

**Department of Transportation**  
**Office of the Chief Information Officer**

**Supporting Statement:**

**Truck and Bus Maintenance Requirements and Their Impact on Safety**

**INTRODUCTION**

This request is submitted for the Office of Management and Budget (OMB) to review and approve a new Federal Motor Carrier Safety Administration (FMCSA) information collection request (ICR) titled “Truck and Bus Maintenance Requirements and Their Impact on Safety.”

**Part A. Justification**

**1. CIRCUMSTANCES THAT MAKE COLLECTION OF INFORMATION NECESSARY**

**1.1 BACKGROUND**

FMCSA’s core mission is to reduce crashes, injuries, and fatalities involving large trucks and buses. To aid in accomplishing this, the Agency uses the Compliance, Safety, Accountability (CSA) enforcement program to prioritize and target interventions<sup>(1)</sup> of those motor carriers who are most likely to be involved in a future crash. As part of the CSA program, the Agency deploys the Safety Measurement System (SMS). SMS uses inspection, crash, and investigation data captured in the Motor Carrier Management Information System (MCMIS) to calculate a percentile for each motor carrier. A motor carrier’s SMS percentile is based on its past compliance with a complete range of safety-based regulations (such as driver safety, hours of service, driver fitness, and vehicle maintenance, among others). The survey described in this notice focuses on the vehicle maintenance component of those safety regulations. The study’s goal is to determine what improvements, ranging from better compliance interventions to better vehicle maintenance requirements, would enhance motor carrier safety.

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<sup>10</sup> An intervention is an action against a carrier taken by FMCSA or a State commercial vehicle enforcement agency in the form of a warning letter, on-site or off-site investigation, nonrated review, or other follow-on enforcement action. For the purpose of this study, targeted roadside inspections, cargo tank facility reviews, shipper reviews, terminal investigations, and security contact reviews are not considered interventions.

In 2014, the John A. Volpe National Transportation Systems Center (Volpe) conducted a study to assess the effectiveness of SMS in identifying the highest risk motor carriers to be targeted for interventions.<sup>(2)</sup> One finding from the study was that motor carriers targeted for intervention due to “vehicle maintenance” issues (i.e., violations) had a 65 percent higher crash rate compared to the national average. These violations are based on Federal and State inspections of components critical to the safe operation of the vehicle. It is important to recognize that proper and regular preventative maintenance (i.e., systematic maintenance programs) among carriers—rather than Federal and State inspections, which are by nature limited to the most visible or obvious safety-related components—should be the primary activity applied to ensure safe equipment operation.

While these initial findings are important, they raise additional questions. One such question is prompted by the stipulation in 49 CFR 396.3(a), which states that every carrier must have a program to “systematically inspect, repair, and maintain, or cause to be systematically inspected, repaired, and maintained, all motor vehicles and intermodal equipment subject to its control” (see Attachment A). Though this regulation provides some direction, there is no supporting definition of the word “systematic,” and because this term is subjective, it is likely to vary from one carrier to another.<sup>(3)</sup> The lack of specificity regarding standard intervals for preventative maintenance makes it difficult to evaluate the effectiveness of and compliance with a carrier’s maintenance program. Furthermore, the lack of specificity may make it difficult for carriers to abide by the regulation’s intent.

## 1.2 STUDY OBJECTIVES

The current research effort is necessary to improve FMCSA’s understanding of the safety impact of preventative vehicle maintenance and to

1. Develop an operational definition of “systematic maintenance.”
2. Evaluate whether current regulations are sufficient to address: (i) preventative maintenance intervals, (ii) preventative maintenance inspections with adequately trained/equipped mechanics, and (iii) motor carriers’ maintenance facilities.

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<sup>20</sup> *The Carrier Safety Measurement System (CSMS) Effectiveness Test by Behavior Analysis and Safety Improvement Categories (BASICS)*. Prepared for the Federal Motor Carrier Safety Administration by Volpe. January 2014.

<sup>30</sup> 49 CFR 396.3(a)(2) specifies that “pushout windows, emergency doors, and emergency door marking lights in buses shall be inspected at least every 90 days,” but there is no further guidance regarding inspection or maintenance intervals for large trucks or buses.

3. Gather information to assist in establishing minimum standards for inspection intervals, mechanic qualifications and training, and certification of maintenance facilities.

