

CHAPTER 6

Market Analysis

Market Analysis

This Market Analysis identifies corridors in the region with the greatest demand and need for transit service. The Market Analysis begins with two key metrics: Transit Potential and Transit Need. Transit Potential is a measure of population and employment density. Transit Need focuses on socio-economic characteristics such as income, automobile availability, age, and disability status that are indicative of a higher propensity to use transit.

More than any other factor, density determines the effectiveness and efficiency of public transportation. Places with higher concentrations of people and/or jobs tend to have higher transit ridership. At the same time, most transit agencies have a mandate to provide comprehensive service in the communities they serve and to provide mobility for residents with no other means of transportation.

In addition to density and demographics, transit use is also influenced by the built environment. Certain land uses—such as retail centers, civic buildings, multifamily housing, educational institutions, medical facilities, and major employment centers—tend to generate transit trips at a relatively higher rate than other land uses. These ridership-generating land uses are highlighted, for context, in county and city maps presented in this chapter.

Transit Potential

POPULATION DENSITY

Public transportation is most efficient when it connects population and employment centers where people can easily walk to and from bus stops. Transit's reach is generally limited to within one-quarter mile of a transit line, or a 10-minute walk. For this reason, the size of a transit travel market is directly related to an area's population density. Typically, a density greater than five people per acre is needed to support base-level (hourly) fixed-route transit service. Within Berks and Lancaster counties, the areas of greatest population density are concentrated around the cities of Lancaster and Reading, with smaller pockets of greater density in the towns of Columbia, Ephrata, Mohnton, and Kutztown (**Figure 1-Figure 5**).

