

GAO

Report to the Subcommittee on
Transportation and Related Agencies,
Committee on Appropriations, House of
Representatives

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TRUCK SAFETY

Motor Carriers Office Hampered by Limited Information on Causes of Crashes and Other Data Problems



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United States General Accounting Office
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Resources, Community, and
Economic Development Division

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The Honorable Frank R. Wolf
Chairman, Subcommittee on Transportation
and Related Agencies
Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

Because of your concern about the increasing numbers of fatalities from crashes involving large commercial trucks (those trucks with a gross weight of at least 10,001 pounds), you asked us to examine the effectiveness of the Federal Highway Administration's Office of Motor Carrier and Highway Safety in improving the safety of large trucks. Specifically, we examined (1) recent trends in the number of crashes involving large trucks, (2) the factors that contribute to such crashes, and (3) the Office of Motor Carrier and Highway Safety's activities to improve truck safety.

Results in Brief

Of the more than 42,000 people who died on our nation's highways in 1997 (the latest year for which data are available), about 5,400 died in crashes involving large trucks. This figure represents a 21-percent increase from 1992, reversing a trend of decreasing truck fatalities from 1988 through 1992. In addition, from 1992 through 1997, the fatality rate—the number of fatalities per 100 million miles traveled by large trucks—has remained fairly constant at about 2.9 deaths per 100 million miles traveled after decreasing by 27 percent between 1988 and 1992. The recent increases in fatalities reflect, in part, a 25-percent increase in the annual number of miles traveled by large trucks since 1992. If this trend of increasing truck travel continues, the number of fatalities could increase to more than 5,800 in 1999. This estimated figure is substantially higher than the goal that the Federal Highway Administration established for 1999 of reducing fatalities from truck crashes to below the 1996 level of 5,142. While trucks are involved in fewer crashes per mile traveled than passenger vehicles, crashes involving trucks are more likely to result in fatalities. In 1997, 98 percent of the fatalities from crashes between a truck and a passenger vehicle were occupants of the passenger vehicle.

While no reliable nationwide data exist on the causes of crashes involving large trucks, some data exist on the extent to which factors such as drivers' behavior, vehicles' mechanical condition, the roadway, and the environment may contribute to these crashes. These data indicate that passenger vehicle drivers' behavior is a significant contributing factor to crashes. For example, in 1997, contributing factors related to passenger vehicle drivers were reported in 80 percent of crashes involving both trucks and passenger vehicles (these data are based only on fatal truck crashes and are not the result of thorough investigations of crash scenes). To better tailor its activities to address the factors that are most likely to contribute to truck crashes, the Office of Motor Carrier and Highway Safety plans to design and fund a study to obtain more detailed information on such factors. Because the factors that contribute to crashes do not vary significantly from year to year, the results of the study are estimated to be relevant for about 15 years.

The Office of Motor Carrier and Highway Safety has undertaken a number of activities and plans to undertake others to improve truck safety. These actions include identifying high-risk carriers that should receive reviews of their compliance with safety regulations, educating passenger vehicle drivers about how to share the road with large trucks, and developing technology to alert truck drivers of the onset of drowsiness. While these activities address what are currently considered to be significant contributing factors to truck crashes, the Office of Motor Carrier and Highway Safety's effectiveness is limited by (1) long-standing data problems, (2) the length of time it takes to complete activities, and (3) the unknown effect of its campaign to educate passenger vehicle drivers about the limitations of large trucks. For example, the Office of Motor Carrier and Highway Safety's effort to identify high-risk carriers for safety improvements depends in part on having reasonably complete data on the number of crashes experienced by carriers. However, states did not report an estimated 38 percent of all crashes and 30 percent of the fatal crashes involving large trucks that should have been reported to the Office of Motor Carrier and Highway Safety in 1997. The Office has developed a draft safety action plan that describes 67 activities that it believes have the greatest potential to reduce crashes and save lives. However, the results of these activities will not be evident for several years. In addition, the draft plan does not address whether the Department of Transportation has the resources needed to complete all of the activities, nor does it prioritize the 67 activities according to their potential to improve truck safety.

Background

The Department of Transportation (DOT) has stated that safety has always been the agency's most important strategic goal. The Office of Motor Carrier and Highway Safety (OMCHS), within DOT's Federal Highway Administration (FHWA), is responsible for, among other things, the portion of this goal related to the safety of interstate commercial motor vehicles. Under federal motor carrier safety regulations, an interstate commercial motor vehicle is one that is used to transport passengers or property between states and (1) has a gross vehicle weight rating or gross vehicle weight of at least 10,001 pounds, (2) is designed to transport more than 15 passengers, or (3) is used to transport hazardous materials that require the vehicle to be placarded.

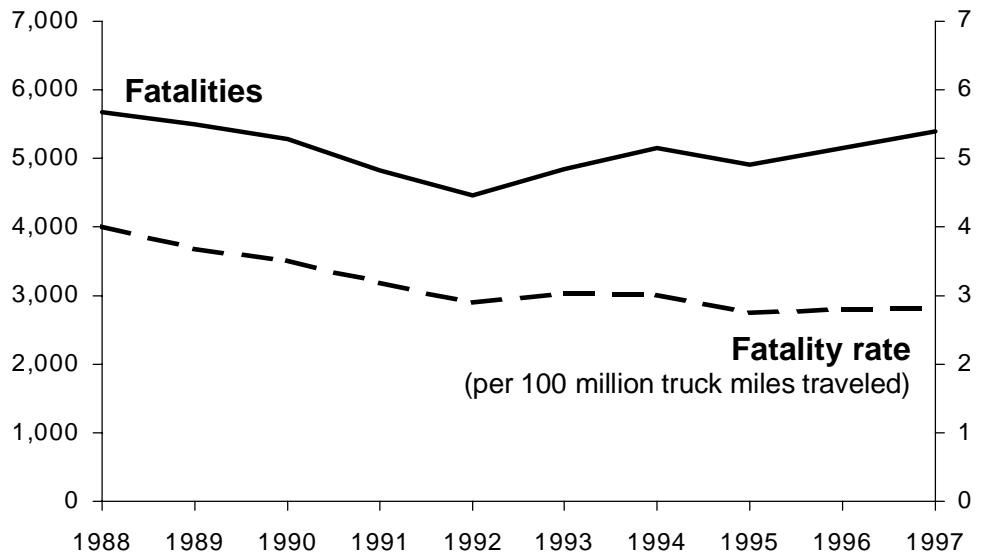
OMCHS' activities include (1) issuing, administering, and enforcing federal motor carrier safety regulations and hazardous materials regulations; (2) gathering and analyzing data on motor carriers, drivers, and vehicles; (3) developing information systems to improve the transfer of data; and (4) researching new methods and technologies to enhance motor carrier safety. OMCHS conducts many of these activities in conjunction with other federal agencies and states. For example, OMCHS provides grants to states through the Motor Carrier Safety Assistance Program to support statewide commercial motor vehicle safety programs. For fiscal year 1999, federal funding for OMCHS totaled about \$160 million, \$90 million of which was for the Motor Carrier Safety Assistance Program.

