

Preliminary Regulatory Evaluation

**Supplemental Notice of Proposed Rulemaking:
Safety Performance History of New Drivers**

Federal Motor Carrier Safety Administration

June, 2003

Safety Performance History of New Drivers SNPRM: Preliminary Regulatory Evaluation

I. Background and Overview

Under 49 CFR 391.23(a), when a driver seeks employment with a motor carrier (employer), the prospective employer must obtain a variety of information about the driver's employment safety performance history for the preceding three years. Current requirements include acquiring and reviewing (1) the driving record (commonly known as the Motor Vehicle Record, or MVR) from each state where the driver held a license within the last three years, and (2) investigating the driver's employment record for the preceding three years from all previous employers.

Beyond the requirement to inquire to obtain MVR data, 49 CFR 391.23 is silent with regard to the types and amount of previous employment driver safety performance data to be investigated and reviewed by the prospective employer. The regulations in part 391 are also silent regarding whether previous employers must provide any of the information. Therefore, if a previous employer does not provide this data, no FMCSA enforcement action can be initiated.

The U.S. Congress, in the Hazardous Materials Transportation Authorization Act of 1994 (Hazmat Act), directed FMCSA to further specify the types and amount of previous employment driver safety performance data to be investigated by prospective employers from all previous employers of the past three years. The Act also specifies that previous employers be required to provide the specified information to prospective employers. This change would allow FMCSA to initiate enforcement action against those who do not provide this data.

A primary objective of the Safety Performance History of New Drivers SNPRM is to help improve driver safety performance industry-wide by enabling prospective employers to more accurately assess the relative safety risk of potential drivers as part of the hiring process. This would be accomplished by requiring prospective and previous employers to request and provide, respectively, additional safety performance information on the drivers being considered in the hiring decision.

Under this proposed rule, prospective employers would continue to be required to investigate a driver's previous three years of employment and inquire for MVR records for the preceding three years. In addition, the prospective employer would be required as part of the Part 391 regulations to investigate the following additional data:

- Information for the preceding three years on the driver's accident^{*} experience;

^{*} The word crash is now more commonly used. However, because the regulations such as § 390.15 and § 391.25 use the word "accident," the word "accident" is used in this analysis for conformance with usage in the regulations.

- Information for the preceding three years on a driver who fails to undertake or complete an alcohol or controlled substances rehabilitation program prescribed by a substance abuse professional under part 382, if the previous employer is required to keep that information by part 382; and
- Information for the preceding three years on a driver’s use of drugs or misuse of alcohol after having completed a part 382 prescribed rehabilitation program.

The proposed rule would require that drivers be notified of their right to review, protest, and rebut employer investigative safety performance data supplied to prospective employers for use in hiring decisions.

Specific costs to previous employers include retaining an additional two years of accident data for each driver and reporting such investigative data to all prospective employers of drivers for three years after a driver leaves their employ. Current regulations already require these employers to collect and retain one year’s worth of accident data on their drivers, but they are not currently required to routinely report such investigative information to prospective employers, or anyone else.

Additionally, previous employers would be required to routinely report out an additional year’s worth of drug and alcohol test and program data to prospective employers who will be required to make requests for such data. Previous employers of drivers required to have a CDL are already required by part 382 to collect and retain three years of such data and to report to prospective employers on drivers’ violations of Federal regulations regarding alcohol and controlled substances use and/or failure to complete rehabilitation programs within the preceding two years. Effectively, this SNPRM would add that existing § 382.413 requirement to the § 391.23 pre-employment investigation requirements and increase the number of years to be reported from two to three years.

Prospective employers would continue to be required to investigate three years of driver accident data, plus an additional year of alcohol/controlled substances data would be added from all previous employers of the past three years, and that data must be considered in the hiring decisions. This proposed rule would impose additional data review requirements on prospective employers conducting investigations into applicant drivers’ safety performance records, and additional record-keeping requirements for maintaining the investigative data received.

A summary of the costs associated with this proposed rule are included in Table 1.

Table 1. Summary of Costs, 2003-2012, in millions of dollars	
First Year Costs	\$10
Total Discounted Costs, 10-Year Period	\$76

First-year costs associated with this rule total \$10 million, while total discounted costs over the entire 10-year analysis period total \$76 million. The benefits associated with this rule are contained in Table 2.

Benefits Scenario	First-Year Benefits	Total Discounted Benefits, 10-Year Analysis Period
Direct Benefits Only ¹	\$6	\$88
With 10% Deterrence Effect ²	\$7	\$97
With 25% Deterrence Effect ²	\$8	\$110
With 50% Deterrence Effect ²	\$10	\$132

¹ Under the “Direct Benefits Only” scenario, all truck-related crash reduction benefits result from those commercial drivers with the worst safety performance records not being hired.

² Under the three benefits scenarios including a “Deterrence Effect”, FMCSA assumes that the availability of and easier access to new commercial driver safety performance data would result in some drivers improving their driving behavior for fear that prospective employers would now use such data in future hiring decisions. Since we were unsure of the magnitude of this effect, we assessed the deterrence effect at zero, 10, 25, and 50 percent of direct truck-related crash reduction benefits.

In calculating benefits for this rule, we attempted to account for both direct and indirect benefits. Direct benefits are reductions in truck-related crashes that result from prospective employers not hiring certain commercial drivers (i.e., those with poor crash or alcohol/controlled substance information) because the new crash and alcohol/controlled substance test and program data was made available by previous employers. Indirect benefits are those associated with a deterrence effect. The FMCSA assumes that the availability of and easier access to new commercial driver safety performance data would cause some percentage of drivers to improve their driving behavior, for fear that prospective employers would now obtain and use such data in their hiring decisions. Since we do not know the specific magnitude of the deterrence effect associated with this new data availability, we calculated this effect as a percent of the direct crash reduction benefits from this rule.

Comparing total discounted costs and benefits, we have calculated net benefits estimates and benefit-cost ratios for this rule. They are contained in Table 3.

