DEPARTMENT OF TRANSPORTATION

INFORMATION COLLECTION SUPPORTING STATEMENT

TITLE OF INFORMATION COLLECTION: Driver Interactions with Driver Assistance Technologies

OMB CONTROL NUMBER: 2127-NEW

ABSTRACT[1]

This information collection request involves voluntary responses for a research project to learn about drivers' use of and behavior while interacting with certain advanced driver assistance system (ADAS) technologies. The research will involve licensed drivers aged 25 to 65. The research involves questionnaires used for selecting research participants and questionnaires to gain feedback from the participants with their experiences with the ADAS functions. Responses containing participant feedback regarding ADAS functions will be released in research publications in aggregate form. Each questionnaire will only be collected once.

SUMMARY

NHTSA has proposed to perform research involving the collection of information from the public as part of a multi-year effort to learn about drivers' use of and behavior while interacting with certain advanced driver assistance system (ADAS) technologies. This research will help NHTSA to better understand the current state of implementation of ADAS technologies, how drivers interact with them, and how they may be useful for improving driving safety. The research will involve on-road, semi-naturalistic driving experimentation in which participants who are members of the general public will drive government-owned, instrumented production vehicles equipped with the ADAS technologies.

Participants will include licensed drivers aged 25 to 65 who are healthy and able to drive without assistive devices. Participants will be recruited using print and online newspaper advertisements as well as using letters mailed to registered owners of the vehicle models of interest. Study participation will be voluntary and monetary compensation will be provided.

The research will be conducted in two equal-sized parts. The first part of the data collection will begin upon receipt of PRA clearance and will focus on Adaptive Cruise Control (ACC) and either Lane Keeping Assistance (LKA) or Lane Centering Assistance (LCA). Individuals with and without experience using these technologies and who fall into one of the following three categories will be recruited for participation in the first part of the data collection:

1) Ohio-registered owners of a model year 2018 or 2019 Cadillac CT6 equipped with the **General Motors' (GM) Super Cruise** system,

[1]

2) Ohio-registered owners of model year 2018 or 2019 Honda Odyssey minivans equipped with the **Honda Sensing** system, or
3) Individuals with **no experience** with advanced driver assistance system technology.

Experienced drivers will be those who own one of the vehicle models equipped with the ADAS features being studied in this research and who can be verified to have a certain degree of experience in using those features.

The assignment of participants for part 1 of the data collection is summarized in Table 1.

Table 1. Part 1 Participant Group Assignments

Experience	**Driving Assignment**	**Group**
Inexperienced Drivers	Cadillac CT6	1
	Honda Odyssey	2
Cadillac CT6 Owners	Cadillac CT6	3
	Honda Odyssey	4
Honda Odyssey Owners	Cadillac CT6	5
	Honda Odyssey	6

The second part of the data collection will follow the same scheme but involve different vehicle models equipped with ADAS technology. The vehicle models to be examined in part 2 of the data collection will be identified upon completion of part 1 of the data collection.

Participants will be asked to drive a government-owned, instrumented vehicle over a specified route on public roadways while using ADAS features. Video cameras and other instrumentation will be used to record participants' eye glance behavior, driving behavior, actions to engage the assistance features, and their responses to unrequested disengagements.

Research staff will collect information throughout the course of the research, beginning with participant recruitment, through observation of driving behavior, to post-drive questionnaires. Survey software will be used to present questions to individuals. Screening questions are designed to assess the individual's suitability for study participation, to obtain feedback regarding participants' use of the ADAS technologies, and to gauge the individual's level of comfort with and confidence in the technologies' performance and safety.

The information collection components for initial research and the information desired are listed below. Information collection tools for subsequent research will be of the same format, but will refer to other ADAS features yet to be determined.

1. **Question Set 1, Interest Response Form (NHTSA Form 1522)** – Necessary for determining individuals' willingness to participate in the study and confirming basic qualification and vehicle ownership.

