



**U.S. Department  
of Transportation**

**Federal Motor Carrier  
Safety Administration**

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**THE COMPREHENSIVE SAFETY ANALYSIS  
2010 PHASE I RESULTS REPORT TO  
CONGRESS**

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## Executive Summary

The Comprehensive Safety Analysis (CSA) 2010 is a major initiative of the Federal Motor Carrier Safety Administration (FMCSA) to improve the effectiveness of the Agency's compliance and enforcement programs. The ultimate goal is to achieve a greater reduction in large truck and bus crashes, injuries, and fatalities by more efficiently using the resources of FMCSA and its State partners.

In February 2008, FMCSA launched a two-phase, 30-month field test to assess the validity, efficiency, and effectiveness of the CSA 2010 operational model. Senate Report 111-69 accompanying the Transportation, Housing and Urban Development, and Related Agencies Appropriations Bill, 2010 (P.L. 111-117, division A), requests FMCSA to

*... submit a report to the House and Senate Committees on Appropriations by March 15, 2010, regarding the results of phase I of the pilot and any preliminary results of phase II. The report should also include an update to the spend plan required in fiscal year 2009.*

This document reports results for Phase I and preliminary results for Phase II of the test in terms of both improved efficiency and effectiveness, and updates the Agency's CSA 2010 Spend Plan.

### Background

The FMCSA's current safety and compliance programs improve and promote commercial motor vehicle (CMV) safety; however, there are significantly more motor carriers than there are resources available to assess them. By reengineering core assessment and enforcement processes, CSA 2010 will improve both efficiency and effectiveness, optimizing the use of State and Federal resources available for CMV safety. Among the major changes that it is making in Agency programs, CSA 2010 is introducing the following:

- **New Safety Measurement System (SMS) to replace FMCSA's current Motor Carrier Safety Status Measurement System (SafeStat).** The SMS is enabling FMCSA and State partners to more efficiently and effectively identify motor carriers and drivers requiring FMCSA attention. In quantifying safety performance, the SMS assesses individual motor carriers on a much expanded list of safety conditions and in seven Behavioral Analysis Safety Improvement Categories (BASICS): Unsafe Driving; Fatigued Driving (Hours of Service); Driver Fitness; Controlled Substances and Alcohol; Vehicle Maintenance; Cargo-Related; and Crash Indicator. These measures provide a fuller, more complete picture of individual carrier safety performance.
- **New interventions process to augment labor-intensive Compliance Reviews (CR).** The CSA 2010 is employing an array of interventions aimed at reaching more motor carriers and influencing them to change unsafe behavior early on. These interventions include the following means of contacting and warning carriers of the government's awareness of their safety records: Warning Letters; Targeted Roadside Inspections;

Offsite Investigations; Onsite Focused Investigations; and Onsite Comprehensive Investigations.<sup>1</sup> In addition, CSA 2010 interventions include a number of post-investigation follow-on actions: Cooperative Safety Plans (CSP); Notices of Violation (NOV); Notices of Claim (NOC); and Out-of-Service (OOS) Orders.

- **New approach to Safety Fitness Determination (SFD).** Ultimately, FMCSA is seeking to issue safety ratings based on current safety performance as measured during roadside inspections, crash data, and other enforcement data rather than on acute or critical violations discovered during a CR. This SFD approach being considered will allow the Agency to assess the safety fitness of a greater segment of the motor carrier industry. The FMCSA will issue a Notice of Proposed Rulemaking (NPRM) to revise its safety fitness standards under Part 385 of Title 49, Code of Federal Regulations. The FMCSA will roll out CSA 2010 in calendar year 2010 with the new SFD to be completed in 2011.

## **Operational Model Test Results**

### Phase I

Phase I of the field test involved about 50 percent of the motor carriers and field resources in each of four States (Colorado, Georgia, Missouri, and New Jersey). Carriers in the test group in each State were assessed using the SMS and received the new CSA 2010 interventions; whereas those in the non-test group in each State were measured using the current SafeStat measurement system and received CRs. This start-up phase applied the new interventions for three of the seven CSA 2010 BASICS – Unsafe Driving, Fatigued Driving, and Vehicle Maintenance – and emphasized the application and testing of the Offsite Investigation and CSP. Since only three BASICS were tested in Phase I, it did not include SafeStat A or B motor carriers<sup>2</sup>. Results for Phase I demonstrated the following:

- The CSA 2010 test group reached 44 percent more carriers compared to the non-test group.
- Sixty-two percent of investigations in the test group included some type of follow-on action with the carrier to address safety deficiencies – such as a CSP, NOV, or NOC – compared with 32 percent in the non-test group.

