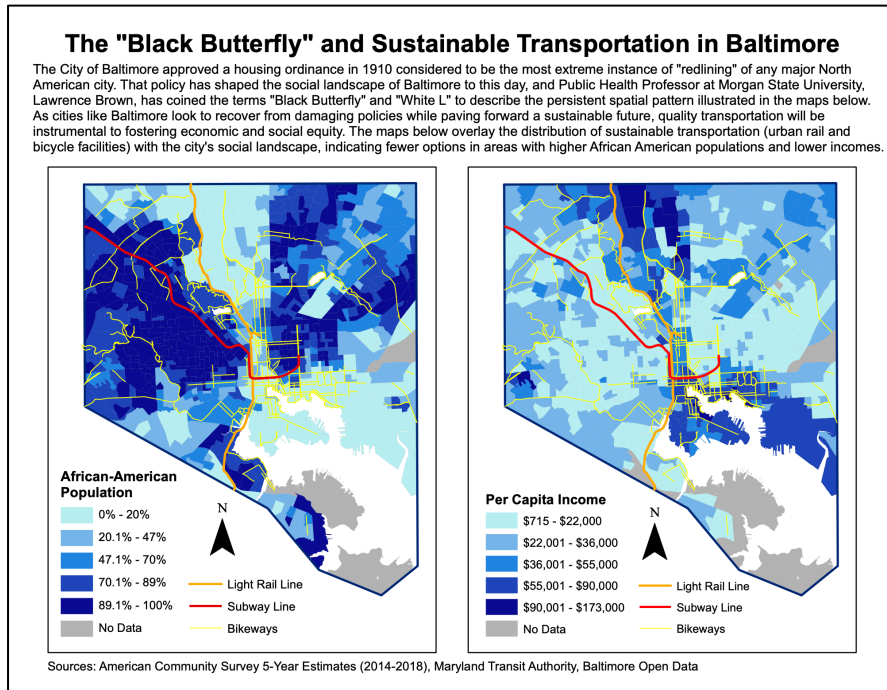


# Evaluating Access to Sustainable Transportation Options for Vulnerable Populations in Baltimore, Maryland

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For individuals without reliable access to a car, infrastructure for alternative modes of travel such as walking, cycling, or transit, determine the *activity spaces* in which they can participate.<sup>1</sup> Social exclusion describes the process where individuals are unable to access quality services and employment as a result of lacking infrastructure.<sup>2</sup> This project looked to evaluate the distribution of sustainable transportation facilities in Baltimore with respect to the city's socio-demographics and essential services, such as grocery stores and hospitals. Combining historical research with spatial analysis methods, this project highlights existing inequalities regarding the mobility of Baltimoreans brought upon by years of racist transportation and housing policy.



Based on census tract data from the 2018 American Community Survey, considerable inequities persist between populations with access to sustainable transportation. Per capita income of census tracts within a quarter mile of Light Rail stations and the city's free downtown bus service were 34.8% and 29.4% higher than the city-wide average (\$29,300), respectively. Census tracts within a quarter mile to the nearest bicycle facility had a 5.1% higher income. While inequities exist between those who can afford to live near light rail versus the city's subway stations, these transit routes did not provide varying levels of access to services as hypothesized. There was no significant difference in the quantity of services accessible between the light rail and subway routes. Further study should examine the *quality* of services accessible by each travel mode, which this project began to lay out a framework for using the Healthy Food Availability Index (HFAI) for food stores, provided by John's Hopkins' Center for a Livable Future.

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<sup>1</sup> Cagney, Kathleen A., et al. "Urban Mobility and Activity Space." *Annual Review of Sociology*, vol. 46, no. 1, 2020, pp. 623-648.

<sup>2</sup> McCray, Talia, and Nicole Brais. "Exploring the Role of Transportation in Fostering Social Exclusion: The use of GIS to Support Qualitative Data." *Networks and Spatial Economics*, vol. 7, no. 4, 2007, pp. 397-412.