Figure 1: Population Density, SCTA Service Area

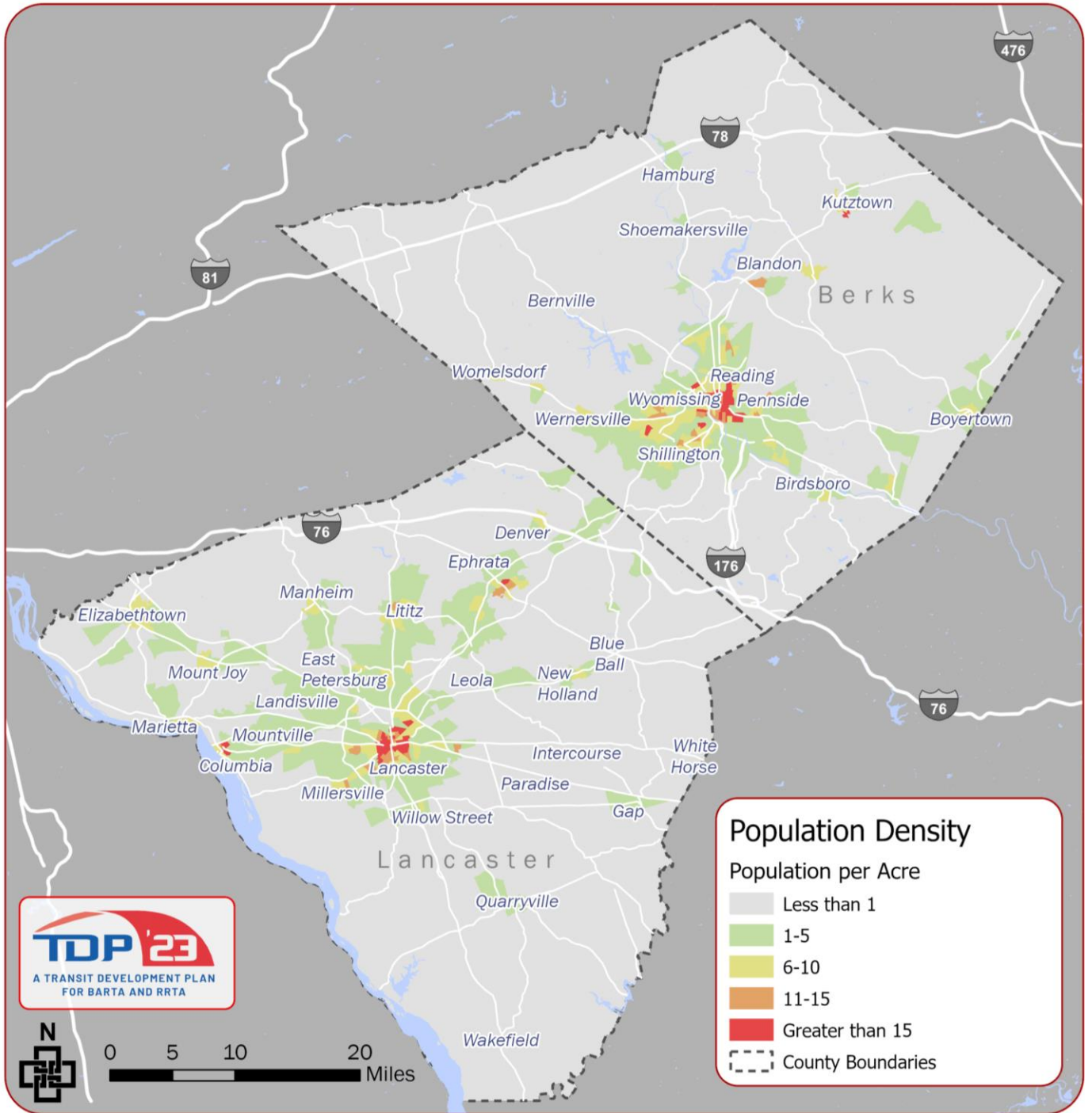


Figure 2: Population Density, Berks County

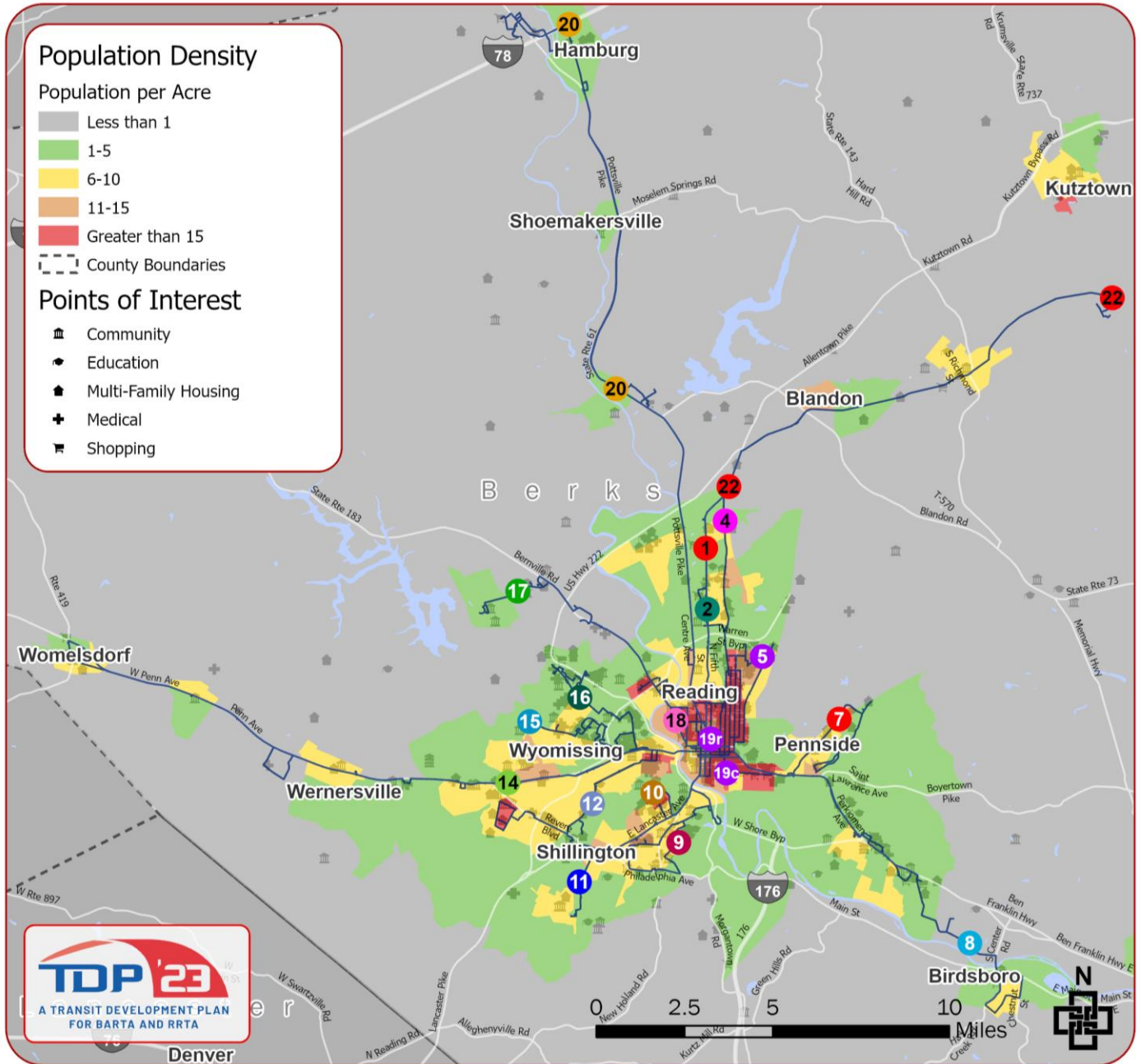


Figure 3: Population Density, Reading

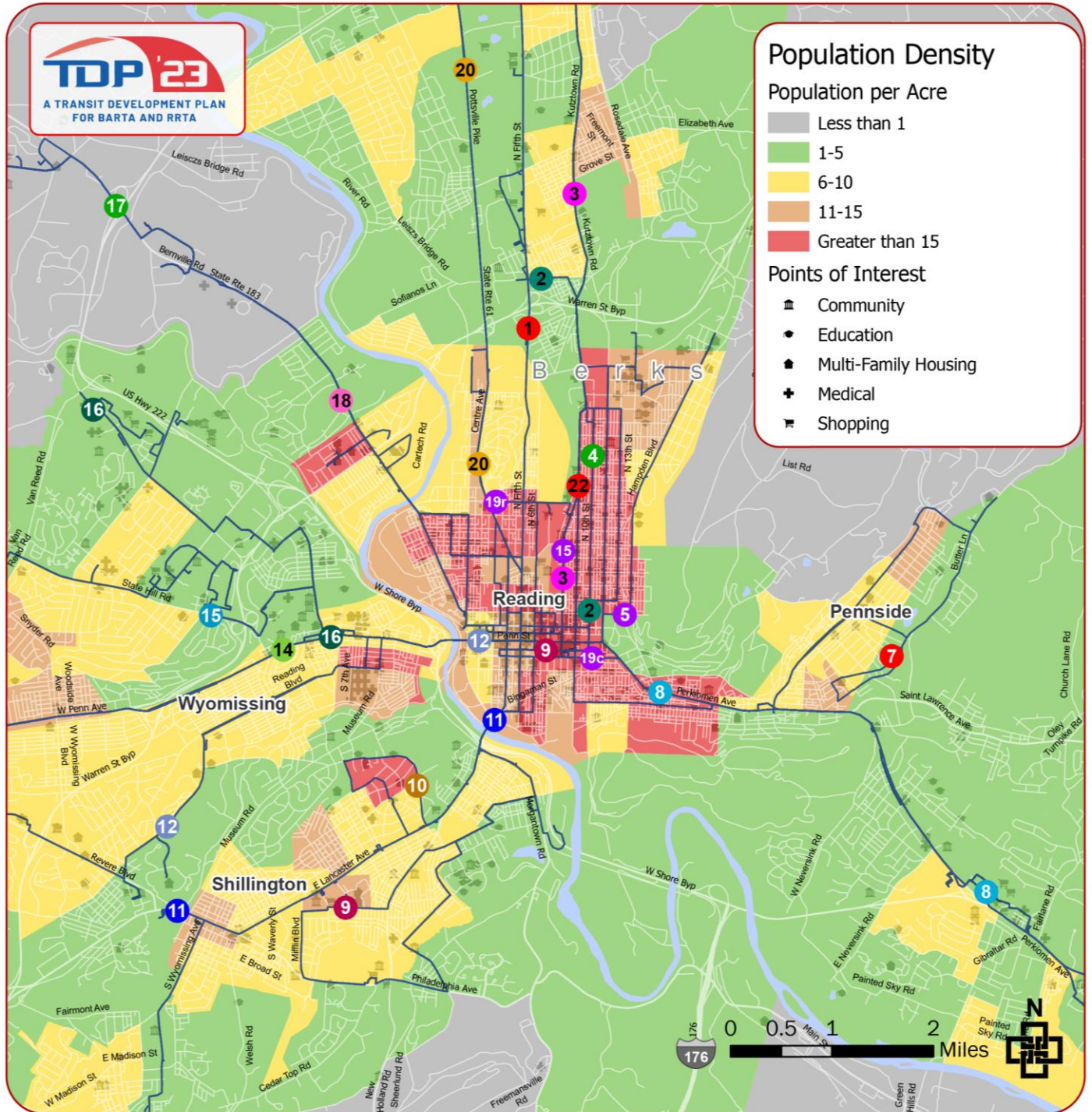


Figure 4: Population Density, Lancaster County

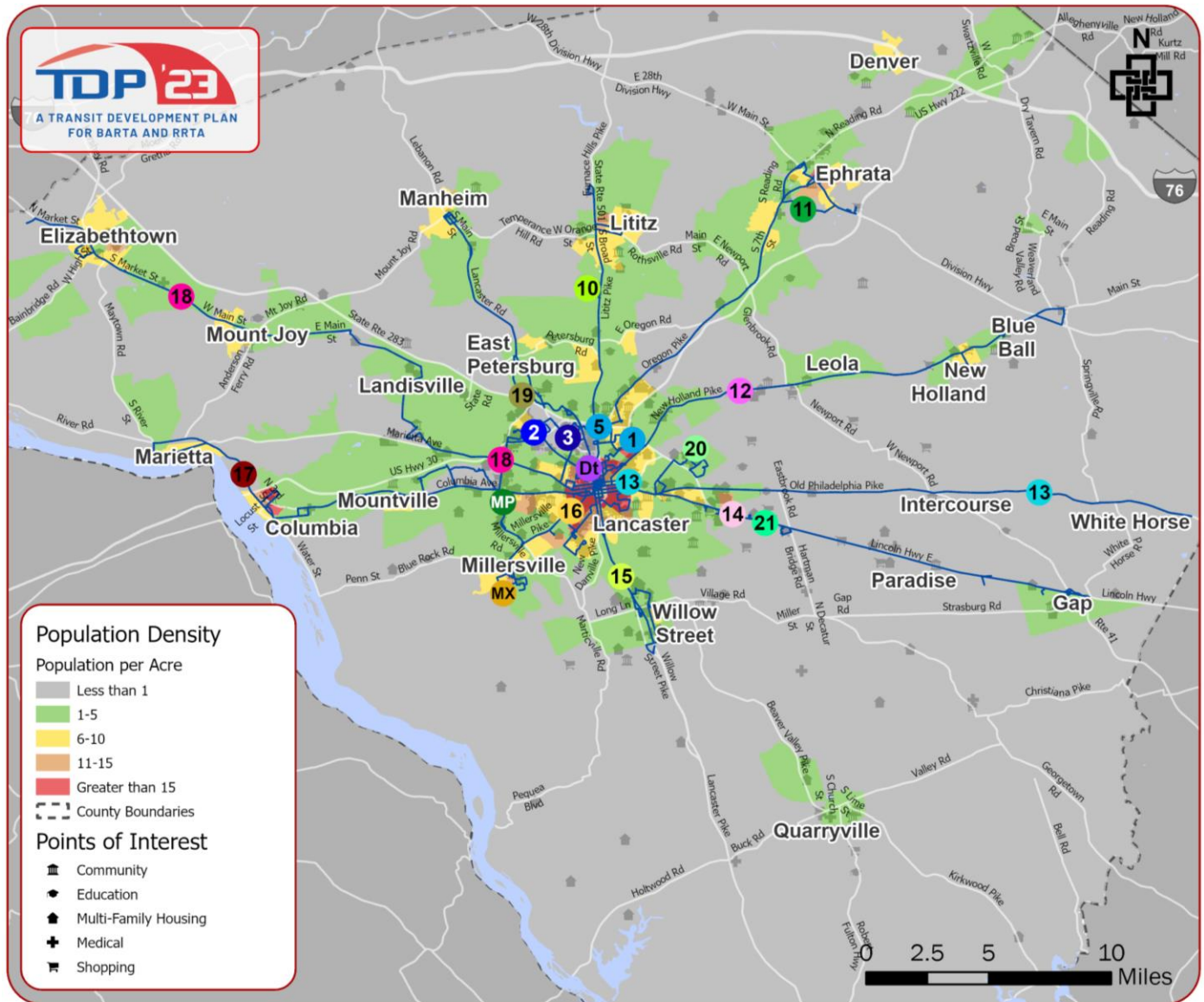
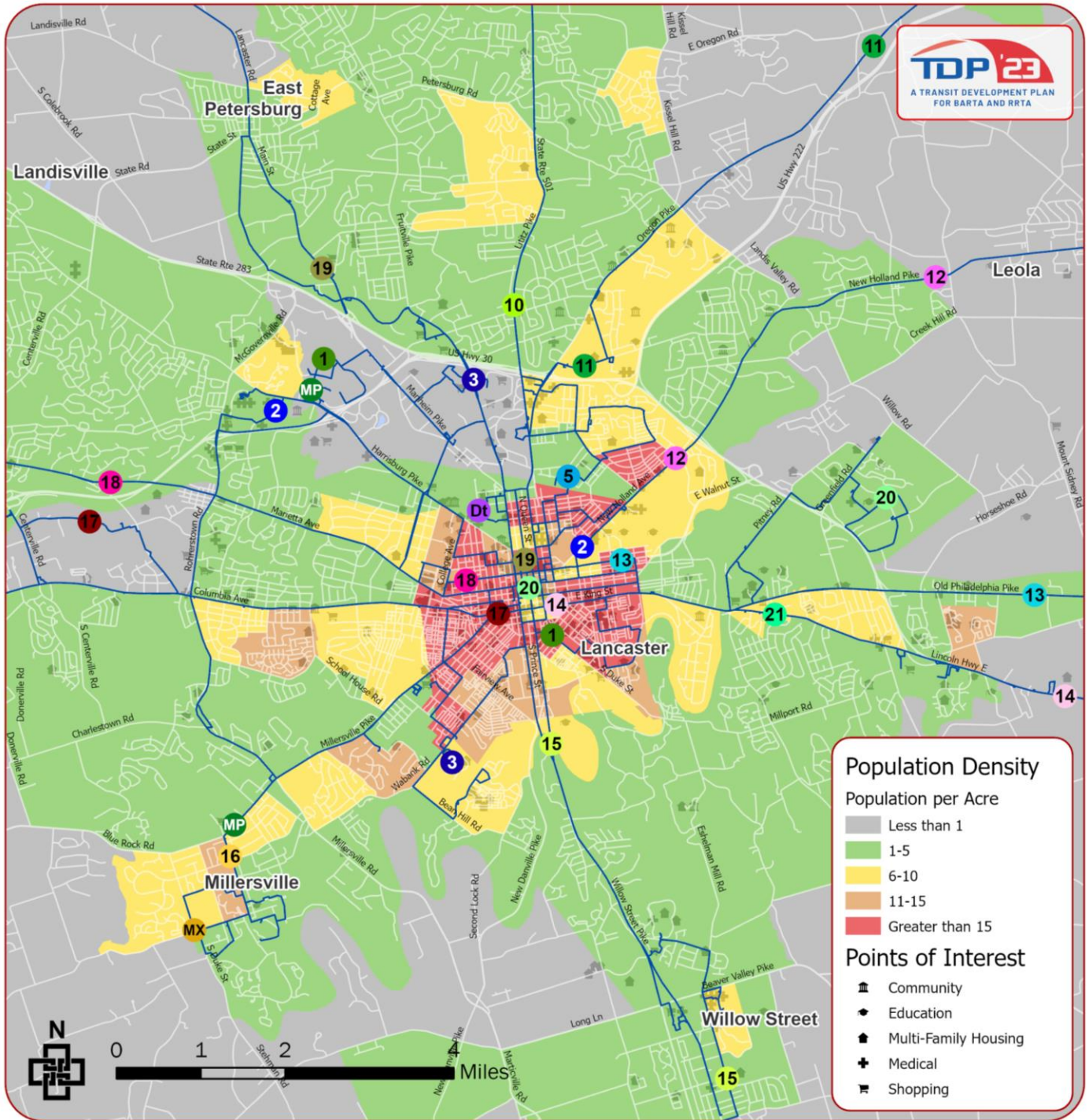


Figure 5: Population Density, City of Lancaster



EMPLOYMENT DENSITY

The number of jobs per acre is the other component of transit potential, as many employees must travel from their homes to their places of employment (**Figure 6-Figure 10**). Employment density is also a proxy for the presence of services which may attract customers as well as workers.

