

# **Survey Design Changes That Affect the Comparability of the 2002 and 2021 VIUS Estimates**

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## 1. INTRODUCTION

The 2021 Vehicle Inventory and Use Survey (VIUS) was not designed to be compared to the 2002 VIUS due to the length of time between the survey cycles and changes in state coverage, sample design, weighting methodology, and analysis. Data users should exercise caution if comparing 2021 VIUS estimates with those from the 2002 VIUS. This document summarizes the differences that limit the comparability of the 2002 and 2021 VIUS estimates.

## 2. STATE COVERAGE CHANGES

The 2002 VIUS collected data from respondents in all 50 U.S. states and the District of Columbia (D.C.). However, the 2021 VIUS did not collect data from the state of New Hampshire because the U.S. Census Bureau was not given access to New Hampshire motor vehicle registration records. Therefore, the published national estimates for the 2021 VIUS do not include data from New Hampshire. However, in an attempt to provide data users with national-level estimates that covered all states, the Census Bureau separately published an [experimental data product of national 2021 VIUS estimates](#) that includes modeled estimates for vehicles registered in the state of New Hampshire.

Data users are advised to use this experimental data product for national estimates; refer to the methodology [VIUS National Estimates with Modeled Estimates for New Hampshire \(census.gov\)](#) for important caveats.

## 3. SAMPLE DESIGN CHANGES

The 2002 VIUS was a sample of approximately 140,000 vehicles selected from a population of nearly 89 million vehicles registered in the 50 U.S. states and the District of Columbia. The 2021 VIUS was a sample of approximately 150,000 vehicles selected from a population of over 190 million vehicles registered in the 49 U.S. states (excluding New Hampshire) and the District of Columbia.

The sample design for the 2002 VIUS used five vehicle strata defined by body type and gross vehicle weight rating (GVWR). The sample design for the 2021 VIUS included an additional stratification variable based on expected vehicle usage (commercial or personal) that resulted in ten comparable strata. Commercial vehicles were those in which R.L. Polk & Co. had some indication the vehicle was registered by a business and, at least in part, used for business-related activities; whereas, those designated as personal-use vehicles had no such indication.

The 2002 VIUS strata:

1. Pickups
2. Vans, minivans, SUVs
3. Straight trucks with GVWR  $\leq$  26,000 lbs.
4. Straight trucks with GVWR  $>$  26,000 lbs.
5. Truck tractors

The 2021 VIUS strata:

1. Commercial pickups
2. Commercial vans, minivans, SUVs

3. Commercial straight trucks with GVWR  $\leq$  26,000 lbs.
4. Commercial straight trucks with GVWR  $>$  26,000 lbs.
5. Commercial truck tractors
6. Personal pickups
7. Personal vans, minivans, SUVs
8. Personal straight trucks with GVWR  $\leq$  26,000 lbs.
9. Personal straight trucks with GVWR  $>$  26,000 lbs.
10. Personal truck tractors

The distinction between commercial and personal vehicles provided by R. L. Polk & Co. was used for proportional sample stratification, so a stratum in 2002 is effectively analogous to the corresponding commercial and personal strata in 2021 combined. Stratifying by commercial and personal vehicles is an improvement on the design from the 2002 VIUS as it should improve the representation in the sample of vehicles used for business purposes. As a result, estimates of, and correlated to, commercial and personal usage of vehicles may not be comparable between the survey cycles.

Estimation of personal or commercial use was based solely on responses to the survey and not the distinction between commercial and personal vehicles provided by R. L. Polk & Co.

#### **4. DATA COLLECTION CHANGES**

For the 2002 VIUS, a paper questionnaire was mailed to the registered owner of each selected vehicle. The 2021 VIUS used an electronic reporting system as the primary mode of data collection. All respondents received an initial letter with instructions to create an account in the Respondent Portal and log into the electronic instrument to complete the survey for the vehicle(s) listed in the letter. A paper version of the questionnaire was sent as part of the second follow-up operation; however, respondents of the 2021 VIUS had the option to request a paper questionnaire at any time. The Census Bureau has been utilizing electronic reporting systems more each survey cycle to improve the quality of the collected data, reduce respondent burden, and reduce data collection and follow-up costs. The extent to which a respondent would have answered differently when responding by paper vs electronically may introduce an unmeasured amount of response error into the collected data that could limit comparisons of estimates between the 2002 and 2021 VIUS surveys. Testing of the questions and electronic reporting system was done prior to fielding the 2021 VIUS in an attempt to reduce the effects of response error on the collected data. The addition of electronic reporting in the 2021 VIUS could limit the comparability of estimates to the 2002 VIUS.

#### **5. SURVEY QUESTION CHANGES**

The 2002 VIUS questionnaire was used as a starting point for determining the questions to be asked and the question wording for the 2021 VIUS questionnaire. Minor changes to the 2021 VIUS questionnaire included rewording questions and additional response options to increase clarity for respondents. Major changes included new and fully revised questions and response options to align with modern vehicle configurations, fuel types, jurisdictions, kinds of business, and technology. Fifteen questions asking for a numerical response included a checkbox for the respondent to indicate if the data provided were 'verified by records.' Previously, it was not possible to distinguish if a respondent simply did not answer a question or if the vehicle didn't possess any of the listed characteristics. To address this limitation, thirteen multiple-choice questions added a new checkbox option, 'none of the above,' that allowed respondents to

indicate the vehicle had none of the listed characteristics. The proposed content for the 2021 VIUS questionnaire underwent cognitive testing to evaluate the changes, investigate the suitability of the proposed questions, and determine if changes in the content warranted any modifications needed to maximize respondent participation and data quality. The changes to questions, response options, and question wording should be considered when attempting to make comparisons for estimates that appear comparable from how they are labeled but may not be comparable because of changes noted. Refer to Table 1 of the Appendix for the full set of 101 changes between the 2002 and 2021 VIUS questionnaires.

## 6. WEIGHTING AND ESTIMATION CHANGES

In the 2002 VIUS, the weight for a given vehicle was the product of two factors: a nonresponse adjustment weight and a sampling weight (the inverse probability of selection into the sample).

In addition to these two weights, the weighting for the 2021 VIUS included a post-stratified weight based on the GVWR distributions observed within each of the 500 sampling strata defined by state and vehicle type.

Compared to the 2002 VIUS weighting methodology, the use of post-stratification in the 2021 VIUS ensured that the estimates derived from the responding cases represented the distribution of GVWRs within the strata. This should result in improved GVWR estimates produced for the 2021 VIUS. This change should be considered if comparing GVWR estimates between 2002 and 2021, as it likely affects the comparability of the published GVWR distributions and correlated characteristics between survey cycles. What follows is a hypothetical example of post-stratification to illustrate how it can correct over- or under-estimation within strata. Without loss of generality, let sampling stratum  $x$  have  $N_x = 10,000$  vehicles, of which  $N_{x,7} = 5,000$  are classified as GVWR class 7 and  $N_{x,8} = 5,000$  are classified as GVWR class 8 (50% in class 7, 50% in class 8). When we select a simple random sample of size  $n_x = 500$  vehicles for stratum  $x$ , each vehicle has the same sampling weight of  $(N_x \div n_x) = (10,000 \div 500) = 20$ . While one representative sample could contain  $n_{x,7} = 250$  class 7 vehicles  $n_{x,8} = 250$  class 8 vehicles (50% to class 7, 50% to class 8), another sample could contain  $n_{x,7} = 300$  class 7 vehicles and  $n_{x,8} = 200$  class 8 vehicles, yielding an empirical distribution of GVWR classes in the sample (60% to class 7, 40% to class 8) that is not representative of the known distribution of GVWR classes in the stratum (50% to class 7, 50% to class 8). Estimates from the latter sample would over-represent GVWR class 7 vehicles and under-represent GVWR class 8 vehicles without post-stratification weighting. Post-stratification reduces the weights of classes that are over-represented in our sample and increases the weights of classes that are under-represented in our sample. The post-stratified sampling weight of GVWR class 7 vehicles and GVWR class 8 vehicles in our sample would be  $(N_{x,7} \div n_{x,7}) = (5,000 \div 300) = 16.666667$  and  $(N_{x,8} \div n_{x,8}) = (5,000 \div 200) = 25$ , respectively.

Changes to weighting and estimation in the 2021 VIUS limit the comparability of estimates to the 2002 VIUS. For further information on the methodology used for the 2002 and 2021 VIUS, refer to [2002 VIUS Methodology](#) and [2021 VIUS Methodology](#), respectively.

