



Goal

Quantitatively assess the accessibility of subsidized housing locations to basic services by public transportation in the Hartford region.

Share maps & results of accessibility scores for point locations and neighborhoods with housing advocates and policymakers.

Project collaborator: Partnership for Strong Communities (PSC) in Hartford, CT, affordable housing advocates

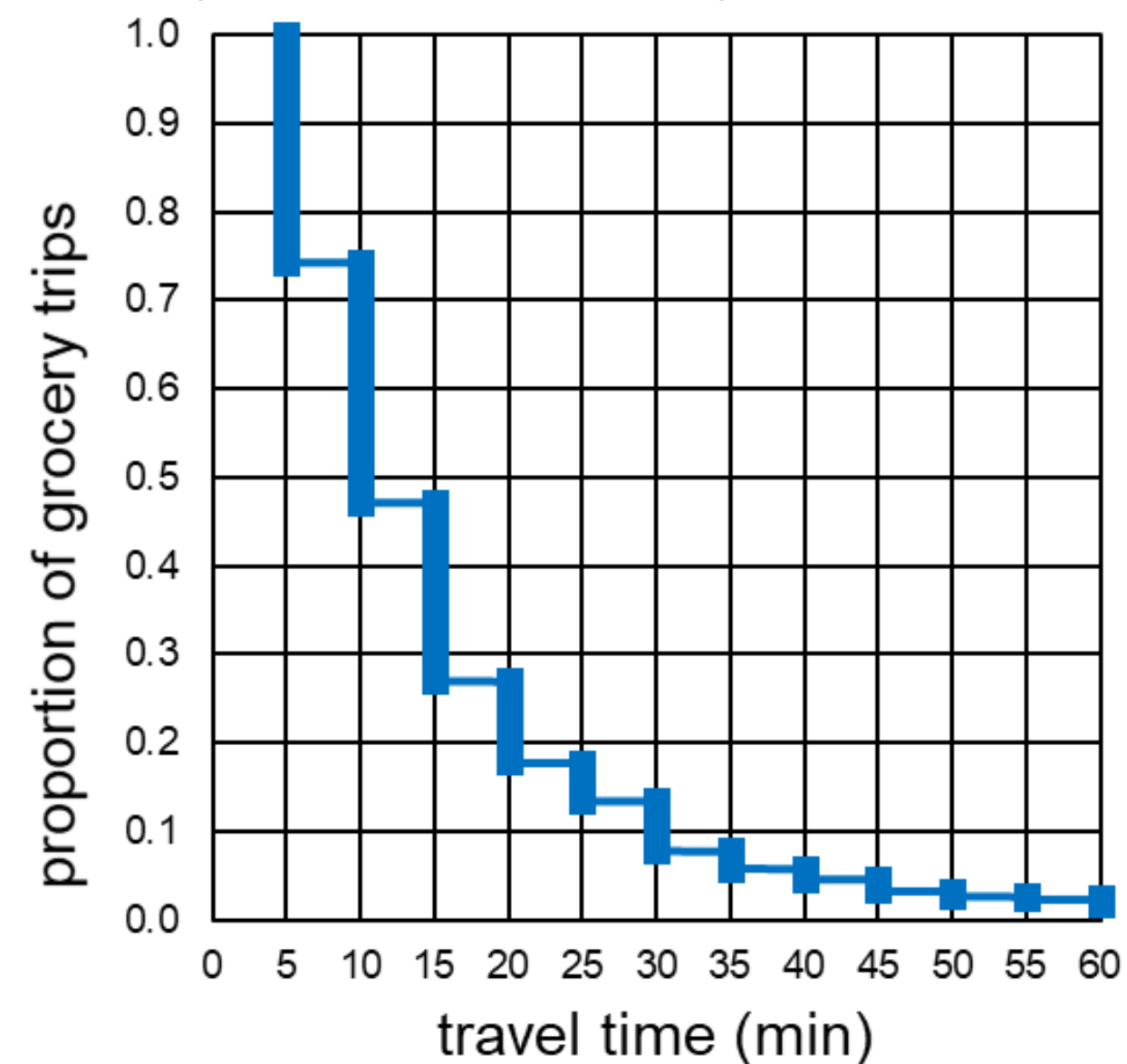
Objectives

- Identify locations of
 - Fresh Grocery Stores
 - Schools and Colleges
 - Government Services
 - Healthcare Facilities
- Identify subsidized housing locations
- Score the transit accessibility of the subsidized units and neighborhoods utilizing the Transit Opportunity Index (TOI)