2. **Question Set 2, Recruitment Screening Questions Form (NHTSA Form 1523)** – Necessary for determining individuals' suitability for study performance based on driving experience and history and their general health and ability to drive for approximately 3 hours without assistive equipment or health concerns.
3. **Informed Consent Form (NHTSA Form 1524)** – Used to ensure that participants understand the protocol they will be participating in and for documenting their agreement to participate.
4. **Passive observation of driving behavior** – Necessary for gathering driving behavior and advanced driver assistance technology use data to answer research questions such as those related to assessing drivers' response to system prompts and understanding of system status.
5. **Question Set 3, Post-Drive Questionnaire (NHTSA Forms 1525, 1526)** – Necessary for understanding drivers' opinions regarding advanced driver assistance technology performance, degree of comfort with system use, and perceptions of safety associated with the use of these features.
6. **Question Set 4, Post-Drive Questionnaire, Owner (NHTSA Forms 1527, 1528)** – Necessary for understanding **experienced ADS users'** opinions regarding advanced driver assistance technology performance, degree of comfort with system use, and perceptions of safety associated with the use of these features.

The Interest Response Form and Recruitment Screening Form data will solely be used to determine an individual's suitability for study participation and will not be analyzed in any way. Driving behavior and post-drive questionnaire responses will be combined for analysis.

Research staff will perform analyses on dependent measures of driving performance, driver behavior in response to system notifications, driver use of the ADAS system, and subjective impressions of the ADAS features assessed via the post-drive questionnaires. Vehicle control metrics such as speed, headway, steering reversal rate, accelerator use, brake use, and lane-position variability will be compared across conditions.

Research staff will also compare driver behavior in response to system notifications across conditions. Response time will be measured as the time from disengagement until the driver either: presses the brake pedal, presses the accelerator pedal, or moves the steering wheel beyond a set threshold. Additionally, research staff will quantify behaviors in response to a disengagement notification, such as hand positions and glance behavior. These may include the time from disengagement to 1) placing both hands on the steering wheel, 2) glancing to the instrument panel, 3) glancing to the forward roadway, and 4) glancing to the center rearview mirror.

Research staff will also compare dependent measures regarding ADAS system use across conditions. These will include the frequency and duration of ADAS system use, as well as the conditions associated with any driver-initiated retake of manual control.

Beyond comparing across conditions, analyses may include examining differences in ADAS use with different road conditions. This may include comparing driver performance, response to disengagement, and ADAS system use during curves compared to straight roadways and differences in dense traffic compared to light traffic.

Research staff will assess subjective impressions of the ADAS systems following the drive by using a post-drive questionnaire to gather subjective ratings of ease of use, trust, and safety.

A Supporting Statement Part B has been prepared and submitted to provide clear information regarding how the information will be used.

Part A. Justification

1. <u>Circumstances That Make the Collection of Information Necessary</u>. *Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the collection of information.*

Subchapter V of Title 49 of the United States Code (U.S.C.) authorizes the Secretary of Transportation to conduct "motor vehicle safety research, development, and testing programs and activities, including activities related to new and emerging technologies that impact or may impact motor vehicle safety." 49 U.S.C. 30182. Pursuant to § 1.95 of Title 49 of the Code of Federal Regulations (CFR), the Secretary has delegated this authority to the National Highway Traffic Safety Administration (NHTSA).

NHTSA's mission is to save lives, prevent injuries, and reduce the economic costs of road traffic crashes through education, research, safety standards, and enforcement activity. As automated vehicle technologies advance, they have the potential to dramatically reduce the loss of life each day in roadway crashes. This research program supports NHTSA's mission by examining how drivers interact with current production driver-assistive technologies and identifying opportunities for system improvement.

The information collection components for initial research and the information desired are listed below. Information collection tools for subsequent research will be of the same format, but will refer to other ADAS features yet to be determined.

