



COVID-19 influenced Households' Interrupted Travel Schedules (**COVHITS**) Survey: Fall 2020 Cycle Report

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COVHITS Survey 2020

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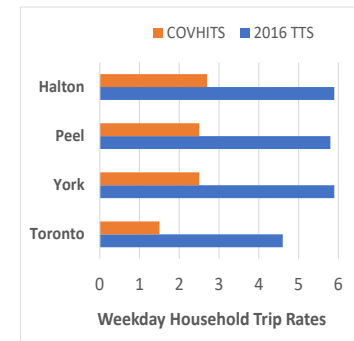
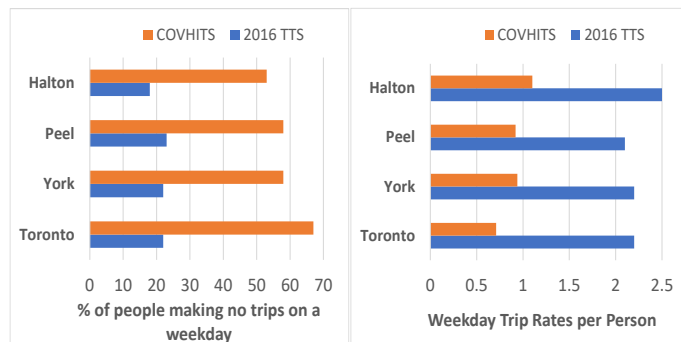
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Executive Summary

The 2020 COVHITS Survey was conducted to collect post-‘first wave of COVID-19’ passenger travel demand data for residents of four regional municipalities, the study area: the City of Toronto and the Regional Municipalities of Halton, Peel, and York. The main objective was to collect observed/revealed data of daily (weekday) passenger travel of the study area. The survey was a household travel survey. The survey sample was relatively small compared to that of a TTS (a once-per-5-years regional household travel survey) but carefully designed to get sufficient data for benchmarking travel demand changes resulting from COVID-19 restrictions in each of the four regions.

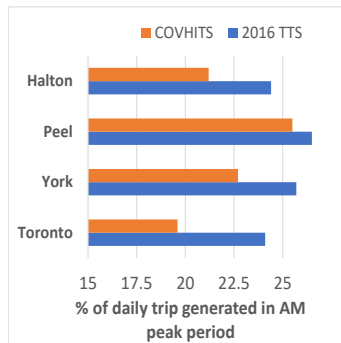
The survey was conducted by randomly recruiting people from on-line survey panels. The survey structure and implementation time were made compatible with those of 2016 TTS as much as possible so that the results could be evaluated considering the 2016 TTS context as the base case. The final dataset of the 2020 COVHITS Survey includes single weekday travel diaries of all members (6 years or older) of a total of 3,721 households across the four regions. This includes a total of 6,948 reported weekday trips. Collected samples of each of the four regions are weight-adjusted separately to make those representatives to the corresponding regional population. This is a relatively small sample survey (compared to regional travel surveys, e.g., the TTS) and is prone to be skewed towards specific population segments (e.g., smaller household size and younger people). So, each region's datasets are pooled and further weight-adjusted to represent the population distributions across these four regions.

COVID-19 caused a large drop in urban passenger mobility, as reflected in our COVHITS data. COVHITS average weekday trip rates in the study area are 2.0 trips per household, compared with 5.2 trips per household, the value observed in the 2016 TTS. All four municipalities experience large drops in weekday household trip rates. One of the main possible reasons for the large decrease in trip rates is the large increase in immobility (no trip at all in a day).



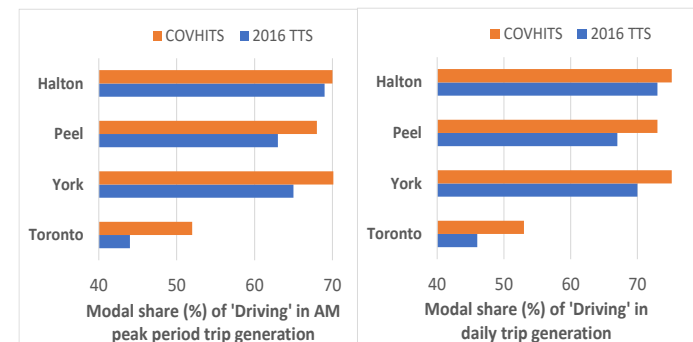
The proportion of respondents reporting no trips at all on the survey day increased significantly. For comparison, overall in the study area, 22% of TTS 2016 respondents did not report making any trips on their survey day, while in COVHITS, this rate of zero-trip making is 62%. This results in average daily weekday trips per person in the study area much lower in COVHITS, at 0.84 trips per day, compared to 2.2 trips per day in the 2016 TTS.

COVHITS survey data indicate COVID-19 may be considerably affecting commuting trip rates. Average weekday commuting trips per worker dropped from 0.83 trips per day to 0.35 trips per day in the study area. This results from a large increase in work from home practices due to the pandemic. Overall, in the four regions, while 14% of employed COVHITS respondents reported working exclusively from home before the pandemic, 46% of these same employed respondents reported working exclusively from home in the Fall of 2020.

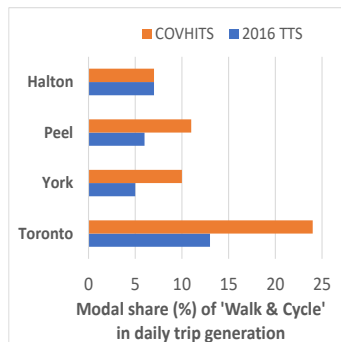


The morning (AM) peak period of the trips generated by the respondents flattened to some extent indicating more distributed trip generation across the day than before. Toronto experienced the highest drop in morning peak-period share of daily trip generations.

In terms of modal shares of trips generated by the respondents in the study area, the modal share of driving in the AM peak period increased from 55% (in 2016 TTS) to 63% (in COVHITS). Similarly, the modal share of driving in daily trip generations increased from 58% (in 2016 TTS) to 66% (in COVHITS) across the study area. Toronto experienced the highest hike in modal shares of driving.



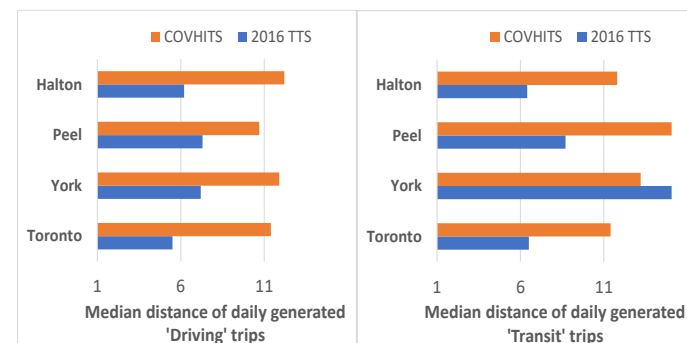
In Toronto, AM peak transit modal shares of trips generated by its residents dropped from 30% (in 2016 TTS) to 20% (in COVHITS). Transit modal shares of daily trips generation dropped from 6% (in 2016 TTS) to 3% (in COVHITS) in York and from 8% (in 2016 TTS) to 3% (in COVHITS) in Peel.



Non-motorized modes (walk and cycle) gained modal shares in all regions. Overall, the study area experienced an increase from 9% (in 2016 TTS) to 16% (in COVHITS) of 'walk & cycle' modal shares in daily weekday trips generated by its residents. Toronto experienced the highest increase in modal shares of non-motorized modes.

COVHITS survey data reveals that the median trip lengths of driving trips generated by the regions' residents and attracted to the regions increased across the regions. Overall in the

study are, the median distance of generated daily driving trips increased from 6.4 km (in 2016 TTS) to 11.5 km (in COVHITS). The median transit trip distance of generated daily transit trips increased from 7.0 km (in 2016



TTS) to 12.2 km (in COVHITS) in the overall study area. All regions except York experienced increases in median transit trip distances.

The COVHIS Survey collected additional (respondent-stated) information on e-shopping and transit usages. We do not have similar information in the pre-COVID TTS or similar other surveys to compare against. These respondent-stated data indicate that, in the study area, 50% of households experienced ordering meals online, 46% of households experienced ordering groceries online, and 26% of households experienced purchasing clothing online in Fall 2020. Respondents of the COVHITS survey who were transit users (made at least 1 transit trip in the survey week) were asked to state their purposes of transit trips. Data revealed that going to restaurants (perhaps to pick up meals) was the most dominant (highest percentage of respondents') purpose of transit trips in all regions except in Peel (where shopping was the most dominant purpose). However, going shopping (perhaps grocery) was the most frequent (highest number of times per week) purpose of transit trips in all four regions.

