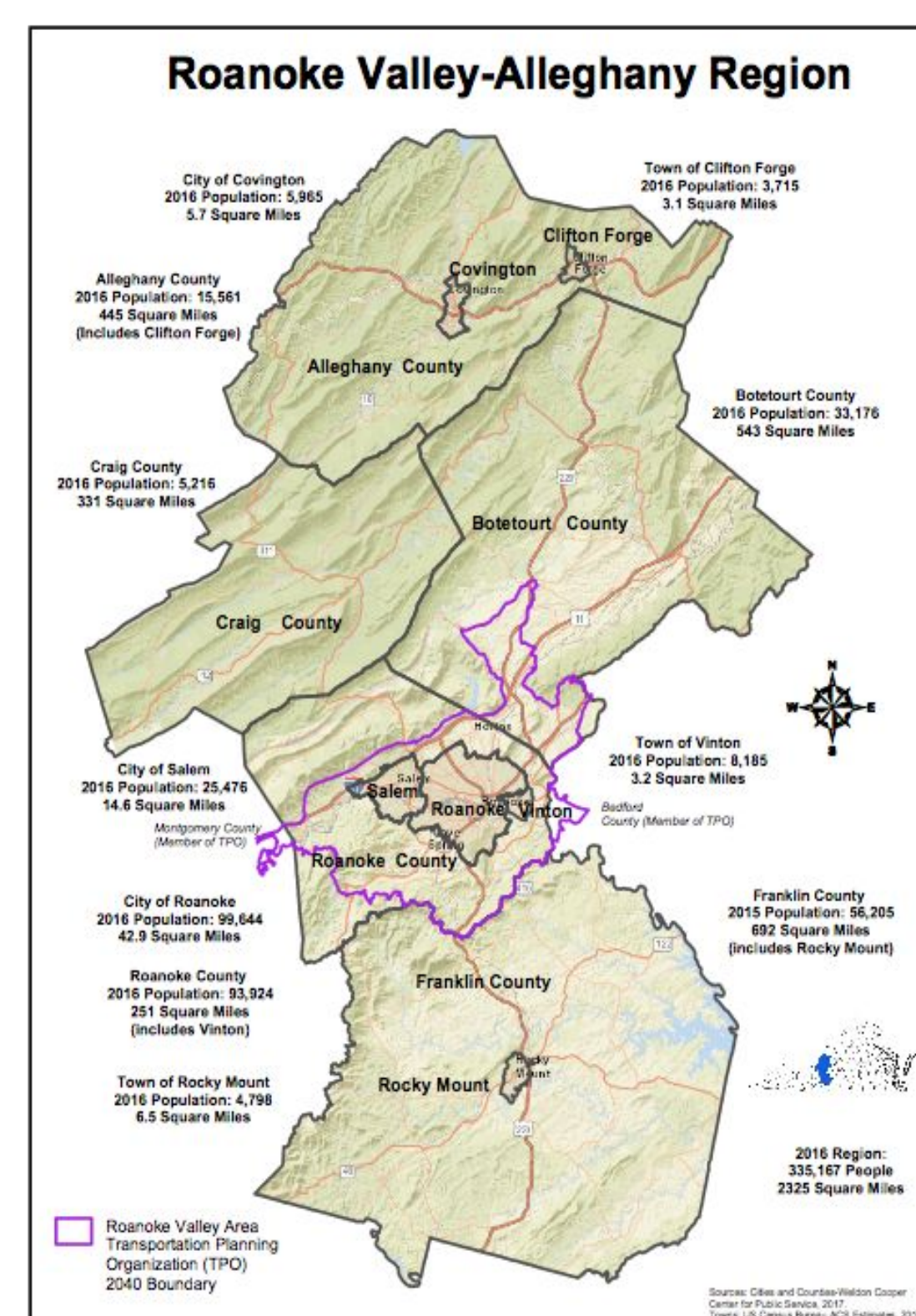


Project Overview and Goals

Issue - Workforce Challenges, for example

- Long Commutes
- Mismatch of job openings & skills
- Available child care
- Affordable housing options

Objective: Create Demographic Profiles and Attractiveness Indicators to identify characteristics that appeal to retaining and recruiting a workforce to the region by County Magisterial Districts, City Election Districts, & Roanoke City quadrants



