

**DEPARTMENT OF TRANSPORTATION**

**INFORMATION COLLECTION SUPPORTING STATEMENT: PART A**

**TITLE OF INFORMATION COLLECTION: Drivers' Use of Camera-Based Rear Visibility Systems  
Versus Traditional Mirrors**

**OMB CONTROL NUMBER: 2127-NEW**

**ABSTRACT<sup>1</sup>**

The National Highway Traffic Safety Administration (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 camera-based rear visibility systems as compared to their use of traditional vehicle outside mirrors. This research will support NHTSA in evaluating whether to pursue a regulation modification that would permit technologies other than mirrors, such as camera-based visibility systems (sometimes referred to as camera monitor systems (CMS)), for compliance with FMVSS No. 111.

The data collections will be performed once to obtain the target number of valid test participants. Study participants will be members of the general public and participation will be voluntary. Participants will include licensed car and/or commercial truck 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. Study participation will be voluntary and monetary compensation will be provided.

The research will be conducted in two parts. Data collection will begin upon receipt of PRA clearance and will first involve light vehicles, and a second, subsequent part will involve heavy trucks. Participants will experience a production vehicle equipped with a commercially available or prototype camera-based visibility system in place of outside mirrors and a vehicle equipped with an original equipment mirror system. The research will involve stationary (i.e., laboratory), track-based and on-road, semi-naturalistic driving experimentation. Vehicles used in testing will be equipped with instrumentation for recording driver eye-glance behavior, as well as vehicle speed, position, steering angle, and turn signal status. Sensors will also be used to determine and record the distances between the test vehicle and surrounding vehicles during testing.

Information will be collected over the course of the research through participant recruitment screening questions, observation of driving behaviors, and post-drive questionnaires. Questions addressed to individuals will serve to assess individuals' suitability for study participation, to obtain feedback

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<sup>1</sup> The Abstract must include the following information: (1) whether responding to the collection is mandatory, voluntary, or required to obtain or retain a benefit; (2) a description of the entities who must respond; (3) whether the collection is reporting (indicate if a survey), recordkeeping, and/or disclosure; (4) the frequency of the collection (e.g., bi-annual, annual, monthly, weekly, as needed); (5) a description of the information that would be reported, maintained in records, or disclosed; (6) a description of who would receive the information; (7) the purpose of the collection; and (8) if a revision, a description of the revision and the change in burden.

regarding participants' use of the CMS, and to gauge individuals' level of comfort with and confidence in the CMS performance and safety.

The information collection components of this research and the information desired are listed below.

1. **Question Set 1, Interest Response Form (NHTSA Form 1553)** – Necessary for determining individuals' willingness to participate in the study and confirm basic qualification and vehicle ownership.
2. **Question Set 2, Candidate Screening Questions (NHTSA Form 1554)** – Necessary for determining individuals' suitability for study performance based on driving experience, history, general health, and ability to drive for approximately 3 hours without assistive equipment or health concerns.
3. **Passive observation of driving behavior** – Necessary for gathering driver eye-glance behavior and driving performance information for the purposes of assessing differences between traditional mirrors and camera-based rear visibility systems.
4. **Question Set 3, Post-Drive Questionnaire: Drive with Camera-Monitoring System (NHTSA Form 1556)** – Necessary for understanding drivers' opinions regarding camera-based visibility system performance, degree of comfort with system use, and perceptions of safety associated with the use of these features.
5. **Question Set 4, Post-Drive Questionnaire: Drive with Traditional Mirrors (NHTSA Form 1557)** Necessary for understanding drivers' opinions regarding traditional mirror performance, degree of comfort with system use, and perceptions of safety associated with the use of these features.
6. **Question Set 5, Post-Drive Questionnaire: Final Opinions (NHTSA Form 1558)** – Necessary for understanding drivers' opinions regarding preference for using CMS or mirrors as well as assessing specific opinions regarding CMS.

The Driving Study Interest Response Form and candidate participant screening information will solely be used to determine individuals' suitability for study participation and will not be analyzed in any way. Driving behavior and post-drive questionnaire responses will be combined for analysis.

Analyses will be performed on dependent measures of driving performance, including time to complete lane changes, time to pass slower moving vehicles, distances to vehicles prior to and following lane changes and passing maneuvers. Vehicle control metrics such as speed, headway, and steering reversal rate will be compared across conditions.

