

Anne Arundel County, MD: Transportation Mobility and Accessibility

Dan Kellman, Aaron Goldbeck, Juan Castro, Alyssa Kurien





CONTENTS

1. Background
2. Methodology
3. Findings: Transit Coverage
4. Findings: Spatial Mismatch
5. Findings: Transit Captive
6. Recommendations and Implications
7. Future Research

Objective:

- 1) Provide Anne Arundel County with a spatial inventory of the low-income labor force, employment centers, transit availability, and their relation to one another.
- 2) Identify spatial gaps between the low-income labor force and employment.

Limitation:

- This study does not provide a full origin - destination profile of the low-income labor force

Research Questions:

- Primary:
 - Do public transit options adequately connect residences of low-income workers to employment areas?
 - Which areas need improved transit access?
- Secondary:
 - Where do low-income workers live?
 - Do they live close to transit?
 - Where are low-income employment opportunities? Are they transit accessible?
 - Who is dependent on public transit?



Methodology

- **Data sources:**

- Longitudinal Employer-Household Dynamics (LEHD)
- American Community Survey (ACS)
- Anne Arundel County

- **Definition of low-income workers (LEHD data)**

- Residences and Job locations (unit of analysis the same)
- Earning \$1250/month or less
- 53,104 low-income workers
- 253,815 total workforce

- **Three Map Types:**

- Transit Coverage
- Spatial Mismatch
- Transit Captivity

- **Transit Services:**

- MTA
 - MARC train stations
 - Multiple bus lines
- RTA
- Annapolis Bus System

Low Overall Transit Coverage

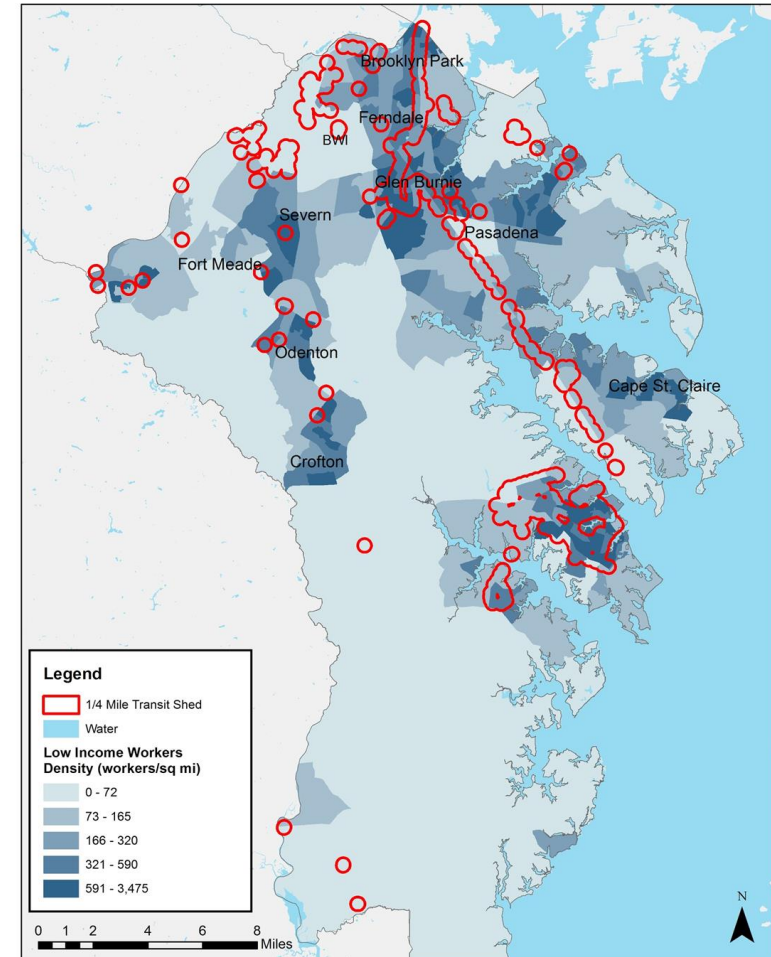
Locations of high concentrations of low-income workers who lack transit:

- Odenton
- South Crofton
- South Pasadena
- Cape St. Claire

Low-Income Workers Coverage

	1/4 mile
Anne Arundel	19%
County w/o Annapolis	14%

Low Income Workers' Residences and 1/4 Mile Buffer Shed



Coverage Significantly Increases

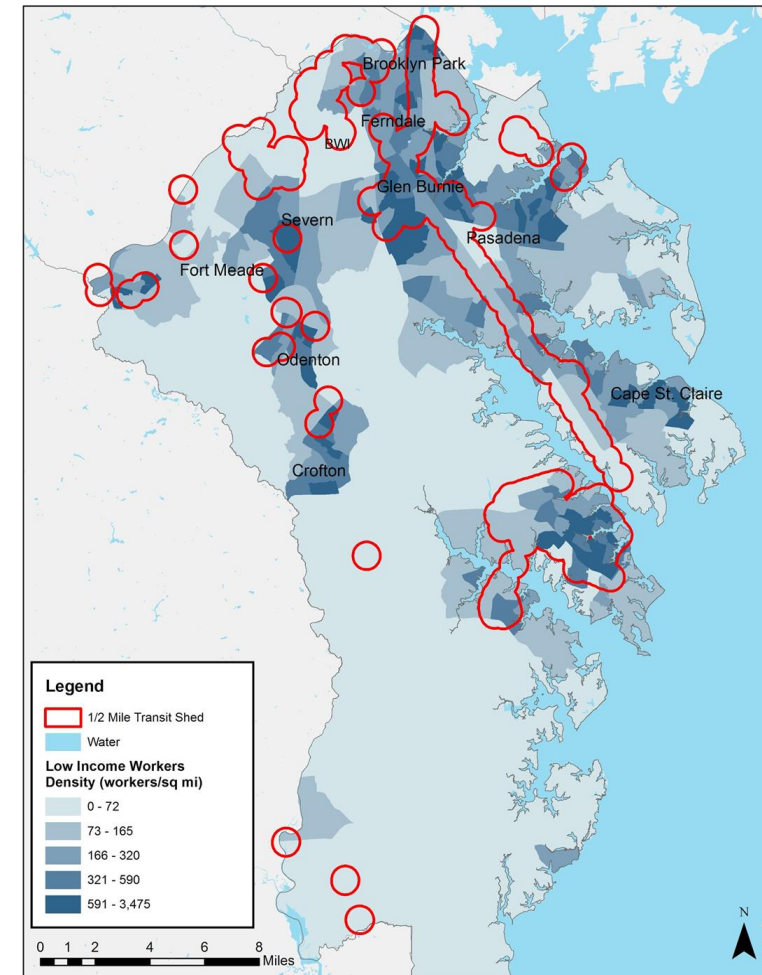
Similar communities (to the ¼ mi. buffer) lack transit :