FMCSA is authorized to conduct this research under 49 USC 31108, *Motor Carrier Research and Technology Programs*.<sup>40</sup> Under 49 U.S.C. 31108(a)(3)(C), FMCSA may fund research, development, and technology projects that improve the safety and efficiency of commercial motor vehicle operations through technological innovation and improvement. This information collection supports the U.S. Department of Transportation (USDOT) strategic goal of “Safety.”

## **2. HOW, BY WHOM, AND FOR WHAT PURPOSE THE INFORMATION IS TO BE USED**

### **2.1 WHO WILL COLLECT THE INFORMATION**

Under contract to FMCSA, the Virginia Tech Transportation Institute (VTTI) at the Virginia Polytechnic Institute and State University (VT) will obtain the data required to address the study objectives. The investigators from VTTI who are currently performing this study are Mr. Andrew Krum and Dr. Rich Hanowski, with support from Dr. Feng Guo.

In accordance with USDOT policy on research involving human subjects, this study will be submitted to VTTI’s Institutional Review Board (IRB) for review and approval prior to beginning data collection. Staff members who assist with participant recruitment will receive IRB ethics training to ensure that the rights of the research subjects are protected. VTTI will also work with FMCSA contracting officer’s representative (COR) to ensure all appropriate methods are applied as defined by the Paperwork Reduction Act (PRA).

### **2.2 PURPOSE OF THE INFORMATION COLLECTION**

See the three purposes described in Section 1.2.

This information collection will also inform an inventory of current State inspection programs and a “best practices” report for large truck and bus maintenance.

### **2.3 HOW INFORMATION WILL BE COLLECTED**

VTTI will use Qualtrics, an online survey platform, to collect the information for this study. VTTI has successfully used Qualtrics to create and administer online surveys in the past. As described in Section 1.2, the information collection will be administered in two phases:

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<sup>40</sup> Section 4111 of SAFETEA-LU (P.L. 109-59)

- **Phase I: Online Recruitment Survey** This voluntary, seven-question survey will screen carriers and verify their eligibility for Phase II participation. To be eligible for Phase II participation, carriers must fall into one of two groups:
  - **Recommended Practices (RP) Group:** Carriers with the lowest crash and vehicle maintenance violation rates.<sup>(5)</sup>
  - **Intervention Effects (IE) Group:** Carriers that have experienced Federal or State interventions in the last 24 months due to vehicle maintenance violations.
- **Phase II: Carrier Maintenance Management Survey** This voluntary, 106-question survey will include questions about demographics; maintenance practices, intervals, personnel, and facilities; and State and Federal inspections, among other things. The Phase II survey will employ branch logic; as such, carriers will be prompted to complete different sections based on their survey group (and for one section, carrier size). No participating carrier will be asked to complete all 106 questions.

The research team believes that this two-phase survey method will (1) limit the burden on carriers by including in Phase II only those that meet the objectives of the study, and (2) increase confidence in the application of the survey results. For example, FMCSA maintains information on the number of power units (PUs) operated by motor carriers; however, this number is required to be reported by motor carriers every two years so the number appearing in FMCSA database could be out of date. As such, the most accurate record of the number of PUs operating at each carrier should be reported by carriers during the Phase I survey.

Because this information collection focuses on large truck and bus maintenance management programs, maintenance managers or other appropriate representatives of carriers will be asked to respond to the survey. In some cases, owner-operators who drive and operate under their own authority may be asked to respond to questions. The research team will seek responses from carriers representing different sizes<sup>(6)</sup> and operations.

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<sup>5)</sup> Based on SMS Behavior Analysis and Safety Improvement Category (BASIC) percentiles. Carriers in the RP Group must have a “Vehicle Maintenance” BASIC percentile less than or equal to the 33rd percentile and a “Crash Indicator” BASIC percentile (crash data from MCMIS) less than or equal to the 33rd percentile.

<sup>6)</sup> The size of the carrier is defined by the number of power units (PUs) it owns and operates. A carrier is classified as “very, very small” if it has 1 PU, “very small” if it has 2–6 PUs, “small” if it has 7–20 PUs, “medium” if it has 21–100 PUs, “large” if it has 101–500 PUs, and “very large” if it has more than 500 PUs.

