



FMCSA Partnering with Universities through FMCSA Grants and the FMCSA Research & Technology Program

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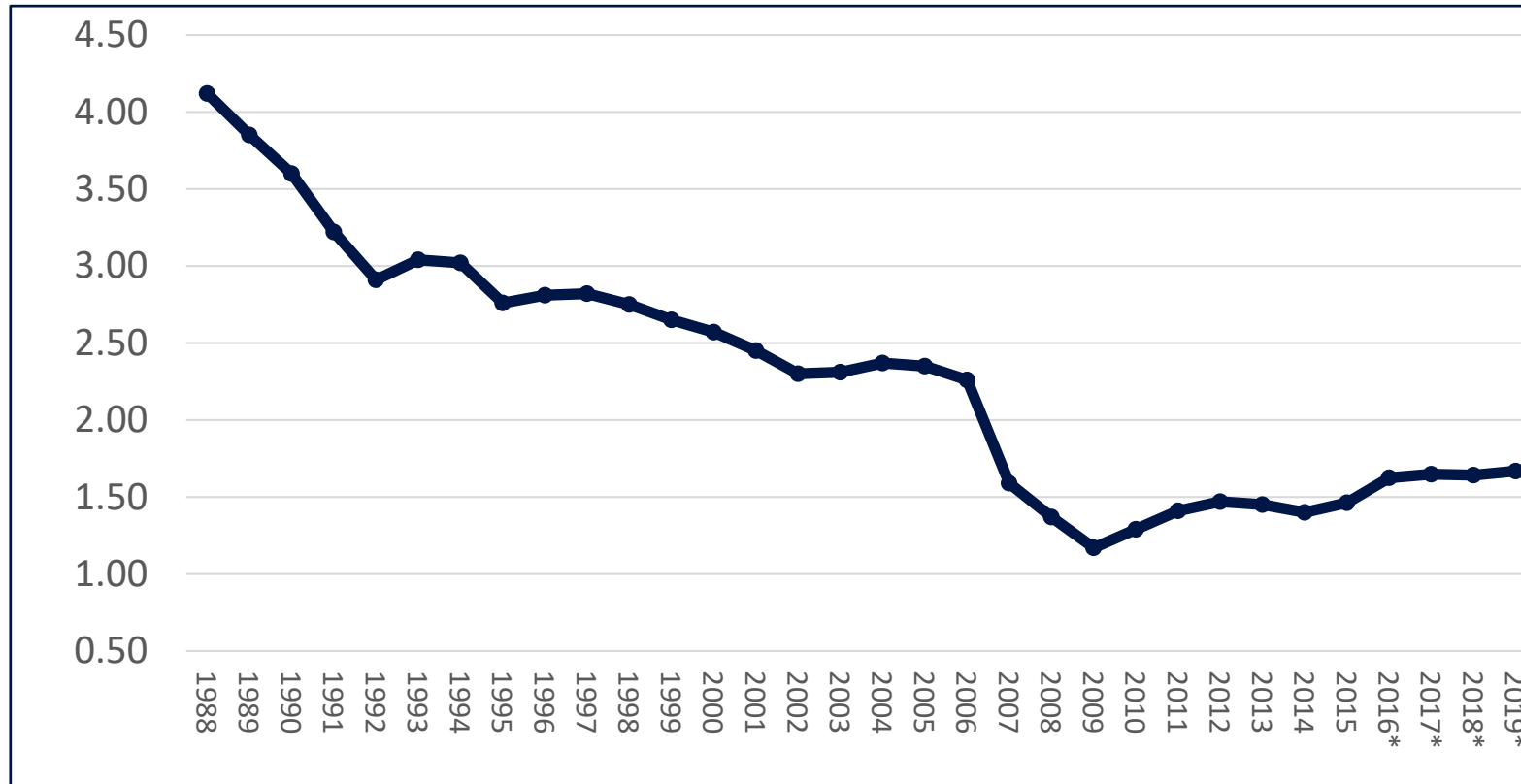
U.S. Department of Transportation
Federal Motor Carrier Safety Administration

FMCSA Mission

- Reduce crashes, injuries and fatalities involving commercial motor vehicles (CMVs) through education, innovation, regulation, enforcement, financial assistance, partnerships and full accountability.

