Evaluating the need for secured bicycle parking in Montréal

Supervised Research Project Report Submitted in partial fulfillment of the
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Submitted by: Juliette Fournier

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Supervised by: Ahmed El-Geneidy

School of Urban Planning McGill University

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Executive summary

Montréal is considered one of the most cyclable cities in North America, and yet every year thousands of bicycles are stolen across the city. Theft of bicycles can cause financial burdens on cyclists and can dissuade people from cycling. One potential solution is to invest in bicycle parking, including secured parking facilities. Indeed, secured bicycle parking has proven to be a good solution to decrease bicycle theft in other cities, especially in northern Europe. In fact, secured bicycle parking deters bicycle theft by making it harder for thieves to access the bicycles and by adding surveillance (camera or guard). This research tries to identify if Montréal could benefit from secured bicycle parking facilities, if Montréal's cyclists desire them, what characteristics they would like them to have and if they would be willing to pay to use the service.

To do so, a survey of 95 questions was created to explore the thoughts of cyclists in Montréal on the subject. To better analyse the surveys' responses, respondents have been categorized in four different cyclists' typologies: leisure, summer, occasional and dedicated cyclists. Dedicated cyclists have been identified the most likely to use secured bicycle parking. Across all typologies, the top three most desired secured parking features are being low-cost, close to final destinations and with protection from bad weather. It was found that cyclists in Montréal would be willing to pay an average of 1,5 $/day for the service, however, to ensure equity between all income groups, this paper recommends providing this service for free. Furthermore, the respondents stated that parking should be located within a 4-minute walk (maximum) from users' final destinations.

Taken together, this report concludes that Montréal could benefit from secured bicycle parking and includes specific policy recommendations to support the implementation of this service across the city

Chapter 1 - Introduction

Climate change, population health concerns, and congestion problems have made cycling an increasingly popular mode of travel in many cities. Indeed, participation in urban cycling is on the rise in many places, including Montréal, Canada, the setting of this study (Pucher & Buehler, 2021). In the past year alone, the COVID-19 pandemic has accelerated this increased bicycle use, a trend researchers hope will continue (Ralph Buehler & Pucher, 2021). To capitalize on the current bicycle boom generated by COVID-19, cities should adapt to meet cyclists' needs. One such need is bicycle parking, an integral component of cycling infrastructure.

Though research on cycling infrastructure has grown exponentially in recent years, few of those studies consider bicycle parking (R. Buehler, Heinen, & Nakamura, 2021). This research gap is significant because adequate parking can significantly reduce bicycle theft, a common issue in many urban centers and a frequently mentioned deterrent of cycling. In fact, in a study set in Montréal, half of the survey respondents had had their bicycle stolen at least once in the past (van Lierop, Grimsrud, & El-Geneidy, 2015). Of the many different types of policies and infrastructure that may help prevent bicycle theft, this paper focuses on secured bicycle parking. There is no standard definition of what a secured bicycle parking is, however, they generally include a few common elements. First, unlike regular on-street bicycle racks, secured bicycle parking offers more protection from theft, vandalism, and the weather by being in a partially or fully enclosed area (Transport Canada, 2010). Second, while on-street bicycle racks tend to be free of cost, secured bicycle parking generally charges a fee for usage (e.g., pay per use or long-term rentals), but is exclusively used by the paying cyclist (Transport Canada, 2010). Finally, while on street parking relies on "eye on the street" surveillance, secured bicycle parking includes often additional supervision such as cameras or even security guards (Transport Canada, 2010). How best to install this new infrastructure is not yet clear, especially when one considers that different cyclists likely have different parking needs. The objective of this paper is to evaluate the need for secured bicycle parking and elaborate recommendations on what type of secured bicycle parking should be implemented, and with what elements, depending on the user's needs. To respond to this research gap, this report presents the results of a cycling survey distributed in Montréal with a focus on parking. The results are presented in four sections. First, a profile of Montréal cyclists is presented. This profile evaluates where cyclists live, develops

cyclist typologies, and presents cyclist behaviours across typologies. The second section examines cyclists' parking behaviour and past experiences with theft. The third section explores the secured bicycle parking preferences of respondents, including the importance of secured bicycle parking, overall and at different locations (e.g., train station, work, etc.), as well as the importance of its many potential characteristics, and the distance people are willing to walk and the amount they are willing to pay for secured bicycle parking.

Chapter 2 – Literature review

Previous research has investigated what elements of cycling are motivators and which are deterrents to cycling. In fact, by analyzing a survey conducted in Vancouver, researcher have found 15 factors that could influence cycling habits. Those factors included, safety (personal and of the bicycle), the route, interactions with motor vehicles, bike parking and others. Although availability of bicycle parking was found to have only a moderate impact on likelihood of cycling, it was still found as a motivator when bicycle parking infrastructure were available at destination. Furthermore, the item fear of bicycle theft (part of the safety factor) appeared to be a significant deterrent to cycling. This previous item was found a barrier to cycling in various research (Schneider, 2013) (Heinen & Buehler, 2019). For instance, a study conducted in Denver, Colorado found that concern about security and comfort, which included "fear of bike theft", lowered the odds ratio of commuting by bicycle by 0.37 (Piatkowski & Marshall, 2015). Research in Montréal has found that concerns about bicycle theft is motivator to use bike-share programs (Bachand-Marleau, Lee, & El-Geneidy, 2012). In another study, students who fear bicycle theft were found to cycle less than students who do not (Titze, Stronegger, Janschitz, & Oja, 2007). Even in places where cycling is a main mode of transport, concerns about bicycle theft persist. For instance, the lack of bicycle racks can result in cyclists parking their bicycles on street furniture or other alternatives to bicycle racks, which makes bicycle theft much more likely (Van der Spek & Scheltema, 2015).

Relationship between the number of bicycle parking spaces and an increase in probability of cycling exists. In fact, the study states that bicycle parking supply and its quality appear to be determinant of cycling for current and potential cyclists. However, the same study also found that charging for this kind of facility can reduce the chances of this facility being used (Piatkowski & Marshall, 2015). A Danish study also found that different types of bicycle parking may also impact cycling behaviour. For instance, the chance of cycling from transit stations was almost three times greater when covered bicycle racks (which protect bicycles of theft and weather damage) were present (Halldórsdóttir et al., 2017). This may be due to the higher protection provided by secured parking. Indeed, van Lierop, Grimsrud and El-Geneidy (2015) found that secured bicycle lockers were ranked highest for bicycle security. This study found that

43% of cyclists are willing to pay for secured bicycle parking, especially cyclists with expensive bicycles ($500 or more).

Amongst the general population of cyclists, van Lierop, Lee and El-Geneidy (2017) found the highest daily amount people are willing to pay for secured bicycle parking is $15.00. However, 43% were willing to pay at least $0.50/day. On the other hand, a Dutch study found that cyclists were more satisfied with their bicycle parking when it was free than when it was paid (Van der Spek & Scheltema, 2015). According to another study on parking behaviour, cyclists are more inclined to park their bicycles at higher quality (e.g. sheltered and secure) bicycle parking than parking of lower quality. However, the same research found that charging for parking reduces the likelihood of using a facility (Heinen & Buehler, 2019). Nonetheless, both studies concluded that cities could benefit from implanting secured bicycle parking as they both identified a potential market for these kinds of facilities and since they could help foster cycling.

A review of multiple types of bicycle parking stated that it is necessary to identify who will park what, where, when and for how long before implanting new bicycle parking infrastructure to inform appropriate provisions. According to the same authors, those provisions include location, surveillance, proprietorship, signage and communication, convenience, and local knowledge (Lorraine Gamman, Adam Thorpe, & Marcus Willcocks, 2004).

Because fear of bicycle theft is a deterrent of cycling, it is important to analyze cyclists' parking needs. For instance, one might anticipate that people are less concerned about safely locking their bicycles when they make a quick errand than when they park their bicycle at home overnight. It is also possible that different types of cyclists have different parking needs. Past research has looked at how cyclists can be categorized into different types of groups based on several factors, such as enthusiasm for cycling, fear of cycling, and different needs of different cyclists. In 2006, Geller (2006) developed a seminal cyclist typology which categorized cyclists as either the Strong and Fearless, Enthused and the Confident, Interested but Concerned, or No Way No How. Dill and McNeil (2013) examined if Geller's four types of cyclists were represented in a large survey conducted in Portland, Oregon, and found that almost all responses fit into one of the categories, bolstering Geller's claim. Examining whether cyclists fit into this

typology has also been done at a national scale in the US, with results again supporting Geller's typologies (Dill & McNeil, 2016).

Other research has utilized more inductive approaches to categorize cyclists. For instance, Damant-Sirois, Grimsrud and El-Geneidy (2014) examined 2,004 survey responses about cycling in Montréal to classify cyclists through factor-cluster analysis. This resulted in four new, distinct typologies: Dedicated Cyclists, Path-Using Cyclists, Fairweather Utilitarians, and Leisure Cyclists. Francke et al. (2019) also used this type of analysis in Germany and found four other groups of cyclists: Ambitious, Functional, Pragmatic, and Passionate. While Geller's (2006) groups mostly differ in terms of levels of fear of cycling, Damant-Sirois, Grimsrud and El-Geneidy's (2014) typology highlights how distinct policies impact cycling behaviours differently across types of cyclists. Francke et al.'s (2019) groups, on the other hand, looked more at how cyclists could be grouped together based on their identity or purpose. This study builds on this past research on cyclist typologies by exploring whether bicycle parking preferences vary across different types of cyclists.

Chapter 3 - Methods

A bilingual (French and English) cycling survey was developed in collaboration with the Agence de Mobilité Durable of Montréal (Appendix A). Following the recruitment approach for online surveys recommended by Dillman (2009), participants were recruited through multiple avenues, including a mailing list of 3,000 cyclists who had completed cycling surveys for the Transportation Research at McGill (TRAM) research group in the past, and via paid and unpaid advertisements on Facebook, LinkedIn, and Twitter (Figure 1). The survey was active between June 17th and July 11th, 2021.

Figure 1 - Add used on social media

The survey consisted of 95 closed questions and five open-ended questions soliciting comments on cycling in Montreal. These questions were organized into six sections: general information, cycling behaviour before and during COVID-19, bicycle ownership and theft, bicycle parking, dangerous areas for cyclists, and personal profile. In the section on bicycle parking, special consideration was given to parking needs specific to secured bicycle parking (including locations where this infrastructure is needed, willingness to pay, and distance willing to walk). Both non-cyclists and cyclists were invited to complete the survey. However, non-cyclists only responded to questions about socioeconomic characteristics and their reasons for not cycling. A total of 1,806 complete responses were collected. Responses that were not logical (e.g., if the person indicated they completed more trips by bicycle than total trips (all modes) to a

specific destination earlier in the survey) were removed. The final sample size used in this analysis is 1,408 cyclists and 125 non-cyclists.

Following prior cycling research methodologies, a factor cluster analysis was conducted to create cyclist typologies based on survey responses using SPSS 24 software. Specifically, survey questions about cycling behaviour, preferences, and deterrents were used to cluster the respondents into four types of cyclists. Following Dent et al. (2021), a rotational matrix was created to see significant correlation coefficients.

In chapter 4, most of the analysis were made on Excel, with standard statistics. However, the binary logit model was built using the SPSS program. For this model, since its relies on secured bicycle parking near work or school locations, only cyclists who stated that they were workers (full time or part-time) and students were analyzed. Second, it must be mentioned that only cyclists that expressed that secured bicycle parking would be important next to their work (or school) location were asked what amount they would be willing to pay for it. The dependent variable was the willingness to pay for secured bicycle parking at work locations and multiple variables from the survey were tested to build a model with the highest explanatory power as possible.

Chapter 4 - Results

This chapter presents the results of the analysis of the survey. The chapter is divided in four sub-sections: Profile of Montréal's Cyclists, Cycling behaviour, Bicycle parking behaviour and Secured bicycle parking opinions.

4.1 - Profile of Montréal Cyclists

This section develops a profile of Montréal cyclists. First, an illustration of where cyclists live is presented to help in the planning of where to build cycling infrastructure in the city. Then, a cyclist typology is developed based on respondents' answers to survey questions about cycling behaviour, preferences, and deterrents. This typology is used to help understand the needs of different types of cyclists.

