

INFORMATION COLLECTION SUPPORTING STATEMENT

Evaluation of Correct Child Restraint System Installations

On average, three children were killed and an estimated 470 children were injured every day in the United States in traffic crashes. Of the 1,149 traffic fatalities involving children 14 and younger in 2013, 776 or roughly two-thirds were occupants of passenger vehicles. Of these 776 fatalities, restraint use was known for 719, of whom 412 or 57% were restrained by child restraints or seat belts.¹ To better understand child restraint use, approval is requested to conduct a study to identify user errors related to: the selection of Child Restraint Systems (CRS) based on a child's height/weight/age, installation of the selected CRS in various vehicle make and models, and securing the child in the CRS. In addition to the user's knowledge of and experience with various CRSs, specific features or designs of the vehicles and CRSs as well as their respective manuals may contribute to various types of errors. The proposed study attempts to identify the various user errors and provide insight into the causal factors that contribute to errors related to selecting CRSs and properly securing children in them, with both novice and experienced users. Findings will provide useful information to the public regarding error-prone factors related to selecting the right CRS and installing the CRS. In addition, the findings will transition to efforts in reducing or removing error-prone factors from the CRS selection and installation processes.

A. Justification

A.1. 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.

a. Circumstances necessitating the data collection.

1. National Highway Traffic Safety Administration (NHTSA) mission

The NHTSA was established by the Highway Safety Act of 1970 (23 U.S.C. 101). Its Congressional mandate is to reduce the number of deaths, injuries, and economic losses resulting from motor vehicle crashes on our nation's highways. To accomplish this mission, NHTSA sets and enforces safety performance standards for motor vehicle equipment and provide funding to

¹ National Center for Statistics and Analysis. (2015). *Children: 2013 data*. (Traffic Safety Facts. Report No. DOT HS 812 154). Washington, DC: National Highway Traffic Safety Administration. Retrieved from <http://www-nrd.nhtsa.dot.gov/Pubs/812154.pdf>

State and local governments for their use in supporting highway safety activities, including demonstration and evaluation programs. NHTSA also conducts research on driver behavior and traffic safety to develop efficient and effective means of bringing about safety improvements. This information collection supports the department's strategic goal of safety.

2. Severity of Child Passenger Safety Problem

NHTSA recommends that all children ages 12 years and under be properly buckled in an age- and size-appropriate car seat, booster seat, or seat belt in the rear seat. Child safety seat (CSS) use reduces the risk for death to infants (aged <1 year) by 71%; and to toddlers (aged 1-4 years) by 54% in passenger cars. For infants and toddlers in light trucks, the corresponding reductions are 58% and 59%, respectively.² Among 4- to 8-year olds there is strong evidence of reduced risk of injury when restrained by booster seats rather than lap and shoulder belts, but the magnitude of the effect varies depending on data source and injury severity.³

Currently, there are four types of CRSs designed for children: rear facing only (previously known as infant), convertible, combination, and belt-positioning booster seats. Each system is designed to protect a child within a given height and weight category in the event of a crash. Rear facing only, convertible, and combination seats are secured to the vehicle seat using the vehicle's seat belt system or the vehicle's lower anchors, and the child is secured to the seat using the CRS's harness system. Conversely, combination and booster seats provide a transition from the CSS with its internal harness to the vehicle lap/shoulder belt by repositioning the child so that the vehicle's seat belt system holds both the child and the booster in place.

While child restraint use has increased over the years, many children are still fatally injured as a result of motor vehicles crashes. One possible explanation for this occurrence is child passengers who are placed in a CRS that is not properly secured to the vehicle or not properly secured in the CRS. While these errors can be classified as improper installation and/or securement errors, other errors can be traced to caregivers selecting a CRS that is not age, weight, or height appropriate or prematurely graduating the child to an adult vehicle seat belt system. A recent NHTSA survey, the National Child Restraint Use Special Study, observed and interviewed a nationally representative sample of drivers with child passengers aged 8 years and

² *Ibid.*

³ Sivinski, R. (2010). Booster seat effectiveness estimates based on CDS and state data. (Report No. DOT HS 811 338). Washington, DC: National Highway Traffic Safety Administration. Retrieved from <http://www-nrd.nhtsa.dot.gov/Pubs/811338.pdf>.

younger.⁴ The most prevalent installation errors identified in this survey were incorrect harness routing slot used, improper harness clip position, loose CRS installation, loose harness straps, and improper lap belt placement. Other potential installation errors may include improper routing of the vehicle's seat belt system or lower connectors, and twisting of the seat belt or lower anchors.