The number of interstate commercial motor carriers has grown rapidly during the past decade. According to OMCHS' census of motor carriers, the number grew from 190,000 in 1989 to about 490,000 as of March 1999, about a 160-percent increase. Most of these carriers are small businesses—about 70 percent of the carriers operate six or fewer trucks, while less than 1 percent operate more than 1,000 trucks. The number of vehicle miles traveled annually by large trucks increased from 148 billion miles in 1989 to 191 billion in 1997.

Fatalities From Large Truck Crashes Are Increasing, While Fatalities per Mile Traveled Have Levelled Off

The annual number of fatalities from crashes involving large trucks increased by 21 percent from 4,462 in 1992 to 5,398 in 1997 (see fig. 1). This result reversed a trend of decreasing truck fatalities in the previous 5-year period, 1988 through 1992. Also from 1992 through 1997, the fatality rate—the number of fatalities per 100 million miles traveled by large trucks—has remained fairly constant at about 2.9 deaths per 100 million miles traveled after decreasing by 27 percent between 1988 and 1992.

Figure 1: Fatalities From Large Truck Crashes and Fatality Rate, 1988-97



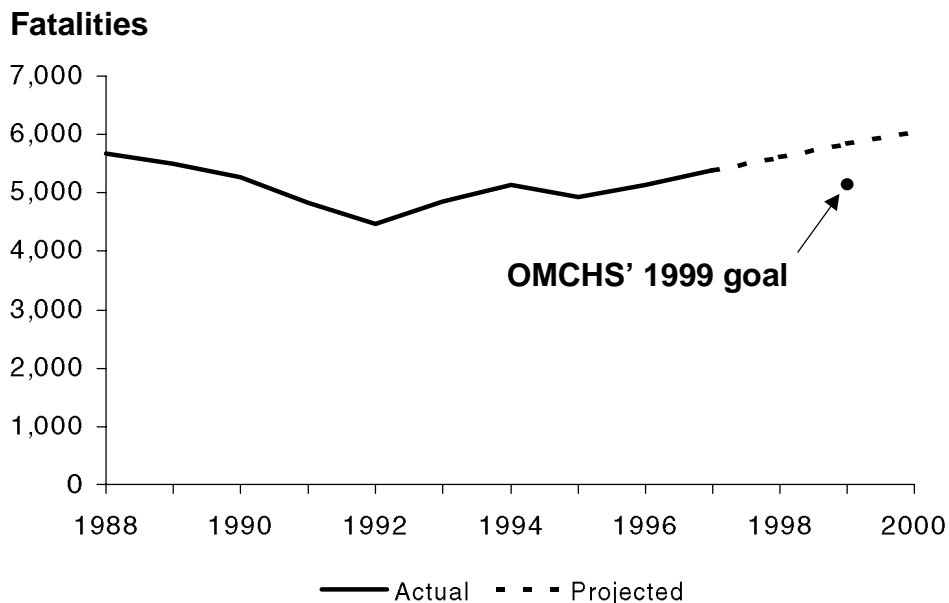
Source: DOT.

While many factors may have contributed to the recent increases in annual fatalities, the upward trend in the number of fatalities reflects, in part, increases in large truck and passenger vehicle travel.¹ The number of miles traveled by large trucks increased by 25 percent from 1992 through 1997, while the number of miles traveled by passenger vehicles increased by 13 percent. If truck travel continues to increase at this rate, and nothing is done to reduce the fatality rate, the annual number of fatalities could exceed 5,800 in 1999 and 6,000 in 2000 (see fig. 2). FHWA has established a

¹Passenger vehicles include cars, pickup trucks, sport utility vehicles, and vans under 10,001 pounds (gross vehicle weight rating).

goal for OMCHS for 1999 to reduce the number of fatalities from truck crashes to fewer than 5,142—the number of fatalities in 1996.² This goal is substantially below our projected figure of 5,847 for 1999.

Figure 2: Actual and Projected Fatalities From Large Truck Crashes, 1988-2000



Sources: DOT for 1988 through 1997; GAO's estimate for 1998 through 2000.

While the recent increase in the number of fatalities from crashes involving large trucks is a concern, only about 1 percent of all truck crashes reported to police in 1997 resulted in a fatality. About 99 percent resulted in injuries or property damage only. The number of people injured in truck crashes in 1997 (133,000) was not significantly different from the number injured in 1988 (130,000). However, from 1988 through 1997, the number of injuries per 100 million miles traveled fell from 92 to 69. In addition, the annual number of crashes involving large trucks that resulted in property damage only increased from 291,000 to 329,000, while the number of these crashes per 100 million miles traveled decreased from 206 to 172.