Respondents' Places of Residence

As shown in Figure 3, cyclists respondents' homes are concentrated in the center of the island of Montréal. Most of the respondents live south of the highway 40, west of Iberville Street and East of highway 15. Two areas are clearly more concentrated: Le Plateau-Mont-Royal (and surroundings) and Le Sud-Ouest (and surroundings). The two zones are central, highly populated, and well-served by bicycle paths. Those three features likely explain why there is a higher concentration of cyclists in these areas.
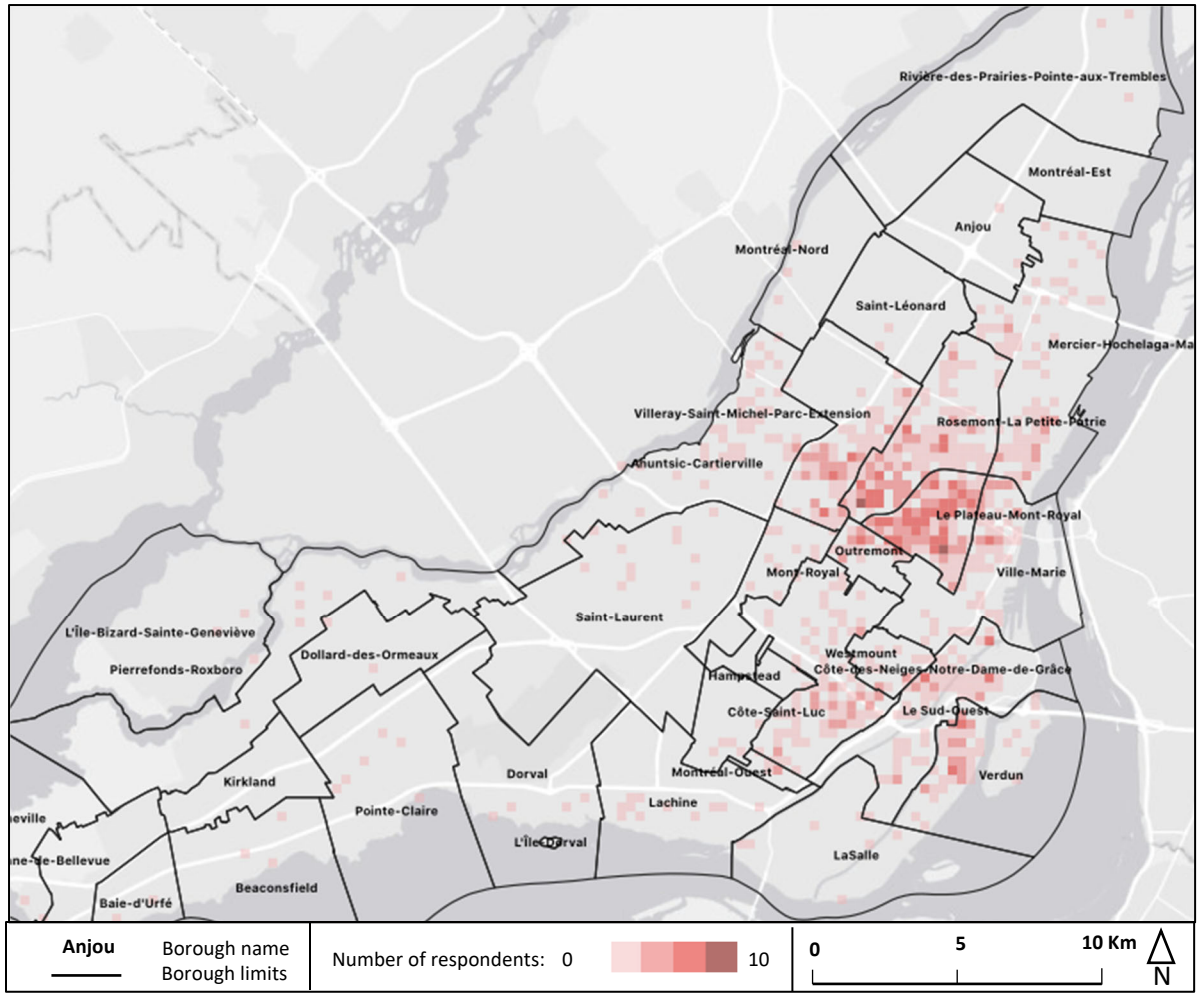
Figure 2 - Respondents' place of residence
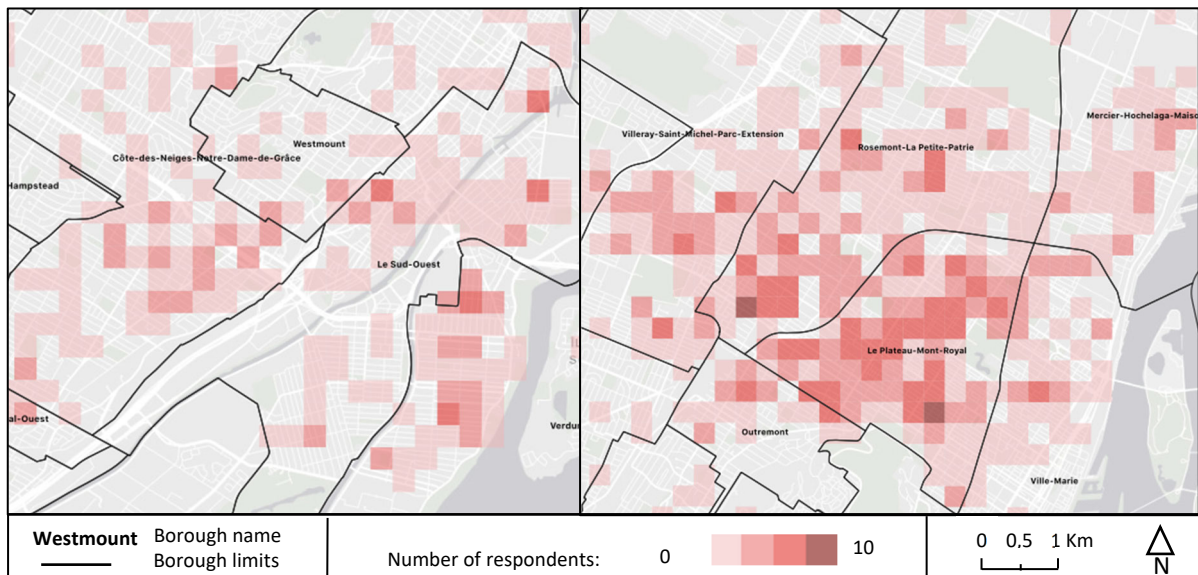
Figure 3 – Spotlight on areas with a high concentration of respondents' places of residence

Cyclist Typologies

Five factors were obtained by grouping variables based on their level of correlation; in this case the 5 factors are: efficiency, weather, identity, health, and effort (Table 1). The health factor is formed by only one variable. In factor-cluster analysis, clusters of respondents are created by maximizing the mean difference between groups and minimizing it within groups. The first factor, efficiency, groups variables on speed, predictability, and flexibility. The second factor, weather, combines weather-related variables including cycling in the snow, cold, and rain (Brian S. Flynn, 2012). The identity factor includes two variables, the perception of cycling being fun and cycling as part of self-identity/culture. As mentioned previously, the health factor has only one variable, "I cycle for health reasons". Finally, the effort factor examined the combined impact of trip distance and steepness of the ride on cycling.

Table 1 - Factors, variables, and loadings used to identify cyclists typologies

Factors	Variables		Loadings
Efficiency	I cycle because	It is the fastest way to get from point A to point B	0.695
		Of the predictability of the travel time	0.735
		Of the flexibility for multiple trips	0.802
		Of the flexibility of the departure time	0.864
Weather	I cycle when	It's raining	0.505
		It snows	0.842
		It's cold	0.854
Identity	Cycling	Is part of my identity/culture	0.530
		Is fun	0.831
Health	I cycle	For health reasons	0.997
Effort	I cycle	When my destination is far	0.497
		When the route is steep	0.732

Four cyclist typologies emerged from the data: Leisure Cyclists, Summer Cyclists, Occasional Cyclists, and Dedicated Cyclists (Figure 4). Those four typologies categorize cyclists who responded to the survey. It is important to mention that the respondents categorized in those

typologies consider themselves as cyclists, in fact, only respondents who stated that they cycle for utilitarian purposes or leisure trips were kept for the analysis. The goal here is to differentiate the respondents between them, by combining those with similar cycling attributes together. The factors that were found were the only elements used to cluster the respondents. The latent factors that were used for the analysis were built using variables from questions of the survey. Multiple variables from the survey were tested to find meaningful latent factors. Only the variables, that helped explain the factors and that allowed the creation of groups with high intra-cluster differences and low inter-cluster differences were kept.
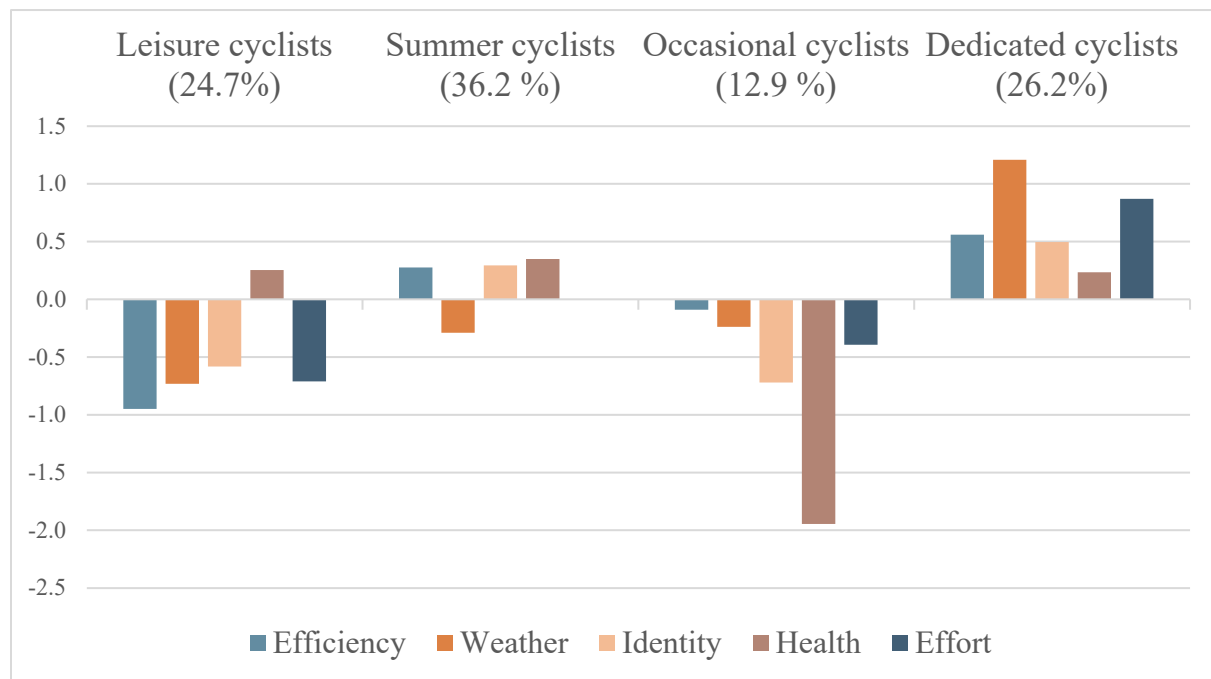
Figure 4 - Types of cyclists

Leisure cyclists comprised 24.7% of the sample. These cyclists do not cycle because they find it efficient, rather they tend to cycle for pleasure, as a hobby, or as a family activity. One of the main motivators for cycling is its health benefits. They do not cycle in bad weather, and they rarely cycle for utilitarian purposes. According to **Error! Reference source not found.**, leisure cyclists have the highest average household income: $95,000 per year which is $5,000 more to the average of all groups. They are also the oldest group with an average age of 47 years and have the highest proportion of retired respondents (13%). Finally, these cyclists have the highest proportion of respondents who have a driver's license and the lowest average household size (2.38 pers/household).

Summer cyclists (36.2% of the sample), only cycle in good weather. They do not cycle when it rains or snows and stop cycling when the weather gets too cold. Cycling, however, is important to them and is a part of their identity. Efficiency and health benefits of cycling are also factors that encourage them to use their bicycle for both utilitarian and recreational purposes. The demographic analysis in **Error! Reference source not found.** shows that 82% of summer cyclists are employed (full time and part time) and their household income is close to the one of all groups combined ($91,500). Their average age is 45 years old and most (91.1%) have a driver's license.

