

Findings and Recommendations from Cognitive Testing for the Vehicle inventory and Use Survey for Heavy Trucks (9502)

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Research Objectives

The Vehicle Inventory and Use Survey (VIUS) for heavy trucks (form number 9502) was originally collected every 5 years since 1963, for years ending in "2" and "7," along with the Economic Census. However, the 9501 VIUS was not been collected since 2002. Since the 9501 VIUS is the only resource available to policymakers about the physical and operational characteristics of the nation's truck population, the survey is being updated for collection in 2022. The survey will be conducted for the Bureau of Transportation Statistics by the Census Bureau in accordance with an agreement between the two agencies. Results will be used to inform decisions about investments in new roads and technology, to examine vehicle performance and fuel economy, and will be a part of the framework for the national investment and personal consumption expenditures component of the Gross Domestic Product.

The purpose of the cognitive interviewing is to evaluate any changes in the content that may warrant modifications needed to maximize respondent participation and data quality produced by the 2022 VIUS. Paper and web-based questionnaires will be generated based on the 2002 questionnaires, with the addition of some response options as outlined in the survey. This pretest will investigate the suitability of the proposed questions.

In addition, the research objectives included learning how respondents:

- understand and interpret the data requests;
- understand the terminology used throughout the questions;
- keep records related to the data items; and,
- perceive the burden that would be associated with answering the questions.

The round one 9502 VIUS draft can be found in appendix A. The round one protocol can be found in appendix B. The round two 9502 VIUS draft can be found in appendix C. the round two protocol can be found in appendix D.

Note: The two rounds of testing were conducted in close proximity, time-wise, from each other. Between the rounds of testing, some changes were made to the draft materials. This report will attempt to summarize findings from all interviews, but the primary focus will be on the findings from Round 2 of the interviews, and provides recommendations based on those draft questions.

Research Methodology

Between September and May 2020, Aryn Hernandez, Krysten Mesner, and Melissa Cidade from the U.S. Census Bureau's Data Collection and Methodology Research Branch (DCRMB) conducted 23 cognitive interviews over two rounds of testing, regarding proposed new questions. A few interviews were conducted in-person at the beginning of round one; however, due to difficulty in reaching the target population and the developing global coronavirus pandemic, the majority of interviews were conducted via telephone.

In general, cognitive interviews are used to, '(a) understand the thought processes used to answer survey items, and (b) to use this knowledge to find better ways of constructing, formulating, and asking survey questions' (Forsyth and Lessler, 1991).¹ Cognitive interviews traditionally focus on the four steps of Tourangeau's (1984) cognitive response model: comprehension, retrieval, judgment, and communication/reporting.² Comprehension refers to the respondent's interpretation and understanding of the question's language, structure, and grammar. In order to answer the question, a respondent must understand what information is being requested on the survey. Retrieval is the step where relevant information is obtained, either from records or from memory. The next step, judgment, describes the respondent's evaluation of the completeness or relevance of the data obtained. It is here that estimates are made based on partial or incomplete data. The last step, communication or reporting, deals with mapping the response to the answer space provided and possibly altering the answer.

While Tourangeau's model is suitable for household and social surveys, the establishment survey setting presents additional factors that must be considered. First, instead of or in addition to a reliance on memory, establishment surveys rely heavily on records and the information contained within them. Second, organizations tend to have distributed knowledge. Some people are experts in one type of information, while others keep information about something else. Third, competing priorities, both for the organization and the individual(s) completing the questionnaire, mean that the survey sometimes does not receive the amount of attention that researchers and data collectors would like. Finally, organizations regularly authorize only a few individuals to release data. If the data provider is not authorized to release the data, an additional step must be added to the response process. Tourangeau's model was expanded by Sudman *et al* (2000) to account for these factors.³

¹ Forsyth, B.H. and Lessler, J.T. (1991). 'Cognitive Laboratory Methods: A Taxonomy.' In Measurement Errors in Surveys, P.P. Biemer, R.M. Groves, L.E. Lyberg, N.A. Mathiowitz, S. Sudman (eds). New York: John Wiley & Sons, Inc.

² Tourangeau, R. (1984). 'Cognitive Sciences and Survey Methods.' In Cognitive Aspects of Survey Methodology, T.B. Jabine, M.L. Straf, J.M. Tanur, and R. Tourangeau (eds). Washington, DC: National Academy Press.

³ Sudman, S., Willimack, D.K., Nichols, E., and Mesenbourg, T.L. (2000). 'Exploratory Research at the U.S. Census Bureau on the Survey Response Process in Large Companies.' Paper prepared for presentation at the Second International Conference on Establishment Surveys, Buffalo, NY.

Participants and Recruiting

The survey examines a probability sample of truck registrations stratified by geography and truck type. This includes private and commercial trucks registered (or licensed) in the United States as of the reference year of the survey. The survey excludes vehicles owned by Federal, state, or local governments; ambulances; buses; motor homes; farm tractors; unpowered trailer units; and trucks reported to have been sold, junked, or wrecked prior to July 1 of the year preceding the survey. Specifically, the 9502VIUS targets trucks above 10,000 pounds, which can include tractor trailers, box trucks, and other large commercial trucks.

Prior to March 11, 2020, recruiting was from the general Washington DC metropolitan area. At this time we were conducting in-person interviews. As such we focused on physical recruiting methods – mainly, BOC Broadcast messages, flyers and word of mouth, along with our more traditional means of phone and email contact, despite not having contact information that we usually have for respondents obtained from survey responses or the Business Register.

We posted recruitment flyers at home improvement stores, truck stops, and other locations in the Washington DC area, though these were generally not effective in recruitment efforts. Staff made 175 call or email attempts to contact cases from the various lists provided by ERD and others. These 175 contact attempts were primarily to different companies/persons/VINs. Approximately 20% of these contact attempts were disconnected phones or entities that were no longer in business. For those numbers not disconnected, we left messages; most did not return our calls, or replied that they were too busy actually working to participate.

Due to COVID-19, cognitive interviewing methodologies were restricted to phone and Web modes. From March 16, 2020 onward, we had to work on administrative and methodological adaptations. These included:

- Ensured that adapted procedures are in compliance with Title 13 and Title 26 data handling policies, particularly with respect to Paperwork Reduction Act and Privacy Act requirements.
- Developed procedures for compliant consent forms providing respondents with functionality for digitally encrypted signatures, thus are paper free.
- Obtained licenses for Skype for Business Conference Lines, the only currently available teleconference-enabled communication platform that meets Title 13 data handling requirements, along with using DCMRB's Conference Number.
- Created operating procedures for dispersing cash incentives post-interview, using the USPS's certified mail and insurance programs to create another layer of security and another form of paper trail for auditing purposes.
- Added a survey methodologist dedicated solely to recruiting, devoting 50% of her time until the required number of cognitive interviews was reached.
- Shifted recruitment efforts to more digital means, by posting recruitment messages online as follows:
 - Trucking-related Facebook groups,
 - Higher profile trucking Twitter handles, and on
 - Several trucking message boards.

- Cragstlist.org platforms for cities selected for their high proportion of truckers in the workforce and their relative accessibility, with preference for cities that were “locked down,” figuring we may get more people to respond that way. The text of the ad can be found in Appendix E.
- We also reached out professional trucking organizations in an attempt to gain leads.

There were a total of 18 participants interviewed for the 9502 VIUS; 10 participants in round 1 and 8 participants in round 2.

Findings and Recommendations

General Findings and Recommendations

Finding #1: Estimated time to complete averaged approximately one to two hours.

After reviewing the draft survey, most respondents gave a time estimate to complete the module between 20 minutes to 2 hours. A few respondents gave an estimate that exceeded 2 hours. Respondents that gave the lower time tended to be less concerned with accuracy. Those that gave higher estimates cited the need to reach out to others within their companies to obtain data.

Recommendation(s):

- No recommendations needed.

Finding #2: Most respondents seemed likely to receive survey requests

Most respondents' vehicles were registered at the same address where they regularly received mail. As survey requests will be sent to the address at which a vehicle is registered, most respondents should receive them. Although some respondents do not get their usual mail at the same address they have their vehicle registered to, they would all eventually get the survey requests. A respondent explained that fines are mailed to the registration address, so they would need to check the mail at that address eventually.

Recommendation(s):

- No recommendations needed.

Finding #3: Web instrument preferred

All respondents stated that they would complete the survey online. Respondents also believed that a spreadsheet template would make responding for multiple vehicles easier. Some truckers are wary of the government. It might be worth adding that information gathered by this survey can only be used to produce statistics and cannot be used legally.

Recommendation(s):

- Emphasize in electronic instrument, the request letters, and promotional materials that all data gathered by this survey is for the production of statistics only and cannot be used against anyone legally.

Question Specific Findings and Recommendations

Two rounds of testing were conducted in close proximity, time-wise, from each other. Between the rounds of testing, some changes were made to the draft materials. The primary focus of these findings and recommendations will be from Round 2 of the interviews. Round 1 and round 2 versions of the questions have been included for reference. As the heavy truck form shares many questions with the light truck form, some recommendations are due to findings from the light truck form. All attempts were made to keep both forms consistent with one another where appropriate.

Section A: Registration Information

After round 1, it was found that some respondents passed over the term ‘your’ and read the question as ‘Is the vehicle identified above still in your company’s possession?’ As such, these respondents were confused if they were not part of a company. For round 2, the question was revised to clarify the phrase ‘in your possession OR your company’s possession.’ After this revision, there were no more issues with this question.

Recommendation(s):

- No recommendations needed.

Section B: Disposal

No changes were made between rounds 1 and 2. No issues were found with this section. It should be noted that none of the interviewed respondents had disposed of their vehicles.

Recommendation(s):

- No recommendations needed.

Section C: Acquisition

No changes were made between rounds 1 and 2. No issues were found with this section.

Recommendation(s):

- No recommendations needed.

Section D: Leasing

The round 1 phrasing was confusing to respondents as the question was attempted to ask two questions at once. As such, the question was split into two for round 2. In round 2, some respondents stated that the phrase ‘someone else’ could be confusing to those that lease to or from a company, not an individual. The phrase ‘someone else’ seemed to imply an individual and seemed to preclude companies to these respondents.

Recommendation(s):

- Consider changing ‘someone else’ to ‘another person or company’ in both D1 and D2.

Section E: Type of Vehicle

In round 1, it was discovered that the vast majority of respondents did not understand how to answer E1. For that reason, question E1 was revised to be a yes/no question for round 2. Despite this revision, none of the respondents who drove or owned tractors understood this question. “I don’t know what this is trying to ask... sleeper or day cab?” Other descriptions given for tractors:

- Power unit with detachable trailer
- Semi
- Combination vehicle
- Tractor trailer combination
- Something that went off road and you would use to do utility work

Between rounds 1 and 2, ‘box truck’ was added to the answer choices for question E2. In round 2, some respondents mentioned that some of the items on the list were straight trucks, while others were types of trailers. One respondent mentioned that ‘beverage’ trucks were also commonly referred to as ‘bay’ trucks.

Recommendation(s):

- Rephrase question E1, for example: “Is this vehicle a combination vehicle (Semi or tractor with detachable trailer)?”
 - Yes (Go to section F – PHYSICAL CHARACTERISTICS)
 - No (Continue with question 2 below)
 - OR “Is this vehicle a semi-truck (tractor/trailer truck)?”
 - Yes (Go to section F – PHYSICAL CHARACTERISTICS)
 - No (Continue with question 2 below)
- For question E2:
 - BTS should remove body types that are exclusive to trailers.
 - Change ‘Beverage’ category to ‘Beverage or bay.’

Section F: Physical Characteristics

After round 1 it was found that some respondents were confused by the reference year in these questions. These respondents believed that the questions were asking about the physical characteristics of a specific model year for the vehicle. As these characteristics are unlikely to change from year-to-year, the reference year was removed. Question F3 was added to round 2. Question F4 and F5 became questions F5 and F6 in round 2. F11 was confusing to some respondents. It was determined that the answers choices were unnecessarily detailed. For round 2, the answer categories were simplified. In round 2 question F12 regarding permanent equipment was broken up into 4 questions (F13 – F16). The sponsors of VIUS were interested in adding more types of equipment, thus necessitating the need for multiple questions. The word ‘exterior’ was added to question F10 about cabin height to help alleviate some ambiguity.

In round 2, some respondents were unclear on what an axle was, how to find out how many axles their vehicles had, and how to determine if the axles were powered. Some of these respondents stated that they would look up the answer online. Many respondents referred to liftable axles as ‘tag’ axles. While answering question F6 a couple of respondents mentioned that all liftable/tag axles are braking. In

regards to question F7, one respondent stated, “Pad and a rotor. I don’t believe it’s hydraulic at all.” This respondent said the answer categories are unclear because “I’m not sure if the rotor and the pad is the right answer. Does a regular pickup truck have hydraulic brakes? If every truck has hydraulic brakes, the answer would be standard.” Another respondent mentioned disc or drum brakes.

Regarding question F8, most respondents only acknowledged two types of cabs: sleepers and day cabs. Some respondents equated conventional cabs to sleepers. These respondents did not know how to answer question F8 if they did not have a sleeper. One respondent stated that the 3rd and 4th categories of question F8 are so rare, they should be replaced with a single ‘other’ category. Some respondents stated that ‘cab forward of engine’ isn’t made anymore.