The Long-Term Challenge

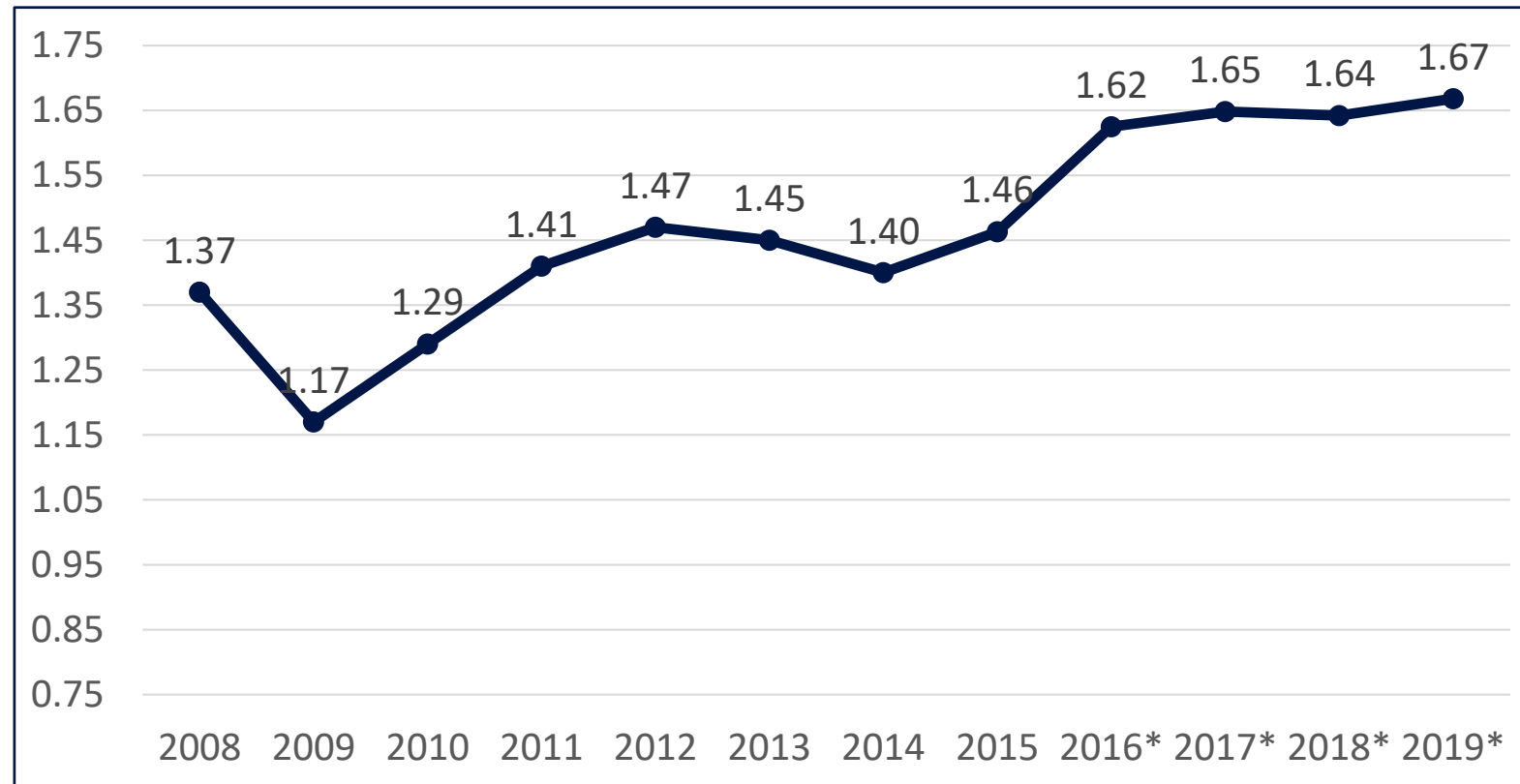
Large Truck Fatality Rate, 30-Year Trend