### 2.3.1 Phase I: Online Recruitment Survey

The link for the Phase I survey will be sent via email<sup>(7)</sup> to include the Initial contact Letter (Attachment B), to representatives from a sample of active motor carriers (contained in MCMIS and SMS) that may be eligible for either the RP Group or the IE Group, based on pre-established filtering criteria. In the event there is non-response in certain carrier size groups, the research team should have enough information about the non-responding carrier to track the non-responding carrier and to target a suitable replacement to meet the sample size requirements. If this approach does not work and there is an insufficient number of responding carriers in certain size groups, the research team may resort to open recruitment through advertising. The choice to participate in the survey will remain voluntary and carriers may choose not to respond to any advertisements.

The Phase I survey will ask carriers to provide the following high-level information:

1. Name and contact information (email and phone number).
2. Name of carrier and USDOT number.
3. Current position/job title at carrier.
4. Length of time carrier has been in operation.
5. Size of carrier.
6. Types of vehicles operated (e.g., bus, truck, tractor-truck, or tractor-trailer).
7. Involvement in the past 24 months with a Federal or State intervention due to vehicle maintenance violations.

The research team will compare carriers' responses to the Phase I survey against information contained in MCMIS to verify which stratum of power units the carrier respondent fits into (e.g., large, small, and very small) prior to distributing the Carrier Maintenance Management Survey (Phase II). If the carrier indicates that it fits into a stratum (see the rows in Table 1) different from the one indicated in MCMIS, the one indicated by the carrier will be used. The carrier will be directed to Phase II if the target sample size (given in Table 1) into which the carrier says it fits has not been filled. At this time, VTTI will also verify that a carrier responding to Phase I, which has already been pre-classified in the RP Group, does not have an intervention. Because the SMS database may not be up-to-date, there is a possibility that it may not reflect a recent intervention for a carrier. If a carrier pre-classified in the RP Group is found to have such an intervention, the carrier will be excluded from the RP Group and dropped from further

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<sup>70</sup> VTTI has extensive experience conducting research within the motor carrier industry and has had success with similar email-based carrier surveys in the past.

consideration for participation in the survey. Carrier representatives who indicate in the Phase I survey that their carrier experienced regulatory interventions in the past 24 months as a result of maintenance violations will be selected for the IE Group. The time lag between the end of Phase I and beginning of Phase II of the survey should be one or two business days but no longer than a week because the verification of responses to Phase 1 is a manual process involving allocation of available staff resources.

### 2.3.2 Phase II: Carrier Maintenance Management Survey

The overall target sample size goal for the Phase II survey is 289 carriers ( $289 = 195 + 94$ ), as given in Table 1. However, the study authors believe that a 50% response rate must be taken into consideration. The assumption of a 50% response rate requires that in order to achieve the target sample sizes in Table 1, the number of respondents that the survey must reach out to or start out with is double those in Table 1. In other words, in order to attain a target sample size of 289 (the total number of targeted respondents in Table 1), the survey must reach out to or start out with an initial sample size of 578 ( $2 \times 289 = 578$ ). While this number (i.e., 578) is admittedly a fraction of the active carriers operating in the United States,<sup>(8)</sup> it will require a significant effort to reach so many carriers of different types and sizes with the survey. The predetermined overall sample size was divided across subgroups by considering the representation (in proportional size and anticipated diversity) of the subgroup in the population. The target sample sizes are stratified in Table 1. The carriers are split between types (i.e., truck carriers and bus carriers). Each of these carrier types is further split into two subgroups (i.e., RP Group and IE Group). Each row in the table represents a category of carrier size.

**Table 1. Target sample sizes for each of the survey sampling strata.**

Carrier Size (Power Units)	Truck Carriers		Bus Carriers	
	Recommended Practices Group	Intervention Effects Group	Recommended Practices Group	Intervention Effects Group
Very, Very Small/Very Small (1–6)*	40**	20	15	15
Small (7–20)	30	15	12	12

<sup>80</sup> As of December 2016, 524,058 interstate motor carriers and intrastate hazardous materials motor carriers had recent activity operating in the United States. (FMCSA, MCMIS, data snapshot as of December 30, 2016.)

