Potential Applicability of Financial Responsibility Requirements to Private Motor Carriers

Final Report

U.S. Department of Transportation
Federal Motor Carrier Safety Administration

March 2006

Foreword

This report presents the results of a study to assist the U.S. Department of Transportation's Federal Motor Carrier Safety Administration assess the potential benefits and costs of implementing provisions of Section 4120 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) regarding private motor carrier public liability insurance. These provisions would require private passenger and property carriers to have financial responsibility in the same amounts currently required by sections 31138 and 31139 of the United States Code.

The work performed for the study involved conducting a literature review, collecting data, and developing a plan to interview and collect data and information from state agencies and stakeholders. All information obtained was examined and fed into safety and economic models to determine the benefits and costs that could be expected from implementation of the new private motor carrier financial responsibility requirements.

The primary benefit associated with the expanded insurance requirements examined in this study stems from avoiding the high costs of crashes involving unsafe private carriers that would find it difficult or impossible to obtain public liability coverage at the new, higher levels. Estimated costs for insurance and reporting exceed estimated benefits in 26 of the 27 scenarios considered in this study, indicating that extending the current minimum financial responsibility requirements for for-hire motor carriers to private motor carriers is not cost-beneficial under the assumptions used. However, the financial responsibility requirements examined within this study may be justifiable given equity considerations.

Although the report can be helpful to the general public in understanding brake inspection and certification, the report is primarily targeted towards private motor carriers.

This publication is considered a final report and does not supersede another publication.

Notice

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16. Abstract:

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The work performed for the study involved conducting a literature review, collecting data, and developing a plan to interview and collect data and information from state agencies and stakeholders. All information obtained was examined and fed into safety and economic models to determine the benefits and costs that could be expected from implementation of the new private motor carrier financial responsibility requirements.

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SI* (MODERN METRIC) CONVERSION FACTORS

APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
		LENGTH		
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
		AREA		
in^2	square inches	645.2	square millimeters	mm^2
ft^2	square feet	0.093	square meters	m^2
yd^2	square yards	0.836	square meters	m^2
ac	acres	0.405	hectares	ha
mi^2	square miles	2.59	square kilometers	km^2
		VOLUME		
fl oz	fluid ounces	29.57	milliliters	ml
gal	gallons	3.785	liters	l
ft^3	cubic feet	0.028	cubic meters	m^3
yd^3	cubic yards	0.765	cubic meters	m^3
		MASS		
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lbs)	0.907	megagrams	Mg
		TEMPERATURE (exact)		
°F	Fahrenheit temperature	5(F-32)/9 or (F-32)/1.8	Celsius temperature	°C
		ILLUMINATION		
fc	foot-candles	10.76	lux	lx
fl	foot-Lamberts	3.426	candela/m2	cd/m2
		FORCE and PRESSURE or STRESS		
lbf	pound-force	4.45	newtons	N
psi	pound-force per square inch	6.89	kilopascals	kPa

APPROXIMATE CONVERSIONS FROM SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
		LENGTH		
mm	millimeters	0.039	inches	in
m	meters	3.28	feet	ft
m	meters	1.09	Yards	yd
km	kilometers	0.621	miles	mi
		AREA		
mm^2	square millimeters	0.0016	square inches	in^2
m^2	square meters	10.764	square feet	ft^2
m^2	square meters	1.195	square yards	yd^2
ha	hectares	2.47	acres	ac
km^2	square kilometers	0.386	square miles	mi^2
		VOLUME		
ml	milliliters	0.034	fluid ounces	fl oz
l	liters	0.264	gallons	gal
m^3	cubic meters	35.71	cubic feet	ft^3
m^3	cubic meters	1.307	cubic yards	yd^3
		MASS		
g	grams	0.035	ounces	oz
kg	kilograms	2.202	pounds	lb
Mg	megagrams	1.103	short tons (2000 lbs)	T
		TEMPERATURE (exact)		
°C	Celsius temperature	1.8 C + 32	Fahrenheit temperature	°F
		ILLUMINATION		
lx	lux	0.0929	foot-candles	fc
cd/m2	candela/m2	0.2919	foot-Lamberts	fl
		FORCE and PRESSURE or STRESS		
N	newtons	0.225	pound-force	lbf
kPa	kilopascals	0.145	pound-force per square inch	psi

* SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380.

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List of Abbreviations and Acronyms

ABA	American Bus Association
ANOVA	Analysis of Variance
AIA	American Insurance Association
ATA	American Trucking Associations
ATRI	American Transportation Research Institute
BCR	Benefit-Cost Ratio
BI&PD	Bodily Injury and Property Damage
BLS	Bureau of Labor Statistics
BTS	Bureau of Transportation Statistics
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CMV	Commercial Motor Vehicle
CR	Compliance Review
CVSA	Commercial Vehicle Safety Alliance
DII	Driver Inspection Indicator
DRM	Driver Review Measure
ECM	Engine Control Module
ESM	Enforcement Severity Measure
FACT	Fatal Accident Complaint Team
FARS	Fatality Analysis Reporting System
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FMCSR	Federal Motor Carrier Safety Regulations
GES	General Estimates System
NHTSA	National Highway Traffic Safety Administration
LTCCS	Large Truck Crash Causation Study
LTL	Less Than Truckload
MCMIS	Motor Carrier Management Information System
MISTER	Management Information System of Terminal Evaluation Records
NAS	North American Standard
NASS	National Automotive Sampling System
NAICS	North American Industry Classification System
NATEF	National Automotive Technicians Education Foundation
NIOSH	National Institute for Occupational Safety and Health
NITL	National Industrial Transportation League
NTS	National Transportation Statistics
NPTC	National Private Truck Council
NTSB	National Transportation Safety Board
OES	Occupational Employment Statistics
OMB	Office of Management and Budget
OOS	Out of Service
RCCC	Regular Common Carriers Conference

List of Abbreviations and Acronyms (continued)

ROE	Ratio of Effectiveness
SAFER	Safety and Fitness Electronic Records
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SBA	Small Business Administration
SEA	Safety Evaluation Area
TIFA	Trucks Involved in Fatal Accidents
UMTRI	University of Michigan Transportation Research Institute
USDOT	U.S. Department of Transportation
VIUS	Vehicle Inventory and Use Survey
VMT	Vehicle Miles Traveled

EXECUTIVE SUMMARY

Part 387 of the Federal Motor Carrier Safety Regulations (FMCSRs) requires specified motor carriers of property and passengers to meet certain financial responsibility requirements. These requirements apply, with some exceptions, to:

- For-hire motor carriers operating commercial motor vehicles transporting property in interstate or foreign commerce (49 CFR 387.3(a))
- Any motor carrier operating commercial motor vehicles transporting hazardous materials, hazardous substances, or hazardous wastes in interstate, foreign, or intrastate commerce (49 CFR 387.3(b))
- For-hire carriers of passengers operating in interstate or foreign commerce (49 CFR 387.27)

Financial responsibility means having financial reserves, such as insurance policies or surety bonds, sufficient to satisfy the minimum public liability requirements. *Public liability* is liability for bodily injury, property damage, and environmental restoration. *Environmental restoration* means restitution for the loss, damage, or destruction of natural resources arising out of an accidental discharge of toxic or other environmentally harmful materials or liquids.

There are currently no Federal financial responsibility requirements for private motor carriers of non-hazardous commodities operating in interstate commerce, or for private motor carriers of passengers operating in interstate commerce. Current regulations exempts these private motor carriers of property and private motor carriers of passengers from the requirement to have financial responsibility covering public liability, property damage, and environmental restoration resulting from crashes involving their vehicles.

Although these carriers may be subject to state insurance requirements, it is important to consider the ramifications of establishing uniform national requirements. Section 4120 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) would require private passenger and property carriers to have financial responsibility in the same amounts as are currently required by sections 31138 and 31139 of the United States Code. This section would also authorize the Secretary of Transportation to require private carriers of non-hazardous property and private motor carriers of passengers to file evidence of financial responsibility with the Department, as for-hire carriers already do.

This project was designed to assist the U.S. Department of Transportation's (USDOT) Federal Motor Carrier Safety Administration (FMCSA) to assess the potential benefits and costs of implementing provisions of SAFETEA-LU regarding private motor carrier public liability insurance.

Battelle assembled and led a project team that included the American Transportation Research Institute (ATRI), the Commercial Vehicle Safety Alliance (CVSA), and Daecher Consulting. The work performed for the study involved conducting a literature review, collecting data, and developing a plan to interview and collect data and information from state agencies and stakeholders. All information obtained was examined and fed into safety and economic models

to determine the benefits and costs that could be expected from implementation of the new private motor carrier financial responsibility requirements.

Costs for expanding the minimum financial responsibility requirements to private motor carriers would include staff time to become familiar with a new regulation and to assess their operation to determine their need for additional insurance, and obtain it. This process would include obtaining insurance quotes and determining the most appropriate insurance option. These total industry costs are estimated at $306,890 to $460,334 for private carriers operating 9-15 passenger vehicles, $567,992 to $851,988 for private carriers operating buses designed or used to transport 16 or more passengers, and $54,981,077 to $82,471,615 for motor carriers of non-hazardous property. These are considered one-time costs, necessary for performing assessments necessary to obtain insurance commensurate with the FMCSA standards presently applied to for-hire carriers. These costs are assumed to be incurred in the first year of the 10-year analysis timeframe.

The vast majority of the costs considered in this study, however, are those that would be tied to the expanded insurance requirements. The total insurance costs borne by private carriers is estimated at $22.3 to $33.4 million for 9-15 passenger vehicle operators, $56.4 to $84.6 million for 16 or more passenger vehicle operators, and $3.4 to $5.1 billion for motor carriers of non-hazardous property over the 10-year analysis time frame.

Under the insurance requirements outlined in SAFETEA-LU and evaluated in this study, private carriers would be required to file forms that provide evidence of required bodily injury and property damage (BI&PD) insurance coverage (Forms BMC-91, 91x, or 82), and endorsements that must be attached to BI&PD policies (Forms BMC-90 and 32). Thus, private carriers would, at a minimum, be required to file two forms with FMCSA if they were subject to the agency's insurance requirements. The total insurance filing costs borne by private carriers is estimated at $11,835 to $17,753 for 9-15 passenger vehicle operators, $27,258 to $40,888 for 16 or more passenger vehicle operators, and $2,595,748 to $3,893,622 for motor carriers of non-hazardous property over the 10-year analysis time frame.

The primary benefit associated with the expanded insurance requirements examined in this study stem from avoiding the high costs of crashes involving unsafe private carriers that would find it difficult or impossible to obtain public liability coverage at the new, higher levels. Expanding Federal public liability insurance requirements to private carriers would not be expected to completely eliminate the discrepancy between private and for-hire accident rates. Thus, this analysis considers a ratio of effectiveness (ROE), where the proposed regulation change would reduce but not eliminate the gap in accident rates between private and for-hire carriers. ROEs of 60, 80, and 100 percent were used in the low-, mid-, and high-end estimates. The cost savings associated with avoided crashes for 9-15 passenger vehicles are estimated at $3.2 to $5.3 million over the 10-year analysis time horizon. The avoided crash costs for 16 or more passenger vehicles are estimated at $9.5 to $15.8 million. The crash costs avoided due to a reduction in the number of crashes involving motor carriers of non-hazardous property is estimated at $2.3 to $3.8 billion.

The benefits and costs over the ten-year analysis period associated with the expanded insurance requirements are highlighted in ES-1 and are shown in present value terms, discounted at 7 percent. The BCA considers 27 scenarios, with varying combinations of benefits and costs ranging from low-end to high-end estimates, with mid-point estimates also included. As noted previously, the benefits estimates vary based on the ROE, ranging from 60 percent (low-end) to 100 percent (high-end) with a mid-point estimate of 80 percent. The cost estimate includes a mid-point estimate and low- and high-end estimates that represent ± 20 percent of the mid-point. The scenarios also differ based on the vehicle fleet considered: 9-15 passenger vehicles, 16+ passenger vehicles, and trucks carrying non-hazardous property.

Table ES-1 shows that estimated costs exceed estimated benefits in 26 of the 27 scenarios considered in this study. Net costs (costs minus benefits) are estimated at $16.9 to $30.2 million for 9-15 passenger vehicles, $40.6 to 75.1 million for 16+ passenger vehicles, and -$428.4[1] to $2.8 billion for trucks carrying non-hazardous property. In all cases except Scenario 21 (highlighted in Table ES-1) where low-end costs and high-end benefits are considered for non-hazardous property-carrying trucks, costs exceed benefits and the benefit-cost ratios (BCRs) fall below 1.0. The lowest BCRs are attributed to the 9-15 passenger vehicles, while trucks achieve the highest BCRs.

[1] For one of the 27 scenarios, benefits exceeded costs, resulting in a negative net cost.

Table ES-1. Benefit-Cost Analysis Findings

Scenario	Benefits	Costs	Vehicle Type	Benefits	Costs	BCR
1	Low	Low	9-15 Passenger	$3,195,125	$22,274,703	0.14
2	Low	Low	16+ Passenger	$9,497,027	$56,415,901	0.17
3	Low	Low	Trucks	$2,284,724,636	$3,379,486,082	0.68
4	Low	Mid	9-15 Passenger	$3,195,125	$27,843,379	0.11
5	Low	Mid	16+ Passenger	$9,497,027	$70,519,876	0.13
6	Low	Mid	Trucks	$2,284,724,636	$4,224,357,602	0.54
7	Low	High	9-15 Passenger	$3,195,125	$33,412,055	0.10
8	Low	High	16+ Passenger	$9,497,027	$84,623,851	0.11
9	Low	High	Trucks	$2,284,724,636	$5,069,229,123	0.45
10	Mid	Low	9-15 Passenger	$4,260,167	$22,274,703	0.19
11	Mid	Low	16+ Passenger	$12,662,703	$56,415,901	0.22
12	Mid	Low	Trucks	$3,046,299,515	$3,379,486,082	0.90
13	Mid	Mid	9-15 Passenger	$4,260,167	$27,843,379	0.15
14	Mid	Mid	16+ Passenger	$12,662,703	$70,519,876	0.18
15	Mid	Mid	Trucks	$3,046,299,515	$4,224,357,602	0.72
16	Mid	High	9-15 Passenger	$4,260,167	$33,412,055	0.13
17	Mid	High	16+ Passenger	$12,662,703	$84,623,851	0.15
18	Mid	High	Trucks	$3,046,299,515	$5,069,229,123	0.60
19	High	Low	9-15 Passenger	$5,325,208	$22,274,703	0.24
20	High	Low	16+ Passenger	$15,828,379	$56,415,901	0.28
21	High	Low	Trucks	$3,807,874,394	$3,379,486,082	1.13
22	High	Mid	9-15 Passenger	$5,325,208	$27,843,379	0.19
23	High	Mid	16+ Passenger	$15,828,379	$70,519,876	0.22
24	High	Mid	Trucks	$3,807,874,394	$4,224,357,602	0.90
25	High	High	9-15 Passenger	$5,325,208	$33,412,055	0.16
26	High	High	16+ Passenger	$15,828,379	$84,623,851	0.19
27	High	High	Trucks	$3,807,874,394	$5,069,229,123	0.75

While some individuals interviewed for this research believe that private motor carriers are generally safer than for-hire motor carriers, no studies were identified that indicated that private carriers, as a whole, were safer than for-hire carriers. The FMCSA data analyzed for this project indicate the opposite is true: for-hire carriers in all three carrier categories examined have lower overall crash rates per vehicle miles traveled than private carriers. However, data examined on fatal truck and bus crashes showed that private carriers had lower fatality crash involvements than for-hire carriers.

Based on the results of the analyses conducted for this project, it appears that extending the current minimum financial responsibility requirements for for-hire motor carriers to private motor carriers is not cost-beneficial under the assumptions used in this analysis. The BCRs for the two passenger carrier categories are both significantly less than one. The BCR for non-hazardous property motor carriers is closer to one, but still indicates that the costs outweigh the benefits for this much larger group of private carriers. However, the financial responsibility requirements examined within this study may be justifiable given equity considerations.

1.0 INTRODUCTION

1.1 Background

Part 387 of the Federal Motor Carrier Safety Regulations (FMCSRs) requires specified motor carriers of property and passengers to meet certain financial responsibility requirements. These requirements apply, with some exceptions, to:

- For-hire motor carriers operating commercial motor vehicles (CMVs) transporting property in interstate or foreign commerce (49 CFR 387.3(a))
- Any motor carrier operating commercial motor vehicles transporting hazardous materials, hazardous substances, or hazardous wastes in interstate, foreign, or intrastate commerce (49 CFR 387.3(b))
- For-hire carriers of passengers operating in interstate or foreign commerce (49 CFR 387.27)

Financial responsibility means having financial reserves, such as insurance policies or surety bonds, sufficient to satisfy the minimum public liability requirements. *Public liability* is liability for bodily injury, property damage, and environmental restoration. *Environmental restoration* means restitution for the loss, damage, or destruction of natural resources arising out of an accidental discharge of toxic or other environmentally harmful materials or liquids.

These motor carriers must have at least the minimum amount of insurance required by law (United States Code, Title 49, Sections 31138 and 31139). For motor carriers of property, the schedule of limits is shown in Table 1-1.

Table 1-1. Insurance Requirements for For-hire Carriers of Property

Type of Carriage	Commodity Transported	Effective Date: 1/1/1985
(1) For-hire (in interstate or foreign commerce, with a gross vehicle weight rating of 10,001 or more pounds).	Property (non-hazardous).	$750,000
(2) For-hire and Private (in interstate, foreign, or intrastate commerce, with a gross vehicle weight rating of 10,001 or more pounds).	Hazardous substances, as defined in 49 CFR 171.8, transported in cargo tanks, portable tanks, or hopper-type vehicles with capacities in excess of 3,500 water gallons; or in bulk Division 1.1, 1.2, and 1.3 materials, Division 2.3, Hazard Zone A, or Division 6.1, Packing Group I, Hazard Zone A material; in bulk Division 2.1 or 2.2; or highway route controlled quantities of a Class 7 material, as defined in 49 CFR 173.403.	$5,000,000
(3) For-hire and Private (in interstate or foreign commerce, in any quantity; or in intrastate commerce, in bulk only; with a gross vehicle weight rating of 10,001 or more pounds).	Oil listed in 49 CFR 172.101; hazardous waste, hazardous materials and hazardous substances defined in 49 CFR 171.8 and listed in 49 CFR 172.101, but not mentioned in (2) above or (4) below.	$1,000,000
(4) For-hire and Private (in interstate or foreign commerce, with a gross vehicle weight rating of less than 10,001 pounds).	Any quantity of Division 1.1, 1.2, or 1.3 material; any quantity of a Division 2.3, Hazard Zone A, or Division 6.1, Packing Group I, Hazard Zone A material; or highway route controlled quantities of a Class 7 material as defined in 49 CFR 173.403	$5,000,000

For for-hire motor carriers of passengers, the requirements are shown in Table 1-2.

Table 1-2. Insurance Requirements for For-hire Carriers of Passengers

Vehicle Seating Capacity	Effective Date: 11/19/1985
(1) Any vehicle with a seating capacity of 16 passengers or more	$5,000,000
(2) Any vehicle with a seating capacity of 15 passengers or less (see exceptions listed below)	$1,500,000

Exceptions to these requirements for vehicles with a seating capacity of 15 passengers or less, as provided in 49 CFR 387.27(b), are:

1. A motor vehicle transporting only school children and teachers to or from school
2. A motor vehicle providing taxicab service and having a seating capacity of less than 7 passengers and not operated on a regular route or between specified points

3. A motor vehicle carrying less than 16 individuals in a single daily round trip to commute to and from work and
4. A motor vehicle operated by a motor carrier under contract providing transportation of preprimary, primary, and secondary students for extracurricular trips organized, sponsored, and paid by a school district.

