMV inspections using a consistent set of criteria (Commercial Vehicle Safety Alliance, 2025). Programs like Operation Airbrake and Operation Safe Driver are designed to address specific risk factors, brake issues, driver behavior, and education with help from FMCSA, state and local law enforcement, and industry members (Commercial Vehicle Safety Alliance, 2025).

Additionally, CVSA supports the broader safety community by sponsoring industry councils, providing scholarships, and organizing training and competitive events like the North American Inspectors Championship. These efforts help build relationships, raise standards, and keep safety professionals engaged in ongoing learning.

The Commercial Vehicle Safety Alliance offers two primary membership types for Alabama, Local and Associate, each providing access to safety programs, training, and collaborative opportunities (Commercial Vehicle Safety Alliance, 2025).

Local Membership is designated for municipal law enforcement agencies with sworn personnel and requires a memorandum of understanding (MOU) with the state's lead CMV safety agency. In Alabama, the lead agency is the Alabama Law Enforcement Agency's Motor Carrier Safety Unit, and the Oxford Police Department is currently the state's sole local CVSA member (Commercial Vehicle Safety Alliance, 2025). Local members benefit from professional development, access to CVSA committees, and participation in programs such as Operation Airbrake and Operation Safe Driver.

Associate Membership includes a broad range of transportation industry participants and is divided into three categories:

- Category I (\$1,050 dues): Trade organizations (example: Independent Carrier Safety Association)
- Category II (\$750 dues): Companies such as Amazon Logistics, along with vendors and insurers
- Category III (\$550 dues): State trucking associations (example: Alabama Trucking Association) (Commercial Vehicle Safety Alliance, 2025)

Associate Members receive similar benefits to Local Members and may also participate in sponsorships, exhibit at events, and promote their own safety initiatives through CVSA platforms.

As Alabama continues to shape its own path toward safer roads for commercial drivers and the public, partnerships like these offer tested strategies, shared goals, and the kind of collaboration that multiplies impact. Learning from what works at the national level, just as Alabama has done in looking to neighboring states, supports a smarter, more connected approach to saving lives.

Preventative Strategies

One of the key strategies in preventing fatalities involving CMVs is the concept of “Zero Deaths” in transportation safety. This approach is built on the understanding that even one fatality is unacceptable and aims to eliminate traffic-related deaths through coordinated, multi-disciplinary efforts. Key initiatives under this framework include Toward Zero Deaths (TZD), Vision Zero, and Road to Zero (Toward Zero Deaths, 2019).

Toward Zero Deaths originated from a national safety workshop in 2009 and has since evolved into a comprehensive strategy to reduce roadway fatalities. The TZD strategy outlines actions across six areas: drivers and passengers, vulnerable users, vehicles, infrastructure, emergency medical services, and safety management (Toward Zero Deaths, 2019). TZD emphasizes creating a culture of traffic safety, where all stakeholders, government agencies, businesses, and community organizations work together to promote safer driving behaviors and reduce fatalities.

Vision Zero began in Sweden 20 years ago and has since gained global traction, including in the U.S. This initiative has reduced traffic deaths significantly by adopting a public health approach to safety, recognizing that traffic fatalities are preventable (Toward Zero Deaths, 2019) (Vision Zero Network, 2025). Vision Zero promotes a systems-level, interdisciplinary approach that

involves stakeholders from transportation, public health, law enforcement, and community groups (Toward Zero Deaths, 2019) (Vision Zero Network, 2025). It is a data-informed initiative aimed at addressing the root causes of traffic fatalities while improving safety for all road users, particularly vulnerable populations such as children, seniors, and those using non-motorized modes of transport.

The Road to Zero initiative, launched in 2016, brings together various national organizations, including the U.S. Department of Transportation and the National Safety Council, to eliminate traffic fatalities within 30 years (Toward Zero Deaths, 2019) (National Safety Council, 2025). Road to Zero focuses on improving existing safety programs, advancing technological solutions, and fostering a Safe Systems approach to strengthen road safety culture and collaboration (Toward Zero Deaths, 2019) (National Safety Council, 2025). More than 350 organizations have joined the coalition to support these efforts, including transportation departments and safety organizations from across the nation.