Occasional cyclists were the least common cyclist typology: they make up 12.9% of the sample. These cyclists only cycle when the conditions are right (efficiency, weather, etc.). For instance, they only cycle if the weather is good, if the route is not too steep, and if the destination is not too far. Cycling is not part of their identity and they do not cycle health reasons. The occasional cyclists group has the youngest mean age (39 years old), the lowest household income (on average $79,750 per year), and the lowest driver's license-ship rates. Factors that could explain this are the high proportion of students in the group (17%) and the low proportion of full time employed respondents (61%).

The final cyclist typology is the dedicated cyclists' (26.2% of the sample). As their name suggests, their decision to cycle does not depend on the weather or the effort that is required for the trip. These cyclists will use their bicycle to reach their destination under all circumstances, even in bad weather (snow, rain or cold) or if the ride is long and steep. One of the main reasons why they cycle is for efficiency. Speed, predictability, and flexibility of the mode motivate these cyclists. In addition, health benefits also influence them. Finally, cycling is part of their identity, and they consider it fun. Though men were more present in all cyclist typologies, the gender gap was greatest amongst dedicated cyclists where 62.1% of the group identified as male. This group is also characterised by the highest percentage of employed respondents (84%). These cyclists have the largest households' size with an average of 2.69 persons and an average household of around $91,500.

The characteristics of the sample is comparable to the general cycling population in Montréal when compared to the cyclists in the Montréal 2018 Origin Destination (OD) survey (Agence métropolitaine de transport, 2018) (**Error! Reference source not found.**). The OD is conducted

every five years and collects travel behaviour information from 5% of the residents in the Montréal metropolitan region. Our sample has a higher representation of women (40% compared to 35.6% in the OD). The average age of our sample is 44 years old while the average age of cyclists in the OD was 42 years old. On average, our sample has smaller household size (2.40 persons) compared to the OD (2.65 persons). As for income, it was only possible to compare the average income as different income brackets were used in the and in the OD. Respondent to our survey had an average household income of $90,908 compared to $90,343 in the OD.

It is important to note that it was expected that the survey would have a high representation of devoted cyclists. The survey was conducted with no incentives and the messaging used in the recruitment concentrated on requesting help to shape the cycling system in Montréal. Such messaging is expected to attract more dedicated and regular cyclists than occasional and recreational ones, which can explain to some extent the differences noticed between our survey respondents and the OD. Despite this high representation of enthusiastic cyclists, we expect the findings to be of value to transport professionals trying to understand the different needs of the distinct groups of cyclists that are present in their region, though perhaps at different ratios.

Table 2 - Demographic Characteristics of respondents by typology compared to cyclists from the Origin-Destination survey of Montréal

	All respondents (n=1408)	Leisure cyclists (n=348; 24.7%)	Summer cyclists (n=510; 36.2%)	Occasional cyclists (n=181; 12.9%)	Dedicated cyclists (n=369; 26.2%)	OD 2018 cyclists
Gender						
Female	40,0%	40.5%	43.1%	42.0%	34.1%	35.6%
Male	56,3%	56.3%	54.5%	53.0%	62.1%	64.4%
Other	3,3%	3.2%	2.4%	5.0%	3.8%	-
Age						
Average	44	47	45	39	42	42
18-30	13%	10%	11%	22%	15%	25%
31-40	30%	25%	31%	33%	30%	26%
41-50	25%	23%	25%	20%	28%	22%
51-60	18%	21%	18%	13%	18%	17%
61 and more	14%	21%	15%	11%	9%	11%
Driver's license						
% of people with driver's license	87.5 %	91.1 %	86.9 %	82.3 %	87.5 %	85.40%
Household size						
Average	2.49	2.39	2.43	2.47	2.69	2.65
1	23.4%	25.6%	24.7%	24.3%	19.2%	23%
2	37.6%	38.8%	38.4%	40.3%	34.1%	31%
3	16.3%	17.2%	14.9%	13.8%	18.4%	17%
4	16.0%	11.5%	16.5%	16.0%	19.5%	20%
5 +	6.7%	6.9%	5.5%	5.5%	8.7%	9%
Household income *						
Average ($)	90,908	95,646	91,435	79,753	91,416	90,344
< 20 000 $	6%	4%	6%	9%	7%	-
20 001 $ – 40 000 $	11%	11%	9%	12%	11%	-
41 000 $ - 60 000 $	12%	12%	13%	17%	9%	-
60 001 $ - 80 000 $	12%	10%	13%	14%	13%	-
80 001 $ - 100 000 $	15%	14%	16%	15%	15%	-
100 000 $ - 120 000 $	11%	12%	10%	11%	12%	-
120 001 $ - 150 000 $	11%	12%	10%	8%	12%	-
150 000 $ >	22%	26%	23%	14%	21%	-
Occupation$^\diamond$						
Employed Full Time	69%	69%	71%	61%	72%	66%
Employed Part time	11%	7%	11%	16%	12%	8%
Student	13%	10%	12%	17%	14%	12%
Retired	8%	13%	7%	8%	4%	8%
Unemployed	3%	4%	2%	5%	4%	4%
At home	0%	0%	0%	1%	1%	2%

*not comparable with OD due to different brackets of incomes

$^\diamond$ totals can exceed 100% because respondents were able to select multiple occupations (ex: student and employed part time)

Spatial variations were observed across cyclist typologies when it came to place of residence (Figure 5). The residences of leisure and summer cyclists are more spread out across the island compared to occasional and dedicated cyclists who are highly concentrated around the Plateau Mont-Royal neighborhood. This higher concentration of dedicated cyclists in this central neighborhood was expected since the proximity of services makes the use of bicycles easier for utilitarian trips, such as going to work or school. Further, perhaps leisure cyclists use mainly their bicycles for recreational purposes because they live farther from downtown, and therefore farther from services making it more difficult to use their bicycle for utilitarian trips.
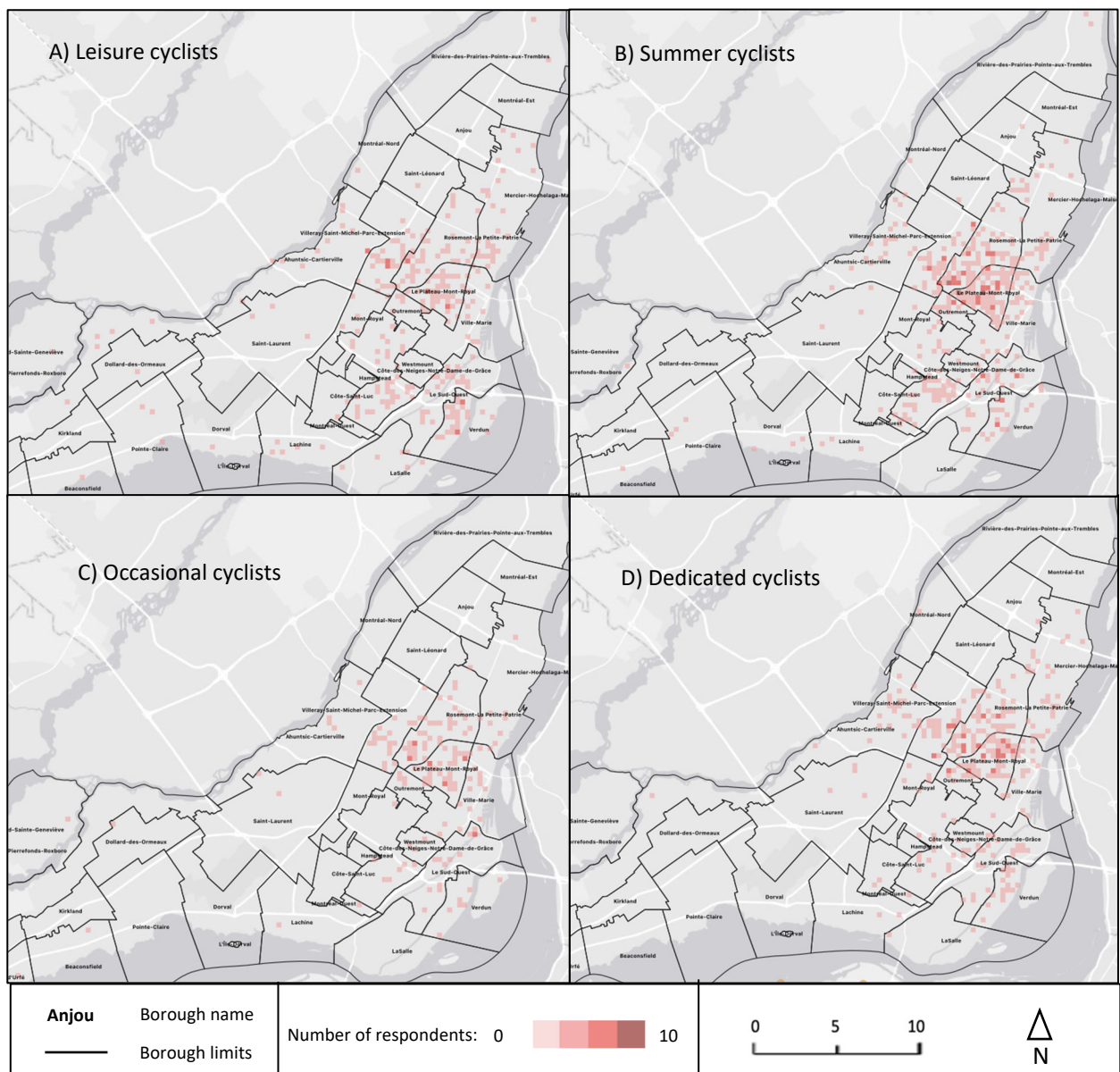

Figure 5 - Respondents' place of residence by type of cyclists

4.2 – Cycling behaviour

This section compares cycling habits and behaviour of the individuals from the different typologies stated previously.

As expected, the four cyclist typologies were found to exhibit different cycling behaviours (**Error! Reference source not found.**). Dedicated Cyclists make the most bicycle trips per week (9.6 on average) and most of their trips are for utilitarian purposes (7.5 trips out of the 9.6). This means that only 21% of their weekly trips are for leisure. Cycling is their main mode of transport, in fact 90% of their work trips and 65% of their shopping trips are made by bicycle, the highest percentages out of all groups. On average, they own 2.3 bikes per person, the highest bicycle ownership out of all the other groups. As it could have been expected, BIXI membership and use is lowest amongst this group, in fact, since cycling is their main mode of transportation, it was expected that they owned their own bicycle and do not rely on this service to get around. Further, the bicycles they use for utilitarian purposes are on average worth $1,026, the highest average value out of all the groups. However, this could also explain the fact that over half of these cyclists (54%) have already had their bicycle stolen in Montréal. In fact, since they use their own bicycle almost every single day, and since they are worth a lot of money, they are more at risk to have it stolen.

Leisure Cyclists make the least bicycle trips for both utilitarian (3.2 trips/ week) and all purposes (4.9 trips/week). Instead, they make the highest proportion of leisure rides. In fact, 34% of their total bicycle trips are for recreational purposes. They are the cyclists with the lowest ratio of trips made by bicycle, only 35% of their shopping trips and 52% of their work trips are made with this mode (Table 3). Leisure Cyclists also own the lowest number of bicycles on average (1.5 bicycles/ person - something they share with Occasional Cyclists). The fact that they use less frequently their bicycles can explain, in some part, why they are the ones that have had their bicycles stolen less frequently (41%).

Occasional Cyclists own the least valuable bicycles ($772 average), and yet almost half (47%) have had their bicycle stolen at least once in Montréal. Although they don't have the highest proportion of BIXI membership, they are the group with the highest proportion of respondents (almost 10%) that use BIXI bicycles for their utilitarian trips. This could explain

why they own less bikes on average than other typologies (along with Leisure Cyclists). On average, they make 5.6 bicycle trips per week: 76% of which are for utilitarian purposes, and 24% of which are for leisure trips. Their percentages of trips made by bicycle are lower than the average of all respondents, 69% and 45% of their work and shopping trips are respectively made by bicycle.