### Phase II

Phase II of the field test began in October 2008 and incorporates CSA 2010 interventions for all seven BASICS. This phase also includes SafeStat A and B motor carriers, safety ratings for test group carriers in accordance with the current rating process, and driver enforcement for egregious violations.

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<sup>1</sup> The CSA 2010 Onsite Comprehensive Investigation is similar to the traditional CR, with the addition of identifying the cause of safety problems to facilitate corrective action.

<sup>2</sup> SafeStat A and B carriers are considered high-risk and under Section 4138 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (P.L. 109-59), Congress mandates a compliance review be conducted when a carrier is rated category A or B for 2 consecutive months.

In June 2009, two additional States joined the test – Minnesota and Montana – followed by Kansas in September, Maryland in October, and Delaware in November. In these States, 100 percent of motor carriers are subject to the CSA 2010 interventions and all field personnel employ the CSA 2010 methodology. Although adding these 100-percent States was not in the original test design, as the test progressed, the Agency realized the need to fully assess the new model in a field environment to identify potential operational issues. The data presented in the report do not include any 100-percent-State data. Preliminary results for Phase II indicate the following:

- As in Phase I, the test group in Phase II has reached approximately 37 percent more carriers than the non-test group.<sup>3</sup>
- The CSA 2010 has conducted motor carrier investigations with fewer resources, demonstrating a 52 percent increase in the number of investigations per safety investigator.
- Forty-eight percent of test group investigations included a follow-on action with the carrier to address safety deficiencies, compared with 33 percent in the non-test group.

### CSA 2010 Effectiveness

In addition to the efficiency results cited above, the CSA 2010 field test is yielding promising results in terms of increased effectiveness of FMCSA compliance and enforcement activities. Key findings include the following:

- Approximately 50 percent of the 5,600 motor carriers that have received Warning Letters have logged on to CSA 2010's information system to view their individual carrier safety performance data. This suggests that the Warning Letters are encouraging carriers to be more aware of safety deficiencies earlier.
- Preliminary indications are that CSA 2010 interventions are resulting in a greater improvement in carrier safety performance in all behavioral areas for which there is sufficient data, particularly Unsafe Driving and Fatigued Driving, which, along with the Crash Indicator BASIC, have the strongest relationship to crash risk among the BASICs.
- The CSA 2010's SMS offers a better predictor of motor carriers that pose a higher crash risk. Carriers that the SMS identifies as high risk have both higher crash rates and 68 percent more crashes overall than SafeStat A and B carriers.

### **Conclusions**

When the field test is completed at the end of June 2010, FMCSA will build on these positive results as it rolls out a strategic nationwide implementation plan. This plan will include replacing SafeStat with the SMS, revising the Inspection Selection System used by roadside inspectors to incorporate SMS results rather than SafeStat scores, and augmenting the CR

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<sup>3</sup> Phase I reached a greater number of additional carriers compared to the non-test group due to the volume of CSA 2010 Warning Letters that were issued during startup of the field test.

process with the new CSA 2010 interventions using a phased-in approach. When promulgated, FMCSA's new SFD rulemaking will further implementation by basing safety fitness determinations on carriers' overall safety performance and assessing the safety fitness of a far broader segment of the industry.

## Purpose and Scope of Report

The Comprehensive Safety Analysis (CSA) 2010 is a major Federal Motor Carrier Safety Administration (FMCSA) initiative to improve the effectiveness of the Agency's compliance and enforcement programs. The ultimate goal is to achieve a greater reduction in large truck and bus crashes, injuries, and fatalities by more efficiently using the resources of FMCSA and its State partners. In contrast to the Agency's current operational model, CSA 2010 is characterized by a new measurement system, a broader array of interventions with motor carriers, and a new approach to Safety Fitness Determination (SFD).

In February 2008, FMCSA launched a 30-month field test to assess the validity, efficiency, and effectiveness of the CSA 2010 operational model. This test is being conducted in two phases. It will conclude at the end of June 2010, and the Agency will begin rolling out CSA 2010 nationwide later in 2010.