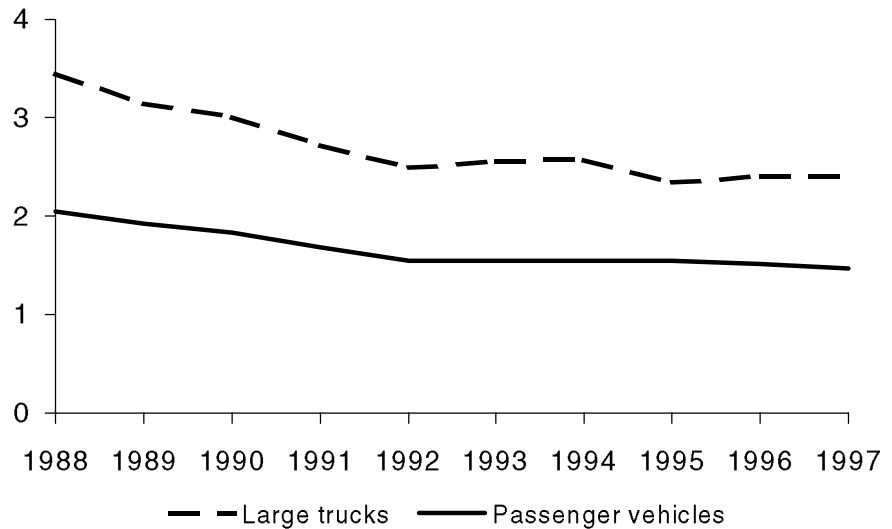
²On May 25, 1999, DOT announced a long-range goal of reducing fatalities from crashes involving commercial vehicles, including large trucks, by 50 percent over 10 years. In the near future, DOT will develop a strategy for achieving this goal and will include all affected parties in its deliberations.

In addition, for each mile that they traveled from 1988 through 1997, large trucks were involved in fewer total crashes than passenger vehicles were. However, large trucks were involved in a greater number of fatal crashes per mile traveled (see fig. 3). The higher fatal crash rate for large trucks is not surprising, considering the difference in weight between passenger vehicles and large trucks. When there is such a mismatch in weight between the vehicles involved in a crash, the lighter one and its occupants tend to suffer more damage. In fatal crashes between a passenger vehicle and a large truck in 1997, 98 percent of the fatalities were occupants of the passenger vehicle.

Figure 3: Comparison of Fatal Crash Rates for Large Trucks and for Passenger Vehicles, 1988-97

Fatal crash rate

(per 100 million vehicle miles traveled)



Note: Rates for both categories include crashes between trucks and passenger vehicles.
Source: DOT.

OMCHS Needs Better Information on Factors That Contribute to Crashes Involving Large Trucks

Current information, while limited, indicates that passenger vehicle drivers' behavior is a significant contributing factor to crashes. OMCHS plans to design and fund a study to obtain more detailed information on the factors that are most likely to contribute to truck crashes, and some states are beginning to conduct more in-depth investigations of truck crashes to determine these factors.

Current Information Points to Passenger Vehicle Drivers' Behavior as a Significant Contributing Factor to Truck Crashes

While no reliable information exists on the causes of crashes involving large trucks nationwide, some information exists on factors that may contribute to these crashes.³ These factors include (1) factors involving drivers, such as excessive speed, fatigue, inattentiveness, and reckless driving; (2) factors related to vehicles' condition, such as worn brakes, bald tires, and improperly secured loads; (3) factors related to the road, such as the type of road and its design; and (4) environmental factors, such as bad weather and darkness.⁴ However, OMCHS does not know how many crashes are related to each of these factors because existing databases do not contain sufficiently complete information on contributing factors. Without this information, OMCHS cannot effectively tailor its activities to address the factors that are most likely to contribute to truck crashes.

One national database contains information on factors that contribute to truck crashes: the Fatality Analysis Reporting System (FARS), maintained by DOT's National Highway Traffic Safety Administration (NHTSA). Based on many sources of data, including reports prepared by police officers at crash scenes, FARS is considered a reliable source of information on all fatal motor vehicle crashes. However, fatal truck crashes represent only 1 percent of all truck crashes. Furthermore, FARS does not rely on a thorough investigation of crash scenes to pinpoint factors that contribute most heavily.

Despite its limitations, FARS has been used to estimate the number of fatal crashes related to certain factors. Data from FARS indicate that factors related to passenger vehicle drivers contribute to more fatal crashes

³A contributing factor does not necessarily identify fault or the cause of a crash; rather, the presence of a contributing factor increases the likelihood of a crash.

⁴In addition, characteristics of truck companies (such as the form of ownership and company size), drivers' characteristics (such as age, training, and experience), and types of cargo (such as liquids) may be related to crash rates.

between a passenger vehicle and a truck than do factors related to truck drivers. In 1997, factors related to passenger vehicle drivers were reported in 80 percent of the crashes, while factors related to truck drivers were reported in 28 percent of the crashes. Safety groups have questioned the validity of these data because truck drivers, who are more likely to survive the crash than passenger vehicle drivers, have more opportunities to tell the officer at the crash scene their version of how the crash occurred. However, a recent study found that in fatal crashes in 1994 and 1995 in which both the truck driver and the passenger vehicle driver survived, factors related to passenger vehicle drivers were cited in 74 percent of the crashes compared with 35 percent for factors related to truck drivers.⁵ This finding provides some support for the hypothesis that, compared with truck drivers, passenger vehicle drivers contribute more to fatal crashes between large trucks and passenger vehicles.

On the basis of data from FARS and several studies involving in-depth crash investigations, OMCHS estimates that another driver-related factor—truck drivers' fatigue—contributes to 15 to 33 percent of the crashes that are fatal to the truck occupant(s) only.⁶ (From 1992 through 1997, about 14 percent of all fatal truck crashes were fatal to the truck occupant(s) only.) OMCHS estimates that truck drivers' fatigue contributes to a much lower percentage—from 1 to 2 percent—of the crashes that are fatal to people other than truck occupants, such as passenger vehicle occupants or pedestrians. The imprecision of these estimates partly reflects the difficulty of detecting drivers' fatigue after crashes occur. Despite this difficulty, fatigue was identified as the number one issue affecting the safety of motor carriers during a 1995 meeting on safety attended by representatives from government, trucking associations, and safety interest groups.

Some information also exists on the extent to which other major factors—vehicles, the road, and the environment—contribute to truck crashes. First, according to estimates in several studies, the percentage of truck crashes that are attributed to vehicles' mechanical failure ranges from 5 to 13 percent but could be up to 20 percent for crashes in which the truck

⁵Daniel Blower, The Relative Contribution of Truck Drivers and Passenger Vehicle Drivers to Truck-Passenger Vehicle Traffic Crashes, The University of Michigan Transportation Research Institute, Ann Arbor, Mich. (1998).