Figure 6: Employment Density, SCTA Service Area

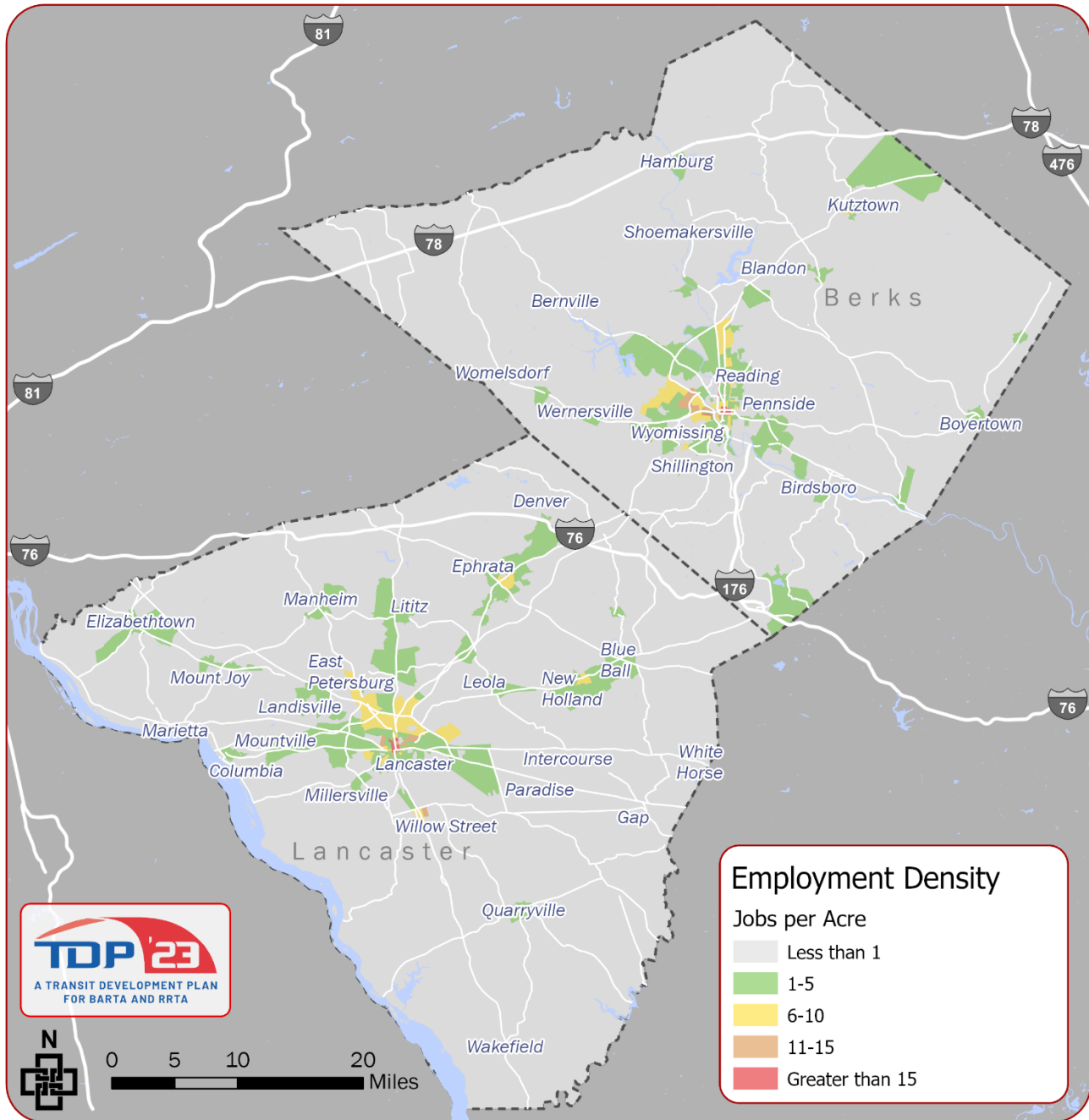


Figure 7: Employment Density, Berks County

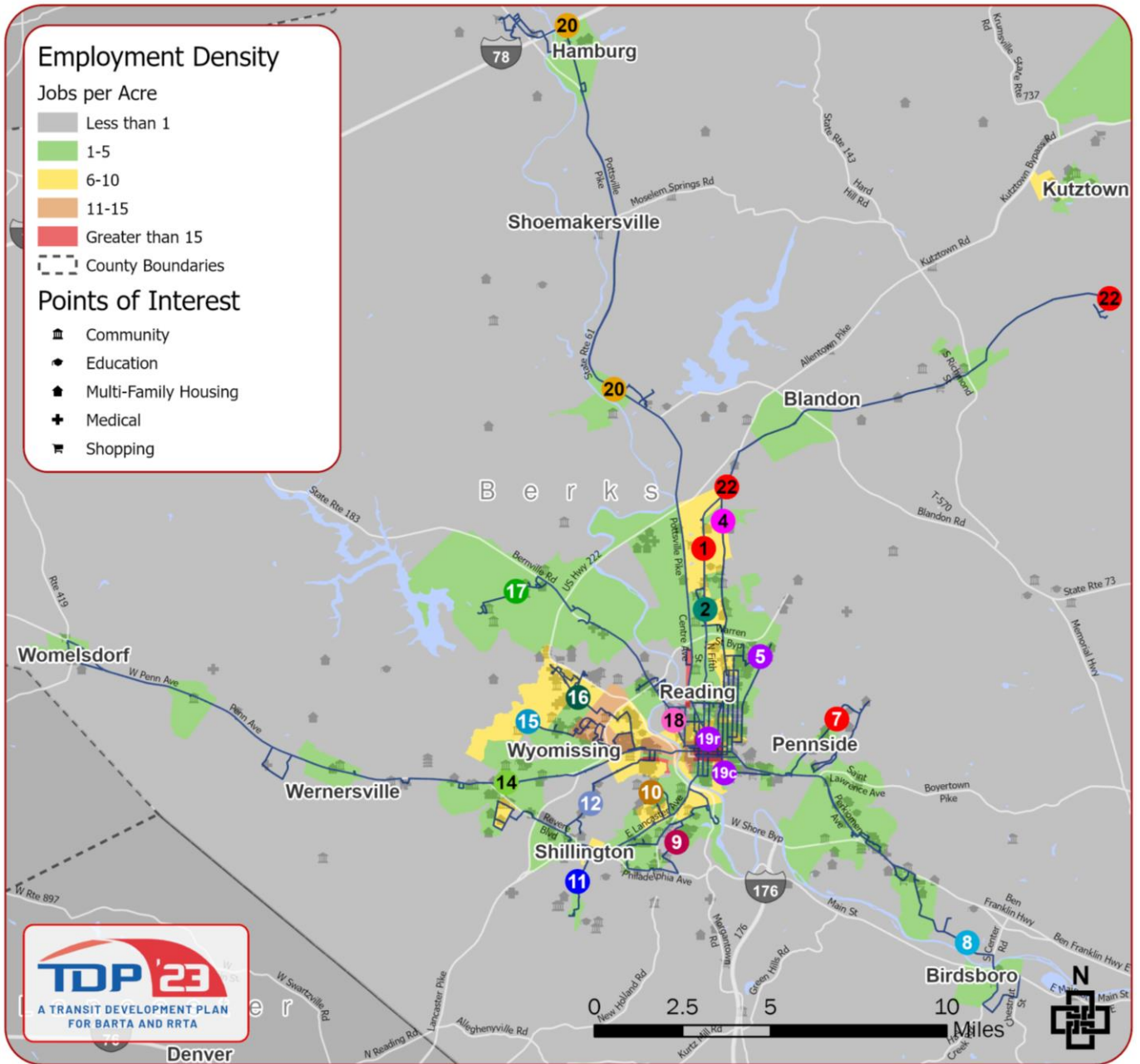


Figure 8: Employment Density, Reading

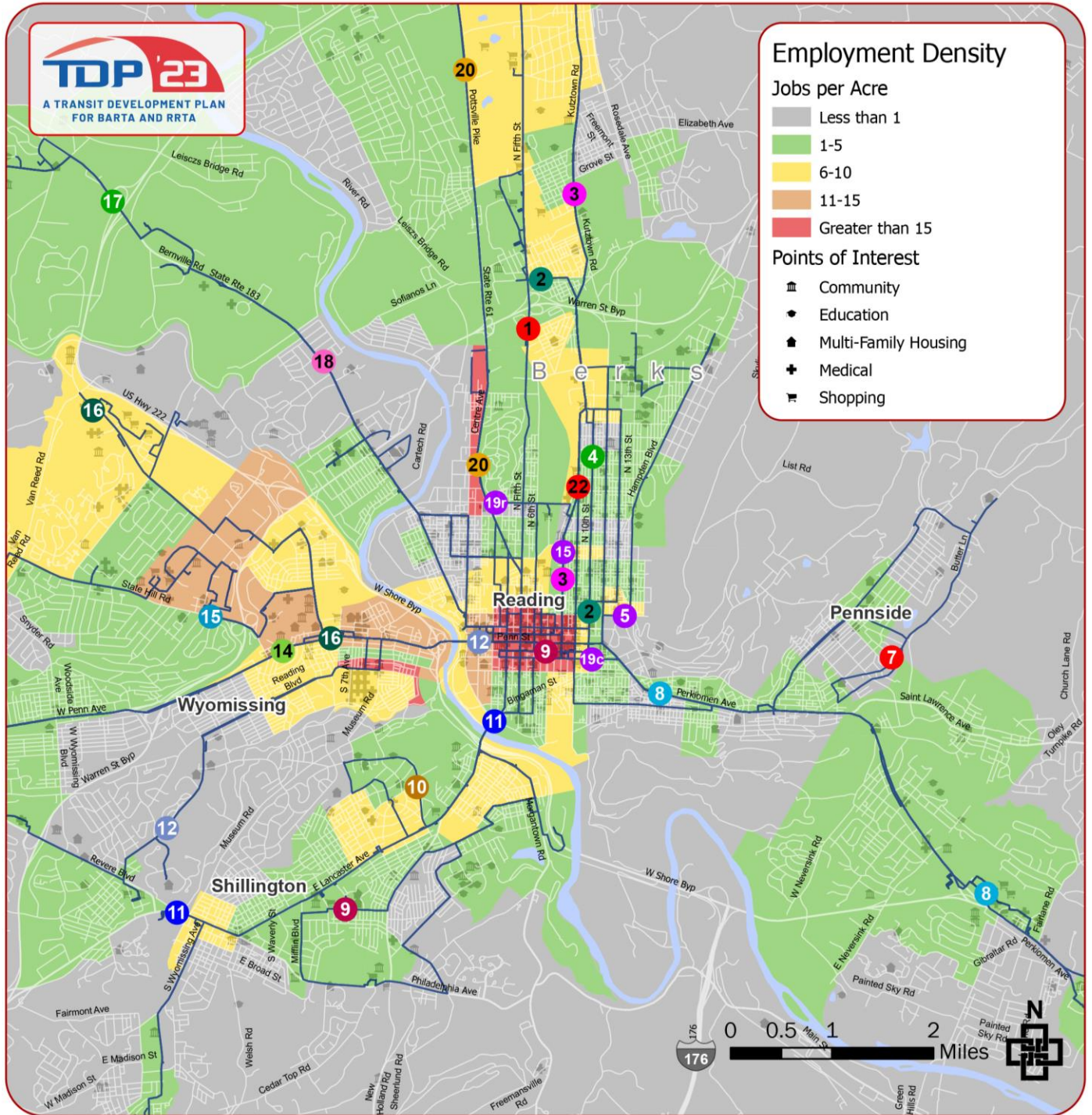


Figure 9: Employment Density, Lancaster County

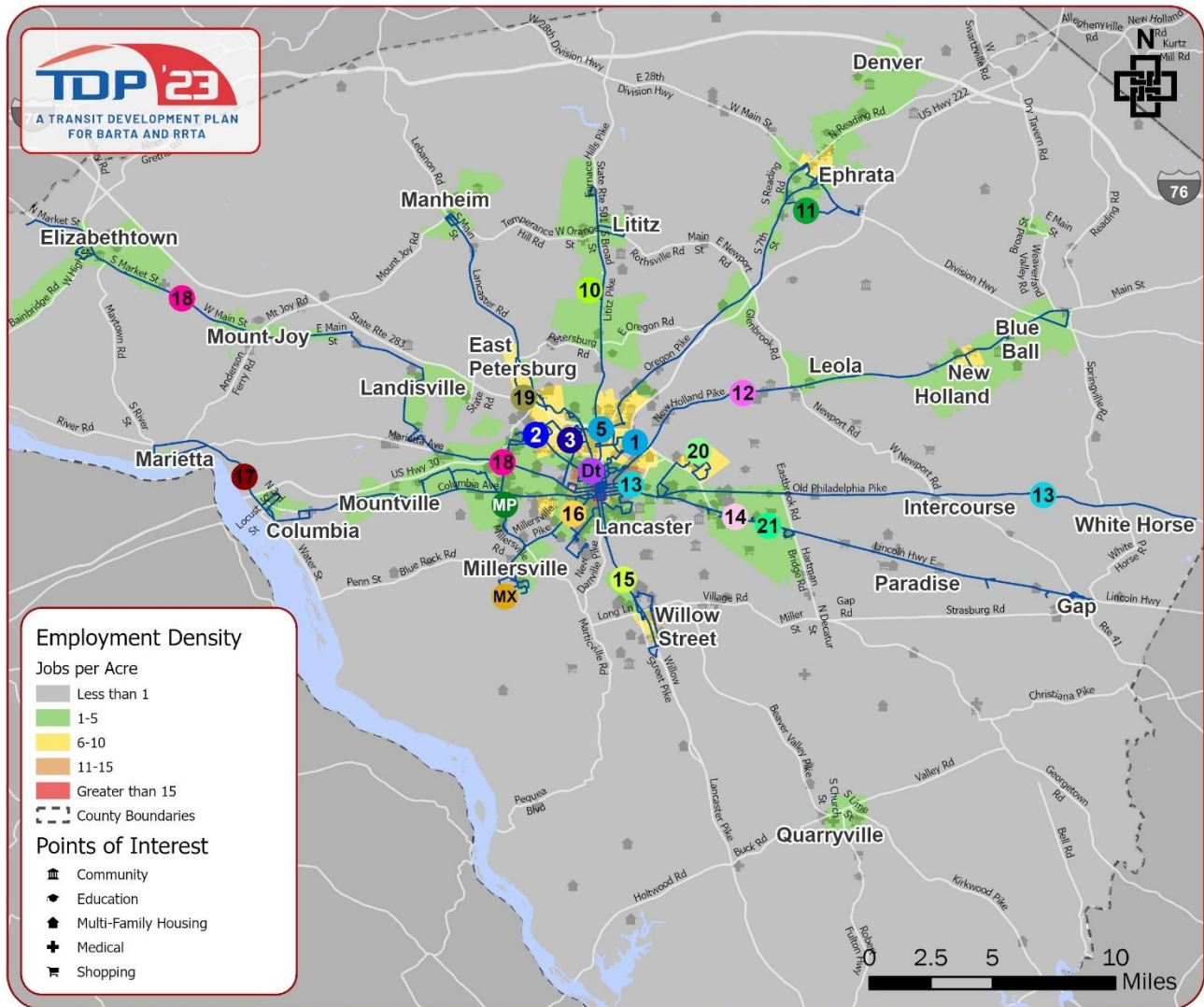
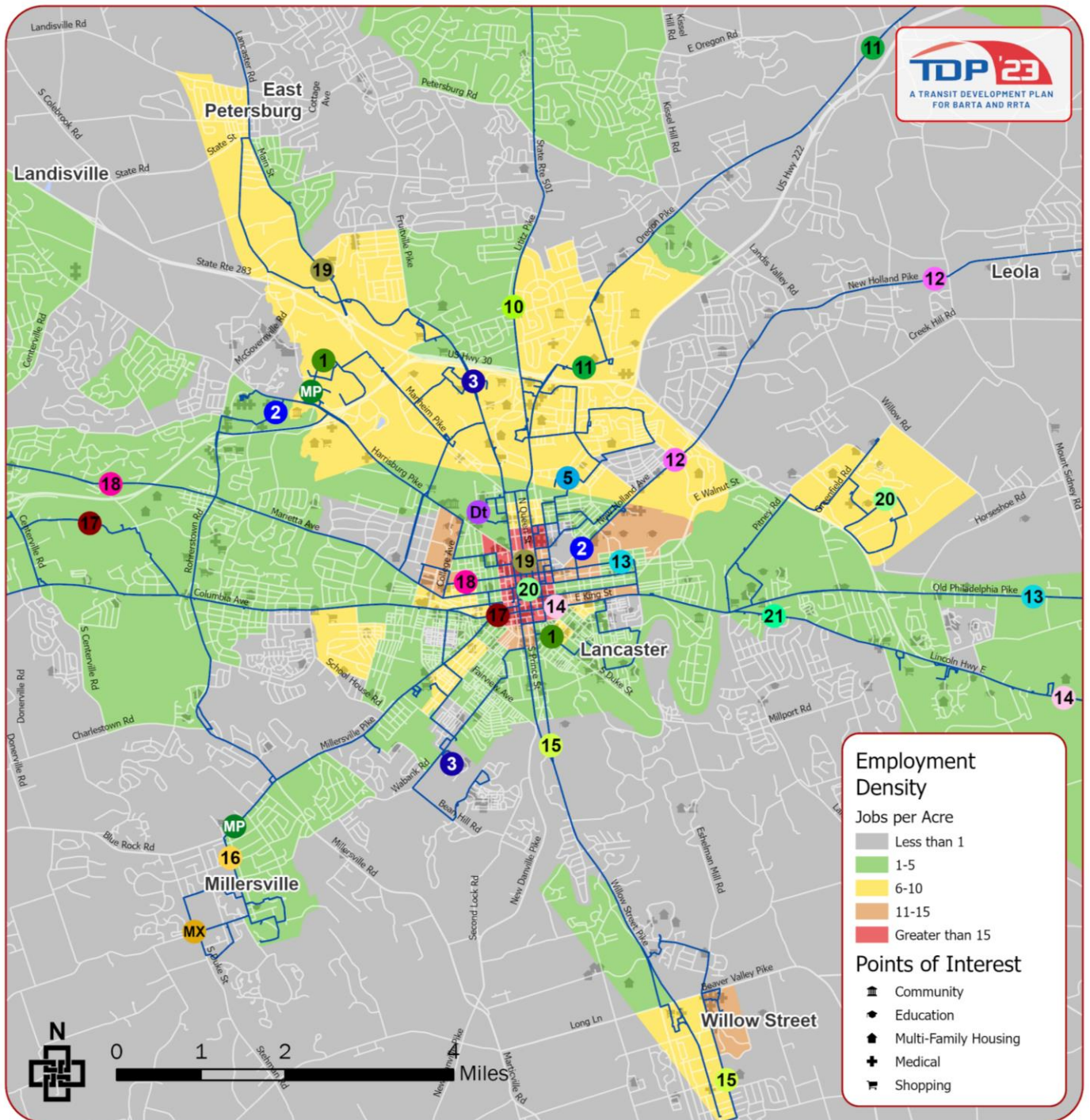


Figure 10: Employment Density, City of Lancaster



TRANSIT POTENTIAL RESULTS

Population density and employment density can be combined into a single Transit Potential index, which indicates the areas where there may be sufficient demand to support fixed-route transit. In addition to the downtowns of Reading and Lancaster, a few areas stand out as potentially viable for transit when employment and population are combined (**Figure 11-Figure 15**):

