

## **PARTICIPANT CONSENT FORM FOR SECONDARY DRIVER**

### **CANADA NATURALISTIC DRIVING STUDY**

**SPONSORS:** Council of Deputy Ministers Responsible for Transportation and Highway Safety

**INVESTIGATORS:** Sheila Klauer, Jessica Rardin: Virginia Tech Transportation Institute

Lorin Elias, Valerie Thompson, Sarah Simmons: University of Saskatchewan

### **WHAT IS THE PURPOSE OF THIS RESEARCH?**

The Canada Naturalistic Driving Study is a large research effort directed at improving Highway Safety in Canada where highway-related accidents accounted for over 2,200 fatalities and more than 11,200 serious injuries in 2010. The study will help researchers gain a deeper understanding of the interaction between the driver, vehicle and roadway and lead to safer roadways, vehicles, and driver training programs. The Canada Naturalistic Driving Study will look at how people normally drive by installing cameras and sensors in people's own vehicles. The study is being conducted in Saskatoon with 125 participants. Length of enrolment varies from one to two years.

### **WHAT DO I HAVE TO DO IF I CHOOSE TO PARTICIPATE?**

The owner, co-owner, or lessee of a vehicle you sometimes drive has allowed us to install a data collection system in their vehicle as part of a study. Data will be collected whenever the vehicle is driven, and some of this data may identify you as the driver. Data that could identify you includes face video and location information (such as your home, work, and school locations). We are inviting you to participate in the study as well and to allow us to use your identifying information for research purposes. There are three options with regard to participation:

1. You may choose to participate fully by reading and signing this consent form and following the steps listed below.
2. You may decline to participate fully but continue to drive the vehicle. If you choose this option, data will be collected whenever you drive the vehicle, but the data will be deleted once it is determined that you were the driver and that you did not consent to join the study.
3. You may decline to participate and choose not to drive the vehicle while it is in the study. In this case, no data would be collected.

The study involves a  month data collection effort in which a data collection system containing sensors and video cameras will be installed in the vehicle(s) you regularly drive to record a variety of driving measures. As a fully enrolled secondary participant, you would complete the following activities:

1. Complete the enrolment process, which should take no more than 20 minutes, and return the forms to the research team. These forms include:

- a. This informed consent form
  - b. A brief questionnaire about you and your driving history
  - c. A questionnaire about your driving behaviours
2. Provide us with a digital picture of your face so that we may automatically identify you as a secondary driver. We will provide instructions on how to do this when we talk to you on the phone about your participation.
  3. Drive as you normally would.
  4. Let us or the primary participant know if you notice any unusual warning light activity, for example, warning lights that go on or off.
  5. While you are in the study, we ask that you not drive the vehicle into any areas where cameras are not allowed, including any international border crossings, military bases, or similar facilities.
  6. If you are in a crash while in the study, we ask that you do five things (in the following order):
    - a. Seek emergency help the way that you normally would.
    - b. If possible, press an incident button that is located near the rear view mirror to describe the incident. The system will then record your brief description. You will know the button is working if the red light comes on when you press it.
    - c. Call us at 306-964-1203 to notify us as soon as it is safe to do so.
    - d. Allow a member of the research team to interview you about the crash if we decide that your crash should be investigated in more detail. This interview would ideally take place soon after the crash, but only when you are comfortable and able to do so.
    - e. Allow us to have access to the police accident report, if any, which results from the crash.

#### **WHAT ARE THE RISKS OF PARTICIPATING IN THIS STUDY?**

The operation or drivability of the vehicle should not be affected by the instrumentation, and thus carries a similar risk as when you operate the vehicle normally. However, if you violate province or local driving laws (such as driving under the influence, exceeding posted speed limits, or driving while distracted), the instrumentation could record evidence of these violations. This has the potential to pose greater than minimal risk of legal harm. A variety of strategies and procedures have been developed to reduce the potential for legal or economic harms. These strategies include encrypting the data obtained by sensors and cameras and using a code number to identify you with the code key maintained in a secure location. More details on these strategies are provided below.

All data collection equipment is mounted such that, to the greatest extent possible, it does not pose a hazard or problem for you when you drive. None of the data collection equipment should get in the way of your normal field of view. You are not being asked to change the way you drive or where you drive.