One or more factors may contribute to any one type of installation error outlined above. There are numerous CRS makes and models marketed to the consumer, each with its own installation procedures/manual. In addition, vehicle manufacturers design vehicle restraint systems and vehicle seats that are incompatible with various CRSs. New vehicles are continually introduced to the fleet, and CRSs continue to evolve each year. Finally, there is a never-ending flow of new parents/caregivers who need to be educated on child passenger safety. Despite their inexperience, new parents may overestimate their own accuracy in selecting and securely installing a CRS to the vehicle and securing the child in the CRS.

While it might be hard to control for some factors, such as the continuing flow of new parents, and the number and variety of vehicles and CRSs, others may be more easily examined. For example, among the large variety of CRS designs, CRS and vehicle labeling, vehicle seating attachments, and manual designs and instructions, there may be ways to better convey information to the caregivers. In addition, specific features or designs may minimize installation errors and improve the ease of use for CRS for the parent or caregiver. Identifying these factors will ultimately transition to efforts in reducing or removing error prone factors and educating the public.

b. Legal basis for collecting data

NHTSA has statutory authority to conduct crash injury research and collect relevant data in the interest of public health (See **Appendix A**). Specifically, NHTSA is authorized to: (1) engage in research on all phases of highway safety and traffic conditions; (2) undertake collaborative research and development projects with non-federal entities for the purposes of crash data collection and analysis; and (3) conduct research and collect information to determine the relationship between motor vehicles and crashes, and personal injury or deaths resulting from such crashes.

The Highway Safety Act of 1966, Title 23 United States Code, Section 403 (a,b,c,d) and the National Traffic and Motor Vehicle Safety Act of 1966, Title

⁴ Greenwell, N. K. (2015). National Child Restraint Use Special Study. (Traffic Safety Facts Research Note. Report No. DOT HS 812 157). Washington, DC: National Highway Traffic Safety Administration. Retrieved from <http://www-nrd.nhtsa.dot.gov/Pubs/812157.pdf>.

15 United States Code 1395, Section 106 (b), give the Secretary authorization to conduct research, testing, development, and training as authorized to be carried out by subsections of these titles. The Vehicle Safety Act was subsequently re-codified under Title 49 of the U.S. Code in Chapter 301, Motor Vehicle Safety. See Title 23 Section 403 and Title 49 Chapter 301 for further information.

A.2. 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.

NHTSA will use this new collection to supplement the information that is available in existing databases related to child passenger safety. The proposed study is aimed at identifying the number and types of errors made by experienced and novice users in CRS installation. The findings of this study will provide insight into the types of errors made as well as the cause of observed errors, which can then be transitioned to methods aimed at removing those causal contributors.

More specifically, the study will address the following objectives.

1. To identify CRS installation errors (3 categories: errors in CRS choice for child height/weight/age; errors in installation of the CRS to the vehicle, errors in securing the child in the CRS) in novice and experienced users.
2. To observe and evaluate the causal role of factors (including but not limited to instructions, vehicle type, CRS and vehicle compatibility, and CRS type) that contribute to errors (quantity and type).
3. To evaluate the relationships between individual differences, confidence in installation performance, observed errors, and CRS familiarity.
4. To evaluate the risk level perceived with inaccurate CRS installations by caregivers.

The data collected in the study will be used to assist NHTSA in its ongoing responsibilities for: (a) planning, policy-related issues, and designing program activities to increase child passenger safety on our nation's roadways; (b) providing support to governmental agencies, private organizations, and safety advocate groups involved in carrying out child restraint programs and public safety; (c) providing information to vehicle manufacturers related to the vehicle seat features, seat belt placement, LATCH systems, and improvements to specific vehicle design features that may foster an easier CRS installation that is less prone to error; (d) providing information to CRS manufacturers related to CRS design features that might

promote correct and secure installations; and (e) identifying countermeasure strategies that are most acceptable and effective in increasing child passenger safety.