Carrier Size	Truck Carriers		Bus Carriers	
Medium (21–100)	20	10	10	10
Large (101–500)	20	10	10	10
Very Large (501+)	20	10	0	0
<b>Subtotal</b>	<b>130</b>	<b>65</b>	<b>47</b>	<b>47</b>
<b>Total</b>	<b>195</b>		<b>94</b>	

\* For the purposes of this table, “very, very small” carriers (carriers with 1 PU) and “very small” carriers (carriers with 2–6 PUs) have been combined.

\*\* In the event there is non-response, the research team will have enough information about the non-responding carrier to track non-response and to target a suitable replacement to meet the sample size requirements.

The Carrier Maintenance Management Survey branches into eight sections, defined in Table 2. Survey respondents will not complete all sections of the Carrier Maintenance Management Survey. Table 2 shows which sections/questions of this survey are to be completed by each respondent group (i.e., RP Group and IE Group). Table 2 also shows the purpose of each section and how it is related to achieving the goals of the project.

**Table 2. Carrier Maintenance Management Survey sections, respondents, and purposes.**

Survey Section	Groups to Complete	Purpose of Section
Demographics (Questions 1–24)	Recommended Practices, Intervention Effects	Gather information on respondents’ experiences with commercial vehicles and the operating characteristics of their carrier.
Systematic Maintenance (Questions 25–50)	Recommended Practices, Intervention Effects	Determine common maintenance intervals, technician training practices, and maintenance facilities that support carriers’ maintenance operations.
Maintenance Personnel & Maintenance Facilities (Questions 51–68)	Recommended Practices	Gather opinions about the minimum capabilities of properly trained maintenance personnel and properly equipped facilities.
Safety Impacts (Questions 69–77)	Recommended Practices	Gather information on common and important vehicle maintenance issues that may impact safety on the roads.
State/Federal	Recommended	Gather detailed information on the periodic

Survey Section	Groups to Complete	Purpose of Section
Periodic (Annual) Inspections (Questions 78–82)	Practices, Intervention Effects	inspections that apply to participating carrier fleets.
Miscellaneous (Questions 83–89)	Recommended Practices, Intervention Effects	Gather information about special operations.
Very, Very Small and Very Small Carriers (Questions 90–97)	Recommended Practices, Intervention Effects (Very, Very Small and Very Small Carriers Only)	Gain information and opinions on specific needs of very, very small and very small carriers.
Intervention Effects (Questions 98–106)	Intervention Effects	Gather detailed information on carriers' experience with State or Federal interventions.

As shown in Table 2, all participating carriers will be asked to provide information on demographics, systematic maintenance, State/Federal periodic (annual) inspections, and special operations. Very, very small and very small carriers in both the IE and RP groups will be asked to answer questions that pertain only to carriers of those sizes. Carriers (of all sizes) in the RP Group will be asked to provide additional information about maintenance personnel and facilities (e.g., mechanic training levels, tools required for adequate inspection, and certification of facilities) and vehicle maintenance issues that may impact safety. Information provided by the RP Group will address the study objectives identified in Section 1.2 above

Carriers in the IE Group will be asked to complete the section on intervention effects, which includes questions about the status of active interventions or investigations, results of closed interventions or investigations, interactions with State versus Federal agencies, intervention activities experienced, the accuracy of violations leading to interventions, actions taken in response to interventions, changes in carrier vehicle maintenance practices as a result of an intervention, significant benefits of interventions, and ways the intervention process could be improved. Information provided by the IE Group will address the portion of Objective 2 regarding where regulations and interventions could be modified to improve compliance with these regulations by carriers. In addition, information provided by the IE Group can help direct what areas of policy guidance and training might be useful in the future.

If respondents do not complete the Phase II survey within a reasonable period of time, VTTI will attempt to contact them by telephone and encourage their participation.

### **3. EXTENT OF AUTOMATED INFORMATION COLLECTION**

This information collection will be administered exclusively online, using a two-phase survey process. Links to both surveys will be emailed directly to potential respondents. Both surveys will be administered using Qualtrics, a user-friendly survey platform that tracks responses and offers a variety of analysis options. The seven-question Online Recruitment Survey (Phase I) will include multiple choice, fill-in-the-blank, and checkbox questions.