1. **Question Set 1, Interest Response Form (NHTSA Form 1522)** – Necessary for determining individuals' willingness to participate in the study and confirming basic qualification and vehicle ownership.
2. **Question Set 2, Recruitment Screening Questions Form (NHTSA Form 1523)** – Necessary for determining individuals' suitability for study performance based on driving experience and history and their general health and ability to drive for approximately 3 hours without assistive equipment or health concerns.
3. **Informed Consent Form (NHTSA Form 1524)** – Used to ensure that participants understand the protocol they will be participating in and for documenting their agreement to participate.
4. **Passive observation of driving behavior** – Necessary for gathering driving behavior and advanced driver assistance technology use data to answer research questions such as those related to assessing drivers' compliance with system prompts and understanding of system status.
5. **Question Set 3, Post-Drive Questionnaire (NHTSA Forms 1525, 1526)** – Necessary for understanding drivers' opinions regarding advanced driver assistance technology performance, degree of comfort with system use, and perceptions of safety associated with the use of these features. There are two versions of this questionnaire that have identical wording except each uses the manufacturer-specific name for the ADAS features (e.g., GM Super Cruise and Honda Sensing)
    a. Cadillac version (GM Super Cruise) (NHTSA Form 1525)
    b. Honda version (Honda Sensing) (NHTSA Form 1526).
6. **Question Set 4, Post-Drive Questionnaire, Owner (NHTSA Forms 1527, 1528)** – Necessary for understanding **experienced ADS users'** opinions regarding advanced driver assistance technology performance, degree of comfort with system use, and perceptions of safety associated with the use of these features. There are two versions of this questionnaire that

have identical wording except each uses the manufacturer-specific name for the ADAS features (e.g., GM Super Cruise and Honda Sensing)

a. Cadillac version (GM Super Cruise) (NHTSA Form 1527)
b. Honda version (Honda Sensing) (NHTSA Form 1528).

2. How, By Whom, and For What Purpose Is the Information to Be Used. *Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.*

The purpose of this research is to help NHTSA to better understand the current state of implementation of ADAS technologies, how drivers interact with them, and how they may be useful for improving driving safety. NHTSA will publish the study results in a technical report. A more detailed description of how, by whom, and for what purpose the individual information components of this collection are to be used is provided below.

BY WHOM: All information will be collected by staff from NHTSA's Vehicle Research and Test Center (VRTC) along with contracted support from Transportation Research Center, Inc.

This research involves three information collection steps and one observational step.

1. **Question Set 1, Interest Response Form** (NHTSA Form 1522)

   PURPOSE: For determining an individual's willingness to participate in the study and initial suitability for study participation based primarily on vehicle ownership and driving experience (e.g., annual mileage driven).

   HOW: Research staff will recruit individuals with two different levels of experience with advanced driver assistance technologies: Individuals with no experience and individuals who own a specific vehicle make/model equipped with the ADAS feature(s) being studied. Individuals who do not have experience with these technologies will be reached via advertisements (print and online). Individuals with experience driving one of the two specific vehicle models equipped with the features of interest will be registered owners identified via data from the State of Ohio's Bureau of Motor Vehicles (BMV). Owners of the vehicles of interest will be contacted by U.S. mail through a postcard containing the study description and an invitation to participate.

   Individuals interested in participation will respond to the advertisement or mailing by completing *Question Set 1, Interest Response Form* either in print (vehicle model-of-interest owners only) or online via a secure website.

   The research team will review the response data and will determine whether the individual meets the initial study participation criteria. Those meeting the criteria will move on to the next step (Question Set 2).

2. **Question Set 2, Recruitment Screening Form** (NHTSA Form 1523)

   PURPOSE: To determine whether an individual has the desired degree of experience with the vehicle model and system type being tested, ensure the respondent has no recent

criminal convictions, and determine whether the individual is affected by any health conditions that may affect driving ability. The purpose of the screening process is to ensure that participants' driving performance will be representative of the general public and that participants' physical and health conditions allow them to safely drive continuously for 3 hours without the use of assistive devices.

HOW: Individuals meeting the criteria associated with *Question Set 1, Interest Response Form*, will be sent an e-mail message containing a web link for accessing Question Set 2 via a secure website. The website will present the questions and record responses to individual vehicle and driving related questions, while recording only a summary indication of whether an individual meets the health question requirements.

Response data will be reviewed by the research team and a determination will be made whether the individual meets the study participation criteria. Those respondents meeting the criteria will be contacted by e-mail or phone to schedule an appointment for study participation.