These three initiatives, while distinct in their names, share the same overarching goal: to eliminate fatalities and serious injuries on our roads. They highlight the importance of collaboration at every level, from local agencies to national organizations, ensuring a unified approach to CMV safety. The collective commitment to Zero Deaths is a vital step toward creating safer roadways for all.

[The Impact of Penalties](#)

While partnerships and preventative strategies can help states find common ground and address issues, it is equally important to hold individuals accountable for breaking the law, especially when lives are lost. The seriousness of CMV crashes calls for a closer look at how penalties are handled. Whether involving a passenger vehicle or a CMV, accountability matters when safety laws are broken.

Lieutenant Zimmerman of the Alabama State Troopers (Zimmerman, 2025) provided insight into how penalties work in Alabama for CDL (Commercial Driver's License) drivers. He explained that most penalties tied to traffic citations are determined by the court, which makes comparisons between states difficult and potentially inconsistent. Therefore, only certain aspects were selected for fair comparison: penalties for overweight vehicles, the number of weigh stations in

each state, and the use of data-informed enforcement strategies that focus on increased enforcement in areas with a high number of recent violations.

In Alabama, the penalty for overweight vehicles ranges from \$100 to \$500, and the final fine is decided by the court, with a legal cap at \$500. The state currently has one stationary weighing station, located on Interstate 20 (Zimmerman, 2025). However, Alabama troopers do apply data-informed enforcement, using high-priority funding to pay troopers overtime for targeted patrols in high-risk areas.

In comparison, Louisiana takes a more detailed approach with a sliding scale for overweight violations. Sergeant Brady Johnson of Louisiana State Police (Johnson, 2025) provided data. He stated that fines are based on how many pounds over the limit a vehicle is, ranging from a \$10 minimum to 11 cents per pound for violations exceeding 11,000 pounds. Louisiana operates weigh stations in 12 different locations, with 21 total buildings that are positioned on both sides of highways. Louisiana is guided by crash analysis conducted by Louisiana State University (LSU), which produces a “heat map” to help troopers focus their inspection efforts.

Mississippi uses a tiered fine system for overweight vehicles. The scale starts at 5 cents per pound for weights just above 88,000 pounds and increases to flat fines of \$500, \$1,000, and \$1,500 depending on the excess weight. According to Captain Mark Hendrix of the Mississippi Department of Public Safety (Hendrix, 2025), these higher fines have led to a drop in overweight citations. Mississippi has a total of 20 weigh stations and implements data-informed enforcement through “monthly callback details.” These involve troopers conducting focused enforcement on their days off, paid for by grant funding. Additionally, being under the Department of Public Safety has given Mississippi Commercial Enforcement Officers more tools and training, including radar use and implied consent authority.

Tennessee handles overweight violations as civil penalties, charging 10 cents per pound based on the excess weight (England, 2025). The state has weigh stations in six locations, totaling eight buildings, with some sites covering both eastbound and westbound traffic. Tennessee also confirmed its use of data-informed enforcement, though further details about how it’s implemented or funded were not provided.

Overall, while Alabama’s enforcement methods and penalties demonstrate a clear commitment to safety, comparisons show room for growth. Other states are investing in larger infrastructure

networks, more structured penalty systems, and advanced data tools. However, all the agencies contacted regardless of the state expressed a shared desire to improve safety enforcement and reduce fatalities involving commercial vehicles.

Alabama's CMV Future

The Alabama Law Enforcement Agency's Motor Carrier Safety Unit, or MCSU, recently received the Strides for Safety Award. This award recognized their work and dedication to making commercial vehicle travel safer and helping reduce crashes across the state (Alabama Law Enforcement Agency, 2024). According to data from the Federal Motor Carrier Safety Administration, Alabama saw about a 30 percent drop in deadly crashes involving big trucks between 2021 and 2023 (Alabama Law Enforcement Agency, 2024). This achievement is the result of several years of close collaboration between state and federal partners.