Senate Report 111-69 accompanying the Transportation, Housing, and Urban Development, and Related Agencies Appropriations Bill, 2010 (P.L. 111-117, division A), requests FMCSA to

*... submit a report to the House and Senate Committees on Appropriations by March 15, 2010, regarding the results of phase I of the pilot and any preliminary results of phase II. The report should also include an update to the spend plan required in fiscal year 2009.*

In response, this report provides a brief overview of CSA 2010 program elements, describes the test design and the activities to date, and reports preliminary test results in terms of both improved efficiency and effectiveness. It should be noted that the findings presented herein are independent of a separate operational model test evaluation currently being performed by the University of Michigan Transportation Research Institute (UMTRI). The remaining sections of this report are as follows:

- Background
- Overview of Operational Model Test
- Test Results
- Summary and Conclusions
- Appendix A. CSA 2010 Spend Plan
- Appendix B. Abbreviations and Acronyms

After listening carefully to all stakeholders including Operational Model test participants, enforcement staff, and industry safety experts, FMCSA revised the schedule for the rollout of CSA 2010. The rollout schedule is designed to methodically step Federal and State enforcement staff, as well as the motor carrier industry, into the program one stride at a time – increasing the safety benefits through better understanding and increased accountability for good safety performance. As a result of the additional time to assess and incorporate these inputs for this revision, the Agency was unable to submit the report by March 15, 2010, as requested by Senate Report 111-69.

## Background

The FMCSA's current safety and compliance programs improve and promote Commercial Motor Vehicle (CMV) safety; however, there are significantly more motor carriers than there are Federal and State resources available to intervene in cases of noncompliance. Currently, the Agency regulates approximately 725,000 interstate and foreign-based truck and bus companies. The current means of reaching these carriers, the Compliance Review (CR), is effective but labor-intensive. Using the CR, FMCSA is able to reach only about 2 percent of the carrier population annually.

The goal of CSA 2010 is to bring about a greater reduction in large truck and bus crashes, and the resulting injuries and fatalities, by reaching more carriers that could pose a safety problem. By reengineering the core FMCSA assessment and enforcement processes, CSA 2010 will improve both efficiency and effectiveness, optimizing the use of State and Federal resources available for CMV safety. Among the major changes that it is making in Agency programs, CSA 2010 is introducing the following:

- **New Safety Measurement System (SMS) to replace FMCSA's current Motor Carrier Safety Status Measurement System (SafeStat).** The SMS is enabling FMCSA and State partners to more efficiently and effectively identify carriers and drivers requiring FMCSA attention and their specific safety problems.
- **New interventions process to augment labor-intensive CRs.** The CSA 2010 is employing an array of interventions aimed at reaching more motor carriers and changing unsafe behavior as early as possible when safety deficiencies are identified.
- **New approach to Safety Fitness Determination.** Ultimately, FMCSA is seeking to issue safety ratings based on current safety performance rather than on acute or critical violations found during a CR, which is the process today. This approach requires rulemaking and is not a component of the planned CSA 2010 rollout in 2010.

### Safety Measurement System

The role of the SMS is to identify, monitor, and quantify the safety performance of carriers and drivers with unsafe behaviors that lead to crashes. In contrast to today's measurement system, SafeStat, the SMS uses all safety-based roadside inspection results and crash reports to identify safety deficiencies. As a result, the SMS utilizes far more inspection violation data to assess carrier and driver safety. In quantifying safety performance, the SMS assesses the safety of individual motor carriers in seven Behavioral Analysis Safety Improvement Categories (BASICS) including the following:

- Unsafe Driving
- Fatigued Driving (Hours of Service)
- Driver Fitness
- Controlled Substances and Alcohol
- Vehicle Maintenance
- Cargo-Related
- Crash Indicator



An additional component of the SMS assesses and monitors the safety performance of individual CMV drivers. These assessments are based on drivers' inspections and crash performance across multiple employers. Enforcement personnel are employing this information in the CSA 2010 field test during carrier investigations.

### **CSA 2010 Interventions**

Interventions are actions FMCSA or its State partners take to address motor carrier or driver safety deficiencies as indicated by the SMS. Currently, FMCSA relies solely on CRs to determine a motor carrier's compliance, to identify the appropriate follow-on enforcement actions, and to assess safety fitness. In contrast, CSA 2010 incorporates an array of interventions based on the overall level of safety performance and the specific safety problem.

Under CSA 2010, FMCSA has developed a range of new interventions that will enable the Agency to reach more motor carriers earlier and to focus on specific unsafe behaviors. As in the current enforcement model, interventions will continue to assess carrier compliance with FMCSA regulations. However, CSA 2010 interventions will also seek to identify the root causes of safety problems. By doing so, FMCSA believes it will facilitate the necessary corrective actions. This targeted, comprehensive approach to interventions will enable the Agency to better address motor carrier safety deficiencies before the carrier becomes a high crash risk.

The CSA 2010 interventions include the following:

#### *Carrier Contacts*

- Warning Letter
- Targeted Roadside Inspection
- Offsite Investigation
- Onsite Focused Investigation
- Onsite Comprehensive Investigation<sup>4</sup>

#### *Follow-on Actions*

- Cooperative Safety Plan (CSP)
- Notice of Violation (NOV)
- Notice of Claim (NOC)
- Out-of-Service (OOS) Order

During the operational model test, FMCSA is addressing the highest risk motor carriers through Onsite Focused and Onsite Comprehensive Investigations.