There are currently no Federal financial responsibility requirements for private motor carriers of non-hazardous commodities operating in interstate commerce, or for private motor carriers of passengers operating in interstate commerce. Current regulations exempt these private motor carriers of property and private motor carriers of passengers from the requirement to have financial responsibility covering public liability, property damage, and environmental restoration resulting from crashes involving their vehicles.

Although these carriers may be subject to state insurance requirements, it is important to consider the ramifications of establishing uniform national requirements. Section 4120 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) would require private passenger and property carriers to have financial responsibility in the same amounts as are currently required by sections 31138 and 31139 of the United States Code. This section would also authorize the Secretary of Transportation to require private carriers of property (that is, non-hazardous cargoes) and private motor carriers of passengers to file evidence of financial responsibility with the Department, as for-hire carriers already do.

1.2 Project Methodology

Battelle assembled and led a project team that included the American Transportation Research Institute (ATRI), the Commercial Vehicle Safety Alliance (CVSA), and Daecher Consulting. The work performed for the study involved conducting a literature review, collecting data, and developing a plan to interview and collect data and information from state agencies and stakeholders. All information obtained was examined and fed into safety and economic models to determine the benefits and costs that could be expected from implementation of the new private motor carrier financial responsibility requirements.

1.2.1 Literature Search and Data Gathering

The literature search for this project focused on gathering literature, data, and sources related to (a) the safety of transportation, and (b) insurance requirements and costs of insurance for private motor carriers operating CMVs designed to seat 9-15 passengers (including the driver), CMVs designed to seat 16 or more passengers (including the driver), and CMVs transporting non-hazardous property.

1.2.2 Interviews with State Agencies

In an attempt to corroborate and/or gather information not available in the literature that quantified the safety of private motor carriers and state insurance requirements, survey/interview

questions were developed and administered to state officials. It was expected that individuals in state agencies (both safety- and insurance-related agencies) would have data or insight on the safety of transportation involving private motor carriers that they could share with the project team. A list of questions was e-mailed in advance to a previously developed list of state officials and subsequent surveys were administered by phone or by return of the e-mail questionnaire. Follow-up calls were required in some cases to clarify any ambiguities.

1.2.3 Interviews with Stakeholders

A similar activity sought to obtain additional information on private motor carrier safety and insurance issues that was not available from the literature search. This material included carrier safety; insurability; insurance pricing, coverage, and acquisition; and certain crash cost information. The targeted groups for these interviews included representative industry associations; however, it became apparent that the detailed information sought was more readily available from insurance companies and private motor carriers and it was these groups that were the focus of the interviews. As with the state agency interviews, these interviews were conducted with the help of questions e-mailed to the respondents in order to facilitate responses.

1.2.4 Safety and Economic Analyses

The data and information obtained in earlier stages of the project were used to develop the safety and economic models needed to determine the potential benefit-cost ratio for implementing new financial responsibility requirements for private motor carriers. The primary benefits are the safety impacts of crash prevention and the primary costs are those to purchase and file proof of the required public liability coverage.

2.0 LITERATURE SEARCH AND DATA GATHERING

The literature search for this project focused on gathering literature, data, and sources related to (a) the safety of transportation, and (b) insurance requirements and costs of insurance for private motor carriers operating CMVs designed to seat 9-15 passengers (including the driver), CMVs designed to seat 16 or more passengers (including the driver), and CMVs transporting non-hazardous property. The information provided in this section has been organized into three sections, based on the primary focus of each information source:

- Safety of private motor carriers
- Insurance requirements and costs
- Economic analysis techniques

Most of the literature did not specifically address private carriers or differentiate between them and for-hire carriers; however, some of the overall information presented can be related to general differences between these two types of carriers.

2.1 Safety of Private Motor Carriers

Databases

During the literature review, several databases were examined in detail to determine if they could support a comparison of the safety of private motor carriers to the safety of for-hire motor carriers. These databases included the Trucks Involved in Fatal Accidents (TIFA) and Buses Involved in Fatal Accidents (BIFA) databases maintained by the University of Michigan Transportation Research Institute (UMTRI). Data from FMCSA's Motor Carrier Management Information System (MCMIS) was received during the analysis phase of the project and is discussed in Section 5.0. The distribution of active domestic interstate carriers in the MCMIS database among the different types of operations is summarized in Table 2-1.

Table 2-1. Number of Carriers in Each Category

	Carriers		
Category	**Private**	**For-hire**	**Both***
9-15 passenger vehicles only	536	493	239
16+ passenger vehicles only	1,606	652	286
non-hazardous property vehicles only	239,912	141,147	21,918
more than one type of vehicle	1,265	384	213
not assigned	17,860	7,867	968
Total	**261,179**	**150,543**	**23,624**
Percentage	60.0%	34.6%	5.4%

*These are private carriers that also have for-hire authority and, therefore, already have the required minimum levels of financial responsibility and would not need to obtain additional insurance.

TIFA data for 2002 analyzed by UMTRI show that 33.7 percent of trucks involved in fatal accidents were operated by private carriers, 54.8 percent by for-hire carriers, 1.3 percent were government owned, 0.8 percent were daily rentals, and 9.4 percent were for carrier type that could not be determined (Blower, 2005). These figures include fatal crashes involving vehicles operated by hazardous materials carriers, but those percentages were very low. Only 4.6 percent of the trucks operated by private carriers in the TIFA data carried hazardous materials; the figure for the for-hire carriers was 3.1 percent. As private carriers operate more vehicles than for-hire carriers according to current MCMIS data (1.4 million trucks for private carriers and 0.58 million trucks for for-hire carriers), the TIFA data indicate that private carriers have significantly lower fatality crash involvements per vehicle than for-hire carriers.

BIFA data analyzed by UMTRI show that of buses involved in fatal accidents between 1999 and 2002, 6.1 percent were operated by private carriers while 30.7 percent were operated by for-hire carriers (Blower, 2005). MCMIS data include approximately 16,000 buses for private carriers and approximately 57,000 buses for for-hire carriers, indicating a lower fatality crash involvement per vehicle for private carriers (20 percent of the fatal crashes and 28 percent of the vehicles).

Literature – Property Carriers

Petty (2005) cites a National Private Truck Council (NPTC) survey of 63 private fleets in early 2005 that indicated that the recordable accident rate per million vehicle miles for these companies was 0.424 for 2003 and 2004. This was compared to the rate for all large trucks of 0.763, a 45 percent difference. However, the industry-wide rate was determined from FMCSA data for 2001, so the rates are not directly comparable.

According to a recent article (Bradley, 2005), the current trucking environment is making in-house, private fleets more attractive to some businesses, including businesses with regular routes, backhaul opportunities, and time-sensitive customers. Driver pay is reported to be higher and working conditions are reported to be better at private fleets. The article also cites a survey conducted by the NPTC of 200 companies that indicated annual driver turnover rates in private fleets of 11 to 16 percent, as compared to rates in excess of 100 percent for for-hire fleets. Additional details were provided in a separate article that compared these figures to those for the trucking industry overall, which was 125 to 135 percent. A more recent survey of NPTC membership (McFain, 2005) reports an annual driver turnover rate of private carriers of 16.9 percent, based on 199 responses. Data provided at a recent industry association meeting placed private carrier driver turnover at 6 percent; the rate was reported to be 115 percent for for-hire truckload drivers and 15 percent for for-hire less-than-truckload drivers (Fisher, 2005). Finally, another article quotes Peter Vroom, President of the Truck Renting and Leasing Association, who reported that some private fleets have annual driver turnover rates of 3 to 5 percent, as compared to a for-hire industry driver turnover rate of 121 percent in the third quarter of 2004 (PACCAR, 2005).

Other data indicate that private fleets are losing ground to for-hire fleets. Data reported in *American Trucking Trends* shows that private carriers account for 48.1 percent of all registered fleets in 2005, but this figure was 50.6 percent in 2004 and 68 percent in 1992 (although the

definition for 1992 was “not for hire” rather than “private”) (ATA, 2005). The more recent NPTC survey (McFain, 2005) found that the primary reason to operate a private fleet cited by 58.3 percent of respondents is to provide better customer service to key customers. Cost advantages were cited as the primary reason by 15.1 percent of the respondents.

A National Institute for Occupational Safety and Health (NIOSH) report (2003) cited a 2002 study on fatigue-related crashes based on TIFA data that examined private versus for-hire carriers, single-unit trucks versus tractor-semitrailers, and length of trip (local, 50 to 200 miles, and more than 200 miles). This study identified private carriers as having the second highest fatigue-related fatal crash rate per vehicle mile traveled (2.47), following for-hire, single-unit truck drivers (3.41), although the sample sizes for these groups were small. They reported that for-hire carrier drivers had a “substantially higher risk” of fatal, fatigue-related crashes than private carrier drivers. The group with the highest relative risk was for-hire tractor-semitrailer drivers on one-way trips of over 200 miles.

Literature – Passenger Carriers

One study focused on the safety of passenger motor carriers (Corsi, 2002b) based on an examination of Motor Carrier Safety Status (SafeStat) Measurement in four Safety Evaluation Areas (SEAs): driver, vehicle, accident, and safety management.[2] It utilized data compiled in September 2000 from SafeStat and all available data on passenger carriers in the MCMIS Census File. Data were based on the results of carrier’s roadside inspections, compliance reviews, enforcement cases, and crashes. The report was divided into two parts. One part compared the safety performance of carriers transporting passengers with that of carriers in other key industry segments (building materials, bulk freight, general freight, moving/household goods, intermodal freight, large machinery, tank truck operations, and passenger transport) and was broken down by for-hire and private carriers. The other part represented the same summary statistics for subsections of passenger carriers based on carrier size. The data included 2,826 for-hire and 114 private motor carriers of passengers. The for-hire passenger carriers had no unsatisfactory ratings on their most recent compliance review and 5 percent of private passenger carriers had unsatisfactory ratings. Passenger motor carriers received the highest levels of compliance based on overall safety performance; they had a recordable accident rate (number of crashes per million miles traveled) of less than 1 and had enforcement severity scores of 1.39 and 2.5 for private and for-hire carriers, respectively. While for-hire carriers generally outperformed the private carriers from a safety perspective, both types of passenger carriers achieved very high levels of compliance.

The second part of the SafeStat analysis of passenger motor carriers examined how safety performance differs between passenger carriers based on size. Subgroups were established based on different numbers of power units: only 1, 2 to 3, 4 to 8, 9 to 25, and 26 or more. Based on the data, conditional evaluations decreased as the size of the carrier increased. The study concluded that size seems to matter with respect to an overall evaluation of carrier safety using compliance reviews. Carriers with the largest number of power units (26+) had the lowest average recordable crash rate, but overall, the smaller the fleet size, the lower the recordable crash rate. The largest

[2] Lower SEA values indicate safer performance.

fleet size group had the lowest driver review measure. Also, as carrier size increased, out-of-service (OOS) rates decreased. In general, for-hire carriers with the largest-sized fleets outperformed the smaller fleets. Due to insufficient data on private passenger motor carriers, they were unable to examine the influence of carrier size on performance. Overall, passenger carriers are the safest industry segment, the authors reported.

Literature – Both Property and Passenger Carriers

Corsi (2000) examined the safety performance of motor carriers, primarily among numerous industry segments, including both passenger carriers and property carriers in a number of different commodity-based segments.[3] The study distinguished between private and for-hire carriers and concluded that private carriers have significantly better performance than do for-hire carriers on the driver SEA. Eight segments had no driver violations in 80 percent of the reviewed carriers and seven of them were private segments. The two lower-performing segments in the driver safety area were both for-hire segments. The for-hire carriers performed better on the compliance review, vehicle safety review, safety management review, and recordable crash rate measures. In eight segments, more than 30 percent of private carriers rated during a compliance review received a conditional rating; whereas, for for-hire carriers it was true in only one segment. Only two segments had higher scores for the vehicle safety review measure, and both of these involved private carriers. Four out of five segments with 60 percent or more of the firms with no safety management violations involved for-hire carriers. While the study reported a wide variation in recordable crash rates among the segments, they identified a concentration of high rates among private firms (there were five segments with average private carrier recordable crash rates of 1.5 per million vehicle miles traveled or more).

The Corsi (2000) study examined passenger motor carriers and determined that a higher percentage of for-hire carriers received a satisfactory rating upon their most recent compliance review (82.2 versus 70.0 percent). The unsatisfactory ratings went to 10 percent of the private carriers and only 1.6 percent of the for-hire carriers. The recordable crash rate for private carriers was 0.13 per million vehicle miles traveled (VMT); whereas, it was 0.91 for for-hire carriers.[4] Private carriers had a higher percentage of acute or critical driver violations as well, 33.3 versus 6.0 percent. The data show that for-hire fleets have lower vehicle SEAs (28.6 versus 64.0), lower driver SEAs (23.0 versus 55.7), and lower driver safety review measures (1.8 versus 14.7) than private fleets.

A more recent examination of SafeStat and MCMIS data by Corsi (2004) used data compiled in September 2000, September 2001, September 2002, and September 2003. More than 400,000 individual motor carriers, both private and for-hire, were included in each of the four compilations. The same 20 industry segments used in Corsi's earlier study (2000) were used here, with the for-hire, general freight segment broken into truckload and less-than-truckload components, for a total of 21 segments. As with the earlier study, private carriers had better

[3] The ten industry segments analyzed are building materials, moving/household goods, general freight, heavy equipment, produce, intermodal, passenger transportation, refrigerated (non-produce), tank carriers, and bulk materials (non-tank). Each of these was separated into two segments, one for private carriers and one for for-hire carriers, bringing the total number of segments analyzed to 20.

[4] The report cautions on the small sample size that was used to develop the recordable crash rate figures.

driver SEA scores and for-hire carriers had better records on compliance review and safety management review measures. There was little difference observed between the groups on driver out-of-service rates, hours-of-service violation rates, vehicle out-of-service rates, and vehicle SEA values. Unlike in the 2000 report, the 2004 study determined crash rates and fatal crash rates on a per-power-unit basis rather than on a per-vehicle-mile-traveled basis. The private carriers had significantly lower crash- and fatal crash-to-power unit rates (0.0436 versus 0.823 for all crashes and 0.0020 versus 0.0044 for fatal crashes). However, the authors did not report the average annual mileage per power unit for private and for-hire carriers. Analysis of MCMIS data used for the present study show that the average mileage per power unit is more than five times greater for those in for-hire fleets than for those in private fleets.

Literature – General Safety Performance

The literature cited in this section does not distinguish between private and for-hire fleets, but provides some insight into key issues that may differ between the two types of fleets, such as carrier financial performance and driver characteristics and their influence on safety. For example, Gary Petty, of the National Private Truck Council (NPTC) believes that "the pay is usually better in private fleets and working conditions are better" (Bradley 2005).

A study examined the connection between motor carriers' safety performance and financial performance from several key for-hire industry segments (Corsi, 2002a). Private carriers were not included in the analysis. Financial data were collected from the reports filed with the Bureau of Transportation Statistics (BTS) for 1999 by large, for-hire motor carriers with adjusted annual operating revenues of $3 million or more. Safety performance data were collected from MCMIS data for 2000.

Compliance review results were compared to the financial variables to determine if fleets with satisfactory ratings had better financial performance. Safety variables were examined to determine if they were correlated with financial performance measures. The research showed that firms with higher gross revenues were likely to have lower driver inspection indicator (DII) scores and lower driver SEA scores, indicating better driver safety performance. Carriers with higher average hauls were likely to have higher DII scores and higher driver SEA scores, indicating poorer driver safety performance. Driver wages tended to be negatively linked with DII scores and driver SEA scores.

In addition to Corsi (2002a), a number of papers illustrate that the firms having the most crashes also seem to be the ones in the most financial peril (Beard, 1992 and Rodriguez, 2004). More successful trucking companies have the financial ability to ensure that equipment is up to date and up to standards. Rodriguez also tied safety to driver hiring and training. The most successful trucking companies, in terms of safety, have a more stringent screening process in hiring, emphasizing pre-service and in-service training for drivers, and using a variety of different rewards to encourage safe driving performance (Mejza, 2003).

Since insurers are dedicated to recognizing and reducing risk for their clients, they have helpful insights on how to improve fleet safety for higher bottom-line revenues. Since 1996, Liberty Mutual has conducted benchmark evaluations and studied best practices to identify the safest

fleets. Their work looks at the effects of training, monitoring, and feedback; incentives; driver selection management policies and practices; and private vs. for-hire operations (Leavitt, 2005).

Leavitt indicates that good training is essential. However, those carriers that focused their safety program entirely on training did not see positive results, because many accidents are caused by drivers' habits and practices rather than lack of knowledge. The best fleets set clear performance expectations and continuously monitor driver performance. They encouraged fleets to download engine control module (ECM) data at every service. Companies that did this had 34 percent better crash frequency rates and 50 percent lower crash costs. Driver monitoring is as important as training. According to Leavitt, driver selection, training, and management commitment to safety, monitoring driver performance and following-up have the greatest impact on safety.

A study by the ATRI statistically proved, based on an analysis of 540,000 driver records, that there is a strong relationship between prior driving history and future crash likelihood. For example, for drivers that have been convicted of (a) improper or erratic lane change, (b) failure to yield right of way, (c) improper turn, or (d) failure to maintain proper lane, the likelihood of a future crash increases between 91 and 100 percent. A reckless driving *violation* increases the risk of a future crash by 325 percent (ATRI, 2005).

However, offering drivers incentives does not reduce accidents or encourage safe driving. According to insurers, it is better to do without than to hire a high-risk driver. Fleets whose road tests were 2 hours or longer as part of their driver selection process had a 45 percent lower crash frequency and 23 percent lower crash costs. Carriers that used planned routes had 38 percent lower crash costs. Furthermore, insurance companies view private fleets as a better risk than for-hire carriers, because insurers do not see private fleets as trucking companies. Private fleets also tend to carry only their own goods, have more regular routes and far fewer long, over-the-road trips, and a more stable driver work force (Leavitt, 2005).

Finally, the NIOSH report (2003) cited numerous strategies that all carriers (and other employers) can implement for preventing crashes. Some of the strategies discussed include comprehensive vehicle maintenance programs, delivery schedules and operations that allow for preventative maintenance, delivery schedules and operations that allow for drivers to maintain safe speeds and follow the hours-of-service regulations, communicating the importance of safety, mandated defensive driving instruction, and compensation for time spent conducting safety inspections.

2.2 Insurance Requirements and Costs

2.2.1 Reports and Documents

This subsection describes the information obtained on the costs and issues involved in insuring commercial motor carriers. None of this information distinguished between for-hire and private motor carriers. In the 1980s, insurance companies were realizing high stock returns and were able to keep premiums low. However, high loss ratios are no longer tolerable. Larger carriers can be rated independently because their size allows a more accurate determination of their loss

profile, while smaller trucking companies bear a heavier burden because they do not have the power to negotiate as well for lower premiums. Smaller carrier rates are often based on their specific loss profile, if they have had high losses. (Shepard, 2001). This implies that small carriers without significant losses must pay going market rates.