Summer Cyclists make almost 8 bicycle trips per week, 73% of which are for utilitarian purposes. About half (53%) of their shopping trips and almost three fourths (73%) of their work trips are made by bicycle. Their bicycles are worth, on average, approximately $850 and they own, again on average, 1.68 bicycles per cyclist. Just under half (48%) have had their bicycle stolen at least once in Montréal. Summer cyclists are the ones with the highest BIXI membership, this could be explained

Table 3 - Cycling Behaviour Across Typologies

	All respondents	Leisure cyclists	Summer cyclists	Occasional cyclists	Dedicated cyclists
	(100%)	(24.7%)	(36.2%)	(12.9%)	(26.2%)
Average total number of bicycle trips for utilitarian purposes last week	5.3	3.2	5.6	4.2	7.5
Average total number of bicycle trips last week	7.2	4.9	7.7	5.6	9.6
Average percentage of work trips made by bicycle last week	74%	52%	73%	69%	90%
Average percentage of shopping trips made by bicycle last week	51%	35%	54%	45%	65%
Average percentage of leisure trips made by bicycle last week	26%	34%	27%	24%	21%
Average bicycle ownership	1.8	1.5	1.7	1.5	2.3
Average value of utilitarian bicycle	$889	$842	$847	$772	$1,026
BIXI membership	22.4%	23.6%	25.5%	22.1%	9.5%
Percentage of people that said that they used BIXI as their utilitarian bicycle	6.89%	8.91%	7.65%	9.94%	2.44%
Percentage of people that have had their bicycle stolen in Montréal	47%	41%	48%	47%	54%

4.3 - Bicycle parking behaviours

This section explores respondents bicycle parking behaviours. First, it is analyzed if duration of stops made by bicycle influences bicycle parking behaviour. Then, an analysis of bicycle parking behaviour near respondents' homes, where bicycles tend to be parked for long durations (e.g., overnight) is presented. Finally, recommendations for potential implementations of secured bicycle parking are given based on findings.

Stop Duration

Bicycle parking behaviours were found to vary depending on how long respondents needed to park their bicycle for. In this section, short stops (15 minutes or less), long stops (i.e., for work) and overnight stops (at home) are considered.

For short stops (stops shorter than 15 minutes), most cyclists (63% on average) park their bicycles to "Whatever is available to lock it to close to my destination (i.e., a tree, bench, fence, etc.)", regardless of the type of cyclist (Figure 6). Under 30% lock their bicycles to a rack during short stops, even if it is somewhat far from their destination. Locking a bicycle to itself is very rare, even for short stops, but is more common amongst dedicated cyclists than all other typologies.
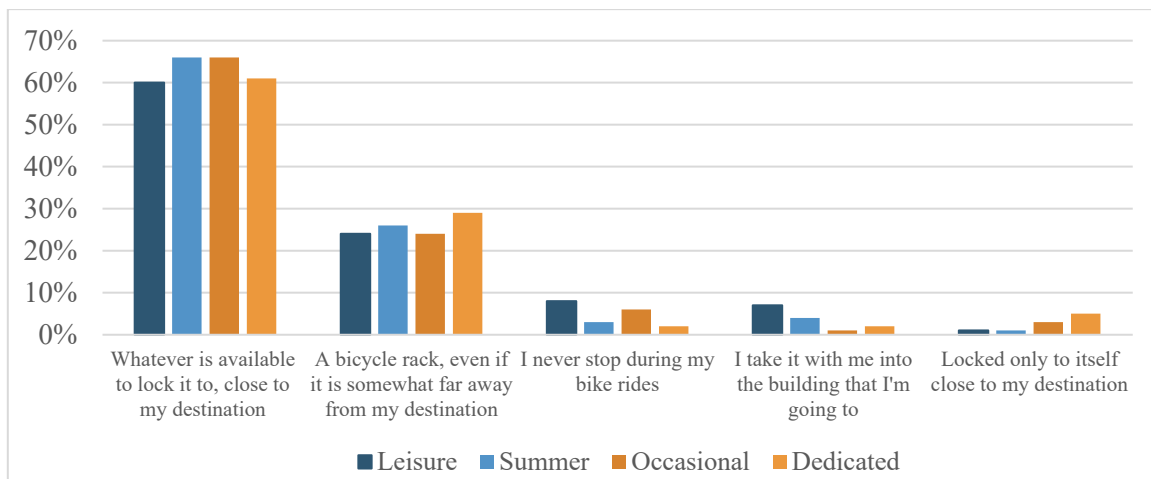
Figure 6 -How do cyclists lock their bicycles for short stops (under 15 minutes) by types

For longer stops (more than 15 minutes), only 34% of cyclists (all group combined) park their bicycle wherever is available, a diminution of almost 30% compared to shorter stops (Figure 7).
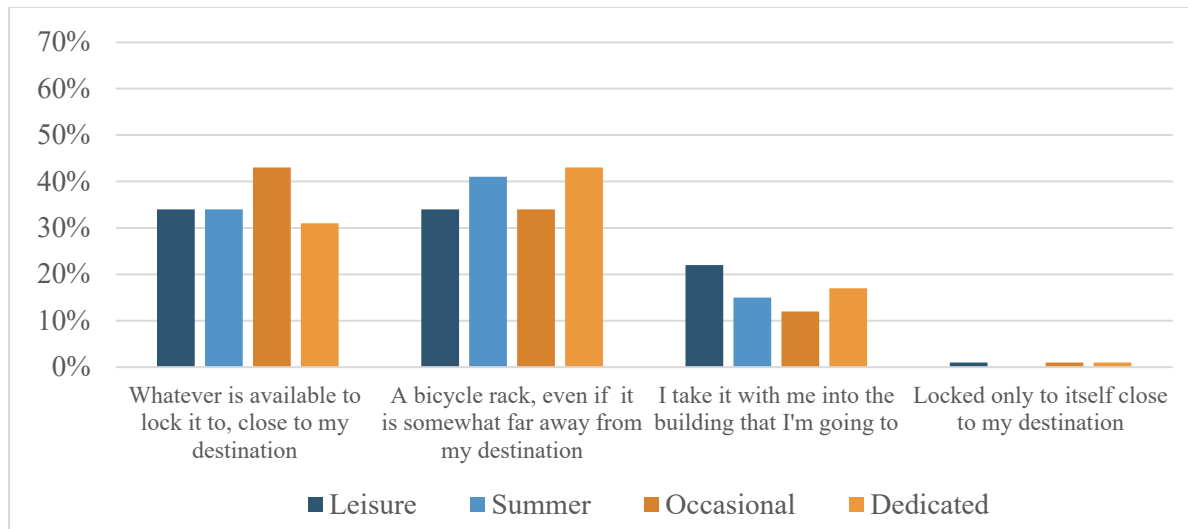
Figure 7 - How do cyclists lock their bicycles for normal stops (such as work) by types

Dedicated cyclists take more precautions to park their bicycles whatever the type of stop. 29% of them take the time to go to a bicycle rack even for a short stop and 43% for longer stops. This can be explained by the fact that they own the most expensive bicycles (Table 3), in fact, their bicycles are worth in average $1,026.

The leisure cyclist group has the highest proportion of cyclists who take their bicycle inside the building, no matter the type of stop. Indeed, 7 % do so for short stops and 22% do so for longer (15 minutes or more) stops. Leisure cyclists are also the group that has the highest proportion of cyclists who do not stop during their bike rides (8 %). This is not surprising, as the need to stop and park your bicycle is less frequent during a recreational bicycle trip than during utilitarian trips.

Regardless of the type of stop, the occasional cyclist group has the highest proportion of cyclists who prefer to park their bicycle wherever is close to their destination than to go look for a bicycle rack further to their destination. However, this proportion lowers when the stop is longer (66 % for short stops vs 43% for normal stops).

The next table looks at the differences between parking behaviours depending on the value of the bicycle.

Table 4 - Parking habits for normal stops by price of bicycle

Bicycle Value	Parking Behaviour			
	Bicycle rack: even if I must park it further from my destination	I take it with me into the building that I'm going to	Whatever is available to lock it to close to my destination	Other
< $150	41%	10%	44%	5%
$150 - $700	40%	13%	39%	7%
$700 - $1500	43%	20%	27%	9%
≥ $1500	34%	33%	22%	11%

Table 4 shows that a relationship exists between the value of the bicycle and the parking behaviour. As expected, the more the bicycle is worth the more respondents take precautions in locking their bicycle. In fact, 33% of the respondents who own a bicycle worth more than $1500 bring their bicycle inside the building in which they are going. This proportion lowers for every range of price to reach 10% for respondents who own bicycles worth less than $150. Following the same idea, the proportion of respondents who lock their bicycle to whatever is available close to the destination lowers the higher the price range. Respondents with bicycles worth more than $1500 are twice less likely to park their bicycle to whatever is available then respondents with bicycles worth less than $150.

Implications for Secured Bicycle Parking

Given that more than 60% of respondents are not willing to look for an on-street bicycle rack for their short stops, it is unlikely that secured bicycle parking in Montréal will be used for short stops (under 15 minutes).

On the other hand, most cyclists take precautions about where they leave their bicycle for longer stops. When stopping for 15 minutes or more, the proportion of cyclists who will look for a bicycle rack increases by 13% and the proportion of respondents who bring their bicycle inside the building increases by 10%. Cyclists making longer stops may be potential users of secured bicycle parking. Furthermore, the highest the value of the bicycle the more precautious cyclists are in locking them. Cyclists with high-value bicycles are also good potential users of the service.

Next, it was analyzed how respondents parked their bicycles at home, a key destination that tends to involve leaving one's bicycle parked for long periods of time (e.g., overnight). Specifically, how parking behaviours varied depending on the type of housing cyclist typologies lived in was examined. Residential areas may be key locations for secured bicycle parking: not only do stops near home tend to be long in duration, but apartments in Montréal are often too small to store bicycles indoors comfortable and difficult to access by bicycle (e.g., when they have outdoor, spiral, staircases).

No matter the group, more respondents live in apartments than in houses (, a living arrangement expected to make indoor bicycle storage more difficult.

Table 5). The leisure cyclist group has the highest proportion of cyclists living in houses (30%), this finding is expected given that they are also the typology with the highest average income (**Error! Reference source not found.**). On the other hand, occasional cyclists have the lowest proportion of cyclists living in houses and the highest of cyclists living in apartments (84%), alongside the lowest average income and the highest proportion of students (**Error! Reference source not found.**). Summer and dedicated cyclists' groups both have almost 80% of their members living in apartments. Out of the respondents living in apartments around 65% of them live on the second floor or higher, a living arrangement expected to make indoor bicycle storage more difficult.

Table 5 - Type of residence by groups

	Leisure	Summer	Occasional	Dedicated
House (semidetached, row house…)	30%	22%	16%	21%
Apartment or condo, duplex Triplex…	70%	78%	84%	79%
Basement or first floor	35%	36%	34%	38%
Second floor or higher	65%	64%	66%	62%

To analyze the need in secured bicycle parking near residential areas, it was examined how cyclists parked their bicycles at home by type of residence (Table 6). Those who do not have

dedicated, convenient, and safe places to park their bicycle at home overnight could be potential secured bicycle parking users. Furthermore, secured bicycle parking services next to residential areas could be used during winter as storage for cyclists who do not cycle in bad weather (non-dedicated cyclists).

Results indicate that cyclists who live in houses, 23% of the respondents, already have dedicated places to park their bicycles, either they bring it inside their homes, or they have place for it in their yard or garage (Table 6). Only 1% of respondents who live in houses use on street parking near their homes. However, cyclists who live in apartments, 77% of respondents, less frequently have this luxury: 15% use on-street parking near their homes. This proportion of apartment-dwellers that use on street-parking near their homes increases dramatically when they live above the first floor: while 5% of basement of first-floor dwellers park their bicycle on-street near their homes, 20% of those who live on the second floor or higher do so.

Table 6 - How do cyclists park their bicycle at home by type

	I bring it into my house/apartment	In a dedicated space in my building	In my yard, garage or shed	On street parking
House (row house, town house, semidetached…)	25%	1%	74%	1%
Apartment or condo, duplex Triplex…	37%	10%	36%	15%
Basement or first floor	33%	5%	57%	5%
Second floor or higher	41%	15%	24%	20%

When it comes to bicycle parking practices at home across cyclist typologies, more leisure cyclists were found to have a dedicated place to park their bicycle at home than occasional cyclists (respectively 92% and 83%) (not shown). This difference may be explained by the fact that leisure cyclists' bicycles are worth on average $70 more than occasional cyclists' bicycles (Table 3). It may also be explained by the fact that there is a higher proportion of leisure cyclists that live in houses than in the other groups (Table 8). Further, 84% of occasional cyclists live in apartments or condos, and most of them (66%, , a living arrangement expected to make indoor bicycle storage more difficult.

Table 5) must climb stairs (live on the second floor or higher) to reach their home, the highest proportion across all groups. Apartments in Montréal can be small and climbing stairs with a bicycle can be challenging, which might explain why this group also has the highest proportion of cyclists who leave their bicycle on the street when they are at home (17%).

