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COMMENTS ON USDOT TRANSPORTATION RESEARCH ANDDEVELOPMENT STRATEGIC PLAN

Docket No. DOT-OST-2025-2085

The American Association of Motor Vehicle Administrators (AAMVA) appreciates the opportunity to provide input on the U.S. Department of Transportation's Research, Development, and Technology (RD&T) Strategic Plan for FY 2026-2030. These comments focus on critical research priorities that can significantly enhance transportation safety, particularly in the commercial vehicle sector, while addressing emerging technologies and infrastructure challenges that will shape the next generation of transportation systems.

RESPONSE TO RFI QUESTIONS

1. How should DOT prioritize and invest in research activities over the next five years? Over the next 25 years?

Near-Term Priorities (5 Years):

Commercial Driver Data Systems Modernization

DOT should prioritize research into improving commercial driver licensing data. Current gaps in conviction reporting and driver history record-keeping directly impact road safety by allowing unsafe drivers to continue operating commercial vehicles across state lines. Research should focus on:

- Methods to enhance interstate data sharing and conviction reporting accuracy
- Technologies that enable real-time verification of driver qualifications at roadside inspections
- Best practices for maintaining comprehensive driver history records that follow drivers across jurisdictions

Driver Testing and Qualification Standards

As vehicle technologies evolve, research is needed to modernize driver testing methodologies to reflect current vehicle systems and real-world driving scenarios. Key research areas should include:

- Assessment methodologies that evaluate competency with advanced vehicle technologies
- Skills testing protocols and training that address modern infrastructure conditions and traffic patterns
- Evidence-based approaches to screening for safety-critical competencies in commercial drivers

Workforce Development in Safety-Critical Roles

DOT should investigate effective training methodologies for professionals responsible for commercial driver testing and oversight. Research should examine:

- Instructor development models that ensure consistency in safety standards across jurisdictions
- Quality assurance mechanisms in the driver testing process
- Audit frameworks that verify compliance with federal safety standards

Law Enforcement Technology Integration

Research is needed on technologies and protocols that enhance law enforcement's ability to identify unsafe drivers during roadside interactions, including:

- Mobile access to comprehensive driver history information
- Technologies that facilitate accurate identification of drivers with suspended or revoked privileges
- Integration of conviction data from courts into driver licensing systems

Long-Term Priorities (25 Years):

As transportation evolves toward greater automation and connected vehicle technologies, DOT research should focus on:

- Licensing and qualification frameworks for operators of autonomous commercial vehicles
- Data systems architecture that can adapt to emerging transportation modes and utilization of V-X infrasturcture
- International standards harmonization for cross-border commercial vehicle operations
- Predictive analytics for identifying high-risk drivers before crashes occur

2. What types of research activities should DOT undertake to meet its strategic goals?

Applied Research with Direct Safety Impact

DOT should prioritize research that directly reduces crashes and fatalities. Specific areas include:

Driver Record Accuracy and Completeness: Research examining the correlation between driver records and crash rates among commercial drivers. Studies should quantify the safety benefit of complete conviction reporting and identify barriers to achieving comprehensive driver histories.

Technology-Enhanced Driver Testing: Pilot programs testing new assessment methodologies that incorporate modern vehicle technologies and real-world scenarios. Research should measure whether updated testing protocols result in better-prepared drivers and reduced crash rates among newly licensed commercial operators.

Conviction Reporting from Courts to Licensing Agencies: Research identifying barriers to timely and accurate conviction transmission from judicial systems to driver licensing agencies. Studies should evaluate technological solutions and policy frameworks that improve this critical data flow.

Comparative Effectiveness Studies: Research comparing different approaches to driver qualification, testing, and monitoring across jurisdictions to identify best practices that demonstrably improve safety outcomes.

3. What key social, demographic, economic, technological, and/or other trends influence transportation today and into the future?

Several critical trends warrant DOT research attention:

Technological Trends:

- Advanced Driver Assistance Systems (ADAS) in commercial vehicles require research into how these technologies affect driver skill requirements and testing protocols
- Electronic logging devices and telematics generate vast amounts of driver behavior data that could inform safety interventions
- Mobile technologies enable real-time verification of credentials and qualifications at roadside

Demographic Trends:

- Aging commercial driver population requires research into age-related medical screening and qualification standards
- Increasing diversity in the commercial driver workforce necessitates research into effective training methodologies across different learning styles and language backgrounds

Economic Trends:

- Growth in e-commerce and freight volumes increases the number of commercial vehicles on roadways, making effective driver screening more critical

- Cross-border commerce requires research into harmonization of driver qualification standards with international partners

Infrastructure Trends:

- Changing road infrastructure and traffic patterns require updates to driver testing scenarios
- Infrastructure conditions vary significantly across jurisdictions, requiring research into standardized yet adaptable testing protocols

4. What emerging challenges or opportunities or knowledge gaps in transportation warrant additional DOT RD&T activities or investments?