The results will assist governmental agencies, private organizations, and child passenger safety advocates in directing the implementation of strategies and action plans that will reduce the incidence of serious and fatal injuries experienced by restrained children in a crash. In addition, these findings could be distributed to consumers and could better educate parents and caregivers regarding the importance of a proper CRS selection, installation and securement of a child.

A.3. 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. Also describe any consideration of using information technology to reduce burden.

For the duration of the study, the contractor (Westat) will maintain a password-protected list that links participants' names and personal contact information with their data. As each participant completes the study, the participant's personal information, including the list for linking the participant's identity with a data ID number, will be destroyed.

For each session, data will be collected using Android-based tablets and digital video cameras, which will allow the researchers to record objective and subjective measurements quickly using the most efficient and private methodology. Prior to installing the CRSs, participants will complete a brief questionnaire assessing their risk appraisal for involvement in motor vehicle crashes and injury risks. This questionnaire will only be completed once by each participant. Following each of the four installations, each participant will complete a questionnaire where the participant will identify problems encountered with various vehicle and CRS features, how acceptable the system was, and the degree of confidence exhibited with correctly installing the CRS to the vehicle and securing the child in the CRS. Participants will convey this information by responding to a series of ratings questions. This survey will be completed after each install, for a total of 4 post-install surveys completed by each participant. Both the risk appraisal questionnaire and post-install surveys will be completed using paper forms.

All survey (questionnaire) data will be reviewed for completeness prior to data entry into a password-protected file developed for the proposed study. A series of edit checks will be developed to identify outlier values or other anomalies. Data forms will be reviewed based on the edit checks to identify data entry error or any anomalies in the data collection process.

Additionally, after each installation, the researcher will take and record various types of objective measures related to how each CRS was installed, as well as make and record measurements of lateral and forward movement of the CRS once installed to assess how secure the CRS was installed. The measurements will include but not be limited to:

- Time to complete task
- Lateral or forward movement when testing at the belt path
- CRS selection based on specified age, height, and weight
- Whether the seat belt is set to an appropriate pre-crash position
Whether the locking clip is positioned within an inch of the latch plate
- Whether the CRS lock-off is properly secured
- Seat belt routing through the CRS
- Seat belt and lower anchors use
- CRS recline angle
- Proper use of top tether in a forward-facing (FF) installation
- Proper use of lower anchors
- Seat facing direction and appropriateness
- Proper placement and use of harness straps

The data gathered by the researcher will serve two purposes. First, researchers will be able to determine how successfully each participant was able to use the instruction manuals and various design features to correctly install the CRS. In addition, Westat will use the data to objectively evaluate different installation errors that relate to the physical design features on the CRS, CRS manual/vehicle manual, and vehicle features.

The Android-based tablet is intended to provide a portable platform on which to record data from the four installations completed during each participant's session. That is, the tablet can be used to quickly enter objective measures recorded by the researcher in order to assess how well each participant performed when selecting a CRS, as well as installing and securing the child size doll. The tablet will house an Access database with each of the data elements. The tablet(s) will be protected with full-disk encryption and credential access for authorized users of the machines. The tablets will also remain physically locked in a secure location when not being used for data collection. Upon completion of a data collection session, all data will be transferred to secure network storage for further processing, archiving, and analysis. Within the Contractor's network server environment, only authorized and credentialed users will be allowed to work with the collected data for project-approved purposes.

Since video will be recorded of each participant installing the four CRS's, other measures and/or qualitative categorizations can be captured verbally or in the video record for post hoc coding (again to save time and participant burden). Several cameras with removable media will be used to capture video of the participants as they complete each installation. This will likely employ 3-6 cameras positioned to capture the details related to challenges of working with the different vehicle and CRS features during installs, overall CRS fit, and subtleties that may not be captured by the researcher. After sessions are recorded, media will be moved to a secure network. Video will be stored and used by authorized individuals for coding and clarification. Like the tablets, these cameras are stored securely when not in use.

A.4. 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.

