

May 2003

# TRUCK SAFETY

## Share the Road Safely Program Needs Better Evaluation of Its Initiatives



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# Highlights

Highlights of [GAO-03-680](#), a report to Congressional Committees

## Why GAO Did This Study

From 1992 through 2001, more than 50,000 people were killed in crashes involving large commercial trucks. Although more than 6,800 of these fatalities were truck occupants, approximately 40,000 were passengers in other vehicles and more than 4,000 were nonmotorists. The Department of Transportation's Federal Motor Carrier Safety Administration (FMCSA) conducts a number of truck safety programs, including the Share the Road Safely program, whose goal is to educate the public about driving safely around large trucks. GAO examined (1) whether the program's initiatives are linked to this goal and (2) how FMCSA evaluates its Share the Road Safely program.

## What GAO Recommends

GAO recommends that the Department of Transportation (DOT) ensure that the Share the Road Safely program initiatives are directly linked to the program's goal and establish a systematic process for evaluating the effectiveness of the program. DOT generally agreed with our recommendations.

[www.gao.gov/cgi-bin/getrpt?GAO-03-680](http://www.gao.gov/cgi-bin/getrpt?GAO-03-680).

To view the full report, including the scope and methodology, click on the link above. For more information, contact Kate Siggerud (202)512-2834 or [siggerudk@gao.gov](mailto:siggerudk@gao.gov).

## TRUCK SAFETY

# Share the Road Safely Program Needs Better Evaluation of Its Initiatives

## What GAO Found

The Share the Road Safely program's goal is designed to educate the motoring public on how to share the road safely with commercial motor vehicles. To accomplish this goal, the program has undertaken a number of public education and information dissemination initiatives including a series of new initiatives beginning in 2000. Some initiatives, such as incorporating the program's messages into state driver education manuals or developing share the road messages specifically targeted to certain types of drivers, pedestrians or motorcyclists, are clearly linked to the program's goal. However, for a few other initiatives, such as directing program messages to elementary schoolchildren, the linkage is less clear. Research currently under way in the Department of Transportation may enable the program to link its initiatives to the most significant causes of truck/car crashes. Many highway safety experts agree that public education efforts to increase safe driving around large trucks are more likely to produce substantial changes in drivers' behaviors if they are combined with other safety initiatives, such as local law enforcement programs. Share the Road Safely has recently begun to pilot test such a program.

FMCSA evaluations of the Share the Road Safely program have provided some information about the program but have not convincingly demonstrated accomplishment of the program's intended outcomes: changes in drivers' knowledge, attitudes, and behaviors. FMCSA has the opportunity to adopt a new evaluation strategy for its recent initiatives, for example, by using evaluation practices adopted by other federally sponsored information dissemination programs to improve its evaluation of the program.

**Collision Involving Passenger Vehicles and Large Commercial Trucks**



Source: Georgia Department of Transportation.

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## Abbreviations

DOT	Department of Transportation
FMCSA	Federal Motor Carrier Safety Administration
FHWA	Federal Highway Administration
NHTSA	National Highway Traffic Safety Administration
TEA-21	Transportation Equity Act for the 21 <sup>st</sup> Century

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United States General Accounting Office  
Washington, DC 20548

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May 30, 2003

The Honorable Ernest Istook, Jr.  
Chairman  
The Honorable John W. Olver  
Ranking Minority Member  
Subcommittee on Transportation, Treasury,  
and Independent Agencies  
Committee on Appropriations  
House of Representatives

The Honorable Richard Shelby  
Chairman  
The Honorable Patty Murray  
Ranking Minority Member  
Subcommittee on Transportation, Treasury,  
and General Government  
Committee on Appropriations  
United States Senate

In 2001, there were 42,116 people killed on our nation's roads, and 3,033,000 people were injured. About 12 percent (5,082) of the fatalities and 4 percent (131,000) of the injuries occurred in collisions involving large commercial trucks.<sup>1</sup> The majority of these crashes were collisions between passenger vehicles<sup>2</sup> and large commercial trucks; and, in such crashes, the occupants of passenger vehicles are more than 15 times more likely to be killed than truck occupants. The Federal Motor Carrier Safety Administration (FMCSA) recently set a goal to cut the fatality rate in large truck-related crashes by more than 40 percent, from its 1996 level by 2008. FMCSA's Share the Road Safely program is designed to assist this effort by educating the motoring public on how to share the road safely with

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<sup>1</sup>A large commercial truck is defined as a truck with gross weight rating greater than 10,001 pounds.

<sup>2</sup>For the purpose of this report, we are using the term passenger vehicle(s) to include cars, pickup trucks, sport utility vehicles, vans, and motorcycles. Passenger vehicles have a gross weight rating less than 10,001 pounds.

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commercial motor vehicles.<sup>3</sup> The program, established in 1994, initially attempted to publicize the dangers of driving unsafely around large trucks to the general public. In 2000, the program refocused its efforts toward all highways users with more specific messages for targeted audiences including car and truck drivers, senior drivers, and new or problem drivers.<sup>4</sup>

The House report accompanying the Department of Transportation and Related Agencies Appropriations bill for 2003 directed us to evaluate the effectiveness of the Share the Road Safely program and submit the study to the House and Senate Committees on Appropriations.<sup>5</sup> We examined (1) whether the program's initiatives are linked to its goal to educate the public about driving safely in and around large commercial trucks and (2) how FMCSA evaluates the program's effectiveness.