- Odenton
- South Crofton
- South Pasadena
- Cape St. Claire

Comparison of Low-Income Workforce Coverage

	¼ mile	½ mile
Anne Arundel	19%	38%
County w/o Annapolis	14%	33%

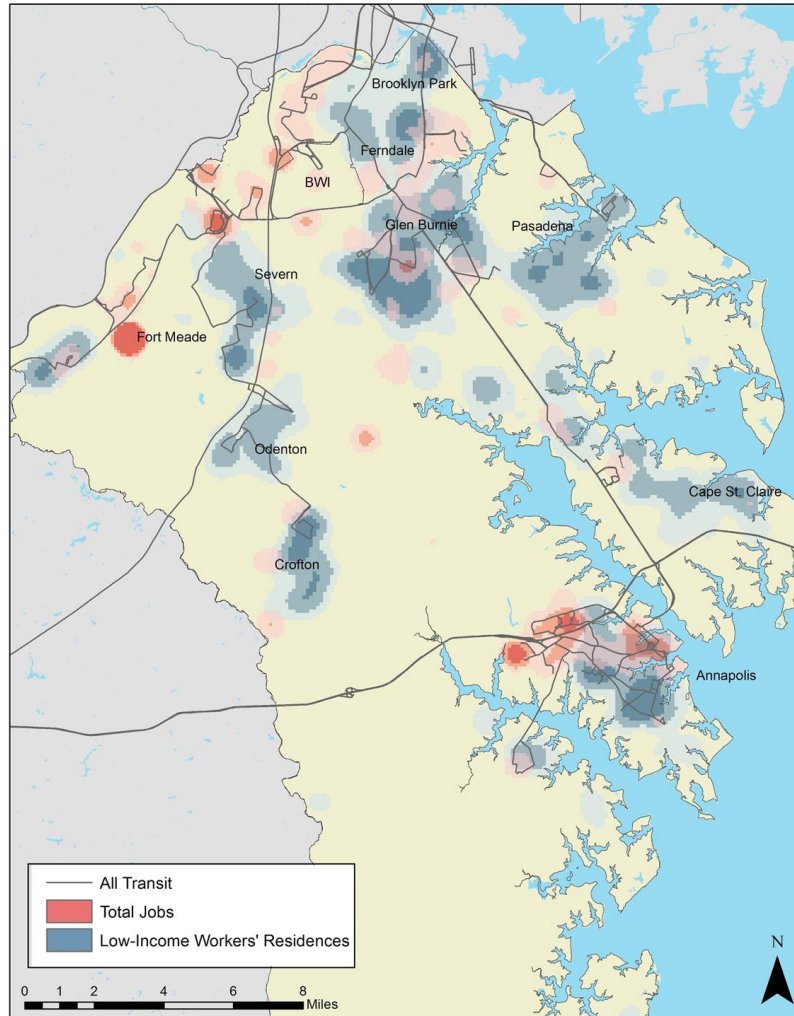
Low Income Workers' Residences and 1/2 Mile Buffer Shed



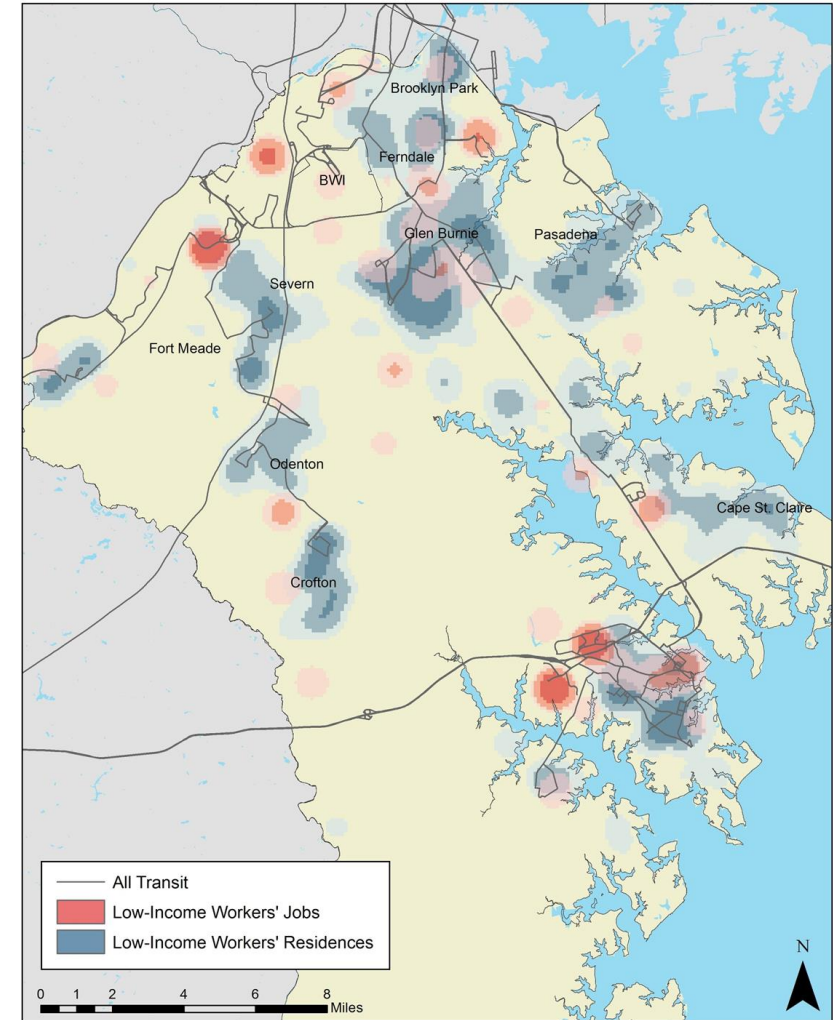


High Job Concentrations Similar Between Total and Low-Income Workforce

Heat Map of Total Jobs and Low-Income Workers' Residences



Heat Map of Low-Income Workers' Jobs and Residences



- Most areas of high employment concentrations are the same.
- Ft. Meade only shown on total employment map (left)
 - Data added separately