In the past decade, insurance prices have risen at a steady rate that is typical of the insurance industry's cyclical nature; however, over a three-year period between 2000 and 2003, insurance costs rose dramatically, which could include the direct and indirect effects of the September 11, 2001 terrorist attacks. According to an ATA insurance survey conducted in 2002, average insurance costs rose 17 percent for those carriers renewing their policies in 2000 and 32 percent for those carriers renewing in 2001[5] (ATA, 2002).

Jenks (2005) discusses why insurers are charging such high premiums and how the transit and private motor coach industry can best address these high costs. One reason for the very high prices is the State Regulatory Commissions that have an assigned risk program. A consumer unable to get coverage will go through the state, which will assign them to a licensed group. This group must then provide insurance to the consumer. A consumer who cannot obtain coverage alone certainly represents a higher risk, to the point where no insurer is willing to take a chance on this company.

Another factor in higher prices is the business cycle itself. Businesses inevitably go into a period of recession and insurance prices typically will rise. Jenks states that the transit industry, which is typically funded by the public and usually has enough money to self-insure, will generally accept very high deductibles. However, for-hire contractors providing transit services are not financially secure enough to self-insure, probably are not large enough to enter a risk retention pool that is funded by a group of transporters, and, unlike government providers, can be sued. Therefore, these companies are almost required to buy from a third party.

Jenks also states that the Federal government's regulations on minimum financial responsibility were used as a barrier to entry. The requirement for maintaining financial responsibility as used as a safety measure, based on the belief that with such high minimums, companies that operated on a shoe-string budget would be forced out of the market. However, beginning in the 1980s, even high-risk operators usually have been able to find insurance.

Still referring to passenger transportation, Jenks reports that recently, insurance premiums have increased significantly, not because of higher risk, but simply because judgments[6] have been rising. Reaction to this rise in prices for the companies that survived was simply to raise fare prices for passengers, but some companies could not endure the price change and simply went out of business. A reduction of services also has occurred; to lower liability, many door-to-door passenger services have recently gone to curb-to-curb.

The high cost of insurance led large trucking companies to explore other insurance methods, which is a typical response when the market hardens and premiums rise. Captives and risk

[5] The overall average for 2001 was 32 percent; it was 30 percent prior to September 11, 2001 and 37 percent after September 11, 2001.
[6] The article did not address out-of-court settlements.

retention have become appealing insurance situations for trucking companies (Vise, 2003). A captive is an arrangement in which several companies join forces to create an entity that acts as an insurance company and share in the risks of all the companies. This method has become popular because of the high cost of insurance, but also because the companies receive interest from costs not expended on accident payments.

Another similar method is risk-retention groups, which feature some advantages, such as avoiding the law prohibiting a volume discount on insurance, but also has some drawbacks such as covering only third-party liability and not shielding all group members from joint liability (Vise, 2003).

A number of sources provided insights into the costs for insurance for different groups of private motor carriers. The minutes from a meeting of the school board for a private school in Indiana indicated their cost to insure a school bus (with an unspecified seating capacity) was approximately $660 per year as compared to $500 per year to insure a van (Clear Creek, 2002).

One insurance company website provides an estimate of $4,600 to $6,000 per truck for annual primary liability coverage (InsureMyRig.com, 2006). An online article reported that truck insurance premiums rose to $5,500 to $6,000 per truck in 2002, with increased deductibles of $25,000 to $50,000 (Memphis Business Journal, 2003). The article reports that one for-hire company with 350 trucks was quoted a cost of $350,000 to obtain $2 million in excess insurance coverage, which the carrier felt was insufficient coverage, although it well exceeds the Federal financial responsibility requirements. This equates to $1,000 per truck for $2 million in excess coverage. Another article quotes an underwriter indicating truck insurance rates of $4,500 to $5,500 per power unit, depending on the deductible. The underwriter expected these costs to reach $6,000 per power unit by the end of 2002 (France, 2002).

2.2.2 State Private Motor Carrier Insurance Requirements

The project team attempted to contact the appropriate agencies in all 50 states and the District of Columbia regarding sources of information on insurance requirements for private motor carriers of passengers and private motor carriers of non-hazardous property. In some cases, information was supplemented with searches of official state internet websites. Table 2-2 shows the results of this data collection.

Additionally, the minimum auto liability requirements for each state were determined and assumed to apply for all vehicles registered in that state. These requirements are shown in Table 2-3. The sum of the per-accident and property damage requirements was taken as the combined minimum—a comparable number to the single value reported in Table 2-2. Therefore, the assumed minimum liability requirements for each state was computed as the maximum of the values in Tables 2-2 and 2-3 for each type of operation and are shown in Table 2-4. For example, the minimum requirements for passenger vehicles carrying 9 to 15 passengers in Alabama in Table 2-4 is $50,000 ($40,000 + $10,000, from Table 2-3) and the minimum requirements for non-hazardous property carriers in Arizona is $750,000 (from Table 2-2).

2.2.3 Cost of Insurance

Data also were desired on the cost of insurance for private motor carriers. A matrix that would allow insurance costs or rates to be provided for up to 12 scenarios for each type of motor carrier operation was developed. This matrix included the following fields:

- driver type: full-time, professional, or part-time
- for-profit or not-for-profit
- operating range: 50 miles or less, 51 to 200 miles, or more than 200 miles.

Insurers were asked to estimate costs for the equivalent levels of coverage as interstate for-hire carriers and use fleet sizes of 10 vehicles for passenger carriers and 6 vehicles for non-hazardous property carriers. Alternatively, insurers were asked to provide a single per-power unit estimated average nationwide cost for each type of motor carrier if it was not possible to provide more detailed estimates.

No insurance company contacted for this initial data collection effort was willing to provide any such data. In addition, the Property Casualty Insurers Association of America asked their membership if they would be willing to provide assistance, and if so, to contact the project team. No data were received. However, several insurance companies that participated in stakeholder interviews were able to provide some high-level data and this input is described in Section 4.2.

To augment the limited information collected through the stakeholder interviews, the project team solicited insurance cost data from private motor carriers. A sample of about 100 private motor carriers were randomly selected from the MCMIS Census File and then manually stratified to ensure representation across the various categories and fleet sizes of the carriers. For carriers with missing contact information in MCMIS, the Safety and Fitness Electronic Records (SAFER) System was used to obtain the contact information.

Table 2-2. State Insurance Requirements for Private Motor Carriers

State	Type of Operation: Passenger (by max. vehicle capacity): 9 to 15 Pass. Veh. (A)	Type of Operation: Passenger (by max. vehicle capacity): 16 or more Pass. Veh. (B)	Type of Operation: Property (non-hazardous) (C)	Private vs. For-hire: A	Private vs. For-hire: B	Private vs. For-hire: C	Notes
AL				○	○	○	
AK				○	○	○	
AZ			$750,000	○	○	●	1
AR				○	○	○	
CA			$750,000	○	○	●	2
CO	$1,500,000	$5,000,000	$750,000	●	●	●	
CT	$1,500,000	$5,000,000	$750,000	●	●	●	
DE				○	○	○	
DC				○	○	○	
FL	$350,000	$350,000	$300,000	●	●	●	3
GA				○	○	○	
HI				○	○	○	
ID				○	○	○	
IL				○	○	○	
IN				○	○	○	
IA	$1,500,000	$5,000,000	$300,000	●	●	◉	
KS	$350,000	$350,000	$350,000	◉	◉	◉	
KY				○	○	○	
LA	$1,500,000	$5,000,000	$750,000	●	●	●	
ME				○	○	○	
MD	$250,000	$500,000	$750,000	◉	◉	●	4
MA				○	○	○	
MI	$1,500,000	$5,000,000	$750,000	●	●	●	
MN				○	○	○	
MS	$1,500,000	$5,000,000	$750,000	●	●	●	
MO				○	○	○	
MT				○	○	○	
NE	$1,500,000	$5,000,000	$750,000	●	●	●	
NV			$1,000,000	○	○	◉	
NH				○	○	○	
NJ				○	○	○	
NM				○	○	○	
NY				○	○	○	
NC	$1,500,000	$5,000,000	$1,000,000	●	●	◉	5
ND				○	○	○	
OH				○	○	○	
OK	$1,000,000	$5,000,000	$750,000	◉	●	●	5
OR			$750,000	○	○	●	5
PA				○	○	○	
RI				○	○	○	
SC				○	○	○	

Table 2-2. State Insurance Requirements for Private Motor Carriers (continued)

State	Type of Operation			Private vs. For-hire			Notes
	Passenger (by max. vehicle capacity)						
	9 to 15 Pass. Veh. (A)	16 or more Pass. Veh. (B)	Property (non-hazardous) (C)	A	B	C	
SD				○	○	○	
TN	$1,500,000	$5,000,000	$750,000	●	●	●	
TX		$5,000,000	$500,000	○	●	◉	5,6
UT				○	○	○	
VT	$300,000	$400,000	$50,000	◉	◉	◉	7
VA	$1,500,000	$5,000,000	$750,000	●	●	●	8
WA				○	○	○	
WV				○	○	○	
WI				○	○	○	
WY	$500,000	$500,000	$500,000	◉	◉	◉	

Key:

○ = private carriers have no specific insurance requirements
◉ = private carriers have lower insurance requirements than interstate for-hire carriers
● = private carriers have the same insurance requirements as interstate for-hire carriers
◎ = private carriers have higher insurance requirements than interstate for-hire carriers

[1] $300,000 for property-carrying vehicles weighing between 20,001 and 26,000 lbs.
[2] Limits are higher for passenger operations if they are youth-camp related.
[3] $50,000 for property-carrying vehicles from 26,000 to 35,000 lbs; $100,000 for vehicles up to 44,000 lbs; $300,000 for vehicles over 44,000 lbs.
[4] The passenger vehicle categories are 8-14 passengers and 15 or more passengers.
[5] For property-carrying vehicles weighing over 26,000 lbs.
[6] $500,000 for 16-25 passenger buses.
[7] $300,000 for 8-12 passenger vehicles; $350,000 for 13-20 passenger vehicles; $400,000 for vehicles that can carry 21 or more passengers.
[8] Lower threshold is 7 passengers.

Table 2-3. State Insurance Requirements for all Vehicles

	General Motor Vehicle Insurance Requirements*		
State	Per-person	Per-accident	Property Damage
AL	$20,000	$40,000	$10,000
AK	$50,000	$100,000	$25,000
AZ	$15,000	$30,000	$10,000
AR	$25,000	$50,000	$25,000
CA	$15,000	$30,000	$5,000
CO	$25,000	$50,000	$15,000
CT	$20,000	$40,000	$10,000
DE	$15,000	$30,000	$10,000
DC	$25,000	$50,000	$10,000
FL	$10,000	$20,000	$10,000
GA	$25,000	$50,000	$25,000
HI	$20,000	$40,000	$10,000
ID	$25,000	$50,000	$15,000
IL	$20,000	$40,000	$15,000
IN	$25,000	$50,000	$10,000
IA	$20,000	$40,000	$15,000
KS	$25,000	$50,000	$10,000
KY	$25,000	$50,000	$10,000
LA	$10,000	$20,000	$10,000
ME	$50,000	$100,000	$25,000
MD	$20,000	$40,000	$15,000
MA	$20,000	$40,000	$5,000
MI	$20,000	$40,000	$10,000
MN	$30,000	$60,000	$10,000
MS	$10,000	$20,000	$5,000
MO	$25,000	$50,000	$10,000
MT	$25,000	$50,000	$10,000
NE	$25,000	$50,000	$25,000
NV	$15,000	$30,000	$10,000
NH	$25,000	$50,000	$25,000
NJ	$15,000	$30,000	$5,000
NM	$25,000	$50,000	$10,000
NY	$25,000	$50,000	$10,000
NC	$30,000	$60,000	$25,000
ND	$25,000	$50,000	$25,000
OH	$12,500	$25,000	$7,500
OK	$10,000	$20,000	$10,000
OR	$25,000	$50,000	$10,000
PA	$15,000	$30,000	$5,000
RI	$25,000	$50,000	$25,000
SC	$15,000	$30,000	$10,000

Table 2-3. State Insurance Requirements for all Vehicles (continued)

	General Motor Vehicle Insurance Requirements*		
State	Per-person	Per-accident	Property Damage
SD	$25,000	$50,000	$25,000
TN	$25,000	$50,000	$10,000
TX	$20,000	$40,000	$15,000
UT	$25,000	$50,000	$15,000
VT	$25,000	$50,000	$10,000
VA	$25,000	$50,000	$20,000
WA	$25,000	$50,000	$10,000
WV	$20,000	$40,000	$10,000
WI	$25,000	$50,000	$10,000
WY	$25,000	$50,000	$20,000

*Obtained from http://info.insure.com/auto/minimum.html.

The research team was ultimately successful in reaching two insurance companies willing to discuss rates. These insurance companies provided rates for private carriers under the assumptions that the 9-15 passenger vehicle and bus operators would be either a school or church group and that the truck operator would be a private, for-profit company. In each case, average conditions (e.g., annual miles traveled, accident history, and other risk factors) were assumed. The insurance companies provided quotes for varying public liability coverage levels from $50,000 to $2,000,000. Rates quoted are shown in Table 2-6. Note that the rates quoted for 9-15 passenger vehicles and buses are identical. When pressed on the quoted rates, one insurance agent noted that his company offered lower rates for passenger vehicles with a capacity of less than 15 passengers but that a 9-15 passenger vehicle would receive the same rates as those paid for 16+ passenger buses. Another agent noted that the rates for 9-15 passenger vehicles would be relatively higher than those for buses due to the historical performance and accident rates for these vehicles.

Table 2-4. Effective State Insurance Requirements for Private Motor Carriers

	General Motor Vehicle Insurance Requirements*		
State	Per-person	Per-accident	Property Damage
AL	$50,000	$50,000	$50,000
AK	$125,000	$125,000	$125,000
AZ	$40,000	$40,000	$750,000
AR	$75,000	$75,000	$75,000
CA	$35,000	$35,000	$750,000
CO	$1,500,000	$5,000,000	$750,000
CT	$1,500,000	$5,000,000	$750,000
DE	$40,000	$40,000	$40,000
DC	$60,000	$60,000	$60,000
FL	$350,000	$350,000	$300,000
GA	$75,000	$75,000	$75,000
HI	$50,000	$50,000	$50,000
ID	$65,000	$65,000	$65,000
IL	$55,000	$55,000	$55,000
IN	$60,000	$60,000	$60,000
IA	$1,500,000	$5,000,000	$300,000
KS	$350,000	$350,000	$350,000
KY	$60,000	$60,000	$60,000
LA	$1,500,000	$5,000,000	$750,000
ME	$125,000	$125,000	$125,000
MD	$250,000	$500,000	$750,000
MA	$45,000	$45,000	$45,000
MI	$1,500,000	$5,000,000	$750,000
MN	$70,000	$70,000	$70,000
MS	$1,500,000	$5,000,000	$750,000
MO	$60,000	$60,000	$60,000
MT	$60,000	$60,000	$60,000
NE	$1,500,000	$5,000,000	$750,000
NV	$40,000	$40,000	$1,000,000
NH	$75,000	$75,000	$75,000
NJ	$35,000	$35,000	$35,000
NM	$60,000	$60,000	$60,000
NY	$60,000	$60,000	$60,000
NC	$1,500,000	$5,000,000	$1,000,000
ND	$75,000	$75,000	$75,000
OH	$32,500	$32,500	$32,500
OK	$1,000,000	$5,000,000	$750,000
OR	$60,000	$60,000	$750,000
PA	$35,000	$35,000	$35,000
RI	$75,000	$75,000	$75,000
SC	$40,000	$40,000	$40,000

Table 2-4. Effective State Insurance Requirements for Private Motor Carriers (continued)

	General Motor Vehicle Insurance Requirements*		
State	Per-person	Per-accident	Property Damage
SD	$75,000	$75,000	$75,000
TN	$1,500,000	$5,000,000	$750,000
TX	$55,000	$5,000,000	$500,000
UT	$65,000	$65,000	$65,000
VT	$300,000	$400,000	$60,000
VA	$1,500,000	$5,000,000	$750,000
WA	$60,000	$60,000	$60,000
WV	$50,000	$50,000	$50,000
WI	$60,000	$60,000	$60,000
WY	$500,000	$500,000	$500,000

Table 2-5. Insurance Cost Data from Private Motor Carriers

Type	Fleet Size*	Insurance Type	Coverage ($)	Obtained from	Cost of Insurance (per vehicle per year)
9-15 passenger vehicle operators					
Private Group	12 to 14	Vehicle	$1,000,000	Ins. Co.	$1,000
School	1	Umbrella	$1,500,000	Ins. Co.	$3,100
16+ passenger vehicle operators					
Church	4 to 6	Vehicle	$5,000,000	Ins. Co.	$1,000
Church	1	Vehicle	$60,000	Ins. Co.	$800
School	12 to 14	Umbrella	$60,000	Ins. Co.	$800-$1,200
non-hazardous property carriers					
Manufacturing-oriented Business	1	Not available	$50,000	Ins. Co.	$1,600
Retail-oriented Business	7 to 8	Vehicle	Not Available	Ins. Co.	$800
Retail-oriented Business	201 to 300	Umbrella	$850,000 – $1,000,0000	Self-Insured	No monthly or yearly cost
Service-oriented Business	4 to 6	Umbrella	$55,000	Ins. Co.	$1,500

* Based on the Fleet Size Codes used in MCMIS; used to help preserve carrier anonymity.

Table 2-6. Insurance Cost Data from Insurance Companies

Coverage Level	9-15 Passenger Vehicles	Buses	Trucks
$50,000	$1,847	$1,847	$4,600
$100,000	$2,067	$2,067	
$200,000			$5,031
$300,000	$2,328	$2,328	
$500,000	$2,594	$2,594	$5,500
$1,000,000	$3,180	$3,180	$6,500
$2,000,000	$3,700	$3,700	

2.3 Economic Analysis

The following subsection briefly describes the few references that were most important for the economic analysis of the cost and benefits of extending minimum financial responsibility requirements to private motor carriers.

"The Economic Cost of Motor Vehicle Crashes, 2000" estimates the economic cost of all motor vehicle crashes in the United States in 2000 at $230.6 billion (Blincoe et al, 2002). This study monetizes the costs associated with 41,821 fatalities, 5.3 million non-fatal injuries, and 28 million damaged vehicles. The study includes a number of cost elements: (a) productivity losses, (b) property damage, (c) medical costs, (d) rehabilitation costs, (e) travel delay, (f) legal and court costs, (g) emergency services, (h) insurance administration costs, and (i) costs to employers. The costs include those associated with both police-reported and unreported crashes. The crash costs are stratified by severity according to the Abbreviated Injury Scale.

"Revised Costs of Large Truck- and Bus-Involved Crashes," prepared by the Pacific Institute for Research and Evaluation for the Federal Motor Carrier Safety Administration, documents the costs associated with large truck- and bus-involved crashes (Zaloshnja, 2002). More specifically, the report estimates the dollar value cost per crash, victim injured, or fatality incurred as a result of large truck- and bus-involved crashes. The cost elements examined in the study includes: medical related (e.g., hospital, rehabilitation), emergency services, property damage, lost productivity (e.g., crash investigation, lost wages, recruiting and training replacement workers) and lost quality of life (e.g., pain and suffering). The costs associated with crashes are differentiated based on crash severity, ranging from no injury to fatality, and by vehicle class, including straight trucks, truck-tractor combinations, and buses. The cost of police-reported crashes involving large trucks with a gross vehicle weight rating in excess of 10,000 pounds averaged $59,153 (2000 dollars). The cost of police-reported crashes involving buses averaged $32,548. These costs are reported from a societal perspective.