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<sup>4</sup> The CSA 2010 Onsite Comprehensive Investigation is similar to the traditional CR, with the addition of identifying the root cause of safety problems to facilitate corrective action.

## **Safety Fitness Determination Rulemaking**

While not a required component of the rollout plan for 2010, FMCSA is developing an SFD NPRM that would enhance the CSA 2010 operational model. This new SFD methodology is based on overall carrier safety performance, taking into account virtually all FMCSA safety regulations, rather than just acute or critical violations found during a CR. Under the new methodology, FMCSA would give an “Unfit” SFD to carriers with the poorest on-road safety performance or egregious violations found during CSA 2010 interventions. The SFD is important because it gives FMCSA a new standard to shut down unsafe operators.

This SFD approach, described in the upcoming NPRM, would allow the Agency to assess the safety fitness of a greater segment of the motor carrier industry than are currently rated annually. Moreover, this rulemaking is important for the Agency's “Open – Unacceptable Response” status with regard to the National Transportation Safety Board’s recommendation H-99-6. This recommendation states that FMCSA should “Change the safety fitness rating methodology so that adverse vehicle and driver performance-based data alone are sufficient to result in an overall unsatisfactory rating for the carrier.”

In advance of the SFD rulemaking, as part of the planned rollout in 2010, FMCSA will issue safety ratings to motor carriers using the current rating system in Part 385 of Title 49 of the Code of Federal Regulations based on the results of CSA 2010 interventions.

## **Overview of Operational Model Test**

The FMCSA is conducting the CSA 2010 field test in two phases. Phase I of the test involved about 50 percent of the motor carriers and field resources in four States (Colorado, Georgia, Missouri, and New Jersey). In each State, these carriers were placed into a test or non-test group. Those in the test group were assessed using the SMS and received the new CSA 2010 interventions, while those in the non-test group were measured using SafeStat and received CRs. This start-up phase applied the new interventions for three of the seven CSA 2010 BASICs – Unsafe Driving, Fatigued Driving, and Vehicle Maintenance – and emphasized the application and testing of the Offsite Investigation and CSP. Since only three BASICs were tested in Phase I, it did not include SafeStat A or B motor carriers or issue safety ratings.

Phase II of the field test began in October 2008 and incorporates all CSA 2010 BASICs. This phase also includes SafeStat A and B motor carriers, safety ratings for test group carriers in accordance with the current rating process, and driver enforcement for egregious violations. In June 2009, two additional States (Minnesota and Montana) joined the test, followed by Kansas in September, Maryland in October, and Delaware in November. In these States, 100 percent of motor carriers are included and all field personnel employ the CSA 2010 methodology. Although adding these 100 percent States was not in the original test design, as the test progressed the Agency realized the need to fully assess the new model in a field environment to identify potential operational issues.

A Federal-State Working Group (FSWG) is governing the daily operations of the CSA 2010 field test. Convened in February 2008, this working group identifies, documents, and addresses operational problems that arise. It also facilitates a process for continuous improvement of the operational model and its consistent application across States. Members of the FSWG include State partners and program managers, FMCSA headquarters personnel, and CSA 2010 technical team leads. The FSWG also includes a representative from UMTRI, the third-party evaluator that will ultimately report on the efficiency and effectiveness of the overall CSA 2010 operational model.

## Test Results

As shown below, the preliminary results of the CSA 2010 field test indicate that the new operational model is enabling FMCSA to contact more carriers earlier to address safety problems and is increasing the efficiency and effectiveness of enforcement and compliance efforts.

The following sections present the activities conducted during each test phase and preliminary results in terms of improved effectiveness of compliance and enforcement activities for the original four test States (Colorado, Georgia, Missouri, and New Jersey).<sup>5</sup>

### Phase I Activities

Table 1 shows the completed motor carrier activities carried out in Phase I.

**Table 1. Phase I Completed Motor Carrier Activities from  
February 2008 to September 2008**

Activity	Test Group	Non-test Group
Carrier Count	32,709	46,028
Carriers Reached	2,349	1,305
Warning Letters Sent <sup>6</sup>	2,044	484
Investigations Conducted	552	866*
Offsite	481	Not applicable
Onsite Focused	60	Not applicable
Onsite Comprehensive/CR	11	866*
Follow-on Actions	356	278
NOC	46	278
NOV	9	Not applicable
CSP	301	Not applicable
<b>Investigations with Follow-on Action</b>	<b>341 (62%)</b>	<b>278 (32%)</b>

\*Includes all SafeStat A and B motor carriers.