Benefits Scenario	Total Discounted Net Benefits ¹	Benefit-Cost Ratio ²
Direct Benefits Only	\$12	1.16
With 10% Deterrence Effect	\$21	1.27
With 25% Deterrence Effect	\$34	1.45
With 50% Deterrence Effect	\$56	1.74

¹ Total Discounted Net Benefits were derived by subtracting the Total Discounted Cost estimate of \$76 million in Table 1 from each of the Total Discounted Benefits estimates in Column 3 of Table 2. For example, subtracting the \$76 million in total discounted costs from Table 1 by the \$88 million in Total Discounted Benefits under the “Direct Benefits Only” scenario of Table 2 yields Total Net Discounted Benefits of \$12 million over the 10-year analysis period (2003-2012) examined here.

² Benefit-Cost Ratios were derived by dividing the Total Discounted Cost estimate of \$76 million in Table 1 from each of the Total Discounted Benefits estimates for each of the Benefits Scenarios located in Column 3 of Table 2. For example, dividing the \$88 million in Total Discounted Benefits under the “Direct Benefits Only” scenario of Table 2 by the \$76 million in total discounted costs from Table 1 yields a Benefit-Cost Ratio of 1.16 over the 10-year analysis period (2003-2012) examined here. A benefit-cost ratio greater than one implies that the rule is cost effective to implement when comparing costs to benefits within the 10-year analysis period.

When examining the total discounted net benefits estimates and benefit-cost ratios, we see that in all scenarios identified in Table 3, this rule is cost effective when measured within the 10-year analysis period. The costs and benefits of this SNPRM will be discussed separately in the next two sections.

II. Costs

Inputs for Cost Estimation

For prospective employers, the costs associated with this proposed rule involve new driver data review, retention, and driver notifications. For previous employers, costs include new driver data retention and reporting. Previous employers are entitled to receive payment for their costs of retaining and providing this information, although to what degree this will actually occur is unknown. FMCSA has a policy that previous employers cannot demand receipt of payment for alcohol and controlled substance data as a condition of releasing the data to prospective employers. If this policy is extended to other investigative information such as accident data, the costs may be largely borne by previous employers.

For purposes of this analysis, we have taken the position that it is not relevant whether prospective employers pay previous employers for such information. This is based on the premise that such charges represent a transfer cost from one group of employers to another and are not a new cost associated with regulatory compliance. It is possible there could be equity implications, i.e., some segments, possibly composed of small entities, may function more as entry level employers and will more consistently be providing this information to other motor carriers without getting benefit of the information for their hiring decisions. Comments and data are requested to document whether any other assumption must be considered.

The costs associated with the records management activities involved with this proposed rule were taken from the publication, “Cost Indicators for Selected Records Management Activities”, and updated to 2001 dollars using the Gross Domestic Product Price Deflator.¹ Relevant records management activities associated with this proposed rule are outlined in Table 4.

Activity, Paper Records Management	Unit Cost (\$1993)	Unit Cost (\$2001)
Filing Records	0.12	0.15
Retrieving Records	1.28	1.57
Duplicating Records	1.08	1.33
Refiling Records	1.49	1.84

Sources: “Cost Indicators for Selected Records Management Activities”, Jose-Marie Griffiths and Donald W. King, ARMA International, 1993, and “2001 Producer Price Index for Trucking and Courier Services (SIC 421)”, U.S. Department of Commerce, Bureau of Economic Analysis.

In developing the cost figures for this manual, ARMA staff identified 38 individual records management activities for which costs were to be developed. They then worked

¹ Cost Indicators for Selected Records Management Activities, Jose-Marie Griffiths and Donald W. King, ARMA International, 1993.

with records managers from 19 test sites throughout the United States to develop a cost per unit for each activity, including direct (i.e., labor) and indirect (i.e., departmental and organizational overhead) cost components. Only those activities deemed relevant to this rule were included in Table 4. It is not known what variations may exist in these costs for the many very small motor carriers that do not have comparable dedicated records management staffs assigned to perform these activities. Comments and data are requested to document whether any other cost basis is required for accurately calculating the impacts on small entities.

The total costs associated with performing the above records management activities are determined by the number of new records we would expect to be generated, retained, and reported as a result of this proposed rule's implementation. Therefore we must estimate the number of driver hiring decisions, truck-related accidents and alcohol/controlled substances data items that would be generated, retained, reported and reviewed as a result of this proposed rule's implementation. This information will be used as input to generate the cost estimates for this proposed rule.

Number of Annual Driver Hiring Decisions Addressed

To examine the number of drivers affected by this proposed rule, we must first develop a baseline estimate of the number of annual driver hiring decisions currently made within the industry. In a 1997 study for the American Trucking Association, the Gallop Organization estimated that between 1994 and 2005, the trucking industry would need to hire 403,000 drivers annually.² Of this total, Gallop estimates that 320,000 (or 80 percent) would need to be hired due to internal turnover (i.e., drivers switching trucking companies), 35,000 (or 8 percent) would need to be hired due to industry growth, and 48,000 (or 12 percent) would need to be hired due to attrition, retirement, and external turnover (i.e., drivers leaving trucking for alternative industries).

There are two factors that might suggest the number of annual hires may be greater than 403,000. First, there are approximately 40,000 new CDLs issued each month, or 480,000 new CDLs per year. Presumably many of these drivers are obtaining a CDL because they are going to work as a new driver. This 480,000 does not include any of the new drivers not required to have a CDL to operate a CMV of less than 26,000 lbs. that we know will also be occurring

Second, the study refers to drivers who chose to enter truck driving as a profession. It makes references that indicate the emphasis is on drivers of long haul, large trucks. But, there are numerous drivers and employers who will be covered by the proposed investigation requirements of this SNPRM who work for regional/local companies driving smaller straight trucks, and for companies not engaged in full-time for-hire or private carriage.

² "Empty Seats and Musical Chairs: Critical Success Factors in Truck Driver Retention", prepared by the Gallop Organization for the American Trucking Associations (ATA) Foundation, October 1997.

These reasons imply the total number of drivers for whom a previous employment investigation would be required as part of the hiring process may be greater than 403,000. Comments are requested with supporting data on any alternative estimate for the total number of drivers who would be covered by the SNPRM who would have to have a previous employment investigation.