The main goal of ALEA's MCSU is to cut down on traffic crashes involving commercial trucks. In 2023, there were only 11 fatal crashes in Alabama where a commercial truck was at fault, according to the FMCSA (Alabama Law Enforcement Agency, 2024).

Looking back over the years, a report by TRIP using data from 2017 to 2021 showed that Alabama averaged about 130 deaths a year from crashes involving large trucks. That equals roughly 26 deaths annually (National Transportation Research Group, 2023). Captain T. E. Pullin with ALEA said that 2022 and 2023 saw a noticeable drop in fatal crashes involving commercial trucks (National Transportation Research Group, 2023). He credited this progress to a joint effort between ALEA, the Alabama Trucking Association, and the FMCSA, noting that the state improved its commercial vehicle fatal crash rate by around 27 percent compared to the 2017 to 2021 average.

While Alabama's numbers have gone down, the national trend is heading in the opposite direction. Reports show that fatal crashes involving large trucks and buses continue to rise across the United States (Alabama Department of Transportation, 2024). From 2017 to 2021, the number of deaths in these types of crashes increased by 18 percent nationwide (National Transportation Research Group, 2023). In 2021 alone, almost 6,000 commercial vehicles were involved in fatal crashes across the country, and 148 of those were in Alabama.

CMV Safety in Other States

When discovering how other states address CMV safety, the focus extended beyond Alabama's neighboring states to include those with similar transportation systems and safety challenges. Louisiana, Michigan, Mississippi, and Tennessee were selected for a deeper review. While all four states follow foundational safety practices aligned with federal regulations, the emphasis of this research was on the additional, proactive steps each state is taking to reduce CMV-related crashes and improve roadway safety. These efforts ranged from innovative enforcement strategies to community partnerships and data-informed planning. These safety efforts offer valuable insights that can help inform and enhance Alabama's own approach to CMV safety.

Louisiana

Louisiana has aligned its traffic safety initiatives with the Toward Zero Deaths National Strategy, adopting the vision of Destination Zero Deaths (Louisiana Department of Transportation, 2022). To support this vision, the state has implemented a Strategic Highway Safety Plan (SHSP), which employs a data-informed approach to identify and address the most critical traffic safety challenges (Louisiana Department of Transportation, 2022). After pinpointing problem areas, strategies and tactics are applied based on their potential to reduce the severity of crashes.

The SHSP has demonstrated measurable results. In 2020, Louisiana recorded 828 traffic fatalities, which increased to 921 in 2021 (Louisiana Department of Transportation, 2022). However, by 2024, fatalities had declined to 159, with only 95 reported so far in 2025 (Louisiana Department of Transportation, n.d.). Commercial Motor Vehicle fatalities followed a similar trend, decreasing from 121 in 2021 to 88 in 2024, and just 3 fatalities reported in 2025 to date (Federal Motor Carrier Safety Administration, 2025).

This notable reduction in fatalities can be attributed, in part, to Louisiana's comprehensive organizational structure designed to support its data-informed framework. The SHSP structure includes an Executive Committee, Implementation Team, Statewide Emphasis Area Teams, Regional Safety Coalitions, and an SHSP Manager (Louisiana Department of Transportation, 2022). Each component plays a distinct role in collecting and analyzing data to inform daily decisions aimed at eliminating fatalities. For example, the Implementation Team is tasked with executing the action plans developed through the SHSP process (Louisiana Department of Transportation, 2022).

Michigan

Michigan's Strategic Highway Safety Plan is structured around five core traffic safety elements: Engineering, Education, Enforcement, Emergency Response, and Equity (State of Michigan, 2023). These pillars form the basis of Michigan's approach to traffic safety and are integrated into a broader Safe System Approach. This layered system is designed to ensure that if one component fails, others remain in place to prevent fatalities.

The Safe System Approach includes five key areas: Safe Speeds, Safe Vehicles, Safe Road Users, Safe Roads, and Post-Crash Care (State of Michigan, 2023). When combined with the five traffic safety elements, this model guides the structure and focus areas of Michigan's SHSP.