The Fall 2020 COVHITS Survey provides a snapshot of daily life for a sample of residents across the four regions. COVHITS Survey data indicate that COVID-19 altered people's daily activity-travel patterns. A high rate of work from home and the necessity of social distancing seems to have translated into a higher rate of daily immobility, higher dependence on private cars, and longer driving distances. These are signs of changes in travel patterns in the region, but how long the effects of these changes will stay and continue to evolve depends on how long COVID-19 continues to affect public life.

Acknowledgements

The Fall 2020 **COV**id-19 influenced **H**ouseholds' Interrupted **T**ravel **S**chedules (**COVHITS**) Survey was sponsored by and conducted on behalf of a consortium of regional municipalities, the provincial government and its agency, and a transit operator in the Greater Toronto area. These are:

City of Toronto
Metrolinx
Ministry of Transportation, Ontario
Regional Municipality of Halton
Regional Municipality of Peel
Regional Municipality of York
Toronto Transit Commission

Staff from these organizations and staff from the Data Management Group (DMG) at the Department of Civil & Mineral Engineering, University of Toronto, comprise the COVHITS Survey Technical Committee (TAC) members. This report is prepared for this consortium by the research group of Professor Khandker Nurul Habib with guidance from the DMG. The contributions of the TAC members to the production of this report and the DMG's ongoing work are gratefully acknowledged.

Further Information

The COVHITS Surveys are parts of a specialized data collection program triggered by the extraordinary contexts of COVID-19's global pandemic-induced travel bans and the ceasing of urban residents' activities. It is sponsored by some member organizations of the Transportation Information Steering Committee (TISC), which also conducted the Transportation Tomorrow Surveys (TTS). The TTS survey datasets (2016, 2011, 2006, 2001, 1996, 1991, and 1986) are currently under the care of the DMG. The DMG is also responsible for maintaining the COVHITS survey databases and making available appropriate travel information for any urban transportation study in the area by the sponsoring organizations. Requests for information from the COVHITS survey should be directed to the address below.

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Tel: (416) 978-3913
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Background

COVID-19 has changed people's travel patterns. Amid uncertainties in the pandemic's future recurrences in various scales and forms, it is unclear when the new normal situation (with respect to daily travel demand) will return and what the new normal will look. The disruption in daily lives, especially social distancing, the mass-experience in telecommuting, e-shopping, and online social/religious activities, may change the travel behaviour of urban residents. Real/revealed ground-truth data/observations on travel demand at different stages of post-COVID-19 lockdown would provide data to assess the effects of lockdown and travel demand returning to 'normalcy'.

The Transportation Tomorrow Survey (TTS) has been the core travel demand dataset in the Greater Golden Horseshoe (GGH) since 1986. The latest TTS was in 2016, and the next one is planned to be in 2021-2022. However, future datasets will benefit from reference data of the same kind in Fall 2020. The COVHITS survey is designed to gather such reference data on passenger travel demand in the Greater Toronto Area. The core of the survey maintains a similar structure to the TTS. However, to capture behavioural changes (that may have already happened), it includes additional questions on topics such as telecommuting and flexible office hours.

Two cycles of COVHITS are planned, and the first cycle was completed in Fall 2020. This report presents a summary of Fall 2020 COVHITS survey results.

Area of coverage

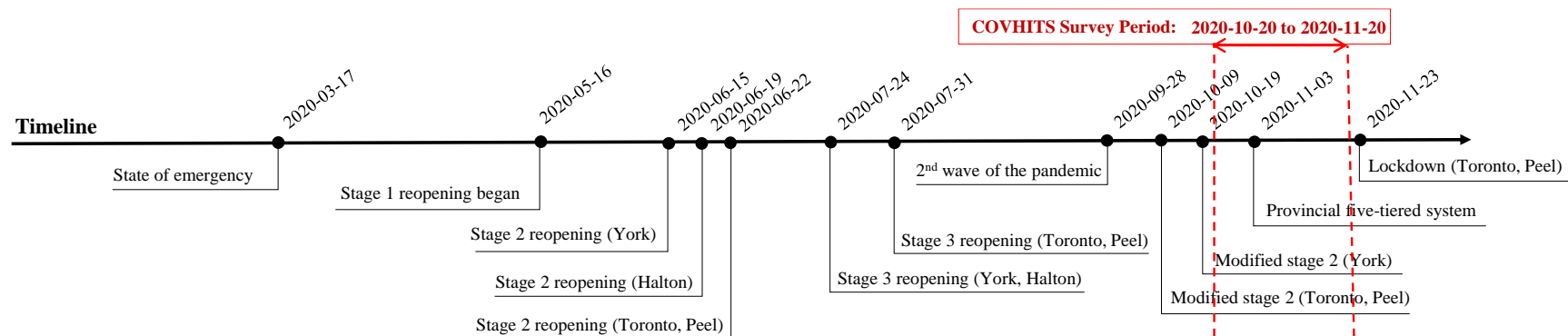
The coverage area of the COVHITS survey was defined by the participant organizations in the consortium and thus composed of the City of Toronto and Regional Municipalities of Halton, Peel, and York.

PARTICIPATING JURISDICTIONS																				
Survey	City of Hamilton	City of Toronto	Regional Municipality of Durham	Regional Municipality of Halton	Regional Municipality of Peel	Regional Municipality of York	City of Kawartha Lakes	City of Barrie	City of Brantford	City of Guelph	City of Orillia	City of Peterborough	County of Brant	County of Dufferin	County of Peterborough	County of Simcoe	County of Wellington	Regional Municipality of Niagara	Regional Municipality of Waterloo	Town of Orangeville
2020 COVHITS Survey		•		•	•	•														
2016 TTS	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Survey magnitude and timeframe

Fall 2020 COVHITS survey was conducted using a random sample of residents drawn from online panels. Considering the constraints of timeline and budget, the use of online panels was determined to be the best option for participant recruitment for this study. The survey sample size requirement calculation took into consideration the maximum possible uncertainty in travel behaviour change and a reasonable design factor. As such, a minimum of 775 completed surveys per region (Toronto, Halton, Peel, and York) was sought.

A total of 5065 households were completed in the survey over a 1-month period of time (October 20 to November 20, 2020).



After cleaning (for missing information and inconsistent travel diary related responses) the collected datasets, the responses from the total of 3721 households are retained. This includes 1,089 households from Toronto, 777 households from Halton, 913 households from Peel, and 942 households from York. The final dataset is composed of 8,096 individuals from 3,721 households in the study area, with a total of 6,948 recorded weekday trips.

UNEXPANDED/UNADJUSTED RECORDS FOR THE STUDY AREA			
Survey	Households	Persons	Trips
2020 COVHITS	3,721	8,096	6,948
2016 TTS	162,708	395,885	798,093

Survey content

The COVHITS survey is a retrospective survey of travel taken by every member (age 6 or over) of the household during the weekday prior to the web contact. The survey is a web-based survey implemented in the TRAISI¹ platform.

INFORMATION COLLECTED																									
	Demographic Information														Travel Information						Other information				
	Household Characteristics					Person Characteristics									Nature of Trip			Means of Travel			Shopping		Transit	Work Place Arrangemen	
2020 COVHITS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2016 TTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

¹ TRAISI stands for 'Travel Activity Internet Survey Interface'. It is a software system developed to design passenger travel surveys with optimum interactions with the survey respondents through graphical, map and transit scheduling app interfaces. The software system is developed as a part of the TTS2.0 project, led by Professor Khandker Nurul Habib and sponsored by the TISC.

Report content

The purpose of this report is to summarize the Fall 2020 COVHITS survey results according to regional boundaries. The summary provides demographic and travel characteristics presented in tabular format at the two levels of detail: The overall study area and each of the four Regional Municipalities (Toronto, Peel, York, and Halton).

Corresponding data from the 2016 TTS are presented in this report as reference points. The overall TTS and the COVHITS surveys differ in survey area as shown by the participating jurisdictions and as explained in the section of 'Area of Coverage'. Note that the reported 2016 TTS statistics are of the study area of the COVHITS survey only.

The information presented includes socio-demographic and travel characteristics. In addition to presenting the magnitude of the trips coming into and leaving an area, the summary tables also describe travel characteristics such as travel purpose, trip start time, travel distance, and travel mode choices. Definitions of terms are listed on the next page.