To estimate the net effect of this proposed rule on the number of driver hiring decisions made annually, we must add to this baseline estimate (i.e., the 403,000 drivers) the number of driver applicants who would not be hired as a result of the additional driver accident and alcohol/controlled substance data made available to prospective employers. For this regulatory evaluation, we estimated that almost 16,000 drivers who otherwise would have been hired would not be hired when prospective employers have access to additional driver accident and alcohol/controlled substances data. A full explanation on the derivation of this estimate is provided later in this discussion.

These 16,000 drivers represent a little less than four percent of the total 403,000 drivers that Gallop estimates are needed annually by the industry. Since 16,000 drivers would be denied employment as a result of the proposed driver safety performance data, an additional 16,000 drivers would then have to be investigated, interviewed and hired as replacements. Our estimate of the number of drivers hired annually within the industry then becomes 419,000 (i.e., 403,000 + 16,000).

The result is approximately 419,000 driver-hiring decisions that would now be made annually after this proposed rule's implementation. At this point, it is appropriate to discuss the process we used to estimate the number of new accident and alcohol/controlled substances records likely to be made available to prospective employers as a result of this proposed rule's implementation.

Number of Annual Truck-Related Accident Records Addressed

Currently, previous employers are only required to retain one year of accident data, and are not required to routinely provide accident data on their drivers to prospective employers, or anyone else. Under this proposed rule they would be required to begin retaining two additional years of data and routinely providing three years of such data upon request. The National Highway Traffic Safety Administration (NHTSA) estimates that truck-related accidents (i.e., those involving vehicles with a gross vehicle weight rating of greater than 10,000 pounds) averaged 445,000 annually for the years 1999-2000. This figure includes all reportable fatal, injury, and property damage only (PDO) accidents involving trucks as estimated by NHTSA through its General Estimates System (GES).

For the purposes of retaining additional accident data, we assume that previous employers will have to retain 445,000 annual driver accident records for two additional years in order to comply with this proposed rule. For the purposes of reporting new driver accident data to prospective employers, we need to estimate the number of

accidents that would likely be applicable to the number of drivers hired each year within the industry.

To do this, we begin by dividing the number of annual truck-related accidents (445,000) by the estimate of total number of interstate and intrastate drivers (3 million) currently operating, which yields an estimate of 0.148 accidents per interstate driver per year.³ We then apply this figure to the Gallop estimate for the number of drivers hired each year within the industry due to internal turnover (320,000).⁴ This yields an estimate of 47,500 annual truck-related accidents applicable to drivers hired each year. Since the proposed rule requires three years of accident records on each driver considered for employment, the total number of newly available accident records equals 142,500 on the 320,000 applicable drivers.

Of the total 142,500 new accident records made available to prospective employers for use in driver hiring decisions each year, we assumed that for 10 percent of these records (or almost 14,300 cases, after rounding), the driver would not be hired as a result. Assuming one accident per driver, we estimate this new accident data will reverse 14,300 of the 403,000 hiring decisions made each year within the industry. Note that this figure represents only those driver hiring decisions reversed because of new *accident* data. In the next section we will discuss those driver-hiring decisions likely to be reversed because of an additional year of *alcohol/controlled substances* data.

We believe the above assumption, (i.e., where in 10 percent of cases the new accident data would result in a reversed decision) is reasonable, given the importance of accident data in determining insurance rates and forecasting potential liability costs for trucking companies. In fact, in a recent survey of the safest motor carriers conducted by the University of Maryland Robert H. Smith School of Business on driver hiring practices, 93 percent of respondents indicated that “no chargeable accidents” was an “important” or “very important” factor in their driver hiring decisions.⁵

If we examine the distribution of annual truck-related accidents, additional perspective is provided. According to the FMCSA publication, “Large Truck Accident Facts 2000”, of the average 445,000 truck-related annual accidents reported in calendar years 1999 & 2000, one percent (or 4,450) were fatal accidents, 22 percent (or 98,000) were injury-

³ The Bureau of Labor Statistics (BLS) estimates there are approximately 3 million truck drivers. This includes those who are primarily employed as truck drivers, and includes inter- and intrastate, CDL and non-CDL drivers. This is likely an underestimate of the true number of drivers, since BLS does not include those individuals who do not consider themselves to be truck drivers, but are nonetheless covered by FMCSA regulations (i.e., utility truck drivers, delivery drivers, etc.) However, FMCSA is unsure how many of these “non-driver drivers” there are, so we used the results from BLS, which are taken from its most recent Occupational Employment Survey.

⁴ We assumed that drivers hired because of retirement and attrition (48,000), industry growth (34,000), and as replacements for those not hired as a result of this rule (16,000), would be new to the industry and therefore would not have safety performance records as commercial drivers.

⁵ “Best Highway Safety Practices, A Survey of the Safest Motor Carriers About Safety Management Practices,” by Thomas Corsi and Richard Barnard, University of Maryland, College Park, R.H. Smith School of Business, 2003, report for the Federal Motor Carrier Safety Administration.

related, and 77 percent (or 343,000) were property-damage-only (PDO) accidents.⁶ Also, FMCSA research into NHTSA's Fatal Accident Reporting System (FARS) database reveals that in almost 30 percent of two-vehicle accidents involving a large truck and passenger vehicle, the driver of the truck exhibited behavior that may have contributed to the accident.⁷

Since the literature carefully notes that a "contributing factor" cannot be equated with crash causation (and FMCSA does not yet have definitive data on crash causation factors), we must assume that in only a certain percentage of these crashes did the truck driver's behavior actually cause the crash, with "cause" being the primary criterion we assume a prospective employer would use in deciding whether to hire a driver or not. In this analysis, we assumed that in only one-third of these "contributing factor" crashes, or 10 percent of all crashes (i.e., 1/3 of 30% of all crashes = 10%), did the truck driver's behavior cause of the crash (in the other two-thirds of "contributing factor" crashes, we assumed that the truck driver's behavior either did not in fact cause the crash or that further investigation on cause was inconclusive and the driver was hired). Therefore, in 14,300 of the cases where three years of new accident data is made available to prospective employers the hiring decisions would be reversed, i.e., the driver is denied employment. The FMCSA invites comments regarding the accuracy of these assumptions.