According to the plan, the integration of the Safe System Approach with the 5 Elements enhances the impact of safety strategies. "The 5 Elements of traffic safety remain an integral part of the SHSP. Each Safe System element can encompass one or more of the 5 Elements. For example, two of the 5 Elements strategies, Engineering and Education, can fall under three Safe System elements, Safe Road Users, Safe Vehicles, and Safe Roads. This SHSP will focus on the Safe System Approach and the 5 Elements strategies that have a direct effect on the SHSP focus areas" (State of Michigan, 2023).

Mississippi

Each year, the State of Mississippi reinforces its commitment to improving roadway safety. Through alignment with the national Toward Zero Deaths (TZD) initiative, the establishment of a Vision Team, and the organization of annual Safety Summits, state safety leaders collaborate to guide the development and execution of Mississippi's Strategic Highway Safety Plan (Mississippi Department of Transportation, 2024). This plan provides a strategic framework for addressing fatalities and serious injuries resulting from motor vehicle crashes, underpinned by a vision of zero-related deaths (Mississippi Department of Transportation, 2024).

The MS Vision Team is composed of safety professionals, community members, and experts who contribute to MS SHSP's formulation (Mississippi Department of Transportation, 2024). The 2024 plan details the team's role in stakeholder outreach, objective and tactic selection, and maintaining a publicly accessible website to share plan updates. This team supports plan implementation while fostering partnerships and innovation across the safety community. Key emphasis is placed on the five leading contributors to fatalities and severe injuries, guiding

objectives that define a forward-looking strategy (Mississippi Department of Transportation, 2024).

Strategic Objectives:

- Strengthen - enforcement, deterrence penalties and laws, accessibility to driver education courses, public safety culture, and Safe Systems approach to road designs
- Improve - enforcement presence, outreach programs, compliance checks, road and intersection designs
- Address - safe driving and licensing practices, stakeholder collaboration, policy and legislation changes

The MS SHSP serves as a guiding framework for coordinated action and reflects the state's progress in pursuing its TZD vision. It outlines strategic objectives and emphasizes collaboration among Mississippi's safety stakeholders. The plan also fosters opportunities for engagement within the "Four Es" of traffic safety (Mississippi Department of Transportation, 2024):

1. Education – Focused on drivers, educators, business leaders, and influencers
2. Emergency Medical Services – Involving emergency responders
3. Enforcement – Including law enforcement, policymakers, and judicial officials
4. Engineering – Targeting planners and infrastructure engineers

Legislative backing for the SHSP came with the passage of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005, which made SHSP development a requirement for receiving federal transportation funding. The Highway Safety Improvement Program (HSIP) funds safety efforts across all public roads, including non-state-owned and tribal roads, and mandates a data-informed approach to roadway safety enhancement (Mississippi Department of Transportation, 2024).

In 2024, Mississippi was awarded the following federal grants to support CMV safety (Federal Motor Carrier Safety Administration Resource Center, 2024):

- \$6,243,293 through the Motor Carrier Safety Assistance Program (MCSAP)
- \$3,516,183 through the Commercial Driver's License Program Implementation (CDLPI) Grant
- \$2,405,831 through the High Priority Commercial Motor Vehicle (HP-CMV) Grant

By comparison, Alabama received:

- \$8,768,714 through MCSAP
- \$1,101,494 through the CDLPI Grant
- \$129,500 awarded to Wallace State Community College under the Commercial Motor Vehicle Operator Safety Training (CMVOST) Grant

Tennessee

Through collaboration with multiple state and federal agencies and organizations, Tennessee currently develops strategies to improve highway safety using a Strategic Highway Safety Plan. Every five years Tennessee creates a SHSP to develop a comprehensive safety road map for the state, identify concerns related to crashes resulting in fatalities and serious injuries, and provide strategies to mitigate or eliminate these concerns (Tennessee Strategic Highway Safety Plan, 2020-2024).