Source: Motor Carrier Management Information System (MCMIS), October 2009; Enforcement Management Information System (EMIS), October 2009; Comprehensive Safety Information (CSI) System, October 2009.

As the startup phase of the field test, Phase I was designed to assess the overall feasibility of using the SMS and CSA 2010 interventions in a field environment. Since this phase did not include all BASICS or A and B motor carriers, and involved less than half of the States' resources, it does not afford a full assessment of the operational model's benefits. Moreover, the resources dedicated to the test and non-test groups were not equal and were not fully recorded until Phase II. Nevertheless, Table 1 shows the following:

<sup>5</sup> Test results for the additional 100 percent States recently added to the test are not included as results are preliminary and still under review.

<sup>6</sup> For the non-test group, Warning Letter refers to those letters issued to carriers under the Performance and Registration Information System Management (PRISM) program.

- The CSA 2010 reached 44 percent more carriers compared to the non-test group in Phase I.
- Sixty-two percent of investigations in the test group included some type of follow-on action with the carrier to address safety deficiencies, such as a CSP, NOV, or NOC, compared with 32 percent in the non-test group.

As intended, Phase I was useful to FMCSA in assessing the viability of the Offsite Investigation and CSP. In particular, although the Agency found that the Offsite Investigation was not conducive to the Fatigued Driving BASIC due to the amount of documentation required from the carrier, its use for other BASICS has proven to be efficient. The Agency has generated enforcement actions as a result of these investigations.

## **Phase II Activities**

With Phase II, FMCSA has made CSA 2010 fully operational as part of the field test. Phase I and Phase II tested the ability to assess carrier safety performance and prioritize limited FMCSA resources.

The SMS thresholds for each BASIC were selected to target the population of carriers with known regulatory compliance issues, as well as higher than average crash rates. Therefore, such thresholds allow FMCSA to focus its limited enforcement resources on those carriers that pose the greatest risk to public safety.

The design of the CSA 2010 Operational Model also allows the Agency enforcement staff to perform more interventions, contact more carriers and reach further into the industry population than under the current model. This will be fully realized when the additional investigative support resources are made available.

The model as a whole is designed to extend FMCSA's reach beyond the carriers traditionally seen under the current enforcement model, and therefore to raise the bar for safety performance. Continued improvement of the efficiency and effectiveness of the model or increased resources would, in turn, allow FMCSA to reach further into the carrier population the Agency currently does not reach.

Phase I testing highlighted this need for additional resources, basically one FTE per State, to assist the Inspectors and Auditors with investigative support to carry out administrative work that allows Inspectors and Auditors to focus their specialized talent on investigations. The test model results, as shown in Table 2, include these additional investigative support resources acquired initially through a contract.

**Table 2. Phase II Completed Motor Carrier Activities as of February 19, 2010**

Activity	Test Group	Non-test Group
Carrier Count	35,671	45,788
<b>Carriers Reached *</b>	2,846	2,081
Warning Letters Sent <sup>7</sup>	1,519	779
Investigations Conducted	1,563	1,621
Off-site	468	Not applicable
On-site Focused	726	Not applicable
On-site Comprehensive/ CR	369	1,621
Follow-on Actions	753	536
NOC	208	536
NOV	17	Not applicable
CSP	528	Not applicable
<b>Investigations with Follow-on Action**</b>	<b>744</b>	<b>536</b>
Percent of Total Investigations	47.6%	33.1%

\*Note: Carriers may have received more than one Intervention (i.e. Warning Letter and an Off-Site Investigation) during this period. Therefore, totals do not add.

\*\*Note: A carrier could have received multiple follow-on actions per investigation. Therefore, totals do not add. Source: MCMIS, February 2010; EMIS, February 2010; CSI, February 2010.

Preliminary results for Phase II indicate the following:

- As in Phase I, the test group in Phase II has reached approximately 37 percent more carriers than the control group.
- In Phase II, the test group conducted 50 percent more motor carrier investigations per investigator than the non-test group.<sup>8</sup> Investigators attribute efficiency gains to focused investigations that evaluate compliance where SMS demonstrates the carrier's on-road performance to be deficient, to off-site investigations that save the time of travel to a carrier place of business, and, importantly, to support provided by a CSA 2010 Program Assistant in each test State. This additional investigative resource allowed investigators to manage their increased caseload of multiple investigations.
- Forty-eight percent of test group investigations included a follow-on action with the carrier to address safety deficiencies, compared with 33 percent in the non-test group.
- The FMCSA and its State partners will continue to reach more carriers and realize investigation efficiencies as the CSA 2010 operational model rolls out nationally. The number of investigations is not expected to rise immediately by the margins above however, because FMCSA, its State partners, and the regulated community will require some time to adjust to the new compliance and enforcement model.