While errors in CRS installation and child securement have been well documented in the past (Decina & Knoebel, 1997; Duchossois, et al., 2008; and Greenwell 2015),^{5,6,7} similar efforts to study the factors that might contribute to these errors are not as common (Mirman, et al., 2013).⁸ This proposed study seeks to go beyond the previous descriptive studies by exploring why installment and securement errors occur and what factors contribute to proper installation. The purpose of this project is to evaluate overall installation performance, as well as caregiver confidence in both experienced and novice CRS users, and determine what factors contribute to errors (quantity and type). The study is designed to explore factors such as CRS design, CRS and vehicle labeling, vehicle seating attachments, and manual designs and instructions that might contribute to installation errors, minimize installation errors or improve the ease of use for CRS for the parent or caregiver. In addition, it will explore the relationship between user confidence with the installation and actual performance for both experienced and novice users. Findings from this study can be used by NHTSA to identify those factors that increase or reduce the likelihood of installation and

⁵ Decina, L., Knoebel, K. (1997). Child safety seat misuse patterns in four states. *Accident Analysis and Prevention*, 1, 125 - 132. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/9110046>

⁶ Duchossois, G., Nance, M., Wiebe, D. (2008). Evaluation of child safety seat checkpoint events. *Accident Analysis and Prevention*, 40(6), 1908 - 1912. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0001457508001437>

⁷ Greenwell, N. K. (2015). Results of the national child restraint use special study. (Report No. DOT HS 812 142). Washington, DC: National Highway Traffic Safety Administration. Retrieved from <http://www-nrd.nhtsa.dot.gov/Pubs/812142.pdf>.

⁸ Mirman, J. H., Curry, A. E., Zonfrillo, M. R., Corregano, L. M., Seifert, S., & Arbogast, K. B. (2013). Caregivers' confidence in performing child safety seat installations: What matters most? *Injury Prevention*, Published Online First: August 8, 2013. doi: 10.1136/injuryprev-2013-040866

securement errors for both novice and experienced users, which can then be transitioned to methods aimed at removing causal contributors with a negative impact. Because no detailed data about installation errors as well as caregiver, vehicle and CRS factors that may contribute to these errors among the current vehicle fleet currently exists, no other data source can be substituted, and there is no possibility of duplicating information that is currently available.

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

There will be no impact on small businesses or other small entities.

A.6. 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.

In order to prevent serious and fatal injuries to children during a crash, it is critical that the child is correctly restrained in a CRS that is appropriate for their age, height and weight. In an effort to reduce serious and fatal injuries among child passengers, NHTSA is attempting to improve child passenger safety by identifying the errors related to the selection of the appropriate CRS, installation of the CRS in the vehicle, and securement of the child in the CRS, and properly evaluate the key causal factors that might contribute to the various types of errors. Not conducting this collection will hinder NHTSA's ability to improve child passenger safety.

Identifying these causal factors that contribute to errors related to selecting and installing CRSs, as well as those factors that contribute to accurately selecting and properly installing CRSs for both novice and experienced users, will be another step in increasing the safety of child passengers in moving vehicles. Information can be shared with parents and caregivers to educate them on the key components that go into selecting the appropriate CRS for their child as well as providing the specific information needed to secure the CRS to the vehicle and securing the child in the seat. In addition, overall findings can be made available to CRS manufacturers and vehicle manufacturers related to improvements to specific CRS and vehicle design features that may foster a better fit in the vehicles and securement for children.

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

No special circumstances require the collection to be conducted in a manner inconsistent with the guidelines in 5 CFR 1320.6.

A.8. 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 these comments. Describe efforts to consult with persons outside the agency to obtain their views.

As required by the Paperwork Reduction Act of 1995, NHTSA published two notices in the *Federal Register* (See **Appendix B**), as noted below.

a. *Federal Register Notice*

NHTSA published a notice in the *Federal Register* with a 60-day public comment period to announce this proposed information collection on January 21, 2015, Volume 80, Number 13, pages 3008-3010.

NHTSA published a notice in the *Federal Register* on April 29, 2015 (Volume 80, Number 82, pages 23850-23851) with a 30-day public comment period to announce that NHTSA intended to forward the request for the proposed information collection to OMB.

b. *Responses to the Federal Register Notice*

Two public comments were received in response to the 60-day Federal Register Notice (FRN). Both comments expressed support for the study and the utility of the information to be obtained. Three suggestions were made including collecting demographic data as it could be related to the study outcome, use of certified Child Passenger Safety Technicians, and protecting the confidentiality of the manufacturers of the seats to be used in the study. Following these suggestions, data will be collected by certified Child Passenger Safety Technicians and demographic questions will be included. Finally, the final report will not identify the manufacturer of the seats used in the study but rather present a general description of the type of seat and its features. It is not the goal or intent of NHTSA to publish encouraging or disparaging remarks regarding any manufacturer nor is it the objective of this study to compare brands. Informal discussion regarding the FRN took place with a number of car seat manufacturers during a meeting at NHTSA.