3. **Passive Observation of Driving Behavior**

PURPOSE: To record study participants' driving behavior and system use for later analysis with respect to research questions addressing safety impacts of advanced driver assistance technology use. This data collection is necessary for assessing drivers' understanding of system use, compliance with system prompts, and understanding of system status.

HOW: Study participants will drive a government-owned instrumented vehicle on public roadways in normal traffic during daytime hours. Vehicle instrumentation will include video cameras for recording the driver eye glance and hand locations and the road scene. Information such as vehicle location, speed, and control inputs will also be recorded.

The research team will review video and engineering data to extract descriptive information associated with driving behavior and system use such as frequency of system use and timing of responses to system prompts.

4. **Question Set 3, Post-Drive Questionnaire** (NHTSA Forms 1525, 1526)

PURPOSE: To understand drivers' opinions regarding advanced driver assistance technology performance, degree of comfort with system use, and perceptions of safety associated with system use. The questions in this form address participants' experiences during the experimental drive, including the difficulty or ease of using the automated system, trust in the automated system, incidences of mode confusion, and any safety considerations related to the system.

HOW: The post-drive questionnaire will be administered using a tablet computer immediately following completion of the study drive. There will be two versions of the questionnaire with both having the same questions but referring to the specific vehicle and ADAS features the participant drove with in the study.

Participants' responses to scale-based questions will be combined for analysis. Responses to open-ended questions will be qualitatively summarized and described in the technical report without reference to individual participants.

5. **Question Set 4, Post-Drive Questionnaire, Owner** (NHTSA Forms 1527, 1528)

PURPOSE: Necessary for understanding **experienced ADS users'** opinions regarding advanced driver assistance technology performance, degree of comfort with system use, and perceptions of safety associated with the use of these features. There are two versions of this questionnaire that have identical wording except each uses the manufacturer-specific name for the ADAS features (e.g., GM Super Cruise and Honda Sensing)

HOW: The post-drive questionnaire will be administered using a tablet computer immediately following completion of the study drive. There will be two versions of the questionnaire: one for participants who own a vehicle equipped with an ADAS technology and one for participants who did not have experience with such technology prior to the study.

Participants' responses to scale-based questions will be combined for analysis. Responses to open-ended questions will be qualitatively summarized and described in the technical report without reference to individual participants.

3. Extent of Automated Information Collection. *Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g. permitting electronic submission of responses, and the basis for the decision for adopting this means of collection. Also, describe any consideration of using information technology to reduce burden.*

Electronic collection of information needed for participant recruitment and screening will be facilitated through the use of a secure website. Secure web-based collection of recruitment information avoids the need to mail printed question sets to candidates or conduct phone interviews. Electronic presentation on a tablet computer of post-drive questionnaires for response input will eliminate the need for manual entry of questionnaire data.

Study recruitment will be accomplished via online and print advertisements, as well as targeted mailings to Ohio registered owners of specific vehicle models. Individuals interested in participation will respond to the advertisement or mailing by visiting a secure website containing a brief study description. Along with the study description, a web link will be provided that interested candidate participants can follow to begin the screening process.

The screening questions will be presented via a secure website and will have two parts:

1. The first part is a short set of questions (*see* Interest Response Form, Question Set 1) used to determine whether a respondent meets the basic qualifications of participation. The form solicits demographic, contact, and driving license and history information and inquires about

the respondent's use of the system under testing.

2. An e-mail containing a web link for accessing a second screening question set (*see* Recruitment Screening, Question Set 2) will be sent to individuals meeting the criteria associated with Question Set 1. The second set of questions is used to determine whether the respondents are in good health and likely to satisfactorily and safely complete study participation if selected.

Information entered by candidate participants will be securely stored in electronic format for review by study staff. NHTSA and its contractors will access the response information from both sets of screening questions via a secure website and use the information to evaluate individuals' suitability for study participation.

In the observational driving experiment, a computer-based data acquisition system will be used to record vehicle-control inputs, video of the driving scene and the driver's eyes, and manual control inputs driving. The data obtained by the data acquisition system will be processed using a computer program to automatically determine eye glance locations.