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<sup>8</sup> Investigations per FTE compares CSA 2010 Offsite, On-site Focused and On-site Comprehensive Investigations on test group carriers per FTE to ratable Compliance Reviews on non-test group carriers per FTE.

## Operational Model Effectiveness

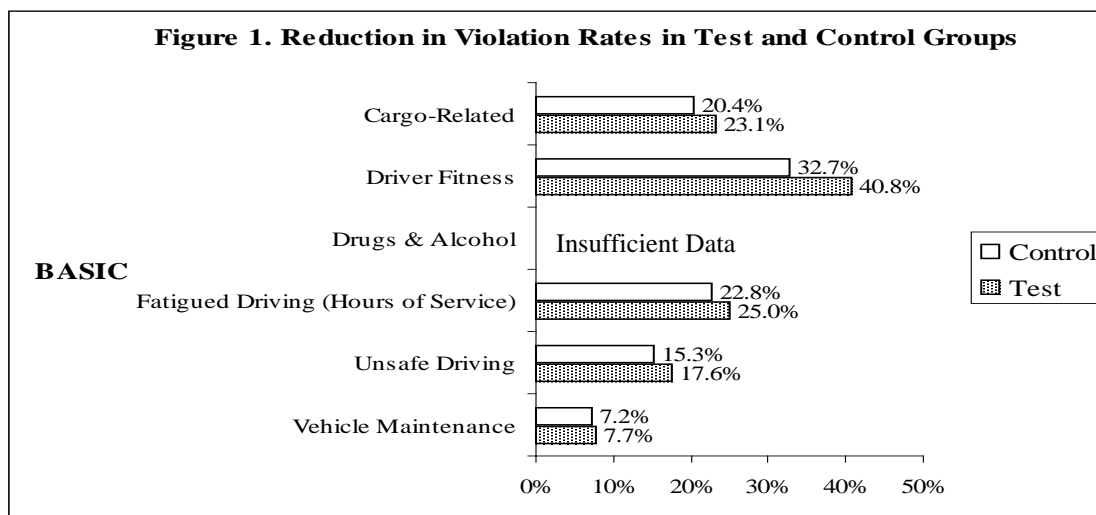
In addition to the efficiency results cited above, the CSA 2010 field test is yielding promising results in terms of increased effectiveness of FMCSA compliance and enforcement activities. The following are some key findings:

### Response to Warning Letters

To date, approximately 5,600 motor carriers have received CSA 2010 Warning Letters during the operational model test. Of these carriers, nearly 50 percent have logged on to CSA 2010's information system, Comprehensive Safety Information, to view their safety performance data. This suggests that the Warning Letters are encouraging carriers to take steps to improve their performance, offering an effective and efficient means of reaching carriers to change unsafe behavior early in the intervention process. The majority of these carriers would not have been contacted under FMCSA's current compliance and enforcement program.

### Effect of Interventions on Motor Carrier Safety Performance

Preliminary results suggest that CSA 2010 interventions are having a positive impact on motor carrier performance in critical safety areas. Figure 1 compares the reduction in the rate of violations found during roadside inspections for two groups: (1) test group carriers, which have received a CSA 2010 intervention, and (2) control group carriers, a comparable set of carriers subject to the existing process, some of which received a CR.<sup>9</sup>



Source: MCMIS, November 2009; CSI, November 2009.

<sup>9</sup> Efficiency measures, such as completed activities in Tables 1 and 2, compare counts of activities performed by enforcement personnel on test and non-test groups of carriers. The non-test group includes two types of carriers: (1) the control group; and (2) carriers excluded from effectiveness analysis because they possess characteristics likely to confound fair comparison, such as carriers that received a CR immediately prior to the operational model test. Effectiveness measures, such as the reduction in violation rate shown in Figure 1, compare results observed in test and control groups of carriers. Violation rate is the sum of all relevant violations found per relevant vehicle or driver inspection across test or control populations. A lower rate implies fewer violations were found, on average, from inspections relevant to the corresponding BASIC. The figure shows the percentage reduction in violation rate from the 12-month period immediately prior to the investigation to the 12-month period immediately after.