In response to the 30-day FRN, three public comments were received. One comment was irrelevant given that it only contained a photograph of an individual identifying himself as a Vietnamese man working for Cengroup and no comment related to the proposed study. The second comment is in reply to a different FRN regarding the National Automotive Sampling System and does not comment on the proposed study. Finally, the third comment did not support the proposed study intruding on the public. No change has been made in response to this comment as the intent of the study is to identify aspects of installation that are problematic and not to intrude on free will.

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

No payment or gift will be provided to respondents for the qualifying

interview (i.e., recruitment screener). Those who qualify for the study and choose to participate will receive a \$75 payment and a NHTSA Child Passenger Safety brochure, which outlines the current recommendations for proper restraint use among children by age group, after completing the session.

The \$75 incentive amount is based upon 1) the level of effort required by the participant, and 2) experience with prior studies.

Regarding the level of effort, participants must travel from various locations in the greater Washington, DC area to the testing lab in Rockville, MD to complete a session running between 2 and 2½ hours, including completing a pre-install questionnaire, installing four Child Restraint Systems (CRS), and completing a post-install questionnaire. While researchers will make every effort to accommodate the participant’s schedule, data collection sessions will occur Monday-Friday between 9AM-6PM. Therefore, in order to participate, participants may need to take time off from work. The \$75 incentive will encourage participation and offset lost work time and travel expenses.

Regarding previous research providing the basis for the incentive amount, as part of the Program for the International Assessment of Adult Competencies (PIAAC) sponsored by the Organization for Economic Co-operation and Development (OECD), the Contractor for the current information collection request (Westat) was required by OMB to complete a field test respondent incentive experiment to examine the effect of increasing respondent incentives from \$35 to \$50 (see www.reginfo.gov/public/do/DownloadDocument?objectID=25766701). The rationale for the higher incentive was due to time burden (i.e., for a 2 hour study), and inflation. Overall, the response rate for participants who received the \$50 incentive was 5.2 percentage points higher than for those individuals who received \$35. In addition, the overall refusal rates for the \$50 group were 6.8 percentage points lower than the \$35 group, providing evidence that higher incentive will increase response rates. Because the study was conducted between August 25, 2011 and April 3, 2012, further inflation since that time would support the proposed \$75 incentive for the current information collection over the \$50 incentive amount used in the study.

In addition, the \$75 incentive amount is based upon previous experience of the firm, Westat, who is contracted by NHTSA to complete the current information collection, with studies similar in design and duration to the current information collection request, as detailed in the below table.

Study Name	Age Group	Duration	Agency	Incentive Amount	Report
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User Acceptance and Effectiveness of Seat Belt Speed Limiters on Recreational Off-Highway vehicles	Adults	90 minutes	CPSC	\$75	Not published
Field Trial Focus Groups on the Feasibility of Seat belt-based Speed Limiters for Recreational Off-Road Vehicles	Adults	120 minutes	CPSC	\$75	http://www.cpsc.gov/global/research-and-statistics/injury-statistics/sports-and-recreation/atvs/westat-phase-2-final-report---user-acceptance-of-seat-belt-speed-limiter-on-rovs.pdf

In-Vehicle Voice Control Interface Performance Evaluation	Adults	90 minutes	NHTSA	\$75	None published to date; in Agency Review
Occupant Protection Issues Among Older Drivers and Passengers	Adults	120 minutes	NHTSA	\$75	www.nhtsa.gov/ DOT/NHTSA/ Traffic %20Injury %20Control/ Articles/ Associated %20Files/ 810938.pdf

A.10. Describe any assurance of confidentiality provided to respondents.

