

DEPARTMENT OF TRANSPORTATION

INFORMATION COLLECTION
SUPPORTING STATEMENT
Recruitment of Human Subjects for Observational Experiments
Regarding Vehicle Sounds'

Part A. Justification

1.Explain the circumstances that make the collection of information necessary. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the collection of information.

The Pedestrian Safety Enhancement Act of 2010 (PSEA)^a requires NHTSA to conduct a rulemaking to establish a Federal Motor Vehicle Safety Standard (FMVSS) requiring an alert sound for pedestrians to be emitted by electric vehicles or hybrid vehicles (EVs and HVs) that allows blind and other pedestrians to reasonably detect a nearby EV or HV.

Further, 49 U.S.C. 30111, 30112 and 30117 of the National Traffic and Motor Vehicle Safety Act of 1966^b specify that the Secretary shall prescribe standards that are practicable, meet the safety need for motor vehicle safety, and are stated in objective terms. The Secretary is authorized to issue, amend and revoke such rules and regulations as she/he deems necessary to carry out these sub-chapters. The Secretary is also authorized to require manufacturers to provide information to first purchasers of motor vehicle equipment when the vehicle or equipment is purchased, in a printed matter placed in the vehicle or attached to or accompanying the equipment.

The National Highway Traffic Safety Administration (NHTSA), in prescribing a FMVSS, is to consider available relevant motor vehicle safety data, consult with appropriate agencies, and obtain safety comments from the responsible agencies, states, safety commissions, public and other related parties. Further, the Act mandates that in issuing any FMVSS, the agency considers whether the standard is "reasonable, practicable and appropriate for the particular type of motor vehicle or item of motor vehicle equipment for which it is prescribed," and whether such standards will contribute to carrying out the purpose of the Act.

In support of the rulemaking to establish this new Federal safety standard (pursuant to the PSEA), NHTSA has been conducting research to observe how sighted and visually impaired pedestrians respond to the auditory cues from internal combustion engines and synthetic sounds meant to facilitate the detection of a motor vehicle in operation. In order to evaluate specific sound characteristics, NHTSA aims to complete an additional human factors observational study. The research consists of a controlled experiment in which participants will listen to vehicle

^a The Pedestrian Safety Act is Public Law No. 111-373, 124 Stat. 4086 (January 4, 2011).

^b Title 49, United States Code Chapter 301 Motor Vehicle Safety. <http://www.nhtsa.gov/cars/rules/standards/chapt301.html>

sound files. The experiment will measure the ability of subjects to detect vehicle sounds of varying characteristics. NHTSA is requesting clearance to collect voluntary information in order

to identify eligible participants for this study. The observational experiments would provide information to assist the agency in the refinement of specifications for alert sound for pedestrians.

Individuals must meet the criteria listed below to be eligible to participate in the observational experiments:

- 18 years or older at the time of the study
- independent traveler (i.e., cross streets without assistance from another person)
- travel regularly (i.e., cross streets at least 10 times per week, on a regular week)
- sighted or legally blind regardless of whether totally blind, blind with light perception or blind with partial vision
- self-reported to have normal hearing on both ears without hearing aids
- have normal manual dexterity in both hands (for prompt button pressing)

Individuals that do not meet the eligibility requirements listed above would be excluded because they may introduce too much variability and mask the effects of the independent variables which are the principal focus of the observational experiments (participants' response to different sound characteristics).

2. Indicate how, by whom, and for what purpose the information is to be used. Indicate the actual use the agency has made of the information received from the current collection.

The John A. Volpe National Transportation Systems Center (Volpe Center), which is an element of the U.S. Department of Transportation (U.S. DOT), Research and Innovative Technology Administration (RITA), would collect the information and conduct the experiments under an Inter-Agency Agreement (IAA) with the NHTSA. The study would assess the auditory detectability of different vehicle sounds. The Volpe Center is not planning to analyze the difference between blind and sighted participant results. Previous research has indicated that there is not a difference in performance between these two groups.^c

The information to be collected would be used to:

- (a) Collect demographic information about study participants to help ensure that the study group is balanced between sighted and visually impaired individuals. The same is true with respect to gender and age.

^c Hastings, A., Pollard, J. K., Garay-Vega, L., Stearns, M. D., & Guthy, C. (2011, October). *Quieter Cars and the Safety of Blind Pedestrians, Phase 2: Development of Potential Specifications for Vehicle Countermeasure Sounds*. (Report No. DOT HS 811 496). Washington, DC: National Highway Traffic Safety Administration.)

(b) Recruit volunteers meeting the eligibility criteria for the study.

Individuals that do not meet the eligibility requirements would be excluded because they may introduce too much variability and mask the effects of the independent variables which are the principal focus of the experiments.

This human subject experiment will not contain any counterbalancing. The presentation of stimuli to participants will be randomized using data collection software.

Legally blind and sighted volunteers would be recruited in the Greater Boston Area, Massachusetts. Researchers would reach out to local organizations that provide services to the local blind community such as the Carroll Center for the Blind, the Perkins School for the Blind, and the Bay State Council of the Blind. Sighted participants will be a combination of Volpe employees (who are not involved in the Quieter Vehicle research) and sighted individuals from the Greater Boston area (such as friends or relatives of blind participants or through local universities, etc.).

Volpe Center personnel would send a recruiting email to representatives of local organizations that provide services to the local blind community. Presentations to these organizations may be offered as requested. Volpe Center employees would be contacted via email. To do so Volpe Center researchers would request an authorization from the Volpe Center communication's division for their review before sending a mass email to employees. Sighted participants who are not Volpe Center employees or members of the blind community may also be recruited from the general population within the Greater Boston Area through, for example, university bulletin boards and flyers. Individuals interested in participating in the study would contact the Volpe Center and complete the eligibility questionnaire either by phone, email, or in person.