⁶Crash Problem Size Assessment Update: Large Truck Crashes Related Primarily to Driver Fatigue, Office of Motor Carrier and Highway Safety (Jan. 1999).

driver is found at fault. Second, noninterstate roads have more crashes per mile traveled than interstate highways because the latter are designed with more safety features such as median barriers and controlled access. Approximately 76 percent of the fatalities in fatal crashes involving large trucks occurred on noninterstate roads in 1997, compared to 59 percent of all truck miles of travel on these roads. Finally, environmental factors—such as snow or darkness—can contribute to crashes.

OMCHS Is Initiating an Effort to Improve Information on Factors That Contribute to Truck Crashes

Because of the lack of sufficiently complete and precise information on factors that contribute to crashes, OMCHS recently began to design a database that contains more detailed information on these factors. OMCHS plans to provide funding to NHTSA to collect data on a national sample of crashes involving large trucks, including crashes resulting in fatalities, injuries, and serious property damage only. OMCHS estimates that the database would take 2 to 3 years to complete, at a cost of \$2 million to \$3 million. The American Automobile Association (AAA) recently proposed a separate, but similar, study to be designed by the Transportation Research Board.⁷ AAA believes that its approach allows the widest possible input from the traffic safety and trucking communities, while providing scientific objectivity and technical expertise. As in OMCHS' study, AAA is proposing that NHTSA conduct the crash investigations and collect the data. AAA estimates that the study would take from 3 to 5 years, at a cost of about \$5 million. According to OMCHS officials, the agency has begun work on its study and may modify its original plans by including input from other groups, such as research groups, during the design phase. Because the factors that contribute to crashes do not vary significantly from year to year, the results of the study are estimated to be relevant for about 15 years.

Some states are also beginning to examine more closely the factors that contribute to truck crashes. In fiscal year 1998, every state submitted an annual commercial vehicle safety plan to OMCHS that included the state's goals for improving truck safety and the activities the state will use to meet those goals. Several states plan to conduct in-depth crash investigations to determine the prevalence of different contributing factors. OMCHS developed a common format for conducting these investigations and is encouraging the states to use this format so that the data collected by

⁷Part of the National Research Council, the Transportation Research Board is a private nonprofit institution that conducts research addressing all modes and aspects of transportation.

various states will be compatible. Michigan is currently the only state known by OMCHS to be implementing this format. In addition, OMCHS has developed a training course on investigating large truck crashes, which will be available to state police officers. The data collected by the police officers will be reported to OMCHS.

OMCHS' Effectiveness Is Hampered by Data Problems and the Time Needed to Complete Activities

OMCHS has undertaken or plans to undertake activities intended to improve truck safety, such as identifying high-risk trucking companies for reviews of their compliance with safety regulations, educating passenger vehicle drivers about how to share the road with large trucks, and conducting research on methods to alert truck drivers when they are becoming fatigued. While these activities—undertaken either directly or through grants provided to states—address what are currently considered to be significant factors contributing to truck crashes, many other factors affect the level of truck safety.⁸ However, OMCHS' effectiveness is limited by (1) long-standing problems with the data it uses to identify high-risk carriers; (2) the length of time to complete activities, including rulemaking; and (3) the unknown effect of OMCHS' campaign to educate passenger vehicle drivers about the limitations of large trucks. OMCHS has developed a draft safety action plan that includes these and many other activities to improve truck safety, but it has not determined whether it has the resources required to complete them all nor which activities have the greatest potential for improving truck safety.

Insufficient Data Limit OMCHS' Ability to Target High-Risk Carriers and States' Ability to Develop and Implement Safety Plans

Each year, OMCHS and state inspectors conduct thousands of on-site reviews of motor carriers' compliance with federal safety regulations, known as compliance reviews. To identify high-risk carriers for these reviews, OMCHS uses a "safety status" measurement system known as SafeStat. SafeStat relies heavily on data from OMCHS' management information system to rank motor carriers on the basis of four factors: (1) crashes, (2) drivers' performance, (3) vehicles' mechanical condition, and (4) safety management. The first factor is given twice the weight of the other factors because carriers that have been in crashes are considered more likely to be involved in crashes in the future. Carriers that are ranked

⁸Other factors that affect truck safety that OMCHS does not directly influence include highway design standards, passenger vehicles' handling and crashworthiness characteristics, traffic congestion, local traffic laws and enforcement, and state initiatives.

in the worst 25 percent of all carriers for three or more factors or for the first factor plus one other factor are targeted for a compliance review.

However, SafeStat's ability to accurately target high-risk carriers is limited because state officials do not report a large percentage of crashes involving large trucks to OMCHS' information system. For 1997, OMCHS estimated that states did not report about 38 percent of all reportable crashes and 30 percent of the fatal crashes involving large trucks.⁹ Furthermore, 10 states reported fewer than 50 percent of the fatal crashes occurring within their borders, including 4 states that reported fewer than 10 percent. Because OMCHS does not receive information on a large percentage of crashes, carriers that have been involved in a substantial number of crashes may go undetected by SafeStat. According to OMCHS officials, states do not report all crashes in part because (1) some states have no legislative requirement for police departments to submit reports on crashes to state officials, (2) state agencies in charge of collecting the data for OMCHS must rely on numerous local jurisdictions and other agencies to provide the data, and (3) state employees who submit crash data to OMCHS may not have sufficient training or incentives to report data completely and in a timely manner.

According to OMCHS officials, providing training to employees and financial incentives to states to report crashes should improve crash reporting, as was the case for Mississippi. The state reported only 1 of 99 fatal crashes involving large trucks that occurred within its borders in 1997. According to OMCHS officials, the state used one-time incentive funds from OMCHS to hire two employees in 1998 dedicated to collecting data on truck crashes and reporting these data to OMCHS. This resulted in increased reporting. From September 1998 through March 1999, Mississippi reported 1,657 crashes involving large trucks to OMCHS. In comparison, from September 1997 through March 1998, the state reported 46 crashes. NHTSA spends about \$5 million annually for FARS to (1) provide funds to all states to collect, interpret, and enter data into the database; (2) maintain the database; and (3) train field staff to ensure consistent coding and interpretation. The cost for OMCHS to set up a similar system could be greater because the Office would need to collect data on a greater number of crashes. For example, in 1997 there were an

⁹For OMCHS' purposes, a reportable crash must result in a fatality, an injury for which the person is taken to a medical facility, or the towing of one vehicle from the scene.

estimated 150,000 truck crashes that should have been reported to OMCHS, compared with about 37,000 fatal crashes reported to NHTSA.