To determine whether the program's initiatives are linked to its goal, we obtained information from FMCSA officials, including representatives from Safety Action Programs, the office responsible for Share the Road Safely, and other relevant FMCSA offices. We interviewed officials from the National Highway Traffic Safety Administration (NHTSA) as well as various external stakeholders and highway safety researchers. We reviewed program documents, including budget allocations from 1992 through 2003, for the Share the Road Safely program and other FMCSA safety programs. To determine how FMCSA evaluates its Share the Road Safely program, we reviewed evaluations performed by FMCSA as well as publications from NHTSA and GAO that describe evaluation criteria appropriate for use in evaluating public information dissemination programs such as the Share the Road Safely program. We conducted our review from January 2003 through May 2003 in accordance with generally accepted government audit standards.

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<sup>3</sup>“Commercial motor vehicles” includes buses as well as trucks, but nearly all the program's initiatives have addressed driving behavior around trucks. In this report, we use the term “truck” unless buses are explicitly included in a specific program initiative.

<sup>4</sup>Before 2000, the program was called “Share the Road.” Since 2000, FMCSA has used the term “Share the Road Safely” in part to indicate this shift in strategy. In this report, we generally use the term “Share the Road Safely,” except where it is necessary to distinguish the pre-2000 program from its successor program.

<sup>5</sup>H.R. Rep. No. 107-722, at 104 (2002).

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## Results in Brief

Several of the Share the Road Safely program's initiatives, such as incorporating Share the Road Safely messages into state driver education manuals and directing its messages to specific audiences, like pedestrians or motorcyclists, appear to be directly linked to the program's goal, as established in the Intermodal Surface Transportation Efficiency Act of 1991, of educating the motoring public on how to share the road safely with commercial motor vehicles. However, the linkage between the program goal and a few other program initiatives, such as providing the Share the Road Safely message to schoolchildren, is not as clear and direct. Research currently under way in the Department of Transportation (DOT) may enable FMCSA to direct program initiatives to ensure its initiatives are linked to the most significant causes of truck/car crashes, such as speeding or unsafe lane changes. Many highway safety officials and researchers agree that public education efforts alone are unlikely to produce substantial changes in drivers' behaviors unless they are coupled with other safety initiatives, such as local enforcement programs to increase compliance with traffic laws. According to a FMCSA official, although the agency has not combined education and enforcement efforts in the past, it recently began a pilot of such a combined effort. For example, in keeping with this new approach, FMCSA has recently targeted six high-crash highway corridors to pilot an initiative that will combine local outreach through radio, television, and outdoor advertising, safety partnerships with local authorities and brochures with targeted police activity to deter unsafe driving in and around large trucks.

FMCSA has not evaluated the effectiveness of initiatives implemented since 2000, and its evaluations of earlier program initiatives provide only limited information. FMCSA has issued three reports about the program's earlier initiatives that attempted to measure changes in the general public's knowledge, attitudes, and behaviors about driving around large commercial trucks. These evaluations provide some information on the program's activities and on how familiar drivers were with some concepts and behaviors promoted by the program, such as avoiding driving in large trucks' "blind spots." However, these evaluations could not determine the program's effectiveness for the following reasons:

- The evaluations relied heavily on self-reports of attitude and behavior change that are subject to biased responses.
- Because FMCSA did not have a baseline of driver knowledge and behavior before program initiatives were implemented, it could not determine the extent to which intended changes in behavior occurred.

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- FMCSA could not determine whether any changes in driving behavior or the frequency of car/truck crashes were attributable to program initiatives or to other influences.

FMCSA believes that funding pilot program initiatives that are directed at specific target audiences (for example, senior citizens) in smaller geographic areas will enable FMCSA to more accurately measure the initiative's effects on drivers' knowledge, attitude, and behaviors and determine whether the program has contributed to reducing the number of car/truck crashes. Other federally sponsored information dissemination programs similar to the Share the Road Safely program, including some sponsored by other parts of DOT, have used various strategies to improve their evaluations—such as measuring targeted knowledge, attitude, and behavior changes before and after program exposure to assess change. FMCSA could use these or similar strategies to enhance future evaluations of Share the Road Safely.

We are recommending that the Secretary of Transportation direct FMCSA to improve its strategic approach to the Share the Road Safely program by linking its activities more directly to its goals and establishing a systematic process for evaluating the effectiveness of the program. DOT officials commented on a draft of this report and generally agreed with our recommendations.

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## Background

Although fatalities resulting from crashes involving large commercial trucks have decreased in recent years (see fig. 1), this improvement may be difficult to sustain as more people and goods are moved throughout the nation. From 1992 through 2001, there were 50,375<sup>6</sup> people killed in large truck crashes. Of this total, 6,811 were large truck occupants while 39,516<sup>7</sup> were people in other types of vehicles, and 4,048<sup>8</sup> were nonmotorists. Figure 1 shows the number of passenger vehicle and large truck occupants