Data Discovery and Concept Mapping

Internal Labor Force → **REGIONAL ATTRACTIVENESS** ← External Labor Force

Workforce Challenges

- Drug Usage
- Prisoner re-entry
- Childcare costs
- Commute times
- Job & skill match

Workforce Training

- Certifications
- High school workers
- Company Engagement with Schools
- Job Quotient



Community Metrics

- Park Access
- Walkability Score
- Housing Age Housing Affordability (owned and rented)
- Cultural Base
- Primary Education Ratings

Transportation

- Commute times
- % Car ownership
- % Walking, biking, public transit

Definition of attractiveness is adapted from Pattnaik, S., & Misra, R. (2014). Employer Attractiveness: A Conceptual Framework & Scale Development. Indian Journal of Industrial Relations, 50 (2), 318-327.

Methods

Develop American Community Survey (ACS) synthetic data to align to sub-county/sub-city geographic boundaries

- Combine ACS microdata and summary tables to produce synthetic estimates by individual at new geographies, using Iterative Proportional Fitting technique
- Re-compute summary statistics of those individuals by the 48 County Magisterial Districts, City Election boundaries, or Roanoke City quadrants

Create Demographic Profile and Attractiveness Indicators

- Rank variables (see below) from 1 to 48
- Sum ranks for each area & then normalize ranks from 0 to 1

Scrape data from internet

- Public transportation routes and stops
- Workforce development sites
- Drug treatment facilities

Demographic Profile Rankings and Attractiveness Indicators (by County Magesterial Districts or City Election Districts or Quadrants)

Where do the four worker populations live in the RVAR?

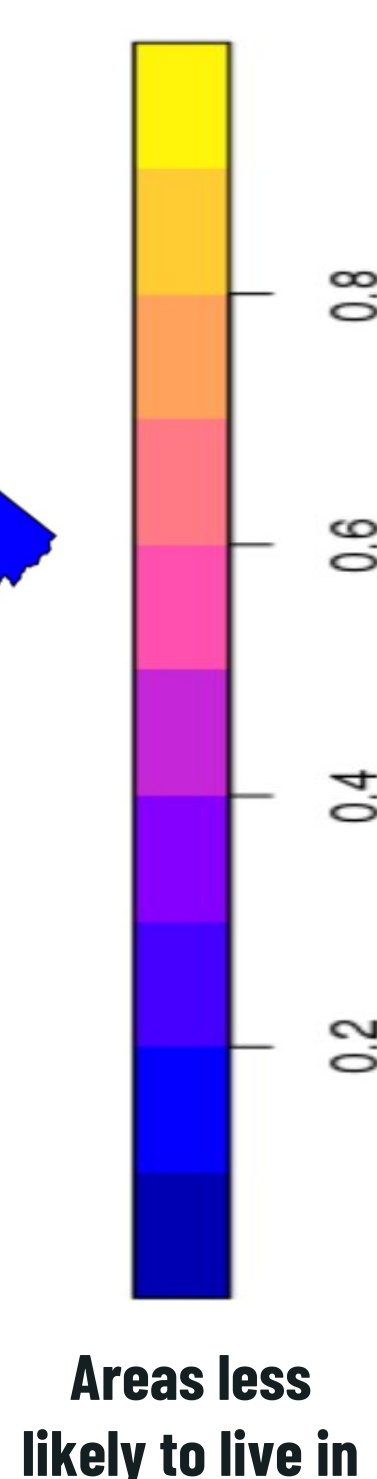
(1) Single, ages 18-24, No College Degree

(2) Single, ages 25-34, College Degree

Areas more likely to live in

(3) Family, ages 35-49, No College Degree

(4) Family, ages 35-49, College Degree



ATTRACTIVENESS VARIABLES

(% of population)

Transportation:

- **Commute Times** (< 1 hr.)
- **Vehicle Ownership** (own a vehicle)
- **Public Transportation** (public transit is primary means to work)