For question F10, It was not clear to respondents what portion of the vehicle they should be measuring. Some respondents said they would actually measure the vehicle with a tape measurer. A couple of respondents that did not know the answer said they would skip this question. For F12, some respondents stated that 12 to 13 gears is typical for a semi. One respondent wasn’t sure and would have guessed four.

For question F13 regarding standard features, respondents were not sure which way the driver camera would be directed (outward or inward). One respondent pointed out that this type of camera did not belong on the light truck form. Another respondent stated that inward facing drivers cameras may also be known as ‘event recorders.’ One respondent said he would only select equipment that was integrated into the vehicle. Some respondents thought that a GPS was the same thing as a navigation system. One respondent asked if rollover protection was the same thing as an alarm that goes off when a semi tries to take a curve too fast.

For question F15, some respondents asked if a fuel tank cover was the same thing as a gas cap. One respondent asked, ‘who decides what is aerodynamic?’ Some respondents pointed out that gap reducers are also known as fairings, ‘boat tails,’ and ‘cab extenders’ Examples of idle reducing technology include heating and cooling.

For question F16, one respondent asked if an Electronic Vehicle identification was the same thing as a toll pass. In addition, ‘Bobtail’ is not equipment or a feature, it is the lack of a trailer or trailer mounted equipment. Including bobtail on this list confused all respondents. One respondent stated that air springs are also known as ‘air ride’ and may be standard.

For question F17, respondents with semis tended to answer 80,000 pounds as that is the standard weight limit for semis. A couple of respondents pointed out that this was information was likely printed on the inside of the vehicle door. One R stated that they checked their manual, but that the towing capacity was listed in a chart, which made it confusing to figure out. A couple of respondents that did not know the answer said they would skip this question. Some respondents that did not tow anything felt that this question was irrelevant to them and did not feel the need to answer it.

Recommendation(s):

- Include definition and description of an axle and powered axle in help text.
- For question F1, revise question text:
 - “What was the total number of axles, including liftable or tag axles, on this vehicle, excluding trailer(s)?”

- For F6: Check paradata to determine if answer matches answer to question F4. If they match, it may be possible to eliminate F6.
- For F7: No change needed. Check write-ins in paradata to determine if further clarification is needed.
- Consider revising question F8 as follows:
 - “What type of cab did this vehicle have? Select ONE only.”
 - Sleeper cab (Go to question 10)
 - Day cab (Continue to question 9)
 - If F8 is revised, change F9 as follows:
 - “Which of the following best describes the cab of this vehicle? Select ONE only.”
 - Conventional cab
 - Cab over engine
 - Cab forward of engine
 - Cab beside engine
 - If F9 is revised, check paradata to determine if the last two categories can be collapsed into an ‘other’ category.
- In regards to question F10:
 - Revise question text:
 - “What was the exterior height of this vehicle’s cabin from the ground to the top of the roof?”
 - Add a line of instructions about including additional equipment above the roof if desired. For example: “Include and equipment that extends above the roof of the cabin such as...”
 - BTS should provide a few examples of equipment that may possibly extend above the cabin roof.
- In regards to questions F13 – F16:
 - BTS should provide associated help text for each response.
 - BTS should determine if all of these features are relevant to light trucks.
 - Add ‘None of the above’ answer choice.
 - Remove ‘bobtail’ from question F8.
- In regards to question F17:
 - Consider providing help text suggesting to check the manual, search online, or to check the inside of the door.
 - Include instructions that an answer is required even if the person does not tow anything.

Section G: Time Operated

After round 1, the order of questions G1 and G2 was swapped. This would allow respondents to skip question G2 if respondents answer ‘12 months’ in G1. No other issues were found.

Recommendation(s):

- No recommendations needed.

Section H: Home Base

After round 1, question H1 was eliminated to reduce redundancy. Question H3 was moved to H1 and a 'No home base' answer choice was added. Question H3 (previously H4) was clarified for round 2. The phrase 'In addition to this vehicle' was added to try to prevent respondents from including the subject vehicle in their answers.

In round 2, for question H1, other types of home bases mentioned: paid parking lot and drop yard. For question H3, a couple of respondents only counted vehicles used for commercial purposes. A couple of respondents thought the rest of the survey was referring to all of the vehicles they listed in this question, instead of the original vehicle being asked about.

Recommendation(s):

- Questions H1 and H2: no recommendations needed.
- For question H3:
 - BTS should provide associated help text for each response. If possible, providing a photo of some features may help.
 - Consider changing 'Tractors (power units only)' to whatever phrase is used in question E1 on 9502.
 - Add 'No other vehicles at this home base' check box.

Section I: Miles

Between rounds 1 and 2, question I2 was moved down to question I5. Question I7 (from round 1), now question I6 in round 2 had some answer choices removed. In round 2 I6 only retained the 'Within 50 miles,' '51 to 100 miles,' and '101 miles or more' were retained. Round 1's question I8 was moved to Section O. I9 was broken up into two questions, I8 and I9.

In round 2, question I1, one respondent stated that they would have to add up the miles from each day and that it would be very time consuming. One respondent stated that many truckers use some kind of app to track their mileage. This respondent also stated that truckers have to do quarterly mileage filings for each state for tax purposes (unless the driving was intrastate only). Some Rs were unsure whether this question was asking about all mile driven or only miles driven for commercial purposes. For question I3, some respondents are not going to calculate their MPG and will likely report the listed MPG, from their manuals or online, for their vehicle. For question I5, most respondents stated that it would be very difficult to estimate the answers to this question.

Question I6 was problematic in both rounds 1 and 2. Respondents did not agree on the definition of a trip, some definitions included:

- Time from when the vehicle is turned on to when it is turned off
- From the time the job started to when it ended not including getting to the job or leaving after finishing the job (only when on the clock).
- Round trip from and to home base
- One way for passengers, round trip for goods

One respondent stated that they routed several jobs into one 'trip' but was unsure if each job should be counted as a separate trip, which would drastically change their answer.

For question I8, most respondents felt this would be very difficult or impossible to estimate accurately. Larger companies may track this electronically for their tractors. Other ways respondents described idling:

- Engine is running but not engaged
- Transmission is disengaged
- Just not moving. Just parked waiting for a job to start. You don't mean engine running, do you?
- Truck running while parked

For question I9, many respondents mentioned using auxiliary power for cooling and heating. Some respondents believed that it would be difficult for smaller carriers to estimate. One respondent stated, "I'm unclear on what you mean by auxiliary power. I really have no clue. Something other than gasoline. Is there some kind of hybrid fuel? I don't know."

Recommendation(s):

- For question I1:
 - Revise question: "How many total miles was this vehicle driven in 202X?"
- For questions I2 and I4 change 'Gas Receipts' to Gas or Fuel Receipts.'
- For question I6:
 - We are aware that BTS has revised this question since testing began.
 - BTS will provide final wording for the new question/questions.
 - If 'off-the-road' is added back, provide a definition.
- For question I9, BTS should provide help text about auxiliary power with examples of uses.
 - Consider rephrasing question. For example:
 - "In 202X, what was the approximate percent of this vehicle's operating time spent using an auxiliary power unit?"

Section J: Fuel and Maintenance

Section J tested fairly well in round 1. The only change made for round 2 was adding 'or overhauled' to the ends of questions J8 and J9.

In round 2, for question J5, not all respondents could agree upon the meaning of the word 'extensive.' One respondent stated that the repair would need to cost over \$500 for them to consider it extensive. Another respondent noted that all of the examples listed in the question were related to transmission, so they answered 'no' as they had no transmission issues. According to this respondent, the driveline, transmission, and differential were all the same thing.

Recommendation(s):

- BTS should provide help text to define what "extensive" means.
- BTS should revise the examples listed in question J5 if the current ones do not meet the criteria for "extensive" repairs.

Section K: Vehicle Configuration

From round 1 to round 2, question K2 was moved down to become K16 (now the last question in the section).

In round 2, question K1 was a confusing question for some respondents. Specifically, the phrase ‘most common configuration’ was confusing to many respondents and often overlooked. One respondent pointed out that it would be difficult to answer questions about the features of a trailer if they were given different trailers for different jobs. Some respondents had difficulty answering question K5 as they did not know the length of their vehicles off the tops of their heads.

For K14, most respondents that pulled a refrigerated trailer said they pulled a ‘reefer’ and some of them did not see the correct choice at first glance. A few respondents mentioned that it was common for some trucks to haul shipping containers. Trailers designed to do this are just referred to as ‘chassis.’ Beverage trailers are also known as bay body.

For K15, one respondent mentioned that ALL trailers have landing gear, but was not sure if it was all considered to be ‘light weight.’

While answering K16, some respondents only answered with the length of their trailer, they did not include the tractor. One respondent even went so far as to ask why we need to know the total length including the tractor.

Recommendation(s):

- Consider including a screener question at the beginning of section K and replacing question K1 with a yes/no question.
 - For example: K1 “In 202X, was this vehicle used to pull a trailer? *Trailer mounted equipment should be treated as a trailer. Yes/No*”
 - K2 (if yes to K1) “In 202X, did this vehicle pull a trailer for more than half of all miles driven? *Trailer mounted equipment should be treated as a trailer.*”
 - Yes, this vehicle pulled a trailer for more than 50% of all miles driven.
 - No, this vehicle pulled a trailer for less than 50% of all miles driven.
 - K3 (if yes to K2) “In 202X, which of the following did this vehicle pull most often? *Trailer mounted equipment should be treated as a trailer.*”
 - Single trailer
 - Double trailer
 - Triple trailer
 - Answering no to K1 or K2 could allow Rs to skip past certain questions, or would allow them to view versions of questions without the phrase ‘most common configuration’ in the electronic version.
 - For K14, BTS should provide associated help text. If possible, providing a photo of some features may help.
 - In addition, Add ‘chassis’ to ‘Flatbed, platform, etc,’ add ‘side’ to ‘Dump...’ category, and change ‘Beverage’ category to ‘Beverage or bay.’
 - Consider adding ‘Reefer’ to ‘Van, insulated refrigerated.’

- For K15, BTS should provide associated help text. If possible, providing a photo of some features may help.
- For K16, in the electronic version, if the R has indicated pulling a trailer:
 - “What was the total length of this [insert year, make, model] plus the [single/double/triple] trailer combination?”
 - In the electronic version, if the R has indicated that they do not pull a trailer: “What was the total length of this [insert year, make, model]?”
 - Check paradata to determine those that own semis with trailers answer with the ‘50.0 to 54.9 feet’ category. Standard trailer length is 53 feet, if the R chose the aforementioned category, they are likely excluding the tractor.

Section L: Weight

For round 2, questions L2 was removed. In round 2, L4 was broken up into five questions: L3 – L7.

For round 2, as most of these respondent did pull a trailer, they were able to answer questions L1 and L2 successfully.

In regards to question L4, every respondent and expert stated that there are no annual overweight permits, these permits are per trip only. According to every respondent and expert, while answering L5, there are no overweight permits that work across multiple states. Each state requires its own permit. Sometimes permits are needed for counties and toll roads.

Recommendation(s):

- Consider rephrasing L4: “In 202X, how many overweight permits did you purchase for this vehicle?”
- Consider rephrasing L5: “In 202X, how many different states were you required to purchase overweight permits for?”

Section M: Kind of Business

From round 1 to round 2, section M received major revisions. Question M1 became a yes/no question to determine if the respondent is using the vehicle for commercial purposes. The answer choices for M2 were arranged alphabetically. Additionally, the answer choice ‘HVAC, plumbing, electrician’ was added, and ‘For-hire transportation or warehousing’ was changed to ‘For-hire transportation (of goods and people).’ Questions M3 and M4 were added to determine the type of commercial business the vehicle is being used for.

In round 2, the revised question M1 tested well with no issues. For M2, one respondent that carried aggregate was not sure which answer to choose, but eventually settled on construction, which would be the correct choice. Some respondents stated that they pull advertising signs and were not sure how to answer. They ultimately chose ‘Retail.’

While answering question M2, one respondent wanted to make multiple selections. One of these selections was vehicle leasing. This respondent leased his vehicle, along with himself as a driver, but carried product for a company. Another respondent mentioned that we might change ‘your business’ to

‘the business’ to avoid the above situation.

In regards to question M3, a respondent that transported paying passengers asked if luggage was considered ‘other peoples’ good.’ When attempting to answer question M4, one respondent stated that they always kept tools in their truck for work, even when they were using the truck for personal transportation, so this respondent wasn’t sure if they were supposed to enter 100% for tools. This respondent suggested that the total for question M4 should not sum to 100%. Other respondents were concerned about being able to answer M4 as they do not track this data.

Recommendation(s):

- Consider changing instances of ‘your business’ to ‘this business.’
- Add advertising to ‘Other services,’ which is the NAICS industry it would fall into.
- For question M4, remove instructions about summing to 100%.

Section N: For-Hire

Question N1 was removed from round 1 to round 2. The answer categories for N2, now N1, were simplified. N3 and N4 were removed for round 2. Question N5 remained the same, however, the method of answering was updated. The product categories were put into a table to allow respondents to look through the product categories without flipping to the end of the survey.