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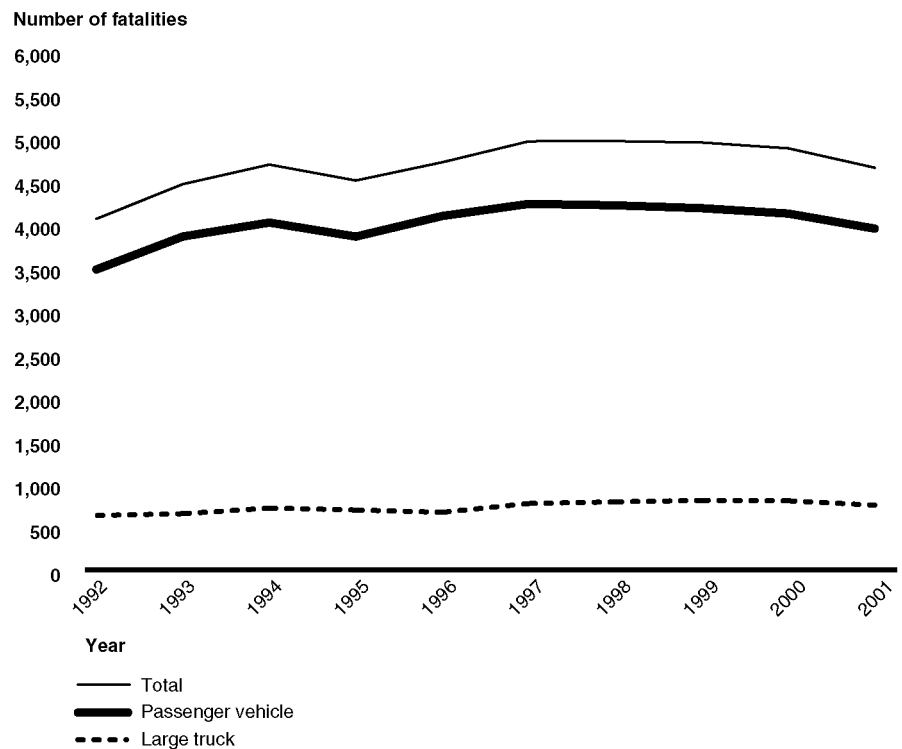
<sup>6</sup>This figure includes passengers in cars, light trucks, large commercial trucks, and on motorcycles, and nonmotorists but excludes bus passengers and those fatalities classified by FMCSA as "other/unknown."

<sup>7</sup>This figure includes passengers in cars and light trucks, and on motorcycles but excludes bus passengers and those fatalities classified by FMCSA as "other/unknown."

<sup>8</sup>This figure includes pedestrians and pedalcyclists but excludes those fatalities classified by FMCSA as "other/unknown."

killed in passenger vehicle and large truck collisions from 1992 through 2001.

**Figure 1: Number of Vehicle Occupants Killed in Large Truck Crashes by Vehicle Type (1992 - 2001)**



Source: GAO analysis of DOT data.

Concerned with the number of crashes between passenger vehicles and large commercial trucks, Congress recognized the need to educate the general motoring public about certain characteristics of large commercial trucks and their operation. With the enactment of the Intermodal Surface Transportation Efficiency Act of 1991, Congress directed the Secretary of Transportation to educate the motoring public about how to share the



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road safely with large commercial trucks and authorized at least \$350,000 for fiscal years 1992 through 1997 for this purpose.<sup>9</sup>

Through public outreach and education, in the early 1990s, Federal Highway Administration (FHWA) began exploring ways to decrease the number of passenger vehicle and large commercial truck crashes and ultimately reduce injuries and fatalities. FHWA sponsored focus group studies conducted with passenger vehicle drivers, the highway safety community, and trucking industry officials to determine the concerns of the public about large commercial truck safety. Passenger vehicle drivers who participated in these group discussions mentioned the size and weight of heavy trucks, truck drivers' aggressiveness, effects of truck-driver fatigue, and traffic congestion as some safety concerns. Passenger vehicle drivers also reported feeling outmatched by the size and weight of large commercial trucks and said that truck drivers drive too fast, too far, and too many hours without proper rest to be safe. They cited the mixing of large commercial trucks and other vehicles in congested traffic conditions and inclement weather as major concerns. FHWA's analysis of the focus group studies indicated that the number of crashes involving passenger vehicles and large commercial trucks might be reduced if motorists understood the special characteristics of large commercial trucks, such as longer braking distances and larger blind spots.

In 1992, in response to Congress' concerns and in support of FHWA's goal of reducing highway fatalities, FHWA began to develop a national public service highway safety program called "Share the Road" to educate passenger vehicle drivers on how to share the road safely with large commercial trucks. The Share the Road program was the first public information dissemination program intended to alert passenger vehicle drivers about blind spots or "no-zones" around a large commercial truck in which the truck driver's visibility is limited.

The first phase of the program was popularly known as the "No-Zone Campaign." This campaign was designed to increase passenger vehicle drivers' awareness of commercial drivers' visibility limitations in an effort to influence the passenger vehicle drivers' behavior and thus decrease the number of crashes involving passenger vehicles and large commercial

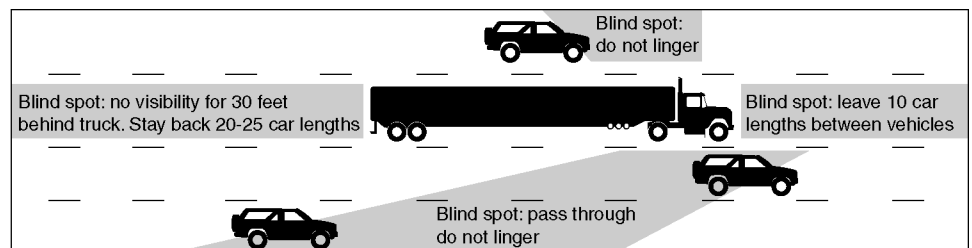
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<sup>9</sup>In 1998, the Transportation Equity Act for the 21st Century (TEA-21) included the same requirement to educate the motoring public on how to share the road safely with commercial motor vehicles, but TEA-21 authorized at least \$500,000 to be appropriated from the Highway Trust Fund for fiscal years 1998 through 2003.