Critical Knowledge Gaps:

Commercial Driver Conviction Data Quality

Significant gaps exist in understanding the full scope of conviction data quality issues and their safety implications. Research should examine:

- The percentage of traffic convictions that fail to reach driver licensing agencies
- The safety impact of incomplete driver records on crash rates
- Effective interventions to improve conviction reporting from courts
- The role of technology in automating conviction transmission

Human Trafficking and Serious Felony Convictions

An emerging area requiring research is the tracking and identification of commercial drivers involved in serious crimes, including human trafficking. Research should examine:

- Methods for identifying patterns of criminal behavior among commercial drivers
- Protocols for conviction information sharing across agencies
- The safety implications of drivers with serious criminal histories operating commercial vehicles

Modernization of Testing Standards

Current knowledge gaps regarding optimal driver testing methodologies include:

- How modern vehicle technologies should be incorporated into skills testing
- Which competencies are most predictive of safe commercial vehicle operation
- Effective methods for assessing judgment and decision-making under realistic conditions
- Optimal balance between standardization and adaptation to local conditions

Interstate Data System Performance

Research is needed to evaluate the performance and limitations of interstate commercial driver data systems, including:

- Latency in data transmission between jurisdictions
- Accuracy rates for different types of driver information
- System vulnerabilities and redundancy requirements
- User interface design that facilitates effective use by licensing agencies and law enforcement

Training Effectiveness and Quality Assurance

Limited research exists on the effectiveness of different training approaches for commercial driver examiners and other safety-critical personnel. Key questions include:

- Which training methodologies produce examiners who most consistently apply safety standards
- How to maintain training quality and consistency across diverse geographic areas
- Effective audit mechanisms to ensure compliance with federal standards

- Scalable models for train-the-trainer programs

Emerging Opportunities:

Advanced Analytics and Artificial Intelligence

DOT should research how AI and machine learning can enhance driver safety monitoring, including:

- Predictive models to identify high-risk drivers before crashes occur
- Pattern recognition in driver behavior data from electronic logging devices
- Automated quality assurance for driver testing procedures

5. How can DOT best lead and coordinate its RD&T activities with Federal, State, local, tribal and territorial governments, the private sector, non-profit institutions, and international partners?

Effective Coordination Models:

State-Federal Partnership Research

DOT should establish research partnerships that leverage state-level implementation experience with federal-level resources and coordination. Specific approaches include:

- Convening subject matter experts from state driver licensing agencies to identify research priorities based on frontline operational challenges
- Supporting peer-to-peer information sharing among states implementing innovative approaches to driver safety
- Funding multi-state pilot programs that test promising interventions with rigorous evaluation protocols
- Creating communities of practice around specific technical challenges (e.g., data system modernization, conviction reporting)

Federal Agency Coordination

Commercial vehicle safety requires coordination across multiple stakeholders. DOT research should:

- Partner the Federal Motor Carrier Safety Administration with state transportation agencies to on issues affecting commercial driver licensing
- Coordinate with Department of Justice on conviction reporting standards and technologies.
- Collaborate with National Highway Traffic Safety Administration on research bridging commercial and non-commercial vehicle safety.
- Work with Department of Homeland Security on credential security and fraud prevention.
- Work with the United States Territories to determine how they might best comply with federal regulations and provide participant data to regulatory compliance systems.

International Coordination

Given the global nature of commerce and cross-border transportation, DOT should:

- Research harmonization opportunities for commercial driver standards with Canada and Mexico
- Participate in international forums establishing global standards for driver qualification
- Study international best practices in driver testing and monitoring

6. How can DOT best use its research portfolio to develop national standards that can drive interoperability across the multimodal transportation system?

Priority Areas for Standards Development:

Commercial Driver Data Standards

DOT research should inform development of national standards for:

- Data elements required in commercial driver records to ensure completeness

- Conviction reporting formats and protocols from courts to licensing agencies
- Standardized data exchange protocols between state licensing systems
- Real-time data access standards for law enforcement at roadside
- Data retention and privacy protection standards

Driver Testing Standards

Research should support evidence-based national standards for:

- Core competencies that must be assessed in commercial driver skills tests
- Minimum requirements for examiner training and qualification
- Testing scenarios that reflect modern vehicles and infrastructure
- Quality assurance and audit protocols for testing programs
- Accommodations for drivers with disabilities while maintaining safety standards

Technology Integration Standards

As technologies evolve, DOT should develop standards for:

- Integration of telematics and electronic logging device data into safety monitoring
- Biometric credential technologies that prevent fraud while protecting privacy
- Mobile technologies for roadside credential verification
- Data security and cybersecurity for driver information systems

Cross-Modal Considerations

Standards should address emerging questions about driver qualification across different transportation modes, including:

- Qualification requirements for operators of new vehicle types (e.g., autonomous vehicles, electric vehicles)
- Transferability of skills and qualifications
- Medical certification standards that apply consistently across modes

7. What activities should DOT adopt to facilitate deployment of DOT research results into the U.S. transportation system?