**In 2016, NHTSA made changes to revise the light pickup truck classification and reclassified 329 vehicles as large trucks (based on GVWR). Due to this methodology change, comparisons of 2016 FARS large truck data with prior years should be performed with caution.*

The Immediate Challenge

Large Truck Fatality Rate, 10-Year Trend



**In 2016, NHTSA made changes to revise the light pickup truck classification and reclassified 329 vehicles as large trucks (based on GVWR). Due to this methodology change, comparisons of 2016 FARS large truck data with prior years should be performed with caution.*

Opportunities to the support FMCSA Mission

- FMCSA Grant Programs
 - MCSAP Lead Agency
 - HP Grants (CMV, SaDIP, ITD*)
 - ADS (2020 unique)
- FMCSA R&T Program
 - Contracts
 - TRB
 - Executive Committee
 - Truck & Bus Safety Committee
 - Annual Analysis, Research & Technology Forum

*Universities ineligible as grantee; could be subaward or contract

FMCSA Grant Basics

- **Four Grants:** One (1) formula and three (3) discretionary grant programs, offering financial assistance totaling \$384 million in FY 2021. Represents almost 60 percent of entire budget.
 - **1. Motor Carrier Safety Assistance Program (MCSAP)**
 - Formula Grant – represents 79 percent of FMCSA’s total grant funds (**\$304 million in FY2021**)
 - “Lead agency” – 50 States, D.C., Puerto Rico, 4 U.S. Territories
 - Establish uniform & reciprocal system to enforce CMV regulations
 - Now includes New Entrant Safety Assurance & Border Enforcement grants*
 - **2. High Priority (HP)**
 - Discretionary - **\$45.2 million** in FY2021, supplement to MCSAP funding
 - Innovative Technology Deployment (ITD) grant
 - Commercial Motor Vehicle (CMV) grant
 - Safety Data Improvement Program (SaDIP) grant
 - **3. Commercial Driver’s License Program Improvement (CDLPI)**
 - Discretionary - **\$32.7 million** in FY2021 to improve State CDL compliance
 - **4. Commercial Motor Vehicle Operator Safety Training (CMVOST)**
 - Discretionary - **\$2 million** in FY2021 to support CDL training schools; local community colleges and technical schools support the CDL training.

Eligible Entities (differs slightly for each grant program): States, D.C., Puerto Rico, four U.S. Territories, local governments (e.g., county, city, township, and Federally-recognized Native American tribes), institutions of higher education (IHE= public, private), and non-profit organizations.

Grant Program Funding FY 2018–21

Program Names	FAST Act Actual FY2018	FAST Act Actual FY2019	FAST Act Actual FY2020	FAST Act Planned FY2021
Motor Carrier Safety Assistance Program (MCSAP)	\$294,416,500	\$299,735,500	\$304,069,500	\$304,069,500
High Priority (HP)	\$42,453,500	\$43,340,000	\$45,163,660	\$45,211,500
<i>Innovative Technology Deployment (ITD)</i>	\$21,757,937	\$19,057,095	\$23,273,191	\$23,211,500
<i>Commercial Motor Vehicle (CMV)</i>	\$19,849,219	\$24,266,938	\$21,890,469	\$22,000,000
Automated Driving Systems (ADS)	\$0	\$0	\$15,000,000	\$0
CMV Operator Safety Training	\$1,000,000	\$2,000,000	\$2,171,091	\$2,000,000
CDL Program Implementation	\$31,323,000	\$32,012,500	\$32,455,075	\$32,702,000
Total	\$368,346,656	\$377,072,033	\$383,859,326	\$383,983,000