Therefore, in 14,300 of the cases where three years of new accident data is made available to prospective employers would the hiring decisions reversed. To this estimate, we will add the number of hiring decisions likely to be reversed due to new alcohol/controlled substance test and program data. The result will be a total number of annual hiring decisions likely to be reversed because of this rule.

Number of Alcohol and Controlled Substances Test-Related Records Addressed

This proposed rule would require previous employers to report to prospective employers those drivers that failed at any time within the three preceding years to undertake or complete an alcohol or controlled substances rehabilitation program prescribed by a substance abuse professional (SAP) under part 382. Employers are already required to retain three years of such results and report on two years of such results, so this proposed rule expands the reporting requirements by an additional year. Additionally, previous employers would be required to report an additional year's worth of data on drivers' use of alcohol and controlled substances after completing such a rehabilitation program, but only if the previous employer is required by part 382 to retain the data, i.e., no new data retention requirement is proposed for this data.

⁶ "Large Truck Crash Facts 2000", Federal Motor Carrier Safety Administration, Analysis Division, March 2002.

⁷ "Large Truck Crash Profile: The 1997 National Picture", by the Analysis Division, Office of Motor Carriers, Federal Highway Administration, September, 1998.

Discussions with FMCSA staff revealed that there are currently no reliable estimates on the number of drivers who fail to undertake or complete alcohol/controlled substances rehabilitation programs annually, nor does reliable information exist on the number of drivers who test positive for alcohol/controlled substance use after completing such a program (no single entity currently collects such data to our knowledge). FMCSA does possess reliable information on the percentage of drivers with commercial driver's licenses who have failed random and non-random alcohol and controlled substances tests within the preceding year. We used results from the 2001 FMCSA Drug and Alcohol Testing Survey to generate what we believe is an upper bound for this group of drivers. By generating an upper bound, we provide ourselves a reasonable chance of fully accounting for the costs associated with the impact on these drivers.

In the 2001 survey, FMCSA estimated that the percentage of drivers testing positive for pre-employment and employment monitoring for alcohol was 0.1 percent, and for controlled substances was 1.5 percent. Applying these figures to the estimate of the number of driver applicants each year with previous industry experience, or 320,000, yields an estimate of roughly 5,120 drivers who would be involved in hiring decisions each year and who would have tested positive for alcohol or controlled substance use within the past year (i.e., $0.001 \times 320,000 + 0.015 \times 320,000$). Per 49 CFR 382.605, each driver who tests positive for alcohol/controlled substance use must be referred by the employer to a substance abuse professional, who shall determine what assistance is needed. In this analysis, we projected that all applicable drivers who tested positive for alcohol/controlled substance use during the preceding year (or 5,120 drivers) would be referred to a rehabilitation program.

Of those referred, it is reasonable to assume that the majority would complete such a program, given that the driver's livelihood depends upon it (i.e., under current regulations, they are not allowed to return to duty as a driver until they complete such a program). For purposes of this analysis we assumed that 25 percent, or almost 1,300 (after rounding) of all drivers who test positive for alcohol/controlled substance use *and* are referred to rehabilitation program within the past year will either (a) not complete the program, and/or (b) will not be hired by prospective employers because of concerns surrounding the driver's past involvement with alcohol/controlled substances.

We felt these assumptions are reasonable, considering that a recent University of Maryland Robert H. Smith Business School survey of the safest motor carriers indicated that 96 percent of respondents felt that "No prior Dismissals for Alcohol and Drug Use" was an "important" or "very important" factor in deciding whether or not to hire a driver. These 1,300 drivers (of the 5,120 drivers referred to rehabilitation programs) represent our proxy estimate for the number of drivers who would be affected by the availability of an additional year of alcohol/controlled substance test and rehabilitation program data becoming available to prospective employers. Combining these 1,300 drivers with the approximate 14,300 drivers who are not hired because of the new accident data yields a total estimate of roughly 16,000 cases (after rounding) where hiring decisions are reversed because of this proposed rule.

Implicit in parts of the above discussion, where we discussed the number of driver safety performance investigations to be made to previous employers, we assumed one applicant per job and therefore one investigation per prospective driver to previous employers. This is likely an underestimate of the true number of investigations likely to be made to previous employers each year, since in some cases a prospective employer will request safety performance data on more than just one prospective driver (i.e., the leading candidate for the position). Additionally, some portion of prospective drivers will likely have had more than one previous employer within the last three years, which would further increase the total number of investigations made to previous employers within a given year. However, FMCSA was not able to estimate with any certainty the number of drivers a prospective employer might consider “serious candidates” for a position and for whom safety performance history data would be requested. Additionally, although recent estimates on industry turnover would indicate that across all segments, an average driver would likely be with the same employer for three or more years, we recognize that some segments have much higher turnover rates and that a prospective driver may have had two or more employers within the past three years. Given the relative uncertainty in these numbers though, we assumed one investigation per position to be filled for the purposes of this evaluation. The agency invites comments regarding the accuracy of these assumptions and encourages commenters to provide data to support their position.

Also, we know that some portion of the industry initiates applications using telephone and other means of communication. They initiate the required inquiries and investigations based on the application. A result is that some portion of those drivers will be pursued further to a second stage screening when drug and alcohol data would be required. Thus, some portion of the investigations would consist of two investigations to the same previous employers, the second being for the drug and alcohol data when the prospective employer has obtained the required signed driver authorization for the data to be released. We do not have enough data to estimate this additional cost.

With the above hiring, accident and alcohol/controlled substance test and program data, we proceed to estimate the costs of this proposed rule.

Costs

In terms of new data retention requirements, two additional years of accident data will have to be retained by previous employers as a result of this proposed rule. There is no new retention requirement for alcohol and controlled substances data, since current regulations require employers to retain three years of such information.

In terms of new reporting requirements, this proposed rule would affect both accident and alcohol/controlled substance data, since three years of accident data and one additional year of alcohol/controlled substances data will now have to be routinely provided by previous employers to prospective employers upon request. The various costs associated with these new requirements will be discussed below.

Accident Data

Recall that the total number of truck-related accidents occurring annually was estimated at 445,000 and the number of annual accidents per driver was estimated at 0.148 (i.e., 445,000 / 3 million drivers). Of this total, the number of accidents for which 320,000 drivers (i.e., those drivers seeking new positions whom we assume already have experience in the trucking industry) would be responsible was estimated at roughly 47,500 (i.e., $0.148 * 320,000$). This is the number of accident records per year that would be reported to prospective employers, or 143,000 for three years. Recall also that we assumed that the 16,000 positions for which “replacement hires” would be required would be new to the industry and therefore would have no previous accident history.