Since one of the positive aspects of secured bicycle parking is protection against theft, the relationship between parking behaviours and bicycle theft history was also surveyed (Table 7). Overall, 47% of the respondents have already had their bicycle stolen in Montréal at least once. Amongst cyclists, 9% of those who bring their bicycle inside their home have already had their bicycle stolen close to their home. This percentage doubles (18%) for cyclists who leave their bicycle on street. Secured bicycle parking could help lower this percentage. In fact, cyclists with safer parking options (such as inside their homes or inside a building) have experienced less theft in general than the others.

Table 7 - Percentage of cyclists who have had their bicycle stolen close to their home depending on where they park their bicycle at home

	Had their bicycle stolen close to home (radius of 1 km)	Had their bicycle stolen but not close to their home	Never had their bicycle stolen
I bring it into my house/apartment	9 %	34%	57%
In my yard, garage or shed	12 %	32%	51%
In a dedicated space in my building	14 %	37%	54%
On street parking	18%	37%	45%

Implications for Secured Bicycle Parking

Secured bicycle parking could be useful next to homes of cyclists living in apartments, especially the ones living on the second floor or higher. This service could be used daily for overnight parking or on a seasonal basis for cyclists who do not cycle during winter and don't want their bicycle to use some space in their apartment. It could also help reduce the thefts of bicycles in residential areas which is a challenge in Montréal.

The relationship between past theft near one's home and opinions on secured bicycle parking are presented in Table 8. As expected, more cyclists who already experienced bicycle

theft near their home want secure bicycle parking near their homes than those who have never had their bicycles stolen. For instance, 68% percent of leisure cyclists who have had their bicycle stolen close to their homes think that it would be important to have secured bicycle parking in residential areas compared to 55% of leisure cyclists who never had their bicycle stolen. Perhaps those cyclists with a safe place to lock their bicycle at home have never had their bicycle stolen and therefore do not see the necessity of such a service at this location.

Table 8 - Percentage of cyclists who think that having secured bicycle parking near their home is important by group and by theft history

	Leisure	Summer	Occasional	Dedicated
Had their bicycle stolen close to their home (1 km radius) (12% of the respondents)	68%	62%	63%	58%
Had their bicycle stolen, but not close to their home (35% of respondents)	47%	52%	52%	52%
Never had their bicycle stolen (53% of respondents)	55%	55%	65%	51%

4.4 - Secured bicycle parking preferences

Opinions on secured bicycle parking were directly surveyed. Namely, respondents were surveyed about where to locate secured bicycle parking, what features they wished to see on this infrastructure, and their willingness to pay and the distance they are willing to walk to reach secured bicycle parking.

Secured Parking Locations and Characteristics

Across all cyclist typologies, secured bicycle parking is more important near work and metro stations than home and train stations (Table 9). With regards to secured bicycle parking needs, the five most important characteristics were found to be the same across all cyclist typologies and all locations. These five characteristics are: being free, having a secured access, being close to the location, weather protection and the duration the bicycle will be parked. Interestingly, proximity was even more important for secured bicycle parking near the home and work than at public transport destinations (i.e., train and metro stations) where secured access was considered more important.

The top three characteristics of secured bicycle parking are shared across the typologies (being free (or low cost), having secured access, and being close to the final destination), however, the other two factors' importance varied across cyclist typology. This was also the case for the overall need for secured bicycle parking and the locations at which this infrastructure was needed.

Dedicated Cyclists desire secured bicycle parking the most. Just like the other groups, around 70% of dedicated cyclists think it is important to install secured bicycle parking next to metro stations and work locations. The majority, however, do not find it important to have secured bicycle parking next to their home or train stations. For Leisure Cyclists, who used their bicycle for utilitarian purposes at a lower rate compared to all other groups, having secured bicycle parking next to metro stations and work locations is important.

Occasional Cyclists care the least about secured bicycle parking. However, this group comprised the highest proportion (48.6%) of respondents who thought it would be important to have secured bicycle parking near their home. As seen in the previous section, most occasional cyclists (55%, the highest proportion across all types) live in apartments on the second floor or higher, this could explain why having secured bicycle parking next to their homes would be useful to them. Also, these cyclists do not cycle as often as the other groups, perhaps this finding is because they park their bicycles for longer duration between infrequent trips. Finally, Summer Cyclists think that it is more important to have secured bicycle parking next to metro stations and work locations than next to train stations and their homes.

Owners of electric bicycles, cargo bicycles or electric cargo bicycles represent 4.4% of the respondents. Even if they do not constitute a type of cyclists in this report, opinions on secured bicycle parking at each location were examined. For each location they are the ones that desire the most the service. In fact, 81% of them stated that it would be important to have secured bicycle parking near metro stations, 50% of them for train stations, 52% near their homes, and 84% near their work.

Table 9 - Opinions on Secured Bicycle Parking

	All respondents (100%)	Leisure cyclists (24.7%)	Summer cyclists (36.2%)	Occasional cyclists (12.9%)	Dedicated cyclists (26.2%)
Secured bicycle parking next to metro stations					
Interest in secured parking	68.7%	70.1%	68.4%	66.9%	68.6%
Important aspects	1 - Free 2- Secured Access 3- Proximity 4 - Weather protection 5 - Duration of stay	1 - Free 2- Secured Access 3- Proximity 4 - Weather protection 5 - Attendance	1 - Free 2- Secured Access 3- Proximity 4 - Duration of stay 5 - Weather protection	1 - Free 2- Secured Access 3- Proximity 4 - Duration of stay 5 - Weather	1 - Free 2- Secured Access 3- Proximity 4 – Duration of stay 5 – Weather protection
Secured bicycle parking next to train stations					
Interest in secured parking	38.8%	37.6%	39.6%	30.9%	42.5%
Important aspects	1 - Free 2- Secured Access 3- Proximity 4 - Weather protection 5 - Duration of stay	1 - Free 2- Secured Access 3- Proximity 4 - Weather protection 5 - Attendance	1 - Free 2- Secured Access 3- Proximity 4 - Weather protection 5 - Duration of stay	1 - Free 2- Secured Access 3- Proximity 4 - Duration of stay 5 - Weather protection	1 - Free 2- Secured Access 3- Proximity 4 - Weather protection 5 - Attendance
Secured bicycle parking next to their home					
Interest in secured parking	41.3%	38.5%	41.8%	48.6%	39.6%
Important aspects	1 - Free 2 - Proximity 3 - Secured access 4 - Weather protection 5 - Duration of Stay	1 - Free 2 - Proximity 3 - Secured access 4 - Weather protection 5 - Attendance	1 - Free 2 - Proximity 3 - Secured access 4 - Weather protection 5 – Individual lockers	1 - Free 2 - Secured access 3 -Proximity 4 - Weather protection 5 - Duration of Stay	1 - Free 2 - Proximity 3 - Secured access 4 - Weather protection 5 - Duration of Stay
Secured bicycle parking next to their work					
Interest in secured parking	70.0%	66.4%	71.4%	66.3%	73.2%
Important aspects	1 - Free 2 - Proximity 3 - Secured access 4 - Weather protection 5 - Duration of Stay	1 - Free 2 - Proximity 3 - Secured access 4 - Weather protection 5 - Attendance	1 - Free 2 - Proximity 3 - Secured access 4 - Weather protection 5 - Duration of Stay	1 - Free 2 - Proximity 3 - Secured access 4 - Weather protection 5 - Duration of Stay	1 - Free 2 - Proximity 3 - Secured access 4 - Weather protection 5 – Inside a building

Willingness to Pay and Walk to Access Secured Bicycle Parking

As shown in **Error! Reference source not found.**, across typologies respondents are willing to walk on average 3.5 minutes from their destination to access secured bicycle parking. Those who indicated a willingness to pay for secured bicycle parking, stated they would pay an average amount of $1.5 per day for the service. Respondents are willing to pay the least amount of money for secured bicycle parking near their homes (0.5 $/day), and the most for secured bicycle parking next to train stations (2.25 $/day). Further, they are willing to walk the longest at train stations and the shortest at metro stations. All groups are willing to walk between 3.5 and 4 minutes to reach their work from secured bicycle parking, the location with the highest interest in this parking infrastructure. The second most desired location for bicycle parking was at metro stations. Here, participants were willing to walk 3.51 minutes.

Few notable differences existed across typologies. One exception is that Leisure Cyclists were willing to pay the most for secured bicycle parking for all locations. Further, Dedicated Cyclists are not as willing to walk longer distances to access secured bicycle parking near their home.
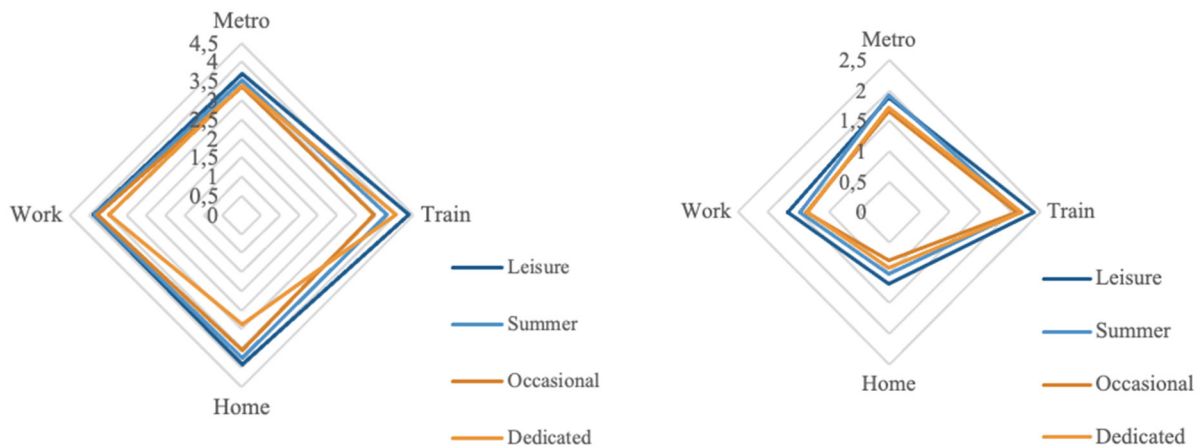

Figure 8 - Willingness to walk to a secured bicycle parking (in minutes) (left) and willingness to pay for a secured bicycle parking (in $/day) (right)

Willingness to pay for secured bicycle parking next to work locations

This section tries to understand what influences cyclists to be willing to pay (or not) for this type of infrastructure at proximity to their work (or school). In this section, the typologies will not be used, instead, only cyclists who identified themselves as workers (full time or part-time) or students were kept for the analysis. To do so, a binary logit model which identifies the reasons why a cyclist, that identified secured bicycle parking as important near its work location, would be willing to pay (or not) for this facility. First, Figure 9 analyzes the proportion of the respondents that indicated their willingness to pay for secured bicycle parking as cumulative percentages. For this figure it is assumed that those who identified higher amounts would also be willing to pay lower amounts, this assumes that everyone would be willing to pay 0$ for the service. The highest amount that participants could select for their willingness to pay in the survey was $15.00 per day.
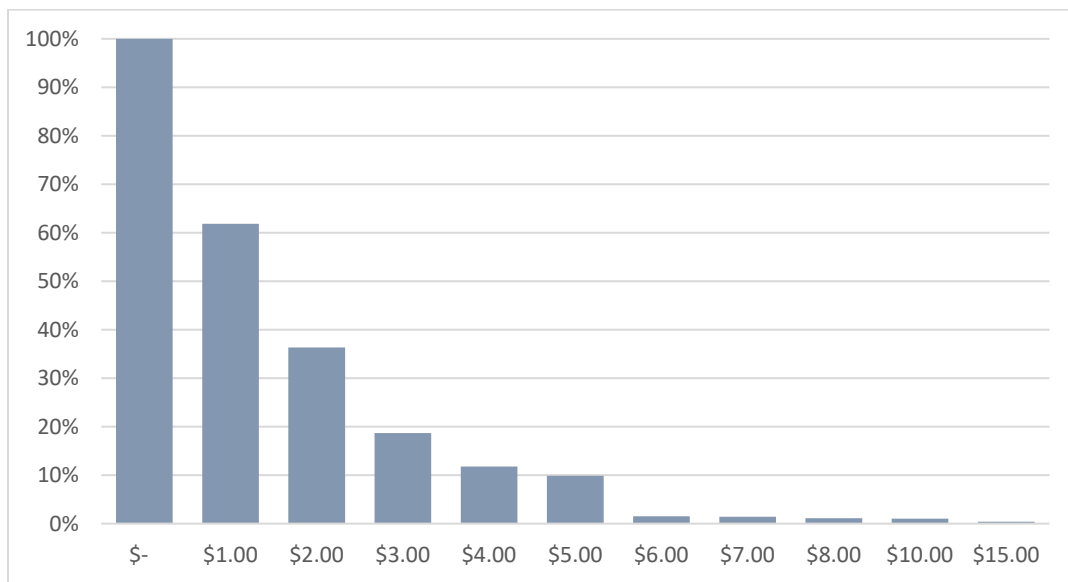

Figure 9 - Percentage of cyclists willing to pay for Secured bicycle parking near their work/school per day by amount

Figure 9 shows that the majority (62%) of the respondents are willing to pay at least one dollar per day for the service at their work location. Only 10% of the respondents are willing to pay five dollars or more and only 2% more than 6 dollars.

