Which fifteen-minutes neighborhoods are dead-ends? An analysis of the network attributes of fifteen-minute pedsheds

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Abstract

Fifteen-minutes neihborhoods, a form of normative chronourbanism based on cumulative opportunities, has gained recognized as a way to reduce the need for motorized travel, and increase the livability, convenience, and health of the public. At the core of this concept is a pedshed, an area defined by the walkable isochrone of the eponymous fifteen minutes. As the idea of fifteen-minutes neighborhoods develops traction in policy and planning circles, it seems timely to revisit the way street network design can support—or obstruct—the stated goal of preserving or creating walkable neighborhoods with essential amenities. In this paper we examine a sample ($n = 834$) of fifteen-minutes pedsheds in Hamilton, a medium-sized city in Canada, and how their sizes relate to the attributes of the transportation network. The analysis reveals that network design in suburban Hamilton conspires against the creating of fifteen-minutes neighborhoods. Much of urban Hamilton, in contrast, already has the characteristics of fifteen-minutes neighborhoods. The research points to elements of network design that can help to discriminate between candidate neighborhoods and dead-ends, and that can provide parameters for the design of new developments.

Keywords: Fifteen-minutes neighborhoods, Pedshed, Walkability, Accessibility, Network analysis

1. Introduction

"Il faut oublier la traversée de Paris d'est en ouest en voiture"[3] (Alimi et al., 2020).

With this declaration during her reelection campaign in 2020, Anne Hidalgo brought international attention to the concept of walkable fifteen-minutes neighborhoods.

Knight et al. (2018) Liu et al. (2022) Pozoukidou and Chatziyiannaki (2021) Weng et al. (2019)

References

Jannick Alimi, Christine Henry, and Charlotte Robinet. Anne hidalgo: "il faut oublier la traversée de paris d'est en ouest en voiture", Dec 2020. URL https://www.leparisien.fr/paris-75/anne-hidalgo-il-faut-oublier-la-traversee-de-paris-d-est-en-ouest-en-voiture-02-10-2020-8395971.php.

J. Knight, R. Weaver, and P. Jones. Walkable and resurgent for whom? the uneven geographies of walkability in buffalo, ny. *Applied Geography*, 92:1–11, 2018. doi: 10.1016/j.apgeog.2018.01.008.

Dong Liu, Mei-Po Kwan, Zihan Kan, and Jianying Wang. Toward a healthy urban living environment: Assessing 15-minute green-blue space accessibility. *Sustainability*, 14(24):16914, 2022. ISSN 2071-1050. doi: 10.3390/su142416914.

Georgia Pozoukidou and Zoi Chatziyiannaki. 15-minute city: Decomposing the new urban planning eutopia. *Sustainability*, 13(2):928, 2021. ISSN 2071-1050. doi: 10.3390/su13020928. URL https://dx.doi.org/10.3390/su13020928.

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[1]This is the first author footnote.

[2]Another author footnote.

[3]"We must forget about crossing Paris from east to west by car"

M. Weng, N. Ding, J. Li, X. F. Jin, H. Xiao, Z. M. He, and S. L. Su. The 15-minute walkable neighborhoods: Measurement, social inequalities and implications for building healthy communities in urban china. *Journal of Transport & Health*, 13: 259–273, 2019. doi: 10.1016/j.jth.2019.05.005.