In "The Economic Burden of Traffic Crashes on Employers," NHTSA (2003) found that traffic crashes occurring on the job resulted in 2,100 fatalities and 353,000 injuries annually during the 1998-2000 timeframe. Further, job-related vehicle crashes accounted for nearly 6.5 percent of all crash injuries. The study estimates the economic burden of traffic crashes on employers,

including health-related fringe benefits costs, employer health care costs, sick leave, life, and disability insurance for employees involved in crashes and wage-risk premiums. These cost elements amounted to nearly $60 billion in annual costs to employers in the United States during the 1998-2000 time frame. This study estimates costs to employers by state. The costs to employers in California and New York were highest, topping $3.5 billion in each state. It also examines the costs associated with crashes involving an alcohol-impaired driver and passengers that are not using restraining devices. Finally, the study breaks down cost by industry, estimating the highest costs in the land transportation, construction, mining, and agriculture sectors. This study was examined to understand further the costs associated with heavy truck and passenger vehicle crashes and to validate some of the estimates presented in Zaloshnja (2002) but was not directly used to monetize the cost savings associated with avoiding crashes.

3.0 INTERVIEWS WITH STATE AGENCIES

As described in Section 1.0, published literature was sought concerning the safety, insurance requirements, and costs of transportation provided by private motor carriers of passengers and by private motor carriers of non-hazardous property. Since availability of this type of information in the open literature was expected to be limited, a parallel effort involving state data collection was undertaken. The intent of the collection was two-fold: (1) to gather data unavailable from the literature search or database analysis, and (2) to corroborate the limited information that was available. The information from the surveys was then used in the economic and safety analyses. Initial state contacts were provided by the CVSA, a project team member, and augmented with contacts identified through state websites.

Nine state agencies were interviewed concerning the safety and current insurance and insurability situations of private motor carriers operating in their jurisdictions. The project team sought to conduct interviews with officials in State Departments of Public Safety or State Police and State Insurance Commissioners or equivalent state agencies to represent a cross-section of those with significant numbers of private motor carriers, geographical diversity, and other parameters.

FMCSA requested that California, Illinois, New York, and Texas be included in the interview process. Other states were selected to represent a geographically diverse interview pool that included Colorado, Florida, Ohio, Virginia, and Washington. The specific organizations in each state are identified in Table 3-1.

Table 3-1. State Agencies Interviewed

State	Agencies Interviewed
California	Highway Patrol – Commercial Vehicle Section
Colorado	Public Utilities Commission
Florida	Department of Transportation
Illinois	Department of Transportation Commerce Commission
New York	Department of Transportation
Ohio	Department of Public Safety State Highway Patrol
Texas	Department of Transportation Department of Safety – Texas Highway Patrol
Virginia	State Police
Washington	State Patrol – Commercial Vehicle Division

Interviews were conducted by telephone, facilitated by advance distribution of interview topics and questions, where appropriate. Most organizations needed time following the interview calls to research specific safety and insurance data questions posed during the interviews that could not be adequately answered during the interview call. The project team then followed-up with these agencies to collect the data and information.

3.1 Safety Issues

The state agencies participating in the interviews were not able to distinguish a difference in the safety record for private carriers as compared to for-hire carriers or private carriers operating interstate and those operating wholly intrastate. Only two states were able to provide any specific safety information. The research team had difficulty in contacting the proper individuals within the correct state agencies. Each state agency was set up uniquely for that state. Initial contacts were generally not able to find the requested safety information. Even when the correct agency and individual were identified, in many cases, the requested information and data did not exist or could not be located.

The California Highway Patrol (CHP) reported that it has statewide authority to inspect all regulated vehicles (with a gross vehicle weight rating of more than 10,000 pounds) in maintenance facilities or terminals, as well as any records relating to the dispatch of vehicles or drivers and the pay of drivers to assure compliance with state laws and regulations. This authority includes all motor carriers of property or passengers without regard to the capacity of the bus; the hazardous nature of the property transported; or whether the motor carrier is a private motor carrier or for-hire.

While the CHP does not specifically record the type of each vehicle inspected, the result of each terminal or carrier inspection is entered into the CHP database (Management Information System of Terminal Evaluation Records [MISTER]). This database includes carrier information; terminal information; current terminal ratings, current carrier ratings, and rating history; and emergency contact information. Provided the operator is using vehicles that seat more than 10 passengers, including the driver, these terminal operations are part of the CHP's overall inspection program. Because neither the seating capacity of the vehicle or the for-hire status of the motor carrier is documented during a terminal inspection, no specific statistical information is available to identify relational patterns between different passenger vehicle types or private and for-hire motor carriers.

The CHP reported that the only operational difference that could be identified in their records was that approximately 22 percent of motor carriers transporting non-hazardous commodities were rated unsatisfactory during the 2005 calendar year versus approximately 13 percent for motor carrier terminals transporting hazardous materials during that same period. While there are differences between interstate and California intrastate regulations, those differences are primarily limited to the compatibility differences permitted by 49 CFR, Parts 350 and 355, allowing commercial motor vehicle drivers to operate on the road 12 hours a day on intrastate trips in California. Any operational differences are not considered as a part of industry regulation. The CHP exercises regulatory oversight based on the type of vehicle being operated, not necessarily on the operation or range of operation of the motor carrier.

Commercial vehicle safety in Texas is a high-visibility issue. Travel on Texas roadways has increased each year, especially since the passage of the North American Free Trade Act in 1991. Texas state officials reported that Texas ranked first in the nation with 459 fatal large truck

crashes in 2001—another reason for increased attention on commercial vehicles.[7] The Texas state inspection form differentiates between 9-15 and over 15 passenger vehicles. Detailed crash records are kept in Texas for trucks over 10,000 lbs and passenger vans with a seating capacity greater than 15. These data are uploaded to MCMIS and are, therefore, included in the analysis presented in Section 5.3. The project team worked with The Texas Department of Public Safety, but was unable to extract differences for for-hire and private carrier safety statistics.

3.1.1 Private versus For-hire Carriers

There was no noted safety difference between private versus for-hire carriers, according to the interviewed state agencies. It is possible that a difference may exist, but no agencies could find or knew of data that could support such an analysis. State agencies were unable to find any data or information to identify any documented difference in safety between for-hire and private carriers.

3.2 Insurance Requirements and Insurability

3.2.1 Insurance Requirements

One of the primary objectives of interviewing state agencies was to determine precise minimum levels of financial responsibility for private motor carriers. The interviewed state agencies provided the project team with the minimum levels of insurance required to satisfy state requirements for private carriers, including passenger carriers. There is a vast difference in the way that states choose to apply regulations regarding insurance requirements for private commercial motor carriers operating in their jurisdiction. Some states had specific requirements for private carriers such California, Colorado, and Florida. Some had no state-mandated requirements such Florida, Illinois, and Ohio. Other states hold private motor carriers to financial responsibility limits that are identical for all private motor vehicles, such as Texas and Virginia. This provided a good cross-section of state insurance requirements.

Table 3-2 shows the minimum financial responsibility state requirements for private carriers for the nine interviewed states participating in this research project.

Another objective of interviewing state regulatory agencies was to characterize the extent to which private carriers are subject to the same or different state minimum financial responsibility rules as for-hire carriers. For-hire carriers have mandated minimum levels of financial responsibility in all states.

[7] Texas continued to record more fatal large truck crashes than any other state each year through 2004 (FMCSA, 2005b), with 383 fatal large truck crashes in 2004.

Table 3-2. State Private Carrier Insurance Requirements

State	9-15 Passengers	16 or more Passengers	Non-HAZMAT Cargo
California	$15,000 bodily injury per person, $30,000 bodily injury per accident, $5,000 property damage per accident.	$15,000 bodily injury per person, $30,000 bodily injury per accident, $5,000 property damage per accident.	$300,000 under 10,000 lbs., $750,000 over 10,000 lbs.
Colorado	$25,000 because of bodily injury to or death of one person in any one accident, in the amount of $50,000 because of bodily injury to or death of two or more persons in any one accident, and in the amount of $15,000 because of injury to property of others in any one accident.	$25,000 because of bodily injury to or death of one person in any one accident, in the amount of $50,000 because of bodily injury to or death of two or more persons in any one accident, and in the amount of $15,000 because of injury to property of others in any one accident.	$25,000 because of bodily injury to or death of one person in any one accident, in the amount of $50,000 because of bodily injury to or death of two or more persons in any one accident, and in the amount of $15,000 because of injury to property of others in any one accident.
Florida	Non-public sector buses: $100,000 bodily injury per person; $300,000 bodily injury per accident; $50,000 property damage per accident.	Non-public sector buses: $100,000 bodily injury per person; $300,000 bodily injury per accident; $50,000 property damage per accident.	$50,000 for 26-35,000 lbs. $100,000 for 35-44,000 lbs. $300,000 for 44,000+ lbs.
Illinois	$20,000 because of bodily injury to or death of one person in any one accident, in the amount of $40,000 because of bodily injury to or death of two or more persons in any one accident, and in the amount of $15,000 because of injury to property of others in any one accident.	$20,000 because of bodily injury to or death of one person in any one accident, in the amount of $40,000 because of bodily injury to or death of two or more persons in any one accident, and in the amount of $15,000 because of injury to property of others in any one accident.	$20,000 because of bodily injury to or death of one person in any one accident, in the amount of $40,000 because of bodily injury to or death of two or more persons in any one accident, and in the amount of $15,000 because of injury to property of others in any one accident.
New York	$25,000 bodily injury per person, $50,000 bodily injury per accident, $10,000 property damage per accident.	$25,000 bodily injury per person, $50,000 bodily injury per accident, $10,000 property damage per accident.	$300,000 under 10,000 lbs., $750,000 over 10,000 lbs.
Ohio	None	$12,500 because of bodily injury to or death of one person in any one accident, in the amount of $25,000 because of bodily injury to or death of two or more persons in any one accident, and in the amount of $7,500 because of injury to property of others in any one accident.	$12,500 because of bodily injury to or death of one person in any one accident, in the amount of $25,000 because of bodily injury to or death of two or more persons in any one accident, and in the amount of $7,500 because of injury to property of others in any one accident.

Table 3-2. State Private Carrier Insurance Requirements (continued)

State	9-15 Passengers	16 or more Passengers	Non-HAZMAT Cargo
Texas	None	$500,000 for 15-25 passengers, $1,500,000 for greater than 25	$500,000 for commercial motor vehicles including tow trucks with gross vehicle weight in excess of 26,000 lbs.
Virginia	$1,500,000	$5,000,000	$750,000
Washington	None, 9-15 Passengers Non-Profit: $100,000 each person, $500,000 each accident, $50,000 property damage or $500,000 Combined Single Limit (CSL).	None, 16 or more Passengers Non-Profit: $100,000 each person, $1,000,000 each accident, $50,000 property damage or $1,000,000 CSL.	A vehicle under 10,000 lbs GVWR is $300,000 CSL. Vehicles over 10,000 lbs GVWR are $750,000 CSL.

Table 3-3 compares the financial responsibility state requirements for private carriers versus for-hire carriers for the nine interviewed states.

Table 3-3. State Private versus For-hire Carrier Financial Responsibility Requirements

State	Private Versus For-Hire Carrier Financial Responsibility Requirements
California	Private passenger carriers have different requirements than for-hire carriers. Private property carriers have the same requirements as for-hire carriers.
Colorado	Private motor carriers have different requirements than for-hire carriers.
Florida	Private carriers have same requirements as for-hire carriers.
Illinois	Private carriers have no specific minimum financial requirements. Private carriers must meet the same minimum financial responsibility as passenger automobiles.
New York	Private passenger carriers have no state financial responsibility requirements. For-hire non-hazardous property follows the Federal requirements.
Ohio	Private carriers have no specific minimum financial requirements. Private carriers must meet the same minimum financial responsibility as passenger automobiles for >16 passenger vehicles and non-hazardous property carriers.
Texas	Private carriers have same requirements as for-hire carriers.
Virginia	Private carriers have same requirements as for-hire carriers.
Washington	Private passenger carriers have no state financial responsibility requirements except for non-profit passenger carriers. For-hire non-hazardous property follows the Federal requirements.

3.2.2 Insurability

Based on the surveys conducted with various state agencies, the only meaningful issues in obtaining insurance for a motor carrier are the amount of their premium, deductibles built into their policy, and their level of coverage. Carriers can get insurance coverage; it is just a question

of what a commercial motor carrier will pay for either the legally required limits or higher levels to further protect their business.

During most of the previous decade, commercial motor carrier liability insurance rates increased so much that many trucking companies implemented or increased deductibles in an effort to keep costs in line. Some large carriers have aggregate liability deductibles as high as $250,000. The insurance market for motor carriers appears to have become more favorable during recent years. State agencies estimate that liability rates seem to be taking a slight downward trend of perhaps 5 percent from a year ago for liability coverage.

As the literature shows, motor carrier insurance rates, and even their insurability, are very dependent on their safety profile. State officials indicated that most commercial motor carriers are encouraging a meaningful commitment to safety from all company employees and most importantly from the drivers. Often, safety-related incentive programs help to reward the focus on safety. Companies that run safety incentive programs show a reduction in the incidence of insurance claims, workers' compensation claims, and crashes. One element to an overall safety program is thorough and accurate driver employment screening. State agency safety officials mentioned that commercial motor carriers need to check the driving records of all potential employees. The commercial motor carrier must screen out drivers who have poor driving records since they are most likely to cause problems in the future. The drivers' motor vehicle records should be reviewed periodically to ensure that each driver maintains a good driving record. This enables commercial motor carriers to lower their premium and total expenditures for obtaining minimum levels of required public liability insurance and may allow that commercial motor carrier to carry much higher levels of public liability insurance than the mandated minimum amounts.

4.0 INTERVIEWS WITH STAKEHOLDERS

In addition to the interviews with state officials, additional data and information were sought from other stakeholders to augment or corroborate the information already obtained. The specific information desired included carrier safety; insurability; insurance pricing, coverage and acquisition; and certain crash cost information. The targeted groups for these interviews included representative industry associations; however, it became apparent that the detailed information sought was more readily available from insurance companies and private motor carriers, and it was these groups that were the focus of the interviews. As with the state agency interviews, these interviews were conducted with the help of questions e-mailed to the respondents in order to facilitate response.

Ultimately, nine interviews were conducted with three insurance providers, one insurance broker, one industry association (NPTC), the American Insurance Association (AIA), and three private motor carriers. The three carriers covered the three types studied in this effort, a youth organization operating two 15-passenger vans, a private university operating 26 buses (as well as seven vans), and a retailer operating one tractor and seven straight trucks.

Other organizations that were considered for interviews included the Community Transportation Association of America, the National Safety Council, and the Property Casualty Insurers Association of America. However, initial discussions with them during the literature search phase of the project revealed that they would not be able to provide the specific information sought during the interviews. These organizations did, however, provide useful information and guidance regarding other sources of information.

In each of the subsections below, comments that apply to all private carriers are followed by comments specific to the three types of motor carrier.

4.1 Safety of Private Motor Carriers

There was some disagreement among the insurers about the relative safety of private versus for-hire carriers. One insurer stated that there are no safety differences based solely on whether a motor carrier is for-hire or private. Another believed that private carriers are generally safer than for-hire carriers because they have a greater degree of management control and the transportation aspect is part of a larger organization. One insurer felt that private carriers are not as well organized for safety (e.g., policies, procedures) as for-hire carriers because the transportation function is separate from the primary business of the organization. The NPTC indicated that there are no definitive studies showing any evidence that private carriers are safer than for-hire carriers. The losses experienced by a private carrier can be more predictable than those for a for-hire carrier. This variability in loss experienced from one year to the next was the primary reason an insurer (one not interviewed for this project) chose to exit the for-hire insurance business, the project team was told. One insurer indicated that studies by insurance companies have shown that the healthier the financial condition of the carrier, the safer the carrier's operations. Insurers consider this as one of their risk factors. The insurance broker indicated that, for private fleets, the cost of insurance is what drives their safety efforts.

Operating 9-15 passenger vehicles

Insurance providers have found that safety for 9-15 passenger vehicles varies based on the company's management and commitment to safety. One insurer stated that it would no longer cover 9-15 passenger vans because of their risk levels. Users of small vans are switching to regular minivans (typically up to eight passengers), vehicles with stability control systems (such as GMC's Savana), or to buses.

Operating 16 or more passenger vehicles

One insurance company representative relayed the position of the American Bus Association (ABA): any organization transporting passengers should obtain the appropriate levels of insurance and, therefore, the ABA supports the adoption of consistent financial responsibility requirements across all motor carriers.

Non-hazardous property carriers

One industry representative stated that FMCSA studies have found that the vast majority of crashes are driver-related. The representative premised his comments on differences in operating characteristics of private fleets as compared to for-hire fleets. Since private carrier drivers return to their point of origin and sleep at home and not on the road more often than for-hire carriers, they are exposed to less cumulative fatigue. He felt that since a private carrier's trucking operations are backed by the larger organization, they do a better job of maintaining, training, and managing, thereby improving private fleet safety. The NPTC conducted a survey of their members in 2003-2004. Of the 67 companies that responded, their reportable accident rates were 45 percent less than the average from FMCSA for the same period.

4.2 Pricing of Insurance for Private Motor Carriers

When setting rates, one insurer did not believe that insurance providers generally differentiate between for-hire and private motor carriers. Risk calculations are not based on a private versus for-hire classification but rates are highly customized for each carrier. Individual safety records are a very important factor. However, other insurers felt differently. One indicated that private fleets typically have less exposure (in terms of miles and routes) and are, therefore, cheaper to insure than for-hire carriers. One broker estimated that premiums are approximately 25 percent lower for private fleets.

One project team member reported his understanding that, for carriers with less than 20 drivers, insurers do not have the same level of comfort and rates on a per power-unit basis are higher. He also reported that common self-insurance levels are $500,000, $1 million, and $3 million.

Insurance companies typically price insurance rates based on exposure, mileage, time constraints (such as tight time windows that might have an impact on safety), schedule (such as hours of operation), utilization, cargo value, and presence of safety programs. Excellent safety programs and records, less exposure, mileage, time constraints, schedule, utilization, and cargo value

translate into less expense. One private carrier also suggested that rates are dependent on previous claims, fleet size, and fleet type. Specific costs for the private carriers interviewed are also included in the data collection summary provided in Section 2.2.3.

Operating 9-15 passenger vehicles

One carrier revealed that an umbrella contract from a private insurance company costs approximately $1,500-$2,000 per year for two 15-passenger vans and one minivan. Another carrier revealed that an umbrella contract with liability coverage of $1 million per accident for ten 15-passenger vans and 37 cars costs approximately $40,000 per year.

Non-hazardous property carriers

According to one insurer, average premiums are $4,000 to $6,000 per truck, but this figure may include coverage for vehicle damage. A project team member, for comparison, reported average for-hire truck insurance premiums of $4,800 to $5,800 per truck with a deductible of $1,000 to $3,000. Well over 70 percent of these premiums can be attributed to public liability insurance, which is consistent with the 85-percent figure presented in Section 2.2.3. One medium-sized ATA member employs very high deductibles (as a form of self-insurance), and therefore, an even greater percentage of its premiums are for public liability insurance. Larger carriers are more likely to self-insure.

4.3 Insurability of Private Motor Carriers

From the stakeholder responses above, private carriers are often viewed as better risks than for-hire carriers because they have a greater extent of management control and are generally part of a larger organization. An insurer prefers to insure a private carrier because they generally have more financial backing and a greater ability to pay. Insurance companies use the financial condition of a carrier as one of the intrinsic risk factors.

