

A Method for Analyzing Transit Accessibility of Affordable Housing Units

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1. Background Transportation cost Housing cost Economic growth and revitalization in urban areas Transit accessibility Housing prices increase in • Infrequent transit service in many suburban areas urban areas Job access is particularly important for low income residents Housing affordability Some low income households move to lower density suburbs that have Affordable (subsidized) housing programs lower housing costs increasingly important for low income households Study areas Chattanooga Nashville Memphis • Prior research has given scant attention to regions with predominantly automobile-oriented transportation systems and bus-based public transit systems, like Tennessee. • Transit accessibility levels of many existing affordable housing units have not been systemically evaluated in Tennessee. 2. Objectives **Objective 1:** Evaluate transit equity of affordable housing programs at the city level; **Objective 2:** Evaluate transit equity of individual affordable housing locations and identify specific affordable housing locations that have inequitable transit access within the city; and **Objective 3:** Propose short-term transit service modifications to potentially increase transit

accessibility for existing individual affordable housing locations.

Transit network: General Transportation Feed Specification (GTFS) data in Feb. 2022 Job opportunities: Longitudinal Employer-Household Dynamics (LEHD) Origin-

Affordable housing locations:

• Low-Income Housing Tax Credit (LIHTC) (2022)

Destination Employment Statistics dataset in 2018

- Assisted Multifamily Housing (Multifamily) (include Section 8 Project Based Assistance; 2022)
- Public Housing (PH) (2022)

5. Results – Step 2b & Step 3

Table: Affordable Housing Locations with Top Five Inequity Index in Memphis

Inequity	Measures		
Index Rank	Inequity Index	Accessible jobs	Housing units
1	1,092	94	158
2	1,057	123	200
3	963	135	200
4	709	99	108
5	331	171	87

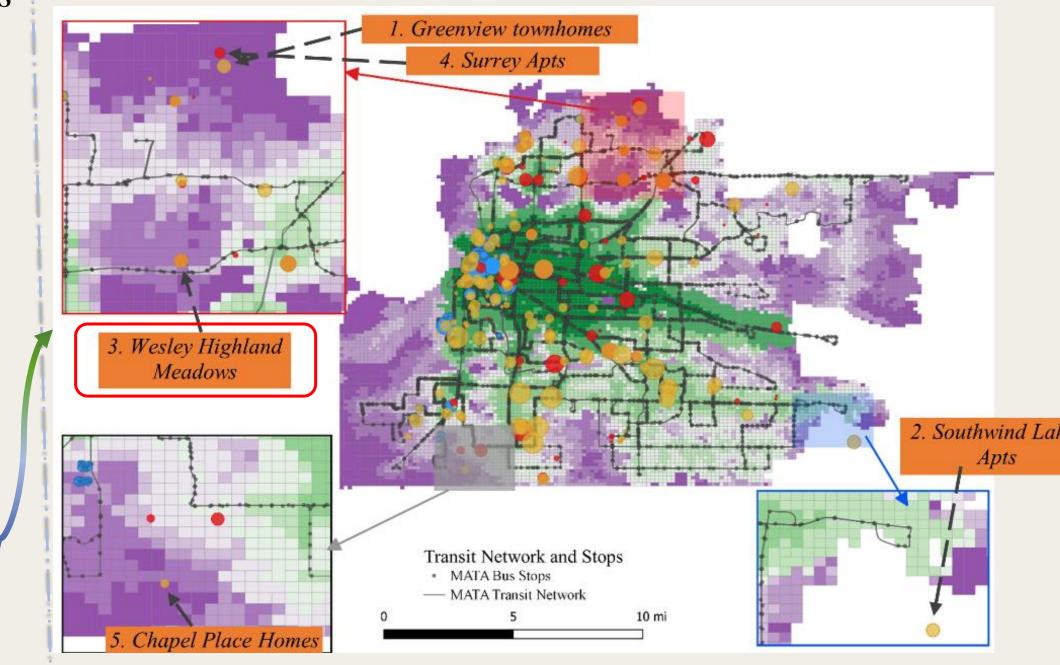
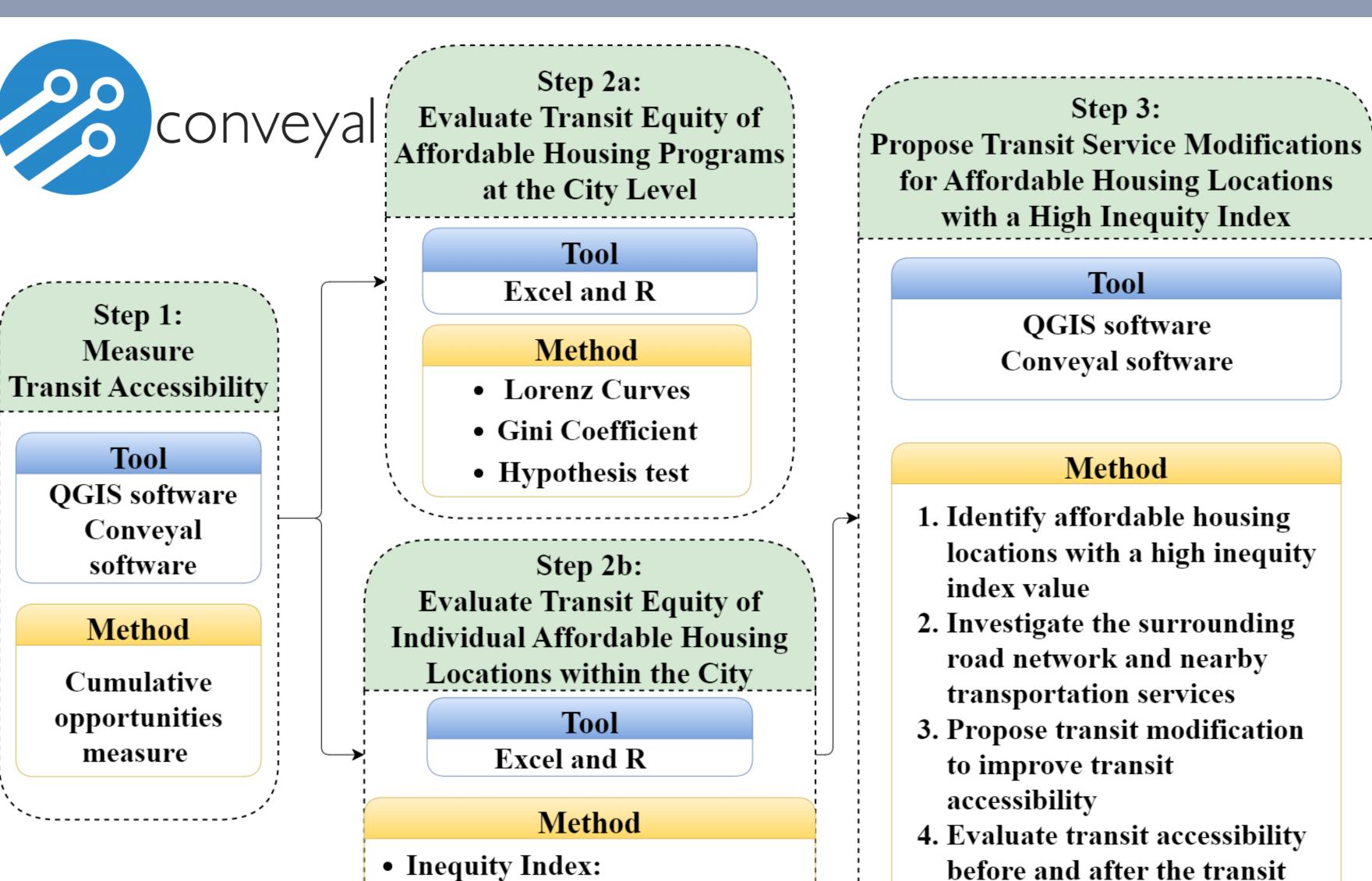