In question N1, a couple of respondents did recognize these categories as ‘truckload’ and ‘less-than-truckload.’

Recommendation(s):

- For question N1, consider adding ‘truckload’ and ‘less-than-truckload’ in parentheses at the end of the answer categories.

Section O: Product, Equipment, or Materials

In round 1, Sections O and P each contained one question. For round 2, these sections were combined. Round 1’s question P1 became O5. The method of answering question O2 was also updated. The product categories were put into a table to allow respondents to look through the product categories without flipping to the end of the survey. Questions O2 – O4 were added due to sponsor interest.

In question O1, some respondents were confused about how to track partial loads. Most of the respondents did not have either a full or empty vehicle 100% of the time. While answering question O3, many respondents pointed out that ‘backhauls’ are not empty. Backhauls are an extra load a driver may take on if the load needed to go in the direction of their home base. Driving empty is called ‘deadheading.’ For question O4, all respondents said this would always be ‘yes.’

Overall, the round 2 version of question O2 tested much better than the previous version. Most respondents seemed to understand how to answer this question. Some respondents still thought the answers had to sum to 100%. One respondent stated he would not answer, as this was too much work. One respondent was confused by ‘loaded’ miles. Since he left his tools in his truck all the time, all of his

mile were loaded and that would be very difficult to estimate. This same R would not have even included the tools in his answer to this question. One respondent mentioned that this list is similar to the Department of Transportation permits list. One respondent mentioned 'compressed bottles' and was unsure of what category those would belong to.

Recommendation(s):

- For question O1, split this question into multiple questions.
 - O1: "What was the approximate percent of this vehicle's 2020 mileage for each of the following categories?"
 - Empty – NOT CARRYING any products, tools, equipment, or materials: ____%
(If you report 100% empty, go to Section O – Contact Information)
 - Loaded – CARRYING products, tools, equipment, or materials: ____%
 - O2: "What was the approximate percent of this vehicle's 202X mileage that this vehicle was filled to physical capacity (cubed out)? *Round to the nearest whole percent.*"
 - Vehicle was filled to physical capacity (cubed out): ____%
 - O3: "What was the approximate percent of this vehicle's 202X mileage that this vehicle was filled to weight limit (weighed out)? *Round to the nearest whole percent.*"
 - Vehicle was filled to weight limit (weighed out): ____%
- For O3, Consider rephrasing: "What was the approximate percentage of the vehicle's 202X mileage driven empty or deadhead directly back to home base?"
- For O4, check paradata to see if all respondents answer as 'yes.' Question may be unnecessary.
- For O5, consider revised question text: "In 202X, for the miles driven during commercial activities only, which of the following products, tools, equipment, or materials were carried and what percentage of this mileage were they carried? *Percentages can add to more than 100% if more than one type of tool or product was carried at the same time. Round to the nearest whole percent.*"
 - In the table, change 'Percentage of loaded miles' to 'Percentage of commercial miles.'
 - Consider adding 'compressed bottles' into one of the 'petroleum products' categories.
 - Check totals in the paradata to determine if Rs are reaching a total of 100% or if they are skipping this question.

Section P: Hazardous Materials

No changes were made between rounds 1 and 2. Only a few respondents had any experience with hazmat driving. For the few respondents that answered this section, none of them had issues with questions P1 and P2. For question P3, one respondent stated that they would need to pull this information by customer, but stated that larger companies may have more sophisticated systems. This respondent believed that his would be difficult for a smaller company.

Recommendation(s):

- No recommendations needed.

Section Q: Contact Information

No changes were made between rounds 1 and 2. Respondents had no issue with this section.

Recommendation(s):

- No recommendations needed.

Appendix A: Draft Questions, Round 1

Vehicle Inventory and Use Survey (VIUS)

Form 9502-2018 VIUS Tractor Trailers

The due date for the **2018 VIUS** is **Month dd, yyyy**.

- If you have any questions, please call us at **1-800-###-####**, weekdays between 8:00 a.m. and 5:00 p.m., Eastern Time.
- **YOUR RESPONSE IS REQUIRED BY LAW.** Title 13, United States Code (U.S.C.), Sections 131 and 182 authorizes this collection. Sections 224 and 225 require your response. The U.S. Census Bureau is required by Section 9 of the same law to keep your information **CONFIDENTIAL** and can use your responses only to produce statistics. The Census Bureau is not permitted to publicly release your responses in a way that could identify your business, organization, or institution. Per the Federal Cybersecurity Enhancement Act of 2015, your data are protected from cybersecurity risks through screening of the systems that transmit your data.
- This collection has been approved by the Office of Management and Budget (OMB). The eight-digit OMB approval number is **####-####** and appears at the upper right of this screen. Without this approval we could not conduct this survey.

A - REGISTRATION INFORMATION

All questions on this form refer to the vehicle identified by the following registration information:

Vehicle Make	Model Year	State	License Plate	Vehicle Identification Number (VIN)

1. Is the vehicle identified above still in your or your company's possession?
 - Yes (*Go to section C – Acquisition on page 3*)
 - No (*Go to section B – Disposal on page 2*)

B - DISPOSAL

1. Did you dispose of this vehicle prior to January 1, 2018?
 - Yes (*Go to section R – Contact Information on page 35*)
 - No (*Continue with question 2 below*)

2. When did you dispose of this vehicle?
Enter 2-digit month and 4-digit year.
Month ____ / Year ____

3. How did you dispose of this vehicle?
Select ONE only.
 - Sold or gave it away
 - Traded it in
 - Junked, scrapped, or otherwise destroyed it
 - Returned it to leasing company
 - Repossessed

NOTE: If you disposed of this vehicle after January 1, 2018, answer all of the remaining applicable questions according to how you used the vehicle during 2018. If you disposed of this vehicle prior to January 1, 2018 skip to section R – Contact Information on page 35.

C – Acquisition

1. When did you obtain this vehicle?
*If purchased after lease, report the date you **originally** took possession of this vehicle. Enter 2-digit month and 4-digit year.*
Month ____ / Year ____

2. Was this vehicle new when you obtained it?

Select ONE only.

- ☐ Yes
- ☐ No

D – LEASING

NOTE: This section pertains to ownership leasing. Rental agreements are NOT covered.

1. Was this vehicle leased during 2018?

Select ONE only.

- ☐ No (*Go to section E – TYPE OF VEHICLE on page 5*)
- ☐ Yes, leased this vehicle FROM someone else) (*Continue with question 2 below*)
- ☐ Yes, leased this vehicle TO someone else) (*Continue with question 2 below*)

2. How did you lease this vehicle?

Select ONE only.

- ☐ Vehicle only
- ☐ Vehicle with driver

3. Was the leasing agreement for 12 months or more?

Select ONE only.

- ☐ Yes
- ☐ No

4. Which of the following did the leasing agreement include?

Select ALL that apply.

- ☐ Financing
- ☐ Full maintenance
- ☐ Payment of taxes (such as state or federal highway use taxes)
- ☐ Obtaining licenses and permits
- ☐ Recordkeeping
- ☐ Fuel contract

E – TYPE OF VEHICLE

1. In 2018, which best described this vehicle?

Select ONE only.

- ☐ Tractor (truck tractor or road tractor) (*Go to section F – PHYSICAL CHARACTERISTICS on page 6*)
- ☐ Other truck (with or without a trailer) (*Continue with question 2 below*)

2. For trucks other than tractors, which of the following most closely resembles this truck's body type?

Select ONE only.

- ☐ Armored
- ☐ Beverage
- ☐ Concrete mixer
- ☐ Concrete pumper
- ☐ Crane
- ☐ Curtainside
- ☐ Dump (including belly or bottom dump)
- ☐ Flatbed (including any with added devices), stake, platform, etc.
- ☐ Low boy (platform with depressed center)
- ☐ Pole, logging, pulpwood, or pipe
- ☐ Service, utility, (telephone line, cable, pipeline, etc.)
- ☐ Service, other (mobile workshop, "craftsman's vehicle", etc.)
- ☐ Street sweeper
- ☐ Tank, dry bulk
- ☐ Tank, liquids or gases
- ☐ Tow/Wrecker (including flatbed type)
- ☐ Trash, garbage, or recycling
- ☐ Vacuum
- ☐ Van, basic enclosed (dry cargo)
- ☐ Van, insulated non-refrigerated
- ☐ Van, insulated refrigerated
- ☐ Van, open top (including low-side grain, fruit, potato bed, etc.)
- ☐ Van, step, walk-in, or multistep (including hi-cube or cutaway)
- ☐ Van, other
- ☐ Other not elsewhere classified: _____

F – PHYSICAL CHARACTERISTICS

NOTE: This section pertains to the power unit ONLY. Do not include information for any trailer(s) pulled.

1. In 2018, what was the total number of axles, including liftable axles, on this vehicle?

Select ONE only.

- ☐ Two
- ☐ Three
- ☐ Four
- ☐ Five or more

2. How many tires are on the rear axle?

- ☐ Two
- ☐ Four

3. From question 1 above, how many axles were liftable axles?

Select ONE only.

- ☐ None (*Go to question 6 on page 7*)
- ☐ One axle
- ☐ Two axles
- ☐ Three or more axles

4. From question 3 above, how many of the liftable axles are located in the following locations?

Total number of axles indicated for this question should equal the total number of axles indicated in question 3 above.

Axles forward of the drive axle: _____

Axles behind the drive axle – below the chassis: _____

Axles behind the drive axle – extending beyond the chassis: _____

5. From question 3 above, how many liftable axles were braking axles?

Select ONE only.

- ☐ None
- ☐ One axle
- ☐ Two axles
- ☐ Three or more axles

6. What type of brakes did this vehicle have?

Select ONE only.

- ☐ Hydraulic (standard)
- ☐ Hydraulic with power assist
- ☐ Air
- ☐ Other – please specify: _____

7. What type of cab did this vehicle have?

Select ONE only.

- ☐ Conventional cab (*Continue with question 8*)
- ☐ Cab over engine (*Continue with question 8*)
- ☐ Cab forward of engine (*Go to question 9*)
- ☐ Cab beside engine (*Go to question 9*)

8. Does the cab of this vehicle contain a sleeper?

Select ONE only.

- ☐ Yes
- ☐ No

9. In 2018, what was the height of this vehicle's cabin?

Feet: _____ Inches: _____

10. What type of transmission did this vehicle have?

Select ONE only.

- ☐ Automatic
- ☐ Manual
- ☐ Semi-automated manual (driver shifts with an electronic module)
- ☐ Automated manual (no driver shifting – done electronically)

11. How many gears did this vehicle have?

Number of gears: _____

12. Did this vehicle have any of the following permanent equipment?

Select ALL that apply.

- ☐ Aerial work platform/bucket
- ☐ Air bag(s) (safety device only)
- ☐ Air compressor (except for air brakes)
- ☐ Air-conditioning
- ☐ Air springs
- ☐ Anti-lock brake system
- ☐ Automatic engine shutoff technology
- ☐ Automatic tire inflation system
- ☐ Bobtail
- ☐ Collusion warning system
- ☐ Computerized drive train control unit
- ☐ Christmas tree
- ☐ Crane
- ☐ Electronic vehicle identification device (transponder) etc.
- ☐ Engine retarder/brake
- ☐ Hoist
- ☐ Idle-reducing technology (portable auxiliary pack, electrification, etc.)
- ☐ Internet access
- ☐ Lift gate
- ☐ Low rolling resistance tires on the drive wheels
- ☐ Low rolling resistance tires on the steering wheels
- ☐ Mounting bar for snowplow
- ☐ Multi-hazmat
- ☐ Navigational system
- ☐ Power take-off
- ☐ Propane
- ☐ Radial tires
- ☐ Reflective material IN ADDITION to those required by law
- ☐ Road speed governor
- ☐ Route guidance technology
- ☐ Single-wide tires
- ☐ Tire pressure monitoring system
- ☐ Toolbox
- ☐ Trip recorder or on-board computer WITH remote communication capabilities
- ☐ Trip recorder or on-board computer WITHOUT remote communication capabilities
- ☐ Winch

13. What was this vehicle's towing capacity in pounds?

_____ Pounds

G – TIME OPERATED

1. During 2018, what reasons (if any) was this vehicle NOT in use for periods of 90 consecutive days or more?

Select ALL that apply.

- ☐ Not applicable
- ☐ Seasonal
- ☐ Not needed/idle (excluding seasonal)
- ☐ Under repair
- ☐ Other – please specify:

2. During 2018, how many months was this vehicle used?

Round to the nearest whole month. Select ONE only.

- ☐ 12 months
- ☐ 7-11 months
- ☐ 2-6 months
- ☐ 1 month or less
- ☐ Vehicle not used (no miles driven) (*Go to section R – CONTACT INFORMATION on page 35*)

H – HOME BASE

1. Did this vehicle operate from a home base location during 2018?

Home base refers to the location where the vehicle was usually parked when it was not on the road, such as a home, farm, terminal, etc. Vehicles that might NOT operate from a home base are typically consumer one-way rentals or some over-the-road truck tractors. If this vehicle is on lease to someone else, answer ALL home base questions as they pertain to the lessee. Select ONE only.