- Ephrata
- New Holland
- Columbia
- Southeast Reading
- Boyertown
- Kutztown

Figure 11: Transit Potential, SCTA Service Area

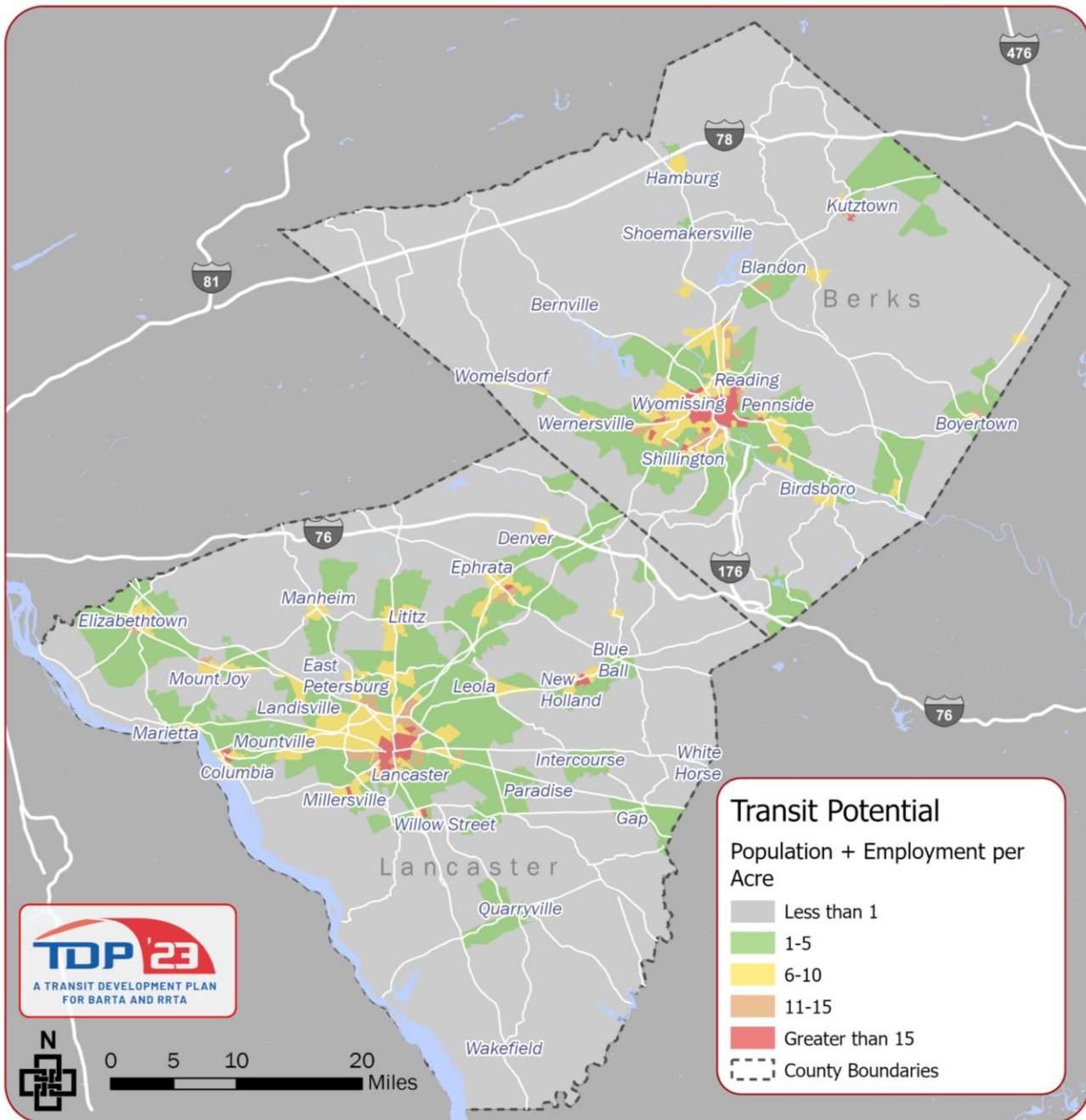


Figure 12: Transit Potential, Berks County

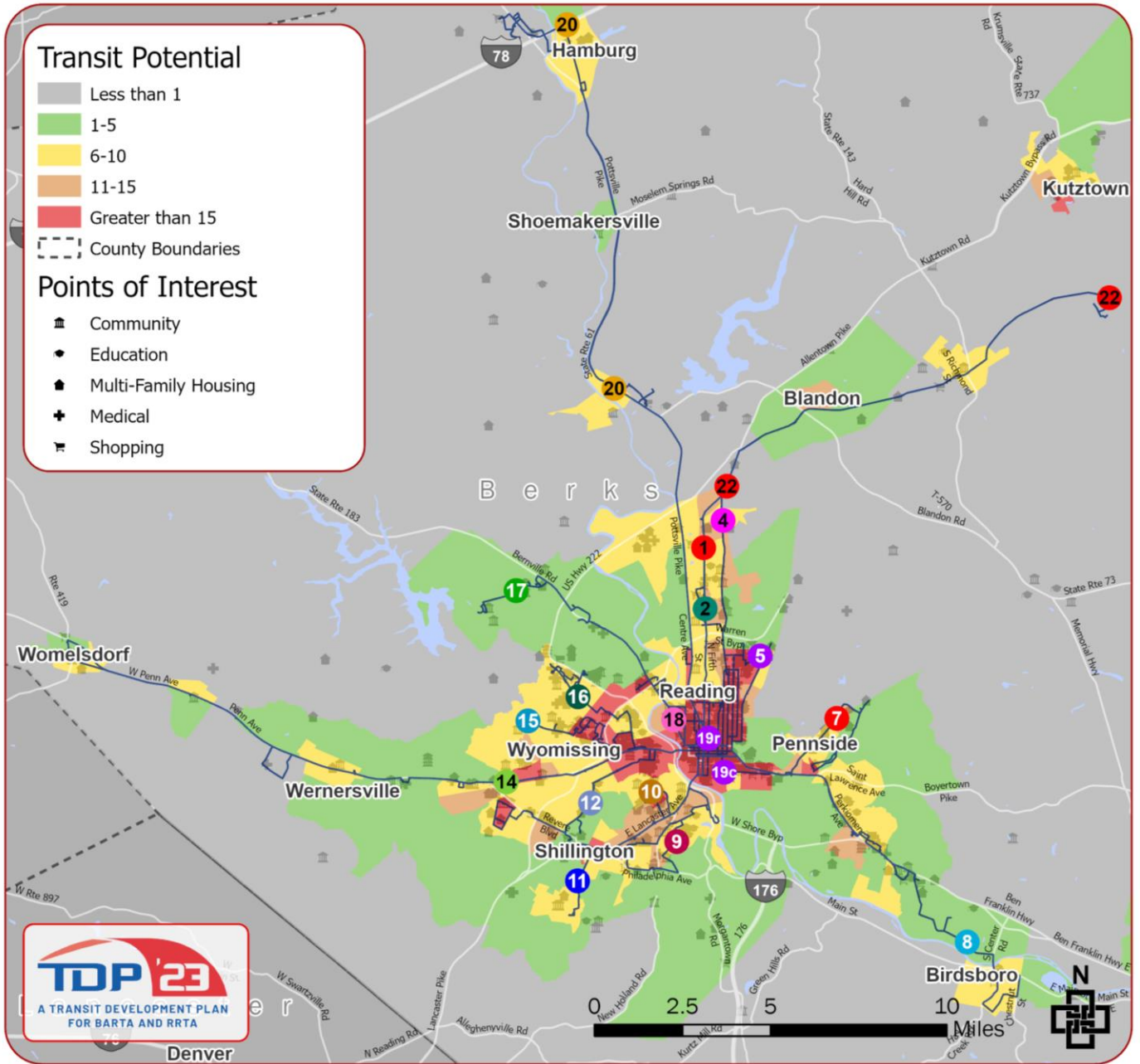


Figure 13: Transit Potential, Reading

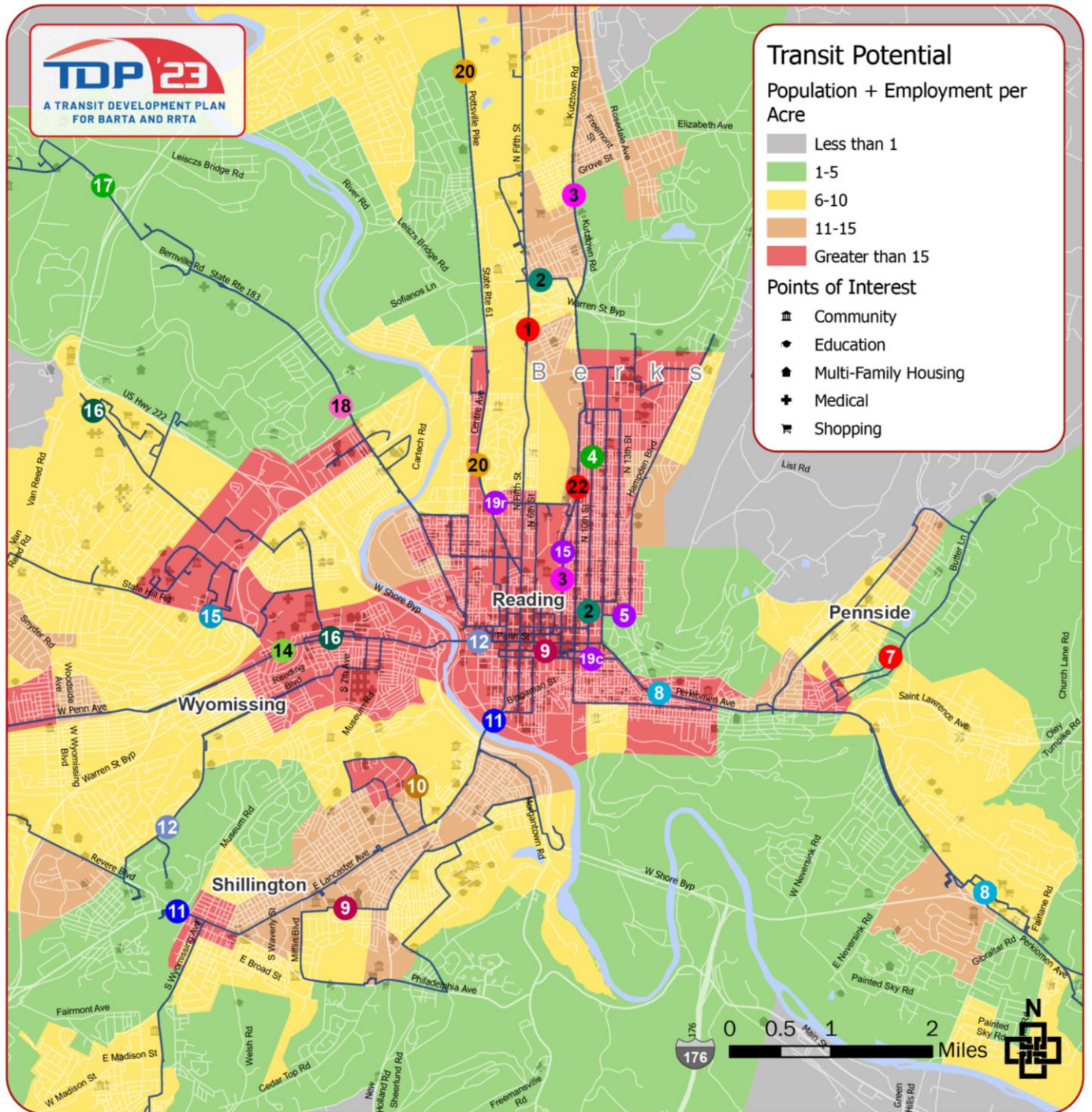


Figure 14: Transit Potential, Lancaster County

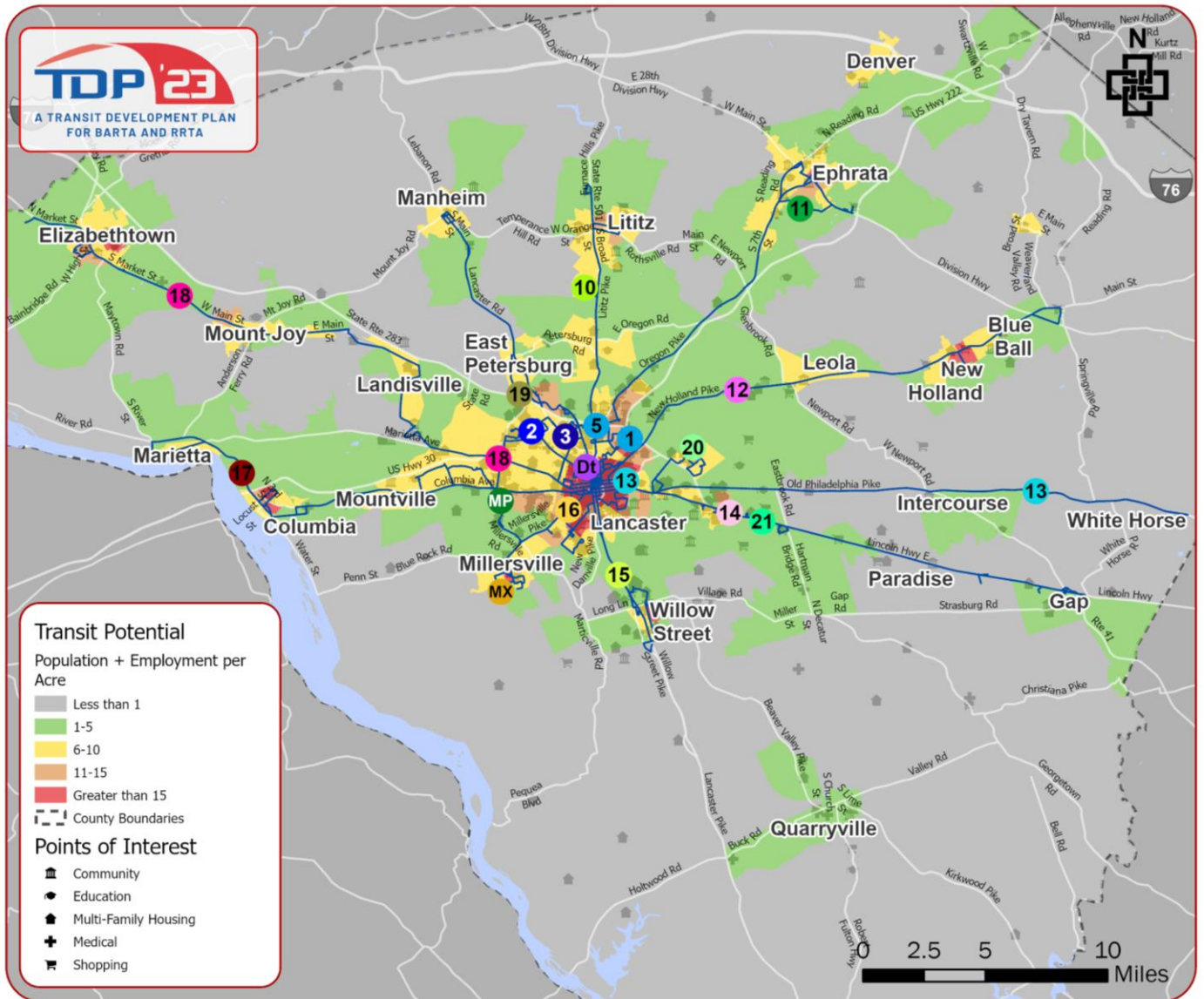
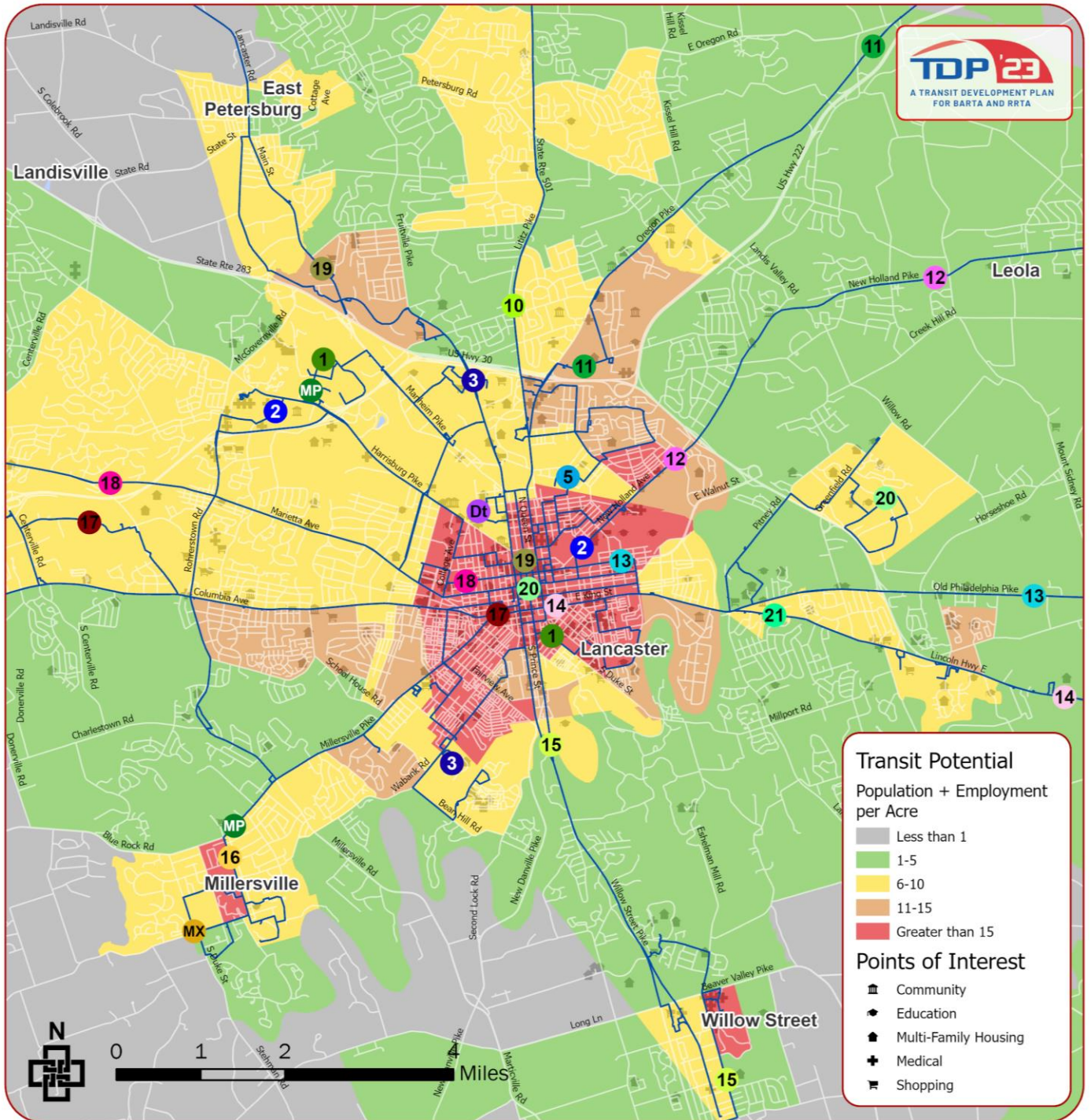


Figure 15: Transit Potential, City of Lancaster



Transit Need

Above all, public transportation is a mobility tool. Certain population subgroups have a relatively higher propensity to use transit as their primary means of local and regional transportation. These groups include:

- **People without access to an automobile**, whether it be by choice or due to financial or legal reasons, often have no other transportation options besides using transit.
- **Persons with disabilities**, many of whom cannot drive and/or have difficulty driving.
- **Low-income individuals**, typically because transit is less expensive than owning and operating a car.
- **Youth**, defined as persons between the ages of 15 and 24 years of age. This group has in recent years shown an increasing interest in transit, walking, and biking, rather than driving.
- **Older adults**, who as they age, often become less comfortable or less able to operate a vehicle.

The maps in this section show the relative densities of each of these five high-transit-propensity population subgroups by Census block groups in Lancaster and Berks Counties to help determine where the need for transit service is greatest.

With density ranges differing for each demographic analysis, the maps utilize a Jenks Natural Breaks classification method to assign each block group to one of five density categories. For each analysis, depending on the natural break category into which it falls, a score from 1 (lowest density) to 5 (highest density) is assigned to each block group. Following the analysis of each individual factor, the Transit Need Index map shows the composite Transit Need score for each block group based on the sum of its scores in each preceding analysis. For example, if a block group falls in the highest density category for each of the five demographic analyses, it will end up with a Transit Need Index value of 25 (5+5+5+5+5). The lowest possible Transit Need Index score is 5 (1+1+1+1+1).