All data will be treated with sensitivity and security considerations commensurate with its level of confidential content. NHTSA will not directly obtain data by intervening or interacting with participants and will not have access to identifiable (including coded) private data. In addition, the Contractor’s Institutional Review Board (IRB) reviewed all instruments, informed consent materials, and procedures to ensure that the rights of individuals participating in the study are safeguarded. The Contractor’s Institutional Review Board is a specially constituted review body established to protect the welfare of human subjects recruited to participate in biomedical and behavioral research. The Contractor holds a Multiple Project Assurance (MPA) from the Federal Office for Human Research Protections (OHRP). For the proposed study, the criteria for IRB approval are: risks to participants are minimized; risks to participants are reasonable in relation to anticipated benefit; selection of participants is equitable; informed consent will be sought and documented for each prospective participant; data collection will be adequately monitored to ensure the safety of participants; there are adequate provisions to protect the privacy of participants and to maintain the confidentiality of data. A copy of the IRB approval notice is included as **Appendix C**.

Once an individual has agreed to participate in the study, minimal personally identifiable information (PII) will be recorded. Only that information needed

for scheduling of the data collection sessions will be maintained. Any names and contact information collected for this purpose will be stored on the Contractor's secure network computers and only the Contractor's staff working on the project will have access to it.

The Contractor's computer systems comply with the Federal Information Security Management Act (FISMA) guidelines. Participant information will not be connected to the data. Contact information maintained for the purpose of scheduling the participant's data collection session will not be connected to the actual data from the participant. Prior to each data collection session, each participant will be assured that the information they provide will be treated in a secure manner and will be used only for the purpose of this research. To ensure data security, project staff is required to adhere to strict security standards. Copies of consent forms provided in writing to the participants as well as scripts for interacting with the participants are provided in **Appendix D**.

All participants will be informed that participation in the study is completely voluntary and any information collected during the session will not be associated with any personally identifying information used to contact them, and will maintain the participant's privacy. Completed consent forms will be stored in separate locked filing cabinets only accessible to authorized personnel, and an electronic list of participant names and ID numbers will be stored in a password-protected database on the Contractor's secure network server.

To ensure privacy, each participant will receive a unique subject ID number. In addition, data collection sessions will be conducted individually. That is, only one participant and the researcher(s) will be present for any given session. While the data collection protocol will be the same for all participants, this procedure will ensure that individual participants do not interact and their privacy is maintained. As stated previously, data collection sessions will use both tablets and paper forms. Tablets will be used by the researcher to record objective information. The researcher will use a checklist to record all of the errors noted with each installation, as well as make and record measurements of lateral and forward movement of the CRS once installed to assess how secure the CRS was installed. The tablets will have full-disk encryption and require a password to access the database where all objective data will be recorded for the participant. Subjective data will be collected using paper forms to administer both the pre-installation risk assessment and the post-installation ease of use ratings related to the usability of the CRS system, its manual, and the vehicle features and manual. Upon completion of each session, all data for a given participant will be moved from tablets and paper forms to secure storage locations on the Contractor's internal network. Once the information from the paper forms have been entered in a secure database, the forms will be

stored in separate locked filing cabinets only accessible to authorized personnel. This cabinet will be different from the one housing the consent forms.

The network is protected by multi-layer secure access control, allowing only those staff with pre-defined access authorization to interact with the data. The network is protected by government and industry best-practice facilities and procedures to ensure confidentiality and protection of personally-identifiable information from being exposed to unauthorized individuals.

The network is firewall protected from outside invasion and credential controlled internally. On-site and off-site (non-cloud) backups of data on the network are made daily and recoverable within 24 hours as a need arises. All aspects of quality assurance, data coding, analysis, and reporting are limited to authorized individuals using the same access control for these data. No personal identifying information will be contained in public use data files that may be made available from the study, and no data will be released in a form that identifies individual participants.

A.11. 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.

The data collection does not contain any questions related to matters that are commonly considered sensitive or private. Each participant will be given a questionnaire prior to completing the installations and then immediately following each of the four installations to assess their confidence with their work as well as provide some information related to their experience with the vehicle features and CRS design features. The questionnaires do not include questions on sensitive issues such as emotional abuse, physical violence, and sexual violence. The pre-installation questionnaire will ask each respondent to rate the likelihood of their being involved in a crash within the next month when driving alone or with a child. If the participant routinely travels with a child passenger under the age of 12, the participant is asked to rate how confident they are the child would be injury free if involved in a crash.

