

## A Brief Literature Review of Transportation Barriers and Adaptations

Mobilizing Justice Theme 2 | Meghan Winters, Soojung Han, Kara Martin, Kate Hosford, Nancy Smith Lea, Kevin Manaugh, Nicholas Klein

### OVERVIEW

The Mobilizing Justice Transportation Modes Working Group conducted a literature review to explore the transportation barriers people face and how they adapt. We were particularly interested in understanding the experiences of equity-deserving communities when trying to access desired destinations. This type of evidence can help us better understand the challenges that people in Canada face when getting around, how they manage, and how to make transportation systems more inclusive moving forward. This brief review provides a starting point for more in-depth research on specific modes or population groups of interest. Our intended audience for this brief is transportation planners and policy makers, and other Mobilizing Justice researchers.

### METHODS

We searched three existing databases on transportation equity from May to August 2022.<sup>1-3</sup> We selected articles that focused on a diversity of equity-deserving groups and a range of transportation modes. In total we reviewed 32 articles and extracted data related to:

- **The transportation barrier:** identifying if the barrier was framed as a built environment, social, or individual barrier.
- **The adaptation:** identifying if the article indicated coping mechanisms people make in response to the transport barrier. Adaptations could either mitigate transport-related social exclusion (e.g., carpooling with friends or family members) or exacerbate it (e.g., not leaving home to participate in social events).
- **The population:** identifying if data was specific to an equity-deserving group, for example, children and youth, housing insecure, Indigenous, low income, newcomers, people with disabilities, racialized, older adults, women and girls, or 2SLGBTQ+.
- **The mode of transportation:** if relevant, identifying the mode that the barrier or adaptation related to, for example, motor vehicle, public transportation, bicycle, walking, etc.

The database that contains the 32 articles can be found [here](#). In this brief we summarize articles that discussed transportation barriers for people from equity-deserving communities as well as adaptations. We compiled select barriers and adaptations into a table format (Table 1). To identify systems-level changes that could address these barriers, we included a column with policy suggestions, based on points made in the literature and reflections from the author team.

## FINDINGS

### Barriers

Barriers related to the built environment included the trade-off between housing costs and proximity to public transit.<sup>4-6</sup> In large cities, housing costs in locations where there is good access to public transit are often more expensive. As a result, people are faced with deciding between staying in central locations with transit options and many social and work opportunities, or moving further into suburban or exurban locations that are more car-dependent.<sup>5</sup> Other built environment barriers related to infrequent transportation services,<sup>7,8</sup> a lack of infrastructure for cycling,<sup>9</sup> and challenges navigating sidewalks with snow.<sup>10,11</sup>

Individual barriers related to people's individual situations, such as no longer being able to drive,<sup>8,12</sup> health challenges,<sup>12</sup> or long commutes between home and work.<sup>6</sup> These challenges often resulted in making fewer trips or foregoing trips altogether, especially those for social and leisure purposes.<sup>8,12</sup>

Social barriers related to experiences of harassment and discrimination on the street and time-space constraints of caregiving. In response to harassment experienced while cycling or taking public transit, adaptations people made included avoiding travelling certain areas or times of day,<sup>13-15</sup> coordinating pick up times at bus stops with family members during unsafe hours,<sup>14</sup> or wearing gender-neutral clothes to avoid harassment.<sup>13</sup>

### Adaptations

While adaptations to transportation barriers varied based on the particular barrier, population, and/or mode, a common theme across articles was the trade-offs people had to make between time, costs, and safety. A common adaptation was foregoing travel altogether, in particular social trips. This came up for older adults,<sup>8,16,17</sup> caregivers,<sup>14</sup> newcomers,<sup>18</sup> and students.<sup>6</sup> The adaptations identified in this review were most often personal accommodations made at the expense or benefit of the individual.