Model - Binary logit model

This model takes only into account the differences between cyclists willing to pay (no matter the amount) and those not willing to pay. Cyclists not willing to pay for the service represent 38% of the respondents that indicated that it would be important to have secured bicycle parking next to their work or school. The dependent variable is the willingness to pay for secured bicycle parking at work location. For a binary logit model, the model has an acceptable explanatory power (Nagelkerke R Square = 0.150).

Table 10 - Binary logit model, explaining willingness to pay for secured bicycle parking at work location

Parameters	Coefficient		Odd ratio
Intercept	0.231		1.260
Personal characteristics			
Income (more than $80,000)	0.531	***	1.700
Age (more than 50 years old)	0.331	***	1.392
Having kids in the house	0.205		1.228
Cycling behaviour			
Cycle more than 3 times a week to work or school (before Covid)	-0.617	***	0.540
Cycle more than 3 times a week to work or school (last week)	-0.313	*	0.732
Started cycling to work during Covid	-0.885	**	0.413
Do not cycle when it rains	0.375	**	1.455
Has a BIXI membership	0.452	**	1.572
Bicycle worth more than $1,000	0.259		1.296
Bicycle bought less than 5 years ago	0.383	**	1.466
Would like to buy an E-bike	0.175		1.191
Cycling is part of culture	-0.236		0.789
Bicycle infrastructure important when selecting home	-0.136		0.784
Bicycle parking behaviour			
Parking for a short stop not safely	-0.213		0.808
Parks bicycle safely for "normal stops"	0.198		1.219
Satisfied with bicycle parking at work (or school)	-0.374	**	0.688
Would like secured bicycle parking for winter	0.485	***	1.625

Cox & Snell R Square = 0.110
Nagelkerke R Square = 0.150
N=814

*** 99% significance
** 95% significance
* 90% significance

The previous model found three factors influencing the willingness to pay for secured bicycle parking at work location: Personal characteristics, cycling behaviour and bicycle parking behaviour.

Personal characteristics are part of the factors that can explain why some cyclists are willing to pay for the service and why some are not. In fact, the odds of being willing to pay for secured bicycle parking are 70% higher for cyclists with a high income (over $80,000). Further,

being older (over 50 years old) and having children at home also increase the odds, respectively by 39% and 23%. Some other personal characteristics, such as gender and possession of a driver's licence, were tested however those were not found to have effect on the model.

Cycling behaviour was also found to influence cyclists' willingness to pay for secured bicycle parking. Cycling to work or school more than 3 times a week (before Covid or during Covid) lowers the desire to pay for such a service by respectively 46% and 26%. This may be because since they cycle so much, having to pay every day for parking their bicycle could end up expensive. Further, workers who started cycling to work during covid are also less likely to pay for the service (by 59%). Cyclists who do not cycle when it rains are more inclined to be willing to pay for secured bicycle parking by 45%, this could be attributed to the fact that those cyclists might not want to leave their bicycle in the rain because of the potential damage that water can cause to bicycle. Furthermore, having a membership to Montréal's bike sharing system (BIXI) increases the odds of being willing to pay for the service by 57%. Those cyclists might use BIXI because it allows them not to stress about using their own bicycle (no fear that their bicycle will get stolen or damaged), secured bicycle parking might give them the same peace of mind. However, having bought its bicycle recently (less than 5 years ago) and owning a bicycle worth more than $1,000 increase the chance of paying for the service respectively by 47% and 30%. Cyclists who are interested in buying an electric bicycle are slightly more prone (by 19%) to be willing to pay for secured bicycle parking at work. However, surprisingly, already owing an E-Bike did not influence cyclists' willingness to pay for the service. If cycling is important in respondent's life (part of their culture) and if cycling infrastructure was important for them when they chose their home, those respondents are less inclined to be willing to pay for the service (by 22% for both).

Finally, current parking habits can also influence willingness to pay for secured bicycle parking. Cyclists who do not lock their bicycle safely (only to itself for example) are less willing to pay by 19%. In fact, if those cyclists do not go through the effort to lock properly their bicycle, there is no reason why they would pay for their bicycle to be secured. On the other hand, cyclists who take time to lock their bicycle properly when going to work or school have higher odds to be willing to pay for secured bicycle parking (by 22%). Also, people who are already satisfied with the available bicycle parking at their work (or school) will be less willing to pay for the service

(by 31%). Finally, wanting secured bicycle parking specifically for winter increases largely the chances of paying for such a service (by 62%). In fact, not having appropriate bicycle parking for winter (safe from weather) can be a major deterrent since rain, snow and ice can damage bicycles.

To obtain this model other variables (factors) from the survey were tested but were not retained since they did not ameliorate the model. For example, gender of the cyclists, years of cycling, working downtown were left out.

Implications for Secured Bicycle Parking

This model found some interesting characteristics of the potential secured bicycle parking users and what makes them willing to pay for it or not. Security from bad weather was mentioned previously to be an important characteristic for cyclists, it was also found to be a characteristic of the service that increase the odds of being willing to pay at least one dollar per day. Cyclists who would be more incline to pay for the service at their work location are high income workers, aged over 50 years old whit children at home who own a bicycle worth more than $1,000 and bought it less than 5 years ago.

Chapter 5 – Conclusion

This study found that four different types of cyclists exist in Montréal: the dedicated, the summer, the occasional and the leisure cyclists. They all have different habits and attributes which make them different potential types of users for secured bicycle parking. In fact, the city of Montréal could benefit from implementing secured bicycle parking facilities and some cyclists are willing to pay for it. However, to attract the most users as possible, the facilities need to be planned and implemented correctly. This section states recommendations that should be considered while planning for those facilities.

Recommendations

Though often omitted from the cycling literature, bicycle parking is a key aspect of cycling infrastructure that is essential to foster cycling cities. Findings from this report indicate that Montréal could benefit from secured bicycle parking. Indeed, believe that this infrastructure is important was relatively high across all cyclist typologies (range = 30.1% - 73.2%). This report can be used to inform policy recommendations, especially with regards to the location, price, and security of secured bicycle parking.

The five most important secured bicycle parking characteristics identified were consistent across typologies. They are being free, having a secured access, being close to the location, weather protection, and the duration the bicycle will be parked. The top three considerations: cost, secured access, and proximity, should be the primary focus of any implementation effort. Therefore, when it comes to implementing this service, firstly it is recommended that secured parking be offered for free or for as low a cost as possible to attract the largest number of users and to foster cycling. When asked directly how much respondents would be willing to pay to use this service, potential users are willing to pay $1.59 per day on average for secured bicycle parking at all destinations. Whilst they are willing to pay more, $2.25 per day, for this service at train stations. Secondly, the access to the facility should be secured, either with a pass, a code, or an app, as this was another top priority highlighted by respondents. Third, the distance between secured bicycle parking and cyclists' destinations seems to be an important aspect to consider as respondents are willing to walk 3.67 minutes on average (across cyclist typologies) to reach secured bicycle parking. This is not surprising given that more than half of the respondents stated they cycle for efficiency.

The fourth recommendation derived from this analysis is that bicycles in secured parking should be protected from bad weather, this characteristic could incite cyclists to use their bicycle in winter. Finally, the duration the bicycle will be parked was also found to be important. Not only did this influence how and where people lock their bicycles, it was also a key priority noted for secured bicycle parking.

Lastly, one good location to test secured bicycle parking facilities could be near works and schools. In fact, around 70% of the respondents were interested in having this facility at those locations, of them, 62% would even be willing to pay for it. If the facility must be charged, the potential users who would be willing to pay are likely over 50 years old, with high income (over $80,000) and would like to protect their bicycle during winter (amongst other things).

and Figure 11 show examples of existing secured bicycle parking that would fit the
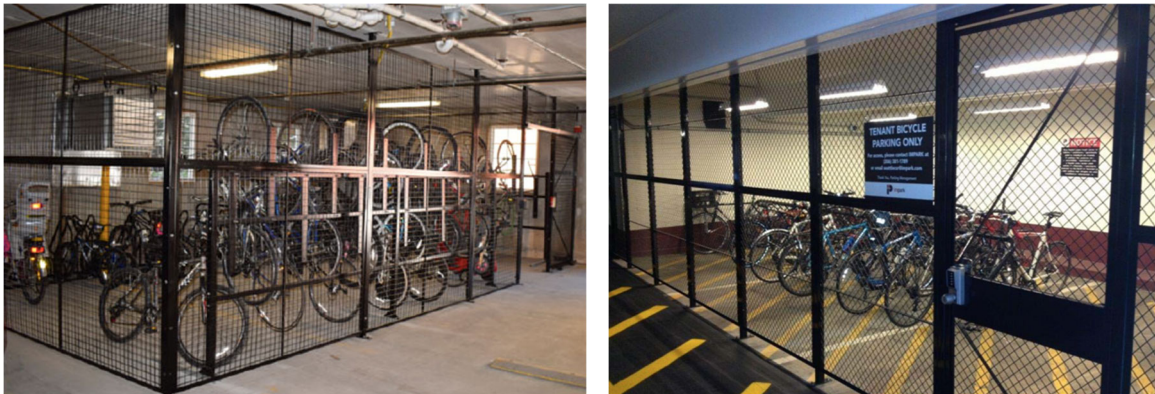
Figure 10 - Examples of inside bicycle parking

Figure 11 - Examples of outside secured bicycle parking

Discussion

A potential downside of secured bicycle parking, if they are charged for, is inequity. In fact, if a fee is required to use the facility, it is likely that cyclists with higher income will pay to secure their high valued bicycle. On the other hand, lower income cyclists may choose not spend money to park their bicycle, leaving it at greater risks of being stolen. These low-income cyclists might also rely heavily on their bicycle as a mean of transportation, and therefore be highly affected by it getting stolen compared to high-income cyclists who could more easily replace it or find other means of transportation. This was highlighted in chapter 4, where it was found that cyclists with higher income were more inclined to be willing to pay for the facility.

In a different section of the survey, respondents were asked to identify specific locations where they wish to see secured bicycle parking on the island of Montréal. Potential next steps could be to analyze those locations to recommend where the city should implement the parking to reach the most users as possible.

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Appendix A

The Survey

La section suivante nous aidera à mieux comprendre le comportement de déplacement des cyclistes montréalais.es. Les informations sur l'utilisation réelle du vélo, telles que la fréquence des trajets à vélo, les objectifs et les conditions qui affectent l'utilisation, peuvent soutenir les recommandations pour l'amélioration de l'infrastructure cyclable.

A1. Au cours de la dernière année, avez-vous effectué au moins un trajet à vélo à Montréal?

Oui, mais uniquement à des fins utilitaires (exemple: aller au travail, faire du magasinage, aller au restaurant)

Oui, mais uniquement à des fins récréatives (exemple: promenade sur le bord de l'eau, autour du quartier)

Oui, à des fins utilitaires et récréatives

Non, mais d'autres années oui

Non, je n'ai jamais utilisé un vélo

A2. Quelle est l'importance de ces facteurs dans votre décision de faire du vélo?

	Sans importance	Peu d'importance	Neutre	Important	Très important
Raisons de santé					
Raisons environnementales					
Faible coût du vélo					
C'est le moyen le plus rapide pour se rendre de A à B					
Flexibilité pour plusieurs déplacements					
Flexibilité de mon heure de départ					
Prévisibilité du temps de trajet					
Cela fait partie de mon identité / ma culture					
Faire du vélo est amusant					

A3. Pourquoi ne faites-vous pas du vélo actuellement?

Je ne me sens pas en sécurité à vélo

Je ne sais pas faire du vélo

Je n'ai pas eu besoin de me déplacer l'année dernière

Je ne me sens pas à l'aise à vélo

Je n'aime pas faire du vélo

Il y a trop de voitures aux alentours

Il y a trop de cyclistes aux alentours

La distance est trop longue pour atteindre ma destination souhaitée

Ma culture m'empêche de faire du vélo

Je n'aime pas arriver à destination après un effort physique

Je ne suis pas en forme Cela demande trop d'effort

Je n'ai pas les moyens d'acheter un vélo
Je ne peux pas emmener mes enfants avec moi
Il n'y a pas de place pour garer mon vélo
J'ai peur de me faire voler mon vélo
J'ai souvent trop de choses à porter
Je n'ai pas accès à un vestiaire à ma destination
Autre

A4. Pourquoi choisissez-vous de ne pas faire de vélo à des fins utilitaires (travailler, faire du magasinage, aller au restaurant) ?