Both Spatial Mismatches and Overlaps Present

Low-Income Workers' Jobs::

- Transit serving highly concentrated areas of jobs well
- /Ritchie HWY corridor lacking transit for employment centers

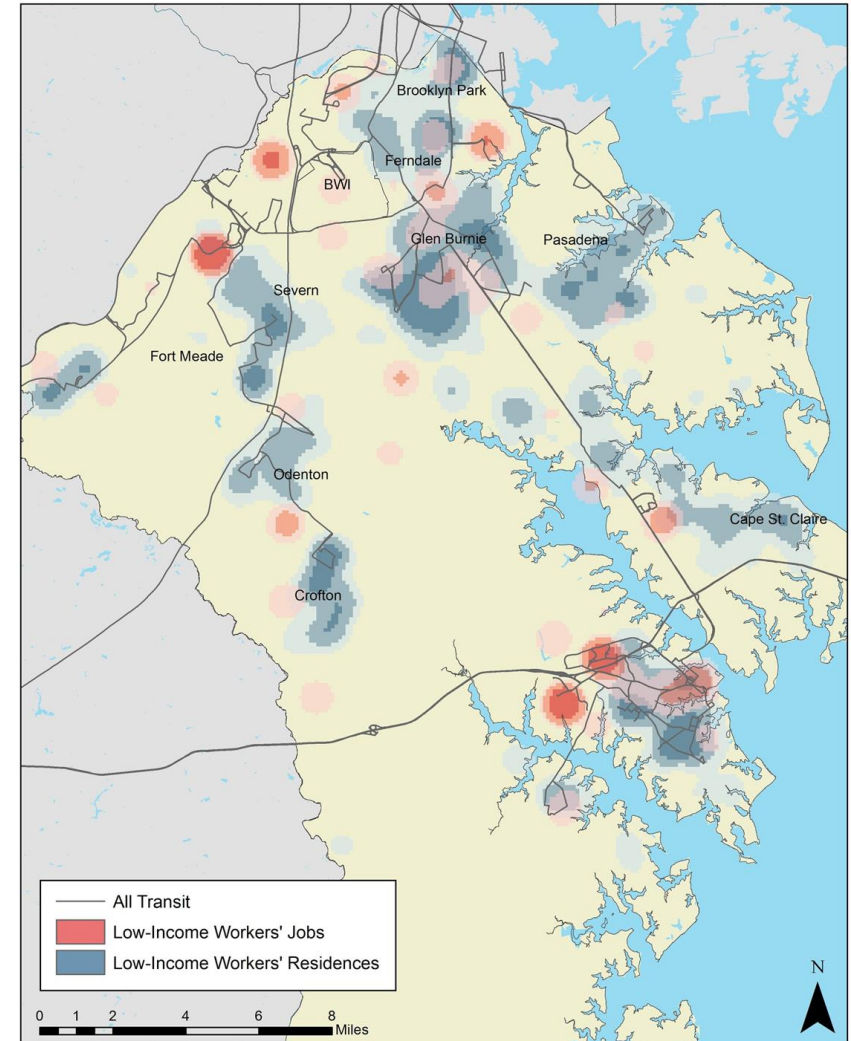
Low-Income Workers' Residences:

- Highly concentrated residential communities reached, but lack coverage
 - Similar to transit coverage map findings

Relationship:

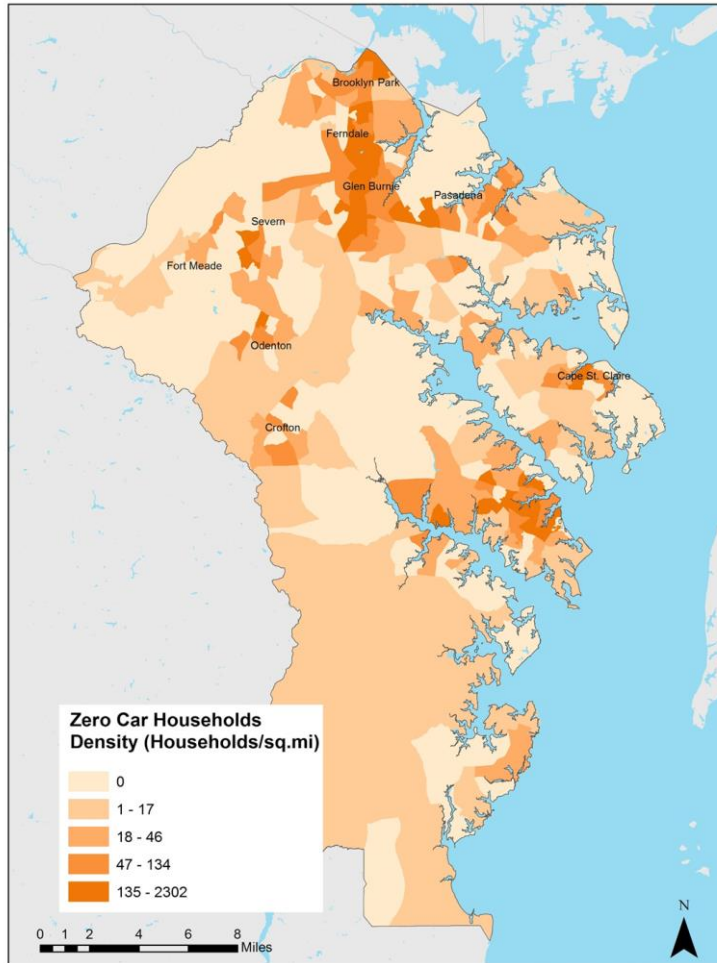
- Overlap in the I-97 corridor near Glen Burnie and Annapolis
- Separations in Cape St. Claire, Crofton, Odenton, Maryland City, and Severn