Following each installation, the participant will simply be asked to rate their confidence related to completing the installation correctly. The questions specifically address the following: correctly attaching/installing the child seat to the vehicle seat; securing the child size doll in the seat properly; choosing the appropriate restraint for the doll's age, height, and weight and if and how the participant used the vehicle owner manual and CRS manual. Another set of questions will address how challenging it was to use each of the vehicle and CRS features to successfully install the CRS and secure the child in the

CRS. Participants will convey this information by responding to a series of rating questions.

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

NHTSA estimates that 300 potential respondents will need to be screened for eligibility by completing a 15 minute screening questionnaire before finding 150 people to participate in the study. (The screening questionnaire is provided in **Appendix E**.) NHTSA plans to pilot test the study with 9 participants with each pilot test session lasting 2 ½ hours. Each actual study session is estimated to last approximately 2 hours; however, because pilot testing could determine that the session time needs to be lengthened to a maximum of 2 ½ hours, NHTSA is calculating the overall possible information collection participant burden based upon a 2 ½ hour burden. During the data collection session, participants will be asked to fill out a brief risk assessment questionnaire prior to completing the installations. Following each installation, participants will be asked to summarize their experience with the vehicle features, CRS features, and the installation overall through a series of debriefing questions. (Pre and Post Install Questions are provided in **Appendices F and G**; justifications for all Pre and Post Install Questions are provided in **Appendices H and I**.) Assuming a 15 minute completion time for the recruitment screener questionnaire, 2 ½ hours for completing the pilot study, and a maximum length of 2 1/2 hours for the study session, the total hour burden is 472.5 hours for the 459 participants. The total estimated burden is shown in Table 1.

**TABLE 1
ESTIMATED BURDEN HOURS**

	Recruitm ent Screener	Pilot Study	Study Session	TOTAL
Respondents	300	9	150	459
Hours	15 min	2.5	2.5	--
Burden Hours	75	22.5	375	472.5

Costs associated with the burden hours for the planned collection of qualifying information by NHTSA can be calculated based on mean hourly wages provided by the Bureau of Labor Statistics for All Occupants (see http://www.bls.gov/oes/current/oes_va.htm#00-0000). This source indicated mean hourly wage equals \$24.40. The total cost to respondents would be a maximum of \$11,529 according to the calculation below:

$$\$24.40/\text{hr.} \times (472.5 \text{ hours}) = \$11,529$$

A.13. Provide an estimate of the total annual cost burden to respondents or record keepers resulting from the collection of information.

There are no record-keeping costs.

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

The total cost to the Federal government is \$411,639. The cost covers all research and reporting expenses for the duration of the project. Annualized cost for the 30 months (2.5 years) of the project is \$164,665 per year.

A.15. Explain the reasons for any program changes or adjustments reported in Items 13 or 14 of the OMB Form 83-1.

This study will result in a program change of adding 473 (472.5 rounded to 473) hours of NHTSA overall burden hours.

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

NHTSA will develop a Final Report that presents the findings from the data collection effort. The Report will include an Executive Summary, Background, Introduction, Methodology, Results, and Conclusions sections. In addition, the report will include discussion of lessons learned and recommendations. It is important to note that individual data will not be identified in the report; data will be reported only in aggregate form as part of the findings.

The report will document user errors related to: the selection of a Child Restraint Systems (CRS) based on a child's height/weight/age, installation of the selected CRS in various vehicle make and models, and securing the child in the CRS. It will also present any findings regarding the causal roles of any factors that might contribute to the various types of errors, and the relationships between individual differences, confidence in installation, CRS familiarity and the observed errors. Ultimately, findings will transition to efforts in reducing/removing error-prone factors and educating the public.

The findings of the research will also be developed into a journal article. The article will be developed in full collaboration and authorship between the NHTSA COR and the Contractor.

Reports and summary sheets will be published in 2017.

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

No such approval is sought. The OMB survey number and expiration date will be displayed on the initial recruitment documents and informed consent.

A.18. Explain each exception to the certification statement identified in Item 19, Certification for Paperwork Reduction Act Submissions,” of OMB Form 83-1.

No exceptions to the certification statement are made.