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trucks and, ultimately, reduce fatalities, injuries, and property damage. Figure 2 shows no-zones, or blind spots, around a large commercial truck.

**Figure 2: No-Zones, or Blind Spots, around a Large Commercial Truck**



Source: American Trucking Associations.

On January 1, 2000, FMCSA was established within DOT pursuant to the Motor Carrier Safety Improvement Act of 1999, and its mission was to reduce the number and severity of large-truck involved crashes. FMCSA became responsible for developing and implementing initiatives for the Share the Road program as well as other commercial vehicle safety programs. FMCSA changed the focus of the Share the Road program from a public outreach initiative emphasizing the No-Zone Campaign to a discrete program within its Safety Actions Program Division and renamed it "Share the Road Safely." The Share the Road Safely program is intended to target all highway users<sup>10</sup> to increase their awareness about the inherent danger of driving in and around large commercial trucks and modify driver behaviors. FMCSA officials believe that through education and outreach to specific target audiences, highway users will be persuaded to change their behavior with the eventual result being a reduction in commercial motor vehicle crashes. Consequently, the program has begun educational initiatives directed at such discrete audiences as senior drivers, new or problem drivers, commercial motor vehicle drivers, school trip planners, and drivers in specific geographic areas.

The Share the Road Safely program is a small part of a group of truck safety programs administered by FMCSA to reduce large commercial truck-related injuries and fatalities. In 2003, FMCSA set an overall goal of reducing the rate of large commercial truck-related fatalities from the 1996 rate of 2.8 fatalities per 100 million truck miles traveled to 1.65 fatalities

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<sup>10</sup>Include pedestrians, bicyclists, and drivers of commercial vehicles, cars, motorcyclists, and recreational vehicles.

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per 100 million truck miles traveled by 2008.<sup>11</sup> FMCSA programs are intended to contribute to this goal by addressing safety in motor carrier operations through identifying and enforcing safety regulations that target high-risk carriers and large commercial truck drivers, improving safety information systems and commercial motor vehicle technologies, strengthening commercial motor vehicle equipment and operating standards, and increasing safety awareness. According to agency officials, FMCSA coordinates its programs with other federal, state, and local enforcement agencies, the motor carrier industry, highway safety advocacy groups, and others.

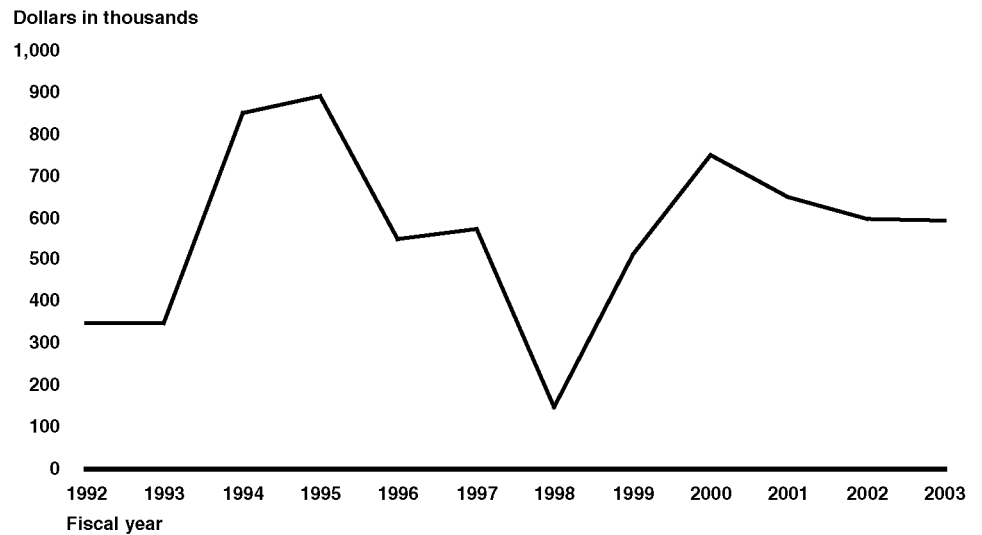
The fiscal year 2003 funding for the Share the Road Safely program represents less than 1 percent of FMCSA's total budget. From fiscal year 1992 through 2003, about \$6.8 million, or an average of \$569,000 per year, was spent on the program.<sup>12</sup> Figure 3 illustrates the funding for the Share the Road Safely program since its inception in fiscal year 1992.

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<sup>11</sup>In 1999, DOT had set a goal of reducing large commercial truck-related fatalities by 50 percent, from 5,380 to 2,690, by the year 2010. According to FMCSA officials, the agency revised its goal to better align it with the DOT Highway Safety performance goal and FHWA and NHTSA measures.

<sup>12</sup>From fiscal year 1992 through fiscal year 1999, the program's initiatives were funded primarily in the form of grants through the Motor Carrier Safety Assistance Program. However, since fiscal year 2000 the program's budget has come primarily as a \$500,000 annual "pass through" funding from NHTSA; other funding—about \$125,000 annually—comes through funding from the Research and Technology Office.