Je n'ai pas eu besoin de me déplacer l'année dernière
Il y a trop de voitures aux alentours
Il y a trop de cyclistes aux alentours
La distance est trop longue pour atteindre ma destination souhaitée
Je n'aime pas arriver à destination après un effort physique
Il n'y a pas de place adéquate pour garer mon vélo
Cela demande trop d'effort J'ai peur de me faire voler mon vélo
J'ai souvent trop de choses à porter
Je n'ai pas accès à un vestiaire à ma destination
Je ne peux pas emmener mes enfants avec moi
Autre

Afin de nous aider à comprendre les compertements de déplacement ainsi que les besoins des résidents de Montréal et d'élaborer des recommendations éclairées sur la planification des infrastructures cyclistes à Montréal, s'il vous plaît veuillez indiquer votre lieu de résidence principale.

B1. Laquelle des méthodes suivantes préféreriez-vous utiliser pour nous fournir l'emplacement approximatif de votre lieu de résidence primaire?

Code postal de votre lieu de résidence
Placer une épingle sur une carte

B2. Veuillez entrer le code postal de votre résidence (par exemple: H3A 0C2):

B3. Placer une épingle sur la carte.

Afin de nous aider à comprendre les compertements de déplacement ainsi que les besoins des résidents de Montréal et d'élaborer des recommandations éclairées sur la planification des infrastructures cyclistes à Montréal, s'il vous plaît veuillez indiquer votre lieu de résidence principale.

C1. Au cours de la dernière semaine, combien de fois avez-vous visité les destinations suivantes... (Ne pas inclure le télétravail)

	1	2	3	4	5	6	7	8	9	…
travail										
école										
épicerie										
faire des courses (aller chez le médecin, aller à la bibliothèque)										
déposer et/ou chercher vos enfants à l'école ou d'autres activités										
activités de loisirs (comme manger au restaurant, faire du magasinage ou rencontrer des amis)										
Une promenade à pied ou une balade à vélo										

C2. Parmi les visites que vous venez de décrire, combien en avez-vous fait à vélo?

	1	2	3	4	5	6	7	8	9	…
travail										
école										
épicerie										
faire des courses (aller chez le médecin, aller à la bibliothèque)										
déposer et/ou chercher vos enfants à l'école ou d'autres activités										
activités de loisirs (comme manger au restaurant, faire du magasinage ou rencontrer des amis)										
Une promenade à pied ou une balade à vélo										

C3. Placez une épingle sur l'endroit où vous allez le plus souvent au travail.

C4. Est ce que votre travail et votre école sont au même endroit?

Oui
Non

C5. Placez une épingle sur la carte à la localisation de votre école.

D1. Durant une semaine typique de printemps ou d'été avant la pandémie, combien de fois par semaine visitiez-vous les destinations suivantes...

	1	2	3	4	5	6	7	8	9	…
travail										
école										

D2. Parmi les visites que vous venez de décrire durant une semaine typique de printemps ou d'été avant la COVID, combien en avez-vous fait à vélo?

	1	2	3	4	5	6	7	8	9	…
travail										
école										

D3. Est-ce que le lieu de travail que vous avez fourni plus tôt dans le sondage est le même que celui où vous vous rendiez avant la COVID?

Oui
Non

D4. Placez une épingle sur l'endroit où vous alliez le plus souvent au travail avant la pandémie.

D5. Est ce que votre travail et votre école était au même endroit?

Oui
Non

D6. Est-ce que l'école que vous avez identifié précédemment dans le questionnaire est la même que celle où vous vous alliez avant la pandémie?

Oui
Non

D8. Placez une épingle sur l'endroit où vous alliez le plus souvent à l'école avant la pandémie.

E1. Depuis combien d'années faites-vous du vélo régulièrement, i.e. plus d'une fois par semaine en beau temps?

je ne fais pas de vélo régulièrement
moins d'un an
1
2

3
4
5
6
7
8
9
10 ans ou plus

E2. Dans quelle mesure êtes-vous en accord avec les affirmations suivantes? Je ne fais pas de vélo quand:

	Fortement en désaccord	En désaccord	Neutre	En accord	Tout à fait en accord	N/A
Il fait trop chaud ou humide						
Il fait trop froid						
Il neige						
Ma destination est trop loin						
Il pleut						
Je pense qu'il sera difficile de trouver du stationnement à ma destination						
Je dois porter des sacs ou des charges lourdes						
La route que je dois emprunter est trop raide						
Je dois amener mes enfants						
J'ai peur que mon vélo soit volé à ma destination						

Cette section comprend deux questions sur l'intersection et le segment les plus dangereux à Montréal afin de mieux planifier les infrastructures cyclistes dans la ville.

F1. Y a t-il une intersection à Montréal que vous trouvez particulièrement dangereuse à traverser en tant que cycliste?

Oui
Non

F2. À l'aide de la carte suivante, veuillez indiquer quelle intersection à Montréal est la plus dangereuse à traverser en tant que cycliste?

F3. Y a-t-il une rue ou une section de rue dans Montréal qui pourrait bénificier d'une piste cyclable selon vous?

Oui
Non

F4. Selon vous, quel segment de rue à Montréal a le plus besoin d'une piste cyclable?

Entrez les noms des rues

La section suivante vous questionnera sur le type de vélo que vous possédez.

G1. Combien de vélos possédez-vous personnellement?

	1	2	3	4	5	6	7	8	9	…
Vélo régulier (route, montagne, hybride, cruiser…)										
Vélo électrique										
Vélo cargo										
Vélo électrique cargo										

La section suivante questionnerale type, le prix et le nombre de vélos en votre possession. Veuillez fournir des estimations précises pour vos dépenses liées au cyclisme.

H1. Quand avez-vous acheté votre vélo le plus récent (en années)?

Je ne me souviens plus
Moins d'un an
1
2
3
4
5
6
7
8
9
10
Plus de 10 ans

H2. Certains de vos vélos sont-ils enregistrés (avec garage529, SPVM, boutique de vélos)?

Oui
Non

H3. Quel type de vélo utilisez-vous le plus souvent pour vos déplacements utilitaires (aller au travail, à l'école, faire des courses...)?

Vélo régulier (route, hybride, montagne...)
Vélo électrique
Vélo Cargo
Vélo cargo-électrique
BIXI

H4. Quel est le prix approximatif que vous avez payé pour le vélo que vous utilisez actuellement le plus fréquemment à des fins utilitaires (exemple: aller au travail, faire du magasinage, aller au restaurant)?

Moins de 50 $
Entre 50 $ et 99 $
Entre 100 $ et 149 $
Entre 150 $ et 499 $
Entre 500 $ et 699 $
Entre 700 $ et 999 $
Entre 1000 $ et 1499 $
Entre 1500 $ et 1999 $
Entre 2000 $ et 4999 $
Plus que 5 000 $
Je ne sais pas

H5. Utilisez-vous le même vélo pour vos déplacements utilitaires et récréatifs?

Oui
Non

H6. Quel type de vélo utilisez-vous le plus souvent pour vos déplacements récréatifs (exemples: balades pour le plaisir, promenade le long d'une rivière ou autour de votre maison)?

Vélo régulier (route, montagne, hybride...)
Vélo électrique
Vélo cargo
Vélo cargo-électrique
BIXI

H7. Quel est le prix approximatif que vous avez payé pour le vélo que vous utilisez le plus fréquemment à des fins récréatives (exemple: balade de plaisir sur le bord de l'eau, balade autour du quartier)?

Moins de 50 $
Entre 50 $ et 99 $
Entre 100 $ et 149 $
Entre 150 $ et 499 $
Entre 500 $ et 699 $
Entre 700 $ et 999 $
Entre 1000 $ et 1499 $
Entre 1500 $ et 1999 $
Entre 2000 $ et 4999 $
Plus que 5 000 $
Je ne sais pas

H8. Avez-vous des considérations particulières concernant le verrouillage de votre vélo électrique et /ou vélo cargo? Si oui, veuillez les décrire ici:

I1. Envisageriez-vous acheter un vélo électrique (ou un autre si vous en possédez déjà un)?

Oui
Non

I2. Envisageriez-vous d'acheter un vélo électrique s'il était subventionné par le gouvernement (ou un autre si vous en possédez déjà un)? Un vélo électrique coûte environ 2000$.

Oui
Non

I3. Pensez-vous que les vélos électriques devraient être subventionnés par le gouvernement? Un vélo électrique coûte environ 2000$.

Oui
Non

I4. Dans quelle mesure pensez-vous que le gouvernement devrait subventionner les vélos électriques (en %) en supposant qu'un vélo électrique coûte environ 2000$?

5% 10 % 15 % 20 % 25 % 30 % 35 % 40 % 45 % 50 % 55 % 60 % 65 % 70 % 75 % 80 % 85 % 90 % 95 % 100 %

I5. Pourquoi avez-vous acheté votre vélo électrique / vélo cargo?

Pour mieux transporter mes enfants
Pour mieux transporter mes affaires
Pour parcourir des plus grandes distances
Pour monter les côtes plus facilement
Je trouve l'utilisation d'un vélo trop difficile physiquement
Autre

I6. Est-ce qu'une des raisons suivantes vous empêche d'acheter un vélo électrique? Un vélo électrique coûte environ 2000$.

Prix
Entreposage
Je crains que mon vélo se fera volé
Je n'ai pas besoin d'un vélo électrique présentement
Autre

J1. À quand remonte la dernière fois que votre vélo a été volé à Montréal ? (sélectionnez jamais si vous n'avez jamais fait voler votre vélo)

Dans la dernière année
Dans les 2 à 5 dernières années
Dans les 6 à 10 dernières années
Il y a plus de 10 ans
Jamais

J2. La dernière fois que votre vélo a été volé à Montréal, où a eu lieu le vol? Veuillez ajuster le zoom et faire glisser l'épingle jusqu'à l'endroit approximatif du vol.

J3. Est-ce que votre vélo volé était enregistré (avec garage529, SPVM, boutique de vélos...)?

Oui
Non

J4. Avez-vous signalé le vélo volé à la police?

Oui
Non

J5. Est-ce que vous avez pu récupérer votre vélo volé?

Oui
Non

J6. Pensez-vous que quelque chose aurait pu prévenir le vol de votre vélo? (ex: programmes, règlements, différentes habitudes)

La section suivante porte sur le stationnement à vélo, incluant les habitudes de verouillage, les emplacements, ainsi que la satisfaction des montréalais face à l'offre de stationnement à vélo dans la ville. Cette section nous éclairera sur les habitudes et les besoins des montréalais vis à vis le stationnement à vélo. Cette section concerne les stationnements à vélos que nous retrouvons présentement à Montréal tel que:

K1. Où garez-vous votre vélo à la maison?

Je l'apporte dans ma maison / mon appartement
Dans ma cour ou mon garage
Dans un espace dédié de mon immeuble
Sur un stationnement dans la rue

K2. Veuillez classer votre niveau global de satisfaction concernant de la disponibilité des stationnements pour vélos dans les secteurs suivants à Montréal:

	Très insatisfait	Insatisfait	Neutre	Satisfait	Très satisfait	N/A
Aux stations de métro (STM)						
À une gare de train (Exo)						
Proche de votre domicile						
Proche de votre travail / école						
Au centre-ville						
Proche d'une épicerie ou d'un magasin						

K3. Où garez-vous votre vélo quand vous allez à une destination habituelle (travail, école, achats)?

Tout ce qui est disponible pour le verrouiller à proximité de ma destination (par exemple un arbre, un banc, une clôture, etc.)
Verrouillé uniquement sur lui-même près de ma destination
Un support à vélos (tel que présenté précédemment), même si cela signifie que je dois le garer un peu loin de ma destination
Je l'emmène avec moi dans le bâtiment où je vais
Autre

K4. Croyez-vous qu'il y a un besoin pour des stationnements pour vélos supplémentaires à Montreal dans un secteur en particulier?

Oui
Non

K5. À l'aide de la carte suivante, veuillez identifier l'endroit où vous ajouteriez un nouveau stationnement extérieur pour vélos en priorité, car vous estimez qu'il y a un besoin (épingle sur la carte).