The samples of each municipality of the COVHITS survey are weight-adjusted to the corresponding municipality's key population statistics (household size and age distribution). This is to ensure that the samples are true representation of corresponding populations. Statistics for the whole study area presented in this report are based on the pooled samples that are further weight-adjusted to the relative proportions of the corresponding total population of the municipalities. Numeric figures presented in this report are rounded.

Data Key

HOUSEHOLD CHARACTERISTICS	
Households Dwelling Type	Total number of households in the area Distribution of households by dwelling type: house, townhouse, or apartment.
Household Size	Distribution of households by the number of persons in residence at the time of the survey interview.
Number of Available Vehicles	Distribution of households by number of vehicles available to the household for personal use.
Number of Available Adult Bikes	Distribution of households by number of adult bikes available to the household for personal use.
Household Income	Distribution of households' annual income before tax.
Household Averages: Persons/household Workers/household	Total population divided by total number of households. Total number of employed persons (full-time, part-time, work-from-home) divided by total number of households.
Drivers/household	Total number of persons in possession of a driver's licence divided by the total number of households. The calculation excludes a small % of households for which the total number of drivers was unknown.
Vehicles/household	Total number of vehicles available for personal use divided by the total number of households.
Trips/day/household	Total number of daily trips made by persons age 6 and over divided by the total number of households.
POPULATION CHARACTERISTICS	
Records	Total population residing in private dwellings in the area at the time of the survey. Excludes residents living in collective dwellings (who were not surveyed). For COVHITS survey, records will be the total number of records collected in each region.
Age Median Age	Distribution of population by age group. 50% of the population are above and 50% are below the median age.
Daily Trips per Person	For TTS, number of trips made by persons aged 11 and over divided by the number of persons aged 11 and over. For COVHITS, number of trips made by persons aged 6 and over divided by the number of persons aged 6 and over.
Daily Work Trips per Worker	Number of work trips made by employed persons divided by the number of employed persons.

Employment Type	Full time outside the home, part-time outside the home, work at home (full-time or part-time).
Student	% of population who are students.
Licensed	% of population with a valid driver's licence. Persons with unknown licence status were excluded from the calculation.
Transit pass	% of population in possession of a valid transit pass. Persons with unknown data were excluded from the calculation.
Workplace Arrangement	Usual place of work. WFH only: work from home only; Hybrid: mix of work outside of home and work from home; WOHO only: work outside of home only; No usual place: no usual place of work, no fixed work location.
Usual Mode of Travel to Work	Typical/Usual mode of travel to work.
Study Arrangement	Usual place of school arrangement. SFH only: study from home only; Hybrid: mix of study from home and go to school; Go to School: travel to school to study.
TRAVEL CHARACTERISTICS	
Trip Rates	For TTS, number of trips made by persons (residents of a designated region) aged 11 and over divided by the number of persons (residents of a designated region) aged 11 and over. For COVHITS, number of trips made by persons (residents of a designated region) aged 11 and over as well as aged 6 and over are divided by the corresponding number of persons (residents of a designated region).
Trips Made by Residents of the Area	Survey statistics for all trips made by population residing within the given geography reported on.
Trips Made to the Area	Survey statistics for all trips with a destination within the given geography reported on, whether made by residents of the given geography or by residents of all other geographies included in the Study Area.
Time Period	Two time periods are reported: the morning peak travel period of 6:00 to 8:59 a.m. and the full 24-hour day.

Trips	Total estimated average trips for the reported time period on weekdays (estimates based on the survey data expanded to represent the total population).
Trip Purpose (for trips made by residents of the area): HB-W HB-S HB-D N-HB	Distribution of all trips made by residents across the following categories: Home-based work: Home to work and work to home. Home-based school: Home to school and school to home. Home-based discretionary: All other home-based trips. Non-home-based: All trips where neither end is home.
Trip Purpose (for trips to the area): Work School Home Other	Distribution of all trips made to the area across the following categories: Destination purpose is work. Destination purpose is school. Destination purpose is to return home. Other destination purpose, such as shopping, entertainment, pick someone up/drop someone off, etc.
Modes of travel: Driver Pass. Transit	Automobile driver. Automobile passenger. Public transit (local transit). If a trip uses more than one mode category which includes public transit, then public transit is given preference as the primary mode. In cases where both GO Train and local transit were used, GO Train is the dominant classification.
GO Train	GO Train. In cases where both GO Train and local transit were used, GO Train is the dominant classification.
Walk Cycle Other	Walk Bicycle Other modes of travel. Includes motorcycle, taxi, school bus, and all other modes.
Median Trip Length (km): - - -	Trip length measured as the straight-line distance between the origin and destination coordinates of the trip within the GTHA. -Reported for trips with the following motorized modes: driver, passenger, transit, and GO Train. -Reported for trips with the following non-motorized mode: walk. -Reported for trips with the following non-motorized mode: bicycle

OTHER INFORMATION	
In-store shopping frequency	The frequency of household's visiting stores in-person to purchase merchandise in each category.
Online shopping frequency	The frequency of household's using online stores purchase merchandise in each category.
Transit usage frequency	The frequency of individuals using transit for various activity purposes.

Comparability of 2020 COVHITS Survey and the 2016 TTS

Caution should be undertaken when comparing data between the 2020 COVHITS survey and the 2016 TTS. The comparability between datasets may be affected by several factors, including the coverage of the survey, sample size, how well the target population (residents of private households) is represented by the sample source used in the given dataset, and changes in survey methods.

The 2016 TTS has the following key characteristics.

- **Survey mode:** The 2016 TTS used a mix of computer-aided telephone interview (CATI) and computer-aided web interview (CAWI) survey method.
- **Coverage:** The 2016 TTS covered 5% of households in the survey area and could be easily expanded to the whole population.
- **Sample frame:** In 2016, an address-based sample frame was adopted to obtain coverage of all households, not just those with directory-listed telephone landlines. A portion of the random address sample was matched to listed phone numbers and received a high response in both telephone and online surveying. However, the 'address-only' portion of the sample, which received only a survey invitation letter, had a lower response. While it was necessary to use an address-only sample to achieve coverage of cell-phone-only households, there is likely higher non-response bias in this portion of the sample. However, this is compensated for in part by data weighting.
- **Survey timeframe:** The 2016 TTS was conducted over the 3 months in Fall: from September to December 2016.
- **Travel diary:** The 2016 TTS collected travel diaries of household members only aged 11 years or more.
- **Sample expansion:** The 2016 TTS is expanded to the population in the survey area. An iterative proportional fitting procedure was undertaken to adjust the household weights according to the following controls: dwelling type, household size, and household members' age by gender. As the method employed made household-level adjustments based on the age/gender demographics of all household members, 2016 expanded household counts in the survey data match the Census household counts.