**Figure 3: Share the Road Safely Program Funding (Fiscal Year 1992 – 2003)**



Source: GAO analysis of DOT data.

Note: TEA-21 directed the Secretary of Transportation to obligate \$500,000 for each of fiscal years 1998 through 2003 for the Share the Road program. However, the program did not receive these funds in fiscal year 1998 because the funding had already been committed by the time the act was passed in June 1998.

According to FMCSA officials, the agency partners with public and private organizations nationwide to promote the Share the Road Safely program’s mission, pool safety ideas and resources, and minimize the duplication of efforts. For example, FMCSA works with a coalition that includes such members as the American Association of Motor Vehicle Administrators,<sup>13</sup> AAA,<sup>14</sup> and the American Trucking Associations,<sup>15</sup> and state and local agencies. The coalition provides FMCSA with feedback on and assistance with the program’s goal. In addition to these efforts, most Share the Road resources are used to hire contractors to develop and implement the

<sup>13</sup>The American Association of Motor Vehicle Administrators is a tax-exempt, nonprofit organization that works to develop model programs in motor vehicle administration, police traffic services, and highway safety.

<sup>14</sup>AAA, formerly known as the American Automobile Association, is a not-for-profit, tax-paying federation of 77 motor clubs serving 46 million members in the United States and Canada.

<sup>15</sup>American Trucking Associations, Inc., is the national trade association of the trucking industry.

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products and services (for example, maintaining a Web site and developing educational materials) for the Share the Road Safely program. The contracts for these products and services have ranged from \$25,000 to \$300,000 since 2000 and are generally awarded for 1 year periods, but they can be modified and extended with approval from FMCSA. Since fiscal year 2000, FMCSA has awarded 13 contracts for various products and services for the Share the Road Safely program.<sup>16</sup>

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## Many Share the Road Safely Program Initiatives Are Linked to the Program's Goal but a Few Lack Clear Linkage

Although a clear rationale exists for several Share the Road Safely initiatives, a few initiatives are not clearly linked to the program's safety goal. The program has begun to target specific driving behaviors more likely to have a direct safety impact. Finally, public educational approaches are generally considered more effective when combined with other safety efforts, such as enhanced enforcement of traffic laws, and FMCSA is beginning to combine these initiatives in the Share the Road Safely program.

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## A Few Program Initiatives Are Not Clearly Linked to the Program's Goal

Several of the initiatives in the Share the Road Safely program are generally linked to the program's goal, as established in the Intermodal Surface Transportation Efficiency Act of 1991, to educate the public about sharing the road safely with large commercial vehicles. Examples of clear links to the program goal includes (1) targeting Share the Road Safely messages at specific groups, such as new or problem drivers, pedestrians, or motorcyclists; (2) using radio and print public service announcements as well as interactive CD-ROMs; (3) developing and maintaining a Share the Road Safely Web site that provides downloadable information suitable for specific audiences; and (4) introducing more information about sharing the road with large commercial trucks into state driver education manuals and driver training curricula.

Yet not all the program's initiatives are directly linked to its goal. For example, in recent years the program has awarded contracts for such initiatives as educating school trip planners on using safe bus companies for students' field trips and providing the Share the Road Safely message to schoolchildren. According to FMCSA officials, these initiatives accounted for about \$255,000 for fiscal years 2001 through 2002, or

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<sup>16</sup>FMCSA officials told us that they did not have contract information for fiscal years 1992 through 1999.

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approximately 20 percent of the program’s budget for that period. According to an FMCSA official, one of the Share the Road Safely initiatives—Moving Kids Safely—educates school trip planners about how to select safe bus companies to transport students on field trips. According to this official, the initiative stresses the importance of choosing a charter transportation company that has a satisfactory safety record in order to reduce the risk of crashes, injuries, and fatalities involving schoolchildren. FMCSA officials pointed out that this can change the way bus companies are hired for school trips and contribute to the goal of reducing school bus crashes. However, it is not clear how the initiative contributes to the program’s goal of educating the public about sharing the road with commercial motor vehicles.

Similarly, according to program officials, FMCSA joined the ongoing “Trucker Buddy” initiative, a national program sponsored by the trucking industry. The initiative’s purpose was to test the effectiveness of targeting students at various stages of the public education system to determine how much the children had learned about the safety issues concerning large commercial trucks, to improve their knowledge of the truck driving profession, and to assess whether this information was communicated to their parents. The initiative included such activities as truckers visiting elementary school classrooms and students establishing pen-pal relationships with truckers. While these activities may prove to have some long-term effect on the children’s behavior when they become drivers, or may have affected their parents’ driving behaviors, the connection between the initiative and the goal of educating the motoring public is indirect. According to FMCSA officials, FMCSA’s participation in this joint initiative ended in March 2003.