SafeStat's ability to target high-risk carriers is also limited by out-of-date census data. SafeStat uses these census data—such as the number of trucks operated or vehicle miles traveled by each carrier—to normalize safety data. For example, SafeStat checks the number of crashes reported for a carrier against the number of trucks operated by the carrier to determine if the number of crashes is disproportionately high. However, in the majority of states, interstate carriers are required to file census data with OMCHS only once—when they initially go into business. After that, the census data are updated generally only when OMCHS or states conduct compliance reviews at the carriers' facilities. Each year from 1993 through 1997, these reviews were conducted for fewer than 4 percent of the carriers known to OMCHS, whose numbers increased from 275,000 to more than 415,000 over the period.

Concern over the quality of OMCHS' data is not new. In 1991 and 1997, we reported that DOT needed to improve the quality of its data to improve its data analysis capabilities.¹⁰ The ICC Termination Act of 1995 required DOT to create an information system to consolidate information on motor carriers, such as census data and insurance and tax information, which carriers will be required to update every year. However, this information system is not expected to be operational until late in 2001.

As we reported in 1997, states have improved the timeliness of reporting the results of the roadside inspections, compliance reviews, and crashes that are used by SafeStat. However, states are still not meeting OMCHS' reporting deadlines. OMCHS' December 1996 guidance to states requires that they report the results of roadside inspections and compliance reviews within 21 days and crashes within 90 days. As shown in table 1, states improved the timeliness of reporting data to OMCHS from fiscal year 1997 to fiscal year 1998 but were missing the Office's deadlines by an average of 8 to 16 days. Overall, 38 states exceeded OMCHS' deadline for reporting inspections, 25 states exceeded the deadline for reporting compliance reviews, and 21 states exceeded the deadline for reporting crashes in 1998. To improve timeliness, OMCHS began distributing monthly reports to

¹⁰Freight Trucking: Promising Approach for Predicting Carriers' Safety Risks (GAO/PEMD-91-13, Apr. 4, 1991) and Commercial Motor Carriers: DOT Is Shifting to Performance-Based Standards to Assess Whether Carriers Operate Safely (GAO/RCED-98-8, Nov. 3, 1997).

states in 1997 and issued a notice of proposed rulemaking on March 9, 1999, to modify the formula used to distribute grants to states to include incentives for, among other things, reporting on time.

Table 1: Average Number of Days to Report Results of Roadside Inspections, Compliance Reviews, and Crashes to OMCHS, Fiscal Years 1996-98

	Average number of days to report to OMCHS			Reporting deadline	Difference between 1998 average and reporting deadline
	1996	1997	1998		
Roadside inspections	49	47	37	21	16
Compliance reviews	35	41	29	21	8
Crashes	195	120	102	90	12

Note: The reporting deadline was established during fiscal year 1997.

Source: GAO's analysis of OMCHS' data.

Data problems also exist at the state level. In fiscal year 1998, all states submitted performance-based safety plans to OMCHS for the first time. Under these plans, states must identify areas that need improvement, such as sections of highways where a disproportionate number of crashes involving large trucks have occurred, and develop a plan for improving those areas. In a pilot program to implement performance-based plans, 5 of 13 pilot states reported that they lacked sufficient or timely data to accurately identify areas that need improvement. Furthermore, according to OMCHS officials, insufficient data—on such things as the number of trucks a carrier operates to help states focus their safety education programs for carriers—have also been a problem for some states once they have identified problem areas and are developing improvement plans. To assist states in improving their data, OMCHS distributed a list of data sources to them.

Some Important Activities to Improve Large Truck Safety Are Years From Completion

While OMCHS' activities have the potential to improve large truck safety, it will be several years before the results of some important activities are seen. For example, OMCHS is conducting research on truck drivers' drowsiness, including research on a device that would detect drowsiness by measuring a truck driver's degree of eye closure. However, this device is not likely to be operational for several years. Similarly, following a study conducted in 1988 and updated in 1997, which found that new motor

carriers have lower rates of compliance with federal motor carrier regulations, OMCHS plans to create a pilot program to ensure the safety fitness of these carriers. While the pilot program is expected to be completed by 2003, it will not be expanded to all states until several years later, assuming it is successful.

OMCHS is also currently implementing the Performance and Registration Information Systems Management (PRISM) Program to link safety information on motor carriers to state-level motor vehicle registration and licensing systems. The Intermodal Surface Transportation Efficiency Act of 1991 required a pilot for this program, and the Transportation Equity Act for the 21st Century in 1998 expanded the program. PRISM is intended to (1) determine the safety fitness of individual motor carriers during the registration process and deny registration to any carrier that is under an “operations out of service order” from OMCHS¹¹ and (2) identify high-risk carriers (via SafeStat) to be placed in a performance-based improvement process that begins with a warning letter and could result in eventual revocation of vehicle registration privileges. According to an OMCHS official, this program was implemented as a pilot program in five states from 1995 through 1997 and has since been implemented in six additional states. At a projected implementation rate of about four new states per year, the program will not be available in all states before 2008.

OMCHS is also deploying an information systems architecture—the Commercial Vehicle Information Systems and Networks (CVISN)—that will allow dissimilar federal, state, and carrier systems to exchange information electronically. The Transportation Equity Act for the 21st Century directed the Secretary of Transportation to deploy CVISN in a majority of states by September 30, 2003. From 1999 through 2003, OMCHS plans to pilot test CVISN in 10 states, develop system designs for 30 additional states, and deploy CVISN in at least 16 of those states. OMCHS plans to complete the deployment of CVISN in all states by 2005.

In March 1999, OMCHS distributed a draft safety action plan for review and comment by FHWA field offices, the safety community, and the trucking industry. Of the approximately 200 activities that OMCHS officials estimate the Office has under way or is undertaking from 1999 through 2003, including those above, 67 activities are in the plan because the Office

¹¹An operations out of service order is issued when a carrier is found to have safety problems so severe and urgent that its operation must be closed immediately until the problems are corrected.

considers them important to reducing crashes, injuries, and fatalities. The plan includes OMCHS' recently initiated effort to evaluate the effectiveness of its major programs to determine their impacts on truck safety, establish goals that will enable the Office to link its activities to improvements in truck safety, and recommend improvements to make the activities more effective. OMCHS intends to finalize the draft plan in July 1999.

