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Federal Motor
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Administration

Proposed Rule Regulatory Evaluation
Initial Regulatory Flexibility Analysis

Carrier Safety Fitness Determination

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EXECUTIVE SUMMARY

As the Federal government agency responsible for commercial motor vehicle (CMV) safety, FMCSA must develop the most effective tools to identify unfit motor carriers. The purpose of this rulemaking is to revise the Safety Fitness Determination (SFD) process. Based on experience with the Safety Measurement System (SMS), the Agency believes that integration of on-road safety data into the SFD process would improve the evaluation of motor carriers and the identification of unfit motor carriers. Such integration is a longstanding recommendation of the National Transportation Safety Board (NTSB) and others. Under this proposal, unfit determinations could be based on a carrier's on-road safety data alone.

In this rulemaking, FMCSA proposes to eliminate the current three-tier SFD rating system (i.e., satisfactory–conditional–unsatisfactory) in favor of a single determination of unfit. FMCSA's statutory requirement is to determine which owners or operators are "not fit" to operate on the Nation's roadways, and prescribe specific consequences for motor carriers found to be "not fit." By statute, such carriers are prohibited from operating in interstate commerce or transportation that affects interstate commerce.

The Agency's current SFD process in 49 CFR Part 385 is resource-intensive and reaches only a small percentage of motor carriers. Using data from inspections or investigations or both, FMCSA proposes to evaluate carriers monthly to determine if they failed two or more Behavioral Analysis and Safety Improvement Categories (BASICs) and thus should be proposed unfit. A motor carrier could (1) fail two or more BASICs based on on-road safety data from 11 or more inspections with violations; (2) have violations of the revised set of critical and acute regulations, identified through an investigation, that cause the motor carrier to fail two or more BASICs; or (3) two or more BASICs based on a combination of data from inspections and investigation results.

The failure standards for a proposed unfit SFD using only on-road safety data would require significantly more evidence of non-compliance than the thresholds SMS uses to prioritize a carrier for interventions. The Agency's proposed approach would ensure that only the worst performing motor carriers would be issued a proposed unfit determination based solely on on-road safety performance data, while striking a balance between the population identified and the ability of enforcement resources to handle the associated workload.

In addition, the proposed standard for an SFD would be set at an absolute value that would equate to higher percentile measures than those used in SMS for interventions. The proposed SFD would also require more inspections with violations for data insufficiency than SMS. In order to fail a BASIC based on on-road safety data, a motor carrier would have to meet or exceed the absolute failure standard for two BASICs established for its safety event group. Failure standards would be established in each BASIC for several safety event groups, which are based on the number of inspections. A carrier meeting or exceeding the failure standard in its safety event group would fail a BASIC.

Under the proposed SFD methodology, every month a carrier's performance would be compared to an absolute failure standard that would be set in regulation based on each safety event group. Because the absolute failure standard would not change from month to month, changes in another company's performance would not impact the motor carrier. The carrier's SFD measure reflects its own performance against the failure standard, not other carriers' performance.

The Agency considered options for failure standards based on absolute measures. These measures equate roughly to the 95th, 96th, 98th, and 99th percentiles for all carriers in SMS. In addition, before failing the BASIC, the carrier would have to have 11 or more inspections with violations in the previous 24-month period. The proposed failure standards for each BASIC, as calculated by analyzing inspections with violations, are presented in tables in the NPRM. This failure standard is equivalent to the absolute value that defines the worst 1 percent of motor carriers with 11 or more inspections with violations, which would be set in the final rule.

Proposed SFDs would also continue to result from investigations. For example, investigations may begin after receipt of a complaint alleging a substantial violation of a regulation is occurring, a crash report suggesting a substantial violation of a regulation occurred, or when a motor carrier's SMS BASIC percentiles meet or exceed intervention thresholds. The Agency proposes to use all of the investigation types used by the Agency during interventions—either an offsite focused, onsite focused, or an onsite comprehensive investigation. This approach would modify the Agency's current requirement for an onsite investigation in order to issue an SFD. Documentation supporting an unfit determination would be collected using existing enforcement guidelines and standards — including sampling methodologies.

If as the result of an investigation, a motor carrier is cited for a violation of an acute regulation associated with a BASIC, it would fail that BASIC. If a motor carrier is cited for a violation of a critical regulation with violations discovered in a minimum of 10 percent violation of the records examined, it would fail that BASIC. If a motor carrier failed two or more BASICs due to violations of the proposed critical or acute regulations, this would result in a proposed unfit determination. This proposed SFD methodology raises the safety standard above that used in the current process. Only one violation of a critical regulation, at a 10 percent or higher violation rate, would be required for a BASIC to fail, whereas, in the current process, two violations of critical regulations are generally required to fail a Factor.

As a result of its analysis and alternatives development, FMCSA proposes to alter the list of critical and acute regulations. Analysis by the Volpe National Transportation Systems Center for FMCSA compared the crash rates of motor carriers with violations of the existing list of critical and acute regulations to the crash rates of motor carriers with violations of the proposed list of critical and acute regulations. The revised, refined list of critical and acute regulations correlated to a higher crash rate. For the purpose of proposing unfit SFDs, the refined list of critical and acute regulations is an equally strong, if not a better, indicator of crash risk. The supporting analysis, "Estimating the

Safety Impact of Proposed Safety Fitness Determination (SFD) Criteria" (FMCSA, May, 2015) is included in the docket for this rulemaking.

Only during investigations would preventable crashes and drug and alcohol violations be used in an SFD. Because of both the small amount of on-road performance data involving drug and alcohol violations and that most violations occur at the carrier level, FMCSA believes it is best to only evaluate the Drug and Alcohol Compliance BASIC during investigations.

As described below, crash data could trigger a failure in a BASIC during the investigative process only if a certified safety investigator makes a "preventability determination."

This regulatory evaluation examines two options for failure standards used to identify motor carriers for a proposed unfit SFD. For Option 1, identification of unfit carriers under the proposed process uses failure standards equivalent to the measures that would place a motor carrier at the 95th percentile for the Unsafe Driving and HOS Compliance BASICs and the 98th percentile for the Driver Fitness, Vehicle Maintenance, and HM Compliance BASICs. For Option 2 (the Agency's preferred option), these failure standards are equivalent to measures based on the 96th and 99th percentiles, respectively. For example, a carrier at the 96th percentile in the Unsafe Driving BASIC has worse safety performance than 96 percent of carriers in that BASIC. Carriers that are identified at or above these failure standards would fail the BASIC.

After notice of a proposed unfit SFD has been served, a motor carrier would have various administrative proceedings available to it. Three different administrative proceedings would be available, two of which have not previously been available in the same form: 1) reviews for material errors in assigning a proposed unfit SFD; 2) reviews claiming unconsidered on-road performance inspection data; and 3) reviews after a motor carrier requests to operate under a compliance agreement.

Motor carriers that opt to remain in service but fail to significantly improve their safety performance within a set period of time under the compliance agreement—for example, achieve an appropriate level of compliance with the applicable regulations—would be required to cease operations. That is, the initial proposed unfit determination would be made final. After the final unfit determination, a motor carrier would be required to provide evidence of corrective action when requesting to resume operations.

The revised SFD methodology and rule would be used to identify and take legal action against unfit motor carriers that have failed to implement and maintain adequate safety management controls for achieving compliance with the FMCSRs and HMRs.

Data from 2011 are used to compare carriers identified under the current and proposed SFD processes. For each carrier identified under either process, the key metric is the number of crashes it has over the next twelve months—starting from the point of what would have been its (hypothetical) final unfit date had it actually been identified using the proposed methodologies.

Under this proposal's preferred Option 2, the Agency estimates it would have proposed as unfit 3,056 motor carriers in 2011, about 2.5 times the number of proposed unfit SFDs relative to 1,232 under the current process, known as proposed unsatisfactory safety ratings. FMCSA estimates that the 3,056 proposed unfit SFD motor carriers would consist of:

- 262 motor carriers based solely upon on use of inspection data,
- 2,674 motor carriers based upon the result of investigations, and
- 120 motor carriers based on a combination of inspection and investigation data.

FMCSA then evaluated how many of these 3,056 motor carriers would have been in active service 12 months following a hypothetical final unfit determination in 2011 and found that most, 2,822 carriers, were active. The actual crash involvement and crash rates experienced by this population of 2,822 carriers over the course of the 12 months after the hypothetical final unfit determination provides a baseline and means of estimating benefits had these carriers been identified by the proposed process. More details about the benefits can be found in Section 2.

With the failure performance standards at or above the 96th and 99th percentiles—application of the proposed method to the year 2011 data identified 1,805 additional poor-performing carriers beyond those identified by the current SFD process, while the current SFD process identified 106 carriers that the proposed SFD method would not (1,017 carriers were identified by *both* the current and proposed methods). *On net*, of the 1,699 of these 1,941 carriers – the subset of carriers which remained in active operation during the twelve months following the date upon which each would have received a final unfit determination under the proposed rule – the switch from the current to the proposed method identifies carriers that were involved in 41 more fatal crashes, 508 more injury crashes, and 872 more tow-away crashes in those subsequent 12 months. The crash reduction elicited from these carriers constitutes the *benefits* of the rule. A Venn diagram representing identification under the current and proposed SFD for Option 2 is presented in Figure 1 at the end of the Executive Summary.[1] For example, the 41 additional fatal crashes are the 43 fatal crashes for "carriers unfit under the new criteria only" minus the 2 fatal crashes for "carriers unfit under the current criteria only." The same procedure applies for the 508 injury and 872 tow-away crashes.

Given (1) the estimated *current* monetized VSL component for a fatal CMV crash of $10,885,000[2], for an injury crash of $393,000, and for a tow-away crash of $50,000, (2)

[1] Note that the Venn diagram referenced here excludes those carriers which went OOS in the 12 months following the date upon which each would have received a final unfit determination, for both current and proposed SFD processes. The focus on this subset of the carrier population is explained in greater detail in the crash rate analysis in the following section.

[2] Section 4 presents the basis for the $10,885,000 value in greater detail. In summary, it reflects an average of slightly more than 1.183 statistical fatalities per fatal CMV crash. Valued at $9.2 million per statistical

annual increases in each of these values due to projected real growth of the value a statistical life of 1.18 percent[3], (3) additional fixed crash costs not projected to increase annually of $134,000 for each fatal crash, $60,000 for each injury crash, and $22,000 for each tow-away crash[4] (4) an assumed 2.17 percent annual increase in the carrier population[5] and hence the number of crashes, (5) an estimated 52.8 percent[6] improvement in the 16.1 percent of carriers placed out of service (OOS), and (6) an estimated 17.4 percent improvement in the 83.9 percent of carriers that opted to correct deficiencies and remain in service, *for Option 2, for the ten years from 2017 through 2026 the annualized benefits of the rule* (discounted at seven percent*) are $240.9 million*. For Option 1, the annualized benefits are $285.6 million (see Table 12 in Section 4 for yearly totals).

The *costs* of the rulemaking are those incurred by:

1) Drivers who were employed by additional carriers ordered OOS who are now forced to seek new employment. Under preferred Option 2, 1,855 drivers are estimated to be adversely affected in this manner annually.
2) The additional carriers identified as deficient under the proposed SFD that opt to improve performance, thereby incurring costs to achieve compliance.
3) FMCSA, resulting from IT system update and modification expenses (estimated as a one-time cost of $3.0 million incurred in year 2017 under both Option 1 and Option 2).