Since excess insurance is now very costly and is an individualized buying decision in the absence of uniform regulations, the level of public liability insurance varies by company. Smaller carriers with lower exposure typically maintain lower coverage levels. Passenger fleets typically carry higher coverage levels. Since there are no standard limits for private motor carriers, they purchase a level of insurance that balances the amount they can afford with the value of the assets they need to protect.

Most of those interviewed thought that private carriers could generally obtain the same levels of insurance that is required of for-hire carriers. The insurance broker thought it would be much easier for private carriers because of their increased ability to utilize umbrella coverage. The NPTC has seen no problems with obtaining insurance since the crisis in availability in the mid-1980s. The NPTC representative believed that all of their members currently maintain at least $1 million in public liability coverage.

One insurer reported that there are twenty times more insurance companies and ten times more insurance brokers willing to offer a policy for a private motor carrier than for a for-hire motor carrier. None of the private motor carriers interviewed expressed any problems with their ability to obtain insurance.

4.4 Acquisition of Insurance

Most motor carriers use insurance companies since insurance is widely available, although some carriers self-insure. Passenger carriers have a higher level of exposure due to civil suits according to one insurer. In general, the larger the fleet, the larger the deductible required. One insurance provider gave the following deductible estimates:

- Less than 100 power units, no deductible
- 200 power units, $25,000 deductible
- 500 power units, $50,000 - $100,000 deductible
- 1,000 power units, $100,000 - $250,000 deductible
- Some sizable carriers have multimillion dollar deductibles.

Underwriters are willing to look at a private fleet as a company with a different, less risky exposure, such as manufacturing plants, products, or assets. Therefore, insurance companies and brokers are more willing to write private carrier insurance policies than for-hire carrier insurance policies.

The NPTC representative believed it is important to provide the self-insurance ability that for-hire carriers currently have if new private carrier financial responsibility requirements are implemented.

At least one insurer stated it will no longer issue new policies for 9-15 passenger vans because they are exceedingly dangerous.

4.5 Affects of Increased Insurance Requirements on Operations

There would likely be minimal changes in operations if private carriers were required to hold the same level of public liability insurance as for-hire carriers. One insurer stated that most private carriers are from large companies and currently buy more than the maximum Federal for-hire limit for all vehicle types of $5 million. He stated that although there is not a required limit, most private carriers carry a realistic limit because it is a good business decision. As previously mentioned, the NPTC representative believed that essentially all of their members currently maintain at least $1 million in public liability coverage. The NPTC filed comments to the Unified Registration System Notice of Proposed Rulemaking stated that new SAFETEA-LU mandates would require private carriers that do not transport HM to be subject to Federal minimum financial responsibility requirements for the first time. The NPTC “accepts this new requirement as virtually all of its member companies already have in place liability insurance or other forms of financial responsibility that exceeds the current minimum requirements of $750,000 for non-hazmat transportation” (NPTC, 2005).

Motor carriers indicated that if there were an increase in public liability insurance they would first get competitive quotes from different insurers. One carrier indicated they currently try to limit the number of passengers in their 15-passenger vans to ten as a safety consideration. If the costs went up significantly, they would explore whether chartered buses would be more economical. Another passenger carrier indicated that they needed to maintain the same level of service and would not change their operations. The retailer indicated that they would not change their operations, but would explore altering their deductible to keep their annual costs constant.

4.6 Industry Growth and Driver Turnover

None of those interviewed could estimate the annual growth rate of private motor carriers. Some thought the annual driver turnover rate would drop if carriers provided consistent hours, same routes, and allowed the drivers to be home more often. The annual driver turnover rates for the private carriers were based on the type of operation and whether they used seasonal or temporary employees. The retailer indicated a fair amount of turnover, but could not quantify it. Carriers that used regular employees reported low turnover rates. One insurer indicated turnover rates for private carriers could be one-third less than for for-hire carriers. The NPTC provided the results of a recent membership survey that reported annual driver turnover rates for private carriers were 16.9 percent. For comparison, the data presented in Section 2.1 included several other estimates that ranged from 3 to 16 percent, with comparable for-hire rates ranging as high as 135 percent. The private carrier driver turnover rates are presented in order to better understand the varying risk characteristics between the private and for-hire fleets but are not used in any calculation presented in this study.

4.7 Costs to Explore Obtaining Public Liability Insurance

If private motor carriers were required to maintain a minimum level of public liability insurance, the amount of time required to comprehend and comply with the new regulation would vary significantly by company. Insurance providers estimated it could take as little as 60 to 90 days, while one broker estimated it could take up one-half year of one employee's time. A motor carrier estimated the time to complete these tasks at as little as 30 days, while the NPTC representative estimated the time at one person-day. Hourly rates for employees to determine the new requirements, determine their need for new insurance, and obtain it from the marketplace ranged from $10.25 at a university and $20-$25 and $20-$50 from insurers. Some respondents provided annual salary estimates for the people that would perform these functions: $30,000 for a clerk, $50,000 for a safety director, and $150,000 for a vice president of distribution. Clearly, some respondents were considering the period over which they would research the issues and gain necessary approvals, rather than the actual employee time spent on this task. Costs could range widely depending on time and level of employee experience required.

5.0 ANALYSES

The data and information obtained in earlier stages of the project were used to develop the safety and economic models needed to determine the potential benefit-cost ratio for implementing new financial responsibility requirements for private motor carriers. The primary benefits are the safety impacts of crash prevention. The primary costs are those to purchase and file proof of the required public liability coverage.

5.1 Baseline

5.1.1 Potentially Affected Private Carriers

The only comprehensive, nationwide source of information on the population of private motor carriers in the United States is FMCSA's MCMIS. The MCMIS Census File contains information on motor carriers primarily submitted on Form MCS-150, which collects general information on each entity. Other input to MCMIS comes from Form MCS-151, Part A, which is completed as part of safety, compliance, or educational reviews, and other sources.

For this effort, the complete Census, Crash, and Inspection Files from MCMIS were obtained. These data were current as of the end of 2005. The data were imported into Microsoft Access and SQL Server databases and further processed to identify carriers and other information relevant to this project.

To identify the number of private motor carriers potentially affected by changes in the minimum financial responsibility requirements, the MCMIS fields listed in Table 5-1 were used.

Table 5-1. MCMIS Fields Used to Identify Private Carriers

Data Element	Field Name	Values	Comments
Status	ACC_STAT	A	Only "active" carriers were selected
Classification	CLASS	C,D,E	Only carriers with one of these values were selected. Some carriers with these values also were identified as for-hire carriers (codes A and B) and would, therefore, already have the required insurance coverage
Interstate Carrier Operation	CRRINTER	A	Only interstate carriers of non-hazardous property and passengers were selected
Hazmat Indicator	HM_IND	all but Y	No hazardous materials carriers were selected
Entity Type	CARSHIP	C	Only entities marked as "carriers" were selected
USDOT Revoked Flag	USDOT_REVOKED_FLAG	all but Y	Only carriers without a revoked USDOT number were selected

This resulted in a total of 261,179 private carriers. Carriers were then assigned to one or more categories corresponding to the types of **private interstate** carriers of interest for this analysis:

- carriers operating passenger vehicles with a seating capacity of 9 to 15 passengers
- carriers operating passenger vehicles with a seating capacity of 16 or more passengers
- carriers transporting non-hazardous property

The assignment was based on the number of owned, term-leased, and trip-leased vehicles in each of the three categories, as shown in Table 5-2. Some carriers did not fit into any of these categories because they operated smaller passenger vehicles.

Table 5-2. MCMIS Fields Used to Assign Carriers to Categories

Field Names	Description
9-15 passenger vehicles	
OWNSCHOOL_9_15	number of owned school buses
TRMSCHOOL_9_15	number of term-leased school buses
TRPSCHOOL_9_15	number of trip-leased school buses
OWNVAN_9_15	number of owned mini-buses and vans
TRMVAN_9_15	number of term-leased mini-buses and vans
TRPVAN_9_15	number of trip-leased mini-buses and vans
OWNLIMO_9_15	number of owned limousines
TRMLIMO_9_15	number of term-leased limousines
TRPLIMO_9_15	number of trip-leased limousines
16+ passenger vehicles	
OWNSCHOOL_16	number of owned school buses
TRMSCHOOL_16	number of term-leased school buses
TRPSCHOOL_16	number of trip-leased school buses
OWNBUS_16	number of owned motor coaches
TRMBUS_16	number of term-leased motor coaches
TRPBUS_16	number of trip-leased motor coaches
OWNLIMO_16	number of owned limousines
TRMLIMO_16	number of term-leased limousines
TRPLIMO_16	number of trip-leased limousines
non-hazardous property vehicles	
OWNTRUCK	number of owned trucks
TRMTRUCK	number of term-leased trucks
TRPTRUCK	number of trip-leased trucks
OWNTRACT	number of owned tractors
TRMTRACT	number of term-leased tractors
TRPTRACT	number of trip-leased tractors

The 261,179 private motor carriers identified were distributed among the different categories, as shown in Table 5-3.

Table 5-3. Number of Carriers in Each Category

Category	Carriers
9-15 passenger vehicles only	536
16+ passenger vehicles only	1,606
non-hazardous property vehicles only	239,912
more than one type of vehicle	1,265
not assigned	17,860

5.1.2 Affected Private Carriers Accounting for Existing Insurance Coverage

Using the information in Section 2.2.2, State Private Motor Carrier Insurance Requirements, and in Tables 2-2 and 2-3, the difference between the current private motor carrier insurance requirements for each state and the current insurance requirements for all interstate for-hire motor carriers can be determined. This is the gap in insurance that each private carrier *with only the state's minimum requirements* would need to cover. As some states vary the minimum requirements for non-hazardous property carriers based on the weight of the vehicle, a weighted average minimum requirement for all vehicles in those states was computed using the distribution of trucks by weight class provided by the Federal Highway Administration (FHWA, 2005). This modified truck insurance minimum was computed for Arizona, Florida, North Carolina, Oklahoma, Oregon, and Texas. For states that vary the minimum insurance required for passenger vehicles based on the passenger capacity, an average coverage was estimated by the project team and is already included in Table 2-2.

MCMIS contains complete carrier address information, so the number of private motor carriers operating each type of vehicle in each state can be determined. However, many of these carriers may already have sufficient public liability coverage to meet the proposed new requirements. The project team developed estimates of the percentage of carriers, based on fleet size, that would already maintain sufficient insurance coverage. These estimates are presented in Table 5-4. It is assumed that some private carriers with small fleet sizes are still large businesses and would maintain high levels of insurance coverage. Using these estimates, the number of carriers in each category that would need to obtain some level of additional insurance is shown in Table 5-5. The total number of carriers by state is provided in Appendix C.

Table 5-4. Estimates of Carriers with Adequate Insurance Coverage by Fleet Size

Category	Fleet Size	% of Private Carriers with Indicated Public Liability Coverage
9-15 passenger vehicles		**$1,500,000**
	1	15%
	2	25%
	3	33%
	10	50%
	20	85%
	65	100%
16+ passenger vehicles		**$5,000,000**
	1	15%
	2	25%
	5	33%
	15	50%
	25	85%
	45	100%
non-hazardous property vehicles		**$750,000**
	1	15%
	9	25%
	19	33%
	50	50%
	145	85%
	550	100%

Table 5-5. Number of Carriers in Each Category Requiring Additional Insurance

Category	Carriers
9-15 passenger vehicles	1,059
16+ passenger vehicles	1,960
non-hazardous property vehicles	189,726

5.1.3 Number of Vehicles for Which Insurance is Required

A similar process is used to determine, at the state level, how many vehicles in each of the three categories will be affected by new minimum public liability coverage requirements for interstate private motor carriers. The same estimates shown in Table 5-4 are applied to the MCMIS data and the overall results are shown in Table 5-6. The total number of vehicles by state is provided in Appendix C.

Table 5-6. Number of Vehicles in Each Category Requiring Additional Insurance

Category	Vehicles
9-15 passenger vehicles	2,110
16+ passenger vehicles	4,114
non-hazardous property vehicles	524,534

5.2 Costs to Private Motor Carriers

5.2.1 Costs to Explore Obtaining Public Liability Insurance

The stakeholders interviewed in support of this study indicated that they would dedicate roughly 8 to 24 hours of staff time to become familiar with a new regulation and to assess their operation to determine their need for additional insurance, and obtain it. This process would include obtaining insurance quotes and determining the most appropriate insurance option. Based on the data received from the stakeholder interviews, the analysis assumes that an average of 16 hours per company will be spent in the process of obtaining insurance.

To determine the costs to private operators of 9-15 passenger vehicles, 16+ passenger vehicles, and non-hazardous material transporting heavy trucks, the number of carriers needing coverage in each category (1,059 9-15 passenger vehicle operators, 1,960 16+ passenger vehicle operators and 189,726 truck operators) was multiplied by the time required to obtain insurance (16 hours) and the salary plus fringe benefits for administrative personnel ($22.64).[8]

Based on these assumptions, the industry costs associated with researching any new insurance requirement and obtaining insurance in compliance with it are estimated at $383,612 for operators of 9-15 passenger vehicles, $709,990 for bus operators, and $68,726,346 for truck operators. These are considered one-time costs, necessary for obtaining insurance commensurate with the FMCSA standards presently applied to for-hire carriers. These costs are assumed to be incurred in the first year of the 10-year analysis timeframe.

5.2.2 Costs for Public Liability Insurance

The vast majority of the costs considered in this study are those tied to the expanded insurance requirements. To determine the insurance costs to private motor carriers, the insurance rates highlighted in Table 2-6 were used to construct cost curves, as shown in Figure 5-1. State insurance coverage requirements were then built into the cost equations shown in Figure 5-1 to estimate the costs currently paid by private carriers. The average state insurance costs were estimated at $2,088 for 9-15 passenger vehicles, $2,325 for buses, and $4,973 per vehicle per year. Federal public liability insurance coverage requirements were also built into the cost equations and compared to the estimated state costs in order to determine the incremental cost of the expanded insurance requirements.

[8] United States Department of Labor, Bureau of Labor Statistics. Occupational Employment Statistics. Washington, DC. November 2004.

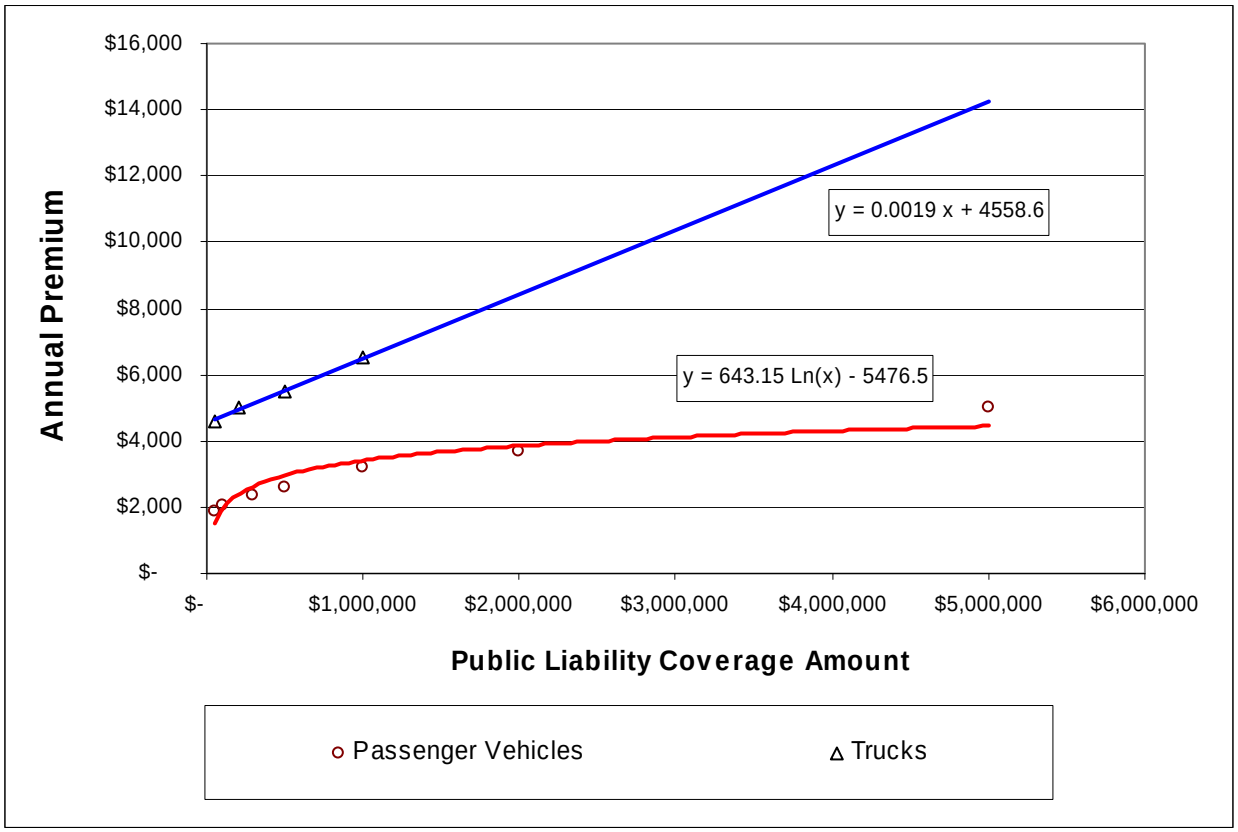

Figure 5-1. Insurance Cost Curves for 9-15 Passenger Vehicles, Buses, and Heavy Trucks

The average costs of state-required insurance, differentiated by vehicle type, are compared to the estimated costs of the expanded Federal requirements in Table 5-7. The costs associated with the expanded insurance requirements range from $1,010 for trucks to $2,120 for 16+ passenger vehicles. The 16+ passenger vehicle cost differential is the greatest because the Federal standards require $5,000,000 of public liability coverage, an amount well in excess of the state average of $382,000 of coverage.

Table 5-7. Insurance Costs per Vehicle per Year

Vehicle Type	Federal Standard	State Average	Cost Differential
9-15 passenger vehicles	$3,670	$2,088	$1,582
16+ passenger vehicles	$4,444	$2,324	$2,120
non-hazardous property vehicles	$5,983	$4,973	$1,010

The number of vehicles requiring insurance was computed in Section 5.1.3. The number of vehicles by type requiring insurance was segmented according to each carrier's state, as determined by their physical address in the MCMIS Census File. The project team obtained data

from all 50 states and the District of Columbia. The number of vehicles required to expand their coverage from state to Federal standards by vehicle type was computed and compared to the insurance cost differential for each state to determine the insurance costs associated with the expanded Federal coverage requirements. Based on these assumptions, the total insurance costs borne by private carriers is estimated at $27.4 million for 9-15 passenger vehicle operators, $69.8 million for 16+ passenger vehicle operators, and $4.2 billion for private truck operators over the 10-year analysis time frame. These costs are presented in present value terms, discounted at 7 percent.

Equation 1 demonstrates how insurance costs were estimated for private motor carriers carrying non-hazardous property in the State of New York. Note that these are the costs estimated for only Year 1 of the analysis time frame.