The draft safety action plan is organized to show where the likely impacts of completed safety initiatives will lie, such as with carriers, drivers, and/or vehicles. However, it does not specify how OMCHS intends to carry out the draft plan or which activities have the greatest potential to reduce the number of crashes and save lives. It also does not address whether OMCHS has the resources, either in terms of funding or staff, to undertake and complete all of these initiatives. Such an assessment is particularly important because the 67 activities represent only about one-third of the activities OMCHS has undertaken or plans to undertake.

FHWA Is Reviewing Its Rulemaking Process to Improve Timeliness

Safety advocates and trucking industry representatives have criticized OMCHS for taking too long to issue safety rules. The rulemaking process in itself takes a certain amount of time due to the need to adhere to various statutory and administrative requirements. However, the length of OMCHS' rulemaking process may be aggravated, in part, by the complexity and contentiousness of some motor carrier issues and the quality of the rules that OMCHS develops.

FHWA officials explained that rules—including those with statutorily mandated deadlines—that are extremely complex or contentious tend to take longer to issue. For example, the ICC Termination Act of 1995 required the Secretary of Transportation to consolidate four sources of information on motor carriers, such as the DOT identification number and financial responsibility information systems, into a single information system. This new system is intended to serve as a clearinghouse and depository of information—including information on safety fitness—on all foreign and domestic motor carriers and others required to register with DOT. The act required the Secretary to issue a final rule on this information system by January 1, 1998. OMCHS issued an advance notice of proposed rulemaking in August 1996 and expects to issue a notice of proposed rulemaking by September 1999, followed by a final rule by December 2000—nearly 3 years after its directed date. OMCHS estimates that the system will be operational about 1 year after the final rule. In addition to the difficulty of consolidating the various systems, an OMCHS official

explained that another reason for the delay in the rulemaking is the act's provision that states not lose revenue compared to that in 1995 as a result of replacing the old independent systems with the new consolidated system.

The ICC Termination Act of 1995 also required FHWA to modify the existing rule concerning hours of service for drivers of commercial motor vehicles to incorporate methods for reducing fatigue-related incidents such as crashes. The act required FHWA to issue an advance notice of proposed rulemaking by March 1, 1996; this notice was issued on November 5, 1996. The act also required a proposed rule within 1 year after the advance notice and a final rule within 2 years after that 1-year deadline. According to OMCHS, revisions to this rule are difficult and extremely contentious. Therefore, FHWA is currently considering the use of a "negotiated rulemaking" process in which a committee—including truck drivers, motor carriers, and safety advocacy groups—develops the rule. Through this process, the views of interested parties can be incorporated in the proposed rule, thereby reducing the number of comments and time needed to issue the final rule. If FHWA conducts a negotiated rulemaking, it expects to issue a proposed rule by March 2000; otherwise, it expects to issue a proposed rule in September 1999.

According to DOT officials involved in all stages of the rulemaking process (including officials from the Office of the Secretary, FHWA's Office of the Chief Counsel, and OMCHS), the length of time OMCHS has taken to issue rules is also due in part to the inexperience of and insufficient training for OMCHS staff who develop the rules. FHWA has recognized that more attention needs to be paid to the development of rules because rules that are insufficiently analyzed or poorly written require more time in the review process. In addition, rules that are classified by FHWA as "significant"—such as rules that will have a significant impact on the public or state or local governments, that are costly, or that are controversial—must be reviewed and approved by the Office of the Secretary, while other rules are approved by the Administrator of FHWA. This difference is important for OMCHS because about half of its rules in process (29 of 57) as of April 1999 were classified as significant, therefore requiring additional review. As part of a DOT-wide effort, FHWA is examining its rulemaking process to identify ways to streamline the process and has identified several areas for improvement. FHWA is considering actions such as (1) preparing guidance on the rulemaking process, (2) providing training for employees that develop rules, and (3) recommending that DOT revise its

procedures to limit the number of regulatory proposals requiring review by the Office of the Secretary and expediting those that undergo such review.

Effectiveness of OMCHS' Campaign to Educate Passenger Vehicle Drivers About the Limitations of Large Trucks Is Unknown

Because factors related to passenger vehicle drivers often contribute to fatal crashes between large trucks and passenger vehicles, OMCHS launched the "No-Zone" campaign in 1994. This campaign is intended to reduce crashes between large trucks and passenger vehicles by educating passenger vehicle drivers about how to safely share the road with large trucks and about trucks' limitations, such as reduced maneuverability, longer stopping distances, and blind spots (the No Zone). The campaign's public education efforts include public service announcements via radio, television, and print; brochures; posters; and decals on large trucks.

According to OMCHS and NHTSA officials, the success of this type of educational campaign depends, in part, on maintaining a consistently high level of public exposure to convey the message. The Transportation Equity Act for the 21st Century directed the Secretary of Transportation to obligate \$500,000 in fiscal years 1998 through 2003 for this type of effort out of funds made available for certain activities carried out by NHTSA. However, according to OMCHS and NHTSA officials, the No-Zone campaign did not receive these funds in fiscal year 1998 because the funds for these activities had already been committed by the time the act was passed in June 1998. While OMCHS had sufficient funds to maintain the No-Zone campaign activities throughout fiscal year 1998, it was not able to develop new advertisements for the 1999 spring through fall travel period.

OMCHS has not determined to what extent, if any, the No-Zone campaign has contributed to changing passenger vehicle drivers' behavior and reducing crashes between large trucks and passenger vehicles. OMCHS has conducted focus groups with high school students and plans to conduct a national telephone survey within the next year to determine the level of public recognition of the No-Zone campaign; however, the survey will not measure whether passenger vehicle drivers' behavior has changed. OMCHS is also exploring the possibility of developing indicators of changes in passenger vehicle drivers' behavior by requesting changes to vehicle citation codes to allow police officers to cite drivers for unsafe driving practices—including those in the vicinity of large trucks. For example, an officer could cite a passenger vehicle driver for changing lanes in front of a truck and then braking suddenly.