Given (1) an assumed 2.17 percent annual increase in the carrier population, and hence the number of drivers, and (2) no change in real wages for drivers over time[7], for Option 2, for the ten years from 2017 through 2026 the annualized costs (discounted at seven percent) in lost wages (or revenue for independent-contractor drivers) and

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fatality (see http://www.dot.gov/sites/dot.gov/files/docs/VSL_Guidance_2014.pdf), the monetized VSL component for a fatal CMV crash is calculated as $9,200,000 × 1.18315, rounded to the nearest thousand.

[3] The real growth rate of the VSL is in keeping with OST guidance, available on the web at http://www.dot.gov/sites/dot.gov/files/docs/VSL_Guidance_2014.pdf. This growth factor represents real growth in the median hourly wage at a macroeconomic level and is not specific to drivers or the motor carrier industry. While real median hourly wages are projected to grow at 1.18% per year at a macroeconomic level, this assumption does not apply to drivers, as the real median hourly wage of drivers has declined or remained static in recent years. Nevertheless, the Agency considered a sensitivity analysis (presented later in this analysis) regarding real wage growth of drivers to demonstrate the costs of this proposed rule in the event that drivers' wages grow at 1 or 2 percent per year.

[4] These additional fixed costs are comprised of medical costs, emergency services costs, property damages, lost productivity from roadway congestion, and environmental and fuel costs.

[5] FMCSA's estimated annual growth rate of 2.17 percent is similar to the BLS estimate of 2.38 percent (Employment by industry, occupation, and percent distribution, 2010 and projected 2020 484000 Truck Transportation. http://www.bls.gov/emp/ep_table_109.htm). FMCSA used the growth rate obtained from MCMIS data because it captures the dynamic nature of the industry and allows for a separate growth rate for carriers with recent activity and new entrants.

[6] For Option 1, this value is 45.5 percent rather than 52.8 percent (discussed in Section 4).

[7] This is a central assumption of the analysis, and affects only the costs side of the net benefits projections. The Agency opted in this evaluation to consider costs under alternate 1% and 2% annual real wage growth assumptions to demonstrate the minimal degree to which potential growth in drivers' future real wages affects the net benefits of the rule.

resources expended in search of employment with compliant carriers are estimated at $9.4 million. Were the real wages of drivers to increase by 1% annually, this annualized cost to drivers over the 10-year period increases to $10.1 million. Were real wages to increase by 2% annually, this annualized cost is $10.9 million. For Option 1, the annualized cost to drivers assuming 0%, 1%, and 2% annual real wage growth, respectively, is $10.1 million, $11.4 million, and $12.3 million.

Including the estimated $3.0 million IT systems costs expected to be incurred by FMCSA in year 2017 to update systems in response to this proposed rule, the annualized costs of the rule increase slightly relative to those noted in the preceding paragraph. For Option 2, the total annualized costs of this proposed rule are estimated (at 0%, 3%, and 7% discount rates, respectively) at $9.2 million, $9.5 million, and $9.9 million. For Option 1, the total annualized costs (again at the same respective discount rates) are $10.4 million, $10.7 million, and $11.1 million.

With $240.9 million in annualized benefits and $9.9 million in annualized costs under preferred Option 2 with no projected real wage growth among drivers, the annualized net benefits of the proposed rule are $231.1 million. Under Option 1 and under corresponding assumptions, with $285.6 million in annualized benefits and $11.1 million in annualized costs, the annualized net benefits of the proposed rule are $274.5 million. Table 1 summarizes the Agency's annualized benefit, cost, and net benefit projections of this proposed rule utilizing a 7 percent discount rate under a range of annual real wage growth assumptions of 0 to 2 percent.

Table 1: Annualized Net Benefits (7% Discount Rate) of the Rule From 2017 Through 2026 (in millions of 2013$)

	Real Wage Growth		
Option 1	**0%**	**1%**	**2%**
Benefits	$285.6	$285.6	$285.6
Costs	$11.1	$11.8	$12.7
Net Benefits	$274.5	$273.8	$272.9
Option 2 (Preferred)	**0%**	**1%**	**2%**
Benefits	$240.9	$240.9	$240.9
Costs	$9.9	$10.6	$11.3
Net Benefits	**$231.1**	$230.4	$229.6

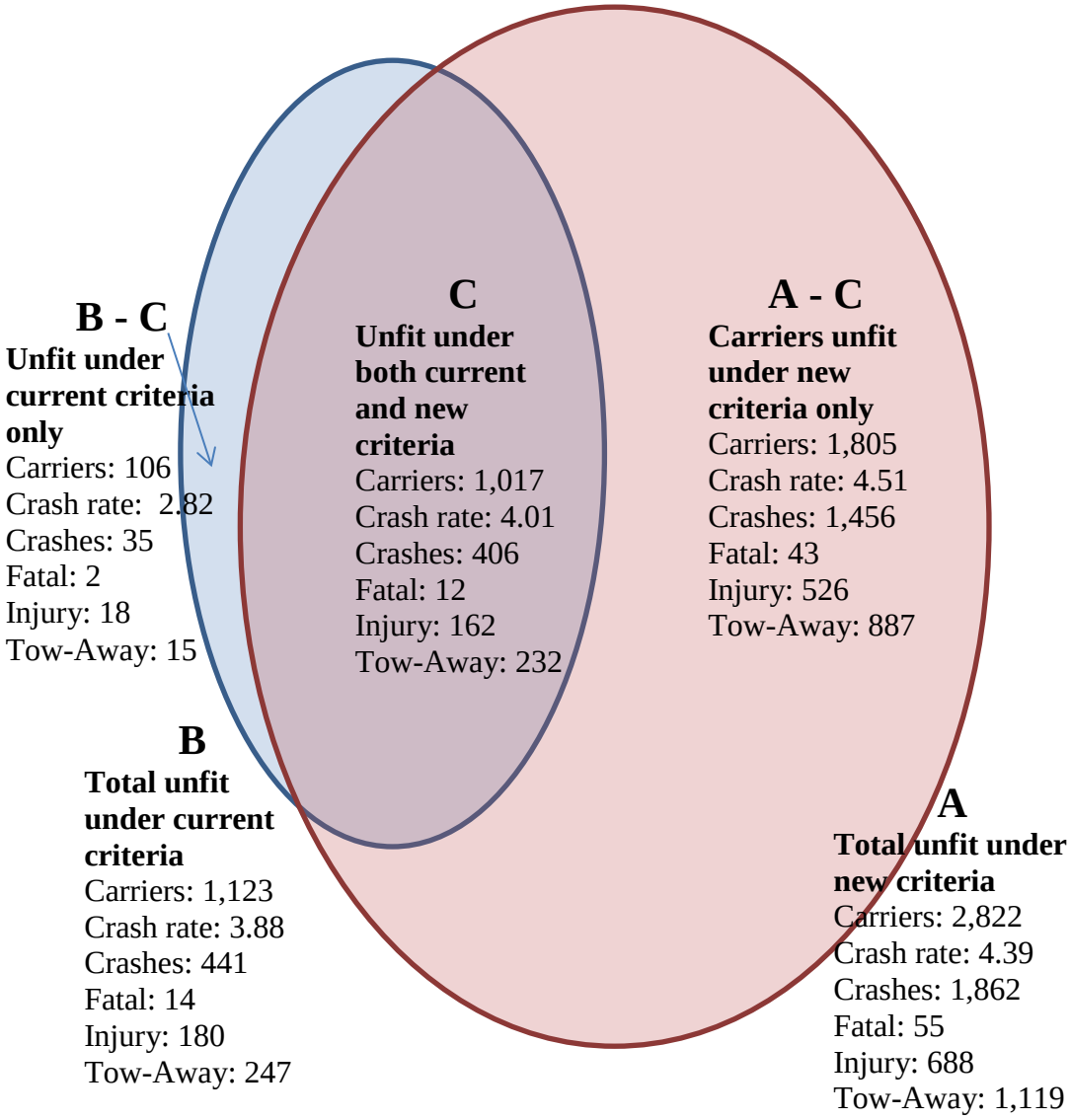
Note: Compliance costs to carriers that improve performance to achieve compliance are not estimated.

Cumulative benefits, costs, and net benefits of the proposed rule are presented in Table 2 for not discounted, 3% discounted, and 7% discounted bases. For brevity, corresponding tables associated with the 1% and 2% annual real wage growth scenarios are not included here as the projections are nearly identical under these alternate assumptions, and the minimal differences resulting from utilization of positive real wage growth assumptions are demonstrated in the annualized values in Table 1.

Table 2: Cumulative Benefits and Costs of the Rule from 2017 through 2026 (in millions of 2013$)						
	Option 1			**Option 2 (Preferred)**		
Discount Rate -->	**0%**	**3%**	**7%**	**0%**	**3%**	**7%**
Benefits	$2,712.4	$2,366.2	$2,005.7	$2,290.9	$1,997.5	$1,692.0
Costs	$103.7	$91.0	$77.7	$92.2	$81.0	$69.2
Net Benefits	$2,608.7	$2,275.2	$1,928.0	$2,198.7	$1,916.5	**$1,622.8**
Note: Compliance costs to carriers that improve performance to achieve compliance are not estimated.						

Although Option 1 is projected to achieve greater net benefits than Option 2, Option 2 is the Agency's preferred alternative because it achieves a manageable balance between Agency enforcement resources and the Agency's mission to remove unsafe operators from the Nation's roadways. The number of proposed unfit determinations that would result under Option 2 and the Agency's capacity to manage this population was an important consideration. While the Agency can accommodate the number of investigations resulting in proposed unfit determinations based on its current resources, the number of enforcement cases, compliance agreements, and oversight required from this population maximizes the capacity of the Agency's existing staff. Both Options 1 and 2 increase the emphasis on a performance-based method of determining the safety-fitness of motor carriers; Option 2's strength relative to Option 1 is its cost-effectiveness in that it increases the efficiency of the SFD process without increasing the expenditure of Agency resources (IT systems update costs being identical under both Options 1 and 2).

Figure 1: Diagram Illustrating the Comparison of the Current and Proposed SFD for Option 2 (96/99), for Carriers in Active Service the Entire 12 Months Following Final Unfit Determination



A The "proposed SFD" category includes 1,017 of the 1,123 carriers identified under the current SFD. Therefore, the "proposed SFD" category is a hybrid of carriers that were proposed unfit that remained in operation by entering into compliance agreements and carriers that would have been proposed unfit if the proposed rule had been in effect during the period studied. Crash rates specific to the subset of carriers identified under the current SFD may reflect improvements in response to receipt of proposed unfit ratings.

B The "current SFD" category consists solely of the 1,123 carriers that were proposed unfit under the current SFD and remained in operation by entering into compliance agreements. Crash rates specific to carriers identified under the current SFD may reflect improvements in response to receipt of proposed unfit ratings.

1. INTRODUCTION AND BACKGROUND INFORMATION

A. Statutory Requirements

As described in the legal basis section of the NPRM, FMCSA is directed by statute to determine whether motor carriers are fit to operate commercial motor vehicles, for both operations in interstate commerce and operations affecting interstate commerce. It is required to establish a procedure for determining such fitness, using data from, among other things, the accident (crash) record and inspection records of such carriers in operation in the United States. The Agency is required to update fitness determinations periodically, make the determinations within specified time frames, and make the determinations available to the public. The proposed new safety fitness methodologies, described in more detail below and in the NPRM, have been developed in order to fulfill these statutory requirements.