In the vast majority of cases, placing the data collection system in the vehicle will not affect the operating or handling characteristics of the vehicle. In some rare cases, the electromagnetic signals generated by the data collection system may cause interference with the vehicle's radio, keyless entry key fob, or other electronic components or sensors, such as the tire pressure monitoring system. If this happens in the study vehicle, Saskatchewan Highways technicians will use engineering countermeasures to attempt to minimize the interference to an unnoticeable level. If these problems cannot be solved, the primary participant will be given the option to continue participation with the problem unresolved or to leave the study.

There are non-driving risks resulting from participation. Five cameras will be placed in the vehicle. If you drive into an area where cameras are not allowed, including international border crossings, certain military and intelligence locations, and certain manufacturing plants, there is a risk that you may be detained or arrested or that the vehicle may be impounded. For this reason, by signing this consent form and thereby agreeing to participate in the study, you also are agreeing not to drive into any such areas while you are in this study. We have provided a letter for the glove box which can be used to explain the vehicle's role in the study while still maintaining your privacy and keeping confidential your role in the study.

Throughout the study, we will take all possible steps to protect your privacy and keep confidential your role in the study and the confidentiality of your personally identifying information. However, this privacy protection does not prevent the researchers from disclosing voluntarily matters such as child abuse, or a participant's threatened or actual harm to self or others. In terms of a vehicle, this could also include items such as driving under the influence of drugs or alcohol, allowing an unlicensed minor to drive the vehicle, or habitually running red lights at high speed. Such behaviours may result in your removal from the study and reporting of the behaviour to the appropriate authorities. If you are removed from the study, your compensation will be prorated based on the time you have already spent as a participant in the study.

In the event of a crash, it may not be possible to prevent the equipment and the data from falling into the hands of the police or an insurance company; if this happens, however, the data are still encrypted (that is, stored in an unreadable format) and will be inaccessible and unreadable to these individuals.

However, you too, are responsible for taking steps to protect your privacy. Do not post or disclose your participation on any public forum including websites, Facebook, newspapers, radio and television. Protect your role in the study the same way that you protect other personal and private information. If you do not keep confidential your role in the study, there is a risk that some of the data collected during the study, including your personally identifying information, may be used against you in a court case or other legal proceeding.

The risk to you of completing the questionnaires is no more than when you are doing activities in your daily life like filling in forms, and working at a computer.

### **WHAT ARE THE BENEFITS OF PARTICIPATING IN THIS STUDY?**

While there are no direct benefits to you from this research, you may find this study interesting. No promise or guarantee of benefits is being made to encourage your participation. Participation will help to improve the body of knowledge regarding driving behaviour and safety. Participation may also help us design safer vehicles and roadways in future years.

The funder of this study, the Deputy Ministers of Transport and Highway Safety will reimburse the Principal Investigator and the institution for the costs of undertaking this study. However, neither the institution nor any of the investigators or staff will receive any direct financial benefit from conducting this study.

### **HOW WILL MY DATA BE KEPT CONFIDENTIAL AND SECURE AND WHO WILL HAVE ACCESS TO MY DATA?**

**Any data collected during this study that personally identifies you or that could be used to personally identify you will be treated with confidentiality.** As soon as you begin participating in this study, your name and other identifying information will be separated from the raw data collected while you drive the vehicle and replaced with a number. That is, your raw data will not be attached to your name, but rather to a number (for example, Driver 0011). The raw data collected while you drive the vehicle will be encrypted (made unreadable) from the moment it is collected until it is transferred to one or more secure central storage locations. Your name also will be separated from any data about you, either provided by you in response to questionnaires or gathered by researchers during the study, including crash investigation data, and will be replaced by the same driver number (for example, Driver 0011).

Several types of information and data about you and the study vehicle will be collected during the study:

1. **Contact information** includes your name, address, email address, phone numbers, and similar information used to contact you when needed. It will be stored securely in electronic form during the course of the study and destroyed after the study is complete (unless you grant permission for us to keep your contact information when the study is over). This information will not be linked to or mingled with your study data, and will not be used in any research or analysis.
2. **Driver data** includes your answers to questionnaires. This data will not contain your name or any identifying information and will be used in analyses, both on its own and in combination with the driving data, vehicle data, and additional crash data. This data will be stored securely in electronic form throughout the lifetime of the data (defined below).
3. **Driving data** includes the data we collect from the vehicle while you are driving, including video data, audio data (if the critical incident button is pressed), and sensor data. This information will contain video of your face, audio (if critical incident button is pressed) and

GPS coordinates of your trips, all of which could be used to personally identify you. These data will be encrypted (stored in an unreadable format) from the moment of their creation until they are downloaded from the vehicle, transferred to a secure data storage facility, and verified. From this point on they will be decrypted (made readable) on an as-needed basis for each analysis. These data will be used for analysis, both on their own and in combination with the driver data, the vehicle data, and the additional crash data. This data will be stored securely in electronic form throughout the lifetime of the data (defined below).