4. Describe Efforts to Identify Duplication. *Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purposes described in item 2 above.*

NHTSA has not conducted or sponsored a similar study of drivers' use of advanced driver assistance technology features involving the particular vehicle make/models involved in this initial study (i.e., 2018 Cadillac CT6 with Super Cruise and 2019 Honda Odyssey EX with Honda Sensing). Nor has there been a study using drivers with extended experience with the selected ADAS.

The information collected during participant recruitment is specific to the particular individuals that wish to participate by driving in the experiment. Therefore, similar information collected from other individuals is not relevant or applicable. The agency is also not aware of any sources of participant screening information other than direct interaction with candidate participants.

The observational experiment will provide information that does not currently exist regarding direct observation of drivers operating vehicles equipped with advanced driver assistance technology systems on public roads and cannot be obtained through other methods.

5. Efforts to Minimize the Burden on Small Businesses. *If the collection of information impacts small businesses or other small entities, describe any methods used to minimize burden.*

This collection of information will not affect small businesses or other small entities.

6. Impact of Less Frequent Collection of Information. *Describe the consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal*

obstacles to reducing burden.

The information collection covered herein will be collected once only. Considerations relating to frequency are therefore not relevant.

If the information related to Question Sets 1 and 2 were not collected, NHTSA would not be able to conduct the study because the agency would be unable to schedule participants for the study. Further, without collecting candidate participant information, NHTSA would be unable to confirm that participants have the necessary amount of driving experience, technology familiarity, and health-related driving ability.

If the observational experiment portion of this effort were not conducted, NHTSA would lack important information used to support its decisions relating to safe implementation of advanced driver assistance system technologies.

As the agency responsible for prescribing and maintaining the standards for vehicle safety in the United States,[2] NHTSA is constantly seeking objective data for use in basing decisions about how to best protect the road-traveling public and minimize deaths and injuries associated with car crashes.[3] Timely, accurate information on driver behavior and performance considering modern-day vehicle equipment and driver habits is essential to NHTSA's determining the most appropriate recommendations and requirements for vehicle equipment and driving safety. With regard to the topic of advanced driver assistance technologies, the rapid rate of their development warrants examination of the state of contemporary driver behavior, and interaction with--as well as misuse of--advanced driver assistance technology capabilities.

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7. <u>Special Circumstances</u>. *Explain any special circumstances that would cause an information collection to be conducted in a manner:*

- *Requiring respondents to report information to the agency more often than quarterly;*
- *requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it;*
- *requiring respondents to submit more than an original and two copies of any document;*
- *requiring respondents to retain records, other than health, medical, government contract, grant-in-aid, or tax records for more than three years;*
- *in connection with a statistical survey, that is not designed to produce valid and reliable results that can be generalized to the universe of study;*
- *requiring the use of a statistical data classification that has not been reviewed and approved by OMB;*
- *that includes a pledge of confidentiality that is not supported by authority established in statute or regulation, that is not supported by disclosure and data security policies that are consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use; or*
- *requiring respondents to submit proprietary trade secret, or other confidential information unless the agency can demonstrate that it has instituted procedures to protect the information's confidentiality to*

[2] 49 U.S.C. 30101(1).
[3] 49 U.S.C. 30101(2).

the extent permitted by law.

If one or more of the following applies, please explain in complete detail.

None of these special circumstances apply to the information collected for this study on driver interactions with advanced driver assistance technologies.

8. Compliance With 5 CFR 1320.8(D). *Provide a copy of the Federal Register document soliciting comments on extending the collection of information, a summary of all public comments responding to the notice, and a description of the agency's actions in response to the comments. Describe efforts to consult with persons outside the agency to obtain their views.*

In compliance with 5 CFR 1320.8(d), NHTSA published the 60-day Federal Register notice requesting public comment on the proposed collection of information on May 21, 2019 (Federal Register/ Vol. 84, No. 98/pp. 23154-23157). NHTSA received 7 comments. The comments did not address the questions to be asked of participants.