Carriers asked to participate in the Carrier Maintenance Management Survey (Phase II) will receive, via email, an informed consent form (ICF). The ICF, which contains no questions and does not require a signature, will outline the study objectives and methods, any possible risks, compensation, and participant rights. Tailored versions of the ICF will be provided to carriers in the RP Group (Attachment C) and carriers in the IE Group (Attachment D). Participant acceptance of the ICF will be presumed based on participant submission of a completed Carrier Maintenance Management Survey. This will be clearly stated on both versions of the ICF. To proceed to the online Carrier Maintenance Management Survey, participants will click the “NEXT” button at the bottom of the ICF. The 106-question Carrier Maintenance Management Survey, which employs branch logic, will include checkbox, multiple choice, and open-ended questions. Through application of this two-phase, online survey process, the study is designed to collect the necessary information from the most fitting carrier representatives with minimal time demand.

At the end of this project, VTTI is required, under the contract with FMCSA, to compile and analyze the collected information and develop a public-use data set. The public-use data set will be de-identified (i.e., personally identifiable information [PII] will be removed) and made available on a public-facing Web site, in accordance with established FMCSA data sharing protocols.

### **4. EFFORTS TO IDENTIFY DUPLICATION**

The research team completed a comprehensive review of the published literature related to the research topic and found only one significant related study, completed by Volpe in 2014.<sup>90</sup> That study, described in Section 1.1, was an important step in validating SMS. However, the Volpe findings focused only on carrier-level data analysis (based on data contained in SMS) and did not include outreach to the industry or definition of the term “systematic maintenance.” As discussed

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<sup>90</sup> *The Carrier Safety Measurement System (CSMS) Effectiveness Test by Behavior Analysis and Safety Improvement Categories (BASICS)*. Prepared for the Federal Motor Carrier Safety Administration by Volpe. January 2014.

earlier in this document, “systematic maintenance” can vary significantly from carrier to carrier. Some carriers employ comprehensive preventative maintenance programs and maintain consistent records of maintenance, repair, and replacement intervals. Other carriers seek to do only the bare minimum to pass annual and roadside inspections. The difference in practice and perceptions of “systematic maintenance” between such carriers may have a significant effect on vehicle safety and related SMS percentiles.

Based on the findings of the literature review, the research team and FMCSA have concluded that the information contained in the 2014 Volpe report does not fulfill the needs of this study, making the requested information collection necessary.

## **5. EFFORTS TO MINIMIZE THE BURDEN ON SMALL BUSINESSES**

Based on Small Business Administration size standards, FMCSA has determined that motor carriers of property with 148 power units or fewer, and passenger carriers with 93 power units or fewer, are small businesses.<sup>(10)</sup> However, because participation in both the Online Recruitment Survey (Phase I) and the Carrier Maintenance Management Survey (Phase II) is voluntary, no small business will have a burden imposed on it that it is not willing to bear. Thus, any such burden would be minimal. Furthermore, the survey will require no preparation on the part of the respondent in terms of gathering carrier-related data or calculating carrier-related statistics. In addition, respondents who complete the survey will be offered modest compensation for their time.

## **6. IMPACT OF LESS FREQUENT COLLECTION OF INFORMATION**

This ICR is for a one-time data collection.

If this data collection does not take place, motor carriers will continue to operate without a clear definition of “systematic maintenance,” despite being required by 49 CFR 396.3(a) to systematically inspect, repair, and maintain all motor vehicles and intermodal equipment subject to their control. Without a clear definition of “systematic maintenance,” it is difficult to evaluate the effectiveness of a carrier’s maintenance program or its compliance with section 396.3(a).

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<sup>100</sup> See FMCSA Carrier Safety Fitness Determination notice of proposed rulemaking at 81 FR 3596, Thursday, January 21, 2016, available at <https://www.gpo.gov/fdsys/pkg/FR-2016-01-21/pdf/2015-33153.pdf>

Furthermore, without a clear definition of this term, carriers may find it difficult to ascertain and therefore comply with the regulation's intent.

## **7. SPECIAL CIRCUMSTANCES**

There are no special circumstances related to this information collection.

## **8. COMPLIANCE WITH 5 CFR 1320.8**

On July 16, 2018, FMCSA published a 60-day Federal Register notice (83 FR 32950) (Attachment E). The Agency received four comments. One anonymous comment was unrelated to the ICR. Both the American Bus Association and the American Trucking Associations voiced support for the ICR. The National School Transportation Association also voiced support for the ICR, but it requested that the survey instrument include questions to identify the type of commercial motor vehicles operated by the respondent. In response, the Agency reviewed and revised three survey questions to better differentiate between various types of passenger-carrying CMVs.