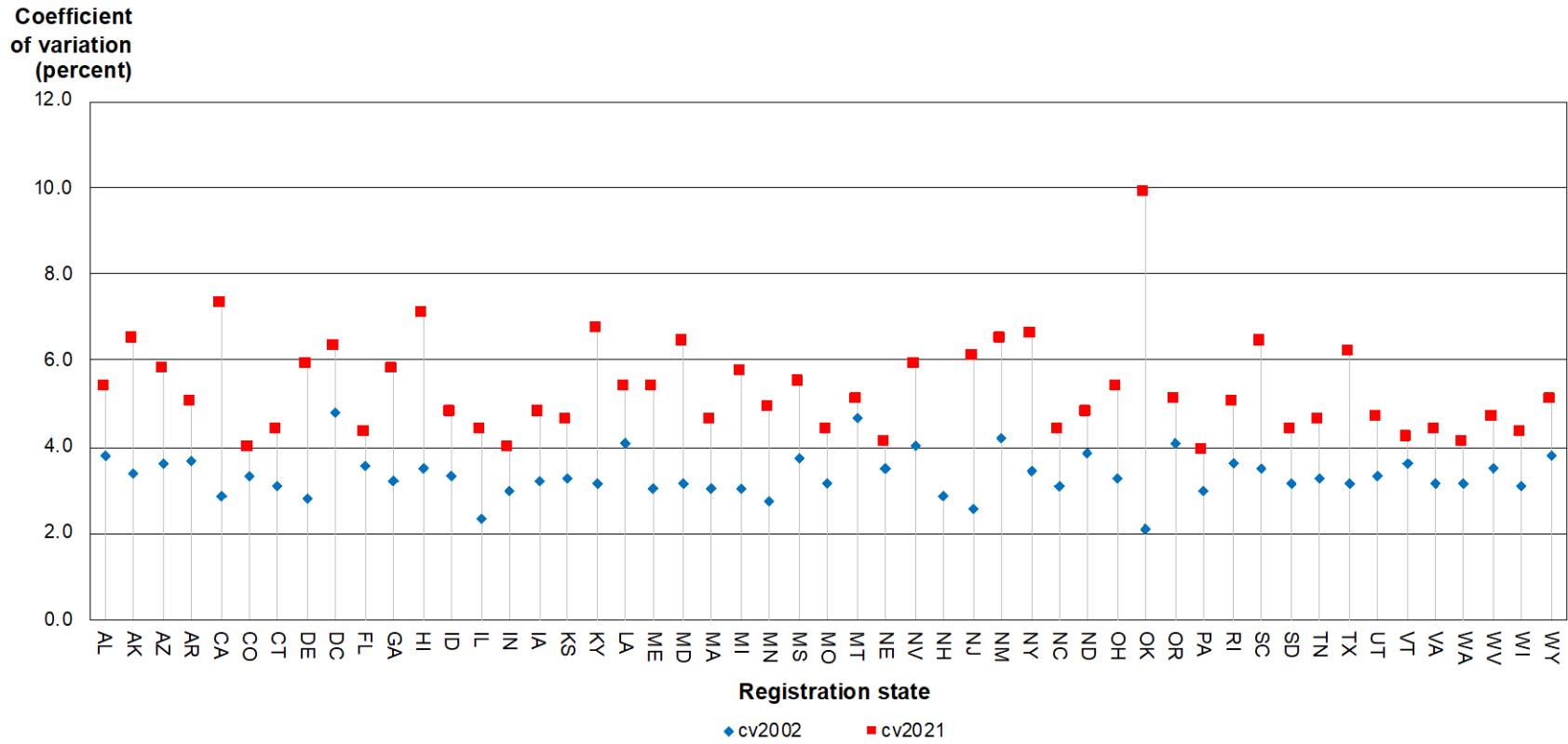
## 7. TESTING FOR SIGNIFICANT CHANGE

When comparing survey items, data users should construct confidence intervals around point estimates to detect statistically significant changes between 2002 VIUS and 2021 VIUS. If confidence intervals don't overlap, there is evidence that estimates are significantly different.

Though the inverse is not necessarily true because significantly different estimates can have overlapping confidence intervals. Lower response rates for the 2021 VIUS in comparison to the 2002 VIUS resulted in increased variation in 2021, therefore, lowering the chance for detecting statistically significant changes between comparable estimates for the two survey cycles. Refer to Figure 1 through Figure 3 in the Appendix for graphs providing state-level comparisons of the estimated coefficients of variation of vehicle miles estimates, number of vehicles estimates, and average miles per vehicle estimates from the 2002 VIUS and the 2021 VIUS. When assessing the comparability of survey items, in addition to the survey design changes outlined above, users are encouraged to consult the “Changes between the 2002 VIUS Questionnaire and the 2021 VIUS Questionnaire” in the Appendix, Table 1.

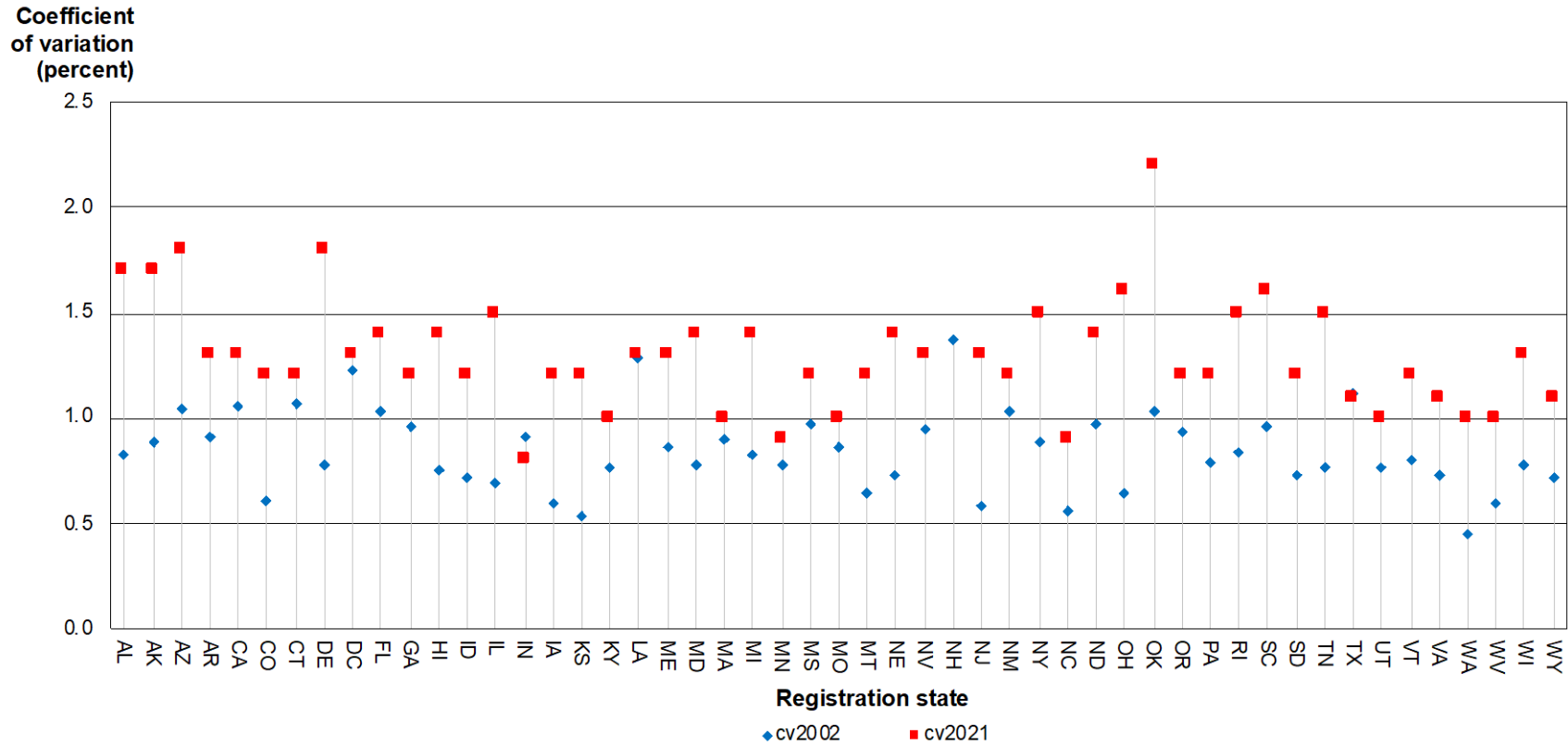
# APPENDIX

Figure 1. Coefficient of Variation of Vehicle Miles Estimates by State for All Vehicles



Source: BTS, Census.

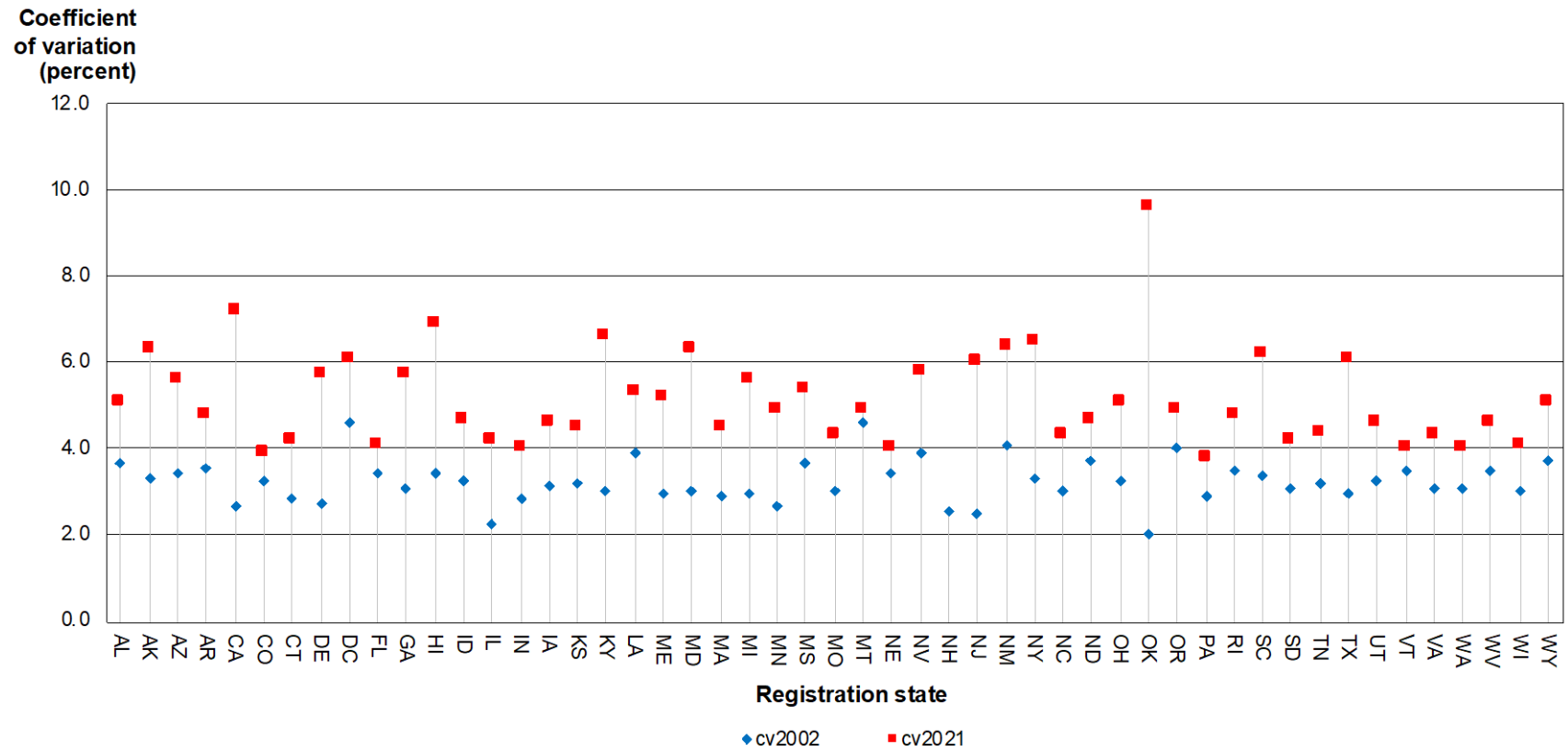
Figure 2. Coefficient of Variation of Number of Vehicles Estimates by State for All Vehicles