Figure: Top Five Affordable Housing Locations with Limited Transit Access in Memphis

4. Method



modification

Housing units %

Accessible jobs within a given threshold %

1). Investigate surrounding road network and nearby transit services

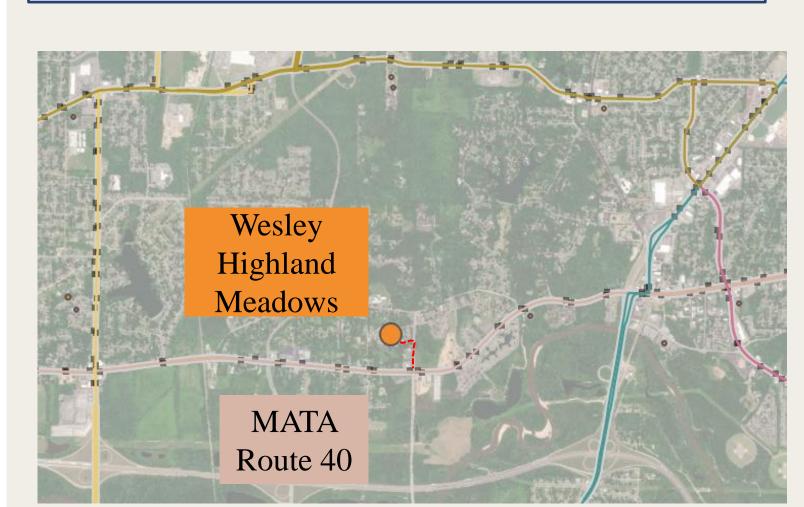


Figure: Satellite view of Wesley Highland Meadows, the surrounding road and the transit network

Draft recommended network from Transit Vision Memphis:

- Rename Route 40 to Route 14
- Route 14: **60-minutes frequency**

2). Propose transit modifications in Conveyal software

Proposed transit modification:

- Possibly **increase frequency** in AM-peak hours (from 90 minutes to 60 minutes)
- 3). Evaluate transit modifications in Conveyal software

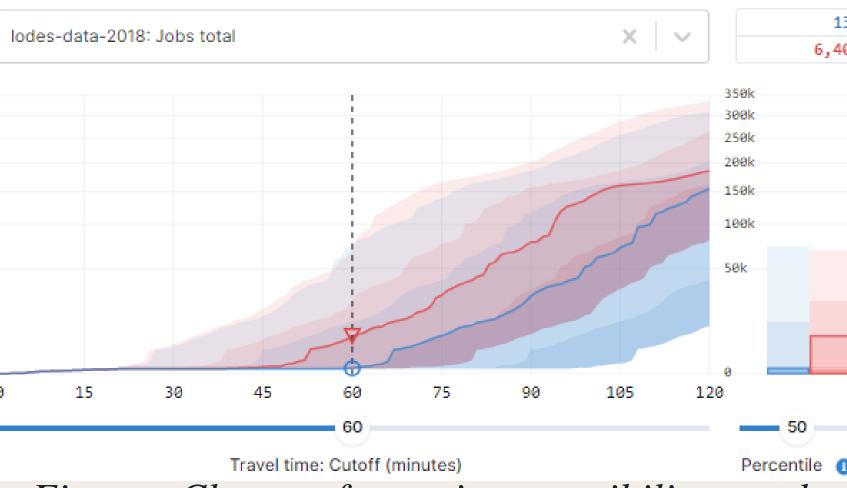


Figure: Charts of transit accessibility results before and after modifying MATA transit route 40 Wesley Highland Meadows

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