MCSAP Grant Program Activities

The goal of the FMCSA MCSAP is to ensure that the Secretary of Transportation, States, and U.S. Territories work in partnership to establish and maintain programs that improve motor carrier, CMV, and driver safety, and support an efficient surface transportation system by:

- (1) making targeted investments to promote safe CMV transportation, including the transportation of passengers and hazardous materials;
- (2) investing in activities likely to generate maximum reductions in the number and severity of CMV crashes and in fatalities resulting from such crashes;
- (3) adopting and enforcing effective motor carrier, CMV, and driver safety regulations and practices consistent with Federal requirements; and
- (4) assessing and improving statewide performance by setting program goals and meeting performance standards, measures, and benchmarks.

****13 States & D.C. currently partner with colleges & universities to support their MCSAP activities (mapping/GIS, crash-data, judicial issues, and technical/engineering solutions)***

HP Grant Program Activities

- A look at the FY2020 HP Awards...
 - 18 individual awards for traffic enforcement in high-crash corridors & rural roadways
 - 7 awards for data and technology-related analysis & training
 - 4 awards for focused enforcement officer technical training and support
 - 12 awards for outreach, education and public awareness
 - 25 awards to States for ITD development and enhancements
 - 8 awards to local agencies, mainly traffic enforcement
 - 8 awards to universities for regional safety summits, education, mapping/GIS, crash-data, judicial issues, and technical/engineering solutions
- Nature of awards is very implementation focused...safety nexus
- Always hope for more variety/innovation in HP applications
- Need for additional strategies to reduce CMV fatality rate

CDLPI Grant Program Activities

- **Commercial Driver's License Program Improvement Grants** - ensuring only medically-qualified & properly-tested individuals receive commercial learner's permits (CLP's) & commercial driver's licenses (CDLs)
- Current CDLPI priorities
 - Improving the national CDL Program through training and technical expertise
 - Implementing training for skills test examiners
 - Improving timeliness and data quality projects to remove unsafe drivers
 - CDL law/rule/reg. training/technical assistance for prosecutors, courts and law enf.
- A look at FY2020 Awards....
 - 36 State awards, e.g., Medical Examiner Certs., CDL skills testing and training, ELDT, facial recognition, human trafficking
 - 13 awards to non-profits for judicial outreach, IT projects, training
 - One 2020 award to a university (U Cincinnati); Nat'l CDL Program Assessment

Summary: Looking Forward

Emerging Priorities in FMCSA Grants:

- MCSAP Formula Grant
 - Overall year-to-year increases in large truck crashes, fatalities
 - New allocation formula in place
 - Focus on new performance measures
- High Priority Grant
 - Traffic Enforcement (e.g., occupant fatalities & seat belt usage)
 - Roadside Enforcement of OOS Orders
 - Work Zone Safety & Rural Road Safety
 - Crashes involving Class 3 CMVs (10,001-14,000) where regulated...
- Commercial Driver's License Program Improvement Grant
 - States need to implement several Federal rules between through CY2022
- New Administration Priorities

FMCSA Analysis, Research & Technology Program

- The **Office of Analysis, Research and Technology** manages agency-wide research and data analysis programs and studies, as well as the evaluation and deployment of pilot or emerging technologies to improve commercial motor vehicle safety and security and reduce the number and severity of crashes involving commercial motor vehicles.