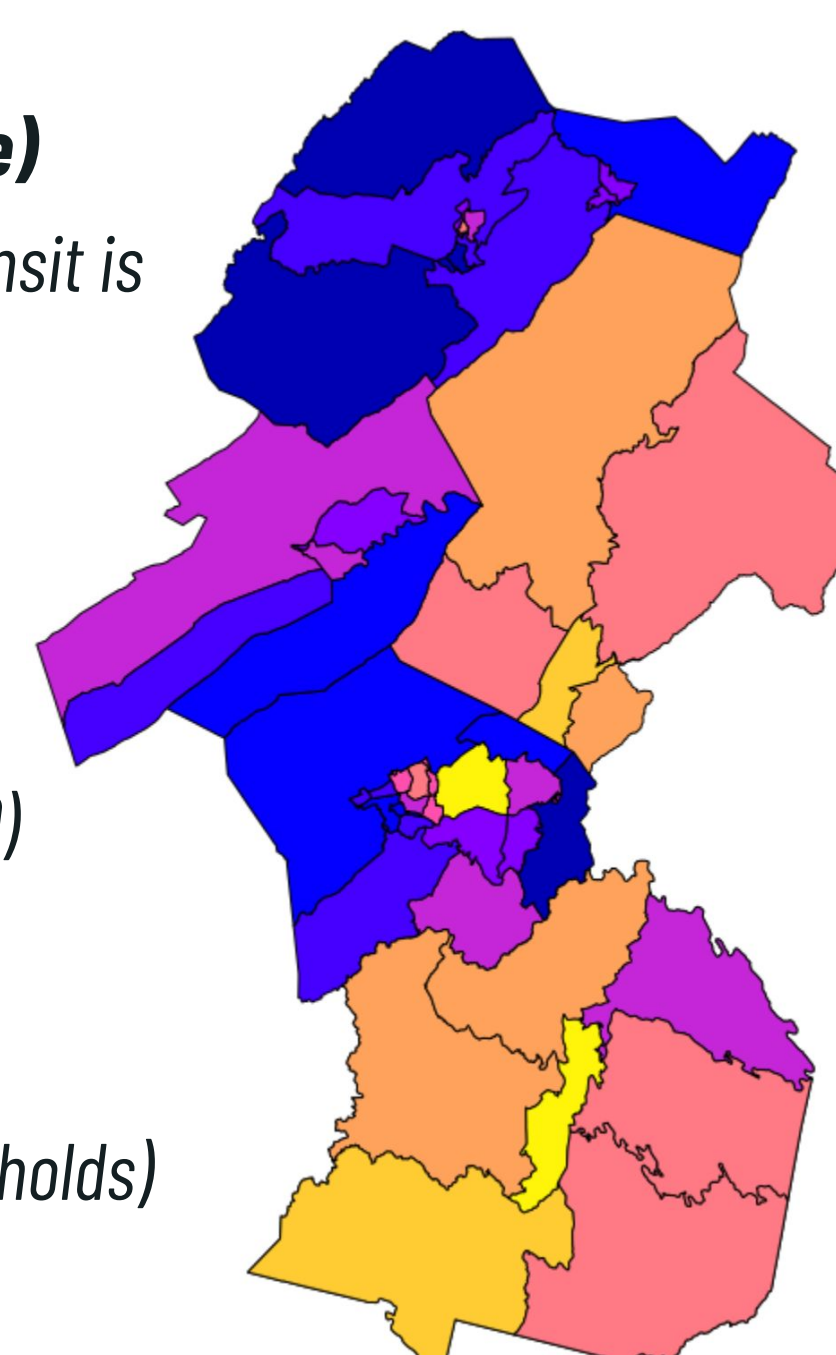
Housing:

- **Size of Home** (Number of bedrooms)
- **Type of Home** (Apartment/House)
- **Age of Home** (Built before/after 1990)