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**Program Currently Targets More Specific Driver Behaviors than in Earlier Phase**

Research conducted in the late 1990s enabled FMCSA to broaden the Share the Road program beyond the No-Zone Campaign to include other initiatives related to sharing the road with large commercial vehicles. The driving behaviors targeted by the pre-2000 Share the Road program were not sufficiently specific to allow drivers to take effective actions to reduce crashes. Because police reports cited the behavior of passenger vehicle drivers in crashes more frequently than the behavior of large commercial truck drivers, Share the Road initially emphasized its “no-zone” theme and focused its efforts on passenger vehicle drivers. However, subsequent research sponsored by FHWA concluded that, at most, only 35 percent of fatal passenger vehicle and large commercial truck collisions are attributable to passenger vehicles traveling in the no-zone. According to FMCSA officials, since 2000 the Share the Road Safely program has

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recognized the need to shift its focus from a “no-zone” approach to one that better addresses the causes of passenger vehicle and large commercial truck collisions in order to develop stronger links between Share the Road Safely program goal and its initiatives. A 1999 FHWA report concluded that “more comprehensive data on the causes of passenger vehicle and large commercial truck crashes of all severities would enhance FHWA’s ability to develop effective countermeasures and prevent future crashes.” Since then, FMCSA and NHTSA’s National Center for Statistics and Analysis have begun a Large Truck Crash Causation Study to determine the causes and associated factors contributing to serious large commercial truck crashes so that agencies within DOT and others can implement effective countermeasures to reduce the occurrence and severity of such crashes. This is the first national study of its kind and is designed to code all factors that might be crash related for later analysis. FMCSA expects to release the study’s database to the public early in 2005.

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### Successful Initiatives Combine Educational Outreach with Local Enforcement Efforts

Highway safety researchers and safety advocates we interviewed agreed that attempts to modify the behavior of drivers are more effective when educational approaches are combined with enforcement efforts. This conclusion is supported by the evaluation of past educational efforts to change driver behavior, in particular efforts to reduce drunk driving or increase safety belt usage.<sup>17</sup> For this reason, according to a NHTSA official, NHTSA public information campaigns are frequently combined with well-publicized local police activities to enforce compliance with traffic ordinances prohibiting behaviors such as driving while impaired or driving without a safety belt.

FMCSA recently began an initiative that would link educational outreach with enforcement. It plans to pilot test the effectiveness of combining Share the Road Safely messages with local outreach and enforcement

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<sup>17</sup>U.S. General Accounting Office, *Motor Vehicle Safety: Comprehensive State Programs Offer Best Opportunity for Increasing Use of Safety Belts*, [GAO/RCED-96-24](#) (Washington, D.C.: Jan 3, 1996); U.S. General Accounting Office, *Highway Safety: Effectiveness of State .08 Blood Alcohol Laws*, [GAO/RCED-99-179](#) (Washington, D.C.: June 23, 1999). See also “Education Alone Won’t Make Drivers Safer,” Status Report: *Insurance Institute for Highway Safety* 36:5 (May 19, 2001); Adrian K. Lund and Allan F. Williams, “A Review of the Literature Evaluating the Defensive Driving Course,” *Accident Analysis and Prevention* 17:6 (1985); Carolyn B. Liban et al., “The Canadian Drinking-Driving Countermeasure Experience,” *Accident Analysis and Prevention* 19:3 (1987); James B. Jacobs, *Drunk Driving, An American Dilemma* (Chicago: University of Chicago Press, 1989).

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initiatives. The pilot test will include outreach material, such as outdoor advertising and brochures, to educate and increase the awareness of passenger vehicle drivers on roads that have a disproportionately high number of large commercial truck crashes. The primary emphasis will be on the inability of large trucks to stop as quickly as cars and the hazard created when cars cut in front of trucks on the highway. The pilot will also emphasize to large commercial truck drivers the need for greater patience and defensive driving in these high crash corridors. In June 2003, FMCSA plans to pilot test these Share the Road Safely messages in conjunction with enhanced state-level enforcement of traffic violations, such as aggressive driving and tailgating in six corridors throughout the country that have a high volume of large commercial truck crashes. According to a FMCSA official, as part of this initiative, FMCSA will measure the relative safety improvements in these high-volume, truck crash corridors in order to identify effective safety strategies that could lead to the development of community-based programs to reduce the number of crashes between large commercial trucks and passenger vehicles.

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## Evaluations by FMCSA Provided Little Information on the Effectiveness of the Share the Road Program

A program's effectiveness can be determined by assessing how far a program has progressed toward achieving its intended outcomes. FMCSA has attempted to measure the effectiveness of some of the program's initiatives, but these evaluations provide only limited information on the program's success in changing driver behavior. FMCSA has not attempted to evaluate the Share the Road Safely program since 2000; however, it has taken steps that may help it improve its evaluations of the program's effectiveness in the future. In addition, practices used by other entities both within and outside DOT to evaluate information dissemination programs illustrate strategies that FMCSA could use to improve its evaluations.



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Program Evaluation Uses Objective Measures to Examine the Effectiveness of a Program's Contributions to Short-Term, Intermediate, or Long-Term Outcomes

A program evaluation is a systematic process that uses objective measures to analyze how well a program is achieving its goals. In a recent report,<sup>18</sup> we noted that articulating the logic—or strategy—of an information dissemination program like Share the Road Safely could help the agency identify expected short-term, intermediate, or long-term outcomes and how to measure them. A clearly stated program strategy that articulates how a program's initiatives are expected to achieve its desired goals enables the program's managers to measure activities (for example, the number of TV advertisements broadcast or workshops held); outputs (for example, the portion of the target audience exposed to TV advertisements or participating in workshops); and outcomes—the changes effected in the target audience by the program. Many programs routinely track their activities and outputs; however, an outcome program evaluation<sup>19</sup> assesses actual changes in the audience's knowledge, attitude, and behavior that lead to an improvement in the conditions the program was designed to improve. Such an evaluation measures the extent to which a program has achieved its intended short-term, intermediate, and long-term outcomes.