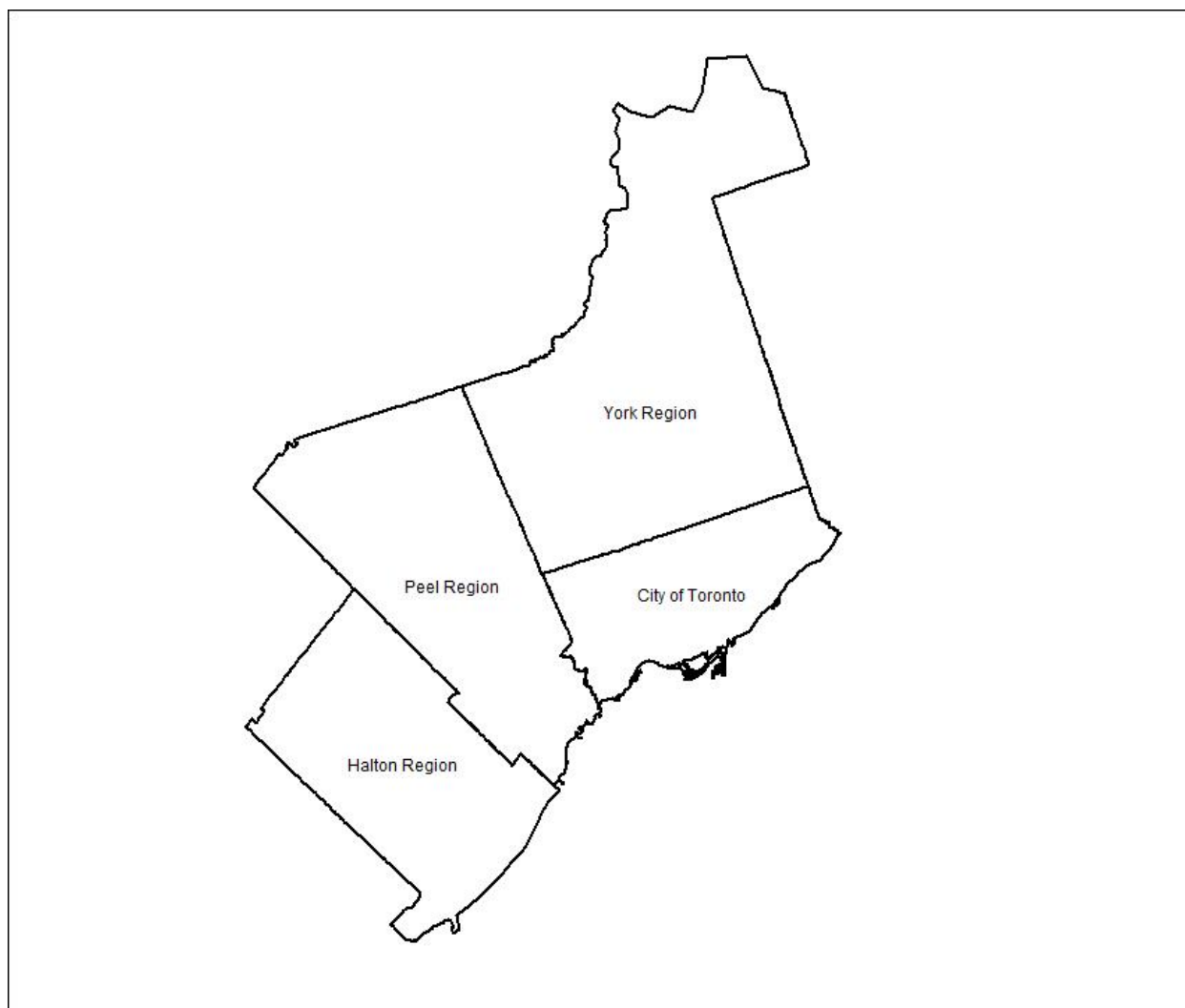
The 2020 COVHITS has the following key characteristics:

- **Survey mode:** The 2020 COVHITS survey was conducted using a computer-aided web interview (CAWI) survey method only.
- **Coverage:** The 2020 COVHITS survey sample size was calculated as the minimum size required to draw regional statistical inferences and is very small compared to that of the TTS.
- **Sample frame:** The 2020 COVHITS survey was conducted using an online commercial survey panel as a sample frame only.
- **Survey timeframe:** The 2020 COVHITS survey was conducted over 1 month in Fall: from October to November 2020.
- **Travel diary:** The 2020 COVHITS Survey collected travel diaries of household members aged 6 years or more.
- **Sample weighting:** The 2020 COVHITS survey sample presented in this report was too small to be reliably expanded to the total population of the survey areas. However, to make the regional (as municipalities) sample representative to the corresponding population, a simple two factor (household size and age) based weights are estimated to make each regional sample as a random representative sample of their population. An iterative proportional fitting procedure is used to calculate sample weight-adjustment values.

Readers should exercise caution while comparing statistics between the 2020 COVHITS survey and 2016 TTS due to the key survey characteristics differences mentioned above. However, this report presents key statistics of both surveys side-by-side, considering the 2016 TTS data as the reference dataset of regular Fall months of the year. To ensure compatibility:

- All TTS statistics that are presented in the report are of four regions (Toronto, Halton, Peel, and York) only, not of the whole TTS area.
- All TTS statistics are of expanded (to the full population) sample. The COVHITS survey statistics are of the weight-adjusted sample.

Area summaries



THE STUDY AREA

THE STUDY AREA

HOUSEHOLD CHARACTERISTICS																				
Households (unweighted)		Dwelling Type				Household Size					Number of Available Vehicles					Household Averages				
		House	Townhouse	Apartment	other	1	2	3	4	5+	0	1	2	3	4+	Persons	Workers	Drivers	Vehicles	Trips/Day
2016 TTS	2,093,200	46%	10%	44%	N/A	25%	28%	17%	17%	12%	17%	41%	32%	8%	3%	2.7	1.4	1.8	1.4	5.2
2020 COVHITS	327,185 (3,721)	58%	12%	28%	2%	25%	28%	17%	17%	12%	14%	44%	34%	7%	1%	2.7	1.6	1.9	1.6	2.1 (of age 6+) 2.0 (of age 11+)

HOUSEHOLD CHARACTERISTICS												
	Number of Adult Bikes					Household Income						
	0	1	2	3	4+	\$0 - \$14,999	\$15,000 - \$39,999	\$40,000 - \$59,999	\$60,000 - \$99,999	\$100,000 - \$124,999	\$125,000 and above	Decline / don't know
2016 TTS	N/A	N/A	N/A	N/A	N/A	5%	14%	14%	21%	10%	18%	18%
2020 COVHITS	44%	24%	22%	7%	2%	3%	12%	14%	28%	16%	20%	8%

POPULATION CHARACTERISTICS																		
Population/records (unweighted)		Age							Daily Trips per Person age 11+ (6+)	Daily Work Trips per Worker	Population (unweighted)		Employment Type			Student	Licensed	Transit Pass
		0-10	11-15	16-25	26-45	46-64	65+	Median					Full Time	Part Time	At Home			
2016 TTS	5,653,900	12%	6%	13%	29%	26%	14%	38.3	2.2	0.83	Male	2,744,000	46%	7%	4%	23%	69%	20%
												415,586 (3,789)	45%	7%	7%	27%	68%	15%
											Female	2,909900	34%	10%	4%	22%	61%	22%
2020 COVHITS	873,671 (8,096)	12%	6%	13%	29%	26%	13%	39.0	0.84 (0.85)	0.35		445,505 (4,190)	35%	10%	7%	26%	64%	14%

POPULATION CHARACTERISTIC														
	Current Workplace Arrangement				Pre-COVID Workplace Arrangement				Pre-COVID Usual Mode of Travel to Work			Current Study Arrangement		
	WFH only	Hybrid	WOHO only	No usual place	WFH only	Hybrid	WOHO only	No usual place	Auto Driver	Transit	Other	SFH only	Hybrid	Go to School
2016 Census	N/A	N/A	N/A	N/A	7%	N/A	81%	12%	62%	25%	13%	N/A	N/A	N/A
2020 COVHITS	46%	11%	38%	6%	14%	18%	60%	7%	65%	24%	10%	54%	25%	21%

TRIP RATES BY STUDY AREA RESIDENTS

	0	1	2	3	4	5+
2016 TTS (11+)	22%	1%	49%	8%	11%	8%
2020 COVHITS (6+)	61%	2%	31%	4%	2%	1%
2020 COVHITS (11+)	62%	2%	30%	4%	2%	1%

TRIPS MADE BY RESIDENTS OF THE STUDY AREA

Time Period	Trips (unweighted)	% 24hr	Trip Purpose				Mode of Travel						Median Trip Length (km)				
			HB-W	HB-S	HB-D	N-HB	Driver	Pass.	Transit	GO Train	Walk & Cy	Other	Driver	Pass.	Transit	Walk & Cy	
6-9 AM	2,717,700	25.0%	50%	19%	22%	9%	55%	11%	17%	3%	11%	3%	8.2	3.5	8.0	1.3	2016 TTS
	142,433 (1,362)	22.0%	60%	24%	13%	3%	64%	8%	11%	N/A	15%	3%	13.6	4.7	11.1	1.1	2020 COVHITS (11+)
	163,601 (1,463)	23.5%	52%	34%	11%	2%	55%	14%	10%	N/A	16%	5%	13.6	3.8	10.2	1.0	2020 COVHITS (6+)
24 Hrs	10,874,300		36%	12%	38%	14%	58%	13%	16%	1%	9%	3%	6.4	4.3	7.0	1.4	2016 TTS
	647,071 (6,715)		37%	11%	35%	18%	66%	8%	8%	N/A	16%	2%	11.5	6.1	12.2	1.1	2020 COVHITS (11+)
	696,803 (6,948)		34%	16%	33%	17%	62%	11%	8%	N/A	16%	3%	11.5	5.2	11.7	1.0	2020 COVHITS (6+)