Source: BTS, Census.



Figure 3. Coefficient of Variation of Average Miles per Vehicle Estimates by State for All Vehicles



Source: BTS, Census.

**Table 1. Changes Between the 2002 VIUS Questionnaire and the 2021 VIUS Questionnaire**

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Registration Information	9501&9502	Is the vehicle identified above still in your possession or your company's possession?	1. Yes 2. No	Is the vehicle identified above still in your possession OR your company's possession?	1. Yes 2. No 3. Vehicle was never in my OR my company's possession
Disposal	9501&9502	How did you dispose of this vehicle?	1. Sold or gave it away 2. Traded it in 3. Junked, scrapped, or otherwise destroyed it 4. Returned it to leasing company 5. Repossessed	How did you dispose of this vehicle?	1. Sold or gave it away 2. Traded it in 3. Junked, scrapped, or otherwise destroyed it 4. Returned it to leasing company 5. Repossessed 6. Sent to another country
Acquisition	9501&9502	When did you obtain this vehicle? If purchased after lease, report the date you originally took possession of this vehicle.	fill in	When did you originally take physical possession of this vehicle?	fill in checkbox for 'Don't Know'
Acquisition	9501&9502	When you obtained this vehicle, was it new or used?	1. New 2. Used	Was this vehicle new when you took physical possession of it?	1. Yes 2. No
Acquisition	9502	not in 2002	not in 2002	Do you plan to replace this vehicle with a vehicle of a different weight class or axle load within the next 5 years?	1. Yes 2. No
Leasing	9501&9502	Was this vehicle leased during 2002?	1. Yes 2. No	not in 2021	not in 2021
Leasing	9501&9502	Which of the following do you represent?	1. Lessee 2. Lessor	not in 2021	not in 2021
Leasing	9501&9502	not in 2002	not in 2002	Did you lease this vehicle FROM another person or company during 2021?	1. Yes 2. No
Leasing	9501&9502	not in 2002	not in 2002	Did you lease this vehicle TO another person or company during 2021?	1. Yes 2. No

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Leasing	9502	Which of the following did the leasing agreement include?	<ol style="list-style-type: none"> <li>1. Financing only</li> <li>2. Full maintenance</li> <li>3. Payment of taxes (such as state or federal highway use taxes)</li> <li>4. Obtaining licenses and permits</li> <li>5. Recordkeeping</li> <li>6. Fuel contract</li> </ol>	Which of the following did the leasing agreement include?	<ol style="list-style-type: none"> <li>1. Financing only</li> <li>2. Full maintenance</li> <li>3. Payment of taxes (such as state or federal highway use taxes)</li> <li>4. Obtaining licenses and permits</li> <li>5. Recordkeeping</li> <li>6. Fuel contract</li> <li>7. None of the above</li> </ol>
Type of Vehicle	9501	Which body type most closely resembles this vehicle?	<ol style="list-style-type: none"> <li>1. Pickup</li> <li>2. Minivan</li> <li>3. Van other than minivan (For example: conversion van, cargo van, etc.)</li> <li>4. Sport utility</li> <li>5. Other not elsewhere specified</li> </ol>	Which body type most closely resembled this vehicle?	<ol style="list-style-type: none"> <li>1. Pickup</li> <li>2. Minivan</li> <li>3. Van other than minivan</li> <li>4. Sport utility vehicle</li> <li>5. Other</li> </ol>
Type of Vehicle	9502	Which best describes this vehicle?	<ol style="list-style-type: none"> <li>1. Tractor (truck tractor or road tractor)</li> <li>2. Other truck (with or without a trailer)</li> </ol>	Was this vehicle a semi-truck (tractor/trailer truck)?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Type of Vehicle	9502	For trucks other than tractors, which of the following most closely resembles this truck's body type?	<ol style="list-style-type: none"> <li>1. Armored</li> <li>2. Beverage</li> <li>3. Concrete mixer</li> <li>4. Concrete pumper</li> <li>5. Crane</li> <li>6. Curtainside</li> <li>7. Dump</li> <li>8. Flatbed, stake, platform, etc.</li> <li>9. Lowboy</li> <li>10. Pole, logging, pulpwood, or pipe</li> <li>11. Service, utility</li> <li>12. Service, other</li> <li>13. Street sweeper</li> <li>14. Tank, dry bulk</li> <li>15. Tank, liquids or gases</li> <li>16. Tow/Wrecker</li> <li>17. Trash, garbage, or recycling</li> <li>18. Vacuum</li> <li>19. Van, basic enclosed</li> <li>20. Van, insulated non-refrigerated</li> <li>21. Van, insulated refrigerated</li> <li>22. Van, open top</li> <li>23. Van, step, walk-in, or multistep</li> <li>24. Van, other</li> <li>25. Other</li> </ol>	Which body type most closely resembled this vehicle?	<ol style="list-style-type: none"> <li>1. Armored</li> <li>2. Beverage or bay</li> <li>3. Box truck</li> <li>4. Concrete mixer</li> <li>5. Concrete pumper</li> <li>6. Conveyor belt</li> <li>7. Crane</li> <li>8. Dump (including side, belly, or bottom dump)</li> <li>9. Flatbed, stake, platform, etc.</li> <li>10. Hooklift/roll-off</li> <li>11. Logging</li> <li>12. Service, utility</li> <li>13. Service, other</li> <li>14. Street sweeper</li> <li>15. Tank, liquids or gases</li> <li>16. Tow/Wrecker</li> <li>17. Trash, garbage, or recycling</li> <li>18. Vacuum</li> <li>19. Van, walk-in</li> <li>20. Van, other</li> <li>21. Wood chipper</li> <li>22. Other</li> </ol>
Physical Characteristics	9501	not in 2002	not in 2002	Note	Axles are long steel rods that run parallel with the front and rear bumpers and have wheels attached to them.
Physical Characteristics	9502	Note	This section pertains to the power unit ONLY. Do not include information for any trailer(s) pulled.	Note	Axles are long steel rods that run parallel with the front and rear bumpers and have wheels attached to them.
Physical Characteristics	9501	What was the total number of axles on this vehicle?	<ol style="list-style-type: none"> <li>1. Two axles (each axle has 2 tires)</li> <li>2. Two axles (front axle has 2 tires, rear axle has 4 tires)</li> <li>3. Other</li> </ol>	What was the total number of axles on this vehicle?	<ol style="list-style-type: none"> <li>1. Two</li> <li>2. Three</li> </ol>

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Physical Characteristics	9502	What was the total number of axles, including liftable axles, on this vehicle?	<ol style="list-style-type: none"> <li>Two axles (each axle has 2 tires)</li> <li>Two axles (front axle has 2 tires, rear axle has 4 tires)</li> <li>Three axles</li> <li>Four axles</li> <li>Other</li> </ol>	What was the total number of axles, including liftable (tag) axles, on this vehicle, excluding axles on trailer(s)?	<ol style="list-style-type: none"> <li>Two</li> <li>Three</li> <li>Four</li> <li>Five or more</li> </ol>
Physical Characteristics	9501&9502	not in 2002	not in 2002	How many tires were on the rear axle?	<ol style="list-style-type: none"> <li>Two</li> <li>Four</li> </ol>
Physical Characteristics	9501	How many axles were driving (powered) axles?	<ol style="list-style-type: none"> <li>One axle</li> <li>Two axles</li> <li>Other</li> </ol>	How many of this vehicle's axles were powered?	<ol style="list-style-type: none"> <li>One</li> <li>Two</li> <li>Other</li> </ol>
Physical Characteristics	9502	How many axles were driving (powered) axles?	<ol style="list-style-type: none"> <li>One axle</li> <li>Two axles</li> <li>Three axles or more</li> </ol>	How many of this vehicle's axles were powered?	<ol style="list-style-type: none"> <li>One</li> <li>Two</li> <li>Other</li> </ol>
Physical Characteristics	9502	How many axles were liftable axles?	<ol style="list-style-type: none"> <li>None</li> <li>One axle</li> <li>Two axles</li> <li>Three axles or more</li> </ol>	How many axles were liftable axles?	<ol style="list-style-type: none"> <li>None</li> <li>One</li> <li>Two</li> <li>Three or more</li> </ol>
Physical Characteristics	9502	How many axles were braking axles?	<ol style="list-style-type: none"> <li>None</li> <li>One axle</li> <li>Two axles</li> <li>Three axles or more</li> </ol>	How many axles were braking axles?	<ol style="list-style-type: none"> <li>None</li> <li>One</li> <li>Two</li> <li>Three or more</li> </ol>
Physical Characteristics	9502	What type of cab did this vehicle have?	<ol style="list-style-type: none"> <li>Conventional</li> <li>Cab over engine</li> <li>Cab forward of engine</li> <li>Cab beside engine</li> </ol>	What best described the cab of this vehicle?	<ol style="list-style-type: none"> <li>Conventional</li> <li>Cutaway (no back wall, joined with van body)</li> <li>Cab forward of engine</li> <li>Low cab forward</li> </ol>
Physical Characteristics	9502	Does the cab of the vehicle contain a sleeper?	<ol style="list-style-type: none"> <li>Yes</li> <li>No</li> </ol>	If this vehicle was a semi-truck (tractor/trailer truck), what type of cab did this vehicle have?	<ol style="list-style-type: none"> <li>Day cab</li> <li>Sleeper cab</li> <li>Not applicable (not a semi-truck)</li> </ol>
Physical Characteristics	9501&9502	What type of transmission did this vehicle have?	<ol style="list-style-type: none"> <li>Automatic</li> <li>Manual</li> <li>Semi-Automated Manual</li> <li>Automated Manual</li> </ol>	What type of transmission did this vehicle have?	<ol style="list-style-type: none"> <li>Automatic</li> <li>Manual</li> <li>Both</li> <li>Other</li> </ol>
Physical Characteristics	9501&9502	not in 2002	not in 2002	What was the height of this vehicle's cabin (measured from the ground to the top of the roof)?	fill in
Physical Characteristics	9502	not in 2002	not in 2002	How many gears did this vehicle have?	fill in