For an information dissemination program, short-term outcomes would typically include gains in the audience's knowledge and changes in its attitude about the issue addressed by the program. For Share the Road Safely, short-term outcomes would include positive changes in motorists' or pedestrians' beliefs and positive reactions to the program's safety messages. Intermediate outcomes would include positive changes in the audience's behavior, such as not cutting in front of large trucks or tailgating. Long-term outcomes represent the ultimate objective of the program. For the Share the Road Safely program, a long-term outcome would be contributing to a reduction in the number of fatal collisions involving large commercial trucks and other vehicles or pedestrians. Changes in this outcome, while easy to measure, can be difficult to ascribe to the program because alternative explanations, such as improvements in the design of trucks and other vehicles, safety improvements in roadway design, or safety initiatives of other FMCSA safety programs can also be credited with contributing toward any progress.

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<sup>18</sup>U.S. General Accounting Office, *Program Evaluation: Strategies for Assessing How Information Dissemination Contributes to Agency Goals*, [GAO-02-923](#) (Washington, D.C.: September 2002).

<sup>19</sup>U.S. General Accounting Office, *Performance Measurement and Evaluation: Definitions and Relationships*, [GAO/GGD-98-26](#) (Washington, D.C.: April 1998).

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We recently reviewed a number of federally sponsored information dissemination programs, including efforts to enhance compliance with environmental regulations and reduce youth drug use.<sup>20</sup> We identified several strategies that were used to improve the evaluations of such programs. They included such practices as

- developing common measures for national evaluations,
- comparing before-and-after reports to assess change,
- using statistical methods to limit external influences, and
- adjusting the wording of survey questions to reduce potential bias.

The programs we reviewed were substantially more costly efforts than the initiatives conducted for Share the Road Safely program and consequently their evaluations were correspondingly more extensive. However, the strategies these programs developed to improve their evaluations can be scaled appropriately to smaller initiatives like those in the Share the Road Safely program.

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### Evaluations of the Share the Road Program Did Not Fully Measure the Program's Outcomes

FMCSA has issued three reports<sup>21</sup> about the Share the Road program's progress and initiatives. In 1997 and 1999, FMCSA reported on the program's progress toward achieving its goal and concluded that the program was effective in communicating the dangers inherent in large commercial truck interaction with passenger vehicles and on providing useful information on safe driving behaviors for the target audience. FMCSA also reported that since 1994, the program has made significant accomplishments in implementing its planned activities. For example, Share the Road messages were seen and heard throughout the country on billboards, radio, and television and in schools and driver education classes.

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<sup>20</sup>GAO-02-923.

<sup>21</sup>*No-Zone Campaign Goals and Activities Summary Report* (March 1997), *Share the Road Campaign Research Study Final Report* (June 1999), U.S. Department of Transportation, Federal Highway Administration, Office of Motor Carrier and Highway Safety; and *No-Zone Campaign Assessment* (October 2000) U.S. Department of Transportation, Federal Motor Carrier Safety Administration.

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In 2000, FMCSA issued a report that addressed changes in drivers' knowledge, attitudes, and behaviors while driving in the vicinity of large trucks as a result of its Share the Road initiatives to that point. The agency surveyed 1,100 licensed drivers and found that 58 percent of the respondents had seen or heard the phrase "Share the Road"; and 59 percent said they changed their behavior when they learned about some of the special characteristics of large trucks, such as longer braking distances and larger blind spots. However, FMCSA could not directly link these behavior changes to the Share the Road program. Only 13 percent of respondents had seen or heard the phrase "No-Zone"—the major focus of the program's initiatives at that time.

Although these studies shed some light on the extent of the Share the Road program's outputs, they did not fully measure the program's outcomes. The studies provide some information on the initiatives the program has sponsored and on drivers' familiarity with some concepts and behaviors promoted by the program. They shed little light on the short-term, intermediate, and long-term outcomes for three reasons. First, FMCSA's evaluations relied heavily on self-reports of the target audience's attitude and behavior change that were highly subject to positively biased responses; that is, respondents are likely to provide socially desirable responses.<sup>22</sup> For example, when a positive-sounding program such as "Share the Road" is mentioned, respondents are likely to report being familiar with and heeding its message.<sup>23</sup> Second, because no baseline of driver knowledge and behavior prior to the program had been established, FMCSA could not determine the extent to which any changes in these intended short-term outcomes actually occurred.<sup>24</sup> Third, if changes did occur, FMCSA had no way of knowing whether these changes were the result of program activities or other influences.<sup>25</sup>

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<sup>22</sup>GAO-02-923.

<sup>23</sup>The fact that 58 percent of respondents reported being familiar with "Share the Road," but only 13 percent were familiar with "No-Zone"—the program's primary initiative—suggests the likely influence of a positive bias.

<sup>24</sup>The Trucker Buddy program is a small exception. As part of the program, elementary schoolchildren were tested on their knowledge of trucks before and after instruction on the subject. They demonstrated a 21 percent improvement.

<sup>25</sup>Other similar programs, such as those sponsored by trucking organizations, automobile associations, and insurance companies, strive for goals similar to those in FMCSA's Share the Road Safely program. These organizations and associations have programs that specifically address the needs of passenger and commercial vehicle drivers.