TRIPS MADE TO THE STUDY AREA BY THE RESIDENCES OF THE STUDY AREA

Time Period	Trips (unweighted)	% 24hr	Trip Purpose				Mode of Travel						Median Trip Length (km)				
			Work	School	Home	Other	Driver	Pass.	Transit	GO Train	Walk & Cy	Other	Driver	Pass.	Transit	Walk & Cy	
6-9 AM	2,650,618	24.8%	55%	20%	6%	19%	55%	11%	18%	3%	11%	3%	11.1	6.7	9.7	1.2	2016 TTS
	139,569 (1,320)	21.9%	58%	23%	6%	13%	63%	8%	11%	N/A	15%	3%	11.3	4.4	10.0	1.1	2020 COVHITS (11+)
	160,549 (1,420)	23.4%	51%	33%	5%	11%	55%	14%	10%	N/A	16%	5%	11.3	3.7	9.3	1.0	2020 COVHITS (6+)
24 Hrs	10,700,208		22%	6%	44%	28%	58%	13%	16%	1%	9%	3%	10.4	8.1	9.1	1.3	2016 TTS
	636,772 (6,568)		22%	7%	45%	26%	66%	8%	8%	N/A	16%	2%	9.9	5.8	10.5	1.1	2020 COVHITS (11+)
	686,316 (6,800)		21%	10%	45%	25%	61%	11%	8%	N/A	17%	3%	9.9	5.1	10.1	1.0	2020 COVHITS (6+)

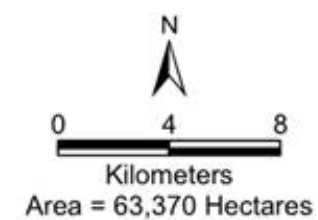
OTHER INFORMATION – Household level responses

	In-Store Shopping Frequency				Online Shopping Frequency			
	Meals	Groceries	Clothing	Other	Meals	Groceries	Clothing	Other
None	33%	13%	72%	68%	50%	54%	74%	66%
Once in a month	20%	8%	18%	19%	15%	12%	15%	20%
Once every two weeks	13%	16%	5%	6%	12%	9%	6%	7%
Once a week	21%	40%	3%	4%	13%	17%	2%	4%
Twice a week	8%	16%	2%	2%	6%	5%	2%	2%
3 times or more a week	5%	7%	0%	1%	4%	3%	1%	1%

OTHER INFORMATION – Individual-level responses

	Transit Usage Frequency of Transit User (who used transit at least during the survey a week) Only					
	Work /school	Shopping	Restaurant	Recreation	Visiting	Other
None	74%	51%	31%	69%	58%	72%
Once a week	10%	13%	33%	13%	23%	12%
Twice a week	4%	8%	19%	5%	7%	4%
3 times a week	5%	12%	7%	6%	5%	3%
4 times a week	3%	7%	7%	3%	3%	7%
5 times a week	3%	6%	2%	1%	4%	2%
6 or more times a week	1%	4%	1%	2%	2%	1%

CITY OF TORONTO - FORMER METROPOLITAN TORONTO



CITY OF TORONTO

CITY OF TORONTO

HOUSEHOLD CHARACTERISTICS																				
Households (unweighted)		Dwelling Type				Household Size					Number of Available Vehicles					Household Averages				
		House	Townhouse	Apartment	Other	1	2	3	4	5+	0	1	2	3	4+	Persons	Workers	Drivers	Vehicles	Trips/Day
2016 TTS	1,113,000	31%	6%	63%	N/A	32%	30%	16%	13%	9%	28%	48%	20%	4%	1%	2.4	1.4	1.5	1.0	4.6
2020 COVHITS	22,171 (1,089)	46%	9%	43%	2%	32%	30%	16%	13%	9%	22%	50%	23%	4%	1%	2.4	1.5	1.7	1.4	1.6 (of age 6+) 1.5 (of age 11+)

HOUSEHOLD CHARACTERISTICS												
	Number of Available Adult Bikes					Household Income						
	0	1	2	3	4+	\$0 - \$14,999	\$15,000 - \$39,999	\$40,000 - \$59,999	\$60,000 - \$99,999	\$100,000 - \$124,999	\$125,000 and above	Decline / don't know
2016 TTS	N/A	N/A	N/A	N/A	N/A	7%	17%	15%	21%	9%	16%	16%
2020 COVHITS	46%	25%	21%	7%	1%	4%	14%	16%	27%	15%	17%	6%

POPULATION CHARACTERISTICS																		
Population/records (unweighted)		Age							Daily Trips per Person age 11+ (6+)	Daily Work Trips per Worker	Population (unweighted)		Employment Type			Student	Licensed	Transit Pass
		0-10	11-15	16-25	26-45	46-64	65+	Median					Full Time	Part Time	At Home			
2016 TTS	2,671,500	11%	5%	13%	31%	26%	14%	38.9	2.2	0.76	Male	1,286,500	45%	7%	4%	22%	68%	24%
												25,474 (944)	45%	7%	8%	24%	67%	23%
											Female	1,385,000	35%	10%	4%	21%	57%	26%
2020 COVHITS	52,452 (1,996)	11%	5%	13%	31%	26%	14%	40.0	0.71 (0.71)	0.33		25,805 (1,001)	35%	9%	7%	23%	59%	23%

POPULATION CHARACTERISTIC														
	Current Workplace Arrangement				Pre-COVID Workplace Arrangement				Pre-COVID Usual Mode of Travel to Work			Current Study Arrangement		
	WFH only	Hybrid	WOHO only	No usual place	WFH only	Hybrid	WOHO only	No usual place	Auto Driver	Transit	Other	SFH only	Hybrid	Go to School
2016 Census	N/A	N/A	N/A	N/A	7%	N/A	81%	12%	46%	37%	17%	N/A	N/A	N/A
2020 COVHITS	48%	13%	33%	6%	15%	20%	58%	7%	54%	32%	14%	60%	20%	20%

TRIP RATES BY CITY OF TORONTO RESIDENTS

	0	1	2	3	4	5+
2016 TTS (11+)	22%	1%	49%	9%	11%	8%
2020 COVHITS (6+)	67%	2%	26%	3%	1%	0%
2020 COVHITS (11+)	67%	2%	26%	3%	1%	0%

TRIPS MADE BY RESIDENTS OF CITY OF TORONTO

Time Period	Trips (unweighted)	% 24hr	Trip Purpose				Mode of Travel						Median Trip Length (km)				
			HB-W	HB-S	HB-D	N-HB	Driver	Pass.	Transit	GO Train	Wlk & Cy	Other	Driver	Pass.	Transit	Walk & Cy	
6-9 AM	1,240,300	24.1%	54%	18%	20%	8%	44%	9%	30%	1%	14%	2%	7.0	3.8	7.4	1.4	2016 TTS
	6,518 (243)	19.6%	64%	24%	11%	2%	52%	8%	20%	N/A	17%	3%	16.7	3.5	7.7	1.2	2020 COVHITS (11+)
	7,171 (257)	20.4%	58%	31%	10%	1%	47%	13%	20%	N/A	17%	3%	16.7	3.4	7.3	1.2	2020 COVHITS (6+)
24 Hrs	5,141,800		36%	11%	38%	15%	46%	11%	27%	1%	13%	2%	5.5	4.1	6.5	1.4	2016 TTS
	33,224 (1,335)		38%	11%	33%	18%	53%	6%	15%	N/A	24%	2%	11.4	4.3	11.4	1.1	2020 COVHITS (11+)
	35,116 (1,371)		36%	15%	32%	18%	50%	9%	15%	N/A	24%	2%	11.4	4.3	11.0	1.1	2020 COVHITS (6+)

TRIPS MADE TO CITY OF TORONTO BY THE RESIDENCES OF THE STUDY AREA

Time Period	Trips (unweighted)	% 24hr	Trip Purpose				Mode of Travel						Median Trip Length (km)				
			Work	School	Home	Other	Driver	Pass.	Transit	GO Train	Wlk & Cy	Other	Driver	Pass.	Transit	Walk & Cy	
6-9 AM	1,375,560	25.8%	60%	19%	5%	17%	42%	9%	30%	5%	13%	2%	10.9	7.5	9.8	1.4	2016 TTS
	11,432 (397)	26.5%	78%	13%	2%	8%	57%	6%	25%	N/A	10%	2%	16.8	5.8	17.2	2.5	2020 COVHITS (11+)
	12,306 (413)	27.1%	72%	19%	1%	7%	53%	11%	24%	N/A	10%	2%	16.8	8.4	16.6	2.3	2020 COVHITS (6+)
24 Hrs	5,327,702		24%	7%	41%	27%	46%	11%	27%	2%	13%	2%	9.5	7.9	8.6	1.4	2016 TTS
	43,136 (1,656)		37%	6%	34%	22%	58%	6%	15%	N/A	20%	1%	12.9	8.9	13.5	1.2	2020 COVHITS (11+)
	45,359 (1,695)		35%	8%	34%	22%	55%	9%	15%	N/A	20%	1%	12.9	8.3	13.2	1.2	2020 COVHITS (6+)