B. Proposed New Safety Fitness Methodologies

FMCSA proposes a process that with no change in burden on Agency resources, aside from up-front costs to update information-technology systems, more accurately determines carrier safety fitness than the current one. The process proposes to identify unsafe operators by linking safety fitness to both on-road safety performance, based on inspection data and crash data, and compliance results from investigations. The proposed process specifically classifies performance and compliance data into seven BASICs. These categories represent behaviors that increase the number and severity of crashes. The seven BASICs are:

(1) Unsafe Driving,
(2) Hours Of Service Compliance,
(3) Driver Fitness,
(4) Controlled Substances and Alcohol,
(5) Vehicle Maintenance,
(6) Hazardous Materials Compliance, and
(7) Crash Indicator.

The model first measures and evaluates safety compliance and performance by each BASIC, and then determines safety fitness.

The proposed method of determining safety fitness differs from the current safety rating process in several significant ways:

- Safety Fitness is evaluated frequently. Under the current process, a safety fitness determination is only a snapshot of compliance on the date of the most recent on-site investigation. Under the proposed process, safety fitness would be *based on inspection, crash, and investigation data* and is evaluated monthly.
- All safety-based regulations are employed in evaluation. Under the current process, safety fitness is determined using only regulations identified as "critical"

or "acute" and documented during on-site investigations; under the proposed process, safety fitness is determined based on a revised set of regulations identified as "critical" or "acute" and documented during any on-site or off-site investigations and violations of all safety-based regulations documented during inspections.[8]

- On-road safety performance is used in evaluation. Generally, under the current process, driver and vehicle inspection data are not considered in making the safety fitness determination (though the Vehicle Factor does consider roadside inspection results if three or more inspections with out-of-service violations are recorded in Motor Carrier Management Information System (MCMIS) during the 12 months prior to the investigation); under the proposed process, a proposed unfit safety fitness determination can be based on driver and vehicle inspection data alone.
- Fitness categorization is revised. Under the current process, the Agency assigns ratings as satisfactory, conditional, or unsatisfactory, based on violations of acute and critical regulations. The rating is effective until the next investigation. Since the number of carriers far exceeds the number of investigations that FMCSA and its State partners perform, substantial time could pass before a carrier's rating is updated. Further, the "satisfactory" rating is often marketed by the industry—and mistakenly understood by the public—as a USDOT "seal of approval." In contrast, the proposed process determines only "unfit."

FMCSA proactively addressed concerns about the SMS in the development of this SFD proposal. In addition to the differences noted above, it is important to point out that other concerns about the system, including disparities for long-haul and short-haul carriers, differences between urban and rural motor carriers, and enforcement differences by the States have all been considered. The long and short haul differences are minimized by the combination (long-haul) and straight truck (short haul) segmentation. The differences of urban and rural transportation are factored into the calculation of the Crash Indicator BASIC failure rates. Lastly, while enforcement differences exist between the States, because the failure standards proposed are significantly higher than the SMS intervention thresholds, the patterns of non-compliance for the carriers that are proposed unfit are not the result of these disparities but are the result of recurring non-compliance.

As to the functioning of the model, the proposed SFD would assess the safety fitness of carriers for which there is sufficient amount of data on a monthly basis. For five of the BASICs (not including Crash Indicator and Drug and Alcohol Compliance BASICs), the appropriate driver and vehicle violations using on-road performance data would be weighted for crash-risk, normalized for exposure, peer grouped, and data-sufficiency tested monthly.

[8] See Appendix B: Acute/Critical Violations Analysis for SFD NPRM in "Estimating the Safety Impact of Proposed Safety Fitness Determination (SFD) Criteria," FMCSA, May 2015. A copy of the full report has been placed in the docket.

Under this proposal, FMCSA will evaluate carriers with sufficient inspection data and any investigation data every month to determine if they have met or exceeded the established failure standards set for each applicable BASIC. Two (or more) failed BASICs for a carrier would lead to a determination of "proposed unfit" to operate CMVs in interstate commerce. A determination could be based on any of the following:

1. A carrier's performance from driver/vehicle inspections in relation to five of the Agency's BASICs;
2. A carrier's violations found during an investigation of critical (10% violation rate) or acute (one violation) regulations and preventable crashes; or
3. A combination of inspection and investigation information.

For a detailed list of the proposed revised list of critical and acute regulations, refer to Section VII of the NPRM. In addition, a more detailed explanation regarding the proposed methodology as a whole is contained in proposed new Appendix B to 49 CFR part 385 in the NPRM for this rulemaking.

The proposed SFD process does not include any new regulations on motor carrier, driver, or vehicle operations. Instead, it provides a means for better identification of unsafe carriers using the data that the Agency already has in its existing systems.

2. ANALYSIS OF CRASH RATES OF IDENTIFIED CARRIERS

This section explains the estimation methodology and analysis used to compare the safety performance of carriers identified under the current and proposed processes.

Data from 2011 are used to compare carriers identified under the current and proposed SFD processes. For each carrier identified under either process, the key metric is the number of crashes it has over the next twelve months—starting from the point of what would have been its (hypothetical) final unfit date had it actually been identified using the proposed methodologies. In other words, the carrier was not identified using this approach and instead remained in service, so the number of crashes it had over the next year would be reduced if the methodologies were in place.

Further, it is assumed that such carriers would continue to perform at that safety level into the future.[9] Therefore, the benefit of identifying these additional poorly-performing carriers is in fact a stream of annual benefits. This stream stems from the crash reduction that occurs because these carriers are identified.

Table 3 (for Option 2) below and Table 4 (for Option 1) below present the number of unfit carriers identified under the current and proposed SFD processes which remained in service for the 12 months following final unfit determination – a distinction made so as to ensure that the crash rates are based on carriers that were most likely truly operating during this time, thereby not diluting the crash rates due to OOS carriers. The table also provides information on the number of power units, crashes (in the twelve months following the hypothetical final unfit date), and crash rates for the identified carriers of each type.[10]

For Option 2, the first row of Table 3 below represents the 2,822 carriers identified by the proposed process. Row 2 represents the 1,123 carriers identified under the current process. Row 3 represents the 1,017 carriers identified by both the current and proposed process. Row 4 differences the 2,822 carriers identified under the proposed process from the 1,017 carriers not identified by the current process, while row 5 similarly differences the 1,123 carriers identified by the current process from the 106 not identified by the proposed process.

[9] The basic assumption is that 2011 is a representative year and results from that year can be used to inform estimates of carrier performance. *It does not have to be the case that an individual carrier exhibits consistent performance from one period to the next in order for this assumption to hold*. As long as the overall level of performance of the population remains consistent, then the assumption holds. For example, if there are two equally poorly-performing firms (of equal size to keep the example simple), and, in a given year, one performed 10% better than usual and the other performed 10% worse than usual, then the assumption holds, because on average, the representative performance of the group (two carriers) under study is obtained. This applies in general. Unless 2011 turns out to be an unrepresentative year as a whole, then the assumption holds and allows for inference as to the benefits of the rule.

[10] See Appendix B for a detailed presentation of the data underlying Tables 3 and 4.

The net change in number of identified carriers (an increase of 1,699) resulting from a change from the current to the proposed process is represented in row 6. The proposed process essentially trades out the 106 carriers the current process identifies but the proposed does not (row 5) with the 1,805 that the proposed process identifies that the current process does not (row 4). The 1,017 identified both ways (row 3) do not contribute to the net change.

A comparison of the crash rates (per 100 power units) also demonstrates that the proposed process trades out a few carriers that are not performing too poorly and replaces them with many carriers that are worse. The crash rate for the 106 carriers over the next twelve months is 2.82 (2.82 crashes per 100 power units = 35 crashes ÷ (1,242 power units × 100)). This is markedly less than the 4.01 crash rate of the 1,017 carriers identified by both the current and proposed processes, so only the lowest crash risk carriers are being removed. The crash rate for the 1,805 carriers being added is 4.51 (4.51 crashes per 100 power units = 1,456 crashes ÷ (32,314 power units × 100)), which is well over the national average of 2.13 and signifies that these carriers are risky enough to warrant attention.

Table 3: Crash Reduction from Switch From Current to Proposed SFD for Option 2 (96/99)

Carriers Identified as Unfit Under:	Relation	Carriers	Power Units	Crashes	Crash Rate	Fatal Crashes	Injury Crashes	Tow-Away Crashes
Proposed SFD[A]	A	2,822	42,437	1,862	4.39	55	688	1,119
Current SFD[B]	B	1,123	11,365	441	3.88	14	180	247
Both Current and Proposed SFD	C	1,017	10,123	406	4.01	12	162	232
Proposed SFD, But Not Current SFD	A - C	1,805	32,314	1,456	4.51	43	526	887
Current SFD, But Not Proposed SFD	B - C	106	1,242	35	2.82	2	18	15
Net Gain Attributable to Proposed SFD	A - B	1,699	31,072	1,421	4.57	**41**	**508**	**872**

[A] The "proposed SFD" category includes 1,017 of the 1,123 carriers identified under the current SFD. Therefore, the "proposed SFD" category is a hybrid of carriers that were proposed unfit that remained in operation by entering into compliance agreements and carriers that would have been proposed unfit if the proposed rule had been in effect during the period studied. Crash rates specific to the subset of carriers identified under the current SFD may reflect improvements in response to receipt of proposed unfit ratings.

[B] The "current SFD" category consists solely of the 1,123 carriers that were proposed unfit under the current SFD and remained in operation by entering into compliance agreements. Crash rates specific to carriers identified under the current SFD may reflect improvements in response to receipt of proposed unfit ratings.

For Option 1, the first row of Table 4 below represents the 3,016 carriers identified by the process specified in Option 1. Row 2 represents the 1,123 carriers identified under the current process. Row 3 represents the 1,018 carriers identified by both the current and Option 1 processes. Row 4 differences the 3,016 carriers identified under Option 1 from the 1,018 carriers not identified by the current process, while row 5 similarly differences the 1,123 carriers identified by the current process from the 105 not identified under Option 1.

Option 1 essentially trades out the 105 carriers the current process identifies but Option 1 does not (row 5) with the 1,998 that Option 1 identifies that the current process does not (row 4). The 1,018 identified both ways (row 3) do not contribute to the net change.

A comparison of the crash rates (per 100 power units) also demonstrates that the Option 1 trades out a few carriers that are not performing too poorly and replaces them with many carriers that are worse. The crash rate for the 105 carriers over the next twelve months is 2.74 (2.74 crashes per 100 power units = 34 crashes ÷ (1,240 power units × 100)). This is markedly less than the 4.02 crash rate of the 1,018 carriers identified by both the current and proposed processes, so only the lowest crash risk carriers are being removed. The crash rate for the 1,998 carriers being added by the proposed method is 3.91 (3.91 crashes per 100 power units = 1,717 crashes ÷ (43,936 power units × 100)), which is well over the national average of 2.13 and signifies that these carriers are risky enough to warrant attention.