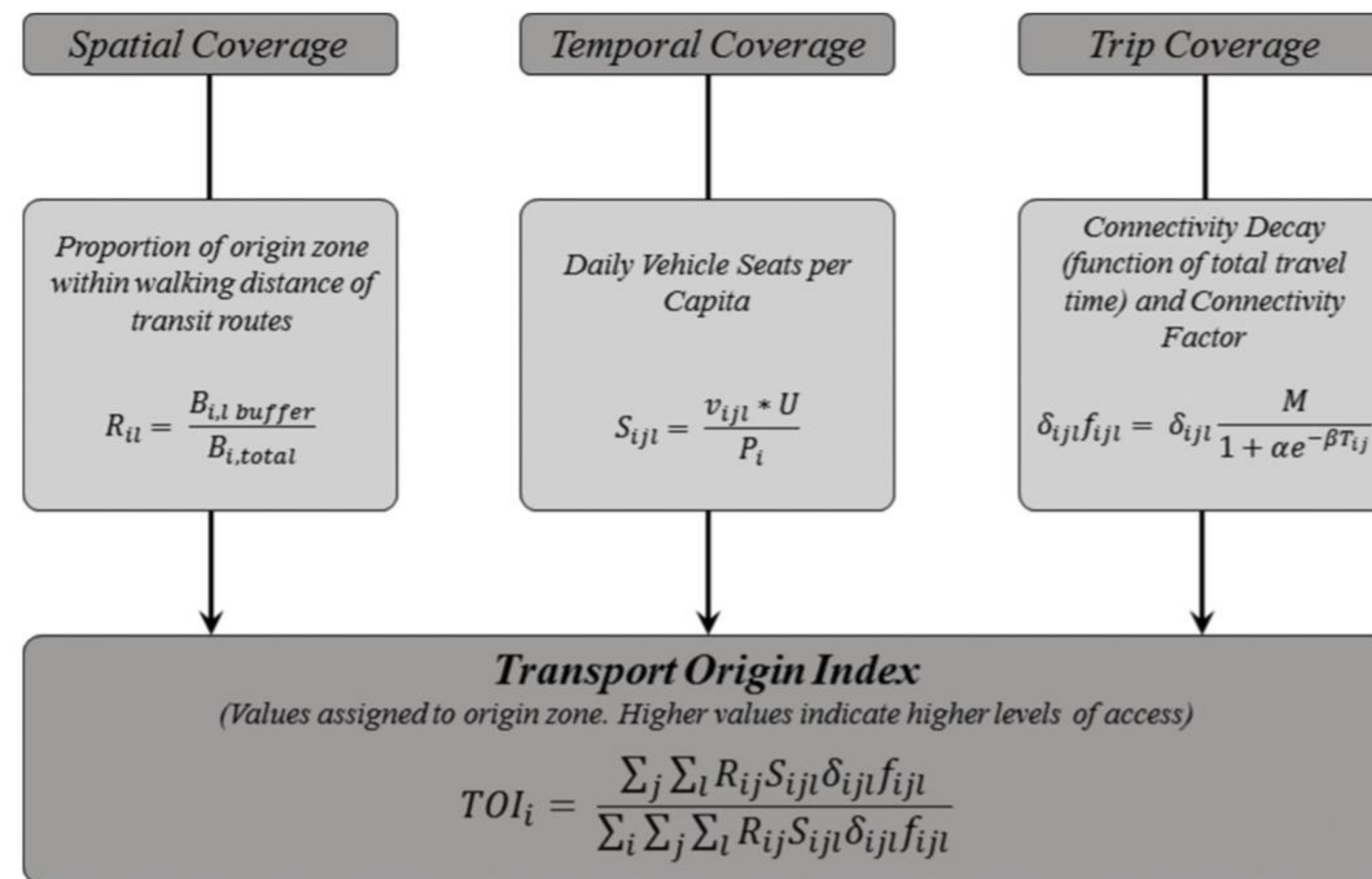