Analyses will also be performed on dependent measures of eye-glance behavior including average glance durations, proportion of total glances, and proportion of long glances to the mirrors/CMS displays. Eye-glance behaviors will be examined more specifically during lane changes and passing maneuvers. Average glance durations to the mirrors or electronic camera-based display in the 10 seconds prior until the 5 seconds following lane changes will be compared between conditions.

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. Circumstances That Make The Collection Of Information Necessary.** *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 Chapter 301 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 Section 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 supports NHTSA’s mission by examining how drivers interact with camera-based visibility systems compared to traditional outside rearview mirrors and identifying opportunities to improve the safety of control exchanges between those systems and the driver.

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 additional CMS features and issues related to using a heavy truck on-road.

1. **Question Set 1, Interest Response Form (NHTSA Form 1553)** – Necessary for determining individuals’ willingness to participate in the study and confirm basic qualification and vehicle ownership.
  2. **Question Set 2, Candidate Screening Questions (NHTSA Form 1554)** – Necessary for determining individuals’ suitability for study performance based on driving experience, history, general health, and ability to drive for approximately 3 hours without assistive equipment or health concerns.
  3. **Passive observation of driving behavior** – Necessary for gathering driver eye-glance behavior and driving-performance information for the purposes of assessing differences between traditional mirrors and camera-based rear visibility systems.
  4. **Question Set 3, Post-Drive Questionnaire: Drive with Camera-Monitoring System (NHTSA Form 1556)** – Necessary for understanding drivers’ opinions regarding camera-based visibility system performance, degree of comfort with system use, and perceptions of safety associated with the use of these features.
  5. **Question Set 4, Post-Drive Questionnaire: Drive with Traditional Mirrors (NHTSA Form 1557)** – Necessary for understanding drivers’ opinions regarding traditional mirror performance, degree of comfort with system use, and perceptions of safety associated with
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the use of these features.

6. **Question Set 5, Post-Drive Questionnaire: Final Opinions (NHTSA Form 1558)** – Necessary for understanding drivers' opinions regarding preference for using CMS or mirrors as well as assessing specific opinions regarding CMS.

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**2. How, By Whom, And For What Purpose Is The Information To Be Used.** *Indicate how, by whom, and for what purpose is 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.*

**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 six components, including five questionnaires and one passive observation step.

1. **Question Set 1, Interest Response Form** (NHTSA Form1553)

**PURPOSE:** For determining individuals' willingness to participate in the study and initial suitability for study participation based primarily on their demographics and driving qualifications (e.g., annual mileage driven).

**HOW:** Individuals will be reached via advertisements (print and online). Individuals interested in participation will respond to the advertisement or mailing by completing the *Question Set 1 Interest Response Form* online via a secure website.

Response data will be reviewed by the research team and a determination will be made 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, Candidate Screening Questions** (NHTSA Form 1554)

**PURPOSE:** To determine whether individuals have the desired degree of driving experience, are free from any health conditions that may affect driving ability, have no more than 2 points on their driving record (a requirement of the company providing the Contractor with a liability insurance policy), and ensure no recent criminal convictions (to increase the likelihood that participants will follow research staff's instructions and maintain safety for research staff and the instrumented government-owned test vehicles). The purpose of the screening process is to ensure that participants' driving experience is representative of either the general public or the average consumer of the particular vehicle model and/or system under test; 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. If the

respondent replies, 'yes,' to the question about recent criminal convictions, a "thank you for completing the questionnaire" message will be displayed and no responses to Question Set 2 will be recorded. Response data for candidate participants meeting the screening criteria will be reviewed by the research team and candidates meeting the criteria will be contacted by e-mail or phone to schedule for participation as needed.

3. **Passive Observation of Driving Behavior**

**PURPOSE:** To record study participants' driving and eye-glance behavior for later analysis with respect to research questions addressing safety impacts of camera-based rear visibility system use. This data collection is necessary for assessing drivers' use of camera-based visibility systems as compared to traditional outside rearview mirrors and the related safety implications.