- ☐ Yes (*Continue with question 2 below*)

- No (Go to section I – MILES on page 14)
- 2. Where was the home base of this vehicle on July 1, 2018?
If this vehicle was put into service after July 1, 2018, enter current home base.

City: _____
County/Parish/Borough (or equivalent): _____
State: _____
ZIP Code: _____

- 3. What was the type of home base from which this vehicle operated?
Select ONE only.

- Company office/headquarters
- Terminal
- Distribution center
- Manufacturing plant
- Fuel Distributor
- Liquefaction plant
- Private residence (home, farm, etc.)
- Other – please specify: _____

- 4. Of the following, how many trucks/trailers do you or your company operate from the home base location indicated above?

Pickups, small vans (including minivans), and sport utility vehicles: _____
Tractors (power units only): _____
All other trucks: _____
Trailers (including trailer mounted equipment): _____
Converter dollies: _____

I – MILES

- 1. How many miles was this vehicle driven in 2018?
Round to the nearest whole mile.

Miles: _____

2. What was the approximate percent of this vehicle's 2018 mileage for each of the following jurisdictions?

Round to the nearest whole percent.

Operated in Canada: _____%

Operated in Mexico: _____%

Operated within the home base state: _____%

Operated in states other than the home base state (or has no home base):
_____%

3. How was the annual mileage calculated?

- ☐ Odometer readings
- ☐ Gas receipts
- ☐ Trip meter
- ☐ GPS
- ☐ Other: _____

4. How many miles has this vehicle been driven since it was manufactured?

If the odometer has turned over, please enter the figure for the total amount. If the vehicle is no longer in your possession, enter the figure when you last operated the vehicle. Round to the nearest whole mile.

Miles: _____

5. How many miles-per-gallon (mpg) did this vehicle average during 2018?

If compressed natural gas (CNG) is used, give miles per gasoline gallon equivalent (GGE). 1 GGE = 123 cubic feet CNG. Report to the nearest tenth.

MPG: _____

6. How was miles-per-gallon (mpg) calculated?

- ☐ Odometer readings
- ☐ Gas receipts
- ☐ Trip meter
- ☐ GPS
- ☐ Other: _____

7. What was the approximate percent of this vehicle's 2018 mileage accounted for by the type of trips listed below?

If this vehicle does not operate from a home base, report the average range of operation. Round to the nearest whole percent.

Trips off-the-road: _____

Trips on public or private roads within

- 50 miles or less from vehicle's home base: _____
- 51 to 100 miles from vehicle's home base: _____
- 101 to 200 miles from vehicle's home base: _____
- 201 to 500 miles from vehicle's home base: _____
- 501 miles or more from vehicle's home base: _____

8. What was the approximate percent of this vehicle's 2018 mileage accounted for by the type of trips listed below?

Round to the nearest whole percent.

Vehicle was cubed out: _____%

Vehicle was weighed out: _____%

Vehicle was empty: _____%

9. On average, in 2018, how many hours per week did this vehicle spend:

Round to the nearest hour.

Operating: _____ hours

Idling: _____ hours

Using auxiliary power: _____ hours

J – FUEL AND MAINTAINANCE

1. During 2018, what type of fuel or fuel combination was most often used in this vehicle?

Select ALL that apply.

- ☐ Gasoline (including gasohol)
 - ☐ Diesel (including biodiesel)
 - ☐ Natural gas (compressed or liquid)
 - ☐ Propane (liquefied petroleum gas)
 - ☐ Alcohol fuels (ethanol or methanol)
 - ☐ Electricity
 - ☐ Other – please specify:
-

2. During 2018, at what type of location was this vehicle typically refueled or recharged?

Select ONE only.

- ☐ Gas station
 - ☐ Truck stop
 - ☐ Your own facility (including home, farm, ranch, on-site by mobile supplier, etc.)
 - ☐ Other company's/contractor's facility not open to the public
 - ☐ Other – please specify:
-

3. During 2018, who performed any GENERAL maintenance (oil change, brake change, headlight replacement, etc.) on this vehicle?

Select ALL that apply.

- ☐ None performed (*Skip question 4, proceed to question 5*)
- ☐ Company-owned maintenance facility
- ☐ General repair business or private mechanic (includes gas stations, truck stops, parts stores, etc.)
- ☐ Dealership service department
- ☐ Leasing company
- ☐ Yourself, spouse, friend, etc. while not employed/paid by any maintenance type facility
- ☐ Other – please specify:

4. What was the total cost of all GENERAL maintenance in 2018?

Round to the nearest whole dollar.

\$_____.00

5. During 2018, were any EXTENSIVE repairs (driveline repair, engine repair/rebuild, transmission repair/rebuild, differential repair/rebuild, etc.) performed on this vehicle?

Select ONE only.

- ☐ Yes (*Continue with question 6 below*)
- ☐ No (*Skip questions 6 and 7, proceed to question 8 on page 18*)

6. What was the total cost of all EXTENSIVE repairs in 2018?

Round to the nearest whole dollar.

\$_____.00

7. Who performed these EXTENSIVE repairs?

Select ALL that apply.

- ☐ Company-owned maintenance facility
- ☐ General repair business or private mechanic (includes gas stations, truck stops, parts stores, etc.)
- ☐ Dealership service department
- ☐ Leasing company
- ☐ Yourself, spouse, friend, etc. while not employed/paid by any maintenance type facility
- ☐ Other – please specify:

8. Has this vehicle's engine EVER been rebuilt?

Select ONE only.

- ☐ Yes (*Continue with question 9 below*)
- ☐ No (*Go to section K – Vehicle Configuration on page 19*)

9. In what year was this vehicle's engine LAST rebuilt?

Year (4 digit): ____ ____ ____ ____

K – VEHICLE CONFIGURATION

1. In 2018, what percent of the miles driven by this vehicle were in each of the following configurations?

Trailer mounted equipment should be treated as a trailer.

No trailer pulled: _____ %
Single trailer pulled: _____ %
Double trailers pulled: _____ %
Triple trailers pulled: _____ %

2. Referring to the most common configuration indicated in question 1 (no trailer or trailer pulled), what was the total length of this vehicle or vehicle/trailer combination?
Report distance, in feet, from front bumper to rear of vehicle or trailer(s). Select ONE only.

- ☐ Less than 16.0 feet
- ☐ 16.0 to 19.9 feet
- ☐ 20.0 to 27.9 feet
- ☐ 28.0 to 35.9 feet
- ☐ 36.0 to 40.9 feet
- ☐ 41.0 to 44.9 feet
- ☐ 45.0 to 49.9 feet
- ☐ 50.0 to 54.9 feet
- ☐ 55.0 to 59.9 feet
- ☐ 60.0 to 64.9 feet
- ☐ 65.0 to 69.9 feet
- ☐ 70.0 to 74.9 feet
- ☐ 75.0 to 79.9 feet
- ☐ More than 80.0 feet

NOTE: If the highest percentage reported in section K, question 1 was:

- No trailer pulled, skip to Section L – WEIGHT on page 25.
- Single trailer pulled, continue to next question on page 20.
- Double trailer pulled, skip to question 6 on page 21.
- Triple trailer pulled, skip to question 10 on page 22.

Single Trailer

3. How many axles were on this trailer?
Select ONE only.

- ☐ One
- ☐ Two
- ☐ Three or more

4. What was the length, in feet, of this trailer?
Round to the nearest whole number.

_____ feet

5. What was the exterior width of this trailer?

Select ONE only.

- ☐ 96 inches
- ☐ 102 inches
- ☐ Other – please specify: _____

Double Trailer

6. How many axles were on this trailer configuration, including any converter dollies?

Do NOT include any axles on the power unit. Select ONE only.

- ☐ Three
- ☐ Four
- ☐ Five
- ☐ Six or more

7. What was the length, in feet, of each trailer?

Round to the nearest whole number.

First trailer: _____feet

Second trailer: _____feet

8. What was the exterior width of the first trailer?

Select ONE only.

- ☐ 96 inches
- ☐ 102 inches
- ☐ Other – please specify: _____

9. What was the exterior width of the second trailer?

Select ONE only.

- ☐ 96 inches
- ☐ 102 inches
- ☐ Other – please specify: _____

Triple Trailer

10. How many axles were on this trailer configuration, including any converter dollies?
Do NOT include any axles on the power unit. Select ONE only.

- ☐ Five
- ☐ Six
- ☐ Seven
- ☐ Eight or more

11. What was the length, in feet, of each trailer?
Round to the nearest whole number.

First trailer: _____ feet

Second trailer: _____ feet

Third trailer: _____ feet

12. What was the exterior width of the first trailer?
Select ONE only.

- ☐ 96 inches
- ☐ 102 inches
- ☐ Other – please specify: _____

13. What was the exterior width of the second trailer?
Select ONE only.

- ☐ 96 inches
- ☐ 102 inches
- ☐ Other – please specify: _____

14. What was the exterior width of the third trailer?

Select ONE only.

- ☐ 96 inches
- ☐ 102 inches
- ☐ Other – please specify: _____

15. Which type of trailer resembles that most often attached to this vehicle?

Select ONE only.

- ☐ Automobile carrier (excluding curtain, van, or flatbed)
- ☐ Beverage
- ☐ Curtainside
- ☐ Dump (including belly or bottom dump)
- ☐ Flatbed, platform, etc.
- ☐ Livestock (including livestock drop frame)
- ☐ Low boy (platform with depressed center)
- ☐ Mobile home toter
- ☐ Open top (including vans, low-side grain, fruit, etc.)
- ☐ Pole, logging, pulpwood, or pipe
- ☐ Refrigerated trailer
- ☐ Tank, cryo
- ☐ Tank, dry bulk
- ☐ Tank, liquids or gases (non-pressurized)
- ☐ Tank, liquids or gases (pressurized)
- ☐ Trailer mounted equipment
- ☐ Van, basic enclosed (dry cargo)
- ☐ Van, drop frame (excluding livestock)
- ☐ Van, insulated non-refrigerated
- ☐ Van, insulated refrigerated
- ☐ Other not elsewhere classified – please specify:

16. Does the trailer have any of the following add-on equipment?

Select ALL that apply.

- ☐ Aluminum wheels
- ☐ Front faring
- ☐ Lightweight landing gear
- ☐ Rear faring
- ☐ Side skirts
- ☐ Undercarriage aerodynamic devices
- ☐ None of the above

L – WEIGHT

1. Referring to the most common configuration Question K-1 (no trailer, single trailer, double trailers, or triple trailers pulled), what was the empty weight of this vehicle or vehicle/trailer combination?

Round to the nearest whole pound.

_____pounds

2. What was the average weight (vehicle weight plus cargo weight) of this vehicle or vehicle/trailer combination as it was most often operated when carrying a typical payload during 2018?

Round to the nearest whole pound.

_____pounds

3. What was the average payload, in pounds, transported by this vehicle or vehicle/trailer combination during 2018?

_____ pounds

4. What were the average hours per week that the trailer(s) was permitted over weight?

_____ hours

M – KIND OF BUSINESS

1. Which of the following best describes your business (or part of your business) in which this vehicle was most often used during 2018?

If vehicle was leased, indicate business of lessee. Select ONE only.

- ☐ For-hire transportation or warehousing
- ☐ Vehicle leasing or rental (includes short-term rentals)
- ☐ Agriculture, forestry, fishing, or hunting
- ☐ Mining (includes quarrying, well operations, and beneficiating)
- ☐ Fuel wholesale or distribution
- ☐ Utilities (includes electric power, natural gas, steam supply, water supply, and sewage removal)
- ☐ Construction (includes land subdivision and development, as well as construction activity by special trade contractors)
- ☐ Manufacturing
- ☐ Wholesale trade
- ☐ Retail Trade
- ☐ Information services (includes telephone and television)
- ☐ Waste management, landscaping, or administrative/support services
- ☐ Arts, entertainment, or recreation services
- ☐ Accommodation or food services (for immediate consumption)
- ☐ Other services, including real estate, nonvehicle leasing or rental, educational, health care, social assistance, finance, insurance, professional, scientific, or technical services
- ☐ Other – please specify:

2. Approximately, what percent of this vehicle's 2018 mileage was from each of the following operator classifications?

Round to the nearest whole percent.

Private (carry own goods, or use truck for internal company business only):

_____%

Motor carrier (company owned trucks hired to carry other people's goods):

_____%

Owner operator (independent truckers hired to carry other people's goods):

_____%

Rental (daily and other short term): _____%

Personal transportation: _____%

NOTE: If your highest percentage occurs for:

- Motor Carrier or Owner Operator, continue to section N – FOR-HIRE on page 28.
- Private or Rental, skip to section O – EMPTY on page 30.
- Personal transportation, go to section R - CONTACT INFORMATION on page 35.

N – FOR-HIRE

1. What was the approximate percent of this vehicle or vehicle/trailer combination's 2018 mileage for each of the following kinds of carrier?

Round to the nearest whole percent.

Contract (offered transportation services to certain shippers under specific contracts): _____%

Common (offered transportation services to the general public over regular and irregular routes): _____%

2. What was the approximate percent of this vehicle or vehicle/trailer combination's 2018 mileage for each of the following kinds of service?

Round to the nearest whole percent.