Regarding new accident *data retention* under this proposed rule, employers would be required to retain an additional two years of all truck-related accidents, or 890,000 records (445,000 annual accident records * 2 years), since an employer never knows which of its drivers would seek new positions within that year. Records management activities associated with this proposed rule include filing/storing a paper record (@ \$0.15 per record according to the Association for Records Management Activities (ARMA)) for each of these accidents each year.

Regarding new *reporting* requirements, each driver applying for a new position (we assumed one applicant per opening in this analysis) would generate a new search by the prospective employer (and consequently a new search by the previous employer), whether or not there is any crash or alcohol/controlled substance data to report. Recall that we had estimated there would be 403,000 drivers hired annually in the industry, along with the 16,000 replacement drivers that would be needed. Therefore, 419,000 record searches will have to be completed per year (@ \$1.57 per search according to the ARMA).

Additionally, in the 143,000 cases where an accident is discovered for the preceding three years, duplication of the record will have to be performed (@ \$1.33 per record according to ARMA.) The original record will have to be refiled in the driver’s file (@ \$1.84 per record according to ARMA).

Lastly, we assumed one letter would be mailed for each of the 419,000 driver record searches conducted annually. We assume each return letter would include either the accident data requested or a standard form note explaining the driver had no accidents within the past three years. We have no immediate basis for estimating labor and indirect costs for preparing the letter, so we used only the direct postage fee of \$0.37 per letter via first-class mail.

Multiplying the cost per record for each activity by the number of records handled under each activity provides an estimate of the total cost to retain, retrieve, and report accident records to meet the requirements of this proposed rule. Total first-year costs from (a) retaining two additional years of driver accident data, (b) searching/retrieving, duplicating, and refiled three years of accident data in preparation for mailing, and (c) mailing out the information are estimated to be approximately \$1.4 million.

Alcohol and Controlled Substance Program Completion Data

Section 114 of the Hazmat Act specifies that driver safety information provided by the previous employer must include “any failure of the driver, during the preceding three years, to undertake or complete a rehabilitation program...” and “any use by the driver, during the preceding three years, in violation of law or Federal regulation, of alcohol or a controlled substance subsequent to completing such a rehabilitation program.” The new reporting requirement is to add one additional year.

Each of the potential new hires already has to be investigated, and the prospective employers are performing a search of their records going back two years. There would be some additional cost incurred to search back and report for one additional year of data. In order to estimate a maximum upper bound of what this might cost, the following assumptions were made.

Since each request for an investigation requires a search, then for each of the 419,000 record searches an additional year of data will have to be searched (@ \$1.57 per search according to the ARMA). Additionally, in the 5,120 cases where a violation/referral is discovered for the preceding year, duplication of the record will have to be performed (@ \$1.33 per record according to ARMA) and the original record will have to be refiled or stored in the driver’s file (@ \$1.84 per record according to ARMA). Lastly, we assumed one letter would be mailed (@ \$0.37 per letter postage only via first-class mail) for each of the 419,000 driver record searches conducted annually, since we assume each return letter would include either the test/program results requested or a short standard form explaining the driver had no alcohol/controlled substance violations/program referrals within the past year.

Multiplying the cost per record for each activity by the number of records handled under each activity provides an estimate of the total cost to retain, retrieve, and distribute alcohol/controlled substances records to meet the requirements of this proposed rule. Total first-year costs from (a) searching/retrieving, duplicating, and refiling one year of additional such data in preparation for mailing, and (b) mailing out the information are \$0.8 million. Because of cost savings and overlaps with the already existing processes being performed, the actual cost likely could be less.

Costs To Notify Drivers of Rights to Review Data

Section 114 of the Hazmat Act specifies that the Secretary of Transportation shall “ensure that the driver to whom such information applies has a reasonable opportunity to review and comment on the information.” Further, section 4014 of the TEA-21 states, “...the Secretary shall ... provide protection for driver privacy and establish procedures for review, correction, and rebuttal of the safety performance records of a commercial motor vehicle driver.”

Under this proposed rule, the § 391.23 investigation into a driver's employment history involves the prospective employer acquiring driver safety performance data (driver accident and alcohol/controlled substance program data) from all previous employers of the previous three years. For this analysis, we assumed all drivers applying for positions annually (419,000) would be notified of such rights by prospective employers as part of the application for employment.

Since the motor carrier industry is dominated by small entities (i.e., 90+ percent of industry participants earn less than \$10 million in annual revenue), we expect that most carriers would simply purchase new employment applications from a third-party office supplies distributor after this proposed rule is implemented. While a box of 100 standard employment applications currently costs \$6.00 (or \$0.06 each) from a major, well-known office supplies distributor, we expect that motor carriers would have to order customized applications to include the new "review rights" language. As such, we assumed the cost of these application forms would run approximately double that of standard application forms, or about \$0.12 each. Accounting for the 419,000 application forms filed each year and using the difference between the current cost of standard application forms and the cost of new customized forms (\$0.06 each), the annual cost to provide this notification to applicants would equal only \$25,000.

There are some segments of the motor carrier industry that encourage drivers to make initial applications via telephone, i.e., no paperwork exchanged at that stage. The drivers likely most interested in seeing the previous employer safety performance data are those not selected for employment. If we allocate all of the drivers projected to be declined employment to these employers, then 16,000 drivers that would not otherwise be physically seen, would have to be notified in writing of their rights by some means. For purposes of this analysis we assume this will be a form letter. Again assuming \$0.12 for the form, \$0.37 for postage, and \$1.00 for labor to address and mail the letter, then an addition cost of just under \$30,000 would be incurred. If just simply added to the cost of notification estimated above, the total cost is still much less than \$0.1 million.