**HOW:** Study participants will drive a government-owned instrumented vehicle on a closed course and/or public roadways. NHTSA-provided vehicle instrumentation will include video cameras for recording driver eye glances and the road scene and computer equipment for recording these data. Vehicle position, speed, steering angle, and turn signal status will also be recorded.

Video and engineering data will be reviewed to extract descriptive information associated with driving behavior and eye-glance patterns.

4. **Question Set 3, Post-Drive Questionnaire: Drive with Camera-Monitoring System (NHTSA Form 1556)**

**PURPOSE:** To understand drivers' opinions regarding camera-based visibility system performance, degree of comfort with system use, and perceptions of safety associated with system use. The questions address participants' experiences during the experimental drive 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. 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: Drive with Traditional Mirrors (NHTSA Form 1557)**

**PURPOSE:** To understand drivers' opinions regarding traditional mirrors. The questions address participants' experiences during the experimental drive 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. 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.

6. **Question Set 5, Post-Drive Questionnaire Final Opinions** (NHTSA Form 1558)

**PURPOSE:** To understand drivers' opinions regarding preference for using CMS or mirrors as well as assessing specific, open-ended opinions regarding CMS.

**HOW:** The post-drive questionnaire will be administered using a tablet computer immediately following the completion of Question Sets 4 and 5. 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 will be used for all question sets. Electronic presentation of participant recruitment and screening questions 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 of post-drive questionnaires on a tablet computer will eliminate the need for manual entry of questionnaire data.

Study recruitment will be accomplished via online and print advertisements. Individuals interested in participation will respond to the advertisement 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 Question Set 1, Interest Response Form) used to determine whether the respondents meet the basic qualifications of participation. The form
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solicits demographic, contact, driving license and history information, and annual mileage information.

2. An e-mail containing a web link for accessing a second screening question set (see Question Set 2, Candidate Screening Questions) 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, are free of recent criminal convictions, have no more than 2 points on their driving record, and are likely to satisfactorily and safely complete study participation if selected.

Information entered by candidate participants meeting health and criminal conviction criteria 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 video of the driving scene and the driver's eyes and manual control inputs while driving. The data obtained by the data acquisition system will be processed using a computer program to automatically determine eye-glance locations.

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**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 camera-based rear visibility systems that replace traditional outside rearview mirrors as this technology is new. Camera-based visibility systems are not currently permitted as a compliance option for FMVSS No. 111's rear visibility requirements. This research will provide input to NHTSA's decision about whether to allow camera-based visibility systems as an alternative compliance option.

The information collected during participant recruitment is specific to the particular individuals that will 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 camera-based rear visibility systems on public roads and cannot be obtained through other methods.

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**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.

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**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 is not collected, NHTSA will 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 and health-related driving ability.

If the observational experiment portion of this effort is not conducted, NHTSA will lack important information to support its decisions relating to safe implementation of camera-based rear visibility systems.

As the agency responsible for prescribing and maintaining the standards for vehicle safety in the United States,<sup>2</sup> 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.<sup>3</sup> 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 camera-based rear visibility systems, the rapid rate of their development warrants frequent examination of the state of contemporary driver behavior and interaction with as well as misuse of, camera-based rear visibility system capabilities.

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**7. Special Circumstances.** *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*

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<sup>2</sup> 49 U.S.C. 30101(1).

<sup>3</sup> 49 U.S.C. 30101(2).



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 the extent permitted by law.

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

There are no special circumstances that require the collection to be conducted in a manner inconsistent with 5 CFR 1320.5(d)(2).

**8. Compliance With 5 CFR 1320.8(d).** *If applicable, provide a copy and identify the date and page number of publication in the federal register of the agency's notice, required by 5 CFR 1320.8(d), soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice and describe actions taken by the agency in response to those comments. Specifically address comments received on cost and hour burden. 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 August 28, 2019, (84 FR 45209). NHTSA received 23 comments (22 via regulations.gov and one via e-mail). No Comments addressed the specific questions to be asked of participants.