OTHER INFORMATION– Household level responses

	In-Store Shopping Frequency				Online Shopping Frequency			
	Meals	Groceries	Clothing	Other	Meals	Groceries	Clothing	Other
None	32%	6%	71%	68%	49%	56%	71%	66%
Once in a month	19%	10%	17%	17%	15%	14%	15%	18%
Once every two weeks	14%	19%	5%	6%	13%	11%	6%	7%
Once a week	20%	40%	3%	5%	12%	13%	3%	5%
Twice a week	10%	17%	4%	3%	7%	3%	4%	3%
3 times or more a week	5%	8%	1%	1%	4%	3%	1%	2%

OTHER INFORMATION– Individual level responses

	Transit Usage Frequency of Transit User (who used transit at least during the survey a week) Only					
	Work /school	Shopping	Restaurant	Recreation	Visiting	Other
None	69%	54%	27%	67%	54%	66%
Once a week	11%	12%	33%	13%	24%	14%
Twice a week	5%	6%	20%	5%	7%	4%
3 times a week	6%	11%	8%	7%	6%	4%
4 times a week	3%	7%	8%	4%	3%	9%
5 times a week	4%	5%	2%	2%	5%	2%
6 or more times a week	1%	4%	2%	2%	2%	1%

REGIONAL MUNICIPALITY OF YORK



Area = 197,600 Hectares

REGIONAL MUNICIPALITY OF YORK

REGIONAL MUNICIPALITY OF YORK

HOUSEHOLD CHARACTERISTICS																				
Households (unweighted)		Dwelling Type				Household Size					Number of Available Vehicles					Household Averages				
		House	Townhouse	Apartment	Other	1	2	3	4	5+	0	1	2	3	4+	Persons	Workers	Drivers	Vehicles	Trips/Day
2016 TTS	357,000	70%	12%	17%	N/A	15%	26%	20%	23%	15%	4%	30%	48%	13%	6%	3.1	1.7	1.9	2.1	5.9
2020 COVHITS	6,161 (942)	77%	14%	9%	1%	15%	26%	20%	23%	15%	3%	34%	52%	10%	2%	3.1	1.8	2.2	1.8	2.8(of age 6+) 2.5 (of age 11+)

HOUSEHOLD CHARACTERISTICS												
	Number of Available Adult Bikes					Household Income						
	0	1	2	3	4+	\$0 - \$14,999	\$15,000 - \$39,999	\$40,000 - \$59,999	\$60,000 - \$99,999	\$100,000 - \$124,999	\$125,000 and above	Decline / don't know
2016 TTS	N/A	N/A	N/A	N/A	N/A	3%	11%	12%	20%	12%	22%	21%
2020 COVHITS	40%	23%	24%	7%	5%	1%	8%	10%	23%	20%	30%	9%

POPULATION CHARACTERISTICS																		
Population/records (unweighted)		Age							Daily Trips per Person age 11+ (6+)	Daily Work Trips per Worker	Population (unweighted)		Employment Type			Student	Licensed	Transit Pass
		0-10	11-15	16-25	26-45	46-64	65+	Median					Full Time	Part Time	At Home			
2016 TTS	1,091,000	13%	7%	13%	26%	28%	14%	40.7	2.2	0.74	Male	531,800	46%	6%	5%	24%	72%	13%
												8,918 (1,047)	44%	8%	8%	29%	70%	7%
											Female	559,200	34%	10%	4%	22%	67%	14%
2020 COVHITS	18,801 (2,248)	13%	7%	13%	26%	28%	14%	39.0	0.94 (0.98)	0.32		9,699 (1,177)	35%	13%	7%	28%	69%	7%

POPULATION CHARACTERISTIC														
	Current Workplace Arrangement				Pre-COVID Workplace Arrangement				Pre-COVID Usual Mode of Travel to Work			Current Study Arrangement		
	WFH only	Hybrid	WOHO only	No usual place	WFH only	Hybrid	WOHO only	No usual place	Auto Driver	Transit	Other	SFH only	Hybrid	Go to School
2016 Census	N/A	N/A	N/A	N/A	9%	N/A	80%	12%	77%	13%	10%	N/A	N/A	N/A
2020 COVHITS	49%	9%	36%	5%	15%	19%	59%	6%	74%	19%	7%	45%	31%	24%

TRIP RATES BY YROK REGION RESIDENTS						
	0	1	2	3	4	5+
2016 TTS (11+)	22%	1%	49%	8%	11%	8%
2020 COVHITS (6+)	56%	1%	37%	3%	2%	1%
2020 COVHITS (11+)	58%	1%	34%	4%	2%	1%

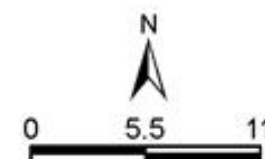
TRIPS MADE BY RESIDENTS OF YORK REGION																
Time Period	Trips (unweighted)	% 24hr	Trip Purpose				Mode of Travel						Median Trip Length (km)			
			HB-W	HB-S	HB-D	N-HB	Driver	Pass.	Transit	GO Train	Wlk & Cy	Other	Driver	Pass.	Transit	Walk & Cy
6-9 AM	541,600	25.7%	48%	20%	22%	9%	65%	12%	7%	3%	7%	4%	9.4	3.5	17.8	1.4
	3,508 (408)	22.7%	59%	24%	14%	3%	74%	6%	5%	N/A	12%	3%	11.9	3.7	12.7	1.2
	4,334 (442)	25.2%	47%	40%	11%	2%	60%	15%	4%	N/A	12%	8%	11.9	2.7	12.4	1.0
24 Hrs	2,109,800		35%	12%	39%	15%	70%	15%	6%	2%	5%	3%	7.2	4.5	15.5	1.3
	15,469 (1,927)		33%	11%	37%	19%	78%	8%	3%	N/A	10%	2%	11.9	6.0	13.2	1.1
	17,177 (1,998)		30%	19%	34%	17%	70%	11%	3%	N/A	10%	5%	11.9	5.1	13.0	1.0

TRIPS MADE TO YORK REGION BY THE RESIDENCES OF THE STUDY AREA																
Time Period	Trips (unweighted)	% 24hr	Trip Purpose				Mode of Travel						Median Trip Length (km)			
			Work	School	Home	Other	Driver	Pass.	Transit	GO Train	Wlk & Cy	Other	Driver	Pass.	Transit	Walk & Cy
6-9 AM	458,496	23.2%	52%	21%	6%	21%	69%	13%	4%	0%	8%	5%	11.5	6.0	9.9	0.9
	4,680 (320)	25.6%	60%	24%	6%	9%	74%	4%	6%	N/A	11%	6%	13.2	4.8	12.7	1.0
	5,462 (352)	27.4%	51%	35%	5%	8%	64%	11%	5%	N/A	11%	9%	13.2	3.0	12.6	0.9
24 Hrs	1,975,662		20%	5%	46%	29%	71%	15%	5%	1%	5%	3%	11.1	8.6	13.6	1.2
	18,304 (1,719)		27%	7%	37%	28%	79%	7%	3%	N/A	8%	2%	12.0	6.6	12.7	1.0
	19,968 (1,788)		25%	11%	39%	26%	73%	10%	3%	N/A	9%	6%	12.0	5.5	12.6	0.9

OTHER INFORMATION– Household level responses								
	In-Store Shopping Frequency				Online Shopping Frequency			
	Meals	Groceries	Clothing	Other	Meals	Groceries	Clothing	Other
None	34%	25%	72%	69%	49%	46%	74%	65%
Once in a month	20%	7%	19%	21%	12%	7%	17%	22%
Once every two weeks	13%	13%	6%	6%	12%	10%	6%	8%
Once a week	22%	34%	2%	3%	19%	24%	1%	3%
Twice a week	8%	15%	0%	1%	5%	8%	1%	1%
3 times or more a week	4%	6%	0%	0%	3%	4%	0%	0%

