

# Added Item 6.2(c)

June 16, 2020

Dear Chair Danko and Members of Council,

I am a graduate student at McMaster University in the Master of Public Health program. My thesis research explores how the built environment in Hamilton (e.g., neighbourhoods, streets, parks, etc.) influences cycling, with a focus on route choice preferences. Over the past year, I have collected and analyzed data in Hamilton from travel surveys, street audits, and interviews to better understand how cyclists perceive the built environment and how they travel through the city.

I am writing today to share a policy brief in response to the *COVID-19 Recovery Phase Mobility Plan*. The purpose of this policy brief is to help the City of Hamilton better understand the needs and preferences of cyclists and to share local research findings that can inform mobility plans and actions moving forward, both in response to the COVID-19 pandemic and for future policies and infrastructure. Recommendations to support and encourage more cycling for transport in Hamilton are outlined as well.

Cities across Canada are implementing bold plans to prioritize cycling as a way for people to be physically active and get around while maintaining physical distance, particularly with reduced vehicular trips and public transit capacity. The City of Hamilton has a window of opportunity to do the same. It is crucial that the city ensure access to protected and connected infrastructure for Hamiltonians to make essential trips and to prevent an increase in private vehicle use.

Supporting and encouraging cycling as a viable mode of transport should be a priority for the City of Hamilton moving forward to our new reality and beyond.

Thank you for the opportunity to share findings from my research in Hamilton.

Best regards,

Elise Desjardins, BSc.  
Master of Public Health (candidate)  
Department of Health Research Methods, Evidence, and Impact  
Faculty of Health Sciences  
McMaster University  
1280 Main Street West | Hamilton, ON L8S 4S4



Policy Brief – June 2020

# Inviting More Cycling In Hamilton's New Normal: Action needed now to support and encourage cycling for transport

By: Elise Desjardins, BSc., MPH (candidate)

## Key Points

- From 2011 to 2016, cycling levels increased two-fold in Hamilton. More than 35% of current trips can potentially be cycled.
- Cyclists in Hamilton prefer quiet streets with low volumes of cars, multi-use trails, and protected infrastructure that minimizes interactions with traffic.
- The City of Hamilton should promote and encourage cycling for transport in their COVID-19 recovery plans and future mobility plans through policy and infrastructure.
- Creating cycling routes that feature streets with low volumes of cars, multi-use trails, or protected infrastructure and that connect to essential destinations is a recommended strategy to make cycling safer and while ensuring physical distancing.
- Existing infrastructure should be upgraded with additional protection to make it safer for all ages and abilities.

## Introduction

Cycling for transport provides health, environmental, and economic benefits to cities in the Greater Toronto-Hamilton area [1]. A city's built environment, which includes among many factors its neighbourhoods, streets, parks, buildings, and infrastructure, is known to influence cycling. As such, the design of our communities has direct impacts on health and transport choices [2]. Cycling represents approximately 1.2% of all trips in Hamilton [3]. This is a two-fold increase from 2011, confirming that cycling is on the rise in Hamilton. More than 35% of current trips in our city can potentially be cycled [4].

The City of Hamilton's *COVID-19 Recovery Plan* notes "there has been a significant decline in traffic congestion, fewer people using public transit, a lower demand for parking, and less use of taxis and ride share programs" as a result of the pandemic [5]. It is encouraging that the City acknowledges that the pandemic may lead to modal shifts – restrictions on the number of customers on HSR transit, for example, may prompt more people to cycle in Hamilton. The City now has a window of opportunity to rebalance streets and ensure access to protected and connected infrastructure that will enable residents to practice physical distancing while cycling for essential trips and also prevent an increase in private vehicle use.

The purpose of this policy brief is to help the City of Hamilton better understand the needs and preferences of cyclists and to share local research findings that can inform mobility plans and actions moving forward, both in response to the COVID-19 pandemic and for future policies and infrastructure. Recommendations to support and encourage more cycling for transport are outlined below.





# Inviting More Cycling in Hamilton's New Normal: Action needed now to support and encourage cycling

## Research Questions and Approaches

What built environment factors influence cycling in Hamilton?  
How do cyclists perceive and navigate the built environment?

A travel behaviour model was estimated to investigate the influence of specific built environment variables on cycling trips. Interviews were also conducted with Hamiltonians who regularly cycle to understand and describe their experiences.