We received comments from 23 entities, including 8 organizations and 15 individuals. Organizations submitting comments included Deplorable Ventures, Automotive Safety Council, Lotus Cars Ltd., Commercial Vehicle Safety Alliance, Volvo Group, Stoneridge Inc., Greyhound Lines, Inc., ZF North America, Inc., and American Bus Association. 17 comments were supportive of the research. Three commenters thought camera-based rear visibility systems should be permitted but not required on vehicles. One individual thought that CMS displays should supplement but never replace traditional mirrors. One individual was against any CMS displays to replacing traditional mirrors. Clarifications are provided in the second 60-day notice and suggestions for broadening the scope of the work will be retained for consideration in future research projects.

On May 24, 2021, NHTSA published a second 60-day notice requesting public comment on the proposed collection of information.<sup>4</sup> We received comments from 1,891 entities, including 2 organizations, 1887 individuals, and input from a social media based Tesla owners' enthusiast community group. Organizations submitting comments included the Automotive Safety Council (ASC) and Alliance for Automotive Innovation (Auto Innovators). There were 35 duplicate entries.

Comments from the ASC did not address the topic of PRA clearance, but did include some recommendations related to the proposed research. The comments included acknowledgement of NHTSA's evaluation of the previous comments made by ASC to the original 60-day notice, and

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<sup>4</sup> 86 FR 27952 (May 24, 2021).

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expressed support for conducting additional research subsequent to the proposed work that would address previous ASC suggestions. A new comment from ASC requested that study participants be provided an opportunity to familiarize themselves with conventional mirror technology in the test track environment in the same vehicle type as the test vehicle. This may help to reduce variability from “normal” mirror usage and driving behaviors due to the unfamiliar test environment and vehicle type and help isolate the participant response to just the camera technology in the test of the camera equipped system vehicle. ASC also commented that the research should ensure sufficient time for the drivers to get acquainted with the system.

Two comments from Auto Innovators offered support for the Agency’s research. The comments noted that some of the organization’s members “currently have CMS already deployed in other markets that comply with established international standards, namely ECE R46 and ISO 16505.” Auto Innovators’ comments expressed strong support for harmonization with existing international standards and urged “that NHTSA prioritize its CMS research and rulemaking processes .”

Of the individuals who submitted comments, 30 indicated support for PRA clearance being given for this work. Another 81 commenters voiced support for the research. The remaining commenters’ input contained opinions regarding whether CMS should be permitted under FMVSS No. 111 and did not address the specific questions regarding NHTSA’s information collection request .

No comments received addressed cost or hour burden.

On March 14, 2022, NHTSA published a 30-day federal register document (87 FR 14319) announcing NHTSA’s intention to submit the information request to OMB and requesting public comment.

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**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 questionnaires, NHTSA plans to provide monetary payment at a 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) and test procedure invasiveness (e.g., wearing eye-tracking equipment). In addition, study participants will be reimbursed at the current GSA mileage rate for miles traveled to

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and from the test site located approximately 30 miles outside of Columbus, Ohio.

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**10. Assurance of Confidentiality.** *Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy. If the collection requires a systems of records notice (SORN) or privacy impact assessment (PIA), those should be cited and described here.*

The agency will provide participants with an informed consent form (NHTSA Form 1555) explaining that NHTSA may release video and audio data containing personally identifiable information (PII) including images of the participant's face and or audio recording of his/her voice, but will not release any other PII including but not limited to their names or individual screening question responses (e.g., medical information). Participants will also be informed that NHTSA "may publicly release video image data (in continuous video or still formats) and associated audio data, either separately or in association with the appropriate engineering data for scientific, educational, research, or outreach purposes." Participants' faces will not be blurred, as a majority of the focus is on examining where drivers are looking, and obscuring the participants' faces would make it impossible to see where they are looking. However, any 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, participants will be assigned a subject number which will be used instead of their name to de-identify all data collected.

NHTSA's privacy impact assessment (PIA), "Driver Interactions with Assistive Technologies" can be found online at <https://www.transportation.gov/individuals/privacy/office-vehicle-safety-research-ovsr-studies-0>.

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**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 screening questions address topics that are commonly considered private, such as general health information that may affect driving ability and criminal activity.

Health-related questions are posed in Question Set 2 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.