OTHER INFORMATION– Individual level responses						
	Transit Usage Frequency of Transit User (who used transit at least during the survey a week) Only					
	Work /school	Shopping	Restaurant	Recreation	Visiting	Other
None	87%	46%	38%	73%	69%	88%
Once a week	10%	13%	34%	14%	16%	4%
Twice a week	2%	17%	19%	7%	7%	2%
3 times a week	0%	8%	1%	2%	3%	0%
4 times a week	0%	7%	8%	4%	5%	5%
5 times a week	0%	8%	0%	0%	0%	0%
6 or more times a week	0%	2%	0%	0%	0%	0%

REGIONAL MUNICIPALITY OF PEEL



Kilometers
Area = 125,550 Hectares

REGIONAL MUNICIPALITY OF PEEL

REGIONAL MUNICIPALITY OF PEEL

HOUSEHOLD CHARACTERISTICS																				
Households (unweighted)		Dwelling Type				Household Size					Number of Available Vehicles					Household Averages				
		House	Townhouse	Apartment	Other	1	2	3	4	5+	0	1	2	3	4+	Persons	Workers	Drivers	Vehicles	Trips/Day
2016 TTS	430,100	59%	13%	28%	N/A	16%	24%	19%	22%	19%	7%	36%	42%	12%	4%	3.1	1.7	1.7	2.1	5.8
2020 COVHITS	67,919 (913)	69%	14%	15%	2%	16%	24%	19%	22%	19%	6%	39%	43%	10%	1%	3.1	1.8	2.1	1.7	2.6 (of age 6+) 2.5 (of age 11+)

HOUSEHOLD CHARACTERISTICS												
	Number of Available Adult Bikes					Household Income						
	0	1	2	3	4+	\$0 - \$14,999	\$15,000 - \$39,999	\$40,000 - \$59,999	\$60,000 - \$99,999	\$100,000 - \$124,999	\$125,000 and above	Decline / don't know
2016 TTS	N/A	N/A	N/A	N/A	N/A	4%	13%	15%	24%	11%	16%	19%
2020 COVHITS	45%	23%	22%	8%	2%	3%	10%	11%	34%	18%	18%	9%

POPULATION CHARACTERISTICS																		
Population/records (unweighted)		Age							Daily Trips per Person age 11+ (6+)	Daily Work Trips per Worker	Population (unweighted)		Employment Type			Student	Licensed	Transit Pass
		0-10	11-15	16-25	26-45	46-64	65+	Median					Full Time	Part Time	At Home			
2016 TTS	1,352,100	13%	7%	14%	28%	26%	12%	38.0	2.1	0.75	Male	663,700	46%	7%	3%	25%	69%	20%
2020 COVHITS	209,158 (2,106)	13%	7%	14%	28%	26%	12%	38.0	0.92 (0.93)	0.42	Female	97,224 (980)	45%	6%	5%	29%	68%	9%
												688,500	33%	10%	3%	24%	61%	23%
												110,861 (1103)	34%	8%	6%	29%	66%	8%

POPULATION CHARACTERISTIC														
	Current Workplace Arrangement				Pre-COVID Workplace Arrangement				Pre-COVID Usual Mode of Travel to Work			Current Study Arrangement		
	WFH only	Hybrid	WOHO only	No usual place	WFH only	Hybrid	WOHO only	No usual place	Auto Driver	Transit	Other	SFH only	Hybrid	Go to School
2016 Census	N/A	N/A	N/A	N/A	6%	N/A	82%	12%	74%	16%	10%	N/A	N/A	N/A
2020 COVHITS	37%	9%	47%	7%	12%	15%	66%	7%	75%	18%	8%	55%	24%	21%

TRIP RATES BY PEEL REGION RESIDENTS						
	0	1	2	3	4	5+
2016 TTS (11+)	23%	1%	50%	7%	11%	7%
2020 COVHITS (6+)	58%	2%	35%	3%	1%	1%
2020 COVHITS (11+)	58%	2%	35%	4%	2%	1%

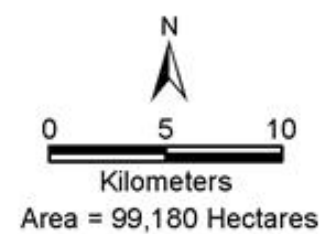
TRIPS MADE BY RESIDENTS OF PEEL REGION																
Time Period	Trips (unweighted)	% 24hr	Trip Purpose				Mode of Travel						Median Trip Length (km)			
			HB-W	HB-S	HB-D	N-HB	Driver	Pass.	Transit	GO Train	Wlk & Cy	Other	Driver	Pass.	Transit	Walk & Cy
6-9 AM	660,200	26.5%	47%	22%	23%	9%	63%	13%	8%	4%	8%	5%	8.9	3.4	10.4	1.0
	43,054 (366)	25.5%	59%	25%	13%	3%	68%	8%	5%	N/A	15%	4%	10.6	5.0	19.0	1.1
	47,869 (384)	26.7%	52%	33%	12%	3%	61%	14%	5%	N/A	15%	5%	10.6	4.4	19.0	0.9
24 Hrs	2,495,400		37%	13%	37%	13%	67%	14%	8%	2%	6%	3%	7.3	4.5	8.7	1.0
	168,528 (1,654)		41%	11%	33%	15%	73%	10%	3%	N/A	11%	3%	10.7	7.3	17.6	1.1
	179,208 (1,694)		39%	15%	32%	14%	69%	13%	3%	N/A	12%	3%	10.7	6.2	17.6	1.0

TRIPS MADE TO PEEL REGION BY THE RESIDENCES OF THE STUDY AREA																
Time Period	Trips (unweighted)	% 24hr	Trip Purpose				Mode of Travel						Median Trip Length (km)			
			Work	School	Home	Other	Driver	Pass.	Transit	GO Train	Wlk & Cy	Other	Driver	Pass.	Transit	Walk & Cy
6-9 AM	610,291	25.6%	52%	21%	7%	20%	67%	13%	6%	0%	8%	5%	11.4	6.1	9.0	1.1
	34,281 (349)	23.2%	49%	27%	10%	14%	65%	10%	2%	N/A	18%	4%	6.9	4.7	7.5	0.9
	38,900 (366)	24.5%	43%	36%	9%	12%	58%	16%	2%	N/A	19%	6%	6.9	3.5	7.5	0.8
24 Hrs	2,386,920		22%	6%	45%	26%	68%	14%	7%	1%	6%	3%	10.8	7.6	11.0	1.1
	148,080 (1,587)		19%	7%	51%	24%	72%	10%	3%	N/A	12%	3%	8.2	6.3	14.0	1.0
	158,453 (1,625)		17%	9%	51%	23%	67%	14%	2%	N/A	13%	3%	8.2	5.3	14.0	1.0

OTHER INFORMATION– Household level responses								
	In-Store Shopping Frequency				Online Shopping Frequency			
	Meals	Groceries	Clothing	Other	Meals	Groceries	Clothing	Other
None	31%	7%	73%	71%	59%	63%	81%	66%
Once in a month	21%	6%	18%	17%	16%	11%	11%	20%
Once every two weeks	11%	16%	5%	7%	8%	6%	6%	9%
Once a week	23%	47%	3%	4%	9%	16%	1%	3%
Twice a week	8%	18%	0%	1%	5%	2%	1%	1%
3 times or more a week	7%	7%	0%	1%	4%	1%	0%	1%

OTHER INFORMATION– Individual level responses						
	Transit Usage Frequency of Transit User (who used transit at least during the survey a week) Only					
	Work /school	Shopping	Restaurant	Recreation	Visiting	Other
None	89%	37%	44%	79%	72%	89%
Once a week	6%	18%	32%	13%	22%	5%
Twice a week	1%	9%	16%	3%	4%	1%
3 times a week	1%	21%	3%	2%	1%	1%
4 times a week	1%	4%	2%	0%	0%	2%
5 times a week	0%	7%	2%	1%	0%	1%
6 or more times a week	2%	5%	1%	3%	0%	0%

REGIONAL MUNICIPALITY OF HALTON



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HOUSEHOLD CHARACTERISTICS																				
Households (unweighted)		Dwelling Type				Household Size					Number of Available Vehicles					Household Averages				
		House	Townhouse	Apartment	Other	1	2	3	4	5+	0	1	2	3	4+	Persons	Workers	Drivers	Vehicles	Trips/Day
2016 TTS	193,100	64%	18%	19%	N/A	20%	30%	18%	22%	11%	3%	31%	49%	12%	5%	2.8	1.6	1.8	2.0	5.9
2020 COVHITS	3,093 (777)	66%	19%	15%	1%	20%	30%	18%	22%	11%	4%	37%	46%	9%	4%	2.8	1.7	2.1	1.8	3.0(of age 6+) 2.7 (of age 11+)