Table 4: Crash Reduction From Switch From Current to Proposed SFD for Option 1 (95/98)

Carriers Identified as Unfit Under:	Relation	Carriers	Power Units	Crashes	Crash Rate	Fatal Crashes	Injury Crashes	Tow-Away Crashes
Proposed SFD[A]	A	3,016	54,061	2,124	3.93	67	779	1,279
Current SFD[B]	B	1,123	11,365	441	3.88	14	181	247
Both Current and Proposed SFD	C	1,018	10,125	407	4.02	12	163	233
Proposed SFD, But Not Current SFD	A - C	1,998	43,936	1,717	3.91	55	616	1,046
Current SFD, But Not Proposed SFD	B - C	105	1,240	34	2.74	2	18	14
Net Gain Attributable to Proposed SFD	A - B	1,893	42,696	1,683	3.94	**53**	**598**	**1,032**

[A] The "proposed SFD" category includes 1,018 of the 1,123 carriers identified under the current SFD. Therefore, the "proposed SFD" category is a hybrid of carriers that were proposed unfit that remained in operation by entering into compliance agreements and carriers that would have been proposed unfit if the proposed rule had been in effect during the period studied. Crash rates specific to the subset of carriers identified under the current SFD may reflect improvements in response to receipt of proposed unfit ratings.

[B] The "current SFD" category consists solely of the 1,123 carriers that were proposed unfit under the current SFD and remained in operation by entering into compliance agreements. Crash rates specific to carriers identified under the current SFD may reflect improvements in response to receipt of proposed unfit ratings.

Further, a comparison of crash rates for Option 1 and Option 2 demonstrates that the additional carriers identified when using $95^{th}/98^{th}$ instead of $96^{th}/99^{th}$ do not perform as poorly as the group "covered" by both. Specifically, under Option 2, the 1,805 carriers identified by the proposed process but not by the current one have a crash rate of 4.51. In contrast, under Option 1, the 1,998 carriers identified by the proposed process but not by the current one have a crash rate of 3.91.

Essentially, the 193 "additional" carriers (193 = 1,998 – 1,805) identified by Option 1 as opposed to Option 2 because the percentile is extended from $96^{th}/99^{th}$ to $95^{th}/98^{th}$ have 11,622 additional power units (11,622 = 43,936 – 32,314) and suffer 261 additional crashes (261 = 1,717 – 1,456). Thus, additional 193 carriers that Option 2 picks up at the

margin have a relatively low crash rate of 2.25 (2.25 = 261 crashes ÷ (11,622 power units × 100)). The extension from 96th/99th to 95th/98th contributes little, which is one reason why Option 2 is the Agency's preferred option.[11]

[11] For completeness, conversely, note on the other end, the comparison between Option 1 and Option 2 in the carriers that the current process identifies that the proposed one does not. Under Option 1, 1 fewer carrier (105 carriers vs. 106 carriers) and 2 fewer power units (1,240 vs. 1,242) are identified, corresponding to 1 less crash (34 vs. 35).

3. ANALYSIS OF COSTS

The costs of this proposed rule affect the following categories/entities:

1) Drivers working for non-compliant carriers ordered OOS (see Section 3.1);
2) The additional carriers (relative to the current SFD) found to be deficient under the proposed SFD that improve performance to come into compliance (see Section 3.2);
3) FMCSA, resulting from IT system update and modification expenses (see Section 3.3).

3.1 DRIVERS WORKING FOR CARRIERS ORDERED OOS

The Agency estimates that a portion of carriers identified as deficient fail to make changes necessary to come into compliance and are instead ordered OOS. As the proposed SFD is projected to result in a greater number of carriers identified as deficient, there may be additional carriers that, following such identification, are ultimately ordered OOS. The agency attributes the costs of this proposed rule to drivers working for such carriers as search costs specific to finding work from other carriers (either existing carriers or new entrants). This section estimates the number of drivers affected in this manner and the consequent costs.

Under the current process, 1,232 carriers had a proposed rating of unsatisfactory.[12] A proposed rating of unsatisfactory under the current process equates such carriers with an SFD of "proposed unfit" under the proposed process. Of these carriers, *16.1 percent* (198 of 1,232) were deemed unfit and ordered OOS upon completion of the SFD process, which is after all opportunities to comply have been exhausted. They were deemed so because they were unable or unwilling to maintain improved safety standards outcomes and eventually ordered OOS. The 198 carriers ordered OOS had on average 4.97 power units per carrier (4.97 = 984 total power units ÷ 198 carriers), and 1.27 drivers per power unit (1.27 = 1,248 total drivers ÷ 984 total power units).

Given 16.1 percent of carriers are ordered OOS upon completion of the process, the remaining 83.9 percent of carriers identified under the current process subsequently improved performance satisfactorily to continue operation. As shown below, we use the 16.1 percent of carriers that remained permanently out of service in estimating the number of drivers adversely affected by this proposed rule.

[12] See Tables B1 and B2 in Appendix B for detailed presentation of these numbers – note that the count of 1,232 carriers includes those carriers that became inactive during the 12 months following their final unfit dates, whereas the corresponding count of 1,123 carriers identified under current process (as shown in Tables 3 and 4) *exclude* those carriers that became inactive during the 12 months following their final unfit dates.

For Option 2, there is a net 1,824 carriers identified by the proposed SFD process that the current process does not. For 2013, assuming that 16.1 percent remain permanently OOS, 294 carriers (16.1 percent of 1,824) are affected. Using the averages for power units per carrier and drivers per power unit from the 198 carriers above, with an average of 4.97 power units per carrier for the 294 carriers ordered OOS, this results in 1,461 power units (1,461 power units = 294 carriers × 4.97 power units per carrier) and consequently 1,855 drivers (1,855 drivers = 1.27 drivers per power unit × 1,461 power units) working for carriers ordered OOS. Therefore, an estimated 1,855 drivers may lose driving work as a consequence of the proposed rule. Table 5 below presents the calculations shown above for Option 2, and also for alternative Option 1.

Table 5: Estimate of Drivers Working for Carriers Ordered Out of Service

Category	Factors		Notes
Proposed SFD Option	**1 (95/98)**	**2 (96/99)**	
Carriers	2,059	1,824	
% of Carriers Ordered OOS	16.1%	16.1%	May 2015 FMCSA Report*
Carriers Improved Compliance	1,728	1,530	(100% - 16.1%) of Carriers
Carriers Ordered OOS	331	294	16.1% of Carriers
Average Power Unit per Carrier	4.97	4.97	984 PUs for 198 carriers put OOS in 2011
Total Power Units	1,645	1,461	1,645 = 331 × 4.97; 1,461= 294 × 4.97
Drivers per Power Unit	1.27	1.27	1,248 drivers for the 984 PUs in 2011
Drivers Displaced	**2,089**	**1,855**	1,645 × 1.27 and 1,461 × 1.27

* "Estimating the Safety Impact of Proposed Safety Fitness Determination (SFD) Criteria," FMCSA, May 2015.

Anecdotal data from the Bureau of Labor Statistics (BLS) Occupational Outlook Handbook indicate that demand for transportation services is stable or improving, and that driving work for heavy and tractor-trailer truck drivers is expected to grow about as fast as the average for all occupations.[13] Driving work for bus drivers is regarded as "favorable" with increases expected to be as fast as the average for all occupations.[14]

In addition, the services provided by these carriers ordered OOS will be transferred to other carriers, who presumably will need additional drivers to meet the provision. Consequently, the Agency assumes that all of these displaced drivers will find new employment, rather than remain idle or unemployed for long periods. The demand for truck and bus transportation should be stable from region to region. That is, FMCSA expects the most logical source for the shortfall to be picked up would be carriers in close geographic proximity to the carriers ordered out of service. Given this, drivers' transitions from OOS carriers to existing and compliant carriers or to new entrants should

[13] "Heavy and Tractor-trailer Truck Drivers," Bureau of Labor Statistics, accessed on July 28, 2014 at http://www.bls.gov/ooh/transportation-and-material-moving/heavy-and-tractor-trailer-truck-drivers.htm .
[14] "Bus Drivers." Bureau of Labor Statistics, accessed on July 28, 2014 at http://www.bls.gov/ooh/transportation-and-material-moving/bus-drivers.htm.

be less of a hardship than transitions to different regions of the country to gain driving employment. In addition, given the high turnover rate in the industry,[15] drivers are familiar with finding new employers for a variety of reasons and through any number of different methods.

Given these factors, the cost to drivers in lost wages (or revenue for independent contractor drivers) and job search expenses can be estimated. FMCSA expects on average about a three-week period (120 hours) spent searching, applying, and interviewing for jobs. Given the many employment opportunities available to these drivers, the three-week period is considered a conservatively long period of time, resulting in a conservatively high estimate of the costs related to this search, which consequently may result in a *conservatively low estimate of the net benefits* of the proposed rule. The Agency requests comment on the assumed 120 hour search time assumed here and the degree to which it is reasonable that a CMV driver seeking employment could obtain employment as a CMV operator with a motor carrier in this allotted time. Additional expenses of the search, such as transportation or supplies, are estimated to be $500. This is also considered a conservatively high cost, potentially resulting in a *conservatively low estimate of net benefits*. The Agency also invites comment on the cost of these additional expenses.

[15] "Truck Driver Turnover Rate Rise; Expected to Get Worse." *Bulk Transporter*, July 15, 2013, accessed on May 21, 2015 at http://bulktransporter.com/trends/truck-driver-turnover-rate-rises-expected-get-worse. "Driver Turnover Rate Rises in First Quarter." *Transport Topics*, July 11, 2013, accessed on May 21, 2015 at http://www.ttnews.com/articles/basetemplate.aspx?storyid=32420. "Charter Bus Drivers." Executive Coach Inc., 2008, accessed on November 15, 2013 at http://www.usacoach.net/bus-drivers.html. Given Ann Arbor, Michigan as nationally-representative of a typical school district: "WISD Takes On Biggest Challenge: 50 Percent Turnover of (School) Bus Drivers." *The Ann Arbor News*, August 31, 2012, accessed on May 21, 2015 at http://www.annarbor.com/news/education/wisd-has-50-percent-turnover-of-bus-drivers-for-three-districts/.

The BLS May 2013 *National Occupational Employment and Wage Survey* estimates that the 10th, 25th, 50th (median), 75th, and 90th percentile wages for CMV drivers (heavy and tractor trailer) are $12.18, $15.03, $18.61, $23.24, and $28.66, respectively, per hour.[16] According to the same data source, transit and intercity bus driver wages are slightly lower; $10.18, $12.90, $17.64, $23.46, and $29.31 for the same percentiles.[17] The Agency uses the median wage of $18.61 for truck drivers and $17.64 for bus drivers in this analysis. Since interstate passenger motor carriers accounted for about 2.3% of total motor carriers in interstate passenger, interstate freight, and intrastate hazardous materials service in 2012,[18] the combined weighted average for truck and bus drivers is $18.59 ($18.59 = ($17.64 × 2.3%) + ($18.61 × (100% – 2.3%))). To estimate fringe benefits, the Agency references data from a BLS news release, "Employer Costs for Employee Compensation – December 2013." An average hourly wage of $22.72 and average hourly benefits of $12.91 for private industry workers in "transportation and warehousing"[19] is used to estimate that fringe benefits are equal to 57 percent (0.57 = $12.91 ÷ $22.72) of wages. Applying the 57 percent estimate to approximate benefits results in driver total hourly compensation of $29.19 ($29.19 = $18.59 × (1 + 0.57)). Given $29.19 as the cost of a lost hour of work, if a driver loses one hundred twenty hours of work over a three-week job search, then the cost is $3,503 ($29.19 per hour × 120 hours).[20] If additional job search expenses come to $500, then the cost to each affected driver totals $4,003.[21] Table 6 below summarizes this cost analysis for Option 2, as well as for alternative Option 1.