While the Transit Potential analysis highlights areas of Berks and Lancaster Counties with actual densities to support fixed-route service, Transit Need is a relative measure that estimates the need for transit compared to other block groups. There is not, however, a specific Transit Need Index score or value that represents a threshold for supporting fixed-route service. Instead, Transit Need should be considered alongside Transit Potential. If two areas have similar and sufficient Transit Potential, the area with higher Transit Need should be prioritized for service. Conversely, in some locations, while the density of transit-dependent population groups may be relatively high, if the total population and/or employment density are still quite low, the potential to generate substantial fixed-route transit ridership will also remain low.

Figure 16 through **Figure 20** presents the composite transit need index for Berks and Lancaster Counties. Maps showing the individual transit need measures (people without access to an automobile, persons with disabilities, low-income individuals, youth, and older adults) are presented in **Appendix I**.

The map of the transit need index suggests that in Berks County a few routes serve areas where few riders may rely upon their services. In particular, after leaving downtown Route 17 and Route 18 pass through areas with low transit need. Those same areas have low transit potential. Additionally, long stretches of Route 20 and Route 22 cover areas with low transit need, and some areas of medium-high transit need, along Lancaster Avenue southwest of downtown Reading, are more than a half-mile from the nearest bus route.

In Lancaster County, Route 13 and Route 21, after they leave the City of Lancaster, travel exclusively through areas of low transit need. This contrasts with Routes 10, 11, 12, 17 and 18, which terminate in or near areas with low-moderate transit need.

The Transit Need Analysis suggests that Denver and Quarryville, which have moderate transit potential, may not be viable candidates for new service due to low transit need. The areas of the City of Lancaster with high transit need are in and immediately surrounding downtown Lancaster.

