

Information for study participants

1. Goals of the study

The goal of the *THATS* study is to gain new insight into how best to improve transport systems in urban areas in the GTHA. How can mobility become more efficient? What do people expect from transport systems? How does the ongoing digitalization of various aspects of life influence the requirements put toward our transport systems?

2. The study

The study starts with an online survey regarding your household basic socio-demographic data as well as mobility tools and patterns. It further includes an extensive smartphone-based study, where your and your household members' mobility behavior is measured over 7 days. Participation in the smartphone study is by way of a mobile app, which must be installed and activated on your smartphone. The app continuously tracks your geo-position and derives routes and places you have travelled throughout a given day. Apart from the automatically detected position data, we ask you to provide the mode and purpose of each trip. You will also complete an online daily survey at the end of each day to provide further information about your activities on that day and your general travel-activity behaviour. Your data, along with more than 1,000 other study participants, will aid us in understanding current mobility behavior and allow us to contribute to improving the transport system in the GTHA.

3. Timetable of the study

The invitation email you received includes a link to our sign-up survey and a personal code that you may use to log in to the survey. Your email address was provided to us by the Ministry of Transportation, Ontario (MTO) from the TTS (Transportation Tomorrow Survey) where you stated that you are willing to participate in further studies conducted by the University of Toronto. After completing the online survey, you and your household members you invite will be sent an email with instructions to join the smartphone study. Our [website](#) contains information on how to install and activate the app. We will track your mobility over the course of one week (7 days) via the app. Tracking takes place in the background, but you need to validate the mode and purpose of the tracked trips. After you successfully complete your study participation, you will be eligible for an incentive you received the information about in the invitation email. We kindly ask you to download and activate the app right after completing the online survey, and at most up to two days later.

4. Requirements for participation

To participate in the smartphone study, you need to fulfil the following requirements:

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- 15+ years old (by May 2023).
- Live in the GTHA
- Use of a smartphone that can install the tracking app (Android or iOS).
- Be able to walk 200m without help.
- Must not be staying outside the GTHA for more than two nights over the next 7 days.
- Agree to the terms described in the consent form.

5. Potential Risks

The risks of participating in this study are minimal. However, we have identified the potential risks and mitigated them as explained below:

The monitoring of all activities for a week could be emotionally distressing: To handle this, we assure you that your information will be anonymized right after data collection and will be secured at all times on our servers which can only be accessed by authorized researchers. Moreover, the results will not be published unless aggregated at a very high level from which is impossible to identify any personal information. Also, you have the right to withdraw from the study at any time and easily if they feel distressed (see section 7 below). Finally, each day's information is collected at the end of that day and not in real time. You can answer the questions of a day on the next day(s), whenever they feel comfortable to do so.

The possibility of using the application while driving: Each day's information is collected at the end of that day and not in real time. Therefore, there is absolutely no necessity to use the application while driving.

6. Requirements for Receiving the Incentive

We are pleased to inform you that as a sign of gratitude to participate in our survey, you will be considered for the incentive you received the information about in the invitation email if you meet the following requirements:

- Receipt of the invitation email (including the participant registration code) by the primary household member and app installation instruction email by the primary household member and all invited household members.
- Completion of the sign-up survey. (Only for the primary household members. The household members invited by the primary member will not need to complete the sign-up survey)
- Installing the survey application (Ma Mobilite), giving all the access to the application required for tracking (location, ...) and completing the tracking survey over the 7 days of the study period. You need to label your daily travel records by choosing the mode and

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purpose of your trips. Additionally, you need to complete a daily survey at the end of each day no later than a day after its generation.

- The travel diary data provided in the application and the activity diary data provided in the daily surveys should reasonably match regarding the timing of activities and trips.

7. Right to withdraw

You may withdraw from the survey at any time during the study and without stating any reason. You can do so by sending us an email to the email address provided in section 9 below.

8. Data protection

The tracking aims to collect 7 days of validated GPS data. After the 7th day, and making sure all the trips are labeled and all the 7 daily surveys are completed, you need to delete the application to avoid further tracking

If the user deletes the application, the data stored on the application is immediately deleted and the data associated with his token (geographical positions, speeds, routes) in the server are saved unless the user requests the deletion of his data. Data stored locally on the application is kept in the application until the application is deleted. The user can request the deletion of his data stored on the server (geographical positions, speeds, routes) at any time. You can delete the recorded trips using the "delete my data" button provided in the profile section. A page will open where you must paste the identifier in the right place and write the email address with which you identified yourself when you first used the application. Once this is done, check the box "I want to delete my data" and finally click on submit my request. The process also is described in the FAQ section and in instruction videos on our website. On the other hand, you can request to have all your recorded data deleted without stating any reason by contacting us by email. Once your data is deleted, it cannot be restored.

In accordance with the digital data charter, all user data is hosted in Canada, on facilities operated by Digital Ocean. Digital Ocean claims to comply with Canadian legislation regarding the protection of personal data. All elements relating to the security and compliance of Digital Ocean are available on this page: <https://www.digitalocean.com/trust/resources/>.

The infrastructure of the Application is managed by La Fabrique des Mobilités Québec (<https://fabmobqc.ca/>). On the University of Toronto side, only the researchers who are directly involved with the project will have access to any personal data, the actual processing, however, is done only after the data was pseudonymized. All personal data will be deleted after the project is completed.

All data will be kept at all times on secure, password-protected servers. Only authorized persons from the study team will have access to the data for research and analysis purposes using virtual machines which are locked down so they cannot upload the data to themselves. The analysis results will also be checked to be aggregated enough before exporting. Respondents will be anonymized

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so that they cannot be identified. All the recorded locations will be coded to a geographically aggregate level at which no individual person/location can be identified. Addresses will be deleted once the locations have been geocoded.

The published results of the project will not allow us to identify individuals. The researchers in this study and/or the responsible members of the ethics commission may access the original data for control purposes under strict confidentiality requirements. After the completion of *THATS*, the pseudonymized data will be stored for future research projects in the University of Toronto data archive, so that new methods and research questions may be analyzed. Any new researcher who wants to access the data in the future needs to request that, be evaluated by our research group, and will submit a separate Research Ethics application to be evaluated by the University of Toronto Human Research Ethics Board as well. All researchers can only access the data using virtual machines which are locked down so they cannot upload the data themselves. The analysis results will also be checked to be aggregated enough before exporting. Finally, before storing the data on the archive servers, all the participants' data will be anonymized and mixed with the data from other respondents to eliminate any possibility of identification.

9. Contact

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