Costs Associated With Driver Data Protests

Recall that the proposed rule provides that all drivers have the right to review, comment on, and refute the employment data provided by their previous employers to prospective employers. However, those drivers most likely to refute such data are those that are denied employment as a result of the information. Understandably, most of the drivers who are hired after the new safety performance data is provided to prospective employers would have no reason to suspect that their safety performance data have errors (since they were in fact hired). Therefore, we felt that these individuals would be very unlikely to request their data. As such, we assume that only those drivers who are denied employment as a result of the new data (or 16,000 drivers) would request the prospective employer to give them a copy of the safety performance data provided by their previous employers.

With regard to the expected accuracy of this data, the FMCSA recently evaluated the accuracy of the data it provides to motor carriers as part of the Carrier Safety Profiles (these are snapshots of a carrier's recent safety performance). The analysis revealed that 99.42 percent of accident data provided to carriers was accurate, while 99.78 percent of inspection data was accurate. Therefore, using the FMCSA data accuracy results as a guide, we felt that the vast majority of driver safety performance data that would be provided by previous employers to prospective employers would be accurate.

In the 16,000 cases where we expect a protest to be filed each year, we assumed two additional hours of labor time spent by each driver to file that protest with their previous employer. Additionally, we assumed two additional hours of labor time spent by each previous employer to address each protest. Using an average 2001 hourly wage rate for trucking managers of \$35.94 and 16,000 cases, total costs to the trucking company to address driver protests of their data files are roughly \$1.1 million annually undiscounted (i.e., $16,000 \times \$35.94 \times 2$).⁸ Multiplying the 2001 hourly wage rate of \$14.66 by the two additional hours spent by each of the 16,000 drivers to file a protest adds another \$0.5 million to this total annual cost. Lastly, at \$0.15 per record filing (using ARMA record keeping estimates) and 16,000 cases, filing activities add only \$2,300 in costs. Aggregating these three components yields an annual total cost to address driver protests of \$1.6 million. In estimating the driver and employer costs associated with potential protests, it was unclear how frequently the driver or the employer would secure the services of an attorney to either file or review such protests. Therefore, costs associated with these services were not included in this analysis. However, the agency invites comments regarding the accuracy of this omission and encourages commenters to provide data to support their position.

Costs to Prospective Employers to Collect/Review Additional Data

We developed an estimate of the additional labor time expended by prospective employers to collect and review the newly acquired driver data from previous employers. Note that, per current regulations, prospective employers must contact all relevant states to acquire drivers' MVRs for the preceding three years. Additionally, prospective employers are required to contact previous employers from the preceding three years to request employment records, including results of drivers' completion of alcohol/controlled substance rehabilitation programs. As such, the new driver performance data required under this proposed rule would simply expand the data collection and review process currently being practiced by these employers.

To determine the cost per hiring decision, we estimated that the prospective employer's review of driver performance data would be expanded by an additional one-half hour per hiring decision. Using the average 2001 hourly wage rate for a trucking company

⁸ In a cost benefit study of motor carrier safety programs, Professors Leon Moses and Ian Savage estimated that the average trucking company manager earns \$31.25 per hour, including wages and benefits. Inflating this figure to 2001 dollars using the GDP price indicator yields an average wage of trucking company managers of \$35.94.

manager of \$35.94 and 320,000 experienced drivers (i.e., those who will have performance histories for these employers to review), total annual costs of this activity amount to \$5.8 million (undiscounted).

Costs to Prospective Employers to Interview “Replacement Hires”

There will also be new costs to prospective employers to interview the approximately 16,000 replacement drivers for those applicants now rejected for positions because of the newly available accident and alcohol/controlled substance data. We assumed one additional hour per prospective employer to interview each “replacement driver”. At an hourly wage rate of \$35.94 per hour per trucking company manager and 16,000 applicants, total annual costs of this activity amount to \$0.6 million (undiscounted).

Total Costs

Total first-year costs to implement this proposed rule amount to approximately \$10 million (after rounding). Total discounted costs over the 10-year analysis period (2003-2012) are \$76 million, using a discount rate of seven percent.

III. Benefits

Societal benefits associated with this proposed rule would accrue from the expected reduction in accidents resulting from the use of safer drivers by industry. Specifically, additional driver safety performance data used in the hiring decision should result in denying positions to the less safe drivers who prior to this proposed rule would have been hired. Additionally, it is reasonable to assume this proposed rule would generate a deterrence effect, since studies of similar social problems and policy approaches have quantified such impacts (i.e., reducing alcohol-related accidents via changes in penalties and public attitudes). In this analysis, we quantified the “direct” benefits resulting from a reduction in accidents due to changes in driver hiring decisions. To estimate “indirect” benefits associated with a deterrence effect, we conducted a sensitivity analysis by assuming that the benefits from a deterrence effect could range anywhere from zero, 10 percent, 25 percent, or 50 percent of the direct crash reduction benefits associated with this rule.

Benefits Resulting From Newly Available Accident Data

The first source of direct benefits expected from this proposed rule would occur as a result of trucking company managers using drivers’ accident data from the three preceding years in their hiring decisions. A study by the Volpe National Transportation Systems Center provides some insight into the use of past accidents as a predictor of future accidents. The Motor Carrier Safety Status Measurement System (SafeStat) is “an automated analysis system developed for [FMCSA] that combines current and historical safety data to measure the relative safety fitness of interstate motor carriers.” A significant part of this system is the accident data reported to FMCSA as part of ongoing State activities under MCSAP, which report accidents using SAFETYNET. The data is initially placed in the motor carrier management information system (MCMIS).

The study by the Volpe Center examined the difference in crash rates for motor carriers with a high number of previous crashes versus those with a low number of previous crashes. We used the results of this study as a proxy for the direct crash reduction potential of this rule, under the logic that if a hiring manager, using the new accident data provided to him under this rule, ends up hiring an applicant with a low previous crash rate (or no crashes in the recent past) in lieu of the applicant with a high previous crash rate, then crash reduction benefits would accrue from this rule.

To evaluate the effectiveness of its accident predictor measure (the Accident Safety Evaluation Area (SEA) Score) in Safestat, Volpe observed the post-identification accident involvement of motor carriers it had identified as high-risk carriers in Safestat (i.e., those with a relatively high number of past accidents) relative to motor carriers identified as low-risk by the system (i.e., those with inspections but generally without past accidents).⁹ The objective was to test the effectiveness of Safestat’s accident rate prediction capability.