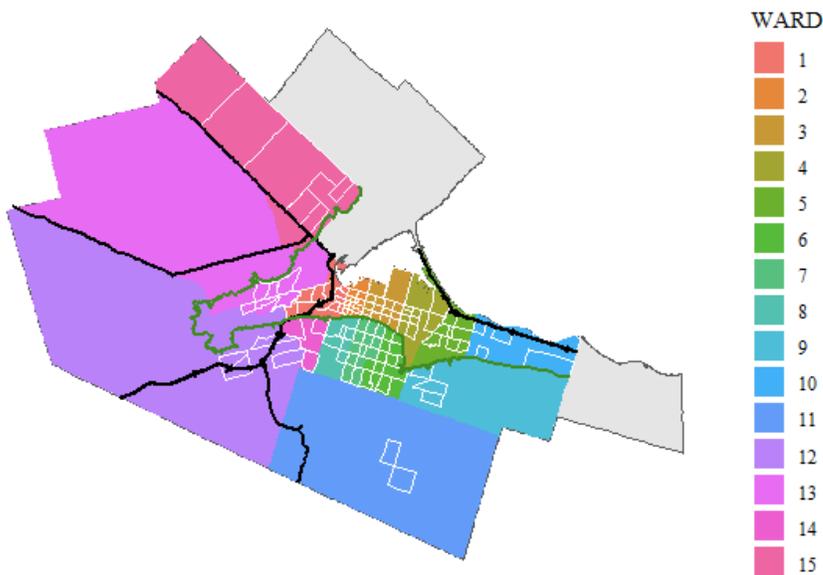


Figure 1. Traffic zones in Hamilton (outlined in white) that generated at least one bicycle trip according to the 2016 *Transportation Tomorrow Survey* responses. Ward boundaries are also indicated.



Figure 2. Number of trips produced by each traffic zone (outlined in white), according to the 2016 *Transportation Tomorrow Survey* responses, included in the analysis. Zones with darker shades of blue indicate a greater number of bicycle trips recorded. Conversely, zones with lighter shades of blue had fewer bicycle trips recorded.

## Results

Responses from the 2016 *Transportation Tomorrow Survey* [4] were analyzed to explore cycling patterns in Hamilton and answer the first research question. All wards generated cycling trips [Figure 1]. Cycling is particularly popular in the lower city, on the mountain, and in areas of Dundas and Ancaster [Figure 2]. The model that estimated the influence of built environment variables (such as population density, commercial locations, etc.) on the level of cycling found that availability of jobs attracted bicycle trips. Likewise, the model also showed that the number of trips increases with institution and residential land use at the destination.

The model suggests that shortest distance quiet routes best explain travel by bicycle in Hamilton. This means that bicyclists usually select routes that allow them to avoid traffic while using residential streets. In addition, the analysis revealed that approximately 78% of bike trips are 5 km or less and nearly half of all trips are 2.5 km or less. Finally, the analysis suggests that there are two distinct zones of cycling given the topography of the city. Cycling trips tends to happen in two self-contained regions, namely the lower-city and mountain/rural areas. Regardless of the area where cycling trips occur, cycling is a mode of transport that Hamiltonians choose to use across the city.

Bicyclists who were interviewed report that they cycle for different trip purposes - to work, for errands, to visit friends and family, and to bring their children to school or daycare. Participants in this study report that they have experience cycling in Wards 1 to 8, and 12 to 14. All agreed or strongly agreed that the built environment influences the routes they choose to travel. The interviews confirmed what our model suggested - that bicyclists usually select routes that allow them to avoid traffic while using residential streets that have pleasant environments.



## Inviting More Cycling in Hamilton's New Normal: Action needed now to support and encourage cycling

Cyclists report choosing routes that feature quiet streets with low volumes of cars, multi-use trails, or protected infrastructure that enable them to minimize interactions with traffic. Some participants report going out of their way to take a preferred route, like the Waterfront Trail or one with protected infrastructure, or to avoid streets that have a lot of cars. Streets that have separated infrastructure, connect to destinations, have green space, or little traffic are perceived to be safe and enjoyable to cycle. Streets that are one-way, have three or more lanes, high volume of cars, or zero cycling infrastructure are perceived to be unsafe or unpleasant. Cyclists reported avoiding similar roads. Many arterial roads, for instance King St., Main St., and Aberdeen Ave., were identified by several participants as "highways" and unpleasant places to cycle because there is no space for them to do so safely. Parents who cycle with their children report that most streets are not safe and that protected infrastructure should be enhanced for their children to use it. As such, parents cycle with their children predominantly on residential streets or trails because there are no safer alternatives. Some female cyclists report that adequate lighting is important to increase their visibility and safety. Although bike share was not a focus of this study, one third of participants reported using SoBi to get to work or for one way trips. This highlights that bike share is an important component of the city's cycling infrastructure.



Figure 3. A positively perceived cycle route segment with a separated bicycle lane on a traffic-calmed street.



Figure 4. A negatively perceived cycle route segment with a signed route on a four-lane minor arterial road.