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Physical Characteristics	9501	Does this vehicle have any of the following permanent equipment?	<ol style="list-style-type: none"> <li>1. Aerial work platform/bucket</li> <li>2. Air bag(s) (safety device only)</li> <li>3. Air-conditioning</li> <li>4. Antilock brake system</li> <li>5. Computerized drive train control unit</li> <li>6. Front-wheel drive</li> <li>7. Mounting bar for snowplow</li> <li>8. Radial tires</li> <li>9. Toolbox</li> <li>10. Trip recorder or on-board computer with remote communication capabilities</li> <li>11. Trip recorder or on-board computer without remote communication capabilities</li> <li>12. Vehicle control aids for handicapped drivers</li> <li>13. Wheelchair lift</li> <li>14. Winch</li> </ol>	not in 2021	not in 2021

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Physical Characteristics	9502	Does this vehicle have any of the following permanent equipment?	<ol style="list-style-type: none"> <li>1. Aerial work platform/bucket</li> <li>2. Air bag(s) (safety device only)</li> <li>3. Air compressor (except air brakes)</li> <li>4. Air-conditioning</li> <li>5. Air springs</li> <li>6. Antilock brake system</li> <li>7. Collision warning system</li> <li>8. Computerized drive train control unit</li> <li>9. Crane</li> <li>10. Electronic vehicle identification device (transponder), etc.</li> <li>11. Engine retarder/ brake</li> <li>12. Hoist</li> <li>13. Idle-reducing technology (portable auxiliary pack, electrification, etc.)</li> <li>14. Internet access</li> <li>15. Lift gate</li> <li>16. Mounting bar for snowplow</li> <li>17. Navigational system</li> <li>18. Power take-off</li> <li>19. Radial tires</li> <li>20. Reflective material in addition to those required by law</li> <li>21. Road speed governor</li> <li>22. Toolbox</li> <li>23. Trip recorder or on-board computer with remote communication capabilities</li> <li>24. Trip recorder or on-board computer without remote communication capabilities</li> <li>25. Winch</li> </ol>	not in 2021	not in 2021

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Physical Characteristics	9501&9502	not in 2002	not in 2002	In 2021, did this vehicle have any of the following standard features?	<ol style="list-style-type: none"> <li>1. Air bags</li> <li>2. Anti-lock brake system</li> <li>3. Cruise control</li> <li>4. Driver-facing camera</li> <li>5. Global Positioning System (GPS) for fleet transponder use only (no navigational aid)</li> <li>6. Global Positioning System (GPS), with navigation</li> <li>7. Internet access</li> <li>8. Rollover protection</li> <li>9. None of the above</li> </ol>
Physical Characteristics	9501&9502	not in 2002	not in 2002	In 2021, did this vehicle have any of the following driving control assistance features?	<ol style="list-style-type: none"> <li>1. Adaptive cruise control</li> <li>2. Active driving assistance</li> <li>3. Lane keeping assistance</li> <li>4. Platooning capabilities</li> <li>5. Vehicle-to-Vehicle</li> <li>6. None of the above</li> </ol>
Physical Characteristics	9501&9502	not in 2002	not in 2002	In 2021, did this vehicle have any of the following collision warning features?	<ol style="list-style-type: none"> <li>1. Blind spot warning</li> <li>2. Forward collision warning</li> <li>3. Lane departure warning</li> <li>4. Parking obstruction warning</li> <li>5. Rear cross traffic warning</li> <li>6. None of the above</li> </ol>
Physical Characteristics	9501&9502	not in 2002	not in 2002	In 2021, did this vehicle have any of the following collision intervention features?	<ol style="list-style-type: none"> <li>1. Automatic emergency braking</li> <li>2. Automatic emergency steering</li> <li>3. Rear automatic emergency braking</li> <li>4. None of the above</li> </ol>
Physical Characteristics	9501&9502	not in 2002	not in 2002	In 2021, did this vehicle have any of the following parking assistance features?	<ol style="list-style-type: none"> <li>1. Active parking assistance</li> <li>2. Remote parking</li> <li>3. None of the above</li> </ol>



Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Physical Characteristics	9501&9502	not in 2002	not in 2002	In 2021, did this vehicle have any of the following other driver assistance systems features?	<ol style="list-style-type: none"> <li>1. Automated high beams</li> <li>2. Backup camera</li> <li>3. Driver monitoring</li> <li>4. Head-up display</li> <li>5. Night vision</li> <li>6. Surround-view camera</li> <li>7. None of the above</li> </ol>
Physical Characteristics	9501	not in 2002	not in 2002	In 2021, did this vehicle have any of the following fuel economy features?	<ol style="list-style-type: none"> <li>1. Aerodynamic bumper</li> <li>2. Aerodynamic hood</li> <li>3. Aerodynamic mirrors</li> <li>4. Automatic engine shutoff technology</li> <li>5. Automatic tire inflation system</li> <li>6. Hybrid-electric drivetrain (no plug)</li> <li>7. Idle-reducing technology (portable auxiliary pack, electrification, etc.)</li> <li>8. Low rolling resistance tires</li> <li>9. Plug-in hybrid-electric drivetrain</li> <li>10. None of the above</li> </ol>

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Physical Characteristics	9502	not in 2002	not in 2002	In 2021, did this vehicle have any of the following fuel economy features?	<ol style="list-style-type: none"> <li>1. Aerodynamic bumper</li> <li>2. Aerodynamic hood</li> <li>3. Aerodynamic mirrors</li> <li>4. Automatic engine shutoff technology</li> <li>5. Automatic tire inflation system</li> <li>6. Fairings (under body or side)</li> <li>7. Fuel tank covers</li> <li>8. Gap reducers</li> <li>9. Hybrid-electric drivetrain (no plug)</li> <li>10. Idle-reducing technology (portable auxiliary pack, electrification, etc.)</li> <li>11. Low rolling resistance tires</li> <li>12. Nose cone</li> <li>13. Plug-in hybrid-electric drivetrain</li> <li>14. Side skirts</li> <li>15. None of the above</li> </ol>
Physical Characteristics	9501	not in 2002	not in 2002	In 2021, did this vehicle have any of the following other features?	<ol style="list-style-type: none"> <li>1. Aerial work platform/bucket</li> <li>2. Air compressor (except for air brakes)</li> <li>3. Air springs</li> <li>4. Crane</li> <li>5. Hoist</li> <li>6. Lift gate</li> <li>7. Mounting bar for snowplow</li> <li>8. Partitions, shelves, racks, or bins</li> <li>9. Power take-off</li> <li>10. Telematics (for fleet management)</li> <li>11. Toolbox</li> <li>12. Winch</li> <li>13. None of the above</li> </ol>

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Physical Characteristics	9502	not in 2002	not in 2002	In 2021, did this vehicle have any of the following other features?	<ol style="list-style-type: none"> <li>1. Air compressor (except for air brakes)</li> <li>2. Air springs</li> <li>3. Auxiliary generator</li> <li>4. Crane</li> <li>5. Digger derrick</li> <li>6. Emergency lights</li> <li>7. Engine retarder/brake</li> <li>8. Hitch</li> <li>9. Hoist</li> <li>10. Inverter (generator powered by the unit)</li> <li>11. Ladder rack</li> <li>12. Lift gate</li> <li>13. Partitions, shelves, racks, or bins</li> <li>14. Power take-off</li> <li>15. Railway adapter axles</li> <li>16. Refrigerator</li> <li>17. Spreader (salt, sand)</li> <li>18. Telematics (for fleet management)</li> <li>19. Toolbox</li> <li>20. Weight station bypass applications, e.g. PrePass and Drivewyze</li> <li>21. Welder</li> <li>22. Winch</li> <li>23. None of the above</li> </ol>
Physical Characteristics	9501&9502	not in 2002	not in 2002	What was this vehicle's towing capacity in pounds?	fill in
Home Base	9501&9502	Note	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 questions as they pertain to the lessee.	Note	Home base refers to the location where the vehicle was usually parked when it was not on the road.