FMCSA published a notice in the Federal Register with a 30-day public comment period that announced this ICR would be sent to OMB for its review and approval (Attachment F).

## **9. PAYMENT OR GIFTS TO RESPONDENTS**

Respondents will be offered modest compensation (\$50) for completing the Carrier Maintenance Management Survey (Phase II). Information regarding compensation will be presented in the ICF. Compensation is dependent upon survey completion. Respondents who begin the survey but do not complete and submit it will not be compensated.

Following completion of the Phase II survey, respondents who indicate that they wish to receive payment and are permitted to do so in accordance with their carrier's compensation policy will be directed to the Incentive Payment Page (Attachment G). On the Incentive Payment Page, respondents will be prompted to submit their name, mailing address, and phone number via a secure online portal. Participants will receive a check payment in the mail in 4–6 weeks. Information submitted via the secure online portal will not be tied to participants' survey responses or to their study ID number. Any information that could link a participant's identity to their study data will not be collected for payment purposes.

Monetary compensation for carrier representatives participating in the information collection is considered beneficial for the reasons listed below:

- **Availability and time burden:** Motor carrier representatives are often difficult to reach for research studies due to irregular schedules and long working hours. Compensation for this time burden seems justified.
- **Increased response rates:** Compensating respondents will significantly increase response rates. This will increase the likelihood of reaching sample size targets, thus improving the validity of study results. Past experience indicates that it is difficult to obtain sufficient participation without providing adequate monetary compensation.<sup>(11,12)</sup>

## 10. ASSURANCES OF CONFIDENTIALITY

Data collected from individual carrier representatives will be protected from release to the public. At the end of the project, a de-identified public-use data set will be compiled (see Section 3. of this document). All study data will be coded with a unique participant ID number.

To be compensated for their participation in the Phase II survey, respondents will need to provide their name, address, and phone number to the research team. This is required for payment tracking and mailing purposes. Participant information submitted for payment purposes will not be tied to survey responses. The participant's study ID number or any other information that could link their identity to their study data will not be collected for payment purposes.

## 11. JUSTIFICATION FOR COLLECTION OF SENSITIVE INFORMATION

This information collection does not involve personally sensitive information (e.g., sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private). Survey questions will be focused on carrier and fleet maintenance programs and facilities. Representatives from carriers in the IE Group may be concerned about disclosing information related to their carrier's safety record; however, this information is already publicly available regardless of their participation.

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<sup>110</sup> Hanowski, Richard J.; Perez, Miguel A.; Dingus, Thomas A. (2005). *Driver distraction in long-haul truck drivers*. Transportation Research Part F: Traffic Psychology and Behaviour, 8(6), 441-458.

<sup>120</sup> Hickman, J.S., R.R. Knipling, R.L. Olson, M. Fumero, R.J. Hanowski, and M. Blanco. *Phase I-Preliminary Analysis of Data Collected in the Drowsy Driver Warning System Field Operational Test: Task 5, Phase I Data Analysis*, for FMCSA under NHTSA contract. September 30, 2005.

## 12. ESTIMATES OF BURDEN HOURS INFORMATION REQUESTED

There are two parts to this ICR:

1. Phase I: The Online Recruitment Survey.
2. Phase II: The Carrier Maintenance Management Survey.

We assume that respondent occupations for both tasks correspond to General and Operations Managers.<sup>(13)</sup> The mean hourly wage for General and Operations Managers in the General Freight Trucking Industry (North American Industry Classification System [NAICS] code 484000) is \$50.99.<sup>(14)</sup> The mean hourly wage for General and Operations Managers in the Transit and Ground Passenger Transportation Industry (NAICS code 485000) is \$51.39.<sup>(15)</sup>

To arrive at a loaded wage, we first estimated a load factor of 1.421 by dividing the total cost of compensation for private industry workers of the trade, transportation, and utilities industry (\$27.44) by the average cost of hourly wages and salaries (\$19.31) as reported by the Bureau of Labor Statistics in its Employer Costs for Employee Compensation for March 2017.<sup>(16)</sup> Multiplying mean hourly wages by the load factor results in a loaded hourly wage of \$72.46 for General and Operations Managers in the General Freight Trucking industry and \$73.03 in the Transit and Ground Passenger Transportation industry as shown in Table 3.