Research Focus Areas

- Produce Safer Drivers
- Produce Safer Carriers
- Improve Safety of Commercial Motor Vehicles
 - Automated and Connected Commercial Motor Vehicles
- Advance Safety through Information-Based Initiatives
- Enable and Motivate Internal Excellence



Research & Technology IDIQ Contract

- Awarded in August 2020
- 5 years, \$24M
- This Indefinite-Delivery, Indefinite-Quantity (IDIQ) Contract was issued in support of Research and Technology to Promote Safety of Commercial Motor Vehicles, Drivers, and Carriers, and to support other CMV-related research needs of the Agency
- Through this contract FMCSA has access to 11 universities as either a prime contractor or a subcontractor

University-led FMCSA Research Activities*

- ***Examining the Seizure Standard for CMV Drivers***
 - R&T IDIQ contract – Lead: Applied Research Associates, subcontractor: University of Utah
- ***ADAS Crash Safety Analysis via OBMS***
 - R&T IDIQ contract – Lead: Virginia Tech Transportation Institute
- ***Trucking Fleet Concept of Operations (CONOPS) for Managing Mixed Fleets***
 - Automated Driving System grant - Lead: Virginia Tech Transportation Institute

Highlight: FMCSA's Analysis Division annually hosts a summer intern from FHWA's Summer Transportation Internship Program for Diverse Groups (STIPDG). These interns are undergraduate or graduate students from colleges and universities around the country. They are assigned projects to produce actionable analysis of important CMV safety issues.

* This summit and the upcoming Eastern Service Summit are both funded through FMCSA's HP-CMV Grant Program.

Examining the Seizure Standard for CMV Drivers

- The objective of the project is to examine the risk of seizure recurrence for CMV drivers who have experienced one or more seizures or have been diagnosed with a seizure disorder, such as epilepsy.
- Methodologies:
 - Literature review
 - State driving regulations relating to seizure disorders
 - CMV regulations in other countries
 - Consultation with medical experts

ADAS Crash Safety Analysis via OBMS

- Currently there is only anecdotal and estimated data on the safety impact and effectiveness of advanced driver assistance systems (ADAS) systems. The objective of this project is to perform empirical analyses of onboard monitoring system (OBMS) data (i.e., dash-cam driver monitoring video data) from commercial motor vehicles to determine the safety impact of ADAS.
- Methodologies:
 - Evaluate available OBMS data from ADAS-equipped CMVs to determine the safety impacts of ADAS.
 - Obtain de-identified OBMS data from vendors such as Lytx, SmartDrive, and Teledyne.
 - Using a dataset with billions of miles, thousands of trucks with and without ADAS, and tens of thousands of crashes, the analysis will provide empirical data on ADAS safety effectiveness and will be a substantial resource for fleets and State/Federal public sector decision makers.

Trucking Fleet CONOPS for Managing Mixed Fleets

- \$10 M grant jointly managed by the FMCSA Virginia and HQ Technology Divisions
 - \$7.5M from FMCSA and \$2.5M from Virginia Tech Transportation Institute (VTTI)
 - Focus is on integration of ADS trucks with conventional trucks.
 - VTTI assembled a team of experts (ADS, data collection/analysis/repositories, naturalistic driving, roadway infrastructure, statistical methods, & truck fleet operations to develop and demonstrate a pragmatic *Fleet CONOPS*.
 - This CONOPS will provide guidelines on *how* to safely implement, and benefit from, ADS-equipped trucks.
 - Data from the real-world demonstrations of the CONOPS will provide the FMCSA with data to inform rulemaking regarding ADS-equipped trucks.