[16] http://www.bls.gov/oes/current/oes533032.htm (accessed on 1-July-2014).
[17] http://www.bls.gov/oes/current/oes533021.htm (accessed on 1-July-2014).
[18] "Large Truck and Bus Crash Facts." FMCSA, March 2013.
[19] From Table 10 of the release, the employer costs per hour worked for employee compensation and costs as a percent of total compensation: Private industry workers, by industry group, March 2013. Transportation and Warehousing. http://www.bls.gov/news.release/pdf/ecec.pdf. (Accessed 1-July-2014).
[20] Even though many CMV drivers spend more than 40 hours per week on-duty and driving, the BLS normalizes all hourly wages estimates to a forty-hour work week. Consequently, the time cost estimate derived from BLS data should be multiplied by 120 (40 hours × 3 weeks) to estimate the value of three weeks' worth of lost wages to drivers.
[21] For Option 2, in 2013 (that is, 2013 dollars, carriers, *and* wages), the cost of the rule for a 3-week search with $500 in additional costs is $7.43 million = ($4,003 per driver × 1,855 affected drivers).

Table 6: Cost to a Driver Working for a Carrier Ordered OOS			
Category	**Factor**		**Notes**
Type of Driver	**Bus Drivers**	**Truck Drivers**	
Median Hourly Wage	$17.64	$18.61	BLS, May 2013 OES Data
% of the Driver Population	2.30%	97.70%	% to Each Type of Driver
Weighted Hourly Wage	$18.59		($17.64 × 2.3%) + ($18.61 × 97.7%)
Benefits Percentage	57%		Compensation Survey
Total Hourly Compensation	$29.19		Wage × (1.57)
Lost Hours of Work	120		3-Week Search = 3 weeks × 40 hrs/week
Cost of Lost Hours	$3,503		$3,503 = 120 × $29.19
Additional Costs of Search	$500		Supplies, etc.
Total Costs Per Driver	$4,003		$4,003 = $3,503 + $500

The rule is proposed to have its first full year of implementation in 2017 based on proposed rule in 2015 and a final rule in 2016. The carrier population is assumed to increase at an annual rate of 2.17 percent,[22] so that by 2017 the 1,824 identified carriers under Option 2 would increase to 1,988 (1,988 = 1,824 × (1.0217^4)). Assuming that 16.1 percent remain permanently OOS, 320 carriers (16.1 percent of 1,988) are affected. Given that carriers ordered OOS have on average 4.97 power units per carrier and 1.27 drivers per power unit, this results in 2,020 drivers (2,020 drivers = 1.27 drivers per power unit × 4.97 power units per carrier × 320 carriers) working for carriers ordered OOS.

Assuming that the real wages of drivers remain constant, then the total cost (in 2013 dollars) for each driver working for non-compliant carriers ordered OOS remains $4,003. So the total cost of the rule to drivers working for non-compliant carriers ordered OOS in 2017, the first year of the rule, is $8.1 million in 2013 dollars ($4,003 per driver × 2,020 drivers = $8,086,060, rounded to the nearest tenth of a million). Were the real wages of drivers to increase at one percent per year, the total cost per driver working for non-compliant carriers ordered OOS in 2017 increases to $4,143 ($4,143 = ($18.59 × ($1.01^4$) × 1.57) × 120) + $500), and the total cost to those drivers in 2017 is $8.4 million ($4,143 per driver × 2,020 drivers = $8,368,860, rounded to the nearest tenth of a million). Were the real wages of drivers to increase at two percent per year, the total cost per driver working for non-compliant carriers ordered OOS increases to $4,291 ($4,291 = ($18.59 × ($1.02^4$) × 1.57) × 120) + $500), and the total cost to those drivers in 2017 is $8.7 million ($4,291 per driver × 2,020 drivers = $8,667,820, rounded to the nearest tenth of a million).

[22] FMCSA's estimated annual growth rate of 2.17 percent is similar to the BLS estimate of 2.38 percent (Employment by industry, occupation, and percent distribution, 2010 and projected 2020 484000 Truck Transportation. http://www.bls.gov/emp/ep_table_109.htm). FMCSA used the growth rate obtained from MCMIS data because it captures the dynamic nature of the industry and allows for a separate growth rate for carriers with recent activity and new entrants.

Assuming the projected 2.17-percent carrier population increase continues through 2026 and real wages for drivers remain constant, then under Option 2, for the ten years from 2017 through 2026, the annualized costs of the rule to drivers working for non-compliant carriers ordered OOS at a seven percent discount rate are $9.4 million ($9.43 million, rounded to the nearest tenth of a million). The total annualized costs for Option 1 and Option 2, under three real wage growth scenarios from 2017 through 2026 are presented in Table 7 below to the nearest hundredth of a million (note that throughout the rest of this analysis, these values are rounded to the nearest tenth of a million).

Table 7: Annualized Cost of the Rule to Drivers Working for Non-Compliant Carriers Ordered OOS, From 2017 Through 2026 (7% discount rate, in millions of 2013$)

Real Wage Growth	Option 1	Option 2
0%	$10.64	$9.43
1%	$11.40	$10.12
2%	$12.32	$10.88

Table 8 presents the stream of yearly costs to drivers working for non-compliant carriers ordered OOS over the 10-year period assessed by the Agency as well as the corresponding cumulative costs. Table 8 presents these costs on not discounted, 3% discounted, and 7% discounted bases. For brevity, corresponding tables associated with the 1% and 2% annual real wage growth scenarios are not included here as the costs are nearly identical from year to year and in the aggregate, and the slight differences resulting from the utilization of positive real wage growth assumptions are captured in the annualized values above in Table 7.

Table 8: Costs to Drivers Working for Non-Compliant Carriers Ordered OOS (in millions of 2013$) Over the Ten-Year Period 2017-2026						
Year	Option 1			Option 2		
	0%	3%	7%	0%	3%	7%
2017	$9.1	$9.1	$9.1	$8.1	$8.1	$8.1
2018	$9.3	$9.0	$8.7	$8.3	$8.1	$7.8
2019	$9.5	$9.0	$8.3	$8.4	$7.9	$7.3
2020	$9.7	$8.9	$7.9	$8.6	$7.9	$7.0
2021	$10.0	$8.9	$7.6	$8.8	$7.8	$6.7
2022	$10.2	$8.8	$7.3	$9.0	$7.8	$6.4
2023	$10.4	$8.7	$6.9	$9.2	$7.7	$6.1
2024	$10.6	$8.6	$6.6	$9.4	$7.6	$5.9
2025	$10.8	$8.5	$6.3	$9.6	$7.6	$5.6
2026	$11.1	$8.5	$6.0	$9.8	$7.5	$5.3
Total	$100.7	$88.0	$74.7	$89.2	$78.0	**$66.2**
Annualized			$10.6			$9.4

In addition to drivers, deficient carriers ordered OOS also adversely affect the shippers, brokers, and freight forwarders that use them regularly. These entities must spend time finding replacement carriers. However, turnover in the trucking and busing industries is significant enough that establishing new commercial relationships with motor carriers is a normal course of business for shippers, and many shippers have relationships with several carriers that compete for their business.

3.2 IMPROVEMENTS BY DEFICIENT CARRIERS TO ACHIEVE COMPLIANCE

Deficient carriers identified by the current or proposed system are either ordered OOS or improve their safety performance to the point that they become compliant. Those carriers opting to improve to achieve compliance incur expenses in making these required improvements. This is true of carriers under both the current and proposed processes, so the additional expenditures related to the rule are those incurred by the additional carriers identified by the proposed process.

FMCSA recognizes that the social benefits of this proposed rule are associated with increased compliance with regulations that motor carriers are already expected to bear the compliance costs of. However, FMCSA notes that a carrier that may be newly identified as deficient under the proposed SFD may under the current SFD be given a conditional safety rating and allowed to continue operating. While the regulations that carriers are expected to be in compliance with are not changing under the proposed SFD, the differing identification methodology introduced with this proposed rule -- such that a portion of borderline carriers under the current SFD would be identified as deficient under the proposed SFD -- argues in favor of characterizing the costs borne by the newly-

identified carriers in order to achieve compliance as new costs resulting from the proposed rule.

The Agency lacks data to evaluate the magnitude of the costs to those additional carriers that would be identified as deficient under the proposed SFD that seek to achieve compliance in order to remain in operation. There are many types of violations that can contribute to a carrier's identification as deficient and the range of compliance costs may differ – even across carriers with similar violations – due to factors such as: size of carrier, experience and training levels of drivers, and experience of fleet maintenance personnel. For this reason, this cost element is noted as "not estimated" throughout summary-level tables in this analysis.

The Agency welcomes input on ways to estimate costs that would be borne by these newly-identified carriers to achieve compliance.

3.3 AGENCY RESOURCES

FMCSA's resources, which include funding to States and use of its own personnel, are limited. Thus, the Agency determines how to allocate and use these resources to provide the greatest safety benefit.

Given that FMCSA has limited resources and cannot perform extensive investigations on every carrier in the industry, the threshold limits set by the Agency try to achieve the maximum safety benefits for a given resource expenditure. At every stage in the development of this proposal, FMCSA considered various threshold limits that drew an even greater number of carriers into enforcement interventions, but far exceeded the resources available to investigate.

Thus, the sensitivity levels of the two options (95/98 and 96/99) in the proposed process, reflect approaches FMCSA considered, and provide the most efficient uses of limited Agency resources. Of the two options, Option 2 (96/99) causes less strain on FMCSA's resources while providing considerable benefits.

Both Option 1 and Option 2 would require FMCSA to incur costs due to the adjustment of current information-technology systems to the proposed SFD methodology. The Agency estimates these to be up-front development costs incurred in year 2017 of $3.0 million.

3.4 TOTAL QUANTIFIABLE COSTS

Of the costs attributable to this proposed rule and discussed in the preceding sections, the Agency has quantified the following:

1) Costs to drivers working for non-compliant carriers ordered OOS.
2) Costs to FMCSA for information-technology systems updates at the outset of the implementation of the proposed rule ($3.0 million in year 2017).

Acknowledging that these quantified totals may understate the rule's total costs due to lack of information with which to quantify compliance costs for carriers newly-identified as deficient under the proposed SFD that would have been allowed to continue operation under the current SFD[23], the year-by-year costs of the proposed rule are presented below in Table 9 at not discounted, 3% discounted, and 7% discounted rates under both Option 1 and Option 2.

Table 9: Total Cost of the Rule (in millions of 2013$) Over the Ten-Year Period 2017-2026

Year	Option 1			Option 2		
	0%	3%	7%	0%	3%	7%
2017	$12.1	$12.1	$12.1	$11.1	$11.1	$11.1
2018	$9.3	$9.0	$8.7	$8.3	$8.1	$7.8
2019	$9.5	$9.0	$8.3	$8.4	$7.9	$7.3
2020	$9.7	$8.9	$7.9	$8.6	$7.9	$7.0
2021	$10.0	$8.9	$7.6	$8.8	$7.8	$6.7
2022	$10.2	$8.8	$7.3	$9.0	$7.8	$6.4
2023	$10.4	$8.7	$6.9	$9.2	$7.7	$6.1
2024	$10.6	$8.6	$6.6	$9.4	$7.6	$5.9
2025	$10.8	$8.5	$6.3	$9.6	$7.6	$5.6
2026	$11.1	$8.5	$6.0	$9.8	$7.5	$5.3
Total	$103.7	$91.0	$77.7	$92.2	$81.0	**$69.2**
Annualized			$11.1			$9.9

Note: Compliance costs to carriers that improve performance to achieve compliance are not estimated.