Truckload (a single shipment carried at one time): _____%

Less-than-truckload (multiple shipments carried at one time): _____%

3. In 2018, what percent of this vehicle or vehicle/trailer combination's hauls (including backhauls) were found from the following sources?

Round to the nearest whole percent.

- Shippers or receivers directly
- Brokers
- Centralized markets or exchanges
- Other – please specify: _____

4. From ANY of the sources listed in question 3 above, what percent were found through the use of the Internet?

Round to the nearest whole percent.

Sources found through the use of the internet: _____%

5. In 2018, how many pickups and/or deliveries did this vehicle or vehicle/trailer combination average in a week?

Round to the nearest number, including zero.

Pickups and/or deliveries: _____

O – Empty

1. What was the approximate percent of this vehicle's 2018 mileage for each of the following categories?

Empty – NOT CARRYING any products, tools, equipment, or materials: _____%

Loaded – CARRYING products, tools, equipment, or materials: _____%

NOTE: If you reported 100% for empty mileage, skip to section R – CONTACT INFORMATION on page 35.

P – PRODUCT, EQUIPMENT, OR MATERIALS

1. During 2018, what products, tools, equipment, or materials did this vehicle carry, and what approximate percent of LOADED mileage were they carried?

Categorize your products, tools, equipment, or materials carried into the groupings provided on pages 36 - 37. Each applicable grouping code should be entered only once. Each item carried should be categorized into ONLY ONE GROUP. Include any backhauls, trip leasing, etc. Round to the nearest whole percent.

Example: If the vehicle carried landscaping tools and hauled debris away, your response might be similar to this:

Product Code (with example description)	Percent of Loaded Miles (with example scenarios)
22 (For items such as rakes, shovels, handsaws, etc.)	100% (When carried for all of the loaded miles)
23 (For items such as leaf blowers, chainsaws, etc.)	100% (When carried for all of the loaded miles)
18 (For tree limbs, wood chips, etc.)	50% (When carried for half of the loaded miles)
44 (For grass clippings or other waste)	25% (When carried for one quarter of the loaded)

Product Code	Percent of Loaded Miles
	%
	%
	%
	%
	%

Q – HAZARDOUS MATERIALS

1. At any time during 2018, was this vehicle used to transport hazardous materials in quantities large enough to have a hazmat placard on the vehicle as required by 49 CFR Part 172 Subpart F?

Select ONE only.

- ☐ Yes (Continue to question 2)
- ☐ No (Skip to section R – CONTACT INFORMATION on page 35)

2. What approximate percent of 2018 mileage did this vehicle transport hazardous materials in quantities large enough to have a hazmat placard on the vehicle as required by 49 CFR Part 172 Subpart F?

Round to the nearest whole percent.

_____ %

3. What was the approximate percent of 2018 mileage for which this vehicle carried each of the following types of hazardous material(s)?

Only report percentages for those hazardous materials carried in quantities large enough to have a hazmat placard on the vehicle. Percentages can add to more than 100% if more than one hazardous material was carried at the same time.

Round to the nearest whole percent.

Division/Class	Placard Name	Percentage of Mileage
Division 1.1	Explosives 1.1	%
Division 1.2	Explosives 1.2	%
Division 1.3	Explosives 1.3	%
Division 1.4	Explosives 1.4	%
Division 1.5	Explosives 1.5	%
Division 1.6	Explosives 1.6	%
Division 2.1	Flammable gas	%
Division 2.1	LPG (Liquefied petroleum gas)	%
Division 2.1	Methane gas	%
Division 2.2	Nonflammable gas	%

Division 2.3	Poison gas	%
Division 4.1	Flammable solid	%
Division 4.2	Spontaneously combustible	%
Division 4.3	Dangerous when wet	%
Division 5.1	Oxidizer	%
Division 5.2	Organic peroxide	%
Division 6.1	Poison	%
Division 6.1	Poison (Poisonous liquid with no inhalation hazard)	%
Class 3	Flammable	%
Combustible liquid	Combustible	%
Oxygen 2	Oxygen	%
Class 7	Radioactive	%
Class 8	Corrosive	%
Class 8 A	Corrosive liquid which is a PIH Zone A	%
Class 8 B	Corrosive liquid which is a PIH Zone B	%
Class 9	Miscellaneous hazardous materials	%
	Elevated temperature material	%
	Infectious waste	%
	Marine pollutants	%
	Hazardous sub (reportable quantity)	%
	Hazardous waste	%
	Other regulated material (ORM)	%

R – CONTACT INFORMATION

Last Name: _____
First Name: _____
Middle Initial: _____
Street Address: _____
Street Address 2: _____
City (or city equivalent): _____
State: _____
Zip Code: _____
Phone Number (10 digit): _____
Extension: _____
Email: _____
Date of Filing (MM/DD): ____ ____ / ____ ____

Product Codes

Agricultural and animal products

Animals and fish, live (01)

Animal feed and products of animal origin (eggs, hides, etc. (02)

Grains, cereal (wheat, corn, rye, etc.) (03)

All other agricultural products (crops, live plants, bulbs, flowers, etc.) (04)

Chemicals and chemical products

Basic chemicals (hydrogen, oxygen, hydrochloric acid, chlorine, sodium hydroxide etc.) (05)

Fertilizers and fertilizer materials (06)

Pharmaceutical products (including blood, organ, gauze, etc. (07)

All other chemical products and preparations (08)

Food products, alcohol, and tobacco

Alcoholic beverages (09)

Bakery and milled grain products (baked snack good, pasta, cereal, etc.) (10)

Meat, seafood, and their preparations (11)

Tobacco products (cigarettes, cigars, chewing tobacco, etc.) (12)

All other prepared foodstuffs (dairy products, fats, food oils, sauces, spices, etc.) (13)

Forestry, wood, and paper products

Logs and other wood in the rough (logs for lumber, pulping, fuel, etc.) (14)

Paper or paperboard articles (toilet paper, paper towels, wallpaper, envelopes, etc.) (15)

Printed products (books, brochures, newspapers, etc.) (16)

Pulp, newsprint, paper, and paperboard (newsprint in large rolls, napkin stock, etc.) (17)

Wood products (wood chips, plywood, doors, windows, etc.) (18)

Manufactured metal and mineral products

Articles of base metal (pipes, nails, screws, tubes, fittings, locks, etc.) (19)

Base metal in primary or semifinished forms (bars and rods of steel or iron, etc.) (20)

Nonmetallic mineral products (cement, bricks, glass, concrete products, mirrors, etc.) (21)

Other manufactured products or equipment

Tools, non-powered (22)

Tools, powered (23)

(Continued on next page)

Electronic and other electrical equipment (telephones, VCRs, computer equipment,

etc.) (24)

Furniture, mattresses, lamps, etc. (25)

Machinery (motors, turbines, air conditioning equipment, fans, dishwashers, etc.) (26)

Miscellaneous manufactured products (toys, sports equipment, jewelry, clocks, etc.) (27)

Precision instruments and apparatus (cameras, eyewear, measuring instruments, etc.) (28)

Textile, leather, and related articles (footwear, yarns, threads, comforters, etc.) (29)

Vehicles, including parts (cars, motorcycles, trailers, etc.) (30)

All other transportation equipment (aircraft, boats, locomotives, etc.) (31)

Mining materials (raw form)

Coal (non-agglomerated and agglomerated) (32)

Crude petroleum (33)

Gravel or crushed stone (34)

Metallic ores and concentrates (35)

Monumental or building stone (marble, limestone, granite, sandstone, etc.) (36)

Natural sands (37)

All other nonmetallic minerals (salt, table salt, clays, asbestos, dolomite, etc.) (38)

Petroleum products (refined)

Fuel oils (diesel, Bunker C, etc.) (39)

Gasoline and aviation turbine fuel (40)

Plastics and rubber (tires, blinds, articles made of plastics or rubber, mud flaps, etc.) (41)

Natural Gas (42)

All other coal and refined petroleum products (greases, propane, etc.) (43)

Waste, refuse, and recycling

Hazardous waste (EPA manifest) (44)

All other waste and scrap (including trash, yard waste, biosludge, non-EPA manifested hazardous materials, etc.) (45)

Recyclable products (46)

Miscellaneous

Mail and courier parcels (47)

Empty shipping containers (48)

Passengers (49)

Mixed freight (for-hire carriers that haul multiple commodities on the same load) (50)

Products, equipment, or materials not elsewhere classified (99)

Appendix B: Interview Protocol, Round 1

Cognitive Interviewing Protocol: Vehicle Inventory and Use Survey (VIUS) Form 9502 VIUS Tractor Trailers

Interviewer notes are in red.

Introduction:

- Explain purpose of meeting: to obtain feedback on VIUS content, to understand the process of answering questions, and to evaluate how questions work or don't work.
- Some questions may seem odd and/or obvious, but we don't want to assume we know what you are thinking.
- Explain that we are *not* testing the respondent – we only want to evaluate the questionnaire
- Structure of meeting: Understand your business and your role in it, then review the questionnaire and ask you questions as you complete it.
- Permission to record discussion for note taking purposes? This study is being conducted under the authority of Title 13 USC. We plan to use your feedback to improve the form for future data collections. Only staff involved in this design research will have access to the recording. **Have R sign consent form.**

Research Questions to Address:

- Are respondents able to answer the questions as intended?
- Are there any items that cause the respondents problems?
 - What can be done to fix those problems?
- Are there any order/context effects?

Before the Questionnaire:

- What types of goods or services does this business provide?
- What is your role in the company? What kind of responsibilities do you have?
- Have you received other surveys from the Census Bureau or other agencies? If so, which ones? Did you complete those surveys?
- Do you have any experience with this questionnaire?
- What types of records do you typically keep on your vehicles
 - *(If part of a larger organization)*: Do you have access to all of the records related to vehicles in your company?

Provide VIUS 9502 Tractor Trailer form to participant.

I'd like for you to go through the survey question by question. As you're going through it, I'd like you to tell me your thought process for answering the questions and how easy or difficult the question is to answer.

Survey Introduction

- What do you consider to be the most important pieces of information in this section?
- Is there any information missing?

A – Registration Information

- How would you answer this question?
- Is this all of the information you need to identify the correct vehicle?
 - If not, what other information could we provide?
- Is this information available in your records?
- How easy or difficult is this information to obtain?

B – Disposal

- For each question:
 - How would you answer this question?
 - Is this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 3 (if applicable):
 - Can you think of any other methods of disposal not listed here?
- **Note if respondent reads and understands 'NOTE'**

C – Acquisition

- For each question:
 - How would you answer this question?
 - Is this information available in your records?
 - How easy or difficult is this information to obtain?

D – Leasing

- For each question:
 - How would you answer this question?
 - Is this information available in your records?
 - How easy or difficult is this information to obtain?
 - *(If respondent answered 'yes')* When did you lease the vehicle?
 - How would you proceed through the survey?
- When answering these questions, did you include or exclude rental agreements?

E – Type of Vehicle

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 2:
 - Are these categories clear or unclear?
 - *(If respondent answers 'other'):* How would you describe your vehicle?

F – Physical Characteristics

- How would you define 'power unit?'
- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 1:
 - How would you define 'liftable' axles?
- Question 4, 6, 7, 10, 12:
 - Are these categories clear or unclear?
- Question 12:
 - How would you define 'navigational system?'
 - Would you consider a 'navigational system' the same as or different to 'route guidance technology?'

G – Time Operated

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 1:
 - *(If respondent answers 'other'):* What would you enter for other?
- Question 2:
 - *(If respondent answers 'Vehicle not used'):* Why was the vehicle not used?

H – Home Base

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 1:
 - How would you define ‘home base’ in your own words?
 - *(If respondent is the Lessor)*: If this information you would have?
- Question 3:
 - Are these categories clear or unclear?
 - *(If respondent answers ‘other’)*: What would you enter for other?
- Question 4:
 - When answering this question, were you only considering vehicles used for commercial purposes, or did you also include vehicles that are strictly for personal use?

I – Miles

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 3:
 - *(If respondent answers ‘other’)*: What would you enter for other?
 - Why did you choose this method of estimation?
- Question 6:
 - Why did you choose this/these methods of estimation?
- Question 8:
 - What does ‘cubed out’ mean to you?
 - What does ‘weighed out’ mean to you?
- Question 9:
 - What does ‘operating’ mean to you?

J – Fuel and Maintenance

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 1, 2, 3:
 - Are the categories clear or unclear?
- Question 5:
 - How would you describe extensive repairs in your own words?
- What is the difference between maintenance and repairs in your own words?

K – Vehicle Configuration

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 1:
 - *(If applicable)*: What other trailer mounted equipment do you have?
- Question 2:
 - Note whether respondent is answering for the most common configuration from question 1.
- Question 15:
 - Are the categories clear or unclear?
 - *(If respondent answers 'other')*: What would you enter for other?
- Question 16:
 - Are the categories clear or unclear?

L – Weight

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- If respondent is a lessor:
 - How easy or difficult is it for you to answer based on how your lessee uses the vehicle?
 - Would you reach out to the lessee to obtain this information?
- Question 4:
 - What does 'permitted over weight' mean to you?

M – Kind of Business

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 1:
 - Are the categories clear or unclear?
 - *(If respondent answers 'other')*: What would you enter for other?
- Question 2:
 - Are the categories clear or unclear?
 - *(If respondent uses vehicle for personal use)*: Can you tell me about how you use your vehicle to personal transportation?

