Abstract

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Urban planning has been historically driven by the pursuit of public health. In fact, “sanitary engineers were the first urban planners in America” when the main concerns about public health were infectious diseases and poor sanitation. The twenty-first century marks a new era of public health challenges including increases in physical inactivity rates, road collisions, and Greenhouse Gas (GHG) emissions. These new challenges need to be addressed by shifting the paradigm towards neighbourhood design that reduces automobile dependency and encourages people to use more sustainable modes of transportation. Given the limited impact of current neighbourhood street pattern designs in promoting more sustainable and safe communities, the SMARTer Growth neighbourhood design principles were developed by Canada Mortgage and Housing Corporation with the objective of balancing the needs of safety and health for residents, with those of the automobile and AT, all in pursuit of enhanced community sustainability. However, no study has been able to draw on any systematic research into evaluating the impact of the full-fledged SMARTer Growth design (i.e., considering all elements, including land use, improved safety, higher levels of social interaction, etc.) on mode choice behaviour for active transportation users. The research to date has tended to focus on the street connectivity aspect of the SMARTer Growth design and ignored its other features. This paper expands on previous research related to the influence of SMARTer Growth neighbourhood design principles on active transportation use for work and non-work trips by hypothetical retrofitting of an existing neighbourhood using SMARTer Growth design principles. The results of the mode choice modelling show promise, as applying SMARTer Growth principles in this case study was successful in reducing auto use and increasing the use of transit and AT modes for work trips.