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<sup>130</sup> Bureau of Labor Statistics. Occupational Employment and Wages, May 2016, 11-1021 General and Operations Managers. <https://www.bls.gov/oes/current/oes111021.htm> (accessed July 5, 2017).

<sup>140</sup> Bureau of Labor Statistics. Occupational Employment Statistics, May 2016 National Industry-Specific Occupational Employment and Wage Estimates: NAICS 484000 - Truck Transportation. [https://www.bls.gov/oes/current/naics3\\_484000.htm#11-0000](https://www.bls.gov/oes/current/naics3_484000.htm#11-0000). Accessed July 5, 2017.

<sup>15</sup> Bureau of Labor Statistics. Occupational Employment Statistics, May 2016 National Industry-Specific Occupational Employment and Wage Estimates: NAICS 485000 - Transit and Ground Passenger Transportation, [https://www.bls.gov/oes/current/naics3\\_485000.htm#13-0000](https://www.bls.gov/oes/current/naics3_485000.htm#13-0000). (accessed July 5, 2017).

<sup>160</sup> Bureau of Labor Statistics. “Table 10. Employer costs per hour worked for employee compensation and costs as a percentage of total compensation: private industry workers, by industry group, March 2017.” <https://www.bls.gov/news.release/ecec.t10.htm> (accessed July 5, 2017).

To calculate average hourly compensation, we weighted loaded hourly wages by type of respondent. The General Freight Trucking wage rate was weighted by 0.675 (390 truck respondents ÷ 578 total respondents); and the Transit and Ground Passenger Transportation wage rate was weighted by 0.325 (188 bus respondents ÷ 578 total respondents). This resulted in a weighted loaded hourly compensation cost of \$72.64 ( $\$72.46 \times 0.675 + \$73.03 \times 0.325$ ).

**Table 3. Hourly compensation of General and Operations Managers (BLS Occupation Code 11-1021).**

NAICS Occupational Designation	Mean Hourly Wage	Load Factor	Loaded Hourly Compensation Cost	Weight	Weighted, Loaded Hourly Compensation Cost*
General Freight Trucking (484000)	\$50.99	1.421	\$72.46	0.675	\$48.91
Transit and Ground Passenger Transportation (485000)	\$51.39	1.421	\$73.03	0.325	\$23.74
<b>Average Hourly Compensation Cost</b>					<b>\$72.64</b>

\*Total may not sum to totals due to rounding.

## 12.1 ONLINE RECRUITMENT SURVEY (PHASE I)

The Online Recruitment Survey requests high-level details, such as carrier name and size, current job title, and length of time the respondent's carrier has been in operation. We expect safety managers and representatives of 578 respondents to spend 5 minutes each completing the Online Recruitment Survey.

We estimate that respondents will incur a burden of approximately 48 hours [578 respondents × (5 minutes per response ÷ 60 minutes)], at a cost of approximately \$3,499 [578 respondents × (5 minutes per response ÷ 60 minutes) × \$72.64 per hour]. The average respondent will incur a cost of \$6.05 ( $\$3,499 \div 578$  respondents).

## 12.2 CARRIER MAINTENANCE MANAGEMENT SURVEY (PHASE II)

Of the 578 respondents to the Online Recruitment Survey, we expect to recruit maintenance managers, safety managers, or owner-operators to participate in the Carrier Maintenance

Management Survey (Phase II) at a 50 percent response rate. This will result in a total of 289 truck and bus carriers completing the Carrier Maintenance Management Survey.

The Carrier Maintenance Management Survey takes approximately 45 minutes to complete. Carrier representatives will incur a total burden of approximately 217 hours [289 respondents × 45 minutes per response ÷ 60 minutes], at a cost of approximately \$15,745 [289 respondents × (45 minutes per response ÷ 60 minutes) × \$72.64 per hour]. The average respondent will incur a cost of \$54.48 (\$15,745 ÷ 289 respondents).

### 12.3 TOTAL BURDEN ESTIMATES

Table 4 summarizes the burden hour estimates for the Online Recruitment Survey (Phase I) and the Carrier Maintenance Management Survey (Phase II).