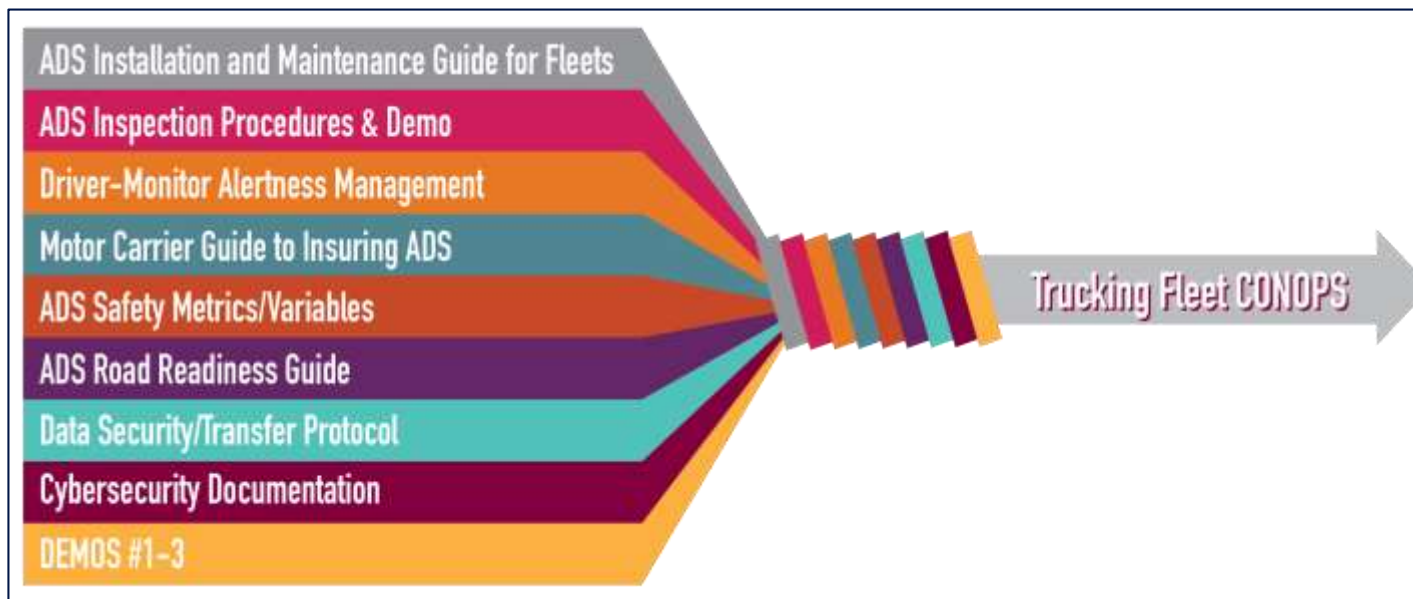


Illustration of How the CONOPS Documents will Inform the Development and Planning of the Demonstrations on Live U.S. Roads.
(Source: VTTI, USDOT NOFO # 693JJ319NF00001)

Integrating the New Administration's Priorities

A generational investment in American transportation and infrastructure that advances outcomes in terms of five key principles:

Safety – Prioritize the reduction of deaths and injuries on our nation’s roadways. Focus on our most vulnerable users who make transportation choices to improve our climate resiliency, and also focus on the disproportional effect of crashes on Black and brown communities. Seize the opportunity to harness new vehicle technologies that prove to reduce crashes and address the safety of people both inside and outside of vehicles. **[TOP PRIORITY]**

Equitable Economic Strength and Improving Core Assets – The repair and modernization of U.S. infrastructure can create millions of good paying union jobs and transform our deteriorating infrastructure into a 21st century system that creates more communities of opportunity, accelerates equitable economic growth, and increases global competitiveness. **[SOLICITING IDEAS]**

Rebalancing Investments to Meet Racial Equity and Economic Inclusion Goals—Americans should live in places that are healthy, vibrant and resilient. We must recognize and undo the harm caused by historical federal policies such as redlining and highway investments which segregated and displaced communities, specifically low-income populations and communities of color. **[SOLICITING IDEAS]**

Climate and Resilience – The transportation sector is the largest source of greenhouse gas emissions, and by treating the root causes - such as poor land use decisions - and the symptoms - such as increased vehicle miles traveled - we can achieve net-zero emissions by 2050. **[EV CMVS]**

Transformation and “Future Proofing” – Major infrastructure investments will stay with us for generations to come, we must take an informed, all-of-pipeline approach to make “shovel worthy” projects “shovel ready,” building transformative, innovative projects today, while future-proofing our infrastructure to leave coming generations with a safe, equitable, and sustainable transportation system. **[SOLICITING IDEAS]**



FY21



TBD



TBD



FY22



TBD

Contact Information

Thank you!

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