Figure 16: Transit Need, SCTA Service Area

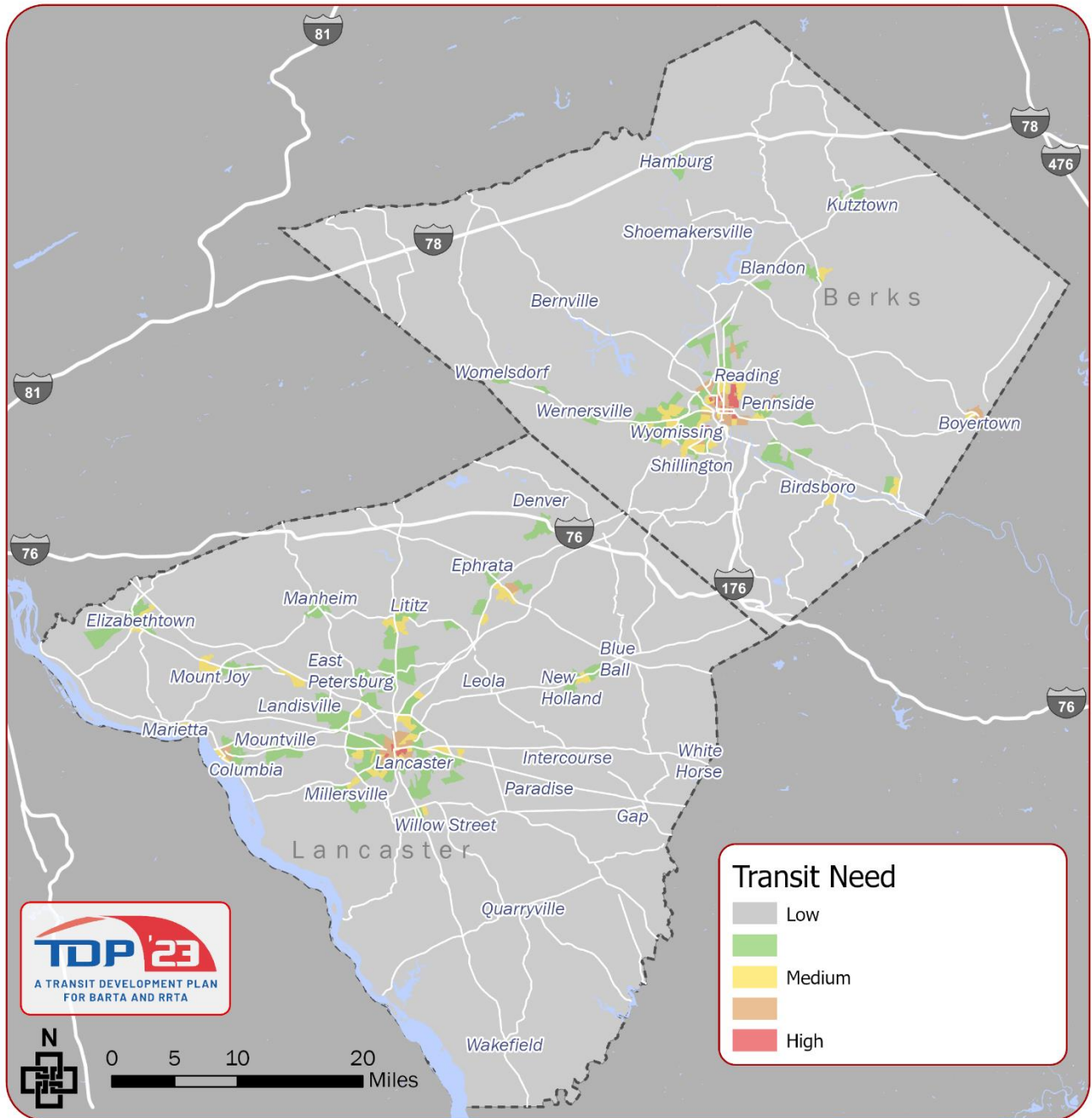


Figure 17: Transit Need, Berks County

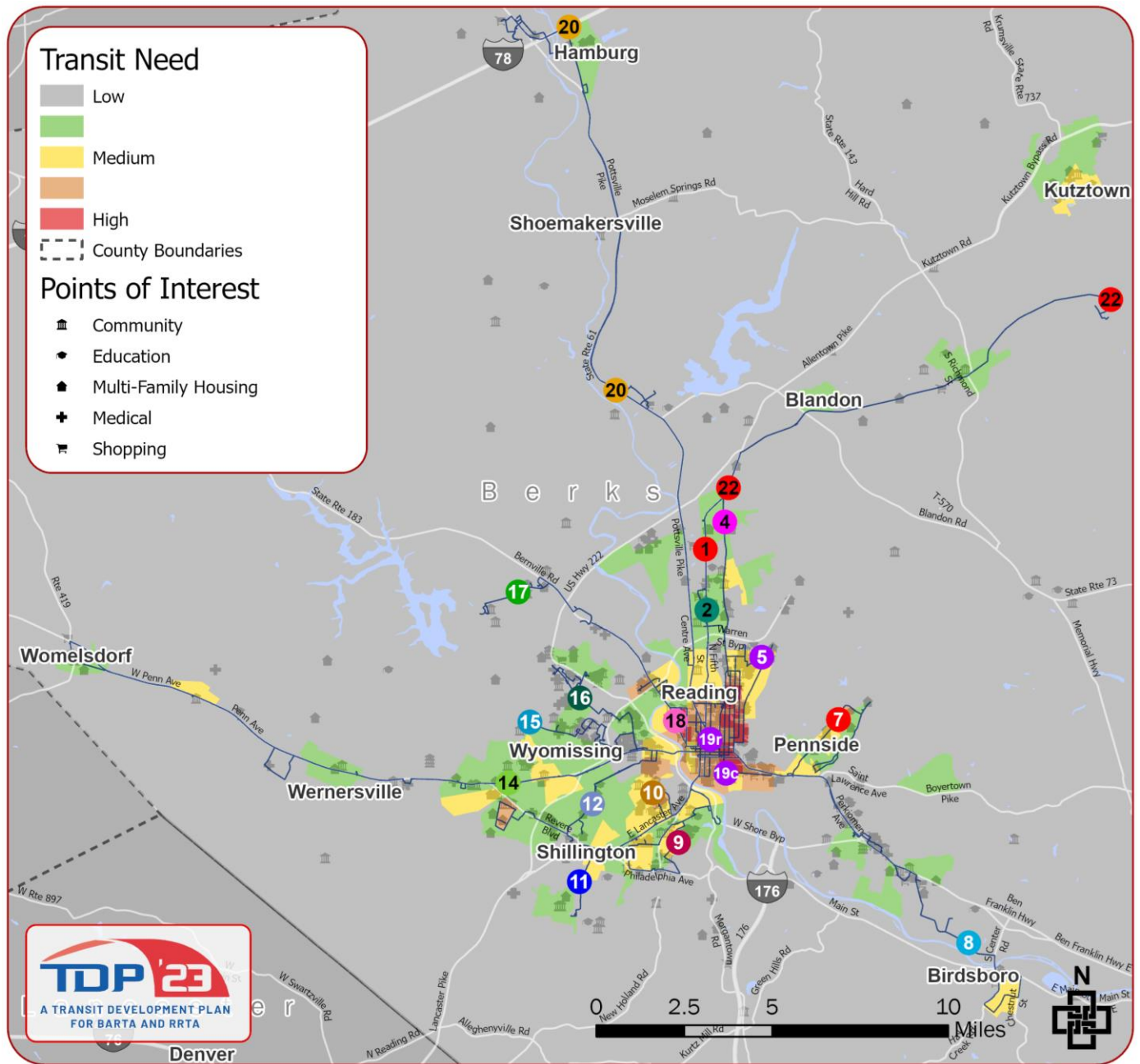


Figure 18: Transit Need, Reading

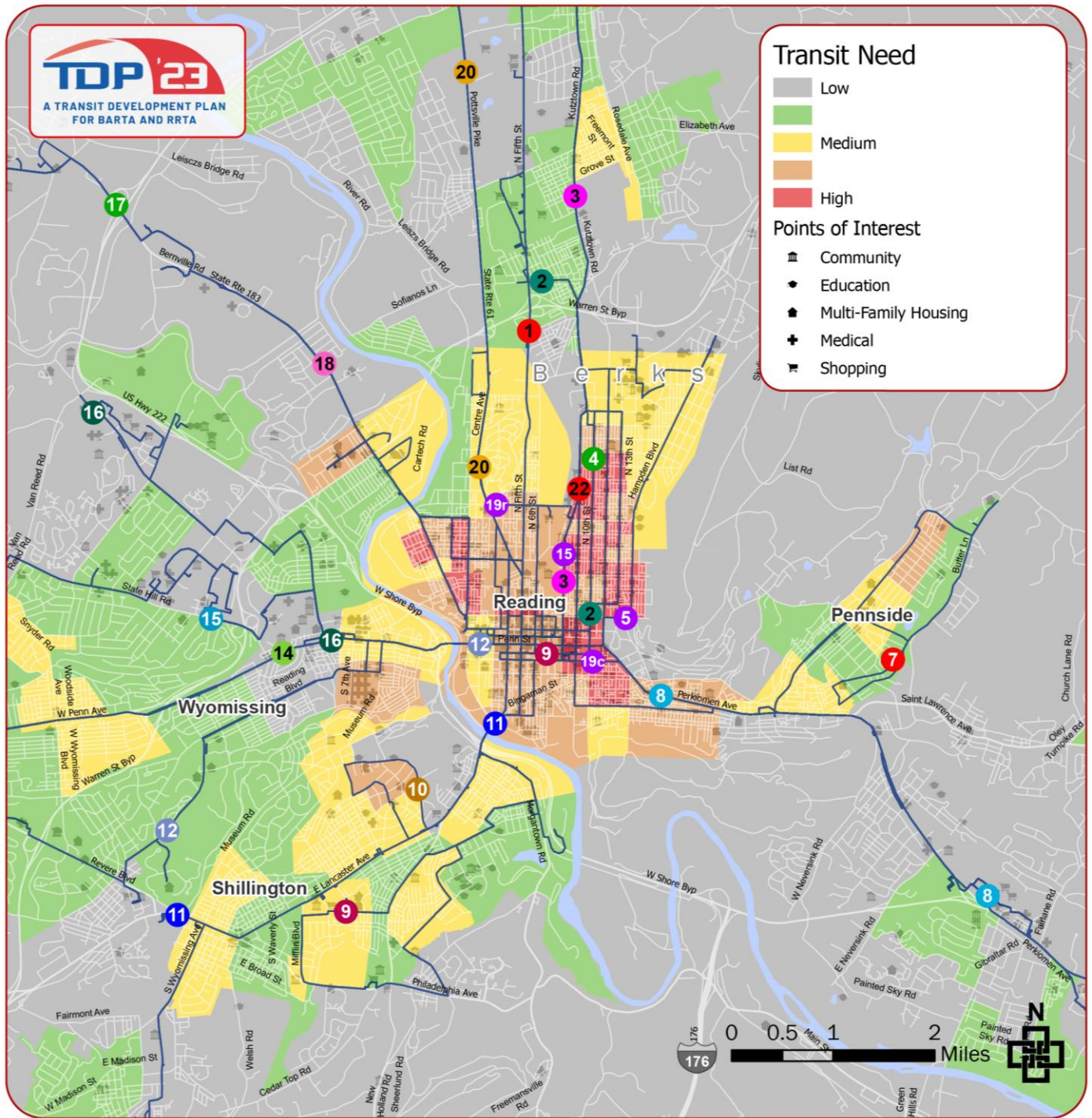


Figure 19: Transit Need, Lancaster County

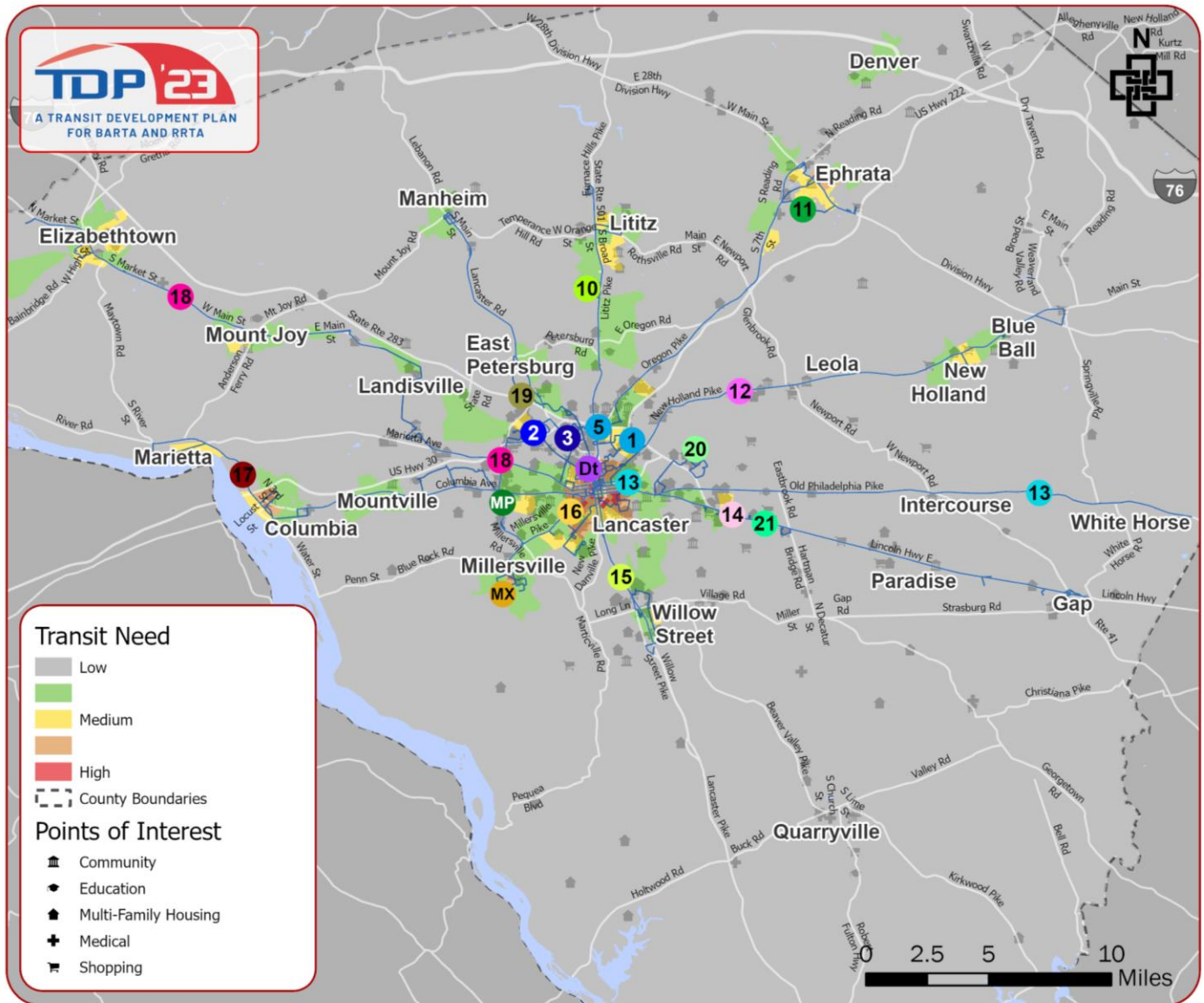
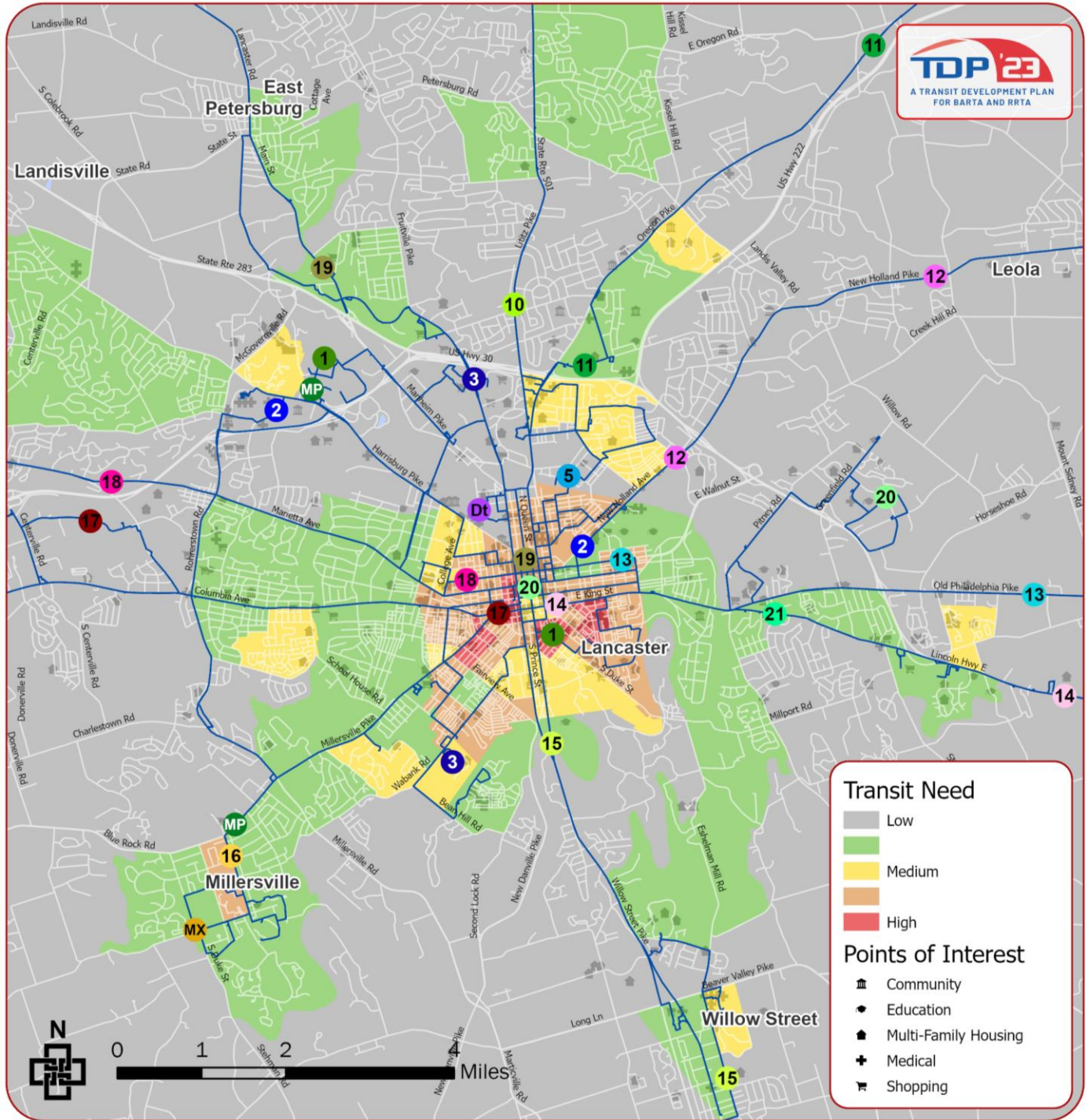


Figure 20: Transit Need, City of Lancaster



Future Growth and Development

Building on the analysis of transit potential and transit need, the future growth and development of Berks and Lancaster counties are also important indicators to help guide transit investments in the region. Examining future growth and development helps ensure the recommendations in this TDP are forward looking and will be useful in the years to come.

LAND USE VISION

In their respective comprehensive plans, Berks and Lancaster counties identified areas to which future growth should be directed. In turn, each county also identified significant land areas in which preservation and conservation are the primary goals rather than growth and development. Such areas contain natural and/or agricultural resources that the counties and their municipalities do not want to see disturbed by development. These designations are based on considerations that include, but are not limited to, the vision and goals of the counties' municipalities as expressed through comprehensive planning that is guided by public input, and the presence or absence of existing infrastructure to support development.

POPULATION AND EMPLOYMENT PROJECTIONS

Both counties developed projections, using statistical modeling, that estimate population growth in each of their municipalities over several different time horizons. In Lancaster County, between 2020 and 2035, population is estimated to grow the most in Manheim, West Lampeter, Manor, Warwick, and East Hempfield. In Berks County, the greatest growth is anticipated in Reading, Spring, Exeter, Muhlenberg, and Cumru Township between 2020 and 2035.

Berks County also projected population growth between 2020 and 2035. High growth areas for employment in the county include West Reading, Spring, Bern, Wyomissing, and Bethel. Employment projections were unavailable for Lancaster County.

Regional Travel Patterns