### Policy and Infrastructure Recommendations

#### Responding to COVID-19

- Upgrade existing separated bike lanes with additional protective measures and lighting.
- Create temporary bike lanes or close quiet streets to local traffic only to allow Hamiltonians to cycle while practicing safe distance. These changes can be implemented on parallel routes to busy corridors as a way to relieve pressure.
- Continue offering bike share as an essential service in the existing area.
- Enhance connections to trails. These are assets in the city's transportation network that also connect cyclists to nature.

#### Permanent Solutions

- Adopt *All Ages & Abilities* guidelines for planning and building cycling infrastructure. *Share the Road Cycling Coalition* made similar recommendations to the City of Hamilton's Public Works Committee in September 2019 for the city to get to the gold level of the Bicycle-Friendly Community award [6].
- Commit to building only protected infrastructure that is safe for all residents, particularly children and older adults.
- Ensure adequate supply of bike parking at essential destinations.



# Inviting More Cycling in Hamilton's New Normal: Action needed now to support and encourage cycling

## Implications

This research suggests that Hamilton is still transitioning to a more bike-friendly city and that there are concrete actions that the City can take to support and encourage more cycling. The increased modal share of bike trips from 2011 to 2016 indicates that the city's current actions to grow the cycling network and offer bike share have been effective but more can be done to continue this growth. Innovative programs like *Mountain Climber* facilitate the ability to cycle between the lower city and mountain area, which already addresses one main finding of this study. This is one example of the city making positive changes in right direction.

The preferences of cyclists in this study align with the preferences of people who cycle less frequently or who are interested in cycling but are concerned for their safety [7, 8]. A survey conducted in Ottawa found that 33% of people fall into that latter category [8], which would be a reasonable estimate for Hamilton as well. Therefore, the policy and infrastructure recommendations outlined above will likely be appealing to both people who currently cycle in Hamilton and people who may be inclined to switch modes in our new reality during and after the COVID-19 pandemic. This is a positive finding because it suggests that planning with these needs in mind will have a large impact. Such changes could prove to be effective in facilitating the 35% of current trips that could

potentially be cycled in the city. The recommendations are also feasible city-wide. Inviting more Hamiltonians of all ages and abilities to cycle is an important step to achieve the City's vision.

## Conclusion

Supporting and encouraging cycling as a viable mode of transport should be a priority for the City of Hamilton moving forward to our new reality and beyond. This policy brief has offered key direction to inform how the City can respond to and support changing mobility trends during a physically distanced time, as well as how the City can rebalance our streets for a healthier and more sustainable future.

## Areas Needing Enhancements

This a selection of areas that have been identified by cyclists in this study as needing to be safer, upgraded to protected infrastructure, or more connected to the cycling network to facilitate essential trips:

- King St. cycle track crossing at Hwy 403
- Dundurn St. between Main & King
- Lawrence Rd. bike lanes
- Stinson St. between Victoria & Wellington
- Hunter St. gap in the bike lane
- Longwood Rd. S. bridge over 403
- Bay St. bike lanes

## References

[1] Mowat, D et al. (2014). *Improving Health by Design in the Greater Toronto-Hamilton Area: A Report of the Medical Officers of Health in the GTHA*. <https://bit.ly/36yXEQI>

[2] Tam, T. (2017). *The Chief Public Health Officer's Report on the State of Public Health in Canada, 2017: Designing Healthy Living*. <https://bit.ly/3c0knpC>

[3] University of Toronto - Data Management Group. (2016). *Transportation Tomorrow Survey*. <https://bit.ly/2APsW9Z>

[4] City of Hamilton. (2020). *Hamilton Reopens: A roadmap to our new reality*. <https://bit.ly/2ASApOJ>

[5] Mitra, R et al. (2016). *Cycling Behaviour and Potential in the Greater Toronto-Hamilton Area*. <https://bit.ly/2A01bMZ>

[6] Share the Road Cycling Coalition. (2019). *Hamilton is a Bicycle-Friendly Community*. <https://bit.ly/2A2KMgc>

[7] Winters, M et al. (2010). *Route Preferences Among Adults in the Near Market for Bicycling: Findings of the Cycling in Cities Study*. <https://bit.ly/2yvbMO9>

[8] R. A. Malatest & Associates Ltd. (2013). *City of Ottawa Commuter Attitudes Survey*. <https://bit.ly/3es3olt>



## HEALTH SCIENCES

Masters of Public Health

**Author Details:**  
Elise Desjardins, BSc.

Master of Public Health candidate

Department of Health Research Methods, Evidence, & Impact

McMaster University

**Contact:**  
[desjae@mcmaster.ca](mailto:desjae@mcmaster.ca)

Readers are encouraged to quote or reproduce material from this policy brief for their own publications, but the author requests due acknowledgement and a copy of the publication.