Conclusions

The Office of Motor Carrier and Highway Safety has not been effective in reducing fatalities resulting from crashes involving large trucks because, among other things, it knows too little about the causes of crashes or the factors that contribute to them and because it has not corrected long-standing problems with the information it uses, such as information that identifies high-risk carriers. As a result, the Office of Motor Carrier and Highway Safety cannot tell whether it is allocating its efforts in line with the most serious problems it seeks to address.

The Office of Motor Carrier and Highway Safety is developing a draft safety action plan that could help it better understand the causes of crashes, improve the information it uses to address safety problems, and lead to safety improvements through other means. The draft plan identifies 67 activities that the Office believes are most important for improving truck safety out of an estimated 200 activities that it has under way. While the draft plan is subject to change, the 67 activities represent a significant undertaking, but the Office has not determined which of these activities are most likely to lead to a reduced number of crashes and deaths or whether it can complete all the planned activities in a timely manner with available resources, both budgetary and human.

Recommendation

We recommend to the Secretary of Transportation that the Department prioritize the activities in the Office of Motor Carrier and Highway Safety's safety action plan according to their potential for reducing the number of crashes and deaths and, to ensure that the activities are completed in a timely manner, only undertake those that the Office is reasonably sure it can complete within available budgetary and human resources.

Agency Comments and Our Evaluation

DOT provided comments on a draft of this report. (See app. I.) DOT agreed with the contents of the report, stating that it provided a balanced discussion of areas needing improvement and the agency's efforts to improve the commercial vehicle safety program. DOT also stated that (1) definitive data are lacking on causes of crashes for all types of motor vehicles, not just trucks, and the Department is working to improve data quality; (2) the Department has recently requested additional funds to improve data collection, enforcement, and technology enhancement programs; and (3) No-Zone campaign information is now provided in 34 state drivers' licensing manuals and evidence from a focus group of high school students indicated that the campaign has had a positive effect on the

students' driving behavior. Regarding the first comment, we recognize that the lack of definitive crash causation data is a problem that relates to all motor vehicles; however, until causation data on truck crashes is improved, DOT will be hampered in improving truck safety. Regarding the second comment, although DOT has requested additional funds to improve several of the problems we identified in our report, this request will be considered by the Congress along with other budget requests. Depending on available resources, DOT may have to find other solutions to improving its programs, including prioritizing its activities according to their potential for reducing crashes. Finally, while DOT has some indication that the No-Zone campaign is reaching a large number of people, it has not yet evaluated the effectiveness of the campaign by determining the extent to which drivers' behavior has actually changed. DOT did not comment on the recommendation in our draft report.

Scope and Methodology

To identify trends in crashes involving large trucks, we reviewed data from 1988 through 1997 (the most recent data available) from NHTSA and FHWA. In estimating the number of fatalities from crashes involving large trucks for 1998 through 2000, we (1) assumed that the fatality rate would remain at the 1997 level of 2.8 fatalities per 100 million truck miles traveled, (2) used the best-fit, least-squares regression trend line for the number of truck miles traveled from 1992 through 1997 to project the truck miles traveled for 1998 through 2000, and (3) multiplied the projected number of truck miles traveled for each year by the fatality rate of 2.8 per 100 million miles traveled.

To determine the factors that contribute to crashes involving large trucks, we reviewed data from FARS. We also interviewed officials and reviewed documentation from OMCHS, the National Transportation Safety Board, AAA, and the University of Michigan Transportation Research Institute. To examine OMCHS' activities to improve truck safety, we interviewed officials and reviewed documentation from DOT (including OMCHS, FHWA, NHTSA, and the Office of General Counsel), the National Transportation Safety Board, the Commercial Vehicle Safety Alliance, American Trucking Associations, the National Private Trucking Council, Advocates for Highway and Auto Safety, and Public Citizen. We performed our work from December 1998 through May 1999 in accordance with generally accepted government auditing standards.

We are sending copies of this report to congressional committees and subcommittees responsible for transportation issues; the Honorable Rodney E. Slater, Secretary of Transportation; the Honorable Jacob Lew, Director, Office of Management and Budget; and other interested parties. We will make copies available to others upon request.