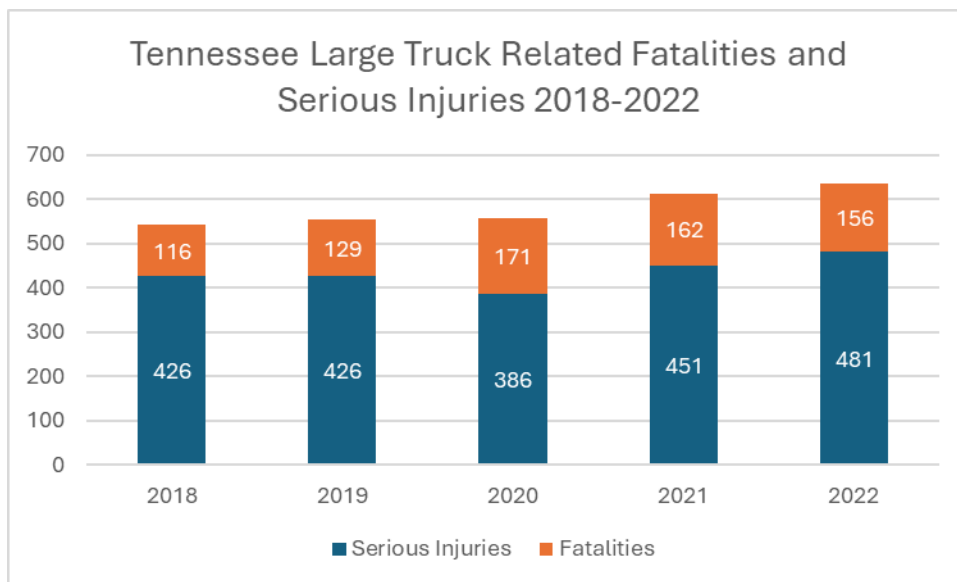
The 2025-2029 SHSP integrates a concept that was adopted by the U.S. Department of Transportation (USDOT) in January 2022 called the Safe System Approach (SSA) (Tennessee Strategic Highway Safety Plan, 2025-2029). The Safe System Approach is summarized in the following graphic, where six principles are shown on the outer ring of the figure while the inner ring depicts five elements (Tennessee Strategic Highway Safety Plan, 2025-2029).



Figure 1. Safe System Approach principles and elements

Tennessee's 2025 SHSP resulted in the following six emphasis areas:

- Data Collection and Analysis
- Driver Behavior
- Infrastructure Improvements
- Vulnerable Road Users
- Operational Improvements
- Motor Carrier Safety



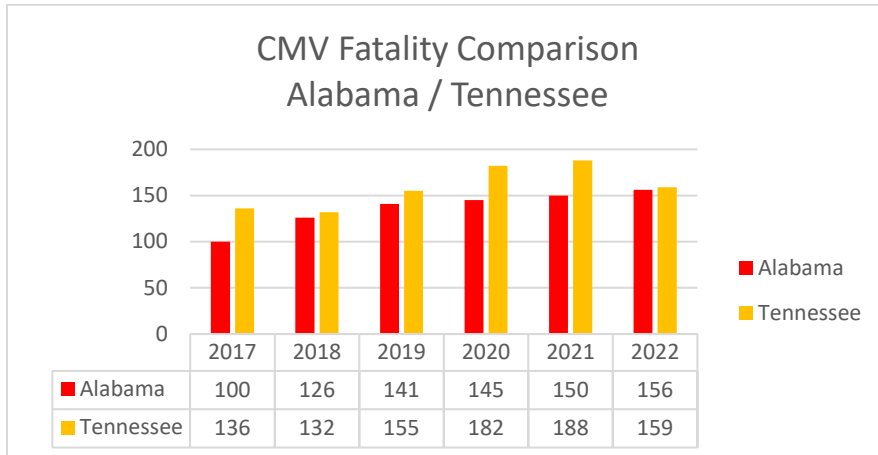
Public Awareness/Education

The Tennessee Trucking Association (TTA) is an independent, non-profit association founded in 1930 and represents more than 500 trucking companies and industry vendors (Tennessee Trucking Association, 2025). Created in 1993, the Tennessee Trucking Foundation (TTF) is the 501(c)3 charitable arm of the Tennessee Trucking Association (Tennessee Trucking Association, 2025). TTF uses various programs, such as Road Team Captains, to educate the public and make highways safer. Road Team Captains travel across Tennessee educating motorists on how to safely share the road with CMVs. There are multiple programs offered by the Road Team Captains, such as:

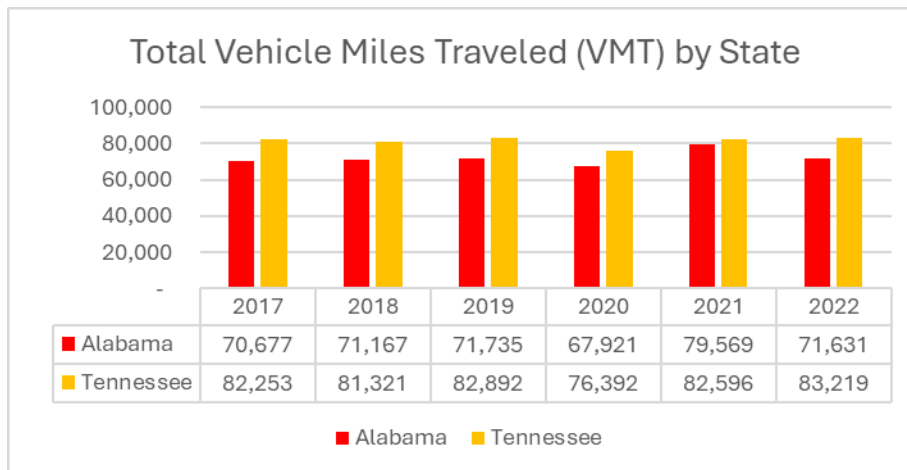
- Touch-A-Truck
- Fatal Vision Goggles

- Speaker/Presentation
- Pedal Karts
- Drowsy Driving Presentation

Statistics



Source: (Federal Motor Carrier Safety Administration, 2024)



Source: (Federal Motor Carrier Safety Administration, 2024)

State to State CMV Comparison

Alabama shares many CMV safety priorities with surrounding and peer states, yet key differences in structure, enforcement capacity, and outreach reveal areas for both recognition and improvement.

In Mississippi, Louisiana, and Tennessee, the leading factors contributing to commercial motor vehicle fatalities are often driver-related errors, mechanical failures, traffic violations, and environmental conditions (Mississippi Department of Transportation, 2024) (Louisiana Department of Transportation, 2022) (Tennessee Strategic Highway Safety Plan, 2025-2029).

Research indicates that states implementing Zero Deaths initiatives, such as Toward Zero Deaths (TZD) and Vision Zero, have experienced reductions in fatalities. These programs rely on data-informed strategies and underscore the importance of coordinated efforts between state and local agencies. By fostering collaboration, these initiatives work to tackle the underlying causes of fatalities in a comprehensive manner, ultimately improving road safety for all.

Mississippi and Alabama are aligned under the Toward Zero Deaths (TZD) initiative, emphasizing CMV safety through education, enforcement, and technology. Both states require Entry-Level Driver Training (ELDT) (Federal Motor Carrier Safety Administration, 2025) and participate in national outreach programs like Safe Kids Worldwide and Impact Teen Drivers (Safe Kids Worldwide, 2025) (Impact Teen Drivers, 2025). However, Mississippi's Department of Public Safety oversees CMV enforcement, providing broader authority to troopers and managing 41 weigh stations compared to Alabama's 1 physical weigh station (Coopsareopen.com, 2025). Mississippi also runs extensive outreach campaigns (Mississippi Department of Transportation, 2025) and a New Entrant Task Force to ensure regulatory compliance (Mississippi Commercial Vehicle Safety Plan, 2024), while Alabama leans heavily on ALEA's data-informed enforcement and limited inspection facilities (AL Commercial Vehicle Safety Plan, 2024-2026).

Tennessee fields 737 troopers trained for CMV inspections over 14 times more than Alabama's 51 (Tennessee Commercial Vehicle Safety Plan, 2022-2024) (AL Commercial Vehicle Safety Plan, 2024-2026). Tennessee's "Teens and Trucks" and "No Zone" campaigns reach thousands annually through public events and interactive education simulators. Alabama's outreach is improving, but event volume and dedicated safety staff remain limited in comparison. Tennessee also uses violation trend data to steer enforcement and educational focus (Tennessee Commercial Vehicle Safety Plan, 2022-2024).