As shown in Figure 1, CSA 2010 interventions are resulting in a greater reduction in violation rates, suggesting positive change in carrier safety performance in all BASICS for which there is sufficient data. The improvements in Unsafe Driving and Fatigued Driving are of particular significance, as these two BASICS, in addition to the Crash Indicator BASIC, have been shown to have the strongest relationship to crash risk. In addition to these results, a third party, UMTRI, will conduct a thorough evaluation of CSA 2010 Operational Model Test results when the test concludes.

SMS Identification of High-Risk Motor Carriers

Along with employing the new SMS in the operational model test, FMCSA has used the system to identify a group of high-risk carriers and compare it with the A and B list generated by the current measurement system, SafeStat, for analytical purposes. Table 3 shows the results.

**Table 3. Comparison of SMS High-Risk Carriers with SafeStat A and B Carriers**

	<b>SMS High-Risk Carriers</b>	<b>SafeStat A and B Carriers</b>
Crash Rate*	6.35	6.16
Number of Crashes	13,038	7,739
Number of Carriers	6,945	6,656

\*Crashes per 100 power units.

Source: Calendar year 2007 crash data from CSI, April 2009.

As indicated in Table 3, the motor carriers that the SMS has identified as high risk have both higher crash rates and more crashes overall (68 percent more) than the SafeStat A and B carriers. Moreover, the SMS identifies at least as many high-risk carriers as does SafeStat. This analysis indicates that the new SMS methodology offers a better predictor of carriers that pose a higher crash risk to the public.



## Summary and Conclusions

Preliminary results of the operational model test suggest that CSA 2010 offers a more efficient and effective means of identifying and intervening with motor carriers that have demonstrated safety performance issues. Ultimately, this should lead to reduced crashes, injuries, and fatalities on the Nation's highways. In particular, the test is demonstrating the following:

- The CSA 2010 reaches 37 percent more carriers with safety deficiencies given the same number of resources.
- The CSA 2010 Warning Letter is encouraging carriers to recognize and address their safety deficiencies earlier.
- The CSA 2010 interventions are having a positive impact on motor carrier performance in all behavioral areas for which there is sufficient data, particularly Unsafe Driving and Fatigued Driving, which are significantly related to crash risk.
- The CSA 2010's SMS offers a better assessment of carrier safety performance and a more effective means of identifying motor carriers that pose a high crash risk.

Upon completion of the field test at the end of June 2010, FMCSA will build on these positive results as it rolls out a strategic nationwide implementation plan. This plan will include the following:

- Replacing SafeStat with the SMS in 2010.
- Revising the Inspection Selection System used by roadside inspectors to incorporate SMS results rather than SafeStat scores in 2010.
- Sending Warning Letters in 2010.
- Augmenting the CR process with the new CSA 2010 interventions using a phased approach in 2011 with Offsite Investigation, and Onsite Focused Investigation. Interventions will also include follow-on actions: CSPs, NOVs, NOCs, and OOS Orders.

A new Safety Fitness Determination rulemaking would further this implementation plan by basing safety fitness determinations on a broader array of motor carrier safety performance data, enabling the Agency to assess the safety fitness of a larger segment of the industry.

## Appendix A. CSA 2010 Spend Plan

The following table updates the information provided in FMCSA’s June 2009 Report to Congress pursuant to the explanatory statement accompanying the Transportation, Housing and Urban Development, and Related Agencies Appropriations Act, 2009 (P.L. 111-8, division D). The table reflects FMCSA’s CSA 2010 appropriations for FY 2009 and FY 2010. The FY 2011 budgeted costs reflect the President’s budget request.

The FY 2011 spend plan supports the revised deployment time line which includes:

- Replacing SafeStat with SMS to identify high risk carriers and form the basis for prioritizing and assigning interventions in December 2010.
- Issuing Warning Letters nationwide in December 2010.
- Delivering the updated ISS Algorithm based on CSA 2010 BASICS to the roadside for inspection selection.
- The CSA 2010 Intervention training and implementation during calendar 2011.
- The current nine test states continuing to implement all the elements of the CSA 2010 operational model.

**Table A-1. CSA 2010 Estimated Costs through Deployment**

Item	FY 2009	FY 2010	FY2011
Program Planning/Deployment Management <sup>10</sup>	\$ 625,000	\$ 985,500	\$1,262,000
Measurement System	\$ 657,000	\$ 100,000	\$1,484,000
Interventions Development	\$ 726,000	\$ 652,500	\$290,000
Outreach and Communication	\$ 935,000	\$ 641,750	\$530,000
Information Technology <sup>11</sup>	\$ 704,000	\$1,012,500	\$1,272,000
Operational Model Test and Mentoring <sup>12</sup>	\$1,009,000	\$1,392,750	\$1,200,000
Training <sup>13</sup>	\$ 590,000	\$ 290,000	\$0
Field Workforce Transition Analysis	\$ 156,000	\$ 50,000	\$0
Crash Accountability	\$ 298,000	\$ 100,000	\$212,000
Reauthorization Technical Support	\$0	\$ 50,000	\$50,000
Inspection Selection System Test	\$0	\$ 25,000	\$0
<b>Total</b>	<b>\$5,700,000</b>	<b>\$5,300,000</b>	<b>\$6,300,000</b>

As shown in the table, deployment of CSA 2010 will involve the following estimated costs:

<sup>10</sup> Includes travel expenses.