4. **Additional crash data** includes items we may collect after a crash, including answers to an interview with one of our researchers and the police accident report resulting from the crash. This data will not contain your name or any identifying information and will be used in analyses, both on its own and in combination with the driver data, vehicle data, and driving data. This data will be stored securely in electronic form throughout the lifetime of the data (defined below).

It is possible that an authorized Institutional Review Board (IRB) may view this study's collected data for auditing purposes. An IRB is responsible for the oversight of the protection of human subjects involved in research in the United States of America. It is also possible that an authorized Research Ethics Board (REB) may view this study's collected data for auditing purposes. An REB is responsible for the oversight of the protection of human research subjects in Canada.

It is also possible that the study sponsors or investigators may view this study's driver data and driving data for quality control or administrative purposes; in this case, the study sponsors or investigators will be required to maintain the security and confidentiality of any data that personally identifies study participants or that could be used to personally identify study participants. Our recruiting partner, SGI, will not have access to your personally identifying data.

While driving the vehicle, a camera will videotape your face with some added space around the head to handle any head movements. An example is shown below. Also, video cameras will capture views of the forward view, the rear view, an external view to the right, as well as an over-the-shoulder view. A camera will also periodically take a permanently blurred snapshot of the vehicle interior which will allow researchers to count the number of passengers and make rough estimates of age, gender, and seatbelt use. Passenger identification will not be possible from these blurred snapshots. All video will be captured and stored in digital format (no tape copies will exist).

There will also be an ambient atmospheric analyzer that is capable of detecting the presence of alcohol in the passenger compartment under certain conditions. It may not be able to distinguish whether the alcohol was imbibed or applied (as in hand sanitizer), and it will be unable to determine whether it is emanating from the driver or a passenger. However, this sensor will flag the data for possible indications of impaired driving.

If a safety-related incident or crash occurs, you are asked to press a button on the unit mounted near the rearview mirror. You will know this button is working if a red light appears when you press it. This will allow researchers to find the incident in the database after the data have been

collected. Also, pressing the button starts a microphone for 30 seconds. During these 30-seconds, you can tell us what happened. No audio will be captured except when you press this incident button. Please note that pressing this button does NOT make a phone call, unlike OnStar™. It simply records your voice in an audio file that remains in the vehicle until the data is collected.



During the data collection phase of this study, all data collected from the vehicle will be encrypted (made unreadable) from the time of its creation and then stored in a specific password-protected project folder on a secure server; the driving data will only be decrypted (made readable) once it has been stored in this folder. At the conclusion of the collection phase of this study, the driver data, driving data, and additional crash data will be permanently housed at one or more highly secure data storage facilities. One set of data will be permanently housed at Virginia Tech under the supervision of the Virginia Tech Transportation Institute, the organization overseeing the data collection for the entire study. It is possible that, after data collection is complete, one copy of study data may be transferred to a research institution or university in Canada.

Only authorized project personnel and authorized employees of the research sponsors will have access to study data that personally identifies you or that could be used to personally identify you. As explained below, other qualified research partners may be given limited access to your driver data, vehicle data, driving data, and additional crash data, solely for authorized research purposes and with the consent of an IRB/REB. This limited access will be under the terms of a data sharing agreement or contract that, at a minimum, provides you with the same level of confidentiality and protection provided by this consent form. However, even these qualified researchers will not be permitted to copy raw study data that identifies you, or that could be used

to identify you, or to remove it from the secure facilities in which it is stored without your consent.

Project personnel, the project sponsors and qualified, authorized research partners may show specific clips of video at research conferences. The project sponsors also may show specific clips of video to the media, driver's education teachers and students, and others involved in efforts to improve highway and road safety. The face portion of the video will be blurred, blacked out, or replaced with an animation for these purposes. Your name and other personally identifying information will never be associated with the showing of these video clips. Identifying location information will not be shown in association with these video clips.