N – For-hire

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Questions 1, 2:
 - Are the categories clear or unclear?
- Question 3:
 - Are the categories clear or unclear?
 - *(If respondent answers 'other'):* What would you enter for other?
- Question 4:
 - *(if respondent answers $\neq 0$):* Can you give some examples?

O – Empty

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?

P – Product, Equipment, or Materials

- Question 1:
 - **Note if respondent looks at the product code list.**
 - How would you answer this question?
 - Are the instructions clear or unclear?
 - Is the example helpful or unhelpful?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
 - **If respondent does not look at the product code list, ask them to do so before moving to next question.**
 - Are the categories clear?
 - Can you find the product codes that are applicable to your business?

Q – Hazardous Materials

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 1:
 - Are you familiar with '49 CFR part 172 Subpart F?'
- Question 3:
 - Are the categories clear or unclear?
 - Are the instructions clear or unclear?

R – Contact Information

- For each question:
 - How would you answer this question?

Wrap Up

- In general, are the questions we covered today something that you document or have available in records?
- Throughout the survey, we refer to the year 2018. When answering the questions were you thinking about the calendar year 2018?
 - Are your records organized by calendar year?
 - If not, how are they organized? How easy or difficult is it to answer these questions based on the calendar year instead?
- *(If applicable):* Would you need to reach out to others in your company for information?
 - If so, what other areas/positions would you reach out to?
- *(If the respondent is the lessor):* How easy or difficult are these questions to answer as a lessor?
 - Would you contact the lessee to obtain any information?
- *(If the respondent is the lessee):* How easy or difficult are these questions to answer as a lessee?
 - Would you contact the lessor to obtain any information?
- About how long do you think it would take you to complete this survey?
- We plan to include some vehicle information in the request letter so that you will be able to identify the vehicle of interest in advance. What information would be most important to you in the letter?
- What would be the best way to contact you about completing the survey?
 - Mail, email, phone, etc...
- This survey will be available to answer online. Would this be your preferred method to answer?
 - What device would you use to complete the survey?
- Do you have any other comments or suggestions about anything we have discussed today?

THANK YOU FOR YOUR TIME!

Appendix C: Draft Questions, Round 2

Heavy Truck Survey

The due date for the **202X Survey** is **Month dd, yyyy**.

A - REGISTRATION INFORMATION

All questions on this form refer to the vehicle identified by the following registration information:

Vehicle Make	Model Year	State	License Plate	Vehicle Identification Number (VIN)

2. Is the vehicle identified above still in your possession OR your company's possession?
- ☐ Yes (*Go to section C – Acquisition*)
 - ☐ No (*Go to section B – Disposal*)

B - DISPOSAL

4. Did you dispose of this vehicle prior to January 1, 202X?
- ☐ Yes (*Go to section Q – Contact Information*)
 - ☐ No (*Continue with question 2*)

5. When did you dispose of this vehicle?
Enter 2-digit month and 4-digit year.
- Month ____ / Year ____

6. How did you dispose of this vehicle?

NOTE: If you disposed of this vehicle after January 1, 202X, answer all of the remaining applicable questions according to how you used the vehicle during 202X. If you disposed of this vehicle prior to January 1, 202X, skip to section Q – Contact Information.

Select ONE only.

- ☐ Sold or gave it away
- ☐ Traded it in
- ☐ Junked, scrapped, or otherwise destroyed it
- ☐ Returned it to leasing company
- ☐ Repossessed

C – Acquisition

3. When did you originally take physical possession of this vehicle?

Enter 2-digit month and 4-digit year.

Month ____ / Year ____

4. Was this vehicle new when you took physical possession of it?

Select ONE only.

- ☐ Yes
- ☐ No

D – LEASING

NOTE: This section pertains to ownership leasing. Rental agreements are NOT covered.

5. Did you lease this vehicle FROM someone else during 202X?

Select ONE only.

- ☐ Yes (Go to Section E – Type of Vehicle)

- ☐ No
- 6. Did you lease this vehicle TO someone else during 202X?
Select ONE only.
 - ☐ Yes
 - ☐ No (Go to Section E – Type of Vehicle)
- 7. How did you lease this vehicle?
Select ONE only.
 - ☐ Vehicle only
 - ☐ Vehicle with driver
- 8. Was the leasing agreement for 12 months or more?
Select ONE only.
 - ☐ Yes
 - ☐ No
- 9. Which of the following did the leasing agreement include?
Select ALL that apply.
 - ☐ Financing
 - ☐ Full maintenance
 - ☐ Payment of taxes (such as state or federal highway use taxes)
 - ☐ Obtaining licenses and permits
 - ☐ Recordkeeping
 - ☐ Fuel contract

E – TYPE OF VEHICLE

- 3. Is this vehicle a tractor (truck tractor or road tractor)?
Select ONE only.
 - ☐ Yes
 - ☐ No

4. Which body type most closely resembles this vehicle?

Select ONE only.

- ☐ Armored
- ☐ Beverage
- ☐ Box Truck
- ☐ Concrete mixer
- ☐ Concrete pumper
- ☐ Crane
- ☐ Curtainside
- ☐ Dump (including belly or bottom dump)
- ☐ Flatbed (including any with added devices), stake, platform, etc.
- ☐ Low boy (platform with depressed center)
- ☐ Pole, logging, pulpwood, or pipe
- ☐ Service, utility, (telephone line, cable, pipeline, etc.)
- ☐ Service, other (mobile workshop, "craftsman's vehicle", etc.)
- ☐ Street sweeper
- ☐ Tank, dry bulk
- ☐ Tank, liquids or gases
- ☐ Tow/Wrecker (including flatbed type)
- ☐ Trash, garbage, or recycling
- ☐ Vacuum
- ☐ Van, basic enclosed (dry cargo)
- ☐ Van, insulated non-refrigerated
- ☐ Van, insulated refrigerated
- ☐ Van, open top (including low-side grain, fruit, potato bed, etc.)
- ☐ Van, step, walk-in, or multistep (including hi-cube or cutaway)
- ☐ Van, other
- ☐ Other not elsewhere classified: _____

F – PHYSICAL CHARACTERISTICS

14. What was the total number of axles, including liftable axles, on this vehicle, excluding trailer(s)?

Select ONE only.

- ☐ Two
- ☐ Three
- ☐ Four

- Five or more

15. How many tires were on the rear axle?

Select ONE only.

- Two
- Four

16. How many of this vehicle's axles were powered?

Select ONE only.

- One
- Two
- Other – please specify: _____

17. From question 1 above, how many axles were liftable axles?

Select ONE only.

- None (*Go to question 6*)
- One axle
- Two axles
- Three or more axles

18. From question 4 above, how many of the liftable axles are located in the following locations?

Total number of axles indicated for this question should equal the total number of axles indicated in question 3 above.

Axles forward of the drive axle: _____

Axles behind the drive axle – below the chassis: _____

Axles behind the drive axle – extending beyond the chassis: _____

19. From question 4 above, how many liftable axles were braking axles?

Select ONE only.

- None
- One axle
- Two axles

- Three or more axles

20. What type of brakes did this vehicle have?

Select ONE only.

- Hydraulic (standard)
- Hydraulic with power assist
- Air
- Other – please specify: _____

21. What type of cab did this vehicle have?

Select ONE only.

- Conventional cab (*Continue with question 9*)
- Cab over engine (*Continue with question 9*)
- Cab forward of engine (*Go to question 10*)
- Cab beside engine (*Go to question 10*)

22. Did the cab of this vehicle contain a sleeper?

Select ONE only.

- Yes
- No

23. What was the exterior height of this vehicle's cabin?

Feet: _____ Inches: _____

24. What type of transmission did this vehicle have?

Select ONE only.

- Automatic
- Manual
- Both

- Other – please specify: _____

25. How many gears did this vehicle have?

Number of gears: _____

26. In 202X, did this vehicle have any of the following **standard features**?

Select all that apply.

- Air bags
- Anti-lock brake system
- Cruise control
- Driver camera
- Global Positioning System (GPS)
- Internet access
- Navigation system
- Rollover protection

27. In 202X, did this vehicle have any of the following **driver assistance features**?

Select all that apply.

- Adaptive Cruise Control
- Automated Driving System (ADS – full or partial)
- Automatic Emergency Steering
- Blind Spot Warning
- Forward Automatic Emergency Braking
- Forward Collision Warning
- Lane Departure Warning
- Lane Keeping Assistance
- Parking Assistance
- Parking Obstruction Warning
- Pedestrian Detection
- Rear Cross Traffic Warning
- Reverse Automatic Emergency Braking

28. In 202X, did this vehicle have any of the following **fuel economy features**?

Select all that apply.

- ☐ Aerodynamic bumper
- ☐ Aerodynamic hood
- ☐ Aerodynamic mirrors
- ☐ Automatic engine shutoff technology
- ☐ Automatic tire inflation system
- ☐ Fuel tank covers
- ☐ Gap reducers
- ☐ Idle-reducing technologies (portable auxiliary pack, electrification, etc.)
- ☐ Low rolling resistance tires

29. In 202X, did this vehicle have any of the following **other features**?

Select all that apply.

- ☐ Aerial work platform/bucket
- ☐ Air compressor (except for air brakes)
- ☐ Air springs
- ☐ Bobtail
- ☐ Christmas tree (chip box)
- ☐ Crane
- ☐ Electronic vehicle identification (transponder, etc.)
- ☐ Engine retarder/brake
- ☐ Hoist
- ☐ Lift gate
- ☐ Mounting bar for snowplow
- ☐ Multi-hazmat
- ☐ Power take-off
- ☐ Toolbox
- ☐ Winch

30. What was this vehicle's towing capacity in pounds?

_____ pounds

G – TIME OPERATED

3. In 202X, how many months was this vehicle used?
Round to the nearest whole month. Select ONE only.
- ☐ 12 months (Go to Section H – Home Base)
 - ☐ 7-11 months
 - ☐ 2-6 months
 - ☐ 1 month or less
 - ☐ Vehicle not used (no miles driven) *(Go to section Q – Contact Information)*
4. In 202X, what reasons (if any) was this vehicle NOT in use for periods of 90 consecutive days or more?
Select ALL that apply.
- ☐ Not applicable
 - ☐ Seasonal
 - ☐ Not needed/idle (excluding seasonal)
 - ☐ Under repair
 - ☐ Other – please specify:

H – HOME BASE

5. What was the primary function of home base from which this vehicle operated?
Home base refers to the location where the vehicle was usually parked when it was not on the road. Select ONE only.
- ☐ Private residence
 - ☐ Company office/headquarters
 - ☐ Terminal
 - ☐ Distribution center
 - ☐ Manufacturing plant
 - ☐ Farm/Agricultural Production
 - ☐ Mining or other Energy Production Site
 - ☐ Truck leasing company
 - ☐ Other – please specify: _____
 - ☐ No home base (Go to Section I - Miles)

6. Where was the home base of this vehicle on July 1, 202X?

If this vehicle was put into service after July 1, 202X, enter current home base.

City: _____

County/Parish/Borough (or equivalent): _____

State: _____

ZIP Code: _____

7. In addition to this vehicle, how many other vehicles/trailers were operated from the home base location?

Pickups, small vans (including minivans), and sport utility vehicles: _____

Tractors (power units only): _____

Any other trucks or vans: _____

Trailers (including trailer mounted equipment): _____

Converter dollies: _____

I – MILES

10. How many miles was this vehicle driven in 202X?

Round to the nearest whole mile.

Miles: _____

11. How was the annual mileage calculated?

Select all that apply.

- ☐ Odometer readings
- ☐ Gas receipts
- ☐ Trip meter
- ☐ GPS
- ☐ Other: _____

12. How many miles-per-gallon (mpg) did this vehicle average during 202X?

If compressed natural gas (CNG) is used, give miles per gasoline gallon equivalent (GGE). 1 GGE = 123 cubic feet CNG. Report to the nearest tenth.

MPG: _____

13. How was miles-per-gallon (mpg) calculated?

Select all that apply.

- ☐ Odometer readings
- ☐ Gas receipts
- ☐ Trip meter
- ☐ GPS
- ☐ Other:

14. What was the approximate percent of this vehicle's 202X mileage for each of the following jurisdictions?

Round to the nearest whole percent. Total should sum to 100%.

Operated within the home base state: _____%

Operated in states other than the home base state (or has no home base):
_____%

Operated in Canada: _____%

Operated in Mexico: _____%

15. What was the approximate percent of this vehicle's 202X mileage accounted for by the type of trips listed below?

If this vehicle does not operate from a home base, report the average range of operation. Round to the nearest whole percent. Total should sum to 100%.

Within 50 miles: _____%

51 to 100 miles: _____%

101 miles or more: _____%

16. How many miles has this vehicle been driven since it was manufactured?

If the odometer has turned over, please enter the figure for the total amount. If the vehicle is no longer in your possession, enter the figure when you last operated the vehicle. Round to the nearest whole mile.

Miles: _____

17. In 202X, what was the approximate percent of this vehicle's operating time spent idling (stationary)?

_____ %

18. In 202X, what was the approximate percent of this vehicle's operating time spent using auxiliary power?

_____ %

J – FUEL AND MAINTAINANCE

10. In 202X, what type of fuel or fuel combination was most often used in this vehicle?

If a fuel combination was used, select all that make up the combination.