<sup>11</sup> Costs represent information technology (IT) support for the operational model test and beyond and do not reflect IT modernization/Creating Opportunities, Methods, and Processes to Secure Safety (COMPASS) deployment costs, which are included in the COMPASS program.

<sup>12</sup> Includes travel expenses for the FSWG members to mentor non test states during nationwide deployment.

<sup>13</sup> Training will be funded and delivered by the National Training Center (NTC) in 2011.

### Program Planning/Deployment Management

This includes contractor support for the development, management, and delivery of a plan for implementation of CSA 2010. It also includes coordination activities to ensure that CSA 2010 is fully supported throughout FMCSA Headquarters Program Offices and is deployed consistently across FMCSA Divisions (Field) and State partner organizations through the conduct of field workshops and webinars that will supplement training and making further enhancements in response to public comment.

### Measurement System

This effort includes the continued development and enhancement by the Agency's contractor of the SMS throughout the operational model test and nationwide implementation. In particular, it includes all efforts necessary to replace FMCSA's current measurement system, SafeStat, with the SMS in the fall of 2010. In 2011, the program will cover the cost of maintaining the SMS.

### Interventions Development

The FMCSA is fine-tuning its broad array of motor carrier interventions and will complete this effort, along with the electronic Field Operations Training Manual, by rollout.

### Outreach and Communication

This activity includes contractor support of the continuation of public listening sessions through Web casts to obtain stakeholder feedback on CSA 2010 development and implementation. It also includes the execution with contractor support of a strategic approach for communication and outreach to partners and stakeholders the changes that are coming through deployment of CSA 2010 through 2011.

### Information Technology

In coordination with FMCSA's IT modernization effort, COMPASS, the Agency is developing the IT systems necessary to support deployment of the CSA 2010 operational model. The CSI system will continue to support the nine test States until nationwide deployment of the Mobile Client in 2011.

### Operational Model Test and Mentoring

This effort supports the conduct of the CSA 2010 field test through the end of June 2010 and support of the nine test States during the nationwide deployment of the operational model including funding of the eight contracted program analysts in the nine test States.

## Training

This activity includes training for the operational model test States, as well as a program to train all Federal and State safety investigators in CSA 2010 processes and procedures. Training for interventions rollout in 2011 is reflected in the NTC budget.

## Field Workforce Transition Analysis

Through this effort, FMCSA is implementing plans to facilitate the transition of its field workforce from the current business model to CSA 2010. These plans will address the identification of, and training for, new skill sets required by the new operational model.

## Crash Accountability

This activity involves an analysis and plan to determine the feasibility of using police accident reports to determine accountability for all motor carrier crashes before they are entered into the SMS. Although the preliminary results are positive, the resources for implementing crash accountability will not be in place in 2010.

## Reauthorization Technical Support

This activity is for the technical analysis to support draft CSA 2010 reauthorization proposals.

## Inspection Selection System Test

This activity will provide for effectiveness testing of the algorithm for the roadside inspection selection system, which under CSA 2010 will be based on the new Safety Measurement System instead of SafeStat.

## **Appendix B. Abbreviations and Acronyms**

BASICs	Behavioral Analysis Safety Improvement Categories
CSA	Comprehensive Safety Analysis
CMV	Commercial Motor Vehicle
COMPASS	Creating Opportunities, Methods, and Processes to Secure Safety
CR	Compliance Review
CSI	Comprehensive Safety Information
CSP	Cooperative Safety Plan
EMIS	Enforcement Management Information System
FMCSA	Federal Motor Carrier Safety Administration
FSWG	Federal-State Working Group
FTE	Full-Time Equivalent
IT	Information Technology
MCMIS	Motor Carrier Management Information System
NOC	Notice of Claim
NOV	Notice of Violation
NPRM	Notice of Proposed Rulemaking
NTC	National Training Center
OOS	Out of Service
PRISM	Performance and Registration Information Systems Management
SafeStat	Motor Carrier Safety Status Measurement System
SFD	Safety Fitness Determination
SMS	Safety Measurement System
UMTRI	University of Michigan Transportation Research Institute