**Table 1. Research Evidence on Reported Transportation Barriers and Adaptations Across Population Groups**

	Transportation barriers	Adaptations (Population group the research focused on in bold)	Policy suggestions
Built environment	High housing costs in areas with greater access to transportation	<ul style="list-style-type: none"> <li>Living in areas with more affordable housing or where social supports are available but where there is limited public transport access – <b>low-income households</b>,<sup>5</sup> <b>new immigrants</b><sup>4,18</sup>,</li> <li>Walking to get around even though it takes longer – <b>new immigrants</b><sup>4</sup></li> </ul>	<ul style="list-style-type: none"> <li>Distribute affordable housing across the city.</li> <li>Ensure daily necessities and basic services can be easily reached by a 15-minute walk or bike ride from any point in the city.</li> <li>Provide good public transit access to all areas of the city.</li> <li>Prioritize clearing of pedestrian routes to better support people with mobility challenges, caregiving roles, and older adults.</li> <li>Plan for and fund public amenities that make it easier for more people to engage in active transportation, including lighting, benches, public washrooms, and water fountains.</li> <li>Support Active and Safe Routes to School programs.</li> <li>Provide secure, accessible bike parking in all new buildings; retrofit existing apartment buildings.</li> </ul>
	Uneven public transport access across the city	<ul style="list-style-type: none"> <li>Choosing to live in areas with higher transit accessibility even if housing is more expensive – <b>car-free low-income households</b><sup>5</sup></li> </ul>	
	Infrequent public transit service	<ul style="list-style-type: none"> <li>Getting rides from family and friends, taking a taxi, walking or biking, not taking trips – <b>older adults in rural settings</b><sup>5</sup></li> </ul>	
	Infrequent ferry service	<ul style="list-style-type: none"> <li>Travelling the day before to ensure they reach the destination on time or opt for relying on mail catalogues and shipping services rather than travelling – <b>residents of island and coastal communities</b><sup>7</sup></li> </ul>	
	Lack of protected bicycle infrastructure	<ul style="list-style-type: none"> <li>Driving children to school instead of using active modes of transportation - <b>parents</b><sup>9</sup></li> </ul>	
	Lack of snow clearing on sidewalks	<ul style="list-style-type: none"> <li>Deciding to not go out – <b>people with disabilities</b><sup>10</sup></li> <li>Going out anyway, but taking extra precaution while walking – <b>older adults</b><sup>11</sup></li> </ul>	
	Lack of secure bike parking	<ul style="list-style-type: none"> <li>Some choose to use a personal bike but have persistent concerns that their bike will be stolen, others decide not to purchase a bike and opt to use public bike share systems instead – <b>marginalized populations, and in particular people who live in apartments with limited bike parking</b><sup>13</sup></li> </ul>	
Individual	Driving cessation	<ul style="list-style-type: none"> <li>Foregoing trips, especially spontaneous trips and for leisure and social purposes – <b>older adults</b><sup>16,17</sup></li> <li>Asking friends or family for a ride – <b>older adults</b><sup>8</sup></li> <li>Using shuttle bus services offered through senior centres – <b>older adults</b><sup>16</sup></li> </ul>	<ul style="list-style-type: none"> <li>Ensure all areas of the city have sufficient access to a range of transportation options for people of all ages and abilities</li> </ul>

	Transportation barriers	Adaptations (Population group the research focused on in bold)	Policy suggestions
	Long commutes to work or school	<ul style="list-style-type: none"> <li>Travelling less often to participate in on-campus activities - <b>students</b><sup>6</sup></li> <li>Selecting courses based on their commute - <b>students</b><sup>6</sup></li> </ul>	
	Health problems	Reducing the frequency of trips, especially trips for leisure and social purposes – <b>older adults</b> <sup>12</sup>	
Social	Safety concerns around harassment, racial profiling, and crime	<ul style="list-style-type: none"> <li>Avoiding cycling in certain areas – <b>women</b><sup>15</sup></li> <li>Travelling in pairs or groups when using active modes of transportation or taking public transit – <b>women</b><sup>14</sup></li> <li>Coordinating with a family member to pick them up at the bus stop to avoid walking home from the bus stop alone in the evenings - <b>women</b><sup>14</sup></li> <li>Wearing gender neutral clothing to avoid harassment – <b>women</b><sup>13,15</sup></li> <li>Wearing safety equipment (e.g., helmets, bike lights) to avoid being stopped by police – <b>racialized populations</b><sup>15</sup></li> <li>Avoid cycling when racial tension is elevated – <b>racialized populations</b><sup>15</sup></li> </ul>	<ul style="list-style-type: none"> <li>Adopt gender-sensitive planning and incorporate equity groups into decision making roles.</li> <li>Recognize historic legacy of racist planning and socially unjust investment and development; incorporate restorative planning.</li> <li>Analyse existing and planned cycling networks through an equity lens to identify potential disparities in access based on income, race, neighbourhood, immigration status, etc.</li> <li>Invest in community bike hubs – welcoming spaces where people can learn more about cycling, meet other people who cycle, and go cycling together – to spark cycling adoption.</li> </ul>

## CONCLUSION

This report summarizes select research evidence from a review undertaken by the Mobilizing Justice Transportation Modes Working Group to explore the transportation barriers people face and how they adapt. We also aimed to bring forward policy suggestions which governments may act on to help to mitigate the challenges individuals, especially those from equity-deserving communities, face when trying get around their communities. We also share the literature database we compiled, which can serve as a starting point for others interested in pursuing mobility justice work.

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