Louisiana and Michigan mirror Alabama's strategic goal of a 50% reduction in fatalities by 2040 and 2050, respectively (AL Department of Transportation, 2022) (Louisiana Department of

Transportation, 2022) (State of Michigan, 2023). All three states target distracted driving, impaired driving, and occupant protection, though Louisiana does not list aggressive driving among its top emphasis areas. Louisiana's use of regional safety coalition teams (Louisiana Department of Transportation, 2022) introduces a flexible model Alabama could consider. Michigan's Strategic Highway Safety Plan places special attention on CMV-related crashes and non-CMV driver errors, such as underestimating truck stopping distance (State of Michigan, 2023). Alabama's CMV crash trends show 30% reductions between 2021 and 2023, partly due to ALEA-led enforcement and federal grant support (Alabama Law Enforcement Agency, 2025).

Age group data shows similar risks across all states: 15- to 34-year-olds make up a significant portion of serious and fatal crashes. In Alabama, 63% of fatalities occur in ages 25–64, with 15–20-year-olds accounting for 15% (AL Department of Transportation, 2022). Louisiana reports 21% of fatalities from ages 25–34 and 18% from 15–24 (Louisiana Department of Transportation, 2022). Michigan highlights 15–20-year-olds as overrepresented in fatal crashes and states that traffic crashes are the leading cause of death for that group (State of Michigan, 2023).

In summary, Alabama's approach to CMV safety shows solid progress, particularly in reducing fatal crashes and leveraging data for enforcement. However, comparisons with Mississippi, Tennessee, Louisiana, and Michigan highlight opportunities for growth. States like Tennessee and Mississippi have invested heavily in manpower, education, and inspection infrastructure, while Michigan and Louisiana offer models in regional coordination and emphasis area flexibility. Expanding outreach, increasing inspection capacity, and adopting localized safety strategies could further enhance Alabama's efforts to reduce CMV-related fatalities and improve roadway safety statewide.

Recommendations

Based on a review of the best practices in Alabama and peer states, the following five recommendations are offered to significantly improve commercial motor vehicle safety throughout the state. Each recommendation is supported by Alabama-specific data, infrastructure trends, and findings from other state programs.

Optimize Targeted Enforcement and Infrastructure Investment

To strategically enhance long-term CMV safety, we recommend that Alabama expand its targeted enforcement efforts through a more robust, data-informed approach and a significant investment in physical enforcement infrastructure. While Alabama currently applies limited data-based enforcement strategies (Zimmerman, 2025), the demonstrated success of similar efforts in Louisiana and Mississippi where crash heat maps and analytics guide enforcement (Johnson, 2025) indicates that broader implementation could lead to meaningful improvements. Increasing investment in crash data analytics would enable more precise patrol deployment along high-risk corridors such as I-65, I-10, and congested state routes, allowing for more efficient use of Motor Carrier Safety Assistance Program (MCSAP) resources (U.S. Department of Transportation, 2022).

For sustained enforcement impact, we recommend Alabama pursue long-term infrastructure upgrades by expanding weigh station coverage along key freight corridors. This includes developing additional stationary sites and incorporating mobile and virtual scale technologies, following models used effectively in Louisiana and Mississippi (Johnson, 2025) (Hendrix, 2025). These upgrades will strengthen weight compliance enforcement, reduce infrastructure strain, and mitigate crash risks. Additionally, modeled after Tennessee and Mississippi, we recommend increasing the number of state troopers dedicated to CMV safety to ensure consistent enforcement across both high-volume freight routes and rural highways. This long-term investment would reduce reliance on temporary grant funding and support a more stable, comprehensive enforcement presence.