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Home Base	9501&9502	Did this vehicle operate from a home base location in 2002?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>	What was the primary function of the home base from which this vehicle operated?	<ol style="list-style-type: none"> <li>1. No home base</li> <li>2. Private residence</li> <li>3. Corporate office/headquarters</li> <li>4. Terminal or motor pool</li> <li>5. Distribution center</li> <li>6. Manufacturing plant</li> <li>7. Farm/agricultural production</li> <li>8. Mining or other energy production site</li> <li>9. Truck leasing company</li> <li>10. Port</li> <li>11. Other</li> </ol>
Home Base	9501&9502	What was the type of home base from which this vehicle operated?	<ol style="list-style-type: none"> <li>1. Private residence</li> <li>2. Company office/headquarters</li> <li>3. Terminal</li> <li>4. Distribution center</li> <li>5. Manufacturing plant</li> <li>6. Other</li> </ol>		
Home Base	9501&9502	Of the following, how many trucks/trailers do you or your company operate from the home base location indicated above?	<ol style="list-style-type: none"> <li>1. Pickups, small vans (including minivans), and sport utility vehicles</li> <li>2. Tractors (power units only)</li> <li>3. All other trucks</li> <li>4. Trailers (including trailer mounted equipment)</li> <li>5. Converter dollies</li> </ol>	In addition to this vehicle, how many other trucks/trailers were operated from the home base location?	<ol style="list-style-type: none"> <li>1. Pickups, small vans (including minivans), and sport utility vehicles</li> <li>2. Semi-trucks (tractor/ trailer trucks)</li> <li>3. Any other trucks or vans</li> <li>4. Trailers (including trailer mounted equipment)</li> <li>5. Converter dollies (A dolly is an unpowered vehicle designed for connection to a tractor unit or truck.) checkbox for 'No other vehicles at this home base'</li> </ol>
Miles	9501&9502	How many miles was this vehicle driven during 2002?	fill in	How many total miles was this vehicle driven in 2021?	fill in checkbox for 'Total miles verified by records'
Miles	9501&9502	not in 2002	not in 2002	How was the annual mileage calculated?	<ol style="list-style-type: none"> <li>1. Odometer readings</li> <li>2. Gas or fuel receipts</li> <li>3. Trip meter</li> <li>4. GPS</li> <li>5. Other</li> </ol>

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Miles	9501&9502	How many miles-per-gallon (mpg) did this vehicle average during 2002? If compressed natural gas (CNG) is used, give miles per gasoline gallon equivalent (GGE). 1 GGE = 123 cubic feet CNG.	fill in	How many miles-per-gallon (mpg) did this vehicle average in 2021? If compressed natural gas (CNG), liquified natural gas (LNG), or electricity was used, give miles per gasoline gallon equivalent (GGE). 1 GGE = 123 cubic feet CNG. 1 GGE = 1.5362 gallons of LNG. 1 GGE = 33.7 kWh electricity.	fill in
Miles	9501&9502	not in 2002	not in 2002	How was miles-per-gallon (mpg) calculated?	<ol style="list-style-type: none"> <li>1. Odometer readings</li> <li>2. Gas or fuel receipts</li> <li>3. Trip meter</li> <li>4. GPS</li> <li>5. Other</li> </ol>
Miles	9501&9502	What was the approximate percent of this vehicle's 2002 mileage for each of the following jurisdictions?	<ol style="list-style-type: none"> <li>1. Operated in Canada</li> <li>2. Operated in Mexico</li> <li>3. Operated within the home base state</li> <li>4. Operated in states other than the home base state (or has no home base)</li> </ol>	What was the approximate percent of this vehicle's 2021 mileage for each of the following jurisdictions?	<ol style="list-style-type: none"> <li>1. Operated within the home base state</li> <li>2. Operated in states other than the home base state (or has no home base)</li> <li>3. Operated in Canada</li> <li>4. Operated in Mexico checkbox for 'Percentages verified by records'</li> </ol>

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Miles	9501&9502	What approximate percent of this vehicle's 2002 mileage was accounted for by the types of trips listed below? If this vehicle did not operate from a home base, report the average range of operation.	<ol style="list-style-type: none"> <li>1. Trips off-the-road</li> <li>2. Trips on public/private roads within: <ol style="list-style-type: none"> <li>a. 50 miles or less from the vehicle's home base</li> <li>b. 51 to 100 miles from the vehicle's home base</li> <li>c. 101 to 200 miles from the vehicle's home base</li> <li>d. 201 to 500 miles from the vehicle's home base</li> <li>e. 501 miles or more from the vehicle's home base</li> </ol> </li> </ol>	<p>What was the approximate percentage of this vehicle's 2002 mileage driven within the following ranges of operation? If this vehicle did not operate from a home base, report its average range of operation.</p> <hr/> <p>What was the approximate percentage of this vehicle's 2021 mileage driven off road (not on an established public or private road)?</p>	<ol style="list-style-type: none"> <li>1. 50 miles or less from its home base</li> <li>2. 51 to 100 miles from its home base</li> <li>3. 101 to 200 miles from its home base</li> <li>4. 201 to 500 miles from its home base</li> <li>5. More than 500 miles from its home base</li> </ol> <p>checkbox for 'Percentages verified by records'</p> <hr/> <p>fill in checkbox for 'Total miles verified by records'</p>
Miles	9502	not in 2002	not in 2002	In 2021, what was the approximate number of hours that this vehicle was in operation; i.e. engine was running?	fill in checkbox for 'Hours verified by records'
Miles	9502	not in 2002	not in 2002	In 2021, what was the approximate percentage of this vehicle's operating time spent idling (stationary)?	fill in checkbox for 'Percentages verified by records'
Miles	9502	not in 2002	not in 2002	In 2021, what was the approximate percentage of this vehicle's operating time spent using an auxiliary power unit?	fill in checkbox for 'Percentages verified by records'

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Fuel and Maintenance	9501&9502	During 2021, what type of fuel or fuel combination was most often used in this vehicle?	<ol style="list-style-type: none"> <li>1. Gasoline (including gasohol)</li> <li>2. Diesel (including biodiesel)</li> <li>3. Natural gas (compressed or liquid)</li> <li>4. Propane (liquefied petroleum gas)</li> <li>5. Alcohol fuels (ethanol or methanol)</li> <li>6. Electricity</li> <li>7. Other</li> </ol>	In 2021, what type of fuel or fuel combination was most often used in this vehicle?	<ol style="list-style-type: none"> <li>1. Gasoline</li> <li>2. Diesel (including biodiesel)</li> <li>3. Propane (liquefied petroleum gas)</li> <li>4. Alcohol fuels - ethanol (E85, E100)</li> <li>5. Electricity</li> <li>6. Compressed Natural Gas (CNG)</li> <li>7. Liquefied Natural Gas (LNG)</li> <li>8. Other</li> </ol>
Fuel and Maintenance	9501&9502	not in 2002	not in 2002	What was the total cost of all GENERAL maintenance in 2021? Round to the nearest whole dollar.	fill in
Fuel and Maintenance	9501&9502	During 2002, were any EXTENSIVE repairs (driveline repair, engine repair/rebuild, transmission repair/rebuild, differential repair/rebuild, etc.) performed on this vehicle?	<ol style="list-style-type: none"> <li>1. Ye</li> <li>2. No</li> </ol>	In 2021, were any EXTENSIVE repairs over \$500 performed on this vehicle? EXTENSIVE repair means a repair that requires the replacement of a costly part to have the vehicle fully operational again. Exclusions (i) Repair that can be remedied temporarily without special tools or parts. (ii) Tire disablement without other damage even if no spare tire is available. (iii) Headlamp or taillight damage. (iv) Damage to turn signals, horn, or windshield wipers which makes them inoperative.	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Fuel and Maintenance	9501&9502	Who performed these EXTENSIVE repairs?	<ol style="list-style-type: none"> <li>1. Company-owned maintenance facility</li> <li>2. General repair business or private mechanic (includes gas stations, truck stops, parts store, etc.)</li> <li>3. Dealership service department</li> <li>4. Leasing company</li> <li>5. Component distributorship (engine, transmission, body, etc.)</li> <li>6. Yourself, spouse, friend, etc. while not employed/paid by any maintenance type facility</li> <li>7. Other</li> </ol>	Who performed these EXTENSIVE repairs?	<ol style="list-style-type: none"> <li>1. General repair business or private mechanic (includes gas stations, truck stops, parts store, etc.)</li> <li>2. Dealership service department</li> <li>3. Leasing company</li> <li>4. Yourself, spouse, friend, etc. while not employed/paid by any maintenance type facility</li> <li>5. Company-owned maintenance facility</li> <li>6. Other</li> </ol>
Fuel and Maintenance	9501&9502	not in 2002	not in 2002	What was the total cost of all EXTENSIVE repairs in 2021?	fill in
Fuel and Maintenance	9501&9502	not in 2002	not in 2002	Has this vehicle's engine EVER been rebuilt or overhauled?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> <li>3. Don't know</li> </ol>
Fuel and Maintenance	9501&9502	not in 2002	not in 2002	In what year was this vehicle's engine LAST rebuilt?	fill in checkbox for 'Don't Know'
Vehicle Configuration	9501	<p>What was the approximate percent of this vehicle's 2002 mileage for each of the following vehicle configurations?</p> <p>For which category, from question 1 above, did you report the highest percent?</p>	<ol style="list-style-type: none"> <li>1. No trailer pulled</li> <li>2. Trailer pulled</li> </ol>	<p>In 2021, was this vehicle used to pull a trailer?</p> <p>In 2021, did this vehicle pull a trailer for at least half of all miles driven?</p>	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol> <ol style="list-style-type: none"> <li>1. Yes, this vehicle pulled a trailer for 50% or more of all miles driven.</li> <li>2. No, this vehicle pulled a trailer for less than 50% of all miles driven.</li> </ol>



Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Vehicle Configuration	9502	What was the approximate percent of this vehicle's 2002 mileage for each of the following vehicle configurations?  For which category, from question 1 above, did you report the highest percent?	1. No trailer pulled 2. Single trailer pulled 3. Double trailers pulled 4. Triple Trailer pulled	In 2021, was this vehicle used to pull a trailer?  In 2021, did this vehicle pull a trailer for at least half of all miles driven?  In 2021, which of the following did this vehicle pull most often?	1. Yes 2. No  1. Yes, this vehicle pulled a trailer for 50% or more of all miles driven. 2. No, this vehicle pulled a trailer for less than 50% of all miles driven.  1. Single trailer 2. Double trailer 3. Triple trailer
Vehicle Configuration	9501	How many axles were on the trailer unit most often pulled by this vehicle?	1. One axle on trailer 2. Two axles on trailer 3. Three or more axles on trailer	How many axles were on the trailer unit most often pulled by this vehicle?	1. One 2. Two 3. Three or more
Vehicle Configuration	9502	SINGLE TRAILER How many axles were on this trailer?	1. One axle of trailer 2. Two axles on trailer 3. Three or more axles on trailer	SINGLE TRAILER How many axles were on this single unit trailer? Do NOT include any axles on the power unit.	1. One 2. Two 3. Three or more
Vehicle Configuration	9502	DOUBLE TRAILER How many axles were on this trailer configuration, including any converter dollies?	1. Three axles on two trailers 2. Four axles on two trailers 3. Five axles on two trailers 4. Six axles on two trailers	DOUBLE TRAILER How many axles were on this double trailer configuration, including any converter dollies? Do NOT include any axles on the power unit.	1. Three 2. Four 3. Five 4. Six or more
Vehicle Configuration	9502	TRIPLE TRAILER How many axles were on this trailer configuration, including any converter dollies?	1. Five axles on three trailers 2. Six axles on three trailers 3. Seven axles on three trailers 4. Eight or more axles on three trailers	TRIPLE TRAILER How many axles were on this triple trailer configuration, including any converter dollies? Do NOT include any axles on the power unit.	1. Five 2. Six 3. Seven 4. Eight or more
Vehicle Configuration	9501	What was the length of the trailer unit most often pulled by this vehicle?	fill in	What was the length, in feet, of the trailer unit most often pulled by this vehicle?	fill in
Vehicle Configuration	9502	SINGLE TRAILER What was the length of this trailer?	fill in	SINGLE TRAILER What was the length, in feet, of this trailer?	fill in

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Vehicle Configuration	9502	DOUBLE TRAILER, TRIPLE TRAILER What was the length of each trailer?	fill in	DOUBLE TRAILER, TRIPLE TRAILER What was the length, in feet, of each trailer?	fill in
Vehicle Configuration	9502	Which body type most closely resembles the type of trailer most often attached to this vehicle?	<ol style="list-style-type: none"> <li>1. Automobile carrier (excluding curtain, van, or flatbed)</li> <li>2. Beverage</li> <li>3. Curtainside</li> <li>4. Dump (including belly or bottom dump)</li> <li>5. Flatbed, platform, etc</li> <li>6. Livestock (including livestock drop frame)</li> <li>7. Low boy (platform with depressed center)</li> <li>8. Mobile home toter</li> <li>9. Open top (including vans, low-side grain, fruit, etc.)</li> <li>10. Pole, logging, pulpwood, or pipe</li> <li>11. Tank, dry bulk</li> <li>12. Tank, liquids or gases</li> <li>13. Trailer mounted equipment</li> <li>14. Van, basic enclosed (dry cargo)</li> <li>15. Van, drop frame (excluding livestock)</li> <li>16. Van, insulated non-refrigerated</li> <li>17. Van, insulated refrigerated</li> <li>18. Other</li> </ol>	Which type of trailer resembles that most often attached to this vehicle?	<ol style="list-style-type: none"> <li>1. Automobile carrier (stinger-steered)</li> <li>2. Automobile carrier (conventional-rack above cab)</li> <li>3. Automobile carrier (high mount-no rack above cab, excluding curtain, van, or flatbed)</li> <li>4. Beverage or bay</li> <li>5. Container</li> <li>6. Curtainside</li> <li>7. Dump (including side, belly, or bottom dump)</li> <li>8. Flatbed, platform</li> <li>9. Intermodal chassis</li> <li>10. Livestock (including livestock drop frame)</li> <li>11. Logging</li> <li>12. Low boy (platform with depressed center)</li> <li>13. Mobile home toter</li> <li>14. Open top (including vans, low-side grain, fruit, etc.)</li> <li>15. Tank, dry bulk</li> <li>16. Tank, liquids or gases</li> <li>17. Van, basic enclosed (dry cargo)</li> <li>18. Van, drop frame (excluding livestock)</li> <li>19. Van, insulated non-refrigerated</li> <li>20. Van, insulated refrigerated</li> <li>21. Other</li> </ol>

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Vehicle Configuration	9501&9502	not in 2002	not in 2002	Did the trailer have any of the following add-on equipment?	<ol style="list-style-type: none"> <li>1. Aerodynamic reflectors</li> <li>2. Aluminum wheels</li> <li>3. Front fairing</li> <li>4. Lightweight landing gear</li> <li>5. Rear fairing (trailer tail, boat tail)</li> <li>6. Side skirts</li> <li>7. Undercarriage aerodynamic devices</li> <li>8. None of the above</li> <li>9. Other</li> </ol>
Weight	9501	Note: This section pertains to the vehicle OR the vehicle/trailer combination indicated in section K question 2 on page 8 (no trailer or trailer pulled). What was the empty weight of this vehicle or vehicle/trailer combination?	<ol style="list-style-type: none"> <li>1. Less than 6,001 pounds</li> <li>2. 6,001 to 8,500 pounds</li> <li>3. 8,501 to 10,000 pounds</li> <li>4. Other</li> </ol>	What was the empty weight of this vehicle or vehicle/trailer combination? That is, the weight of the vehicle or vehicle/trailer combination without any goods, packaging, or parcels for use, delivery, or sale.	<ol style="list-style-type: none"> <li>1. Less than 6,001 pounds</li> <li>2. 6,001 to 8,500 pounds</li> <li>3. 8,501 to 10,000 pounds</li> <li>4. Other</li> </ol>
Weight	9502	Note: This section pertains to the vehicle OR the vehicle/trailer combination indicated in section K question 2 on page 8 (no trailer or trailer pulled).  What was the empty weight of this vehicle or vehicle/trailer combination?	fill in	Referring to the most common vehicle configuration selected in questions K.1-3 (either no trailer, or a single, double, or triple trailer(s) pulled), what was the empty weight of this vehicle or vehicle/trailer(s) combination? That is, the weight of the vehicle or vehicle/trailer combination without any goods, packaging, or parcels for use, delivery, or sale.	fill in

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Weight	9501	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 2002?	<ol style="list-style-type: none"> <li>1. Less than 6,001 pounds</li> <li>2. 6,001 to 8,500 pounds</li> <li>3. 8,501 to 10,000 pounds</li> <li>4. 10,001 to 14,000 pounds</li> <li>5. 14,001 to 16,000 pounds</li> <li>6. 16,001 to 19,500 pounds</li> <li>7. Other</li> </ol>	In 2021, what was the average weight of this vehicle or vehicle/trailer combination? That is, the typical weight of the vehicle or vehicle/trailer combination with any goods, packaging, or parcels for use, delivery, or sale loaded onto the vehicle.	fill in
Weight	9502	<p>Note: This section pertains to the vehicle OR the vehicle/trailer combination indicated in section K question 2 on page 8 (no trailer or trailer pulled).</p> <p>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 2002?</p>	fill in	In 2021, referring to the most common vehicle configuration, what was the average weight of this vehicle or vehicle/trailer combination? That is, the typical weight of the vehicle or vehicle/trailer combination with any goods, packaging, or parcels for use, delivery, or sale loaded onto the vehicle.	fill in
Weight	9502	not in 2002	not in 2002	In 2021, how many annual overweight permits did you purchase for this vehicle?	fill in
Weight	9502	not in 2002	not in 2002	In 2021, how many trips were taken with this vehicle that required the purchase of single trip overweight permits?	fill in

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Kind of Business	9501&9502	Which of the following best describes your business (or part of your business) in which this vehicle was most often used during 2002?	<ol style="list-style-type: none"> <li>1. For-hire transportation or warehousing</li> <li>2. Vehicle leasing or rental (includes short-term rentals)</li> <li>3. Agriculture, forestry, fishing, or hunting</li> <li>4. Mining (includes quarrying, well operations, and beneficiating)</li> <li>5. Utilities (includes electric power, natural gas, steam supply, water supply, and sewage removal)</li> <li>6. Construction (includes land subdivision and development, as well as construction activity by special trade contractors)</li> <li>7. Manufacturing</li> <li>8. Wholesale trade</li> <li>9. Retail trade</li> <li>10. Information services (includes telephone and television)</li> <li>11. Waste management, landscaping, or administrative/support services</li> <li>12. Arts, entertainment, or recreation services</li> <li>13. Accommodation or food services (for immediate consumption)</li> <li>14. Other services, including real estate, nonvehicle leasing or rental, educational, health care, social assistance, finance, insurance, professional, scientific, or technical services</li> <li>15. Other</li> </ol>	Which of the following best describes the business activity in which this vehicle was most often used during 2021?	<ol style="list-style-type: none"> <li>1. Accommodation or food services</li> <li>2. Waste management and remediation</li> <li>3. Landscaping</li> <li>4. Other admin and support and waste mngmt and remediation services</li> <li>5. Agriculture</li> <li>6. Fishing, hunting, trapping</li> <li>7. Forestry and logging</li> <li>8. Other agric., forestry, fishing, and hunting</li> <li>9. Arts, entertainment, or recreation services</li> <li>10. Construction, residential</li> <li>11. Construction, nonresidential</li> <li>12. Other construction</li> <li>13. Fuel wholesale or distribution</li> <li>14. Information services</li> <li>15. Manufacturing</li> <li>16. Mining</li> <li>17. Retail trade</li> <li>18. For-hire Transportation (of goods or people)</li> <li>19. Warehousing and storage</li> <li>20. Other transportation and warehousing</li> <li>21. Utilities</li> <li>22. Vehicle leasing or rental</li> <li>23. Wholesale trade</li> <li>24. Other services, including advertising, real estate, nonvehicle leasing or rental, educational, health care, social assistance, finance, insurance, professional, scientific, or technical services</li> <li>25. Other</li> </ol>