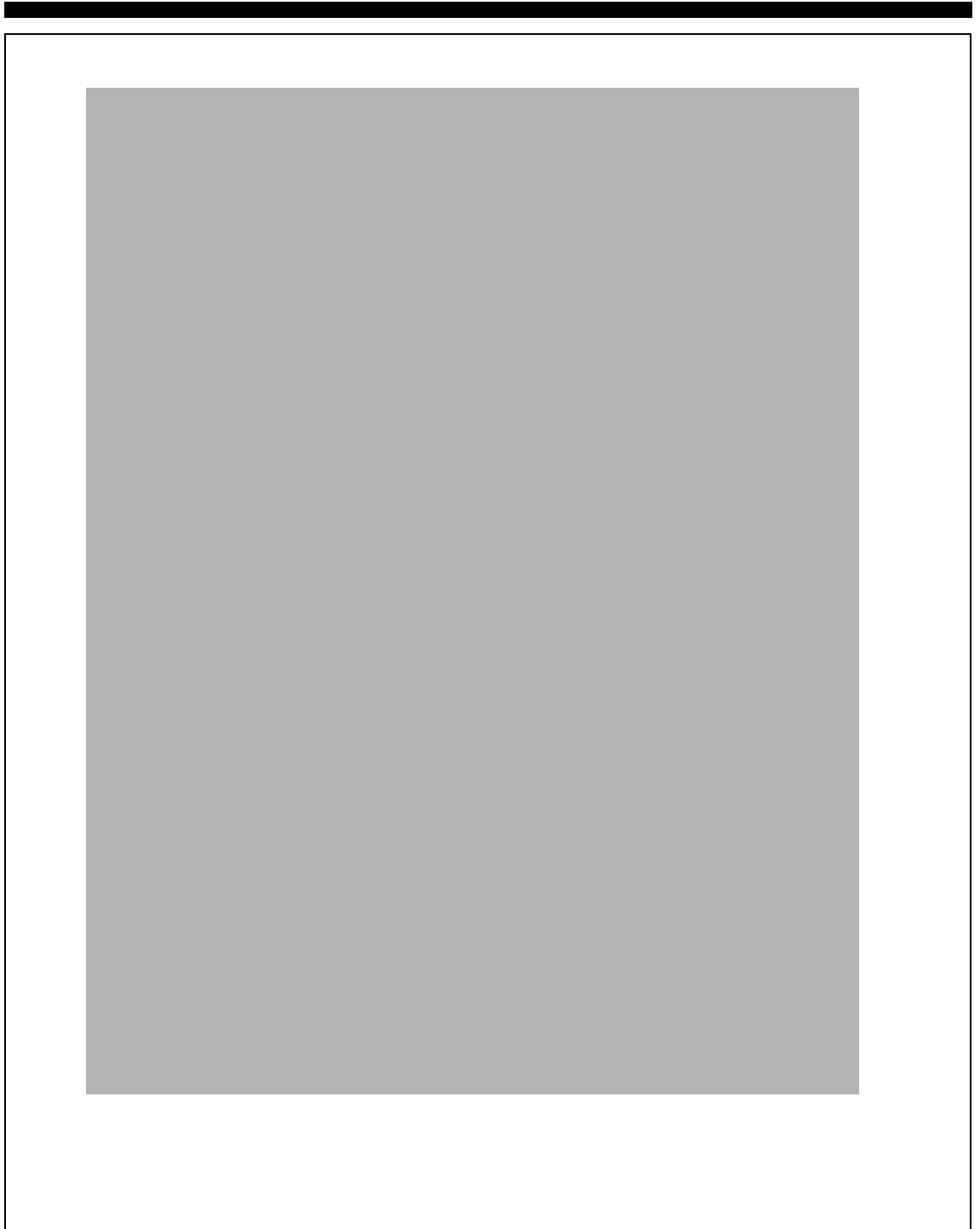
If you or your staff have any questions about this report, please contact me at (202) 512-3650. Major contributors to this report were Jennifer Clayborne, David Goldstein, James Ratzenberger, and Sara Vermillion.

Sincerely yours,

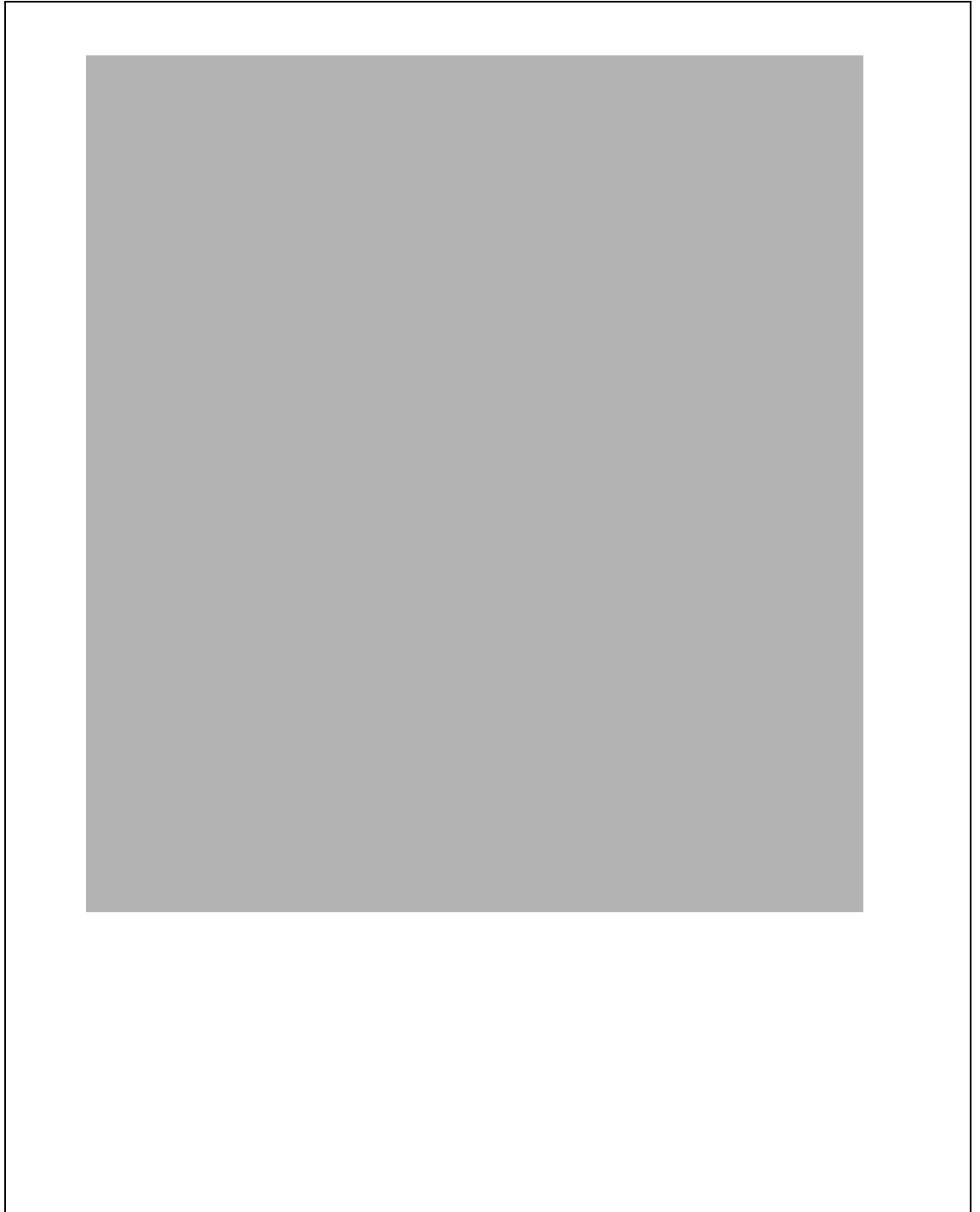
A handwritten signature in black ink that reads "Phyllis F. Scheinberg". The signature is written in a cursive style with a large initial "P" and a long, sweeping underline.

Phyllis F. Scheinberg
Associate Director,
Transportation Issues

Comments From the Department of Transportation



**Appendix I
Comments From the Department of
Transportation**



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