3. Describe whether the collection of information involves the use of technological collection techniques or other forms of information technology.

Recruitment will be done primarily via emails but also using flyers or informational sessions. Individuals interested in the study will contact the Volpe Center recruiting coordinator and complete an eligibility questionnaire by phone, email, or in person.

4. Describe efforts to identify duplication. Show specifically why any similar information cannot be used.

This is a one-time collection and is only applicable to the observational experiments described above. The information collection during recruitment is specific to the particular individuals that will be participating in the observational experiments. Similar information collected from other individuals is not applicable. The agency is also not aware of any other sources of this information.

5. If the collection of information involves small businesses or other small entities, describe the methods used to minimize burden.

This collection of information involves individuals and does not involve small business.

6. Describe the consequences to Federal program or policy activities if the collection is not conducted or is conducted less frequently.

If it were not possible to ask questions to confirm that respondents meet the eligibility criteria then the researchers would not be able to reduce potential between-subjects variance in the observational experiments. This would affect the ability to explain and use the results as they relate to the PSEA.

7. Explain any special circumstances that require the collection to be conducted in a manner inconsistent with the guidelines set forth in 5 CFR 1320.6.

The information collection is consistent with the guidelines set forth in 5 CFR 1320.6.

8. Provide a copy of the Federal Register document soliciting comments on extending the collection of information, a summary of 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.

A Federal Register Notice published on April 17, 2012 (Vol. 77, No. 74 / Tuesday, April 17, 2012) (pp. 22834-22835) solicited public comments for 60 days. An electronic version of this notice is attached. The comments period closed on June 18, 2012; no comments were received.

9. Explain any decision to provide any payment or gift to respondents, other than remuneration of contractors or grantees.

Respondents will not receive any compensation for responding to this information collection. Respondents who are selected to participate in the observational experiments will be compensated with a \$75 gift card for the time spent participating in the experiments but will not receive any additional compensation for responding to the information collection. Respondents who are not selected to participate will not receive any compensation. Respondents who are Federal employees who are selected to participate in the observational experiments will not receive any compensation beyond their salary.

10. Describe any assurance of confidentiality provided to respondents.

The Volpe Center will provide each participant with an informed consent form which explains to participants that the Volpe Center and NHTSA will protect all personally identifying data and information collected in connection with this study to the extent provided by law. In order to maintain privacy, participants will be assigned a study number which will be used instead of their name to identify all data collected.

11. Provide additional justification for any questions on matters that are commonly considered private.

The screening questions do not relate to matters that are commonly considered private. Researchers would match the characteristics of the study group (age, gender, and vision (sighted/blind)) to help ensure that the study group is balanced between sighted and visually impaired individuals. The same is true with respect to gender and age. Other information such as self-reported to have normal hearing on both ears without hearing aids, independent traveler (i.e., cross streets without assistance from another person), travel regularly (i.e., cross streets at least 10 times per week during a regular week), and have normal manual dexterity in both hands (for prompt button pressing) are collected to reduce between-subject variability.

12. Provide estimates of the hour burden of the collection of information on the respondents.

Table 1: Estimated Burden Hours

	Number of Respondent	Frequency of Responses	Number of Questions	Estimated Individual Burden	Total Estimated Burden Hours	Annualize Cost to respondents ^d
Recruitment questionnaire	101 ^e	1	7	7 minutes (.117 hours)	11.8 hours	\$310.58

13. Provide estimates of the total annual cost to respondents or record keepers resulting from the collection of information. (Do not include the cost of any hour burden shown in Question 12 or 14).

There are no additional costs to respondents or record keepers.

14. Provide estimates of annualized cost to the Federal government.

^d Estimated based on the mean hourly rate for Massachusetts (all occupations) is \$26.32 as reported in the May 2011 Occupational Employment and Wage Estimates, Bureau of Labor Statistics. http://www.bls.gov/oes/oes_dl.htm

^e This includes 96 participants and an additional 5% to account for the extra number of individuals that may take the eligibility questionnaire in order to get the 96 participants needed. The 5% is an estimate and is based on experience with similar studies.

The costs of this information collection are included in an Inter-Agency Agreement awarded to the Volpe Center, which includes analysis and report preparation. The specific cost to collect the information (recruitment) is estimated as: (16 hours) (\$61.93/hours)^f = \$990.88. There are no other costs to the government.

15. Explain the reasons for any program changes or adjustments reported in Items 13 or 14 of the OMB Form 83-I.

There is a program change of adding 11.8 burden hours to NHTSA's overall burden hour total.

16. For collections of information whose results will be published, outline plans for tabulation and publication.

Aggregate data for the number of participants and observations for a given group (age, gender and vision) may be tabulated. Personal information will not be published. An exact publication date has not been established but would occur no sooner than January 2013.

17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that the display would be inappropriate.

NHTSA and the Volpe Center are not seeking such approval.

18. Explain each exception to the certification statement identified in Item 19, "Certification for Paperwork Reduction Act Submission," of OMB Form 83-I.

There are no exceptions.

Part B. Collections of Information Employing Statistical Methods.

This information collection will be utilized to identify individuals who are eligible for a human factors auditory detectability study of individuals who are visually impaired or sighted, and cross streets independently on a regular basis. The information collection (using the questionnaire) itself is not the result of the study. The information will be used to balance the subject pool across gender, vision and age. The human factors observations and detection rates during the critical listening sessions will be the results of the study. The information from the questionnaire is not intended to be used to describe, estimate, or analyze the characteristics of groups, segments, activities, or geographic areas. Thus, the agency does not believe the use of sophisticated statistical survey methodology is necessary.

^f Estimated average hourly rate for researcher/recruiter coordinator.