⁹ An Effectiveness Analysis of Safestat (Motor Carrier Safety Status Measurement System), by David Madsen and Donald Wright, Volpe National Transportation Systems Center, November, 1998.

In this evaluation, Volpe found that motor carriers identified as high-risk (based on accidents they experienced during a 36-month period prior to identification) had a post-identification accident rate of 81.4 accidents per 1000 power units owned or leased by that company. The post-identification study period lasted 18 months. Carriers identified by Safestat as low-risk (based on the absence of any past accidents and hence no Accident SEA score), had a post-identification accident rate of only 29.9 accidents per 1000 power units owned or leased for a period of 18 months after identification.

Since a motor carrier's accident profile is a direct extension of its drivers' accident profiles, for purposes of this analysis we converted this difference (51.5 accidents per 1000 power units) to a "per driver" accident rate. To do so, we assumed there are on average two drivers per power unit within the industry. Research by the University of Michigan's Trucking Industry Program (UMTIP) estimates the drivers-to-power units ratio between 1.1 and 2.4, while anecdotal information provided by a large motor carrier at the Hours-of-Service Roundtables in September, 2000, revealed a current ratio of 2.33 drivers per power unit.

At a post-identification accident rate difference of 51.5 accidents per 1000 power units between high- and low-risk carriers, and two drivers per power unit on average within the industry, the difference in accidents per driver is .026 over the 18-month post-identification analysis period. Assuming an equal distribution to this accident involvement differential over the 18-month period following identification, we estimated the annual difference in accidents between drivers with and without accidents within the preceding 18 months to be 0.017 accidents per driver per year.

An important consideration in the estimation of accident reduction benefits is the length of time we expect it would take drivers who are denied an employment opportunity because of the new safety performance data to re-enter the truck driving population. While the expectation of a deterrence effect is recognized here, it was not possible to quantify this effect with any degree of certainty in this analysis. In this analysis, we conservatively assumed that drivers who are not hired into driving positions in any given year because of the new data would be able to find other driver positions after an average of six months of searching. Drivers with relatively few previous accidents would find work sooner, while those with a relatively large number of previous accidents may have difficulty stretching beyond the three years of required record-keeping.

The assumption of an additional six-month job search period for these drivers was chosen because it is conservative. Choosing such an assumption for this analysis allows us only to count six months' worth of accident reduction benefits associated with each hiring decision made. As such, the accident reduction differential used to calculate benefits in this analysis was 0.0085 per driver (i.e., 0.017 accidents per driver per year / 2). By using such an estimate, we are attempting to ensure that our estimates of accident reduction benefits will not be overestimated.

An average cost per truck-related accident of \$75,637 (in 1999 dollars), taken from Zaloshnja, Miller, and Spicer, was used in these calculations.¹⁰ This estimate represents the average cost in 1999 of police-reported accidents involving trucks with a gross weight rating of more than 10,000 pounds. We estimated this cost to be \$79,873 in 2002 dollars using the Gross Domestic Product (GDP) Price Deflator.

In the first year of the analysis period (2003), one year’s worth of accident data (or 47,500 records) would be available to prospective employers, since previous employers are currently required to collect and retain one year’s worth of such data. Based on our earlier assumption that in 10 percent (or 4,750) of these cases, the driver hiring decision would be reversed, then 4,750 drivers would be denied employment because of the newly available accident data. In the second year of the analysis period (2004), two years of accident data (or 95,000 records) are collected on drivers, and the number of hiring decisions reversed rises to 9,500 (or 10 percent of the 95,000 records), and in 2005 and thereafter, when this proposed rule would be fully implemented, the number of hiring decisions reversed because of the new accident data would rise to almost 14,300 (or 10 percent of the 143,000 newly-available accident records for the 320,000 experienced drivers hired each year).

At an average cost per accident of \$79,873 in 2002 dollars, an accident differential of .0085, and 4,750, 9,500, and 14,300 drivers who are not hired in 2003, 2004, and 2005, respectively, the discounted value of annual accident reduction benefits is equal to \$3.3 million in 2003, \$6.5 million in 2004, and \$9.8 million in 2005 (when three years of data become available to prospective employers). This translates to a total of 41, 81, and 122 accidents avoided in these three years, respectively, as a result of the newly available accident data. Thereafter, the accident reduction potential (122 accidents) remains the same as that in 2005, the year the accident data retention and reporting requirement would become fully implemented. First-year accident reduction benefits equal \$3.3 million, while total discounted accident reduction benefits from the new accident data are equal to \$64 million (after rounding) over the 10-year analysis period.

Alcohol and Controlled Substance Use and Rehabilitation Program Data

The second source of direct accident reduction benefits would result from the availability of additional driver alcohol and controlled substance use and rehabilitation program data by prospective employers. The MCMIS accident information contains information on the number of accidents experienced by drivers with and without alcohol or controlled substances citations for the period 1999-2001. These results are provided in Table 5.

Table 5. Truck Accidents Involving Drivers With and Without Citations for Alcohol and Controlled Substances Violations, 1999-2001.			
Driver Category	No. Of Drivers in MCMIS Sample	Number of Accidents (over 3	Accidents Per Driver (over 3

¹⁰ Cost of Large Truck- and Bus-Involved Crashes, Final Report, by Eduard Zaloshnja, Ted Miller, and Rebecca Spicer, October 2000, prepared for the Federal Motor Carrier Safety Administration.

		Years)	years)
Drivers Who Had 0 Citations for Alcohol/Drug Violations	12,815	13,877	1.08
Drivers Who Had 1 or More Citations for Alcohol/Drug Violations	209	266	1.27
Source: MCMIS Data, October, 2002.			

Table 5 shows the difference in accidents for drivers with and without citations for alcohol and controlled substances violations. The difference in accident involvement over a three-year period was 0.18985 accidents per driver (.019 after rounding). Assuming an equal distribution of accident involvement and driver exposure over this three-year period, the difference in accident profiles between drivers with and without a citation for an alcohol/controlled substances violation is roughly 0.0633 accidents per driver per year.