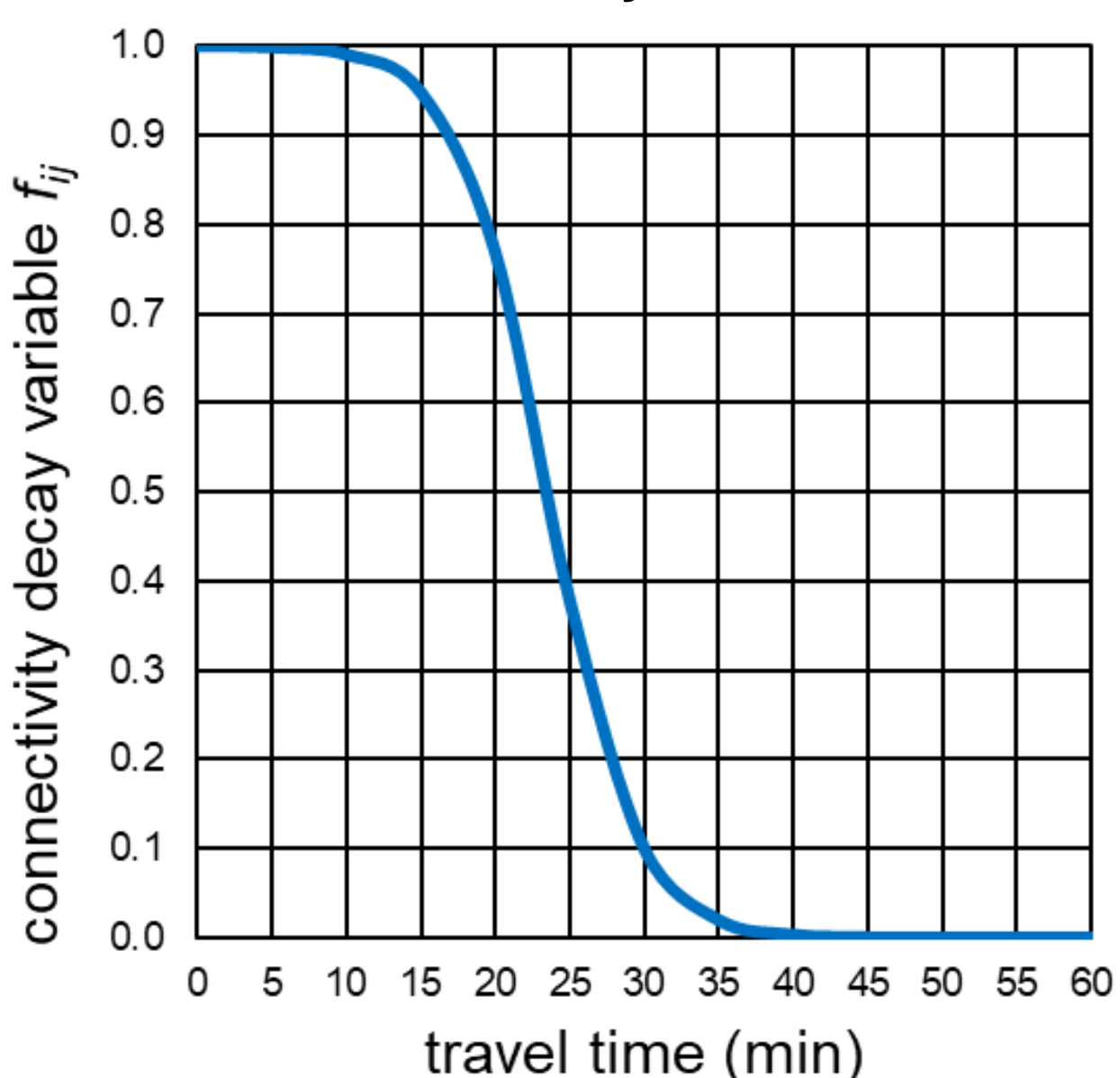
Methodology