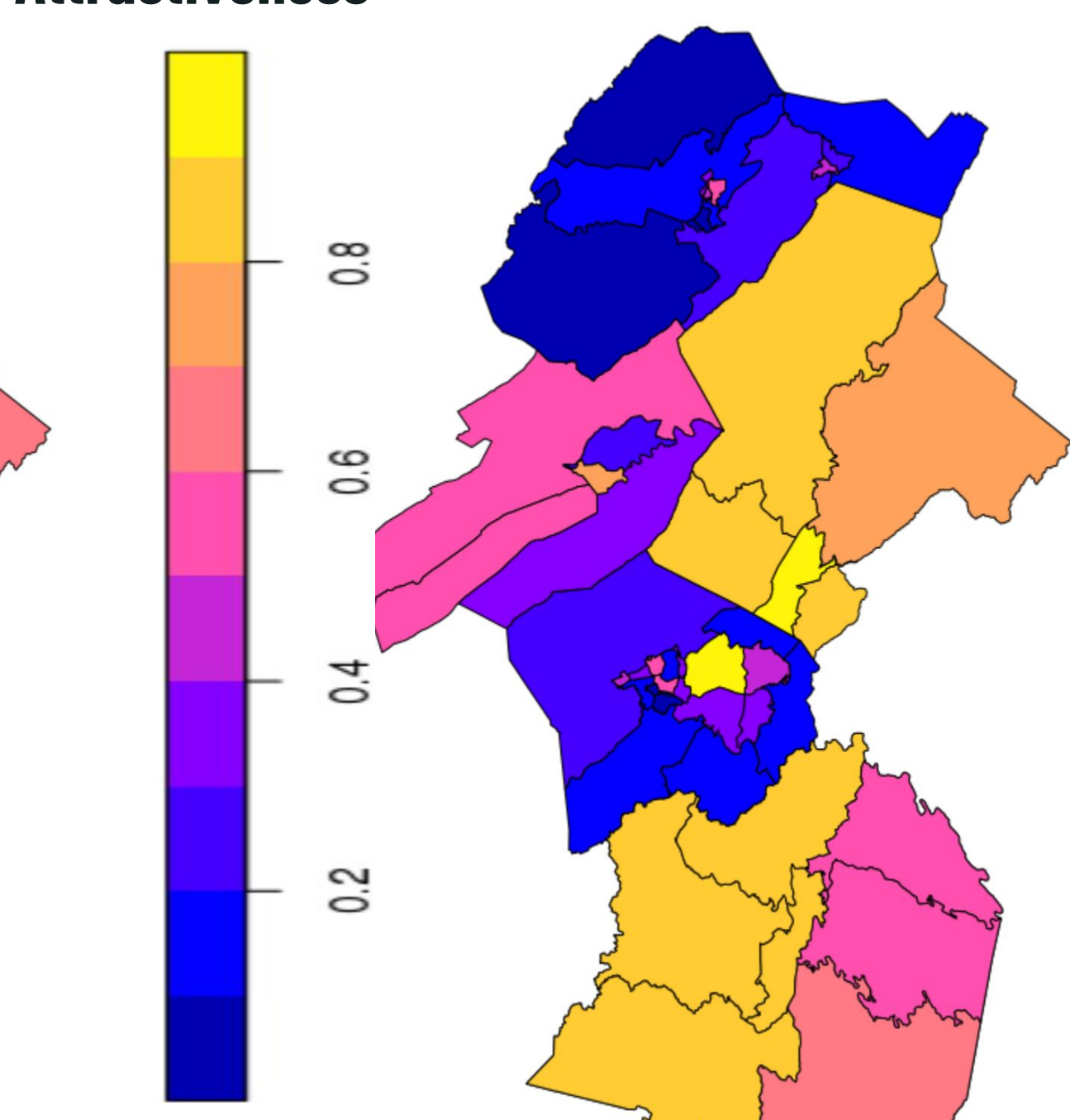
Community:

- **Resident Type** (Renter/Owner)
- **Family Presence** (Family/NF Households)
- **Diversity** (% non-white)
- **Employment** (% employed)
- **Active Post-Secondary** (enrolled in college)