We received comments from 7 entities including 4 organizations and 3 individuals. Organizations submitting comments included AAA, The Center for Auto Safety, Consumer Reports, and the Motor & Equipment Manufacturers Association (MEMA). All comments were supportive of the research. Some comments requested clarification of participation criteria, such as a more detailed definition of what NHTSA would consider "experience" with using an ADAS. Some comments suggested adjustments to study participation criteria, such as lowering the minimum annual mileage driven and including younger and older drivers. Based on comments, the target age range was changed from 21 yrs or older to 25 to 65 years and the annual mileage driven criterion was reduced from 14,000 to 11,000 miles. The 30-day notice published August 21, 2020 (Federal Register/ Vol. 85, No. 163/pp. 51844-51848) provided clarifications and suggestions for broadening the scope of the work will be retained for consideration in future research projects.

9. Payment or Gifts To Respondents. *Explain any decision to provide any payment or gift to respondents, other than remuneration of contractors or grantees.*

For Question Sets 1 and 2, no payment or gift will be provided to respondents.

For the observational driving study and the post-drive questionnaire, NHTSA plans to provide monetary payment at the rate of $50 per hour for study participation. Such compensation is consistent with normal experimental practice to compensate participants for their time and encourage participation in research studies.

The compensation rate is set using a calculation method approved by NHTSA's Office of Acquisition Management and will be reviewed by an independent Institutional Review Board. The compensation amount calculation begins with an hourly rate corresponding to a nonprofessional federal government employee (GS-8, Step 1) in the locality (Columbus, OH) in which the study is conducted. Additional amounts are added to this rate to compensate for things such as special participant criteria

(e.g., technology experience). In addition, study participants will be reimbursed at the current GSA mileage rate for miles traveled to and from the test site located approximately 30 miles outside of Columbus, Ohio.

10. Assurance of Confidentiality. *Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy.*

The agency will provide participants with an informed consent form (NHTSA Form 1524) explaining that NHTSA will not release any personally identifiable information (PII) including but not limited to their names, individual screening question responses, or medical information. Participants will also be informed that video and engineering data documenting their driving behavior will not be used, stored, or released in conjunction with their name or other personally identifiable information. In order to maintain privacy, test participants will be assigned a subject number which will be used instead of their name to identify all data collected.

A Privacy Threshold Analysis will be completed by the study staff and submitted to Agency privacy officials to ensure that PII is adequately protected. PII use will be solely for the purposes of study recruitment and study conduct. Agency policy requires that any data containing PII be stored securely and protected for access only by required study personnel.

11. Justification for Collection of Sensitive Information. *Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private. This justification should include the reasons why the agency considers the questions necessary, the specific uses to be made of the information, the explanation to be given to persons from whom the information is requested, and any steps to be taken to obtain their consent.*

All recruitment screening question sets are prefaced with a statement clarifying that responding is voluntary and that information will only be used for the purposes of study recruitment.

Question Sets 1 and 2 will involve collection of sensitive information. These questions are used to ensure that individuals meet study eligibility requirements prior to their enrollment. Age and sex information will be collected to assign participants to the experimental conditions in a balanced manner. Some questions address topics that are commonly considered private, such as general health information and the presence of medical conditions that may affect driving ability. Health-related questions are posed to ensure that the drivers could be considered of average driving ability, are healthy enough to safely participate in an experimental protocol, are able to drive continuously for a period of 3 hours, are not impaired in any way, and have no episodic health conditions that could manifest during their participation (e.g., an asthma attack or seizure). Candidates will be asked whether they are taking any medications that may affect driving ability. Health information will only be used for determining eligibility; however, the records will not be retained nor analyzed for the study. Only an electronic record of a yes/no indication of whether an individual met the screening criteria will be retained.

12. <u>Estimate of Burden Hours For Information Requested</u>. *Provide estimates of the hour burden of the collection of information. The statement should:*

- *Indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated. Unless directed to do so, agencies should not conduct special surveys to obtain information on which to base hour burden estimates. Consultation with a sample (fewer than 10) of potential respondents is desirable. If the hour burden on respondents is expected to vary widely because of differences in activity, size, or complexity, show the range of estimated hour burden, and explain the reasons for the variance. Generally, estimates should not include burden hours for customary and usual business practices.*
- *If this request for approval covers more than one form, provide separate hour burden estimates for each form and aggregate the hour burdens.*
- *Provide estimates of annualized cost to respondents for the hour burdens for collections of information, identifying and using appropriate wage rate categories. The cost of contracting out or paying outside parties for information collection activities should not be included here. Instead, this cost should be included in item 14.*