[23] A topic on which the Agency requests comment, see Section 3.2 for details.

Table 10 below presents the annualized cost of the proposed rule at the 7% discount rate and under the central (0%) and alternate (1% and 2%, respectively) assumptions regarding the real wage growth of drivers.

Table 10: Annualized Cost of the Rule From 2017 Through 2026 (7% discount rate, in millions of 2013$)		
Real Wage Growth	Option 1	Option 2
0%	$11.06	$9.85
1%	$11.83	$10.55
2%	$12.74	$11.30
Note: Compliance costs to carriers that improve performance to achieve compliance are not estimated.		

4. ANALYSIS OF BENEFITS

Under preferred Option 2 with the failure performance standards at or above the 96th and 99th percentiles, the proposed method identified 1,941 poor-performing carriers that the current process did not, while the current process identified 117 carriers that the proposed method did not (1,115 carriers were identified by *both* methods). The proposed process trades out 117 carriers that over the next twelve months following each of their final unfit dates would as a group go on to have at least 2 fatal crashes, 18 injury crashes, and 15 tow-away crashes (these are known crash counts of the 106 of these 117 carriers which did not go OOS in the twelve months following their final unfit determinations), and replaces them with 1,941carriers for which, over the next twelve months following each of their final unfit dates, went on to have 43 fatal crashes, 526 injury crashes, and 887 tow-away crashes (these are known crash counts for the 1,805 of this group of 1,941 carriers that did not go OOS in the twelve months following their hypothetical final unfit determinations). The Agency isolated the focus of the analysis of the safety benefits of the proposed rule to consider only the projected reduction in crashes related to the net 1,699 carriers (1,699 = 1,805 – 106) that remained in operation for the twelve months following final unfit determination. This may be a conservative assumption in that those carriers that went OOS may be less safe on average than other carriers deemed unfit. However, it is uncertain to what degree similarly poor-performing carriers in future years will go OOS on their own accord in the absence of an unfit determination, and therefore the Agency does not count the potential benefits of this proposed rule related to that sub-group in this analysis *even though* we include the impact to drivers employed by this sub-group among the proposed rule's costs.

Given that identification and the final unfit date remove a portion of the poorly-performing carriers from active service while the remainder improves its safety performance and remains in service, a portion of the crashes of these carriers that takes place in the next 12 months (from the time of the final unfit) are thus prevented, and comprise the annual benefits of the rule. The *annual* benefits of the rule are *net reductions in crashes* that come from switching from the current to the proposed process. The proposed process identifies carriers that suffered an additional 41 fatal crashes (41 = 43 – 2), 508 injury crashes (508 = 526 – 18), and 872 tow-away crashes (872 = 887 – 15) when compared with the current process.

In 2011, under the current process, 16.1 percent of identified carriers were deemed unfit and ordered OOS upon completion of the SFD process. Relatedly, a pending rating of unsatisfactory under the current process equates such carriers with an SFD of "proposed unfit" under the proposed process. Given the performance comparison between the current and proposed SFD-process-identified groups (as measured by both having crash rates per 100 power units considerably greater than the national average), it is assumed that 16.1 percent of the additional carriers identified under the proposed SFD process will ultimately be ordered out of service.

The remaining 83.9 percent of carriers identified but not ultimately shut down improve their safety-performance. These improvements (specifically, those involving the net

differential group of carriers identified by the proposed process relative to the current process) should be credited as benefits to the proposed process. The Compliance Review Effectiveness Model (CREM)[24] estimates the safety improvement of carriers that receive a compliance review, in terms of crashes avoided. For the four most recent years of analysis (since measurement based on fiscal years (rather than calendar years) began in 2005), the estimated percentage reduction in the average crash rate due to compliance reviews was 16.3 percent in 2005, 18.6 percent in 2006, 14.7 percent in 2007, and 19.9 percent in 2008.[25] We assume that issuing a proposed unfit SFD to a carrier identified under the proposed process would result in performance improvement similar to that of a compliance review. Given the year-to-year variability in the estimated reduction from 2005-08, the Agency uses the four-year average for the period of 17.4 percent. As such, the safety improvement percentages estimated in the CREM can be applied to the crashes attributed to the 83.9 percent of carriers that were *not* ordered out of service.

The CREM has several limitations that are common to transportation safety research. For one, there is no pure control group, because FMCSA does not have the option to not intervene with carriers it knows to be unsafe. Workarounds for the lack of pure statistical control are discussed in more detail in the CREM. The newer model, Carrier Intervention Effectiveness Model (CIEM), which has been peer reviewed, uses size group–specific comparison groups and measures the statistical significance of the net improvement in crash rates of reviewed carriers. While the two models' results are not directly comparable due to their differing methodologies, their estimates of crash rate reductions among reviewed carriers have similar orders of magnitude across the carrier size groups.

There is also the potential for "regression to the mean" to obscure the true benefits of interventions. This phenomenon is a possible statistical consequence of the rarity of crash events. It can occur when an individual carrier experiences a period of high crash rate; this is likely to be followed by a period of low crash rate, regardless of interventions or changes in safety practices, simply due to the infrequency of crash events.

However, the low probability of a spike in crashes at any given time makes it unlikely that "regression to the mean" is a substantial contributor to the reduction in crash rate attributed by the CREM to the compliance review process. Carriers that receive a compliance review may not be in the midst of a crash spike. Carriers that have a crash spike may not get a compliance review shortly after the spike. This is because carriers are not primarily selected for compliance reviews based on their current crash rate, but rather their overall safety performance as assessed through roadside inspection and/or investigation results. For "regression to the mean" to be a substantial issue for this analysis, it would need to be the case that carriers are being identified during a period of usually high crash rate for that carrier. As the intervention process is implemented now, if a carrier's crash rate drops after they receive a compliance review, there is no reason to

[24] Volpe National Transportation Center, "FMCSA Safety Program Effectiveness Measurement: Compliance Review Effectiveness Model, Results for Carriers with Compliance Reviews in Fiscal Year 2008".
[25] http://ai.fmcsa.dot.gov/PE/PEReport.aspx?rp=crNat accessed on 20-August-2014.

assume that drop is a correction to the carrier's "actual" mean crash rate as opposed to a response to FMCSA's intervention.

Next, consider that most of the services provided by the 16.1 percent of carriers that are ordered out of service are likely to be shifted to new or existing carriers. This contrasts with a crash rate of 4.51 crashes per 100 PUs for those carriers identified under the proposed process (or 3.91 per 100 PUs for those carriers identified under Option 1). This suggests the replacement of an identified carrier with one from the carrier population in general would result in a 52.8 percent improvement (0.528 = (4.51 – 2.13) ÷ 4.51) under the proposed process, or analogously, 45.5 percent (0.455 = (3.91 – 2.13) ÷ 3.91) under Option 1.[26] The Agency believes that the subset of carriers placed OOS would likely perform worse than the total carrier group identified as unfit by the proposed SFD, and therefore that the 52.8 percent improvement is a conservative estimate for the gains in safety resulting from the replacement of carriers ordered OOS with carriers of average overall safety performance.

In sum, the safety performance and thus the frequency of crashes attributed to the 83.9 percent of carriers that were not ordered OOS realize an improvement of 17.4 percent, and the safety performance and thus the frequency of crashes attributed to the 16.1 percent of carriers put OOS and replaced by an average carrier realize an improvement of 52.8 percent.

As stated above, the prevention of a portion of the 41 fatal, 508 injury, and 872 tow-away crashes (under Option 2) attributable to the additional carriers identified by the proposed SFD process is where the benefits of the proposed rule are realized. Assuming the final rule goes into effect in 2017, the carrier population is assumed to increase at an annual rate of 2.17 percent, and applying that rate to these crashes results in 45 fatal (44.68 = 41 × (1.0217^4), 554 injury (553.55 = 508 × (1.0217^4)), and 950 tow-away crashes (950.19 = 872 × (1.0217^4) *in 2017*.

Allocating 83.9 percent of these crashes to carriers that improved performance and were not ordered OOS results in 38 fatal, 465 injury, and 797 tow-away crashes apportioned. Allocating the remaining 16.1 percent of crashes to carriers that were permanently put OOS, results in 7 fatal, 89 injury, and 153 tow-away crashes apportioned. Given that the carriers permanently placed OOS are believed by the Agency to have worse safety performance than that of the carriers that improved, proportioning the crashes by percentage results in a conservatively low number of crashes assigned to those put out of service. Since the carriers permanently placed OOS are replaced with ones realizing an improvement of 52.8 percent, rather than 17.4 percent, assigning by proportion results in a conservatively low estimate of the overall crash reduction of the rule.

[26] The crash rate of the general carrier population (2.13 per 100 power units) was calculated on a consistent time frame as that (4.51 per 100 power units) of the carriers identified under the proposed process and as that (3.91 per 100 power units) of the carriers identified under Option 1.

The 83.9 percent of carriers opting to make the necessary changes to become compliant realize improvements of 17.4 percent. Given the 17.4 percent improvement, 7 fewer fatal crashes (6.6 = 17.4% of 38), 81 fewer injury crashes (80.9 = 17.4% of 465), and 139 fewer tow-away crashes (138.7 = 17.4% of 797) occur. The 16.1 percent of carriers placed permanently OOS are replaced with carriers realizing improvements of 52.8 percent. Given the 52.8 percent improvement, 4 fewer fatal crashes (3.70 = 52.8% of 7), 47 fewer injury crashes (46.99 = 52.8% of 89), and 81 fewer tow-away crashes (80.78 = 52.8% of 153) occur. So the total estimated crash reduction for 2017, the first year of the rule, is 11 fewer fatal crashes (11 = 7 + 4), 128 fewer injury crashes (128 = 81 + 47), and 220 fewer tow-away crashes (220 = 139 + 81). The same process applies for all subsequent years. The number of carriers—and thus crashes—is increased by 2.17 percent from the previous year; these crashes are allocated as described above to those carriers put permanently OOS and those that opted to make the necessary changes, and then the improvement rates of 52.8 percent and 17.4 percent are applied to the respective groups.

The average cost of a fatal CMV crash is estimated at $11,019,000 (in 2013 dollars), $10,885,000 of which is the monetized value of a statistical life (VSL) component. As the value of an individual statistical life is $9.2 million (in 2013 dollars), the $10,885,000 value noted above reflects an average of 1.183 statistical fatalities per fatal CMV crash – this value is derived from the latest annual crash statistics available during the development of this analysis. The remaining $134,000 is comprised of medical costs, emergency services, property damages, lost productivity from roadway congestion, and environmental costs. It is assumed that the VSL increases at a rate of 1.18 percent annually. By 2017 the VSL component (in 2013 dollars) increases from $10,885,000 to $11,408,000 ($11,408,000 = $10,885,000 × (1.0118^4)). Together with the remaining $134,000 in costs, the cost of a fatal crash in 2017 is estimated to be $11,542,000 in 2013 dollars ($11,542,000 = $11,408,000 + $134,000).

The average cost of an injury crash is estimated at $453,000 (in 2013 dollars), $393,000 of which is the monetized VSL component. The remaining $60,000 is comprised of medical costs, emergency services, property damages, lost productivity from roadway congestion, and environmental costs. By 2017, the VSL component (in 2013 dollars) increases from $393,000 to $412,000 ($412,000 = $393,000 × (1.0118^4)). Together with the remaining $60,000 in costs, the cost of a fatal crash in 2017 is estimated to be $472,000 in 2013 dollars ($472,000 = $412,000 + $60,000).