(5) Single Subpopulation Attractiveness Index

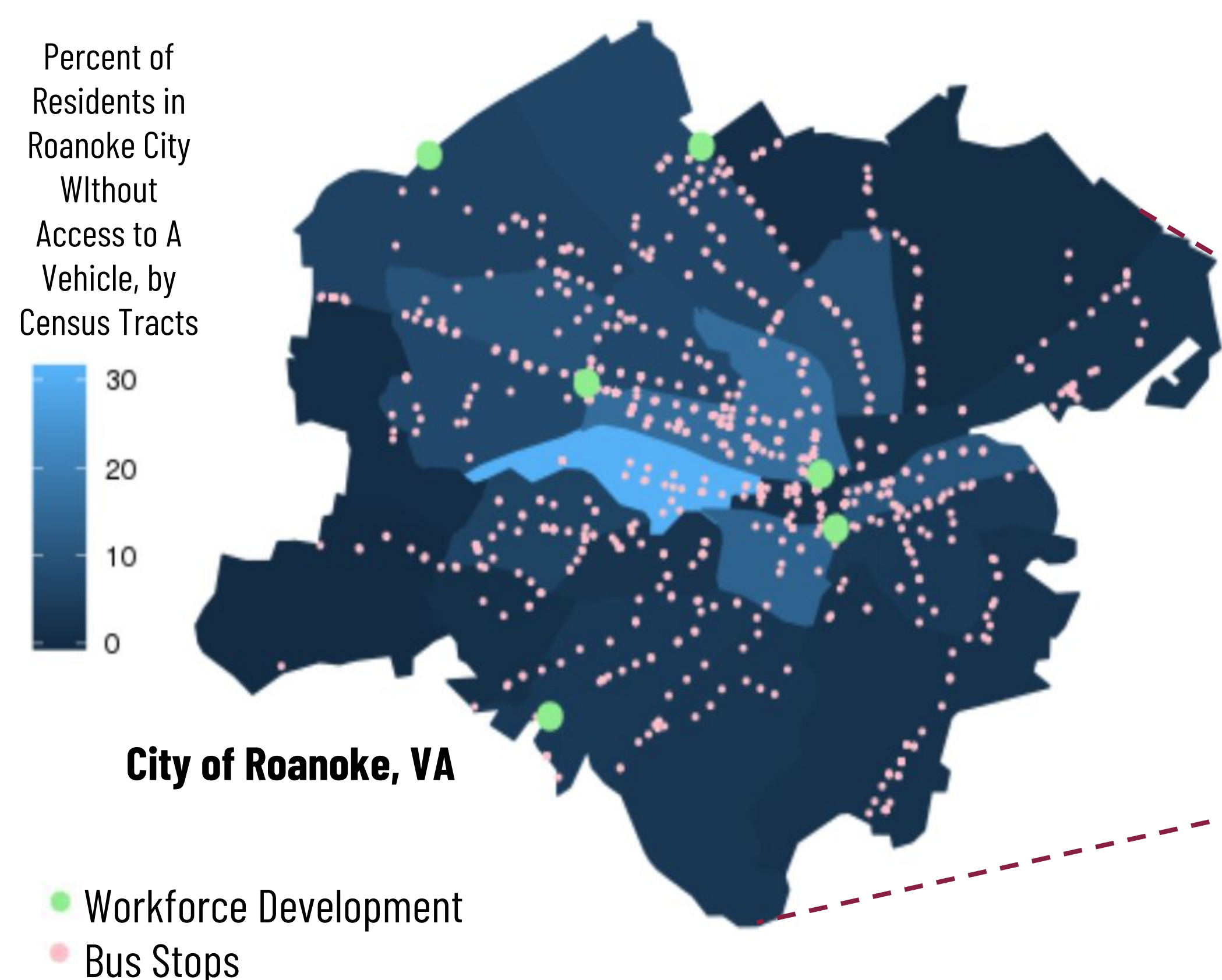


(6) Family Subpopulation Attractiveness Index

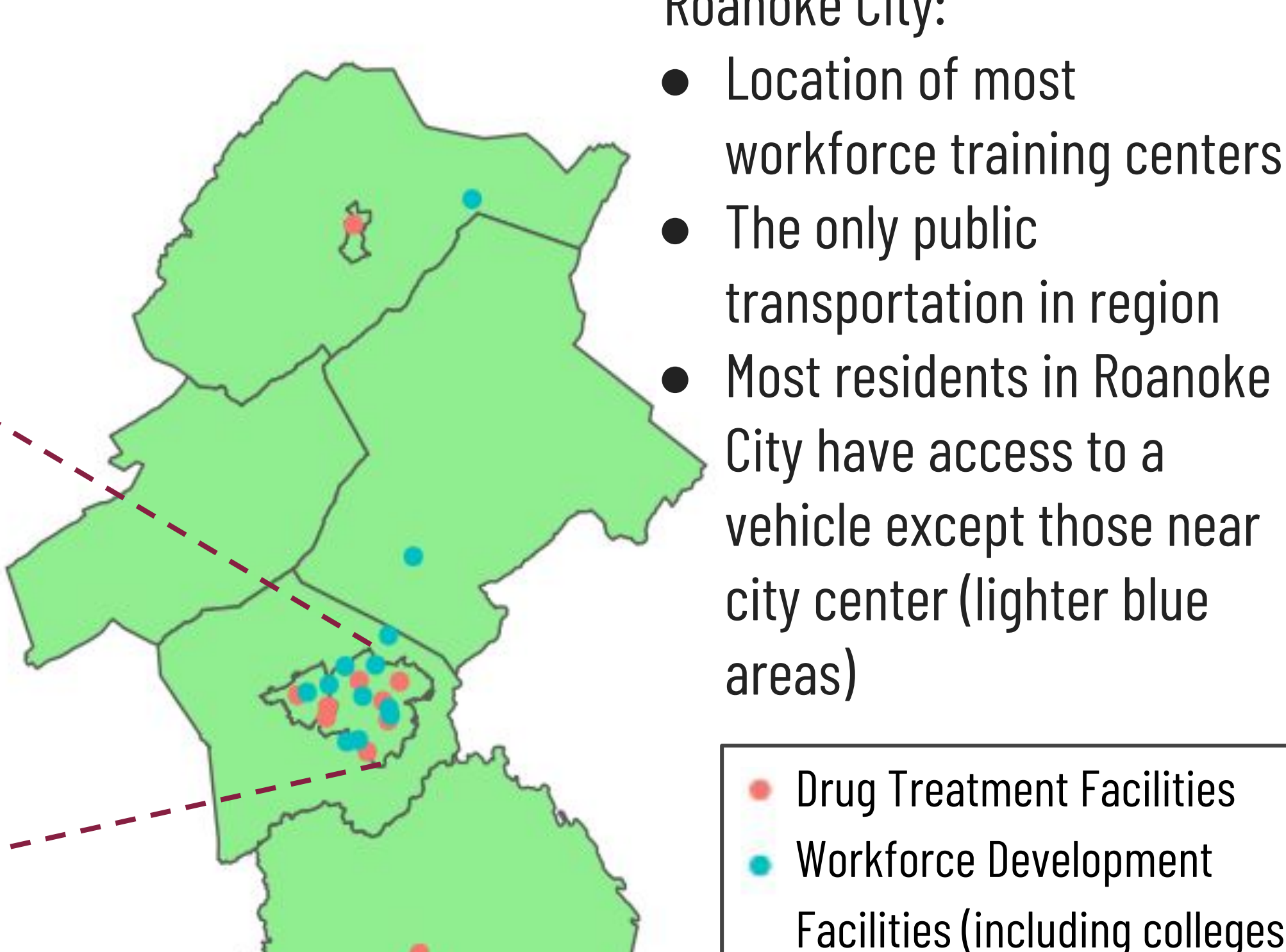


Sources: American Community Survey (synthetic data); GIS Shapefiles for each city and county in RVAR

Transportation Options



Drug Treatment/Workforce Facilities



Roanoke City:

- Location of most workforce training centers
- The only public transportation in region
- Most residents in Roanoke City have access to a vehicle except those near city center (lighter blue areas)

Sources: American Community Survey, Roanoke Regional Partnership, Substance Abuse and Mental Health Services Administration (SAMHSA), Moveit.com

Key Findings and Next Steps

Key Findings & Potential Policy Actions

- Different household types live in different parts of the RVAR region, e.g. singles without a degree live in northwestern and southwestern parts while singles and families with college live closer to Roanoke city and surrounding areas (maps 1-4)
- Attractiveness patterns across RVAR are similar for singles and families (maps 5-6)
 - The northwest side of Roanoke City and western side of Franklin County have the highest attractiveness values for both singles and families; Botetourt County is very attractive to families
- Transportation options are limited to vehicles for most residents in region; a larger percent of individuals in Craig and Franklin Counties have longer commutes (data not shown)

Next Steps

- Examine underlying factors to identify policy options