The estimated number of respondents for Question Set 1 is 1,000, for Question Set 2 is 600, for Question Set 3 is 150, and for Question Set 4 is 150. NHTSA estimates that it will take 5 minutes to respond to Question Set 1, 7 minutes to respond to Question Set 2, 15 minutes to respond to Question Set 3, and 20 minutes to respond to Question Set 4. The time per question set is calculated by multiplying the number of respondents by the time per respondent and then converting from minutes to hours. The total burden hours associated with this information collection is expected to be 240.83 hours. The hour value for each question set is multiplied by the latest average hour earning estimate from the Bureau of Labor Statistics to obtain an estimated burden cost per question set.

The estimated annual time and cost burdens are summarized in the table below. The number of respondents and time to complete each question set are estimated as shown in the table.

Question Set	Question Topic	Respondents	Pay Rate*	Total Burden Hours	Total Cost
1	Driving Research Study Interest Response Form	1000	$28.32	83.33	$ 2,359.91
2	Screening Questions	600	$28.32	70.0	$ 1,982.40
3	Post-Drive Questionnaire	150	$28.32	37.5	$ 1,062.00
4	Post-Drive Questionnaire, Owner	150	$28.32	50.0	$ 1,416.00
			TOTAL Estimated Burden:	240.83	$ 6,820.31

*Cost per hour based on Bureau of Labor Statistics Dec. 2019 Average Hourly Earnings data for "Total Private," $28.32 (Accessed Jan. 28, 2020, at https://www.bls.gov/news.release/empsit.t19.htm)

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13. <u>Estimate Of The Total Annual Costs Burden</u>. *Provide an estimate of the total annual cost burden to*

respondents or record keepers resulting from the collection of information.

- *The cost estimates should be split into two components: (a) a total capital and start-up cost component (annualized over its expected useful life); and (b) a total operation and maintenance and purchase of services component. The estimates should take into account costs associated with generating, maintaining, and disclosing or providing the information. Include descriptions of methods used to estimate major costs factors including system and technology acquisition, expected useful life of capital equipment, the discount rate(s), and the time period over which costs will be incurred. Capital and start-up costs include, among other items, preparations for collecting information such as purchasing computers and software; monitoring, sampling, drilling and testing equipment; and record storage facilities.*
- *If cost estimates are expected to vary widely, agencies should present ranges of cost burdens and explain the reasons for the variance. The cost of purchasing or contracting out information collection services should be a part of this cost burden estimate. In developing cost burden estimates, agencies may consult with a sample of respondents (fewer than 10), utilize the 60-day pre-OMB submission public comment process and use existing economic or regulatory impact analysis associated with the rulemaking containing the information collection, as appropriate.*

Generally, estimates should not include purchases of equipment or services, or portions thereof, made (1) prior to October 1, 1995, (2) to achieve regulatory compliance with requirements not associated with the information collection, (3) for reasons other than to provide information or keep records for the government, or (4) as part of customary and usual business or private practices.

There are no additional costs to respondents or record keepers.

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14. Estimates of Costs to the Federal Government. *Provide estimates of annualized cost to the Federal government.*

The estimated cost in terms of government time is approximately 40 hours for the Contracting Officer's Representative (COR) and 8 hours for the supervisor. Using an example COR GS pay scale level of 14 Step 1 and Supervisor GS pay scale rate of 15 Step 1, NHTSA estimates that the cost associated with those hours to be $2,623.60 ($53.10 x 40 hours = $2124.00, $62.45 x 8 hours = $499.60, $2124.00 + $499.60 = $2623.60).

The estimated costs incurred by the Federal government relating to the administration and technical support for this information collection are based on the number of minutes needed to administer and process each question set and the number of respondents. The time per question set is calculated by multiplying the number of respondents by the time per respondent and then converting from minutes to hours. Referral for Question Set 2 is automated via software.

The labor cost for each question set is based on the cost of contractor time to accomplish administration and data processing. Labor cost for each question set is multiplied by the time for all respondents in hours to obtain total cost per question set.