K6. Lorsque vous effectuez un arrêt rapide (faire une petite course, s'arrêter dans un parc etc.) pendant un déplacement, où garez-vous votre vélo?

Tout ce qui est disponible pour le verrouiller à proximité de ma destination (par exemple un arbre, un banc, une clôture, etc.)

Verrouillé uniquement sur lui-même près de ma destination

Un support à vélos (tel que présenté précédemment), même si cela signifie que je dois le garer un peu loin de ma destination

Je l'emmène avec moi dans le bâtiment où je vais

Je ne m'arrête jamais pendant mes déplacements à vélo

Autre

K7. Avez-vous des suggestions pour la Ville afin d'améliorer les stationnements extérieurs à vélos à Montréal (vous pouvez n'en indiquer aucune, si vous n'avez pas de suggestions)?

Il existe différents types de stationnements sécurisés à vélos. Certains sont individuels, certains sont collectifs, certains protègent des intempéries, d'autres non... Voici quelques exemples de stationnements à vélo sécurisés que l'on peut trouver dans d'autres villes. La Ville de Montréal envisage de fournir des installations similaires, donc vos réponses à la section suivante guideront ces efforts.

L1. Dans les situations suivantes, dans quelle mesure est-il important pour vous de rechercher un stationnement à vélos sécurisé? (Indiquez N/A si vous n'utilisez pas un vélo dans une de ces situations)

	Sans importance	Peu important	Neutre	Important	Très Important	N/A
Aux stations de métro (STM)						
À une gare de train (Exo)						
Proche de votre domicile						
Proche de votre travail / école						

L2. Veuillez classer au moins trois des facteurs suivants par ordre d'importance quand vous recherchez un stationnement à vélos sécurisé aux stations de métro (STM).

Être gratuit ou à faible coût

Protection contre les intempéries

Accès sécurisé (code ou clé requis pour y accéder)

Proximité de la station de métro

Durée pendant laquelle votre vélo est stationné

Présence d'un individu vérifiant les vélos en tout temps

Casier individuel (n'est pas partagé avec d'autres vélos)

Situé à l'intérieur d'un bâtiment

L3. Combien de temps seriez-vous prêt.e à marcher pour ce service à une station de métro (STM)?

0 Min

1 Min

2 Min

3 Min

4 Min

5 Min

10 Min
15 Min
20 Min
25 Min
30 Min
35 Min
40 Min
45 Min
50 Min
55 Min
60 Min

L4. Quel est le montant maximal que vous seriez prêt.e à payer pour ce service à une station de métro (STM), (s'il vous plaît choisir zéro si vous n'êtes pas prêt à payer)?

0 $/jour
1 $/jour
2 $/jour
3 $/jour
4 $/jour
5 $/jour
6 $/jour
7 $/jour
8 $/jour
9 $/jour
10 $/jour
11 $/jour
12 $/jour
13 $/jour
14 $/jour
15 $/jour

L5. Veuillez classer au moins trois des facteurs suivants par ordre d'importance quand vous recherchez un stationnement à vélos sécurisé à une gare de train (exo).

Être gratuit ou à faible coût
Protection contre les intempéries
Accès sécurisé (code ou clé requis pour y accéder)
Proximité de la station de métro
Durée pendant laquelle votre vélo est stationné
Présence d'un individu vérifiant les vélos en tout temps
Casier individuel (n'est pas partagé avec d'autres vélos)
Situé à l'intérieur d'un bâtiment

L6. Combien de temps seriez-vous prêt.e à marcher pour ce service à une gare de train (exo)?

0 Min
1 Min
2 Min
3 Min
4 Min
5 Min
10 Min

15 Min
20 Min
25 Min
30 Min
35 Min
40 Min
45 Min
50 Min
55 Min
60 Min

L7. Quel est le montant maximal que vous seriez prêt.e à payer pour ce service à la gare de train (exo) (veuillez choisir zéro si vous n'êtes pas prêt à payer)?

0 $/jour
1 $/jour
2 $/jour
3 $/jour
4 $/jour
5 $/jour
6 $/jour
7 $/jour
8 $/jour
9 $/jour
10 $/jour
11 $/jour
12 $/jour
13 $/jour
14 $/jour
15 $/jour

L8. Veuillez classer au moins trois des facteurs suivants par ordre d'importance quand vous recherchez un stationnement à vélos sécurisé à proximité de votre domicile.

Être gratuit ou à faible coût
Protection contre les intempéries
Accès sécurisé (code ou clé requis pour y accéder)
Proximité de la station de métro
Durée pendant laquelle votre vélo est stationné
Présence d'un individu vérifiant les vélos en tout temps
Casier individuel (n'est pas partagé avec d'autres vélos)
Situé à l'intérieur d'un bâtiment

L9. Combien de temps seriez-vous prêt.e à marcher jusqu'à ce service près de chez vous?

0 Min
1 Min
2 Min
3 Min
4 Min
5 Min
10 Min

15 Min
20 Min
25 Min
30 Min
35 Min
40 Min
45 Min
50 Min
55 Min
60 Min

L10. Quel est le montant maximal que vous seriez prêt.e à payer pour ce service près chez vous (veuillez choisir zéro si vous n'êtes pas prêt à payer)?

0 $/jour
1 $/jour
2 $/jour
3 $/jour
4 $/jour
5 $/jour
6 $/jour
7 $/jour
8 $/jour
9 $/jour
10 $/jour
11 $/jour
12 $/jour
13 $/jour
14 $/jour
15 $/jour

L11. Veuillez classer au moins trois des facteurs suivants par ordre d'importance quand vous recherchez un stationnement à vélos sécurisé à proximité de votre travail ou école.

Être gratuit ou à faible coût
Protection contre les intempéries
Accès sécurisé (code ou clé requis pour y accéder)
Proximité de la station de métro
Durée pendant laquelle votre vélo est stationné
Présence d'un individu vérifiant les vélos en tout temps
Casier individuel (n'est pas partagé avec d'autres vélos)
Situé à l'intérieur d'un bâtiment

L12. Pendant combien de temps seriez-vous prêt à marcher jusqu'à ce service près de votre lieu de travail / école?

0 Min
1 Min
2 Min
3 Min
4 Min
5 Min
10 Min

15 Min
20 Min
25 Min
30 Min
35 Min
40 Min
45 Min
50 Min
55 Min
60 Min

L13. Quel est le montant maximal que vous seriez prêt à payer pour ce service à proximité de votre lieu de travail / école (veuillez choisir zéro si vous n'êtes pas prêt à payer)?

0 $/jour
1 $/jour
2 $/jour
3 $/jour
4 $/jour
5 $/jour
6 $/jour
7 $/jour
8 $/jour
9 $/jour
10 $/jour
11 $/jour
12 $/jour
13 $/jour
14 $/jour
15 $/jour

L14. Est-ce que la présence de stationnements à vélos sécurisés et protégés contre les intempéries augmenterait les chances que vous utilisiez votre vélo en hiver?

Oui, je vais commencer à faire du vélo l'hiver grâce aux stationnements sécurisés et protégés
Oui, je fais déjà du vélo l'hiver mais cela ferait en sorte que j'en ferais davantage Non, je fais déjà du vélo l'hiver
Non, même avec les des stationnements à vélos sécurisés et protégés contre les intempéries je ne ferais pas de vél en hiver

L15. Dans quelle mesure êtes-vous d'accord avec l'énoncé suivant: avoir un stationnement à vélos sécurisé à Montréal augmentera ma probabilité d'acheter et d'utiliser un vélo électrique ou un vélo cargo.

Entièrement en désaccord
En Désaccord
Neutre
En accord
Entièrement en accord

L16. Y a-t-il un endroit à Montréal où vous aimeriez spécialement voir un stationnement sécurisé?

Oui

Non

L17. À l'aide de la carte suivante, veuillez identifier l'endroit où vous aimeriez le plus voir un stationnement à vélos sécurisé installé à Montréal.

L18. Seriez-vous plus enclin à rechercher un stationnement pour vélos sécurisé pendant que vous utilisez votre vélo électrique et / ou votre vélo cargo?

Oui, je serais prêt à marcher plus loin pour rechercher un stationnement sécurisé pour mon vélo électrique / vélo cargo

Oui, je serais prêt à payer plus pour un stationnement sécurisé pour mon vélo électrique / vélo cargo

Oui, je serais prêt à payer plus et marcher plus loin pour un stationnement sécurisé pour mon vélo électrique / vélo cargo

Non, faire du vélo électrique / vélo cargo n'a aucun impact sur mon désir de stationnement sécurisé

L19. Avez-vous d'autres suggestions, commentaires ou inquiétudes à soulever concernant les stationnements sécurisés à Montréal? Est-ce qu'il y a des aspects que nous avons oublié? (vous pouvez n'en indiquer aucun, si vous n'avez pas de suggestions)

La section suivante nous aidera à mieux comprendre les caractéristiques sociales et démographiques de la population cycliste de Montréal. Ces informations peuvent nous permettre de formuler des recommandations sur de nouveaux investissements cyclistes adaptés aux personnes qu'ils affecteront le plus.

M2. En quelle année êtes-vous né.e?

M1. Vous êtes un.e:

Femme
Homme
Femme transgenre
Homme transgenre
Non-Binaire
Genre fluide
Agenré
Autre

M3. Où êtes-vous né.e? Veuillez sélectionner le pays:

M4. Lorsque vous avez déménagé.e dans votre résidence actuelle, quelle a été l'importance des facteurs suivants dans votre décision?

	Sans importance	Peu important	Neutre	Important	Très Important
Proximité du travail / école					
Infrastructure cyclable dans mon quartier					
Piste cyclable direct de mon domicile à mon travail / école					
Proximité des commerces et services					
Proximité des transports publics					
Quartier calme					
Quartier animé					
Proche de la famille ou des amis					
Maison spacieuse					

M6. À quel étage habitez-vous?

Sous-sol
Rez-de-chaussée
Deuxième étage
Troisième étage
Quatrième étage ou plus

M7. Êtes-vous (ou un membre de votre résidence):

Locataire
Propriétaire

M8. Combien de personnes vivent dans votre résidence, y compris vous- même?

1
2
3
4
5
6
7
8
9
10 ou plus

M9. Y a-il des enfants de moins de 18 ans vivant dans votre domicile (17 ans ou moins)?

Oui
Non

M10. Combien d'enfants de moins de cinq ans (quatre ans ou moins) compte votre domicile?

0
1
2
3
4
5 ou plus

M11. Combien d'enfants âgés entre 5 et 12 ans compte votre domicile?

0
1
2
3
4
5 ou plus

M12. Combien d'enfants âgés entre 13 et 17 ans compte votre domicile?

0
1
2
3
4
5 ou plus

M13. En 2019, aviez-vous un:

Permis de conduire
Abonnement BIXI
Abonnement à un service de partage d'autos
Abonnement mensuel STM, RTL, STL, Exo

M14. Quel était le revenu annuel de votre domicile en 2019?

20000 $ ou moins
Entre 20 001 $ et 40 000 $
Entre 40,001 $ et 60,000 $
Entre 60,001 $ et 80,000 $
Entre 80,001 $ et 100,000 $
Entre 100,001 $ et 120,000 $
Entre 120 001 $ et 150 000 $
Plus de 150 00$
Je préfère ne pas répondre

M15. Vous êtes:

Employé.e à temps plein
Employé.e à temps partiel
Étudiant.e
Au chômage - à la recherche de travail
À la maison
À la maison avec mes enfants
Retraité.e
Autre

M16. Quel est le niveau de scolarité le plus élevé que vous ayez atteint?

Pas d'éducation formelle
École primaire
École secondaire
CEGEP
Diplôme universitaire de premier cycle
Études supérieures
Autre

N1. Comment avez-vous entendu parler de cette enquête?

Liste de diffusion TRAM
Invitation de l'Agence de Mobilité Durable
Invitation Jalon
Infolettre Vélo Québec
Article de journal
Facebook
Twitter
Instagram
Autre

N2. Seriez-vous intéressé.e à participer à d'autres sondages menés par le groupe Transportation Research at McGill (TRAM) à l'avenir?

Oui
Non

N3. Veuillez entrer votre adresse courriel veuillez noter que les adresses courriel sont séparées du reste des réponses et enregistrées à part pour des fins de confidentialité:

N4. Avez-vous des préoccupations liées au vélo à Montréal et au stationnement pour vélos dont nous n'avons pas discuté dans le sondage et sur lesquelles vous aimeriez attirer notre attention (vous pouvez n'en indiquer aucune, si vous n'avez pas de suggestions)?