Enhance CMV Driver Training and Public Awareness Campaigns

Crash data from 2020–2023 identified improper lane changes and failure to yield as leading causes of CMV-involved crashes, along with fatigue-related issues and hours-of-service violations (Alabama Department of Transportation, 2020-2023). As a short-term strategy, we

recommend Alabama enhance CMV driver training and fatigue management. This can be achieved by forming statewide partnerships with training providers and utilizing resources such as the FMCSA's Commercial Motor Vehicle Operator Safety Training (CMVOST) grant. Referring to our discoveries in collaborative partnerships, we also recommend a short-term strategy for expanding local participation in the Commercial Vehicle Safety Alliance. This can be accomplished under the coordination of the Alabama Law Enforcement Agency's Motor Carrier Safety Unit. The expansion could enhance statewide commercial motor vehicle safety by increasing collaboration, improving access to training, and strengthening participation in enforcement initiatives (Federal Motor Carrier Safety Administration Resource Center, 2024) (Commercial Vehicle Safety Alliance, 2025).

Because a large share of CMV-involved crashes stem from the actions of non-commercial drivers, we recommend launching public awareness campaigns that focus on safe road-sharing practices. Modeled after Tennessee's Road Team Captains initiative, these short-term campaigns should be integrated into driver education programs and community events to promote hands-on learning and improve safety outcomes for all road users (Tennessee Trucking Association, 2025).

Improve Penalty Structures and Address Truck Parking Shortages

To deter violations in the short term and reduce associated safety risks, we recommend Alabama strengthen its penalty structures for CMV violations. Compared to peer states like Louisiana and Mississippi, Alabama's fine structure for overweight CMVs is less tiered and more reliant on court discretion (Zimmerman, 2025). Implementing a more consistent, sliding-scale fine system based on pounds over the legal limit can provide clearer, more predictable consequences and serve as a short-term deterrent to violations.

As a long-term recommendation, we recommend Alabama address the shortage of safe, legal truck parking along major freight routes. The lack of parking, particularly on interstates and near industrial hubs, contributes to driver fatigue and illegal stopping (Rocky Moretti, News Release: Rate of Alabama Fatal Crashes Involving Large Trucks Among Highest in Nation, 2023). Alabama should leverage federal funding and establish public-private partnerships to expand truck parking infrastructure along key corridors like I-65 and I-20. This long-term investment is essential to improving driver well-being, ensuring regulatory compliance, and enhancing overall road safety.

Invest in State Road Safety Enhancements

Based on our findings, state roads accounted for the highest percentage of fatal CMV crashes in 2023, representing 33.6% of such incidents (Alabama Department of Transportation, 2020-2023). As a long-term strategy, we recommend Alabama prioritize infrastructure improvements on state highways, following the model of Mississippi's strategic highway safety plan.

Enhancing roadway conditions, particularly in rural areas, experiencing increased CMV traffic due to industrial growth, can significantly reduce crash risks. Strategic, sustained investment in the physical roadway environment is a critical step toward strengthening CMV safety statewide.

Leverage Alabama's Transportation Systems Management and Operations Plan to Enhance CMV Safety

The Commercial Motor Vehicle Safety Solutions team recommends that Alabama take short-term action by building upon its existing TSMO plan to enhance commercial motor vehicle safety across the state's transportation network (National Operations Center for Excellence, 2019). TSMO is an integrated, cost-effective approach that improves safety, reliability, and system efficiency through coordinated strategies, services, and technologies (AECOM, 2021).

With many solutions deployable within two to three years, TSMO provides a practical framework for implementing short-term operational improvements that directly support CMV safety goals statewide (AECOM, 2021).

Conclusion

Improving commercial motor vehicle safety in Alabama is critical to protecting lives, supporting economic mobility, and advancing the state's highway safety goals. The Commercial Motor Vehicle Safety Solutions Alabama Project focused on identifying practical, research-based strategies that can enhance CMV safety through enforcement, education, and technology.

By learning from peer states like Mississippi, Tennessee, Louisiana, and Michigan, Alabama can enhance CMV safety through focused enforcement, targeted outreach, and regional collaboration. The decline in CMV-related fatalities from 2021 to 2023 highlights the impact of these strategies.

Continued investment in data-informed, preventative efforts tailored to Alabama’s needs will advance progress toward the “Toward Zero Deaths” vision and support a proactive, collaborative safety culture.

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