The average cost of a tow-away crash is estimated at $72,000 (in 2013 dollars), $50,000 of which is the monetized VSL component. The remaining $22,000 is comprised of medical costs, property damages, lost productivity from roadway congestion, and environmental costs. By 2017, the monetized VSL component (in 2013 dollars) increases from $50,000 to $52,000 ($52,000 = $50,000 × (1.0118^4)). Together with the remaining $22,000 in costs, the cost of a fatal crash in 2017 is estimated to be $74,000 in 2013 dollars ($74,000 = $52,000 + $22,000).

The same process applies for all subsequent years. The monetized VSL component is increased by 1.18 percent from the previous year, and added to the $134,000 other costs of a fatal crash, resulting in that year's benefits in 2013 dollars.

Given the cost of a fatal crash of $11,542,000, an injury crash of $472,000, and a tow-away crash of $74,000 in 2017 (in 2013 dollars), and given the 11 fewer fatal, 128 fewer injury, and 220 fewer tow-away crashes estimated in 2017, the benefits of the rule for Option 2 that occur in 2017 total $203.7 million. The fatal crash component is $127.0 million ($126,962,000 = $11,542,000 × 11), the injury crash component is $60.4 million ($60,416,000 = $472,000 × 128), and the tow-away crash component is $16.3 million ($16,280,000 = $74,000 × 220). The same process applies for all subsequent years. Table 11 summarizes the benefits for the first year of the rule for both preferred Option 2 and alternate Option 1.

Table 11: Calculation of Benefits for the First Year of the Rule (2017)

	Option 1			Option 2		
Net Gain to Proposed SFD	**Fatal Crashes**	**Injury Crashes**	**Tow-Away**	**Fatal Crashes**	**Injury Crashes**	**Tow-Away**
Carrier Population Increase	1.0217	1.0217	1.0217	1.0217	1.0217	1.0217
Net Crashes From Switch	58	652	1,125	45	554	950
Percent Put OOS	16.1%	16.1%	16.1%	16.1%	16.1%	16.1%
Crashes to OOS Carriers	9	105	181	7	89	153
OOS Improve Rate	45.5%	45.5%	45.5%	52.8%	52.8%	52.8%
Crash Reduction to OOS Carriers	4	48	82	4	47	81
Crashes to Remaining Carriers	49	547	944	38	465	797
Remain Improve Rate	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Crash Reduction to Remaining Carriers	9	95	164	7	81	139
Total Net Crash Reduction	13	143	246	11	128	220
Monetized VSL 2013	$10,885,000	$393,000	$50,000	$10,885,000	$393,000	$50,000
VSL Annual Increase	1.0118	1.0118	1.0118	1.0118	1.0118	1.0118
Monetized VSL 2017	$11,408,000	$412,000	$52,000	$11,408,000	$412,000	$52,000
"Fixed" Portion of Crash Cost	$134,000	$60,000	$22,000	$134,000	$60,000	$22,000
Cost Per Crash	$11,542,000	$472,000	$74,000	$11,542,000	$472,000	$74,000
Benefits (Millions)	$150.0	$67.5	$18.2	$127.0	$60.4	$16.3
Total Benefits (Millions)	**$235.7**			**$203.7**		

Given the carrier population continues to increase at 2.17 percent annually and the VSL continues to increase at 1.18 percent annually through 2026, under Option 2, *for the ten years from 2017 through 2026, the annualized benefits* of the rule at a seven percent discount rate are *$240.9 million*. The total annualized benefits for Option 1 are $285.6 million, also at a seven percent discount rate. Table 12 presents the stream of yearly

benefits over the 10-year period assessed by the Agency as well as in cumulative and annualized form. Table 12 presents benefits on not discounted, 3% discounted, and 7% discounted bases.

The benefits shown in Table 12 represent a stream that is a function of:

- The immediate (first-year) impact of the proposed rule capturing a significantly larger set of carriers with poor safety fitness;
- The departure of those carriers from the market, or an improvement in their safety fitness;
- The consequent prevention of a portion of the crashes associated with proposed unfit carriers both in the year the unfit determination was made and thereafter;
- The subsequent capture in future years of additional carriers found to be unfit.
    - Note that the number of carriers expected to be identified as unfit in years two through ten is much smaller than that which would be identified during the first year in which this proposed rule is in effect. For this reason, the monetized stream of benefits shown in Table 12 does not "snowball" across the years examined.

Table 12: Total Benefits Projection (in millions of 2013$) Over the Ten-Year Period 2017-2026

Year	Option 1			Option 2		
	0%	3%	7%	0%	3%	7%
2017	$235.7	$235.7	$235.7	$203.7	$203.7	$203.7
2018	$240.3	$233.3	$224.6	$207.7	$201.7	$194.1
2019	$256.7	$242.0	$224.2	$211.4	$199.3	$184.6
2020	$261.6	$239.4	$213.5	$215.7	$197.4	$176.1
2021	$267.1	$237.3	$203.8	$220.0	$195.5	$167.8
2022	$271.9	$234.5	$193.9	$224.5	$193.7	$160.1
2023	$277.0	$232.0	$184.6	$228.9	$191.7	$152.5
2024	$295.2	$240.0	$183.8	$246.4	$200.3	$153.4
2025	$300.5	$237.2	$174.9	$263.8	$208.2	$153.5
2026	$306.4	$234.8	$166.7	$268.8	$206.0	$146.2
Total	$2,712.4	$2,366.2	$2,005.7	$2,290.9	$1,997.5	**$1,692.0**
Annualized			$285.6			$240.9

Note: the large increases in benefits that occur in years 2019 and 2024 under Option 1, and years 2024 and 2025 under Option 2 (most evident in the undiscounted column) are artifacts of rounding fractional fatal crashes prevented to the nearest whole number prior to monetization. The rounding is such that in each of these years, one additional fatal crash beyond that of the previous year is projected to be prevented.

5. ANALYSIS OF NET BENEFITS

In a comparison of motor carrier safety fitness determination processes, the proposed process (Option 2) compares favorably to the current process. Of the carriers that remained in service throughout the 12 months following a final unfit determination, the safety-performance record of the 1,805 carriers identified under the proposed SFD process but not under the current SFD is much worse than the 106 carriers identified by the current process but not the proposed one. The 1,805 carriers added by the process have a crash rate 4.51 per 100 power units, while the 106 "discarded" have a very low crash rate of 2.82 per 100 power units. This trade out of 106 for 1,805 leaves 1,699 carriers with a crash rate of 4.57 per 100 power units.

Under preferred Option 2, the estimated 1,855 drivers working for non-compliant carriers ordered OOS lose employment. It costs each driver in 2013 (in 2013 dollars) an estimated total of $4,003 in lost wages (or revenue for independent contractor drivers), job search expenses, and work adjustments. Given the annual increase in the carrier population of 2.17 percent and no annual increase in real wages for drivers, the annualized cost (note: all annualized costs, benefits, and net benefits in this discussion utilize a seven percent discount rate) to these drivers across the ten years from 2017 through 2026 is estimated at $9.4 million, rounded to the nearest tenth of a million. For alternative Option 1, annualized costs are estimated at $10.6 million when rounded to the nearest tenth of a million. Incorporating information technology systems update costs borne by FMCSA, the annualized cost of the proposed rule increases to $9.9 million Option 2 and $11.1 million for alternative Option 1. As discussed in Section 3.2, costs incurred to achieve compliance by newly-identified carriers are not estimated in this analysis and therefore not included in these annualized values.

For preferred Option 2, annualized benefits are $240.9 million. For alternative Option 1, annualized benefits are $285.6 million. Therefore, for preferred Option 2, annualized net benefits are $231.1 million ($231.1 million = $240.9 million – $9.9 million), and for alternative Option 1, annualized net benefits are $274.5 million ($274.5 million = $285.6 million – $11.1 million). Table 1 in the Executive Summary above provides a summary of the annualized benefits, costs, and net benefits for Options 1 and 2, and also presents alternative annualized cost estimates when applying driver real wage growth of one and two percent from now through 2026.

Table 13 presents the stream of yearly net benefits over the 10-year period assessed by the Agency in cumulative and annualized form, and with not discounted, 3% discounted, and 7% discounted bases. For brevity, corresponding tables associated with the one and two percent annual real wage growth scenarios are not included here as the net benefits are nearly identical from year to year and in aggregate, and the slight differences resulting from utilization of positive real wage growth assumptions are (as mentioned above) captured in the annualized values in Table 1 (see Executive Summary).

Table 13: Total Net Benefit Projection (in millions of 2013$) Over the Ten-Year Period 2017-2026						
Year	Option 1			Option 2		
	0%	3%	7%	0%	3%	7%
2017	$223.6	$223.6	$223.6	$192.6	$192.6	$192.6
2018	$231.0	$224.3	$215.9	$199.4	$193.6	$186.3
2019	$247.2	$233.0	$215.9	$203.0	$191.4	$177.3
2020	$251.9	$230.5	$205.6	$207.1	$189.5	$169.1
2021	$257.1	$228.4	$196.2	$211.2	$187.7	$161.1
2022	$261.7	$225.7	$186.6	$215.5	$185.9	$153.7
2023	$266.6	$223.3	$177.7	$219.7	$184.0	$146.4
2024	$284.6	$231.4	$177.2	$237.0	$192.7	$147.5
2025	$289.7	$228.7	$168.6	$254.2	$200.6	$147.9
2026	$295.3	$226.3	$160.7	$259.0	$198.5	$140.9
Total	$2,608.7	$2,275.2	$1,928.0	$2,198.7	$1,916.5	**$1,622.8**
Annualized			$274.5			$231.1

6. REGULATORY FLEXIBILITY ACT ANALYSIS

The Regulatory Flexibility Act of 1980 (Pub. L. No. 96-354, 94 Stat. 1164 (codified at 5 U.S.C. sec. 601 et seq.)) requires Federal agencies to "…endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation." The Act requires Federal agencies to consider the effects of the regulatory action on small business and other small entities and to minimize any significant economic impact. The term "small entities" comprises small businesses and not-for-profit organizations that are independently owned and operated and are not dominant in their fields and governmental jurisdictions with populations of less than 50,000. Accordingly, DOT policy requires an analysis of the impact of all regulations (or proposals) on small entities, and mandates that agencies shall strive to lessen any adverse effects on these businesses.

The initial Regulatory Flexibility Analysis (IRFA) must cover the following topics:

(1) A description of the reasons why action by the Agency is being considered.

Utilizing an innovative new process, SFD is an improvement on the efficiency of the current method of determining carrier safety fitness. This rulemaking would (primarily) revise 49 CFR Part 385, Safety Fitness Procedures (the Agency's current procedure) through a Notice of Proposed Rulemaking (NPRM; RIN 2126-AB11). It would make conforming amendments to 49 CFR parts 365, 386, 387, 390, and 395.

(2) A succinct statement of the objectives of, and legal basis for, the proposed rule.

The proposed SFD process would improve the effectiveness of the current safety fitness determination. Its goal is a more performance-based method of determining the safety-fitness of motor carriers conducting commercial operations in interstate commerce. The efficiency gains mean more carrier contacts for the same expenditure of resources.