The insurance cost equation reflects the findings of the insurance rates analysis presented in Figure 5-1. Based on current requirements of $60,000 liability coverage and the expanded Federal requirements of $750,000, the cost impact per truck would be estimated at $1,311, reflecting an increase in the estimated annual insurance premium from $4,672 to $5,983. The per-vehicle increase in insurance costs is, in turn, multiplied by the total number of trucks not already in compliance with Federal standards (estimated at 23,787). Equations 2 and 3 show the result of the calculation, an estimated cost to private truck operators in New York of $31.2 million in 2006.

$$ICT_{NY} = \#TR_{NY} \times [(0.0019(IRT_F) + 4558.6) - (0.0019(IRT_{NY}) + 4558.6)] \quad [1]$$

where:

- ICT_{NY} = Insurance cost impacts of expanded Federal requirements to private property truck operators in New York
- $\#TR_{NY}$ = Number of trucks requiring coverage
- IRT_F = Federal insurance requirements for operators of trucks carrying non-hazardous property
- IRT_{NY} = New York insurance requirements for trucks carrying non-hazardous property.

$$ICT_{NY} = 23{,}787 \times [(0.0019(\$750{,}000) + \$4558.6) - (0.0019(\$60{,}000) + \$4558.6)] \quad [2]$$

$$ICT_{NY} = \$31{,}184{,}757 \quad [3]$$

5.2.3 Costs to File Proof of Insurance

For-hire carriers, who are already required to meet FMCSA insurance standards, must file numerous forms documenting the possession of adequate public and cargo liability insurance, as well as forms designed to verify that the carriers have purchased surety bonds. For-hire carriers are also required to file notice of cancellations on FMCSA's prescribed forms. Under the insurance requirements outlined in SAFETEA-LU and evaluated in this study, private carriers would be required to file forms that provide evidence of required bodily injury and property

damage (BI&PD) insurance coverage (Forms BMC-91, 91x, or 82) and endorsements that must be attached to BI&PD policies (Forms BMC-90 and 32). Thus, private carriers would, at a minimum, be required to file two forms with FMCSA if they were subject to FMCSA insurance requirements.

FMCSA has estimated that the time required to complete these forms is 10 minutes per form (FMCSA, 2005). This cost analysis assumes that each private carrier, including those who would not need to change insurance coverage levels, would be required to file proof of insurance with FMCSA and that it would take 20 minutes (10 minutes per form). The cost to file these forms is estimated at $7.55 per company, assuming an hourly rate (salary plus fringe) of $22.64 for administrative personnel.

Based on the assumptions outlined above, the product of the number of companies required to file proof of insurance forms (Table 5-8) and the filing cost per company generates estimates of the initial costs to file proof of insurance ($10,980 for operators of 9-15 passenger vehicles, $20,006 for bus operators and $1,815,396 for private truck operators). When carriers change insurance providers, start, or stop coverage, they would be required to file additional forms with FMCSA. Based on current filing rates associated with for-hire carriers, the costs associated with future years' filings tied to changes in coverage were estimated (OMB, 2005). Total filing costs are highlighted in Table 5-8.

Table 5-8. Filing Costs*

Vehicle Type	Number of Carriers	Total Filing Costs
9-15 passenger vehicles	1,455	$14,794
16+ passenger vehicles	2,651	$34,073
non-hazardous property vehicles	240,556	$3,244,685

*Based on current filing rates associated with for-hire carriers.

5.2.4 Impacts on Small Businesses

The project team evaluated the industries most likely to be impacted by the expanded insurance requirements and identified corresponding North American Industry Classification System (NAICS) codes for each industry, as shown in Table 5-9. Because these requirements would apply to private carriers, the industries affected by the insurance regulations span a broad cross-section of the national economy. Broad industry classifications, such as manufacturing (31-33), retail (44-45), and wholesale (42) industries and construction (23), would be affected by the requirement that property carriers meet the expanded insurance requirements. With respect to the 9-15 and 16+ passenger vehicles, the project team identified four primary NAICS codes: educational services (61); nursing and residential care facilities (623); art, entertainment, and recreation (71); and religious organizations (8131).

Table 5-9. Impacted NAICS Codes

NAICS Code(s)	Industry
non-hazardous property motor carriers	
23	Construction
562	Waste Management Services
44-45	Retail
811	Repair and Maintenance
113	Forestry and Logging
31-33	Manufacturing
42	Wholesale
passenger motor carriers	
61	Educational Services
623	Nursing and Residential Care Facilities
71	Arts, Entertainment, and Recreation
8131	Religious Organizations

The research team was unable to determine the percentage of all vehicles attributable to small businesses operating under each NAICS code identified in Table 5-9; however, Small Business Administration (SBA) data were used to determine the number of establishments, employees, annual pay, and total receipts broken down by firm size (SBA, 2006). From this dataset, which is provided in Appendix C, the project team was able to determine the proportion of employees, salaries, receipts, and establishments attributed to small businesses operating trucks and passenger vehicles. The resulting shares are shown in Table 5-10. Table 5-10 shows that small businesses comprise 80.6 percent of the establishments associated with trucks, as identified in Table 5-9. Further, small businesses account for approximately 29.5 percent of estimated receipts in industries where private heavy trucks are operated. Small businesses account for 35.3 percent of total receipts in industries that operate passenger vehicles.

Table 5-10. Small Business Share of Establishments, Employees, Annual Pay, and Estimated Receipts in Impacted NAICS Codes

	Trucks	Passenger Vehicles
Establishments	80.6%	87.8%
Employees	42.9%	45.2%
Annual Pay	39.9%	35.5%
Estimated Receipts	29.5%	35.3%

Table 5-11 presents the estimated costs to small businesses associated with the expanded insurance requirements. The small business analysis considers high- and low-cost scenarios. In the low-cost scenario, estimated receipts are used as a proxy for the burden that small businesses would bear (29.5 percent for heavy trucks and 35.3 percent for passenger vehicles). The low-cost scenario considers employees as an indicator of financial responsibility, and presents a range based on the assumption that small businesses operating in industries deploying heavy trucks would shoulder 42.9 percent of the costs while those operating in industries using passenger vehicles would bear 51.9 percent of the costs. Based on these assumptions, total costs to small businesses operating trucks are estimated at $1.2 to $1.8 billion. The impact of the expanded

insurance requirements on small businesses operating 9-15 passenger vehicles is estimated at $11.7 to $14.5 million, and the costs to small businesses operating 16+ passenger vehicles is estimated at $29.7 to $36.6 million.

Table 5-11. Small Business Cost Analysis

Category	Total Cost to All Businesses	Small Business Costs	
		Low	High
9-15 passenger vehicles	$27,843,379	$11,722,062	$14,450,714
16+ passenger vehicles	$70,519,876	$29,688,868	$36,599,815
non-hazardous property vehicles	$4,224,357,602	$1,246,185,493	$1,812,249,411

5.2.5 Summary of Costs

The costs associated with the expanded insurance requirements examined in this study are highlighted in Table 5-12. These costs are summarized by vehicle type. The vast majority of the costs are tied to insurance premiums paid by private operators of heavy trucks. In computing these costs over 10 years, an average annual growth rate of 2.98 percent was applied to the truck population, an annual growth rate of 1.92 percent was applied to buses and an average annual growth rate of 2.0 percent was applied to 9-15 passenger vehicles.[9] A discount rate of 7 percent was applied in order to present estimates in current value terms.

As illustrated in Table 5-12, the total costs to operators of 9-15 passenger vehicles is estimated at $27.8 million over the 10-year timeframe. Estimated costs to private bus operators are estimated at $70.5 million. Finally, the estimated costs borne by private truck operators are expected to exceed $4.2 billion over the 10-year (2006-2015) study time horizon.

Table 5-12. Summary of Costs

Vehicle Type	Administrative Costs to Obtain Insurance	Costs of Insurance Premiums	Costs of Filing	Total Costs
9-15 passenger vehicles	$383,612	$27,444,972	$14,794	$27,843,379
16+ passenger vehicles	$709,990	$69,775,813	$34,073	$70,519,876
non-hazardous property vehicles	$68,726,346	$4,152,386,571	$3,244,685	$4,224,357,602

Because there is some uncertainty with respect to the estimate of the number of entities potentially affected by expanded Federal financial responsibility requirements and the costs that would be incurred, sensitivity analysis was performed and low-, medium- and high-end ranges were computed. The sensitivity analysis takes the medium-end or mid-point estimates provided

[9] Truck growth rate is based on growth in truck population forecast between 1998 and 2008 in American Trucking Associations, U.S. Freight Transportation Forecast to 2008. Bus growth rate based on historic growth in private commercial buses as published in Federal Highway Administration, Federal Highway Statistics, Table MV-10. Washington, D.C. The 9-15 passenger vehicle growth rate was computed by average annual growth in gross output for the transit and ground passenger transportation sector between 1999 and 2004.

in Table 5-12 and considers the cases where costs exceed or fall short of the baseline by 20 percent. The range of costs is presented in Table 5-13.

Table 5-13. Results of Cost Sensitivity Analysis

Vehicle Type	Administrative Costs to Obtain Insurance	Costs of Insurance Premiums	Costs of Filing	Total Costs
9-15 passenger vehicles				
Low-end estimate	$306,890	$21,995,978	$11,835	$22,274,703
High-end estimate	$460,334	$32,933,966	$17,753	$33,412,055
16+ passenger vehicles				
Low-end estimate	$567,992	$55,820,650	$27,258	$56,415,901
High-end estimate	$851,988	$83,730,976	$40,888	$84,623,851
non-hazardous property vehicles				
Low-end estimate	$54,981,077	$3,321,909,257	$2,595,748	$3,379,486,082
High-end estimate	$82,471,615	$4,982,863,885	$3,893,622	$5,069,229,122

5.3 Benefits

5.3.1 Safety Benefits from Crash Reduction

Per-crash Costs

The primary benefit associated with the expanded insurance requirements examined in this study stem from avoiding the high costs of crashes involving unsafe private carriers that would find it difficult or impossible to obtain public liability coverage at the new, higher levels. The costs include those related to: medical costs, emergency services, property and equipment damage, lost productivity (e.g., wages, fringe benefits, claims processing costs, litigation costs, crash investigation costs, recruiting and training replacement for disabled workers), and monetized quality-adjusted life years. Zaloshnja (2002) estimated these costs according to non-injury crashes, injury crashes, and fatal crashes for a broad spectrum of vehicle types, including buses and heavy trucks.

The estimated costs per accident, differentiated based on vehicle type and crash severity, are highlighted in Table 5-14. The research team was unable to identify a study that estimated the costs associated with 9-15 passenger vehicle incidents. Thus, this analysis assumes that there is no difference between the crash costs attributable to 16+ passenger and 9-15 passenger vehicle crashes due to the similarity in their risk profile, as noted by two insurance industry representatives contacted for this study. Zaloshnja (2002), the most recent source of crash cost information, relies on data obtained in 2000. Thus, the published costs were inflated to 2006 dollars based on growth in the consumer price index between 2000 and 2006.

Table 5-14. Crash Costs by Vehicle Type and Crash Severity

Crash Severity	9-15 and 16+ Passenger Vehicles	Trucks
Non-Injury	$7,058	$11,973
Injury	$88,599	$189,440
Fatality	$3,072,617	$3,769,916

Crashes Avoided

The MCMIS Census File was used to compute overall crash rates for both private and for-hire carriers in each of the three carrier-type categories. This was done by using the recordable accident rate (ACC_RATE) and latest review mileage (MILETOT) fields to determine the number of crashes attributable to each carrier *that operated vehicles in only one category*. The overall crash rate was determined by summing all the crashes and dividing by the sum of all the review mileage figures for each motor carrier included. For all three carrier types, the private carrier crash rate was higher than it was for the for-hire carriers. These values are shown in Table 5-15.

Table 5-15. Crash Rates by Carrier Category

Category	Crash Rates (per million miles traveled)	
	For-hire Carriers	Private Carriers
9-15 passenger vehicle operators	0.283	0.359
16+ passenger vehicle operators	0.221	0.516
non-hazardous property carriers	0.307	0.409

Crashes in the MCMIS Crash File were linked, where possible, to motor carriers in the MCMIS Census File by their USDOT numbers. This linkage was not possible for approximately 30 percent of the crashes in the Crash File as the USDOT number was missing. There are several reasons why the USDOT number can be blank for a reported crash. While all reportable crashes are to be entered into MCMIS, not all motor carriers are required to have a USDOT number. For example, while for all vehicle configurations only 30 percent of the MCMIS crash records have missing USDOT numbers, that percentage is 70 percent for 16+ passenger vehicle operators and 75 percent for 9-15 passenger vehicle operators. It follows that there are many reportable accidents involving these categories of vehicles that are not included in the crash rate calculation shown in Table 5-15. While all motor carriers transporting hazardous materials must apply for a USDOT number, one study of hazardous material transport found that the USDOT number was not entered for 15 percent of the MCMIS crash records. The overall effect of a missing USDOT number on the estimates shown in Table 5-15 is much less significant than the inability to include many of the crashes involving 9-15 and 16+ passenger vehicle operators in the crash rate estimates.

For the reportable accidents that had USDOT numbers, crashes were then identified as involving a private or for-hire carrier and by crash severity. These crashes were used to determine the probabilities of a fatality or injury, given a crash, for each carrier category. Finally, the reduction

in crashes, fatal crashes, and injury crashes was determined for each carrier category. This reduction was based on the assumption that with the levels of public liability insurance increased to those for for-hire carriers, private carriers would experience the same accident rates as for-hire carriers. There are a number of reasons that would lead one to expect higher insurance requirements to have an effect upon safe operations. For example, the increased costs should force private carriers to focus more on safety in order to keep their rates as low as possible. Furthermore, as long as private carriers must only comply with part of the FMCSRs, their basis for safe operation will be more dependent upon the cost of insurance rather than regulatory compliance. Finally, unsafe operators may not be able to either acquire or afford the minimum insurance required to comply, thus removing them from the carrier population. While minimum financial responsibility requirements may not be the sole reason for the differential in crash rates between private and for-hire carriers, the baseline analysis assumes that it is a significant one. Sensitivity analysis is used to account for other possible reasons behind the crash rate differential and a smaller percentage of crashes avoided from the new requirements. These reductions are shown in Table 5-16 and are actual values, not percentages.

Table 5-16. Annual Reductions in Crashes, Fatalities, and Injuries

Category	Crashes	Fatal Crashes	Fatalities	Injury Crashes	Injuries
9-15 passenger vehicle operators	2.3	0.1	0.2	1.5	3.2
16+ passenger vehicle operators	84.9	1.3	1.4	44.7	95.6
non-hazardous property carriers	2,392.8	86.2	99.4	1,113.4	1,581.8

Based on analysis results obtained from UMTRI, crash data are underreported in MCMIS.[10] The adjustment factors to account for this underreporting, taken from UMTRI's analysis, are shown in Table 5-17.

Table 5-17. MCMIS Underreporting Correction Factors

Category	Crashes	Fatal Crashes	Fatalities	Injury Crashes	Injuries
9-15 passenger vehicle operators	0.3	0.7	0.7	0.6	0.6
16+ passenger vehicle operators	0.3	0.7	0.7	0.6	0.6
non-hazardous property carriers	0.6	0.7	0.7	0.6	0.6

Next, the values in Tables 5-16 and 5-17 are multiplied to yield the resulting reductions in crashes, fatalities, and injuries shown in Table 5-18.

[10] UMTRI acquired six states' crash files for all motor vehicle crashes in the state. UMTRI developed algorithms in each state to identify records that qualified for reporting to the MCMIS crash file and developed weighted MCMIS reporting rates for crashes, fatal crashes, and injury crashes for 9-15 passenger vehicles, 16+ passenger vehicles, and trucks.

Table 5-18. Annual Reductions in Crashes, Fatalities, and Injuries Corrected for Underreporting

Category	Crashes	Fatal Crashes	Fatalities	Injury Crashes	Injuries
9-15 passenger vehicle operators	7.8	0.2	0.2	2.5	5.4
16+ passenger vehicle operators	283.0	1.8	2.0	74.5	159.4
non-hazardous property carriers	3,988.0	123.2	142.0	1,855.7	2,636.3

The next step in determining the avoided crashes, fatalities, and injuries from extending the minimum public liability insurance requirements to private carriers is to account for those carriers that already have the minimum levels of coverage. The percentage of VMT associated with these carriers was determined by using the same methodology presented in Section 5.1.2 to identify the carriers themselves. It was assumed that VMT was distributed proportionally across all the fleet size categories shown in Table 5-4. For 9-15 passenger vehicles, the percentage reduction was 19.8 percent; the reduction was 85.6 percent for 16+ passenger vehicles and 46.5 percent for trucks carrying non-hazardous property. The resulting adjusted annual reductions in crashes, fatalities, and injuries shown in Table 5-19.

Table 5-19. Annual Reductions in Crashes, Fatalities, and Injuries Corrected for Carriers Already Meeting the Insurance Requirements

Category	Crashes	Fatal Crashes	Fatalities	Injury Crashes	Injuries
9-15 passenger vehicle operators	6.3	0.1	0.2	2.0	4.3
16+ passenger vehicle operators	40.7	0.3	0.3	10.7	22.9
non-hazardous property carriers	2,135.1	66.0	76.0	993.5	1,411.4

Expanding Federal public liability insurance requirements to private carriers would not be expected to completely eliminate the discrepancy between private and for-hire accident rates. Thus, this analysis considers a ratio of effectiveness (ROE), where the proposed regulation change would reduce but not eliminate the gap in accident rates between private and for-hire carriers. As shown in Table 5-20, a ROE of 60 percent reduces the annual avoided crashes, fatalities, and injuries highlighted in Table 5-19 by 40 percent. The analysis also considers an 80 percent ROE scenario, which is highlighted in Section 5.4 of this report.

Table 5-20. Annual Reductions in Crashes, Fatalities, and Injuries Corrected for Carriers Meeting the Insurance Requirements Assuming a 60 Percent Ratio of Effectiveness

Category	Crashes	Fatal Crashes	Fatalities	Injury Crashes	Injuries
9-15 passenger vehicle operators	3.8	0.1	0.1	1.2	2.6
16+ passenger vehicle operators	24.4	0.2	0.2	6.4	13.7
non-hazardous property carriers	1,281.1	39.6	45.6	596.1	846.8

Benefits of Crashes Avoided

By combining these per-crash estimated costs with the crashes shown in Tables 5-19 and 5-20, the cost savings associated with avoided crashes for 9-15 passenger vehicles are estimated at $3.2 to $5.3 million over the 10-year analysis time horizon. The avoided crash costs for 16 or more passenger vehicles are estimated at $9.5 to $15.8 million. The crash costs avoided due to a reduction in the number of crashes involving motor carriers of non-hazardous property is estimated at $2.3 to $3.8 billion.

5.3.2 Summary of Benefits

This study estimated that the expanded insurance requirements would eliminate 1,309.3 to 2,182.1 crashes, 45.9 to 76.5 fatalities, and 863.2 to 1,438.6 injuries annually, resulting in benefits associated with enhanced safety totaling $2.3 to $3.8 billion over the 10-year analysis time horizon. Though these benefits are significant, they were outweighed by the costs associated with soliciting insurance bids, paying insurance premiums, and filing necessary reports with FMCSA. The total costs borne by industry over the 10-year time horizon were estimated at $3.4 to $4.3 billion.