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## Other Methods for Evaluating Information Dissemination Programs Exist

There are other methods that can be used to assess the effectiveness of information dissemination programs such as Share the Road Safely. For example, the Office of National Drug Control Policy used a media campaign to counteract images that were perceived as glamorizing or condoning drug use. Under the direction of the National Institute on Drug Abuse, a contractor conducted a national evaluation of the campaign. The evaluation surveyed households in the targeted markets to assess advertisement awareness, knowledge, attitudes, and behavior, including drug use, in a representative sample of youths and their parents or other caretakers. The evaluation could not compare its sample with a control group that had not been exposed to the media campaign because the campaign ran nationally. Therefore, the evaluation used a “dose-response” design to measure the degree of respondents’ exposure to the campaign and assess whether adoption of the desired attitudes and behaviors was positively correlated with their exposure.

The experiences of other administrations within DOT, such as NHTSA, could also help FMCSA in its evaluations of the Share the Road Safely program. FMCSA officials acknowledged that NHTSA possesses expertise in developing and evaluating information dissemination programs aimed at improving drivers’ safety consciousness and driving behaviors. For example, in May 2001, NHTSA conducted a regional “Click It or Ticket” campaign in several southeastern states to increase safety belt use through media outreach combined with intense state-level enforcement of safety belt use laws. Evaluation of the campaign found an increase in safety belt use that was correlated with the amount of advertisements publicizing the campaign and consequent public awareness of the heightened enforcement activities.

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## FMCSA Expects to Perform More Meaningful Evaluations of the Share the Road Safely Program in the Future

FMCSA officials told us that they have performed no evaluation of the Share the Road Safely program since 2000. However, they also told us that they recognize the need for improved evaluation of the program’s outcomes and that this was one factor considered in the refocus of the program beginning in 2000. Prior evaluations had attempted to measure the national penetration of the Share the Road program message, particularly its no-zone message. Because their post-2000 strategy has emphasized specific target groups or geographic areas, officials expect that they will be better able to measure the effectiveness of focused pilot tests and determine the relative effectiveness of different initiatives before expanding them or offering them as models for state or local emulation. FMCSA officials pointed to the combined education/enforcement initiative planned for six corridors with high numbers of truck crashes as a recent

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example of this more targeted approach that they expect will allow them to make more meaningful evaluations of changes in driver behavior and, ultimately, in car/truck crash frequency. However, because none of the pilot initiatives undertaken during the post-2000 Share the Road Safely program has been completed, FMCSA has no outcome measures to assess the effectiveness of the program.

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## Conclusion

The Share the Road Safely program currently consists of a number of relatively new pilot initiatives in various stages of implementation. These initiatives are designed to contribute to FMCSA's goal of reducing the fatality rate associated with large commercial vehicles; however, we found that in some cases their link to the program's goal of educating the public about driving safely around large commercial vehicles was tenuous. Given that findings from DOT's research—which may help identify specific behaviors contributing to car/truck crashes—will soon be available and that FMCSA's pilot initiatives are still not fully implemented, FMCSA has an opportunity to ensure that the initiatives are organized into a program strategy that explicitly links them to the program's overall goal.

In addition, FMCSA has not evaluated the effectiveness of Share the Road Safely since 2000. We recognize that the program's relatively small budget demands that its evaluation activities be scaled appropriately to the size of its initiatives. Yet it is important that FMCSA incorporate the best evaluation practices that are available from federal and other sources to the extent practicable to ensure that the agency does not expend its limited resources on initiatives of uncertain or unknown effectiveness. The program's shift to more limited pilot initiatives offers the opportunity for appropriately scaled evaluations. More rigorous evaluations than those conducted in the past could be used to enhance FMCSA's ability to direct its resources to more cost-effective initiatives that are clearly linked to the program's goal.

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## Recommendations for Executive Action

To ensure that FMCSA's Share the Road Safely program initiatives contribute to the agency's goal to reduce the number of collisions between large commercial trucks and other highway users, we recommend that the Secretary of Transportation direct the FMCSA administrator to

- develop an explicit program strategy that clearly and directly links FMCSA's Share the Road Safely program initiatives to its goal and uses the results of the Large Truck Crash Causation Study as they become available, as well as other relevant highway safety data, in order to identify

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specific behaviors that contribute to passenger vehicle and large commercial truck crashes, thus more effectively targeting the limited resources of the Share the Road Safely program; and

- establish a systematic strategy for evaluating the Share the Road Safely program's initiatives that makes greater use where practical of DOT's experience in designing and evaluating information dissemination programs to enhance highway safety.

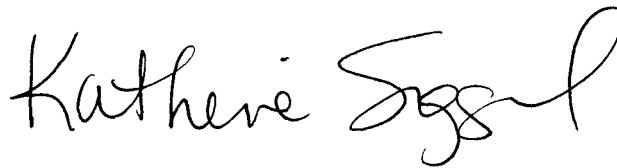
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## Agency Comments and Our Evaluation

DOT officials reviewed a draft of this report and generally agreed with our recommendations. They also made some technical comments that we have incorporated into this report as appropriate.

We are sending copies of this report to congressional committees and subcommittees with responsibilities for transportation and the Secretary of Transportation. We will make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact either Robert White at [whitere@gao.gov](mailto:whitere@gao.gov) or me at [siggerudk@gao.gov](mailto:siggerudk@gao.gov). Alternatively, we may be reached at (202) 512-2834. Key contributors to this report were Sally Gilley, Brandon Haller, Octavia Parks, Jason Schwartz, and Susan Michal-Smith.



Katherine Siggerud  
Acting Director, Physical Infrastructure Issues

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