It is expected that the data we capture throughout the course of the entire study, including that from the secondary participants, will be a valuable source of data on how drivers respond to certain situations and how the roadway and vehicle might be enhanced to improve driver safety. Researchers who study traffic congestion and traffic patterns may also find the data useful. Therefore, it is expected that there will be follow-up data analyses using all or part of the data for up to 30 years into the future. These follow-up analyses will be conducted by qualified researchers with IRB/REB approval, as required by law, who may or may not be part of the original project team. In consenting to this study, you are consenting to future research uses of the information and videos we gather from you, consistent with the protections described above and elsewhere in this document.

If you are involved in a crash while participating in this study, the data collection equipment in the study vehicle will likely capture the events leading up to the event. You are under NO LEGAL OBLIGATION to voluntarily mention the data collection equipment or your participation in this study at the time of a crash or traffic offense. We have provided a letter which you should keep in the glove box for these cases. The letter describes the vehicle's role in the study without identifying you as a participant in the study.

As described earlier, the obligation to protect your confidentiality does not prevent the researchers from disclosing voluntarily matters such as child abuse, or subject's threatened or actual harm to self or others. This could also include behaviours such as habitually driving under the influence of drugs or alcohol, allowing an unlicensed minor to drive the vehicle, or habitually running red lights at high speed. If this type of behaviour is observed, we reserve the right to remove you from the study and inform the appropriate authorities of what we have observed. In most cases, we will notify you first of the behaviours we have observed prior to removing you from the study or informing others of our observations.

The protections described herein may not apply to passengers or drivers of the vehicle who have not consented to being in this study. For this reason, consent will be sought from all other adults who drive the vehicle.

### **WILL I RECEIVE PAYMENT FOR PARTICIPATING IN THIS STUDY?**

There is no payment for secondary drivers participating in the Canada Naturalistic Driving Study.

## **WHAT ABOUT INSURANCE?**

Please note that since you are not driving a vehicle owned by study personnel nor their respective organizations, neither study personnel nor their respective organizations are responsible for the expenses that are caused by a crash you may experience. In the event of a crash, you are **not** responsible for any damage to the data collection system that is installed into the vehicle.

Participants in a study are considered volunteers, regardless of whether they receive payment for their participation. Under Canadian law, workers compensation does not apply to volunteers; therefore, the participants are responsible for their own medical insurance for bodily injury. Appropriate health insurance is strongly recommended to cover these types of expenses.

If you get hurt in a crash, whether in or out of an automobile, the medical treatment available to you would be that provided to any person by emergency medical services in the vicinity where the accident occurs.

## **AM I FREE TO WITHDRAW FROM THIS STUDY AT ANY TIME?**

As a participant in this research, you are free to withdraw at any time, for any reason, and without penalty of any sort. To withdraw, contact Sarah Simmons at 306-964-1203. You will also be allowed the opportunity to withdraw your identifying data should you so choose, but you must notify us in writing within one month of leaving the study. As the study progresses, data will be aggregated, anonymized, analyzed, and reported in ways that will make it impossible to totally withdraw your data. You **are free to choose not to answer any questions** or respond to any tests that you choose without penalty.

## **HAS THIS RESEARCH BEEN APPROVED?**

Before this experiment begins, the research must be approved by the Institutional Review Board for research involving human subjects at Virginia Tech; you should know that this approval has been obtained. The research has also been approved by the Research Ethics Board at the University of Saskatchewan on May 8<sup>th</sup>, 2013; any questions about your rights as a participant may be addressed to them by calling 306-966-2975 or by email: [ethics.office@usask.ca](mailto:ethics.office@usask.ca).

## **HOW DO I PROVIDE MY CONSENT?**

I \_\_\_\_\_ (participant) have read and understand this consent form and conditions of participation. I understand what is being asked of me. My questions have been answered. I freely agree to participate and have not been coerced into participation. I understand that participation is voluntary and that I may withdraw at any time without penalty.

I certify that I hold a valid Canadian driver's licence and that I am 18 years or older.

I also understand that if I choose not to participate, the data collected while I am driving will be deleted once it is determined that the driver of the vehicle for any trip did not sign a consent form.