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Kind of Business	9501	What was the approximate percent of this vehicle or vehicle/trailer combination's 2002 mileage for each of the following operator classifications?	<ol style="list-style-type: none"> <li>1. Personal transportation (operated as a personal-use vehicle for travel to work, carpooling, pleasure driving, etc.)</li> <li>2. Rental (daily and other short term)</li> <li>3. Business use:               <ol style="list-style-type: none"> <li>a. Private (carry own goods, or use truck for internal company business only)</li> <li>b. Motor carrier (company owned trucks hired to carry other people's goods)</li> <li>c. Owner operator (independent truckers hired to carry other people's goods)</li> </ol> </li> </ol>	In 2021, was this vehicle used, at least partially, for any commercial or business-related activities?	<ol style="list-style-type: none"> <li>1. Yes, this vehicle was used at least part time for commercial activities</li> <li>2. No, this vehicle was strictly used for personal transportation</li> </ol>
		For which category, from question 1 above, did you report the highest percent?		In 2021, was this vehicle used for any of the following commercial activities?	<ol style="list-style-type: none"> <li>1. Transporting goods/products belonging to you or your company</li> <li>2. Transporting goods/products belonging to another person or company (e.g. hired motor carrier or owner operator)</li> <li>3. Transporting online goods/products (e.g. grocery store, Uber Eats, Grubhub)</li> <li>4. Transporting tools related to your business</li> <li>5. Transporting paying passengers (e.g. taxi, Uber, Lyft)</li> <li>6. Transporting non-paying passengers (e.g. shuttle for airports, hotels, car rentals, or social services)</li> <li>7. Rental (daily and other short term)</li> <li>8. Other</li> </ol>

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
				What was the approximate percentage of this vehicle's 2021 mileage for each of the following activities?	<ol style="list-style-type: none"> <li>1. Transporting goods/products belonging to you or your company</li> <li>2. Transporting goods/products belonging to another person or company (e.g. hired motor carrier or owner operator)</li> <li>3. Transporting online goods/products (e.g. grocery store, Uber Eats, Grubhub)</li> <li>4. Transporting tools related to your business</li> <li>5. Transporting paying passengers (e.g. taxi, Uber, Lyft)</li> <li>6. Transporting non-paying passengers (e.g. shuttle for airports, hotels, car rentals, or social services)</li> <li>7. Rental (daily and other short term)</li> <li>8. Personal use (non-commercial use)</li> <li>9. Other checkbox for 'Percentages verified by records'</li> </ol>

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Kind of Business	9502	What was the approximate percent of this vehicle or vehicle/trailer combination's 2002 mileage for each of the following operator classifications?	<ol style="list-style-type: none"> <li>1. Private (carry own goods, or use truck for internal company business only)</li> <li>2. Motor carrier (company owned trucks hired to carry other people's goods)</li> <li>3. Owner operator (independent truckers hired to carry other people's goods)</li> <li>4. Rental (daily and other short term)</li> <li>5. Personal transportation</li> </ol>	In 2021, was this vehicle used, at least partially, for any commercial or business-related activities?	<ol style="list-style-type: none"> <li>1. Yes, this vehicle was used at least part time for commercial activities</li> <li>2. No, this vehicle was strictly used for personal transportation</li> </ol>
		For which category, from question 2 above, did you report the highest percent?		In 2021, was this vehicle used for any of the following commercial activities?	<ol style="list-style-type: none"> <li>1. Transporting goods/products belonging to you or your company</li> <li>2. Transporting goods/products belonging to another person or company (e.g. hired motor carrier or owner operator)</li> <li>3. Transporting online goods/products</li> <li>4. Transporting tools related to your business</li> <li>5. Transporting paying passengers (e.g. airport shuttle and other limousine services)</li> <li>6. Transporting non-paying passengers (e.g. shuttle for airports, hotels, car rentals, or social services)</li> <li>7. Rental (daily and other short term)</li> <li>8. Other</li> </ol>



Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
				What was the approximate percentage of this vehicle's 2021 mileage for each of the following activities?	<ol style="list-style-type: none"> <li>1. Transporting goods/products belonging to you or your company</li> <li>2. Transporting goods/products belonging to another person or company (e.g. hired motor carrier or owner operator)</li> <li>3. Transporting online goods/products</li> <li>4. Transporting tools related to your business</li> <li>5. Transporting paying passengers (e.g. airport shuttle and other limousine services)</li> <li>6. Transporting non-paying passengers (e.g. shuttle for airports, hotels, car rentals, or social services)</li> <li>7. Rental (daily and other short term)</li> <li>8. Personal use (non-commercial use)</li> <li>9. Other checkbox for 'Percentages verified by records'</li> </ol>
For-Hire	9502	What was the approximate percent of this vehicle or vehicle/trailer combination's 2002 mileage for each of the following kinds of service?	<ol style="list-style-type: none"> <li>1. Truckload: A single shipment carried at one time</li> <li>2. Less-than-truckload: Multiple shipments carried at one time</li> </ol>	What was the approximate percentage of this vehicle or vehicle/trailer combination's 2021 mileage for each of the following kinds of service?	<ol style="list-style-type: none"> <li>1. Single shipment carried at one time (Truckload)</li> <li>2. Multiple shipments carried at one time (Less-than-truckload) checkbox for 'Percentages verified by records'</li> </ol>

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
For-Hire	9502	What was the approximate percent of this vehicle or vehicle/trailer combination's 2002 mileage for each of the following kinds of carrier?	<ol style="list-style-type: none"> <li>1. Contract: Offered transportation service to certain shippers under specific contracts</li> <li>2. Common: Offered transportation services to the general public over regular and irregular routes</li> </ol>	not in 2021	not in 2021
For-Hire	9502	In 2002, what percent of this vehicle or vehicle/trailer combination's hauls (including backhauls) were found from the following sources?  From ANY of the sources listed in question 2 above, what percent were found through the use of the Internet?	<ol style="list-style-type: none"> <li>1. Shippers or receivers directly</li> <li>2. Brokers</li> <li>3. Centralized markets or exchanges</li> <li>4. Other</li> </ol>	not in 2021	not in 2021
For-Hire	9502	In 2002, how many pickups and/or deliveries did this vehicle or vehicle/trailer combination average in a week?	fill in	In 2021, how many load drop-offs or parcel deliveries did this vehicle or vehicle/trailer combination make on average in a week?	fill in
Products, Equipment, or Materials	9501&9502	What was the approximate percent of this vehicle or vehicle/trailer combination's 2002 mileage for each of the following categories?  From question 1 above, did you report 100% for empty mileage?	<ol style="list-style-type: none"> <li>1. Empty - NOT CARRYING any products, tools, equipment, or materials</li> <li>2. Loaded - CARRYING products, tools, equipment, or materials</li> </ol>	What was the approximate percentage of this vehicle's 2021 mileage for each of the following categories?	<ol style="list-style-type: none"> <li>1. Empty - NOT CARRYING any products, tools, equipment, or materials</li> <li>2. Loaded - CARRYING products, tools, equipment, or materials checkbox for 'Percentages verified by records'</li> </ol>

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Products, Equipment, or Materials	9501&9502	not in 2002	not in 2002	What was the approximate percentage of this vehicle's 2021 mileage that this vehicle was filled to physical capacity (cubed out)?	fill in checkbox for 'Percentages verified by records'
Products, Equipment, or Materials	9501&9502	not in 2002	not in 2002	What was the approximate percentage of this vehicle's 2021 mileage that this vehicle was filled to weight limit (weighed out)?	fill in checkbox for 'Percentages verified by records'
Products, Equipment, or Materials	9501&9502	not in 2002	not in 2002	In 2021, when carrying a typical load, what was the average weight of goods, parcels, or any other products (including packaging) that were loaded for delivery or sale?	fill in
Products, Equipment, or Materials	9502	not in 2002	not in 2002	What was the approximate percentage of this vehicle's 2021 mileage driven to reposition the empty vehicle to a new location for the next load?	fill in checkbox for 'Percentages verified by records'
Products, Equipment, or Materials	9502	not in 2002	not in 2002	What was the approximate percentage of this vehicle's 2021 mileage driven as a direct empty backhaul to home base?	fill in checkbox for 'Percentages verified by records'
Products, Equipment, or Materials	9502	not in 2002	not in 2002	In 2021, did you EVER take less efficient routes due to:	<ol style="list-style-type: none"> <li>1. Low height on a bridge</li> <li>2. Weight restriction on a bridge</li> <li>3. Weight restriction on a highway</li> <li>4. None of the above</li> </ol>
Products, Equipment, or Materials	9501&9502	During 2002, what products, tools, equipment, or materials did this vehicle carry, and what approximate	<ol style="list-style-type: none"> <li>1. Animals and fish, live</li> <li>2. Animal feed and products of animal origin (eggs, hides, etc.)</li> <li>3. Grains, cereal (wheat, corn, rye, etc.)</li> </ol>	In 2021, for the miles driven while carrying a load, what percentage of those "LOADED miles" were driven while carrying the following?	<ol style="list-style-type: none"> <li>1. Animals and fish, live</li> <li>2. Animal feed and products of animal origin (eggs, hides, etc.)</li> <li>3. Grains, cereal (wheat, corn, rye, etc.)</li> </ol>