HOUSEHOLD CHARACTERISTICS												
	Number of Available Adult Bikes					Household Income						
	0	1	2	3	4+	\$0 - \$14,999	\$15,000 - \$39,999	\$40,000 - \$59,999	\$60,000 - \$99,999	\$100,000 - \$124,999	\$125,000 and above	Decline / don't know
2016 TTS	N/A	N/A	N/A	N/A	N/A	2%	9%	11%	20%	12%	27%	19%
2020 COVHITS	37%	22%	26%	9%	5%	2%	6%	9%	28%	15%	27%	13%

POPULATION CHARACTERISTICS																		
Population/records (unweighted)		Age							Daily Trips per Person age 11+ (6+)	Daily Work Trips per Worker	Population (unweighted)		Employment Type			Student	Licensed	Transit Pass
		0-10	11-15	16-25	26-45	46-64	65+	Median					Full Time	Part Time	At Home			
2016 TTS	539,200	14%	7%	12%	26%	27%	14%	40.3	2.5	0.73	Male	262,000	46%	6%	5%	24%	72%	16%
												3,978 (818)	47%	6%	10%	26%	73%	6%
											Female	277,200	33%	11%	5%	23%	70%	15%
2020 COVHITS	8,723 (1,746)	14%	7%	12%	26%	27%	14%	38.0	1.1 (1.1)	0.35		4,681 (909)	33%	10%	5%	31%	69%	5%

POPULATION CHARACTERISTIC														
	Current Workplace Arrangement				Pre-COVID Workplace Arrangement				Pre-COVID Usual Mode of Travel to Work			Current Study Arrangement		
	WFH only	Hybrid	WOHO only	No usual place	WFH only	Hybrid	WOHO only	No usual place	Auto Driver	Transit	Other	SFH only	Hybrid	Go to School
2016 Census	N/A	N/A	N/A	N/A	9%	N/A	81%	9%	79%	11%	10%	N/A	N/A	N/A
2020 COVHITS	46%	8%	41%	6%	15%	18%	60%	7%	78%	15%	7%	44%	37%	19%

TRIP RATES BY HALTON REGION RESIDENTS

	0	1	2	3	4	5+
2016 TTS (11+)	18%	2%	47%	9%	14%	11%
2020 COVHITS (6+)	51%	2%	38%	6%	3%	2%
2020 COVHITS (11+)	53%	2%	35%	6%	3%	2%

TRIPS MADE BY RESIDENTS OF HALTON REGION

Time Period	Trips (unweighted)	% 24hr	Trip Purpose				Mode of Travel						Median Trip Length (km)				
			HB-W	HB-S	HB-D	N-HB	Driver	Pass.	Transit	GO Train	Wlk & Cy	Other	Driver	Pass.	Transit	Walk & Cy	
6-9 AM	279,300	24.4%	47%	20%	23%	9%	69%	11%	2%	5%	8%	5%	10.2	3.0	9.2	1.1	2016 TTS
	1,749 (345)	21.2%	56%	25%	16%	3%	70%	8%	4%	N/A	16%	2%	17.5	9.0	7.3	1.2	2020 COVHITS (11+)
	2,150 (380)	23.5%	46%	38%	13%	3%	57%	14%	7%	N/A	17%	5%	17.5	5.4	5.6	1.2	2020 COVHITS (6+)
24 Hrs	1,143,900		31%	11%	43%	15%	73%	13%	2%	3%	6%	3%	6.2	4.1	6.4	1.1	2016 TTS
	8,237 (1,799)		30%	10%	40%	20%	76%	9%	3%	N/A	10%	1%	12.2	7.3	11.8	1.1	2020 COVHITS (11+)
	9,169 (1,885)		27%	17%	37%	19%	69%	12%	5%	N/A	12%	2%	12.2	5.7	8.7	1.1	2020 COVHITS (6+)

TRIPS MADE TO HALTON REGION BY THE RESIDENCES OF THE STUDY AREA

Time Period	Trips (unweighted)	% 24hr	Trip Purpose				Mode of Travel						Median Trip Length (km)				
			Work	School	Home	Other	Driver	Pass.	Transit	GO Train	Wlk & Cy	Other	Driver	Pass.	Transit	Walk & Cy	
6-9 AM	206,271	20.4%	43%	25%	8%	24%	67%	12%	2%	0%	11%	7%	11.4	6.1	9.0	1.1	2016 TTS
	3,410 (261)	27.1%	64%	13%	2%	20%	86%	3%	2%	N/A	8%	1%	15.5	4.5	2.6	1.3	2020 COVHITS (11+)
	3,811 (296)	28.2%	58%	22%	2%	18%	77%	7%	4%	N/A	9%	3%	15.5	3.3	3.4	1.3	2020 COVHITS (6+)
24 Hrs	1,009,924		15%	6%	48%	31%	72%	14%	2%	2%	7%	3%	11.0	8.6	11.3	1.1	2016 TTS
	12,575 (1,610)		32%	5%	29%	35%	82%	9%	2%	N/A	7%	1%	11.9	6.1	8.9	1.1	2020 COVHITS (11+)
	13,507 (1,696)		30%	8%	30%	33%	76%	12%	3%	N/A	8%	2%	11.9	5.2	6.8	1.1	2020 COVHITS (6+)

OTHER INFORMATION– Household level responses

	In-Store Shopping Frequency				Online Shopping Frequency			
	Meals	Groceries	Clothing	Other	Meals	Groceries	Clothing	Other
None	43%	37%	71%	64%	37%	35%	73%	67%
Once in a month	20%	5%	21%	25%	20%	7%	16%	22%
Once every two weeks	14%	12%	5%	6%	13%	9%	6%	6%
Once a week	15%	31%	1%	4%	19%	29%	4%	4%
Twice a week	6%	12%	1%	1%	8%	14%	1%	1%
3 times or more a week	3%	3%	0%	0%	3%	5%	0%	1%

OTHER INFORMATION– Individual level responses

	Transit Usage Frequency of Transit User (who used transit at least during the survey a week) Only					
	Work /school	Shopping	Restaurant	Recreation	Visiting	Other
None	87%	45%	42%	86%	75%	90%
Once a week	8%	6%	35%	11%	7%	4%
Twice a week	3%	16%	16%	3%	13%	1%
3 times a week	1%	17%	7%	0%	2%	1%
4 times a week	1%	10%	1%	0%	3%	2%
5 times a week	0%	5%	0%	0%	0%	0%
6 or more times a week	0%	1%	0%	0%	0%	2%

Lessons Learned from Phase 1 of COVHITS Survey

This section summarizes the key challenges and opportunities that the research team experienced in completing this survey. These are as follows:

- Despite all difficulties related to quickly deploying a household travel survey and completing the data collection within a short period, the project met its target by successfully collecting the necessary data.
- The use of an online survey panel made it possible to collect data within such a short period, but it needs to be clear that there are limits on the sample size collected through such an approach. Such limits depend on the size of panels and the spatial distribution of panel members' home locations.

The travel diary part of the survey was found most challenging by the respondents. So, the CAWI (TRAISI in this case) software should consider making the travel diary portion as intuitive (to the respondents) as possible.

Appendix

Sample Weighting to match individual regions household size and age distributions

- On the individual level, weighting factors are calculated using an iterative proportional fitting (IFP) procedure constrained to household size (on the household level) and age cohort of census data (on the person level).
- Weighting factors were calculated for each sample based on household size and age cohort in each sub-region.

			PERCENTILE								
Regions	Mean	Std Dev.	Min.	0.01	0.05	0.25	0.5	0.75	0.95	0.99	Max
Toronto	20.36	17.24	1.00	3.33	7.60	9.60	17.57	23.02	52.96	87.30	187.36
York	6.54	5.33	1.00	1.00	1.45	3.58	5.74	7.65	17.30	28.11	40.12
Peel	74.39	81.84	1.00	7.42	9.68	31.16	52.64	89.46	221.02	461.03	783.88
Halton	3.98	3.32	1.00	1.00	1.22	2.28	3.08	4.11	9.98	15.08	52.55

Sample Weighting to combine individual region's data for the whole study area by matching regional population distributions

- On the sub-region level, weighting factors are calculated to match the weighted-adjusted sub-regional population distributions with relative proportion of population between regions within the study area.

	Toronto	York	Peel	Halton
Normalized sub-region weight	7.88	8.94	1.00	9.52