Effective Technology Transfer Strategies:

Implementation Guidance and Technical Assistance

DOT should provide comprehensive implementation support for research findings:

- Develop detailed implementation guides translating research findings into actionable procedures
- Offer technical assistance to states and local agencies implementing evidence-based practices
- Create model policies and regulations based on research findings
- Provide training materials and curricula incorporating research results

Demonstration and Pilot Programs

DOT should support demonstration projects that:

- Test research findings in real-world operational settings
- Evaluate cost-effectiveness and scalability of promising interventions
- Document lessons learned during implementation
- Measure actual safety outcomes achieved through deployment

Funding Mechanisms for Implementation

Research deployment requires dedicated funding. DOT should:

- Provide implementation grants to states and local agencies adopting evidence-based practices
- Support multi-year projects that allow sufficient time for full implementation and evaluation
- Prioritize funding for practices with demonstrated safety benefits in research settings
- Consider sustainability of innovations beyond initial grant funding

Stakeholder Engagement in Research Design

To facilitate deployment, research should be designed with end-users involved from the beginning:

- Include state and local practitioners on research teams
- Design research questions addressing operational challenges identified by implementers
- Test solutions in realistic operational environments
- Consider resource constraints and practical implementation barriers during research design

Performance Measurement and Feedback Loops

DOT should establish systems to:

- Track deployment of research-based practices across jurisdictions
- Measure safety outcomes achieved through implementation
- Collect feedback from implementers to refine practices
- Share performance data to encourage adoption of effective practices

Specific Deployment Priorities:

Based on pressing safety needs, DOT should prioritize deployment of research in these areas:

Conviction Reporting Systems: Research findings on effective technologies and protocols for automated conviction transmission from courts to driver licensing agencies should be rapidly deployed through technical assistance and funding support to states.

Modernized Driver Testing: As research validates updated testing methodologies that reflect current vehicle technologies, DOT should provide implementation support including examiner training materials, updated test scenarios, and quality assurance protocols.

Training Programs: Evidence-based training curricula for commercial driver examiners and other safety-critical roles should be made widely available with train-the-trainer support for nationwide deployment.

8. Is there anything else you want to share or say regarding DOT's research portfolio and activities?

Cross-Cutting Themes:

Focus on Foundational Data Quality

Many transportation safety challenges stem from inadequate data quality. DOT research should address fundamental data infrastructure issues that affect multiple safety programs:

- Driver history record accuracy and completeness
- Crash data quality and reporting consistency
- Vehicle registration and inspection data reliability
- Roadway inventory and condition data

These foundational data quality issues cascade through the transportation system, affecting enforcement, policy development, and safety interventions. Improving data foundations should be a strategic priority.

Balance Innovation with Implementation

While DOT should research emerging technologies and innovative approaches, equal emphasis should be placed on implementing proven interventions that have yet to be deployed widely. Many effective safety practices

remain unadopted due to lack of resources, technical capacity, or awareness. DOT's research portfolio should balance innovation with implementation support for existing knowledge.

Address System-Wide Issues, Not Just Technology

Transportation safety involves complex systems with human, organizational, and technological components. DOT research should take systems approaches that address:

- Organizational culture and incentives affecting safety
- Human factors in safety-critical decision-making
- Policy and regulatory frameworks that enable or hinder safety
- Resource constraints and practical implementation barriers
- This systems perspective ensures research findings are actionable in real-world contexts.

Measure What Matters: Safety Outcomes

DOT should emphasize research that measures actual safety outcomes (crashes, injuries, fatalities) rather than only intermediate metrics. While process measures and surrogate outcomes are valuable, ultimate research value should be judged by demonstrable improvements in safety.

Long-Term Perspective with Near-Term Actions

Transportation infrastructure and systems evolve slowly. DOT's research portfolio should maintain long-term vision while identifying near-term actions that move toward long-term goals. Five-year incremental steps should align with 25-year transformational objectives.

CONCLUSION

DOT's RD&T Strategic Plan for FY 2026-2030 offers an important opportunity to advance safety through targeted research in areas where knowledge gaps currently limit effective interventions. By prioritizing research that addresses foundational issues, modernizes driver qualification standards, and facilitates deployment of proven safety practices, DOT can achieve significant safety improvements over the next five years while building toward a safer transportation future over the next 25 years.

The research priorities identified in these comments reflect urgent operational challenges where improved knowledge can prevent crashes, injuries, and fatalities. We encourage DOT to prioritize research with direct safety applications and to support rapid deployment of research findings through comprehensive implementation assistance.

We appreciate DOT's commitment to stakeholder engagement in developing the RD&T Strategic Plan and look forward to the Department's continued leadership in transportation safety research.

Respectfully,

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