Table 5-21. Summary of Benefits

Vehicle Type	Avoided Crashes	Avoided Fatalities	Avoided Injuries	Total Benefits
9-15 passenger vehicles				
Low-end estimate	3.8	0.1	2.6	$3,195,125
High-end estimate	6.3	0.2	4.3	$5,325,208
16+ passenger vehicles				
Low-end estimate	24.4	0.2	13.7	$9,497,027
High-end estimate	40.7	0.3	22.9	$15,828,379
non-hazardous property vehicles				
Low-end estimate	1,281.1	45.6	846.8	$2,284,724,636
High-end estimate	2,135.1	76.0	1,411.4	$3,807,874,394

5.4 Benefit-cost Ratios

The benefits and costs over the ten-year analysis period associated with the expanded insurance requirements are highlighted in Table 5-22 and are shown in present value terms, discounted at 7 percent. The BCA considers 27 scenarios, with varying combinations of benefits and costs ranging from low-end to high-end estimates, with mid-point estimates also included. As noted previously, the benefits estimates vary based on the ROE, ranging from 60 percent (low-end) to 100 percent (high-end) with a mid-point estimate of 80 percent. The cost estimate includes a mid-point estimate and low- and high-end estimates that represent ± 20 percent of the mid-point. The scenarios also differ based on the vehicle fleet considered: 9-15 passenger vehicles, 16+ passenger vehicles, and trucks carrying non-hazardous property.

Table 5-22 shows that estimated costs exceed estimated benefits in 26 of the 27 scenarios considered in this study. Net costs (costs minus benefits) are estimated at $16.9 to $30.2 million for 9-15 passenger vehicles, $40.6 to $75.1 million for 16+ passenger vehicles, and $-428.4 to $2.8 billion for trucks carrying non-hazardous property. In all cases except Scenario 21 (highlighted below) where low-end costs and high-end benefits are considered for non-hazardous property-carrying trucks, costs exceed benefits and the benefit-cost ratios (BCRs) fall below 1.0. The lowest BCRs are attributed to the 9-15 passenger vehicles, while trucks achieve the highest BCRs.

Table 5-22. Benefit-cost Analysis Findings

Scenario	Benefits	Costs	Vehicle Type	Benefits	Costs	BCR
1	Low	Low	9-15 Passenger	$3,195,125	$22,274,703	0.14
2	Low	Low	16+ Passenger	$9,497,027	$56,415,901	0.17
3	Low	Low	Trucks	$2,284,724,636	$3,379,486,082	0.68
4	Low	Mid	9-15 Passenger	$3,195,125	$27,843,379	0.11
5	Low	Mid	16+ Passenger	$9,497,027	$70,519,876	0.13
6	Low	Mid	Trucks	$2,284,724,636	$4,224,357,602	0.54
7	Low	High	9-15 Passenger	$3,195,125	$33,412,055	0.10
8	Low	High	16+ Passenger	$9,497,027	$84,623,851	0.11
9	Low	High	Trucks	$2,284,724,636	$5,069,229,123	0.45
10	Mid	Low	9-15 Passenger	$4,260,167	$22,274,703	0.19
11	Mid	Low	16+ Passenger	$12,662,703	$56,415,901	0.22
12	Mid	Low	Trucks	$3,046,299,515	$3,379,486,082	0.90
13	Mid	Mid	9-15 Passenger	$4,260,167	$27,843,379	0.15
14	Mid	Mid	16+ Passenger	$12,662,703	$70,519,876	0.18
15	Mid	Mid	Trucks	$3,046,299,515	$4,224,357,602	0.72
16	Mid	High	9-15 Passenger	$4,260,167	$33,412,055	0.13
17	Mid	High	16+ Passenger	$12,662,703	$84,623,851	0.15
18	Mid	High	Trucks	$3,046,299,515	$5,069,229,123	0.60
19	High	Low	9-15 Passenger	$5,325,208	$22,274,703	0.24
20	High	Low	16+ Passenger	$15,828,379	$56,415,901	0.28
21	High	Low	Trucks	$3,807,874,394	$3,379,486,082	1.13
22	High	Mid	9-15 Passenger	$5,325,208	$27,843,379	0.19
23	High	Mid	16+ Passenger	$15,828,379	$70,519,876	0.22
24	High	Mid	Trucks	$3,807,874,394	$4,224,357,602	0.90
25	High	High	9-15 Passenger	$5,325,208	$33,412,055	0.16
26	High	High	16+ Passenger	$15,828,379	$84,623,851	0.19
27	High	High	Trucks	$3,807,874,394	$5,069,229,123	0.75

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

While some individuals interviewed for this research believe that private motor carriers are generally safer than for-hire motor carriers, no studies were identified that indicated that private carriers, as a whole, were safer than for-hire carriers. The FMCSA data analyzed for this project indicate the opposite is true: for-hire carriers in all three carrier categories examined have lower overall crash rates per vehicle mile traveled than private carriers. However, data examined on fatal truck and bus crashes showed that private carriers had lower fatality crash involvements than for-hire carriers. While this analysis links the level of insurance coverage with safety levels and crash reduction, the project team acknowledges that other variables might be contributing factors. However, as carriers that experience more crashes and that are considered to be in a higher claims risk category in general will pay increased rates for insurance, the insurance requirements are assumed to have a strong effect in encouraging safe operating practices. Further, expanded insurance requirements could remove a number of unsafe carriers from the vehicle population, as these carriers would be unable to secure public liability coverage at the higher levels on reasonable financial terms.

Most states have lower or no financial responsibility requirements for private motor carriers than for for-hire motor carriers, and those that have similar requirements appear to have done so to apply consistent rules across all motor carriers within their state. States agencies demonstrate this regulatory behavior either because they have not determined that private motor carriers are no less safe than for-hire motor carriers or there just are not sufficient data on which to properly address the issue.

This study found that the expanded insurance requirements would eliminate 1,309 to 2,182 crashes, 46 to 77 fatalities, and 863 to 1,439 injuries annually, resulting in benefits associated with enhanced safety totaling $2.3 to $3.8 billion over the 10-year analysis time horizon. Though these benefits are significant, they were outweighed by the costs associated with soliciting insurance bids, paying insurance premiums, and filing necessary reports with FMCSA in 26 of 27 benefit-cost analysis scenarios. The total costs borne by industry over the 10-year time horizon were estimated at $3.5 to $5.2 billion.

The societal costs are the same for a crash involving a motor carrier with adequate financial resources and insurance coverage and for a crash involving a motor carrier without adequate financial resources and insurance coverage. However, there are two equity issues that may justify the adoption of the new requirements so that they apply to all motor carriers. First, when a motor carrier is at fault in a crash and is not able to cover the bodily injury and property and environmental damage costs resulting from the crash, the injured parties must pay those costs. These parties may include individuals, businesses, and public agencies. Second, some for-hire motor carriers argue that some private carrier operations are essentially competing with for-hire carriers and that requiring the same level of public liability coverage for all carriers would remove what they see as an unfair advantage for private carriers.

6.2 Recommendations

Based on the results of the analyses conducted for this project, it appears that extending the current minimum financial responsibility requirements that exist for for-hire motor carriers to private motor carriers is not cost-beneficial under the assumptions used in this analysis. The BCRs for the two passenger carrier categories are both significantly less than one. The BCR for non-hazardous property motor carriers is closer to one, but still indicates that the costs outweigh the benefits for this much larger group of private carriers. However, the financial responsibility requirements examined within this study may be justifiable given the equity considerations previously described.

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APPENDIX B. ADDITIONAL ANNOTATED REFERENCES

This appendix describes papers, reports, and articles that were consulted during the study but not discussed directly in Section 2.0, Literature Search and Data Gathering. Although the annotated references were not used directly for the report preparation, they served either to provide background material and information or to validate another source and indicate its applicability to the project.

Hornblower, Manning, and Ward. Truck Accident Litigation. Available at www.hmwpc.com/truck.htm as of March 1, 2006.

This website lists reasons why truck accidents are different from personal automobile accidents and explains the need to have insurance. Specific differences between truck and auto accidents include the following:

- Greater likelihood of substantial damage claims
- Juror prejudice against truck drivers and trucking companies
- Claims of negligence in the areas of driver hiring, qualification, and training
- Claims of negligence in the areas of vehicle maintenance
- Conflicting or overlapping insurance coverages for leased tractors or trailers
- Claims by co-drivers or unauthorized passengers
- Claims by employees covered by workers' compensation insurance in a different state
- Subject to more governmental regulations than non-commercial vehicles
- Unique physical limitations on driver and equipment due to the size and bulk of vehicles
- Identification of vehicle operation and ownership in alleged bump-and-drive cases

Forkenbrock, David. "External Costs of Intercity Truck Freight Transportation." Public Policy Center, The University of Iowa. Iowa City, IA. 1999.

This paper estimates that there are four external costs to trucking operations: accidents, emissions, noise, and un-recovered costs such as overhead fees. In this study, small carriers were not separated from large carriers because, in all markets, large carriers are in direct competition with one- or two-vehicle carriers. In general, trucking has two main costs, compensation for workers and insurance payments. Insurance costs are based on accident history. In 1994, general freight motor carriers were involved in accidents costing society over $14 million per 100 million vehicle miles traveled; only $6 million were paid by the trucking companies, meaning that 0.59 cents per ton mile were paid by society.

Selland, Kerri. "Steelmakers gauge truck options for long haul." American Metal Market. August 20, 1993.

This article explains the dispute within companies between having their own trucking group and contracting out the trucking. It explains that having a group of their own can be very costly and rarely do companies take into account all the costs including worker's compensation, insurance, equipment, and other issues.

Haigh, Susan. "Blumenthal calls on DMV to Demand Insurance Proof from Trucking Cos." Boston Globe. September 30, 2005.

State's Attorney General Richard Blumenthal calls on the Connecticut Motor Vehicle Administration to demand proof of insurance from trucking companies following a fiery 20-vehicle crash that killed four people. The operator of the truck causing the accident had no liability insurance. Blumenthal states that companies with safety problems are the most likely not to have insurance. In Connecticut, the Department of Motor Vehicles is only informed if there is a lapse in coverage on a car, but not if there is a lapse in coverage on a truck.

Vise, Avery. "Ticking Away." eTrucker Magazine. April 2003.

Trucking insurance has skyrocketed since 2001; liability insurance has gone up 32 percent while umbrella coverage went up 87 percent. Premium jumps have forced some carriers to reduce their fleet size and others to leave the market completely. Choosing the proper coverage is the best way to reduce unnecessary costs. For a motor carrier, the best way to accomplish this is review their safety background and forecast a future loss schedule. Determining the loss schedule on a per-power unit or per-mile basis will allow the company to determine the most cost-effective coverage. For a company with good financials and a good safety record, a policy with a higher deductible and a lower premium may be best. Although many things played a role in the enormous price hike that has occurred in trucking insurance, one of the main reasons is multi-million dollar verdicts. Many insurance companies have excluded punitive damages in their insurance policies. To compensate, trucking companies have moved to umbrella coverage, but there are few companies willing to write this type of policy. There are still some hidden costs to insurance, and with companies moving toward high-deductible, low-premium policies, there are even more hidden costs. One such cost is the need for collateral; the insurer is still responsible for claims if the motor carrier cannot pay their deductible for any reason and will seek some form of security to protect themselves.

"Insurance Crisis." edge, Ryder Business Magazine. January 14, 2002.

This article highlights the fact that insurance rates have gone up. Shippers will not be able to pass this increased cost on to their customers due to the heavy competition in the market. Risk management is the key to reducing insurance costs over time; generating good practices will lead to a more efficient and safer work environment. Ultimately, this will better protect the company's employees and products. Companies should look more closely at their insurance policy. There are many options that can affect a company's cash flow, such as monthly invoicing. Oftentimes there are discounts based on driver safety records and different vehicle types. Using services such as safety training and accident reporting properly could also reduce costs. If a carrier is renting vehicles, it may be less expensive to explore obtaining insurance through the leasing company.

Mosher, Robert. "Statutory Insurance Requirements for the MCS-90 Endorsement and other Minimum Coverage Requirements for Motor Carriers." Committee on Insurance Coverage Litigation, American Bar Association. Vol. 13. Number 1. January/February 2003.

This article discusses Federal and state endorsements, the laws behind them, and the procedures required in order to comply. The MCS-90 endorsement is an obligation to the public that "sits" on top of the company's insurance. It extends coverage to vehicle(s) involved in a judgment of operator negligence even if they are not specifically included or covered under the insurance policy to which the endorsement is attached.

BizStats.com. Trucking and Courier Services U.S. National Industry Profitability Averages

BizStats reports the profitability averages of the industry. Their data show that 4.4 percent of costs can be attributed to insurance. It is the most expensive item, after the costs of goods sold, truck expenses, depreciation, repairs, and wages.

RLS & Associates, Inc. "ODOT Guide to Compliance with Interstate Passenger Transportation Regulations." ODOT Office of Transit. July 2003.

This guide summarizes the requirements for interstate passenger motor carriers, highlighting the differences for private and for-hire operations.

Schulz, John D. "Carriers Push for Streamlined Insurance Rules; Circuit Court Hears Intrastate Deregulation Appeal." Journal of Commerce/Gale Group. 1995/1999.

A trucking and business interest alliance is supporting a plan for streamlined motor carrier insurance regulation. ATA, NPTC, AIA, ABA, National Industrial Transportation League (NITL), and Truck Renting and Leasing Association and others are supporting the creation of a national registration and database that would include motor carriers, which are currently ICC-regulated, at the USDOT. State enforcement agencies, shippers, insurance carriers, and other interested organizations would be able to access the database. Carriers failing to comply with motor carrier standards or financial responsibility requirements would have their operations suspended, revoked, or denied by the DOT. Plan supporters believe it would make the Single State Registration System (SSRS) program unnecessary and obsolete. If passed, 20 percent of the revenue generated by registration and insurance filing fees would be passed on to states for motor carrier safety enforcement. The current program generates approximately $50 million annually for the states. If a Federal registry is created with access for state enforcement, the SSRS program could not be justifiable.

According to the Regular Common Carriers Conference (RCCC), since the Motor Carrier act of 1980, $750 million in fees and $3.5 billion in administrative costs has been paid to comply with state laws. The RCCC estimates the cost to be less than $3 million per year for the DOT to provide this service, and recommends that the rest of the fees be passed on to the states for motor carrier safety programs. According to the RCCC, it would be unbiased to all carriers, cost-

effective and would improve highway safety programs if the DOT was solely responsible for insurance registration by for-hire and private carriers.

Corsi, Thomas M. and Michelle Smith. "Motor Carrier Industry Profile Study: Financial and Operating Performance Profiles by Industry Segment, 2001-2002." Prepared for FMCSA Analysis Division, Office of Information Management. September 2004.

This study primarily used information from Annual Reports filed with the USDOT by Class I (revenues greater than $10 million) and Class II (revenues from $3-10 million) carriers. The study focused on some basic measures detailing the financial performance of the for-hire carriers and major industry segments. Some of the segments analyzed include many private carriers.

The financial profile was divided into the following subsections: firm size and revenue concentration, profitability, investment profile, and revenue profile. Based on 2002 annual operating revenues, the average firm size was $41 million. Three segments exceeded this: less-than-truckload ($129 million); building materials ($59 million); and household goods ($58 million). Profitability was based on the operating ratio (total operating expenses/total operating revenue) and net profit margin (net income or income after taxes). In 2002, the average operating ratio was 98.6, and the net profit margin was 0.99 percent. In 2001, these figures were 98.3, and 1.16 percent. In 2002, general freight, the largest industry segment by total revenue, had a net profit margin of 0.79 percent. The only segments with a 2 percent or higher were: building materials, other specialized, and motor vehicles.

The investment profile was based on three measures: net return on transportation investment, return on equity, and long-term debt-to-equity ratio. The median value was more representative and less influenced by outliers than the average value; therefore, it was a better measure. Overall, the median net return on transportation investment was 4.3 percent in 2001 and 5.0 percent in 2002. In 2002, the following segments exceeded the median: motor vehicles (13.2 percent), package couriers (12.6 percent), less-than-truckload (7.1 percent), household goods (7.0 percent), and other specialized (5.5 percent). Motor vehicles, package couriers, and less-than-truckload experienced improved median return on transportation investment; while, heavy machinery and tank experienced sharp declines. Median return on equity fell from 8 percent in 2001 to 5.4 percent in 2002. Only packaged goods (7.4 percent) and motor vehicles (8.0 percent) were higher than the median in 2002.

In 2002, long-term debt-to-equity ratios were 0.18 (18 cents for every dollar of equity or capital). The motor vehicle segment had the highest median debt-to-equity ratios, while the household goods segment had the lowest. The revenue profile was based on revenue per mile and revenue per ton. In 2002, the average revenue per mile was $1.98. Less-than-truckload had $2.93 and motor vehicles had $2.55. In 2002, the median revenue per ton was $36.15. Household goods had $486.92 (including loading and unloading) followed by package carriers with $148.87.

The operating performance profile productivity measures were average length of haul, average load, annual miles per driver, and annual miles per truck. In 2002, the average length of haul was 452 miles. The haul was much shorter for tank carriers (203 miles) and much longer for refrigerated carriers. In 2002, the average load was 16.0 tons; bulk had 22.4, tank had 21.2, heavy machinery had 19.2, building material had 18.9, other specialized had 17.3, refrigerated

had 17.0 and general freight had 16.7. The average annual miles per driver was 82,387 miles. This varied from the lowest of 57,524 to 60,236 for less-than-truckload and household goods respectively; and highest from 99,635 to 107,380 for building materials and refrigerated segments respectively. In 2002, the average annual miles driven per truck was 83,563 miles. This ranged from a low of 59,925 to 70,145 miles for the household goods and less-than-truckload segments to a high of 111,455 to 132,577 for the refrigerated and package couriers segments respectively.

The Annual Report data provided few direct measures of the safety level of effort made by carriers. One option was to look at the percent of carrier's operating expenses dedicated to insurance. However, there was not a way to separate out carriers whose high insurance burdens were due to poor safety. Additional data would need to be collected for a successful comparison of safety level of effort.

Harrington, Lisa. "Can You Justify a Private Fleet?" Transportation & Distribution V42, n6. June 2001.

In 1998, Gemini Coating was using for-hire motor carriers to ship its product. The job was getting completed, but not to their satisfaction. They decided to use a private fleet to improve their customer service by having their drivers strengthen their relationships with their customers. They periodically compare the cost of making these trips to less-than-truckload (LTL) freight rates to see if the cost of the fleet is reasonable. Their purpose for running a private fleet was to improve customer service, eliminate product damage, and give them an added sales tool. After their second year of operation, 99.9 percent of customer complaints went away. Gemini's decision to launch a private fleet is far from unique. Big and small companies operate private fleets for the same reason.

Private fleets are under more pressure to show that they add economic value. Top management usually views private fleets negatively, as a capital-intensive cost center. However, this could not be further from the truth; private fleets provide excellent customer service and can compete economically with the best for-hire fleets.

The following are many of the factors that go into the decision to operate a private fleet:

- Fleet mission or purpose – are the costs created balanced out by the value created?
- Labor – all labor costs must be assessed including benefits
- Capital investment – transferring investment costs, leasing, and outsourcing must be considered on a regular basis
- Maintenance – only larger corporate fleets have in-house maintenance, most companies outsource it
- Internal resources – management personnel and facilities to supplies must be committed
- Control – complete control over product delivery, and drivers become the company representative and salesperson
- Corporate philosophy on outsourcing

Full-service leasing is also an option many private fleets use. In this case, the leasing company takes care of all the vehicle maintenance. With flexible lease terms, fleets can keep up with technology. It is also a good insurance policy since depreciation costs have risen drastically.

Roberts, J. "Savior or Necessary Evil." Equipment World. September 2003.