1. Compile location data for services and housing
2. Generate spatial data using address geocoding and GTFS data.
3. Calculate network walking distances between origins, stops, and destinations.
4. Apply the point-to-point TOI script (ArcPy) to housing locations using real destination travel time and a time decay factor based on trip purpose.
5. Score block groups for public housing potential using zone-to-point TOI to the same destinations

Survey Travel Time Decay Curve: Groceries



TOI Travel Time Decay Curve: Groceries



Transit Opportunity Index

TOI assigns a score to an origin based on its transit accessibility to destinations.¹ TOI includes:

- **Spatial Coverage**
Proportion of an origin zone within walking distance of transit
- **Temporal Coverage**
Availability of transit vehicle capacity during the day
- **Trip Coverage**
Real travel time from the origin to other destinations, utilizing a decay factor that penalizes longer trips

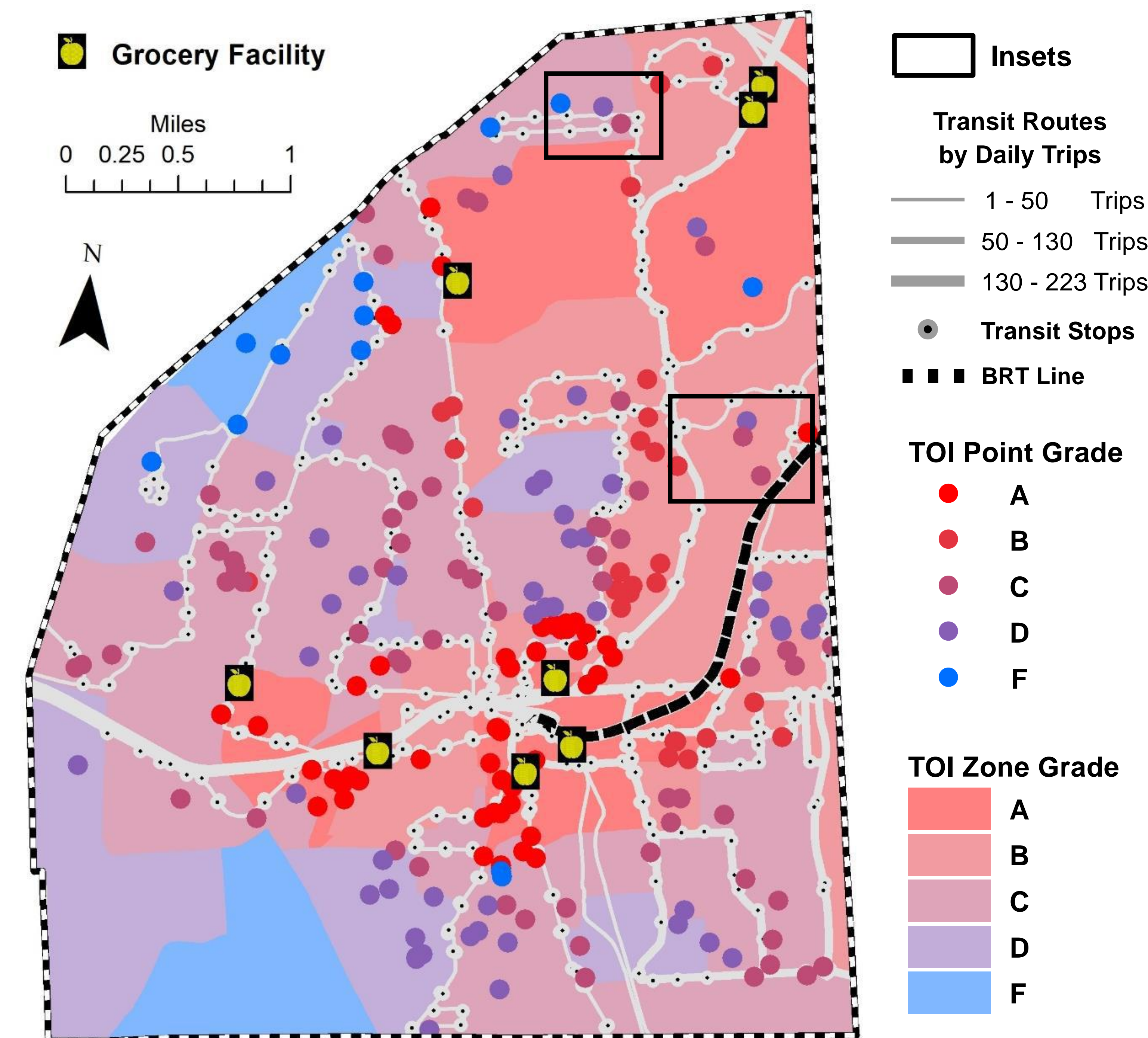
Walking Network Effect on TOI



Transit Frequency Effect on TOI



Grocery TOI Scores for the City of New Britain



Average Town TOI Scores for Subsidized Housing Units

