title: "Towards caring 15-minute neighbourhoods: "

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The 15-Minute City is a normative conceptualisation gaining ground in urban planning: it frames neighbourhoods as places where most daily necessities should be reached within a 15-minute walk, bike or public transit ride. As a related method, accessibility measures (the ease of reaching opportunities) are an increasingly important tool amongst transport planners aiming to foster just and sustainable cities. Both the 15-Minute City and accessibility measures are flexible enough to consider all destination types holistically however, gendered examinations have been lacking in the literature. For instance, accessibility analyses have traditionally focused on employment-centric and discretionary travel, types of travel more frequent for working-age and higher-income men.

To counter this masculinist bias, this study investigates a way to gender-mainstream the 15-Minute City through a care lens. The care lens is supported by the Mobility of Care framework (coined by Sanchez de Madariaga (2013) and discussed by earlier efforts [e.g., Law, 1999; Cresswell & Uteng, 2008; Lev 1992; Levy 1991, Lev 2013]). Mobility of Care emphasizes the importance of travel to unpaid work (care trips) in contrast to the better-studied travel to employment and leisure. Indeed, exploratory analyses have found that mobility of care comprises approximately 30% of adults’ daily trips (Sanchez de Madariaga & Zucchini, 2019; Ravensbergen et al., 2023; Mejia Dorantes et al. 2021). While all three trip types (work, care, and leisure) are essential, care trips are often relatively shorter-distance and proximate to residential/work/school locations, potentially fitting well within the 15-Minute City conceptualisation.

Our study provides an empirical example that maps the 15-Minute City onto the Mobility of Care framework. Specifically, it identifies which areas in Hamilton, Canada are caring 15-minute neighbourhoods. To do so, a database of care destinations is created using secondary data. In this database, care destinations include all places associated with sustaining household tasks needed for the reproduction of life including: shopping (e.g., groceries), errands (e.g., libraries), health (e.g., dentist), and caring for dependents (e.g., schools) categories. This database is used to estimate the number and mix of care-destinations that can be reached within a 15-minute walk- and cycling- sheds from census centroids. Typologies are generated that illustrate which neighbourhoods can and cannot facilitate 15-minute access to care. Through this methodology, neighbourhoods are classified as having the potential to be 'care-complete', 'caring' or somewhere on this continuum.

Results indicate only a few neighbourhoods outside of the downtown core are 'care-complete', i.e., contain a sufficiently high mix of care destinations from all categories and sub-categories. However, some neighbourhoods are almost 'care-complete' and provide 15-minute access to some care-categories. Our study frames these neighbourhoods on the continuum of 'caring' and in need of further intervention. Our quantitative investigation provides a high-level picture of what neighbourhoods (and the underlying land-use) are connected to transport infrastructure that can support reaching care-destinations.

Taken together, this study provides a theoretical bridge to connect 15-Minute Cities, accessibility analysis and Mobility of Care framework for the purpose of informing policy choice aimed to encourage just and sustainable mobility.

Keywords: Accessibility; Mobility of Care; Gender; Travel Mode; 15-Minute City

References