Reducing insurance costs starts with close examination of a company's policy. Many companies expect certain coverages are included with their policies until after a claim is filed. Also, companies often pay for insurance that is of little or no use to them and should be written out of the policy. As theft is of concern, most insurers are requiring that trucks have tracking devices installed. Theft prevention insurance costs are the easiest to lower, by implementing simple measures such as installing a locked gate, proper lighting, or cameras. The main insurance cost is collision insurance, which is best reduced by hiring the right drivers. Checking the driver's motor vehicle report and quality testing are important.

B.3 Safety and Insurance-related Information

Corsi, Thomas M., Barnard, Richard, and Gibney, James, with Robert H. Smith School of Business/University of Maryland. "Motor Carrier Industry Profile: Linkages Between Financial and Safety Performance Among Carriers in Majority Industry Segments." Prepared for FMCSA Analysis Division, USDOT. October 23, 2002.

A multi-year assessment focusing on a carrier's safety performance and its financial performance was completed by the Supply Chain Management Center of the Robert H. Smith School of Business. Carriers' reviews (CR) were used as a basis for this assessment. Researchers used the Annual Report database from the American Trucking Associations and the SafeStat database to match carriers' DOT numbers. A new database was created that contained 656 carrier reviews. Of this, 553 received a satisfactory rating, and 103 received an unsatisfactory (7) or a conditional (96) rating. CRs are based on the carriers' recordable crash/accident rates; its driver safety review (DRM), safety management review measure (SMRM), and its enforcement severity measure (ESM). These reviews were used to create two groups: carriers receiving an overall satisfactory CR, and those receiving an unsatisfactory or conditional review. These two groups were then compared based on descriptive variables and financial performance variables. Descriptive variables were: total ton-miles, and average load, length of haul, driver wage, and driver wage as a percentage of the operating expense. Financial variables were the operating ratio (operating expense/operating revenues) and return on assets. The researchers used ANOVA (analysis of variance) to determine if there was any statistical significance between the two groups. They were unable to establish that safety performance is positively correlated to financial performance for all carriers.

Ostria, Sergio J. "Evaluation of U.S. Commercial Motor Carrier Industry Challenges and Opportunities." ICF Consulting with George L. Edwards and Associates. March 31, 2003.

According to the trucking industry, the reasons for higher transport costs are higher insurance rates, cost of fuel, and changes to the Hours-of-Service rules. Most of the companies believed that the one cost pushing their respective companies out of the market was the high insurance

costs. The cost has increased 40 percent at a minimum, especially for small firms. These high insurance costs can be attributed to the high payouts caused by the events of September 11, 2001 and the low return on company investments.

Trucking accident rates have been falling but the liability claims for accidents have been rising, creating the need for higher premiums. In addition, the cyclical nature of the trucking business and the September 11, 2001 effect also have to be taken into account. The September 11, 2001 effect can be described as risk managers perceiving a very high level of risk in the United States due to the terrorist attacks and other seemingly unpredictable events.

The trucking industry's high competition level, along with rising insurance rates, creates a dilemma. With so many companies, it is difficult for one to pass their higher overhead costs to the consumer, forcing small marginally operating companies out of business. Some do not believe the higher costs are a problem, since owner-operator trucking operations have always paid a higher insurance rate than larger firms, but now the larger firms' premiums are merely catching up to that of the owner-operators.

Some firms looking to reduce costs have gone to self-insurance, but most firms are not large enough to do that. Most are looking toward curbing risk as well. Self-insured firms typically have the most extensive safety requirements, usually having very high requirements to be hired. In the private market, they are adding new courses, creating better schedules for drivers, and ensuring that dispatchers understand the company safety program.

Public safety includes instituting new technology and some groups will be putting new cameras into the tractor in order to record the drivers' reactions during unusual driving situations. It is believed that companies will be rewarded for maintaining higher trucking standards. Tort reform has also taken shape. Today, most compensation has been given to plaintiffs in court cases, but recently proposed reform would place the awards in a public fund that would take care of problems, therefore reducing the incentives for court cases. Better research is also needed in order to better insure companies, thereby helping to motivate better driving techniques and more targeted insurance premiums.

APPENDIX C. STATE-SPECIFIC DETAIL

This appendix provides state-level detail for data provided at the national level in the body of the report.

Table C-1. Carriers and Vehicles Requiring Additional Insurance by State

State	Carriers			Vehicles		
	9-15 Pass. Veh.	16+ Pass. Veh.	Trucks	9-15 Pass. Veh.	16+ Pass. Veh.	Trucks
AL	3	5	162	6	15	419
AK	44	80	3,876	81	119	10,793
AZ	16	30	2,675	28	55	6,808
AR	7	12	986	18	31	3,327
CA	41	76	3,976	97	167	13,539
CO	14	16	1,828	43	35	5,644
CT	22	58	3,406	29	113	9,369
DE	1	4	230	2	11	867
DC	9	19	1,292	16	49	3,626
FL	31	54	4,361	77	143	11,795
GA	34	60	6,575	67	120	18,026
HI	0	0	80	0	0	540
ID	6	18	4,227	14	35	9,950
IL	8	19	1,599	12	35	4,519
IN	45	78	5,882	78	184	18,583
IA	37	98	8,023	83	184	21,026
KS	16	26	3,030	28	44	8,487
KY	62	111	5,241	106	220	12,876
LA	14	24	3,092	29	47	8,837
ME	20	33	8,262	43	81	21,769
MD	30	63	6,981	63	147	18,893
MA	8	18	1,727	17	42	4,065
MI	28	55	5,939	46	112	15,037
MN	21	37	5,955	45	72	16,988
MS	44	55	5,619	76	107	15,773
MO	24	43	3,082	35	69	7,561
MT	2	7	1,146	3	16	2,728
NE	27	48	6,704	55	102	18,225
NV	1	4	1,277	5	14	3,774
NH	15	17	3,443	20	38	8,478
NJ	7	14	2,951	13	29	6,806
NM	21	35	6,862	48	66	20,322
NY	8	10	1,100	14	29	3,089
NC	6	18	1,134	12	37	3,055
ND	18	46	8,142	39	120	23,787
OH	60	110	6,126	127	193	18,837
OK	25	40	2,341	43	81	6,903
OR	11	21	2,083	23	37	6,536
PA	26	79	9,990	60	207	30,453
PR	0	0	14	0	0	65

Table C-1. Carriers and Vehicles Requiring Additional Insurance by State (continued)

State	Carriers			Vehicles		
	9-15 Pass. Veh.	16+ Pass. Veh.	Trucks	9-15 Pass. Veh.	16+ Pass. Veh.	Trucks
RI	4	16	2,873	12	34	5,717
SC	31	72	2,941	50	113	7,588
SD	3	3	1,998	4	4	4,720
TN	43	79	5,864	76	156	14,603
TX	44	61	5,892	91	140	18,826
UT	10	10	1,615	32	26	4,711
VT	30	46	4,422	58	95	13,412
VA	2	4	1,349	13	14	2,990
WA	22	39	2,037	46	101	7,128
WV	36	66	4,734	75	151	11,953
WI	14	17	3,474	30	57	7,778
WY	8	6	1,108	22	17	2,931
TOTAL	**1,059**	**1,960**	**189,726**	**2,110**	**4,114**	**524,532**

Table C-2. NAICS Codes, SBA Size Threshold, and Annual Revenue for Selected Trucking Industries

Table C-2

Industry			Annual Revenue							
NAICS	SBA Size Threshold		0-99,999	100,000-499,999	500,000-999,999	1,000,000-4,999,999	5,000,000-9,999,999	10,000,000-49,999,999	50,000,000-99,999,999	100,000,000 +
Construction										
23	$31 million	Firms	126,426	309,615	106,563	125,801	17,063	13,445	1,306	1,230
		Establishments	126,427	309,628	106,586	126,115	17,437	14,842	2,172	7,118
		Employment	141,003	836,835	651,896	1,759,968	659,976	1,097,965	266,220	893,507
		Ann. Payroll	2,098,519	19,368,315	18,950,754	64,530,216	29,068,144	52,885,698	13,648,080	46,752,736
		Est. Receipts	6,851,025	77,889,212	75,337,040	264,729,368	117,124,687	252,887,590	78,520,911	304,203,854
Waste management services										
562	$6.5 million	Firms	2,257	5,778	2,303	2,904	461	343	35	103
		Establishments	2,258	5,782	2,319	3,023	570	644	161	2,941
		Employment	2,796	18,475	17,380	53,916	22,043	35,550	8,591	141,829
		Ann. Payroll	35,253	399,296	469,599	1,809,219	868,033	1,463,879	331,382	6,258,356
		Est. Receipts	113,201	1,511,954	1,618,388	6,082,263	2,978,308	5,512,889	1,393,310	28,993,431
Retail										
44-45	$6.5 million	Firms	107,685	283,980	127,485	163,988	22,606	23,502	3,770	3,114
		Establishments	107,797	285,503	130,422	187,755	36,831	63,340	22,418	291,627
		Employment	136,834	852,418	731,169	1,916,296	660,149	1,445,334	564,791	8,512,913
		Ann. Payroll	1,202,824	11,789,765	12,982,451	42,574,140	17,393,136	44,394,638	19,119,175	171,250,897
		Est. Receipts	5,564,818	74,831,781	90,260,047	340,343,082	150,451,271	470,383,155	224,870,249	1,777,748,294
Repair and Maintenance										
811	$6.5 million	Firms	47,153	113,614	31,480	19,750	1,258	1,073	218	537

		Establishments	47,179	113,858	31,931	23,539	2,872	4,188	1,372	8,295
		Employment	57,484	359,405	243,985	335,875	59,816	87,339	23,865	167,106
		Ann. Payroll	673,068	7,459,646	6,465,361	10,769,784	2,192,707	2,967,684	945,850	6,797,651
		Est. Receipts	2,484,810	28,541,375	21,619,759	34,982,906	7,275,987	10,609,247	3,172,169	21,924,266

Note that for Table C-2 and all subsequent tables in this Appendix, all data in any annual revenue or employee category below the SBA size threshold are considered to apply to small businesses. For categories that contained the SBA size threshold, a weighted proportion of the data in that category are considered to apply to small businesses. For example, for retail firms, the $6.5 million size threshold falls within the $5 to $10 million annual revenue category. Therefore, all firms in the first three annual revenue categories and 30 percent ([6.5–5]/[10–5] = 1.5 / 5 = 0.3) of the firms in the $5 to $10 million annual revenue category are considered small businesses.

Table C-3. NAICS Codes, SBA Size Threshold, and Number of Employees for Additional Selected Trucking Industries

Table C-3

Industry			Number of Employees						
NAICS	SBA Size Threshold		0	1-4	5-9	10-19	20-99	100-499	500+
Forestry / Logging									
113	500 emp	Firms	1,538	5,694	2,476	1,312	617	38	33
		Establishments	1,539	5,699	2,477	1,313	633	61	192
		Employment	-	12,377	16,358	17,318	-	-	7,399
		Ann. Payroll	51,039	282,256	418,104	472,601	-	-	382,129
Manufacturing									
31-33	500 emp	Firms	20,879	96,067	55,257	46,910	58,246	14,135	4,102
		Establishments	20,912	96,102	55,347	47,236	62,457	23,789	36,006
		Employment	-	217,108	369,362	639,999	2,381,283	2,494,258	8,030,010
		Ann. Payroll	2,222,484	5,683,675	10,597,229	20,107,400	82,441,414	91,609,702	363,395,993
Wholesalers									
42	100 emp	Firms	35,613	157,159	60,120	40,953	37,798	7,725	3,082
		Establishments	35,730	157,555	61,402	44,252	53,597	26,237	53,764
		Employment	-	329,404	396,372	546,730	1,385,840	982,034	2,223,480
		Ann. Payroll	1,702,748	11,731,561	14,909,733	21,691,808	57,757,419	43,033,208	121,329,723

Table C-4. Number of Small and Large Business in Selected Trucking Industries

Table C-4

Industry			Small Business Total	Large Business Total	Total	Small Business Percent
NAICS	SBA Size Threshold					
Construction						
23	$31 million	Firms	692,191	9,259	701,449	98.7%
		Establishments	693,614	16,711	710,325	97.6%
		Employment	4,598,661	1,708,710	6,307,370	72.9%
		Ann. Payroll	160,458,797	86,843,665	247,302,462	64.9%
		Est. Receipts	668,375,127	509,168,560	1,177,543,687	56.8%
Waste management services						
562	$6.5 million	Firms	13,380	804	14,184	94.3%
		Establishments	13,553	4,145	17,698	76.6%
		Employment	99,180	201,400	300,580	33.0%
		Ann. Payroll	2,973,777	8,661,240	11,635,017	25.6%
		Est. Receipts	10,219,298	37,984,446	48,203,744	21.2%
Retail						
44-45	$6.5 million	Firms	689,920	46,210	736,130	93.7%
		Establishments	722,526	403,167	1,125,693	64.2%
		Employment	3,834,762	10,985,142	14,819,904	25.9%
		Ann. Payroll	73,767,121	246,939,905	320,707,026	23.0%
		Est. Receipts	556,135,109	2,578,317,588	3,134,452,697	17.7%
Repair and Maintenance						
811	$6.5 million	Firms	212,374	2,709	215,083	98.7%
		Establishments	217,369	15,865	233,234	93.2%
		Employment	1,014,694	320,181	1,334,875	76.0%
		Ann. Payroll	26,025,671	12,246,080	38,271,751	68.0%
		Est. Receipts	89,811,646	40,798,873	130,610,519	68.8%
Forestry / Logging						
113	500 emp	Firms	11,675	33	11,708	99.7%
		Establishments	11,722	192	11,914	98.4%
		Employment	68,419	7,399	75,818	90.2%

		Ann. Payroll	1,877,601	382,129	2,259,730	83.1%
Manufacturing						
31-33	500 emp	Firms	291,494	4,102	295,596	98.6%
		Establishments	305,843	36,006	341,849	89.5%
		Employment	6,102,010	8,030,010	14,132,020	43.2%
		Ann. Payroll	212,661,904	363,395,993	576,057,897	36.9%
Wholesalers						
42	100 emp	Firms	331,643	10,807	342,450	96.8%
		Establishments	352,536	80,001	432,537	81.5%
		Employment	2,658,346	3,205,514	5,863,860	45.3%
		Ann. Payroll	107,793,269	164,362,931	272,156,200	39.6%
Truck Totals		Firms	2,242,677	73,923	2,316,600	96.8%
		Establishments	2,317,163	556,087	2,873,250	80.6%
		Employment	18,376,071	24,458,356	42,834,427	42.9%
		Ann. Payroll	585,558,140	882,831,943	1,468,390,083	39.9%
		Est. Receipts	1,324,541,181	3,166,269,466	4,490,810,647	29.5%

Note: numbers may not add to totals due to rounding.

Table C-5. NAICS Codes, SBA Size Threshold, and Annual Revenue for Selected Passenger-carrying Industries

Table C-5

Industry			Annual Revenue							
NAICS	SBA Size Threshold		0-99,999	100,000-499,999	500,000-999,999	1,000,000-4,999,999	5,000,000-9,999,999	10,000,000-49,999,999	50,000,000-99,999,999	100,000,000+
Educational services										
61	$11.5 million	Firms	19,608	23,589	7,389	10,755	1,991	1,931	338	332
		Establishments	19,617	23,692	7,590	12,166	2,986	4,065	1,068	2,517
		Employment	73,061	144,228	115,573	444,407	202,134	556,528	320,854	844,890
		Ann. Payroll	1,208,428	2,040,663	2,113,921	10,243,942	5,446,772	13,778,014	7,230,430	29,899,682
		Est. Receipts	908,228	5,647,731	5,235,347	22,698,180	12,906,215	35,516,971	19,314,389	78,051,778
Nursing and residential care facilities										
623	$6.5 million	Firms	5,489	9,646	3,457	8,191	2,862	2,420	252	403
		Establishments	5,497	9,760	3,730	12,978	7,439	14,399	3,810	10,287
		Employment			70,830	502,291	407,644	700,813	214,015	794,422
		Ann. Payroll			1,159,455	9,440,673	8,643,781	16,034,636	4,657,955	17,941,616
		Est. Receipts			2,467,333	19,343,333	17,773,345	34,241,886	10,185,463	39,638,992
Arts, entertainment, and recreation										
71	$6.5 million	Firms	29,293	42,180	13,741	14,181	1,797	1,242	201	408
		Establishments	29,302	42,249	13,925	15,439	2,376	2,858	716	3,510
		Employment	41,985	194,472	172,425	453,082	157,817	240,768	88,364	452,078
		Ann. Payroll	483,539	3,152,398	3,097,117	10,021,082	4,094,784	6,719,833	4,150,057	16,005,567
		Est. Receipts	1,378,956	10,346,009	9,616,506	28,818,765	11,461,393	21,302,762	10,474,384	54,155,494
Religious organizations										
8131	$6.5 million	Firms	68,164	71,962	16,466	13,966	1,139	525	42	47

		Establishments	68,164	71,964	16,469	14,011	1,168	671	53	62
		Employment	232,669	382,634	223,720	487,880	111,349	111,878	21,571	67,214
		Ann. Payroll	2,533,914	4,717,782	3,190,328	7,578,242	2,102,162	2,445,679	550,862	1,724,775
		Est. Receipts	2,774,665	16,732,659	11,480,290	27,360,127	7,558,585	8,792,099	1,983,004	6,228,956

Table C-6. Number of Small and Large Business in Selected Passenger-carrying Industries

Table C-6

Industry NAICS	SBA Size Threshold		Small Business Total	Large Business Total	Total	Small Business Percent
Educational services						
61	$11.5 million	Firms	63,407	2,526	65,933	96.2%
		Establishments	66,163	7,538	73,701	89.8%
		Employment	986,983	1,714,692	2,701,675	36.5%
		Ann. Payroll	21,257,980	50,703,872	71,961,852	29.5%
		Est. Receipts	47,879,684	132,399,155	180,278,839	26.6%
Nursing and residential care facilities						
623	$6.5 million	Firms	27,642	5,078	32,720	84.5%
		Establishments	34,197	33,703	67,900	50.4%
		Employment	776,064	1,994,601	2,770,665	28.0%
		Ann. Payroll	14,265,637	44,684,854	58,950,491	24.2%
		Est. Receipts	29,760,064	96,507,683	126,267,746	23.6%
Arts, entertainment, and recreation						
71	$6.5 million	Firms	99,934	3,109	103,043	97.0%
		Establishments				92.1%

			101,628	8,747	110,375	
		Employment	909,309	891,682	1,800,991	50.5%
		Ann. Payroll	17,982,571	29,741,806	47,724,377	37.7%
		Est. Receipts	53,598,654	93,955,615	147,554,269	36.3%
Religious organizations						
8131	$6.5 million	Firms	170,900	1,411	172,311	99.2%
		Establishments	170,958	1,604	172,562	99.1%
		Employment	1,360,308	278,607	1,638,915	83.0%
		Ann. Payroll	18,650,915	6,192,829	24,843,744	75.1%
		Est. Receipts	58,347,741	24,562,644	82,910,385	82.2%
Passenger Vehicle Totals		Firms	361,882	12,125	374,007	96.8%
		Establishments	372,946	51,592	424,538	87.8%
		Employment	4,032,664	4,879,582	8,912,246	45.2%
		Ann. Payroll	72,157,103	131,323,361	203,480,464	35.5%
		Est. Receipts	189,586,142	347,425,097	537,011,239	35.3%

Note: numbers may not add to totals due to rounding.

U.S. Department of Transportation
Federal Motor Carrier Safety Administration

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For more information on the Federal Motor Carrier Safety Administration, check out our website at www.fmcsa.dot.gov.