

## Data Privacy Notice

### 1. Implementation and Adherence to the Data Privacy Policy

We, the Mobility Network at University of Toronto, Galbraith Building 305, 35 St George St, Toronto ON, M5S 1A4, (hereafter, “we”), provide you with a smartphone application (hereafter, “the app”) within the scope of the study entitled *THATS*. The app allows us to track and record your daily movements and mobility behavior for the smartphone study within the scope of the overall *THATS* study. Additionally, we record your responses from online surveys (hereafter, the *THATS* study, the smartphone study, and all online surveys are referred to as “the study”). Your private information is of the utmost importance to us, especially with regard to the collection, processing, and use of personal data. We, therefore, provide you with information related to data privacy in the study.

**Please read the data privacy policy carefully before agreeing to participate in the study.** We commit to adherence to the data privacy policy as described in the following.

**By agreeing to participate in the study, you consent to the collection and use of your data in accordance with the data privacy policy.**

### 2. Purpose of Data Collection

Mobility behavior in the GTHA is increasingly dynamic and diversified in its development. Traditional methods of data collection, such as travel diaries, are unable to incorporate this reality in an accurate manner. By using the app, we aim to generate a better overall picture of your mobility behavior in this study. This will contribute to the improvement of transport policy (e.g., building roads or expanding public transport).

### 3. Study Description

The purpose of the app is to gain new insights into mobility behavior. We aim to measure key indicators such as transport mode choice, travel times, and transport capacity as well as identify hot spots for different transport modes.

### 4. Data Collection Methods

#### Survey Data

We collect survey data using the online survey platform Qualtrics.

#### Movement Data

We collect your movement data (hereafter, “trip data”) using the app. We perform transport analyses using trip data, which allows for the determination of key mobility indicators (e.g., transport mode choice). The Application is also able to provide a personalized estimate of the calories burned during a trip if the user has provided gender, height, weight and age

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information. The disclosure of this information by the User is optional and it is not subject to any subsequent data processing since it is stored on the User's smartphone only.

Traditional methods are not suitable for the accurate measurement of trips with different transport modes (inter-modal trips). The app directly measures individual mobility behavior and automatically detects the transport mode. As a result, mobility behavior is measured much more accurately than traditional methods such as surveys or traffic counts.

The raw data is stored on the user's smartphone and continuously sent to a server that performs processing each night to improve the data. These improvements consist of an 8-step treatment:

- GPS position and speed data are collected in the application (telephone side) by querying the smartphone OS, then:
  1. Sent (asynchronously) to the server to be processed on a non-realtime basis (every night) in a processing pipeline.
  2. Recovery of app data already saved in the database.
  3. Breakdown into trips: after 5' of immobility (configurable threshold), it is considered to be another trip.
  4. Divisions into sections.
  5. Smoothing of sections: correction of potential GPS errors.
  6. Cleaning / temporal resampling of samples.
  7. travel mode detection: the mode is detected according to the speed, and, for public transport, only based on the proximity of the start and the end of the trip (section) and a transport stop collective (public transport stops are found on the OpenStreetMap database queried by the overpass API).
  8. verification of active modes: the mobile app allows the user to inform about an incident and to correct the mode, or complete the reason for a trip.

The server hosting the Application and the data collected: TOR1 is located in Toronto, Canada, at Digital Ocean. No use for commercial purposes of this personal data is made by La Fabrique des Mobilités Québec and its partners (Coop Carbone and Savoir Faire Linux).

Aggregate data is made up of individual data and is the result of a combination of different measurements. They are obtained by adding or averaging the individual values obtained. They make it possible to obtain information on groups that have common characteristics. We can aggregate by location, by characteristics or by analysis criteria.

Data is visible in the "Dashboard" tab and corresponds to the indicators for each user of the application for a period defined by the User. These data are not subject to a specific database and

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are calculated on the fly for direct display in the users' application. These are the following indicators:

- total number of kilometers per mode of travel
- number of journeys by mode of travel
- total travel time by mode of travel
- speed by travel mode

### 5. Classification and Scope of Collected Data

The following summarizes the data collected:

- Primary identification data
  - Username and e-mail address for contact, recruitment, and reimbursement for participation
  - Login credentials for the app
- Survey Data
  - Questions regarding mobility
  - Demographic data
- Smartphone app
  - Time and location
  - Coordinates and accuracy (determined by GPS chip)
  - Gyroscopic sensor data (determined by smartphone sensors)
  - Movement activity from operating system
  - Accuracy of movement activity
  - User agent (make and model of smartphone, operating system version, app version)

### 6. Data Processing

The survey data of participants in the smartphone study will be linked to the app data. This data will be statistically analyzed.

### 7. Data Storage

#### Survey Data

The survey data will be downloaded from Qualtrics to a secure server at the University of Toronto.

#### App Data

The app only stores collected trip data and the participant number. No other personal data is stored. As soon as the trip data is transmitted to the server, the tracking data in the app is deleted.

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## **8. Data Dissemination**

The data is used for scientific publications. Results are presented in the aggregate, which eliminates the possibility of identifying individuals.

## **9. Distribution to Third Parties**

The collected data are not distributed to third parties and only used for research purposes, and will only be processed by La FabMob and Coop Carbone. At the conclusion of the study, the data will be stored for future research projects in the University of Toronto data archive, such that new methods and research questions may be analyzed.

## **10. Contact with Participants**

We will use your email address to send information relevant to the study. We will provide you with access (i.e., links) to online surveys, and brief you on any potential changes in the data privacy policy or study protocol. If you agree at registration, we will provide you with information on the results of the study and may contact you with regard to participating in future studies.

To avoid unnecessary e-mails and cookies, we collect the following information on the sent emails: whether and when an email was opened, and whether any links were clicked on. This information is subject to the same strict privacy regulations as all other personal data. If you do not agree to the collection of this information, please contact the study team ([thats@utoronto.ca](mailto:thats@utoronto.ca)).

## **11. Data Deletion**

You reserve the right to block or delete all your data at any time. To exercise this right, send an email with the subject “Please delete data” to [thats@utoronto.ca](mailto:thats@utoronto.ca) from the email address with which you registered for the study. Your data will be removed from the live system and do not enter any further analyses. Deletion of your data is irrevocable and takes place in all storage and backup locations. Once the deletion request has been processed, you receive a confirmation by email. The processing time for this type of request can take up to 30 business days.

## **12. Data Subject Rights**

### **Right to Revoke and Right to Object**

You may object to and/or revoke consent for the use of your data at any time, independently of the above clauses. The lawfulness of the processing of your data up until the point at which you object to or revoke consent for the processing or use of your data remains unaffected.

### **Right to Amend, Delete, Block, and Restrict**

In addition, you reserve the right to amend, block or delete your data collected and stored as part of the study. We explicitly state that legal requirements may exist requiring us to continue storing your data. In this case, the data can only be blocked.

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**Contact for Exercising Data Subject Rights**

The party responsible for the processing of your data is the Mobility Network at the University of Toronto. You can also contact the Research Oversight and Compliance Office – Human Research Ethics Program at [ethics.review@utoronto.ca](mailto:ethics.review@utoronto.ca) or 416-946-3273 if you have questions about your rights as participants.

**13.Contact**

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