Otherwise, select one only.

- ☐ Gasoline (including gasohol)
- ☐ Diesel (including biodiesel)
- ☐ Natural gas (compressed or liquid)
- ☐ Propane (liquefied petroleum gas)
- ☐ Alcohol fuels (ethanol or methanol)
- ☐ Electricity
- ☐ Other – please specify:

11. In 202X, at what type of location was this vehicle typically refueled?

Select ONE only.

- ☐ Gas station
- ☐ Truck stop
- ☐ Your own facility (including home, farm, ranch, on-site by mobile supplier, etc.)
- ☐ Other company's/contractor's facility not open to the public
- ☐ Other – please specify:

12. In 202X, who performed any GENERAL maintenance (oil change, brake change, headlight replacement, etc.) on this vehicle?

Select ALL that apply.

- ☐ General repair business or private mechanic (includes gas stations, truck stops, parts stores, etc.)
- ☐ Dealership service department
- ☐ Leasing company
- ☐ Yourself, spouse, friend, etc. while not employed/paid by any maintenance type facility
- ☐ Company-owned maintenance facility
- ☐ None performed (*Skip question 4, proceed to question 5*)
- ☐ Other – please specify: _____

13. What was the total cost of all GENERAL maintenance in 202X?

Round to the nearest whole dollar.

\$_____.00

14. In 202X, were any EXTENSIVE repairs (driveline repair, engine repair/rebuild, transmission repair/rebuild, differential repair/rebuild, etc.) performed on this vehicle?

Select ONE only.

- ☐ Yes (*Continue with question 6 below*)
- ☐ No (*Skip questions 6 and 7, proceed to question 8*)

15. Who performed these EXTENSIVE repairs?

Select ALL that apply.

- ☐ General repair business or private mechanic (includes gas stations, truck stops, parts stores, etc.)
- ☐ Dealership service department
- ☐ Leasing company
- ☐ Yourself, spouse, friend, etc. while not employed/paid by any maintenance type facility
- ☐ Company-owned maintenance facility
- ☐ Other – please specify: _____

16. What was the total cost of all EXTENSIVE repairs in 202X?

Round to the nearest whole dollar.

\$_____.00

17. Has this vehicle's engine EVER been rebuilt or overhauled?

Select ONE only.

- ☐ Yes
- ☐ No (*Go to section K – Vehicle Configuration*)
- ☐ Don't know (*Go to section K – Vehicle Configuration*)

18. In what year was this vehicle's engine LAST rebuilt or overhauled?

Year (4 digit): ____ ____ ____ ____

K – VEHICLE CONFIGURATION

17. In 202X, what percent of the miles driven by this vehicle were in each of the following configurations?

Trailer mounted equipment should be treated as a trailer. Total should sum to 100%.

No trailer pulled: _____%

Single trailer pulled: _____%

Double trailers pulled: _____%

Triple trailers pulled: _____%

NOTE: If the highest percentage reported in section K, question 1 was:

- No trailer pulled, skip to Section L – Weight.
- Single trailer pulled, continue to next question.
- Double trailer pulled, skip to question 5.
- Triple trailer pulled, skip to question 9.

Single Trailer

18. How many axles were on this single trailer configuration?

Do NOT include any axles on the power unit. Select ONE only.

- ☐ One
- ☐ Two
- ☐ Three or more

19. What was the length, in feet, of this trailer?

Round to the nearest whole number.

_____feet

20. What was the exterior width of this trailer?

Select ONE only.

- ☐ 96 inches
- ☐ 102 inches
- ☐ Other – please specify: _____

Double Trailer

21. How many axles were on this trailer configuration, including any converter dollies?

Do NOT include any axles on the power unit. Select ONE only.

- ☐ Three
- ☐ Four
- ☐ Five
- ☐ Six or more

22. What was the length, in feet, of each trailer?

Round to the nearest whole number.

First trailer: _____feet

Second trailer: _____feet

23. What was the exterior width of the first trailer?

Select ONE only.

- ☐ 96 inches
- ☐ 102 inches
- ☐ Other – please specify: _____

24. What was the exterior width of the second trailer?

Select ONE only.

- ☐ 96 inches
- ☐ 102 inches
- ☐ Other – please specify: _____

Triple Trailer

25. How many axles were on this trailer configuration, including any converter dollies?

Do NOT include any axles on the power unit. Select ONE only.

- ☐ Five
- ☐ Six
- ☐ Seven
- ☐ Eight or more

26. What was the length, in feet, of each trailer?

Round to the nearest whole number.

First trailer: _____ feet

Second trailer: _____ feet

Third trailer: _____ feet

27. What was the exterior width of the first trailer?

Select ONE only.

- ☐ 96 inches
- ☐ 102 inches
- ☐ Other – please specify: _____

28. What was the exterior width of the second trailer?

Select ONE only.

- ☐ 96 inches
- ☐ 102 inches
- ☐ Other – please specify: _____

29. What was the exterior width of the third trailer?

Select ONE only.

- ☐ 96 inches
- ☐ 102 inches
- ☐ Other – please specify: _____

30. Which type of trailer resembles that most often attached to this vehicle?

Select ONE only.

- ☐ Automobile carrier (stinger-steered)
- ☐ Automobile carrier (conventional – rack above cab)
- ☐ Automobile carrier (high mount – no rack above cab, excluding curtain, van, or flatbed)
- ☐ Beverage
- ☐ Curtainside
- ☐ Dump (including belly or bottom dump)
- ☐ Flatbed, platform, etc.
- ☐ Livestock (including livestock drop frame)
- ☐ Low boy (platform with depressed center)
- ☐ Mobile home toter
- ☐ Open top (including vans, low-side grain, fruit, etc.)
- ☐ Pole, logging, pulpwood, or pipe
- ☐ Refrigerated trailer
- ☐ Tank, dry bulk
- ☐ Tank, liquids or gases
- ☐ Trailer mounted equipment
- ☐ Van, basic enclosed (dry cargo)
- ☐ Van, drop frame (excluding livestock)
- ☐ Van, insulated non-refrigerated
- ☐ Van, insulated refrigerated
- ☐ Other not elsewhere classified – please specify:

31. Does the trailer have any of the following add-on equipment?

Select ALL that apply.

- ☐ Aluminum wheels
- ☐ Front faring
- ☐ Lightweight landing gear
- ☐ Rear faring
- ☐ Side skirts
- ☐ Undercarriage aerodynamic devices
- ☐ None of the above
- ☐ Other – please specify: _____

32. Referring to the most common configuration indicated in question 1 (no trailer or trailer pulled), what was the total length of the vehicle or vehicle/trailer combination?

Report distance, in feet, from front bumper to rear of vehicle or trailer(s). Select ONE only.

- ☐ Less than 16.0 feet
- ☐ 16.0 to 19.9 feet
- ☐ 20.0 to 27.9 feet
- ☐ 28.0 to 35.9 feet
- ☐ 36.0 to 40.9 feet
- ☐ 41.0 to 44.9 feet
- ☐ 45.0 to 49.9 feet
- ☐ 50.0 to 54.9 feet
- ☐ 55.0 to 59.9 feet
- ☐ 60.0 to 64.9 feet
- ☐ 65.0 to 69.9 feet
- ☐ 70.0 to 74.9 feet
- ☐ 75.0 to 79.9 feet
- ☐ More than 80.0 feet

L – WEIGHT

5. Referring to the most common configuration Question K-1 (no trailer, single trailer, double trailers, or triple trailers pulled), what was the empty weight of this vehicle or vehicle/trailer combination?

Round to the nearest whole pound.

_____pounds

6. What was the average payload, in pounds, transported by this vehicle or vehicle/trailer combination during 202X?

Round to the nearest whole pound.

_____ pounds

7. In 202X, how many miles did this vehicle operate using an overweight permit?

_____miles

8. In 202X, how many annual overweight permits did you purchase for this vehicle?

_____permits

9. Of these annual permits, how many authorized overweight travel in multiple states?

_____permits

10. In 202X, how many trips were taken with this vehicle that required the purchase of single trip overweight permits?

_____trips

11. Of these trips, how many required the purchase of single trip overweight permits for more than one state?

_____trips

M – KIND OF BUSINESS

3. In 202X, was this vehicle used, at least partially, for any commercial or business-related activities?

- Yes, this vehicle was used at least part time for commercial activities
(*Continue with Question 2*)
- No, this vehicle was strictly used for personal transportation (*Go to Section O – Contact Information*)

4. Which of the following best describes your business (or part of your business) in which this vehicle was most often used during 202X?

If vehicle was leased, indicate business of lessee. Select ONE only.

- ☐ Accommodation or food services (for immediate consumption)
- ☐ Agriculture, forestry, fishing, or hunting
- ☐ Arts, entertainment, or recreation services
- ☐ Construction (includes land subdivision and development, as well as construction activity by special trade contractors)
- ☐ For-hire transportation (of goods or people)
- ☐ Fuel wholesale or distribution
- ☐ HVAC, plumbing, electrician
- ☐ Information services (includes telephone and television)
- ☐ Manufacturing
- ☐ Mining (includes quarrying, well operations, and beneficiating)
- ☐ Retail Trade
- ☐ Utilities (includes electric power, natural gas, steam supply, water supply, and sewage removal)
- ☐ Vehicle leasing or rental (includes short-term rentals)
- ☐ Warehousing
- ☐ Waste management, landscaping, or administrative/support services
- ☐ Wholesale trade
- ☐ Other services, including real estate, nonvehicle leasing or rental, educational, health care, social assistance, finance, insurance, professional, scientific, or technical services
- ☐ Other – please specify: _____

5. In 202X, was this vehicle used for any of the following commercial activities?

Select all that apply.

- ☐ Transporting goods belonging to you or your company
- ☐ Transporting goods belonging to another person or company
- ☐ Transporting tools related to your business
- ☐ Transporting paying passengers
- ☐ Used as a daily or short term rental
- ☐ Other – please specify: _____

6. What was the approximate percent of this vehicle's 202X for each of the following commercial activities?

Total should sum to 100%.

- Transporting goods belonging to you or your company: _____%
- Transporting goods belonging to another person or company: _____%
- Transporting tools related to your business: _____%
- Transporting paying passengers: _____%
- Used as a daily or short term rental: _____%
- Other – please specify: _____: _____%

NOTE: If your highest percentage occurs for transporting tools related to your business, transporting paying passengers, used as a daily or short term rental, or other, go to section O - Contact Information. Otherwise, continue to question 2.

N – FOR-HIRE

6. What was the approximate percent of this vehicle or vehicle/trailer combination's 202X mileage for each of the following kinds of service?

Round to the nearest whole percent.

Single shipment carried at one time: _____%

Multiple shipments carried at one time: _____%

7. In 202X, how many loads and/or runs did this vehicle or vehicle/trailer combination average in a week?

Round to the nearest number, including zero.

_____ Loads and/or runs per week

O – PRODUCT, EQUIPMENT, OR MATERIALS

1. What was the approximate percent of this vehicle's 202X mileage accounted for by the type of trips listed below?

Round to the nearest whole percent. Total should sum to 100%.

- Vehicle was filled to physical capacity (cubed out): _____%
- Vehicle was filled to weight limit (weighted out): _____%
- Vehicle was empty: _____% *(If you report 100% empty, go to Section O – Contact Information)*

2. What was the approximate percentage of the vehicle's 202X mileage driven to reposition the empty vehicle to a new location for the next load?

_____%

3. What was the approximate percentage of the vehicle's 202X mileage driven as a direct empty backhaul to home base?

_____%

4. In 202X, did you ever take less than efficient routes due to low height on bridges or tunnels?

Select ONE only.

- ☐ Yes
- ☐ No

5. In 202X, what products, tools, equipment, or materials did this vehicle carry, and what approximate percent of LOADED mileage were they carried?

Round to the nearest whole percent. Percentages can add to more than 100% if more than one type of tool or product was carried at the same time.