Heat Map of Low-Income Workers' Jobs and Residences

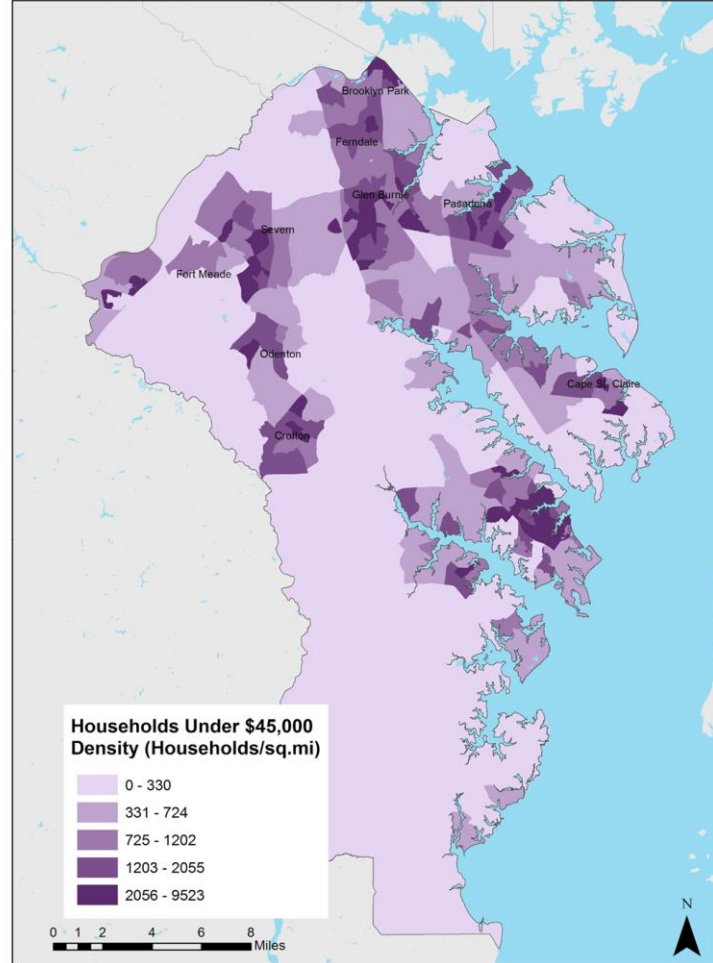


Transit Dependent

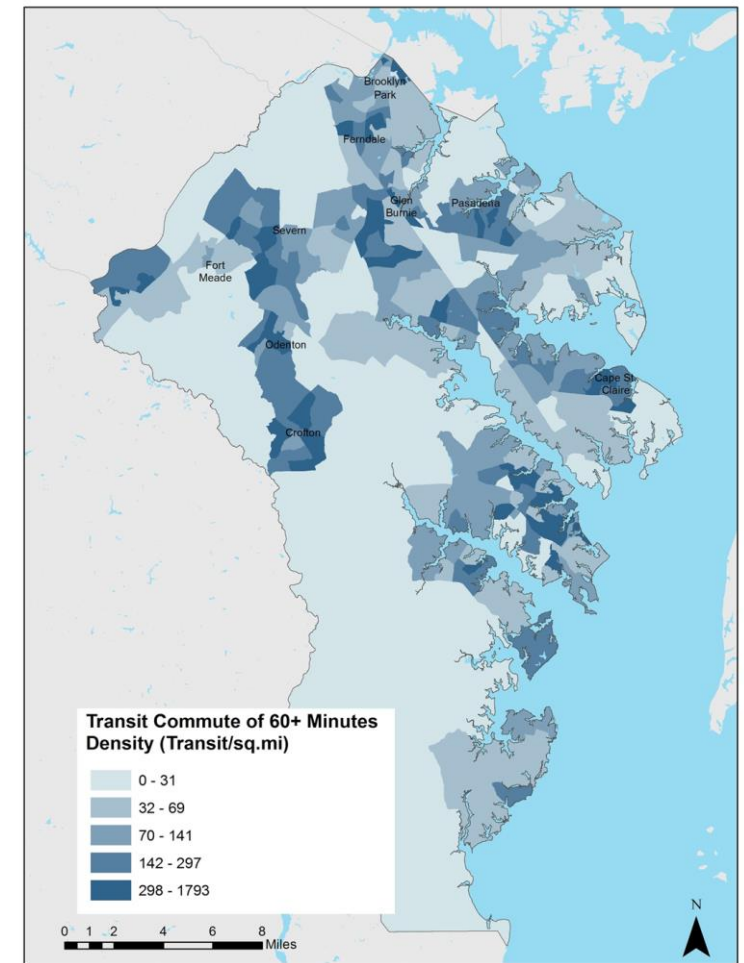
Zero Car Households



Household Income Less Than \$45,000



Average Transit Commute Times of 60+ Minutes





Closing the Gap: Recommendations and Implications

- **Residential Areas of Low-Income Workforce:**

- Finding: Several communities lack transit coverage
- *Recommendation: Investigate feasibility of additional service in Odenton, Glen Burnie, Cape St. Claire, Pasadena, and Crofton*

- **Employment Areas**

- Finding: Most well served by transit, but a few centers lack access
- *Recommendation: Investigate the potential need for transit service to employment areas in the I-97/Ritchie HWY corridor*

- **Overall:**

- Finding: Correlation between long transit commute times and zero car households
- *Recommendation: Investigate transit needs in potential “transit captive” areas such as Pasadena, I-97 corridor, Annapolis*



Limitations and Further Research

Limitations

- Insufficient Origin - Destination data for low-income workforce
- Transit dependence and choice riders
- Heat map accuracy
- Lack of federal employment data
 - Ex: Ft. Meade

Further Research Questions

- Do the people we identified as transit dependent actually fit that definition, or are they choice riders?
 - Example: Annapolis.
- Is transit coverage greater for wealthy communities than low-income communities?
- Can communities be better served through additional transit?
 - Last mile issue
- How are jobs distributed in Ft. Meade? Is transit service needed?