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Health information will be elicited using a single health question asking the candidate participant to respond yes or no to indicate whether he/she has any of the listed medical conditions. Only this yes/no response indication of whether an individual met the full list of health screening criteria will be recorded and that response will only be used for determining study participation eligibility. The health information question is worded as follows:

5. Do you currently have any of the following medical issues that may impact your ability to drive continuously for a 3-hour period?
- Current inner ear, dizziness, vertigo, or balance problems
  - Current respiratory disorder/disease or any condition that requires oxygen
  - Any epileptic seizures or lapses of consciousness within the past 12 months
  - Condition or injury resulting in decreased motor control or cognitive ability condition that might affect your ability to concentrate while driving, such as Attention-Deficit/Hyperactivity Disorder (ADHD) or anxiety
- a. Yes
  - b. No

A question regarding criminal activity will also be posed asking, "Have you had any criminal convictions in the past 3 years? (yes/no)." The rationale for this question is that individuals who have in the past not behaved in accordance with the law may present a risk to the safety of the Contractor staff carrying out the data collection as well as to that of other road users where study driving will occur.

Furthermore, driver's license numbers of candidate participants (who meet the health and criminal convictions criteria) will be obtained such that the individual's driving record can be checked to ensure that he/she has no more than 2 points. This criterion is a requirement of the insurance company that the Contractor uses to obtain liability insurance. The license number will be obtained securely via the questionnaire software. Candidate participants' driver's license numbers will be sent by the Contractor to the insurance company via encrypted e-mail in a password protected .zip file. The password for the .zip file will be sent in a separate e-mail message or provided by phone.

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**12. Estimate of Burden Hours for Information Requested.** *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 13.

The burden estimate has been adjusted from the estimate published in the 60-day notice to include time for driving sessions, where passive information is collected, and the time for reviewing instructions. The anticipated number of individuals completing Question Set 1 is 750, Question Set 2 is 375, and the study sessions and Question Sets 3, 4, and 5 is 200 each.

Completion of Question Set 1 is estimated to take approximately 5 minutes, and completion is estimated to take approximately 7 minutes for Question Set 2. Participation in the study involves up to 2 sessions, and the test drive in a session will last approximately 1.5 hours. Therefore, the study is estimated to take approximately 3.5 hours, which includes 30 minutes for reviewing instructions regarding the study and the driving tasks and 3 hours for two 1.5-hour test drives. Completion of Question Sets 3 and 4 is estimated to take 10 minutes each, and 5 minutes is estimated for completion of Question Set 5. 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 time for the study session is calculated by multiplying the number of respondents by the time estimated in hours. The hour value for each question set and the study session is multiplied by the average hour earning estimate from the Bureau of Labor Statistics to obtain an estimated opportunity cost/lost time to respondents per question set.

The total estimated annual hour burden is 890 hours and the total estimated annual opportunity cost burdens are \$25,205 across both parts of data collection. The details of the hour and opportunity cost burdens are summarized in the table below.

Question Set	Form No	Question Topic	Respondents	Time per Response	Average Hourly Earning Rate*	Estimated Opportunity Cost per Participant	Total Burden Hours	Total Opportunity Cost
1	1553	Interest Response Form	750	5 min.	\$28.32	\$2.36	63	\$1,784.16
2	1554	Candidate Screening Questions	375	7 min.	\$28.32	\$3.30	44	\$1,246.08
Study Session	1555	Instructions and Passive Observation of Driving Behavior	200	3.5 hours	\$28.32	\$99.12	700	\$19,824.00
3	1556	Post-drive Questionnaire: Drive with Camera-Monitoring	200	10 min.	\$28.32	\$4.72	33	\$934.56

		System						
4	1557	Post-drive Questionnaire: Drive with Traditional Mirrors	200	10 min.	\$28.32	\$4.72	33	\$934.56
5	1558	Post-Drive Questionnaire: Final Opinions	200	5 min.	\$28.32	\$2.36	17	\$481.44
<b>TOTAL</b>						<b>\$116.58</b>	<b>890 hours</b>	\$25,204.80 ≈ \$25,205

\* 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>)

**13. Estimate Of The Total Annual Costs Burden.** 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.

The only cost burdens respondents will incur are costs related to travel to and from the study location for those that participate in the research study. The costs are minimal and are expected to be offset by the monetary compensation that will be provided to all research participants.