An important consideration in the estimation of accident reduction benefits is the length of time we expect it would take those drivers who are denied an employment opportunity because of the new safety performance data to re-enter the truck driver population. As was done with the accident data, we conservatively assume that drivers who are not hired into positions in any given year because of the additional year of data would re-enter the truck driver workforce after an average of six months of searching. Drivers with relatively few alcohol/controlled substance violations would find work sooner, while those with a relatively larger number of previous alcohol/controlled substance violations may have difficulty stretching beyond the three years of required record-keeping.

The assumption of an additional six-month job search period for these drivers was chosen because it is conservative. Choosing such an assumption for this analysis allows us only to count six months' worth of accident reduction benefits associated with each hiring decision made. As such, the accident reduction differential used to calculate benefits in this analysis was 0.0316 per driver for new alcohol/controlled substances data. By using such an estimate, we are attempting to ensure that our estimates of accident reduction benefits will not be overestimated.

Recall that we estimated that 5,120 additional driver alcohol and controlled substance test and program results would now be reported to prospective employers each year as a result of this proposed rule. Also, we assumed that in 25 percent (or 1,280) of these cases the driver was not hired as a result of the new data being made available to prospective employers. In the case of alcohol/controlled substance program data, current regulations require previous employers to retain three years of such data but report out only two years of that data. Effectively, this proposed rule would require an additional year's worth of such data to be reported.

Since the data is already being retained, all three years of the data can be reported to prospective employers during the first year (2003) of the proposed rule’s implementation. Therefore, in 2003, the additional year’s data would be immediately available to prospective employers.

Using an average cost per truck-related accident of \$79,873, an annual difference in accidents of .0316 per driver, and 1,280 drivers, annual benefits associated with this provision equal approximately \$3.2 million in 2003. The number of accidents avoided as a result of the new driver alcohol and controlled substance test and program data is equal to 41 accidents each year between 2004 and 2012 (i.e., 0.0316 * 1,280 drivers). Total discounted accident reduction benefits from the new alcohol/controlled substance test and program data over the 10-year analysis period are estimated to be \$24 million.

Benefits from a Deterrence Effect

We believe it is plausible to assume there would be a “deterrence effect” associated with this rule, (i.e., where a driver may strive to improve his safety performance record if he knows that such information would be available to prospective employers in future hiring decisions). However, we were unsure as to the specific magnitude of this effect. Therefore, we incorporated a sensitivity analysis framework into this evaluation by assuming that the deterrence effect could range anywhere from zero, 10 percent, 25 percent, or 50 percent of the value of direct crash reduction benefits measured earlier.

Since the ‘deterrence effect’ benefits are a percentage of the direct crash reduction benefits associated with this rule, they are identified in the next section, where we discuss the total benefits.

TOTAL BENEFITS

Total benefits associated with this rule are identified in Table 6 and are separated according to our assumptions regarding the magnitude of the deterrence effect associated with this rule.

Table 6. Summary of Benefits, 2003-2012, in millions of dollars		
Benefits Scenario	First-Year Benefits	Total Discounted Benefits, 10-Year Analysis Period
Direct Benefits Only ¹	\$6	\$88
With 10% Deterrence Effect ²	\$7	\$97
With 25% Deterrence Effect ²	\$8	\$110
With 50% Deterrence Effect ²	\$10	\$132

¹ Under the “Direct Benefits Only” scenario, all truck-related crash reduction benefits result from the industry’s refusal to hire drivers with the worst safety performance records.

² Under the three benefits scenarios including a “Deterrence Effect”, FMCSA assumes that the availability of and easier access to new commercial driver safety performance data would result in some drivers improving their driving behavior for fear that prospective employers would now use such data in future hiring decisions. Since we were unsure of the magnitude of this effect, we assessed the deterrence effect at zero, 10, 25, and 50 percent of direct truck-related crash reduction benefits.

First-year (2003) benefits associated with this proposed rule range from slightly less than \$6.5 million (rounded down to \$6 million in the table) when we assume there is no deterrence effect to almost \$10 million when we assume the deterrence effect is equal to 50 percent of the direct crash reduction benefits of this rule.

Total discounted benefits associated with this rule range from a low of \$88 million when we assume no deterrence effect to a high of \$132 million when we assume the deterrence effect is equal to 50 percent of the direct crash reduction benefits.

IV. Net Benefits

Total discounted net benefits associated with this proposed rule are included in Table 7.

Table 7. Summary of Net Benefits and Benefit-Cost Ratios, 2003-2012, in millions of dollars		
Benefits Scenario	Total Net Discounted Benefits ¹	Benefit-Cost Ratio ²
Direct Benefits Only	\$12	1.16
With 10% Deterrence Effect	\$21	1.27
With 25% Deterrence Effect	\$34	1.45
With 50% Deterrence Effect	\$56	1.74

¹ Total Net Discounted Benefits were derived by subtracting the Total Discounted Cost estimate of \$76 million in Table 1 from each of the Total Discounted Benefits estimates in Column 3 of Table 6. For example, subtracting the \$76 million in total discounted costs from Table 1 by the \$88 million in Total Discounted Benefits under the “Direct Benefits Only” scenario of Table 6 yields Total Net Discounted Benefits of \$12 million over the 10-year analysis period (2003-2012) examined here.

² Benefit-Cost Ratios were derived by dividing the Total Discounted Cost estimate of \$76 million in Table 1 from each of the Total Discounted Benefits estimates for each of the Benefits Scenarios located in Column 3 of Table 6. For example, dividing the \$88 million in Total Discounted Benefits under the “Direct Benefits Only” scenario of Table 6 by the \$76 million in total discounted costs from Table 1 yields a Benefit-Cost Ratio of 1.16 over the 10-year analysis period (2003-2012) examined here. A benefit-cost ratio of greater than one implies that the rule is cost effective to implement when comparing costs to benefits within the 10-year analysis period.

Total net discounted benefits associated with this rule over the 10-year analysis period range from a low of \$12 million when we assume no deterrence effect benefits, to a high of \$56 million when we assume the magnitude of the deterrence effect is equal to 50 percent of the direct crash reduction benefits associated with the rule. Correspondingly, benefit-cost ratios range from a low of 1.16 when we assume no deterrence effect benefits to a high of 1.74 when deterrence effect benefits are assumed to equal 50 percent of direct crash reduction benefits.