Products	Percentage of loaded miles
Agricultural and animal products	
Animals and fish, live (01)	%
Animal feed and products of animal origin (eggs, hides, etc.) (02)	%
Grains, cereal (wheat, corn, rye, etc.) (03)	%
All other agricultural products (crops, live plants, bulbs, flowers, etc.) (04)	%
Chemicals and chemical products	
Basic chemicals (hydrogen, oxygen, hydrochloric acid, chlorine, sodium hydroxide etc.) (05)	%
Fertilizers and fertilizer materials (06)	%
Pharmaceutical products (including blood, organ, gauze, etc. (07)	%
All other chemical products and preparations (08)	%
Food products, alcohol, and tobacco	
Alcoholic beverages (09)	%
Bakery and milled grain products (baked snack good, pasta, cereal, etc.) (10)	%
Meat, seafood, and their preparations (11)	%
Tobacco products (cigarettes, cigars, chewing tobacco, etc.) (12)	%
All other prepared foodstuffs (dairy products, fats, food oils, sauces, spices, etc.) (13)	%
Forestry, wood, and paper products	
Logs and other wood in the rough (logs for lumber, pulping, fuel, etc.) (14)	%
Paper or paperboard articles (toilet paper, paper towels, wallpaper, envelopes, etc.) (15)	%
Printed products (books, brochures, newspapers, etc.) (16)	%
Pulp, newsprint, paper, and paperboard (newsprint in large rolls, napkin stock, etc.) (17)	%
Wood products (wood chips, plywood, doors, windows, etc.) (18)	%
Manufactured metal and mineral products	
Articles of base metal (pipes, nails, screws, tubes, fittings, locks, etc.) (19)	%

Base metal in primary or semifinished forms (bars and rods of steel or iron, etc.) (20)	%
Nonmetallic mineral products (cement, bricks, glass, concrete products, mirrors, etc.) (21)	%
Other manufactured products or equipment	
Tools, non-powered (22)	%
Tools, powered (23)	%
Electronic and other electrical equipment (telephones, VCRs, computer equipment, etc.) (24)	%
Furniture, mattresses, lamps, etc. (25)	%
Machinery (motors, turbines, air conditioning equipment, fans, dishwashers, etc.) (26)	%
Miscellaneous manufactured products (toys, sports equipment, jewelry, clocks, etc.) (27)	%
Precision instruments and apparatus (cameras, eyewear, measuring instruments, etc.) (28)	%
Textile, leather, and related articles (footwear, yarns, threads, comforters, etc.) (29)	%
Vehicles, including parts (cars, motorcycles, trailers, etc.) (30)	%
All other transportation equipment (aircraft, boats, locomotives, etc.) (31)	%
Mining materials (raw form)	
Coal (non-agglomerated and agglomerated) (32)	%
Crude petroleum (33)	%
Gravel or crushed stone (34)	%
Metallic ores and concentrates (35)	%
Monumental or building stone (marble, limestone, granite, sandstone, etc.) (36)	%
Natural sands (37)	%
All other nonmetallic minerals (salt, table salt, clays, asbestos, dolomite, etc.) (38)	%
Petroleum products (refined)	
Fuel oils (diesel, Bunker C, etc.) (39)	%
Gasoline and aviation turbine fuel (40)	%
Plastics and rubber (tires, blinds, articles made of plastics or rubber, mud flaps, etc.) (41)	%
Natural Gas (42)	%
All other coal and refined petroleum products (greases, propane, etc.) (43)	%
Waste, refuse, and recycling	
Hazardous waste (EPA manifest) (44)	%
All other waste and scrap (including trash, yard waste, biosludge, non-EPA manifested hazardous materials, etc.) (45)	%
Recyclable products (46)	%
Miscellaneous	

Mail and courier parcels (47)	%
Empty shipping containers (48)	%
Passengers (49)	%
Mixed freight (for-hire carriers that haul multiple commodities on the same load) (50)	%
Products, equipment, or materials not elsewhere classified (99)	%

P – HAZARDOUS MATERIALS

4. At any time during 202X, was this vehicle used to transport hazardous materials in quantities large enough to have a hazmat placard on the vehicle as required by 49 CFR Part 172 Subpart F?

Select ONE only.

- ☐ Yes (Continue to question 2)
- ☐ No (Skip to section Q – Contact Information)

5. What approximate percent of this vehicle's 202X mileage used to transport hazardous materials in quantities large enough to have a hazmat placard on the vehicle as required by 49 CFR Part 172 Subpart F?

Round to the nearest whole percent.

_____ %

6. What was the approximate percentage of this vehicle's 202X mileage for which this vehicle carried each of the following types of hazardous material(s)?

Only report percentages for those hazardous materials carried in quantities large enough to have a hazmat placard on the vehicle. Percentages can add to more than 100% if more than one hazardous material was carried at the same time. Round to the nearest whole percent.

Division/Class	Placard Name	Percentage of Mileage
Division 1.1	Explosives 1.1	%
Division 1.2	Explosives 1.2	%
Division 1.3	Explosives 1.3	%
Division 1.4	Explosives 1.4	%
Division 1.5	Explosives 1.5	%
Division 1.6	Explosives 1.6	%
Division 2.1	Flammable gas	%
Division 2.1	LPG (Liquefied petroleum gas)	%
Division 2.1	Methane gas	%
Division 2.2	Nonflammable gas	%
Division 2.3	Poison gas	%
Division 4.1	Flammable solid	%
Division 4.2	Spontaneously combustible	%
Division 4.3	Dangerous when wet	%
Division 5.1	Oxidizer	%
Division 5.2	Organic peroxide	%
Division 6.1	Poison	%
Division 6.1	Poison (Poisonous liquid with no inhalation hazard)	%
Class 3	Flammable	%
Combustible liquid	Combustible	%
Oxygen 2	Oxygen	%
Class 7	Radioactive	%
Class 8	Corrosive	%
Class 8 A	Corrosive liquid which is a PIH Zone A	%
Class 8 B	Corrosive liquid which is a PIH Zone B	%

Class 9	Miscellaneous hazardous materials	%
	Elevated temperature material	%
	Infectious waste	%
	Marine pollutants	%
	Hazardous sub (reportable quantity)	%
	Hazardous waste	%
	Other regulated material (ORM)	%

Q – CONTACT INFORMATION

Last Name: _____
 First Name: _____
 Middle Initial: _____
 Street Address: _____
 Street Address 2: _____
 City (or city equivalent): _____
 State: _____
 Zip Code: _____
 Phone Number (10 digit): _____
 Extension: _____
 Email: _____
 Date of Filing (MM/DD): ____ / ____ / ____

Appendix D: Interview Protocol, Round 2

Cognitive Interviewing Protocol: Vehicle Inventory and Use Survey (VIUS) Form 9502 VIUS Tractor Trailers

Interviewer notes are in red.

Introduction:

- Explain purpose of meeting: to obtain feedback on VIUS content, to understand the process of answering questions, and to evaluate how questions work or don't work.
- Some questions may seem odd and/or obvious, but we don't want to assume we know what you are thinking.
- Explain that we are *not* testing the respondent – we only want to evaluate the questionnaire
- Structure of meeting: Understand your business and your role in it, then review the questionnaire and ask you questions as you complete it.
- Permission to record discussion for note taking purposes? This study is being conducted under the authority of Title 13 USC. We plan to use your feedback to improve the form for future data collections. Only staff involved in this design research will have access to the recording. **Have R sign consent form.**

Research Questions to Address:

- Are respondents able to answer the questions as intended?
- Are there any items that cause the respondents problems?
 - What can be done to fix those problems?
- Are there any order/context effects?

Before the Questionnaire:

- What types of goods or services does this business provide?
- Can you tell me about your vehicle or your company's vehicle?
- What is your role in the company? What kind of responsibilities do you have?
- Have you received other surveys from the Census Bureau or other agencies? If so, which ones? Did you complete those surveys?
- What types of records do you typically keep on your vehicles?
 - *(If part of a larger organization):* Do you have access to all of the records related to vehicles in your company?

I'd like for you to go through the survey question by question. As you're going through it, I'd like you to tell me your thought process for answering the questions and how easy or difficult the question is to answer.

The table in the Registration Information section would be prefilled with information about your vehicle.

- Is this the information you would need to identify which vehicle you should answer this survey for?
 - If not, what information would you need?

A – Registration Information

- How would you answer this question?

B – Disposal

- For each question:
 - How would you answer this question?
 - Is this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 3 (if applicable):
 - Can you think of any other methods of disposal not listed here?

C – Acquisition

- For each question:
 - How would you answer this question?
 - Is this information available in your records?
 - How easy or difficult is this information to obtain?

D – Leasing

- Question 1 and 2:
 - How would you answer this question?
 - *(If respondent answered 'yes' to either)* When did you lease the vehicle?
 - How would you proceed through the survey?
 - Who is the vehicle registered to? You or the lessee/lessor?
 - When answering these questions, did you include or exclude rental agreements?
- Question 3 and 4:
 - How would you answer this question?
 - Is this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 5:
 - How would you answer this question?

- Is this information available in your records?
- How easy or difficult is this information to obtain?
- *(If R said yes to any categories)* Can you tell me more about that? Can you give me examples?

E – Type of Vehicle

- Question 1:
 - How would you answer this question?
 - How would you describe a tractor?
- Question 2:
 - How would you answer this question?
 - Are these categories clear or unclear?
 - *(If respondent answers 'other'):* How would you describe your vehicle?

F – Physical Characteristics

- For each question:
 - How would you answer this question?
 - Is this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 1:
 - How would you define 'liftable' axles?
- Question 3:
 - How would you define 'powered'?
- Questions 7 and 8:
 - Are these categories clear or unclear?
- Question 13:
 - Are these categories clear or unclear?
 - How would you define 'navigational system'?
 - Would you consider a 'navigational system' the same as or different to 'GPS'?
- Question 14, 15, and 16:
 - Are these categories clear or unclear?

G – Time Operated

- For each question:
 - How would you answer this question?
 - Is this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 1:
 - *(If respondent answers 'Vehicle not used'):* Why was the vehicle not used?
- Question 2:
 - *(If respondent answers 'other'):* What would you enter for other?

H – Home Base

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 1:
 - How would you define ‘home base’ in your own words?
 - *(If respondent is the Lessor):* If this information you would have?
 - Are these categories clear or unclear?
 - *(If respondent answers ‘other’):* What would you enter for other?
- Question 3:
 - When answering this question, were you only considering vehicles used for commercial purposes, or did you also include vehicles that are strictly for personal use?

I – Miles

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 2:
 - *(If respondent answers ‘other’):* What would you enter for other?
 - Why did you choose this method of estimation?
- Question 4:
 - Why did you choose this/these methods of estimation?
- Question 8:
 - What does ‘idling’ mean to you?
- Question 9:
 - What does ‘auxiliary power’ mean to you?

J – Fuel and Maintenance

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 1, 3:
 - Are the categories clear or unclear?
- Question 5:
 - How would you describe extensive repairs in your own words?
- What is the difference between maintenance and repairs in your own words?

K – Vehicle Configuration

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 2 OR 5 OR 9:
 - Note whether respondent is answering for the most common configuration from question 1.
- Question 14:
 - Are the categories clear or unclear?
 - (*If respondent answers 'other'*): What would you enter for other?
- Question 15:
 - Are the categories clear or unclear?

L – Weight

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- If respondent is a lessor:
 - How easy or difficult is it for you to answer based on how your lessee uses the vehicle?
 - Would you reach out to the lessee to obtain this information?
- Question 3:
 - What does 'overweight permit' mean to you?

M – Kind of Business

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 2 and 3:
 - Are the categories clear or unclear?
 - (*If respondent answers other*): What would you enter for other?

N – For-hire

- For each question:
 - How would you answer this question?

- If this information available in your records?
 - How easy or difficult is this information to obtain?
- Questions 1:
 - Are the categories clear or unclear?

O – Product, Equipment, or Materials

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 1:
 - Are the categories clear or unclear?
- Question 3:
 - What does ‘backhaul’ mean to you?
- Question 5:
 - How would you answer this question?
 - Are the instructions clear or unclear?
 - Can you find the product codes that are applicable to your business?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?

P – Hazardous Materials

- For each question:
 - How would you answer this question?
 - If this information available in your records?
 - How easy or difficult is this information to obtain?
- Question 1:
 - Are you familiar with ‘49 CFR part 172 Subpart F?’
- Question 3:
 - Are the categories clear or unclear?
 - Are the instructions clear or unclear?

Wrap Up

- In general, are the questions we covered today something that you document or have available in records?
- Are your records organized by calendar year?
 - If not, how are they organized? How easy or difficult is it to answer these questions based on the calendar year instead?

- *(If applicable):* Would you need to reach out to others in your company for information?
 - If so, what other areas/positions would you reach out to?
- *(If the respondent is the lessor):* How easy or difficult are these questions to answer as a lessor?
 - Would you contact the lessee to obtain any information?
- *(If the respondent is the lessee):* How easy or difficult are these questions to answer as a lessee?
 - Would you contact the lessor to obtain any information?
- About how long do you think it would take you to complete this survey?
- We plan to include some vehicle information in the request letter so that you will be able to identify the vehicle of interest in advance. What information would be most important to you in the letter?
- What would be the best way to contact you about completing the survey?
 - Mail, email, phone, etc...
- This survey will be available to answer online. Would this be your preferred method to answer?
 - What device would you use to complete the survey?
- If you were asked to complete this survey for more than one vehicle, would it be easier or more difficult to fill in a spreadsheet template? (Vehicles as rows, questions as columns)
- Do you have any other comments or suggestions about anything we have discussed today?

THANK YOU FOR YOUR TIME!

Appendix E: Online Ad Text

Hello!

The Economic Statistical Methods Division of the US Census Bureau is looking for commercial truck drivers to participate in an hour long interview about their vehicles. If you qualify and complete the interview, we will give you \$40 as a thank you!

Qualifications:

Must currently be or have been in the last three weeks responsible for a commercial truck or trucking fleet;

Must be knowledgeable about the truck(s)' uses, maintenance, and other information;

Must have access to a telephone and an internet connected computer;

Must be 18 years old or older to participate.

This is your opportunity to make sure that we "get it right" when we ask for feedback on your vehicle(s)! Please consider helping us out! All interviews will be conducted remotely, using either the telephone or web conferencing depending on your capabilities. Thank you!