This NPRM is based primarily on the authority of 49 U.S.C. 31144, as amended. It also relies on the provisions of 49 U.S.C. 31133. Delegation of authority is conferred from the Secretary of Transportation to FMCSA under 49 CFR 1.87(f). A full description of the legal basis for this proposal is contained in the Legal Basis section of the NPRM.

(3) A description—and, where feasible, an estimate of the number—of small entities to which the proposed rule will apply.

Because FMCSA does not have direct revenue figures for all carriers, power units serve as a proxy to determine the carrier size that would qualify as a small business given the SBA's revenue threshold. In order to produce this estimate, it is necessary to determine the average revenue generated by a power unit.

With regard to truck power units, the Agency has estimated that a power unit produces about $186,000[27] in revenue annually (in 2013$).[28] According to the SBA, motor carriers with annual revenue of $27.5 million[29] are considered small businesses.[30] This equates to 148 power units (147.77 = $27,500,000 ÷ $186,100/power-unit). Thus, FMCSA considers motor carriers of property with 148 PUs or fewer to be small businesses for purposes of this analysis. The Agency then looked at the number and percentage of property carriers with recent activity that would fall under that definition (of having 148 power units or fewer). The results show that over 99 percent of all interstate property carriers with recent activity have 148 power units or fewer. This amounts to about 493,000 carriers. Therefore, the overwhelming majority of interstate carriers of property would be considered small entities.

With regard to passenger-carrying vehicles, the Agency conducted a preliminary analysis to estimate the average number of power units for a small entity earning $15 million annually, based on an assumption that passenger carriers generate annual revenues of $161,000 per power unit. This estimate compares reasonably to the estimated average annual revenue per power unit for the trucking industry ($186,000). A lower estimate was used because passenger-carrying CMVs generally do not accumulate as many vehicle miles traveled (VMT) per year as trucks,[31] and it is therefore assumed that they would generate less revenue per power unit on average. The analysis concluded that passenger carriers with 93 power units or fewer (93.2 = $15,000,000 ÷ $161,000/power-unit) would be considered small entities. The Agency then looked at the number and percentage of passenger carriers registered with FMCSA that have no more than 93 power units. The results show that about 98% of active passenger carriers have 93 power units or less, which is about 10,000 carriers. Therefore, the overwhelming majority of passenger carriers would be considered small entities to which this NPRM would apply.

Every active motor carrier would be, in essence, subject to this regulation because each has the chance of being identified under the new system if their performance warrants it (that is, if it is poor enough). Hence the rulemaking would apply to all of the estimated 503,000 motor carriers (493,000 property + 10,000 passenger) that are considered as small entities.

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[27] $172,000 estimate in 2008$ indexed for inflation to 2013$: (232.957 ÷ 215.303) × $172,000 = 186,100 using annual CPI accessed on 22-August-2014 at http://www.bls.gov/data/inflation_calculator.htm.
[28] The 2000 *TTS Blue Book of Trucking Companies*, number adjusted to 2008 dollars for inflation.
[29] Subsector 484 on page 26 of newer SBA guidelines (July 14, 2014) accessed on 21-August-2014 at http://www.sba.gov/sites/default/files/Size_Standards_Table.pdf.
[30] U.S. Small Business Administration Table of Small Business Size Standards matched to North American Industry Classification (NAIC) System codes, effective August 22, 2008. See NAIC subsector 484, Truck Transportation.
[31] FMCSA Commercial Motor Vehicle Facts – March 2013.

From Table 5 above, under Option 2 (FMCSA's preferred option), there are an expected 1,530 additional carriers (1,824 – 294) identified under the proposed process that would opt to improve to the point of achieving compliance, and all should be considered small entities. However, while all 503,000 small entities are subject to the rule, about 1,824 carriers (this carrier count includes those carriers that went OOS in the year following final unfit determination under the proposed SFD) are expected to be impacted and an estimated 1,530 of them are projected to opt to improve after being identified under the proposed process.

Under Option 1, there are an expected 1,728 additional carriers (2,059 – 331) identified under the proposed process that would opt to improve to the point of achieving compliance (again, these counts include those carriers that went OOS in the year following final unfit determination under the proposed SFD), and all should be considered small entities. However, while all 503,000 small entities are subject to the rule, about 2,059 carriers are expected to be impacted and an estimated 1,728 of them are projected to opt to improve after being identified under the proposed process; therefore, the proposed rule requires no added burden of any type on ***compliant*** small entities.

(4) Reporting, record keeping, and other compliance requirements (for small entities) of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirement and the types of professional skills necessary for preparation of the report or record.

The proposed rule would require no additional reporting, record keeping, or other compliance requirement burden on small entities.

(5) Duplicative, overlapping, or conflicting Federal rules.

The FMCSA is not aware of any other rules which duplicate, overlap, or conflict with the proposed action. FMCSA is the sole Federal Agency responsible for determining the safety fitness of motor carriers and operators—and that safety fitness is in fact the subject of this rule.

(6) A description of any significant alternatives to the proposed rule which minimize any significant impacts on small entities.

FMCSA is considering whether to phase the implementation of the final rule over a period of time, such as one or two years. A recent memorandum from the President directed Executive departments and agencies to consider ways of lessening the burden of compliance on small entities, such as a phased or delayed implementation, when a rule may have a significant economic impact on a substantial number of small entities.[32] Although FMCSA has reached a preliminary determination that this proposed rule would cover a substantial number of small entities, it will have a negligible economic impact.

[32] Presidential Memorandum on Regulatory Flexibility, Small Business, and Job Creation, 76 FR 3827 (Jan. 21, 2011).

Nonetheless, the Agency would like comments from small entities on whether a phased implementation of the SFD proposal should be incorporated into the final rule. FMCSA also requests comments on this Initial Regulatory Flexibility Analysis and whether there would be significant economic impacts on substantial numbers of small entities.

7. APPENDIX A: EFFECT OF PROPOSED RULE ON THE OVERALL ECONOMY

Under Option 2, *for 2013*, an estimated 294 carriers possessing 1,461 power units and using 1,855 drivers would be ordered out of service were this proposed rule in effect (see Table 5). These 1,855 drivers represent slightly more than 0.05 percent of the estimated total number of 3.5 million interstate drivers (0.00053 = 1,855 ÷ 3,500,000).[33] Given that the need for drivers is a good proxy for economic activity, the Agency estimates that under 0.06 percent of the sector is affected by the rule.

It is critical to distinguish between supply and demand. Any possible disruption in this case is a *supply* disruption—demand is not affected at all.[34] That is, the supply curve may shift, but the demand curve is unaffected.[35] Consequently, the demand for truck and bus transportation is expected to remain stable over time through this continuous safety-fitness determination process, though the market equilibrium may shift as the supply curve shifts relative to a fixed demand curve.

To meet demand, the services provided by these drivers must be reallocated to either existing carriers or new entrants. These carriers can be expected to require an estimated 1,855 drivers to pick up the business of the carriers ordered out of service. The Agency assumes all 1,855 drivers will remain in the industry and actively seek work, therefore providing a ready pool of drivers for existing compliant carriers or new entrant carriers to draw from.

These 1,855 drivers are more productive than the otherwise next most-promising available drivers waiting to be hired by the industry. These displaced drivers may therefore reasonably be assumed to be the next to be hired to make up any shortfall. Additionally, the demand for truck and bus transportation is expected to be stable from region to region—the most logical place for the shortfall to be picked up would be within close geographic proximity to the carriers ordered out of service. Therefore, the re-allocation of these 1,855 displaced drivers should be relatively immediate, with minimal disruption of service or prices.

[33] FMCSA Pocket Guide, 2014 Edition: http://www.fmcsa.dot.gov/safety/research-and-analysis/2014-pocket-guide-large-truck-and-bus-statistics (accessed September 4, 2014).
[34] For these 1,855 drivers, the part of their income affected *does* affect their individual demand, but this is such a miniscule part of the overall economy that there is no effect on the aggregate demand curve.
[35] Equilibrium after a supply-curve shift necessitates a move *along* the demand curve, not a shift in it.

8. APPENDIX B: SUPPORTING CARRIER SAFETY STATISTICS

Tables B1 and B2 provide additional details underlying the analysis presented in Figure 1, Table 3, and Table 4 of this regulatory evaluation. The source of the data in Tables B1 and B2 is the supporting analysis "Estimating the Safety Impact of Proposed Safety Fitness Determination (SFD) Criteria" (FMCSA, May, 2015) for this proposed rule (available in the docket for this rulemaking).

Table B1. Safety Statistics for 12 Months Following Final Unfit Date Under Option 1[36]

Carriers Identified as Unfit under:	Relation	All Carriers	Active Carriers	PUs	Crashes	Crash Rate	Fatal Crashes	Injury Crashes	Tow-Away Crashes
New SFD	A	3,291	3,016	54,061	2,124	3.93	67	778	1,279
Current SFD	B	1,232[37]	1,123	11,365	441	3.88	14	180	247
Both Current and New SFD	C	1,116	1,018	10,125	407	4.02	12	162	233
New SFD, But Not Current SFD	A-C	2,175	1,998	43,936	1,717	3.91	55	616	1,046
Current SFD, But Not New SFD	B-C	116	105	1,240	34	2.74	2	18	14
Net Gain to New SFD	A - B[38]	2,059	1,893	42,696	1,683	3.94	53	598	1,032

[36] Only carriers that were active at their final unfit date and 12 months later were counted for the crash and power unit totals in this table

[37] Of the 1,232 carriers that were given a proposed unfit SFD based on Compliance Reviews (CRs), 198 carriers received a final unfit SFD and were placed out-of-service (OOS). These 198 carriers collectively had 1,248 drivers (or 6.3 drivers per carrier) and 984 PUs (or 4.97 PUs per carrier) according to the PU and driver data collected during the CRs that ultimately resulted in final unfit SFDs.

[38] This row is arithmetic subtraction, so it counts the 117 carriers in the Current-not-Proposed set even though they can't meaningfully be "removed" from the Proposed set, A.

Table B2. Safety Statistics for 12 Months Following Final Unfit Date Under Option 2[39]

Carriers Identified as Unfit under:	Relation	All Carriers	Active Carriers	PUs	Crashes	Crash Rate	Fatal Crashes	Injury Crashes	Tow-Away Crashes
New SFD	A	3,056	2,822	42,437	1,862	4.39	55	688	1,119
Current SFD	B	1,232[40]	1,123	11,365	441	3.88	14	180	247
Both Current and New SFD	C	1,115	1,017	10,123	406	4.01	12	162	232
New SFD, But Not Current SFD	A-C	1,941	1,805	32,314	1,456	4.51	43	526	887
Current SFD, But Not New SFD	B-C	117	106	1,242	35	2.82	2	18	15
Net Gain to New SFD	A-B[41]	1,824	1,699	31,072	1,421	4.57	41	508	872

[39] Only carriers that were active at their final unfit date and 12 months later were counted for the crash and power unit totals in this table.

[40] Of the 1,232 carriers that were given a proposed unfit SFD based on Compliance Reviews (CRs), 198 carriers received a final unfit SFD and were placed out-of-service (OOS). These 198 carriers collectively had 1,248 drivers (or 6.3 drivers per carrier) and 984 PUs (or 4.97 PUs per carrier) according to the PU and driver data collected during the CRs that ultimately resulted in final unfit SFDs.

[41] This row is arithmetic subtraction, so it counts the 117 carriers in the Current-not-Proposed set even though they can't meaningfully be "removed" from the Proposed set, A.