**Table 4. Responses and Burden Hour Estimates\***

Survey	Number of Responses	Average Burden per Response	Total Burden Hours	Total Burden Hour Cost
Online Recruitment Survey	578	5 minutes	48 hours	\$3,499
Carrier Maintenance Management Survey	289	45 minutes	217 hours	\$15,745
<b>Total</b>			<b>265 hours</b>	<b>\$19,244</b>

\*Numbers may not sum to totals due to rounding.

#### Totals for this ICR:

- **Estimated Total Annual Burden Hours:** 265 hours  
(48 hours for Online Recruitment Survey + 217 hours for Carrier Maintenance Management Survey)
- **Estimated Total Annual Responses:** 867 responses  
(578 responses for Online Recruitment Survey + 289 responses for Carrier Maintenance Management Survey)
- **Estimated Total Respondents:** 578 respondents  
(578 truck and bus respondents)
- **Estimated Total Annual Burden Costs:** \$19,244

(\$3,499 for Online Recruitment Survey + \$15,745 for Carrier Maintenance Management Survey)

### **13. ESTIMATES OF TOTAL ANNUAL COSTS TO RESPONDENTS**

There are no additional costs to respondents beyond those associated with the hourly burden presented above.

### **14. ESTIMATE OF COST TO THE FEDERAL GOVERNMENT**

The estimated cost to the Federal government include contractor costs and Federal staff costs.

The actual contracted total cost for the study, which includes this survey, is \$335,627. The research design, protocol development, and implementation of the research methods will be completed between FY 2017 and FY 2019. This includes \$297,063 in labor costs; \$16,950 in materials, services, and other direct costs, including participant payments (\$14,450) and peer review payments (\$2,500); \$7,003 in travel costs; and \$14,611 in indirect costs.

Oversight of the study will be carried out by a GS-14 Program Manager. The labor cost of this activity is estimated to be \$74.06 per hour, comprising \$48.53 in hourly wages,<sup>(17)</sup> employee benefits equal to 36.25 percent of wages, and overhead expenses equal to 12 percent of wages and benefits  $[(\$48.53 \times (1 + 0.36)) \times (1 + 0.12)]$ .<sup>(18)</sup> FMCSA estimates that oversight tasks require 4 hours each week for the duration of the 3-year contract, totaling 624 hours (4 hours  $\times$  52 weeks  $\times$  3 years). The estimated Federal staff support is \$46,211 ( $\$74.06 \times 4 \times 52 \times 3$ ).

**Estimated Total Annual Cost to Federal Government:** \$381,838  
(\$335,627 in contractor costs + \$46,211 in Federal staff support)

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<sup>170</sup> Office of Personnel Management. 2018 General Schedule (Base). [https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/salary-tables/pdf/2018/GS\\_h.pdf](https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/salary-tables/pdf/2018/GS_h.pdf) (accessed May 15, 2018).

<sup>180</sup> Office of Management and Budget. Circular No. A-76 (Revised). [https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A76/a76\\_incl\\_tech\\_correction.pdf](https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A76/a76_incl_tech_correction.pdf) (accessed May 15, 2018).

## **15. EXPLANATION OF PROGRAM CHANGES OR ADJUSTMENTS**

This is a new information collection.

## **16. PUBLICATION OF RESULTS OF DATA COLLECTION**

The results of this information collection will be documented in a technical report to be delivered to and published by FMCSA. In addition, the results will be used to create a “recommended best practices” report that will outline minimum standards for inspection intervals, mechanic qualifications and training, and certification of maintenance facilities. Finally, as noted in Section 3., VTTI is required under the contract with FMCSA to compile and analyze the collected information and develop a public-use data set.

## **17. APPROVAL FOR NOT DISPLAYING THE EXPIRATION DATE OF OMB APPROVAL**

No such approval is being requested.

## **18. EXCEPTIONS TO THE CERTIFICATION STATEMENT**

None.

### **ATTACHMENTS**

- A. 49 CFR 396.3
- B. Initial Contact Letter
- C. Online Informed Consent Information (Recommended Practices)
- D. Online Informed Consent Information (Intervention Effects)
- E. 60-Day FR, 83 FR 32950, (July 16, 2018).
- F. 30-Day FR, 83 FR 60946, (November 27, 2018).
- G. Incentive Payment Page