**14. Estimates Of Costs To The Federal Government.** Provide estimates of annualized cost to the federal government. Also, provide a description of the method used to estimate costs, which should include quantification of hours, operational expenses such as equipment, overhead, printing, and support staff, and any

*other expense that would not have been incurred without this collection of information.*

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 GS-14 Step 1 and Supervisor GS pay scale rate of GS-15 Step 1, NHTSA estimates that the cost associated with those hours to be \$2,623.60 ( $\$53.47 \times 40 \text{ hours} = \$2,138.80$ ;  $\$62.89 \times 8 \text{ hours} = \$503.12$ ;  $\$2,138.80 + \$503.12 = \$2,641.92$ ). (GS locality COLUMBUS-MARION-ZANESVILLE, OH and pay rates for year 2020.)

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 estimated costs incurred by the Federal Government relating to the administration and technical support for both parts of this information collection are summarized below. The number of respondents and time to administer and process each question set across both parts of data collection are estimated as shown in the table, and the calculations for the estimates are described below. As such, for example, the anticipated cost of administration and data processing of Question Set 1 for part 1 of data collection is half of \$6,000, or \$3,000, and so on.

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 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 per question set to obtain total cost per question set. The estimated costs to the Federal government for administration, processing, and summarizing this information collection across both parts of data collection are detailed in the table below.

Question Set	Form No	Step	Number of Responses	Time Per Respondent (Minutes)	Time per Question Set (Hours)	Labor Cost (\$) Per Hour	Estimated Total Cost (\$)
1	1553	Interest Response Form Administration	750	0	0	\$96.00	\$0.00
1	1553	Interest Response Form Data Processing	750	5	62.5	\$96.00	\$6,000.00
2	1554	Screening Questions Administration	375	7	43.75	\$96.00	\$4,200.00
2	1554	Screening Questions Data Processing	375	20	125	\$136.00	\$17,000.00
3,4	1556, 1557	Post-Drive Questionnaire Administration	200	20	66.7	\$154.50	\$10,300.00
3,4	1556, 1557	Post-Drive Questionnaire Data Processing	200	30	100	\$154.50	\$15,450.00

5	1558	Post-Drive Questionnaire Final Opinions Administration	200	5	16.7	\$154.50	\$2,575.00
5	1558	Post-Drive Questionnaire Final Opinions Data Summary	200	15	50	\$154.50	\$7,725.00
<b>TOTAL:</b>							<b>\$63,250.00</b>

\*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<sup>5</sup> 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.

Compensation	N	Quantity	Cost Rate	Cost (\$)
Participant Pay	200	4 (hours)	\$ 50.00/hr	\$40,000.00
Mileage Reimbursement	200	60 (miles)	\$ 0.575/mile	\$6,900.00
<b>TOTAL:</b>				<b>\$46,900.00</b>

**15. Explanation Of The Program Change Or Adjustments.** Explain the reasons for any program changes or adjustments reported on the burden worksheet. If this is a new collection, the program change will be entire burden cost and number of burden hours reported in response to questions 12 and 13. If this is a renewal or reinstatement, the change is the difference between the new burden estimates and the burden estimates from the last OMB approval.

<sup>5</sup> See <https://www.gsa.gov/travel/plan-book/transportation-airfare-pov-etc/privately-owned-vehicle-mileage-rates/pov-mileage-rates-archived> (2020 rate)



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This is a new data collection. Therefore, this information collection adds a burden of 890 hours to NHTSAs overall burden hour total.

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**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 the form of one or more technical reports. NHTSA may publish in aggregate the results of this data (not separated according to age or sex) as part of a research report and/or 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 in the technical reports. However, NHTSA intends to present its research findings at professional conferences and will use specific video clips and audio of the test participants in those presentations. NHTSA may also show the specific clips of video and associated audio to the media, driver's education teachers and students, and others involved in efforts to improve highway and road safety.

The project began in late 2018. Data collection is planned to begin immediately upon PRA clearance receipt and both parts of data collection are anticipated to span approximately 6 months and will be conducted in parallel. Data reduction and analysis will follow data collection. Completion of technical reports is anticipated within 6 months of the end of data collection.

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**17. Approval For Not Displaying The Expiration Date Of OMB Approval.** *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.

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**18. Exceptions To The Certification Statement.** *Explain each exception to the certification statement "Certification for Paperwork Reduction Act Submissions." The required certifications can be found at 5 CFR 1320.9.*

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