Costs incurred by the Federal Government relating to the administration and technical support of this information collection are summarized in the table below.

Step	N	Time Per Respondent (Minutes)	Labor Cost ($) Per Hour	Total Cost ($)
Question Set 1 Administration	1000	5*	$ 96.00	$ 8,000.00
Question Set 1 Data Processing	1000	5	$ 96.00	$ 8,000.00
Question Set 2 Administration	600	5**	$ 96.00	$ 4,800.00
Question Set 2 Data Processing	600	20	$ 136.00	$ 27,200.00
Question Set 3 Administration	300	20	$ 154.50	$ 15,450.00
Question Set 3 Data Summary	300	30	$ 154.50	$ 23,175.00
Question Set 4 Administration	150	5	$154.50	$1,931.25
Question Set 4 Data Summary	150	15	$154.50	$5,793.75
TOTAL:				$ 94,350.00

*Note: Two of the 3 groups/types of individuals targeted for study recruitment will have to be contacted by U.S. mail (NHTSA will acquire contact information for particular vehicle model owners from Ohio BMV and send them an invitation with Set 1 questions). The administration time represents the time to prepare mailing.

**Note: Question Set 2 will be administered electronically via a secure website. However, the step of referring individuals with acceptable Question Set 1 responses to complete Question Set 2 will be accomplished by a contractor sending the candidate an e-mail asking them to complete Question Set 2 online. Administration time consists of the time it will take for an individual to send the candidate participant a scripted e-mail response.

Costs incurred by the Federal Government for compensation of study participants and mileage reimbursement are estimated below. It is planned that participants will be recruited from an area

covering an approximately 60-mile radius surrounding the test site. For the purposes of estimating mileage reimbursement cost, it is assumed that participants' residences will be located an average of 30 miles from the test site. Study participants will be reimbursed for mileage driven for both outbound and return trips between their residence and the test site, which gives an average of 60 miles reimbursed at the current GSA mileage rate of $0.575[4] per participant.

For the observational driving study and the post-drive questionnaire, NHTSA plans to provide monetary payment at the rate of $50 per hour for study participation. For the study, the participants will drive for approximately 3 hours along a set route, after which they will fill out a post-drive questionnaire. Participants are expected to spend approximately a total of 4 hours participating in the research study.

Costs incurred by the Federal Government for compensation of study participants and mileage reimbursement are summarized in the table below.

Step	N	Quantity	Cost Rate	Cost ($)
Participant Pay	300	4 (hours)	$ 50.00/hr	$ 60,000.00
Mileage Reimbursement	300	60 (miles)	$ 0.575/mile	$ 10,350.00
TOTAL:				$ 70,350.00

15. Explanation Of The Program Change Or Adjustments. *Explain the reasons for any program changes or adjustments reported in questions 12 or 13.*

This is a new data collection. Therefore, this information collection increases burdens by 240.83 (routed to 241) hours and $0.

16. Publication Of Results Of Data Collection. *For collections of information whose results will be published, outline plans for tabulation, and publication. Address any complex analytical techniques that will be used. Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.*

Study results will be published in a technical report. NHTSA may publish in aggregate the age and gender results from this data collection as part of a research report and future Federal Register published documents. Results will not be tabulated by recruitment criteria levels (e.g., age, gender).

Only descriptive and inferential statistical analysis methods will be used. Personal information will not be published.

The project began in late 2018. Data collection is planned to begin in 2020 immediately upon PRA clearance receipt and is anticipated to span approximately 6 months. Data reduction and analysis will follow data collection. Drafting of a technical report should be completed within 6 months of the end

[4] *See* https://www.gsa.gov/travel/plan-book/transportation-airfare-pov-etc/privately-owned-vehicle-pov-mileage-reimbursement-rates

of data collection, with the target completion time frame being Spring 2021.

17. <u>Approval for Not Displaying the Expiration Date of OMB Approval</u>. *If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.*

NHTSA is not seeking such approval.

18. <u>Exceptions to the Certification Statement</u>. *Explain each exception to the certification statement "Certification for Paperwork Reduction Act Submissions."*

No exceptions to the certification are required for this research plan.