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
		percent of LOADED miles were they carried?	<ol style="list-style-type: none"> <li>4. All other agricultural products (crops, live plants, bulbs, flowers, etc.)</li> <li>5. Basic chemicals (hydrogen, oxygen, hydrochloric acid, chlorine, sodium hydroxide etc.)</li> <li>6. Fertilizers and fertilizer materials</li> <li>7. Pharmaceutical products (including blood, organs, gauze, etc.)</li> <li>8. All other chemical products and preparations</li> <li>9. Alcoholic beverages</li> <li>10. Bakery and milled grain products (baked snack goods, pasta, cereal, etc.)</li> <li>11. Meat, seafood, and their preparations</li> <li>12. Tobacco products (cigarettes, cigars, chewing tobacco, etc.)</li> <li>13. All other prepared foodstuffs (dairy products, fats, food oils, sauces, spices, etc.)</li> <li>14. Logs and other wood in the rough (logs for lumber, pulping, fuel, etc.)</li> <li>15. Paper or paperboard articles (toilet paper, paper towels, wallpaper, envelopes, etc.)</li> <li>16. Printed products (books, brochures, newspapers, etc.)</li> <li>17. Pulp, newsprint, paper, and paperboard (newsprint in large rolls, napkin stock, etc.)</li> <li>18. Wood products (wood chips, plywood, doors, windows, etc.)</li> <li>19. Articles of base metal (pipes, nails, screws, tubes, fittings, locks, etc.)</li> <li>20. Base metal in primary or semifinished forms (bars and rods of steel or iron, etc.)</li> <li>21. Nonmetallic mineral products (cement, bricks, glass, concrete products, mirrors, etc.)</li> </ol>		<ol style="list-style-type: none"> <li>4. All other agricultural products (crops, live plants, bulbs, flowers, etc.)</li> <li>5. Basic chemicals (hydrogen, oxygen, hydrochloric acid, chlorine, sodium hydroxide etc.)</li> <li>6. Fertilizers and fertilizer materials</li> <li>7. Pharmaceutical products (including blood, organs, gauze, etc.)</li> <li>8. All other chemical products and preparations</li> <li>9. Alcoholic beverages</li> <li>10. Bakery and milled grain products (baked snack goods, pasta, cereal, etc.)</li> <li>11. Meat, seafood, and their preparations</li> <li>12. Tobacco products (cigarettes, cigars, chewing tobacco, etc.) including electronic devices</li> <li>13. All other prepared foodstuffs (dairy products, fats, food oils, sauces, spices, etc.)</li> <li>14. Logs and other wood in the rough (logs for lumber, pulping, fuel, etc.)</li> <li>15. Paper or paperboard articles (toilet paper, paper towels, wallpaper, envelopes, etc.)</li> <li>16. Printed products (books, brochures, newspapers, etc.)</li> <li>17. Pulp, newsprint, paper, and paperboard (newsprint in large rolls, napkin stock, etc.)</li> </ol>

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
			22. Tools, non-powered 23. Tools, powered 24. Electronic and other electrical equipment (telephones, VCR's, computer equipment, etc.) 25. Furniture, mattresses, lamps, etc. 26. Machinery (motors, turbines, air conditioning equipment, fans, dishwashers, etc.) 27. Miscellaneous manufactured products 28. Precision instruments and apparatus (cameras, eyewear, measuring instruments, etc.) 29. Textile, leather, and related articles (footwear, yarns, threads, comforters, etc.) 30. Vehicles, including parts (cars, motorcycles, trailers, etc.) 31. All other transportation equipment (aircraft, boats, locomotives, etc.) 32. Coal (non-agglomerated and agglomerated) 33. Crude petroleum 34. Gravel or crushed stone 35. Metallic ores and concentrates 36. Monumental or building stone (marble, limestone, granite, sandstone, etc.) 37. Natural sands 38. All other nonmetallic minerals (salt, table salt, clays, asbestos, dolomite, etc.) 39. Fuel oils (diesel, Bunker C, etc.) 40. Gasoline and aviation turbine fuel 41. Plastics and rubber (tires, blinds, articles made of plastics or rubber, mud flaps, etc.) 42. All other coal and refined petroleum products (greases, propane, etc.) 43. Hazardous waste (EPA manifest)		18. Wood products (wood chips, plywood, doors, windows, etc.) 19. Articles of base metal (pipes, nails, screws, tubes, fittings, locks, etc.) 20. Base metal in primary or semifinished forms (bars and rods of steel or iron, etc.) 21. Nonmetallic mineral products (cement, bricks, glass, concrete products, mirrors, etc.) 22. Electronic and other electrical equipment (telephones, computer equipment, etc.) 23. Furniture, mattresses, lamps, etc. 24. Machinery (motors, turbines, air conditioning equipment, fans, dishwashers, etc.) 25. Miscellaneous manufactured products (toys, sports equipment, jewelry, clocks, etc.) 26. Precision instruments and apparatus (cameras, eyewear, measuring instruments, etc.) 27. Textile, leather, and related articles (footwear, yarns, threads, comforters, etc.) 28. Vehicles, including parts (cars, motorcycles, trailers, etc.) 29. All other transportation equipment (aircraft, boats, locomotives, etc.) 30. Coal (non-agglomerated and agglomerated)

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
			<ul style="list-style-type: none"> <li>44. All other waste and scrap (including trash, yard waste, biosludge, non-EPA manifested hazardous materials, etc.)</li> <li>45. Recyclable products</li> <li>46. Mail and courier parcels</li> <li>47. Empty shipping containers</li> <li>48. Passengers</li> <li>49. Mixed freight (for-hire carriers that haul multiple commodities on the same load)</li> <li>50. Products, equipment, and materials not elsewhere classified</li> </ul>		<ul style="list-style-type: none"> <li>31. Crude petroleum</li> <li>32. Gravel or crushed stone</li> <li>33. Metallic ores and concentrates</li> <li>34. Monumental or building stone (marble, limestone, granite, sandstone, etc.)</li> <li>35. Natural sands</li> <li>36. All other nonmetallic minerals (salt, table salt, clays, asbestos, dolomite, etc.)</li> <li>37. Fuel oils (diesel, Bunker C, biodiesel, etc.)</li> <li>38. Gasoline and blends of gasoline w/ up to 10% alcohol volume (E10 or lower)</li> <li>39. Aviation turbine fuel (types A &amp; B) and kerosene</li> <li>40. Ethanol and ethanol blends (more than 10% alcohol volume) and other fuel alcohols</li> <li>41. Plastics and rubber (tires, blinds, articles made of plastics or rubber, mud flaps, etc.)</li> <li>42. All other coal and refined petroleum products (greases, propane, etc.)</li> <li>43. Hazardous waste (EPA manifest)</li> <li>44. All other waste and scrap (including trash, yard waste, biosludge, non-EPA manifested hazardous materials, etc.)</li> <li>45. Recyclable products</li> <li>46. Mail and courier parcels</li> <li>47. Empty shipping containers</li> </ul>

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
					48. Mixed freight (multiple commodities on the same load) 49. Products, equipment, and materials not elsewhere classified

Section	Form	2002 VIUS Question/Note	2002 VIUS Responses/Text	2021 VIUS Question/Note	2021 VIUS Responses/Text
Hazardous Materials	9502	What was the approximate percent of 2002 mileage for which this vehicle or vehicle/ trailer combination carried each of the following types of hazardous material(s)?	Class or Division - Placard Name 1. Division 1.1 - Explosives 1.1 2. Division 1.2 - Explosives 1.2 3. Division 1.3 - Explosives 1.3 4. Division 1.4 - Explosives 1.4 5. Division 1.5 - Explosives 1.5 6. Division 1.6 - Explosives 1.6 7. Division 2.1 - Flammable gas 8. Division 2.2 - Nonflammable gas 9. Division 2.3 - Poison gas 10. Class 3 – Flammable 11. Combustible liquid – Combustible 12. Oxygen 2 – Oxygen 13. Division 4.1 - Flammable solid 14. Division 4.2 - Spontaneously combustible 15. Division 4.3 - Dangerous when wet 16. Division 5.1 – Oxidizer 17. Division 5.2 - Organic peroxide 18. Division 6.1 - Poison inhalation hazard 19. Division 6.1 – Poison 20. Class 7 – Radioactive 21. Class 8 – Corrosive 22. Class 9 - Class 9	What was the approximate percentage of this vehicle's 2021 mileage for which this vehicle carried each of the following types of hazardous material(s)?	Class or Division - Placard Name 1. Division 1.1 - Explosives 1.1 2. Division 1.2 - Explosives 1.2 3. Division 1.3 - Explosives 1.3 4. Division 1.4 - Explosives 1.4 5. Division 1.5 - Explosives 1.5 6. Division 1.6 - Explosives 1.6 7. Division 2.1 - Flammable gas 8. Division 2.2 - Nonflammable gas 9. Division 2.3 - Poison gas 10. Class 3 – Flammable 11. Combustible liquid – Combustible 12. Oxygen 2 – Oxygen 13. Division 4.1 - Flammable solid 14. Division 4.2 - Spontaneously combustible 15. Division 4.3 - Dangerous when wet 16. Division 5.1 – Oxidizer 17. Division 5.2 - Organic peroxide 18. Division 6.1 - Poisonous (Toxic Material) 19. Division 6.2 - Infectious Substance 20. Class 7 – Radioactive 21. Class 8 – Corrosive 22. Class 9 - Miscellaneous