Transit systems should provide service between destinations that many people want to travel to and should prioritize serving areas where people are particularly likely to use transit. Another way to think about where transit should run is to examine actual travel behavior in the region, regardless of mode. Corridors with a high number of trips may be good candidates for transit service.

Figure 21 shows vehicle trips between traffic analysis zones (TAZs) in Berks County. The greatest density of travel occurs between Reading and Mohnton. Another heavily travelled corridor extends from Reading west through Wernersville to Womelsdorf, which is served by BARTA Route 14. North of Reading, there is a concentration of travel along the Pottsville Pike corridor served by BARTA Route 20, which connects Reading to Shoemakersville and Hamburg. There also appears to be a concentration of travel between TAZs in the area to the southeast of Shillington, an area that features a few golf courses, the Nolde Forest Sawmill, and the Penske Truck Leasing Corporate Headquarters.

Figure 22 shows trips between TAZs in Lancaster County. Note that while the pattern of trips is similar to the pattern in Berks County, with the largest concentration of trips in the central city and smaller concentrations elsewhere, the map of Lancaster includes fewer TAZ pairs with more than 600 vehicles

trips per day (visualized with orange and red lines). TAZ data for the two counties was prepared by separate planning agencies who may have used different methodologies for preparing the data; therefore, direct comparisons between the datasets is not advised. While it is reasonable to compare general travel patterns between the two, deeper comparisons would be require a robust review of the travel demand models.

The greatest density of travel in Lancaster County occurs in Lancaster and the nearby areas, with a corridor of continuous travel density extending north to Lititz and east to Gap. Those corridors are served by RRTA bus routes 10 and 21, respectively. Route 14 begins in Lancaster and extends east to Blue Ball; most trips involving New Holland appear to be to points further east, which potentially has implications for transit service.

Figure 21: Daily Vehicle Trips: Berks County

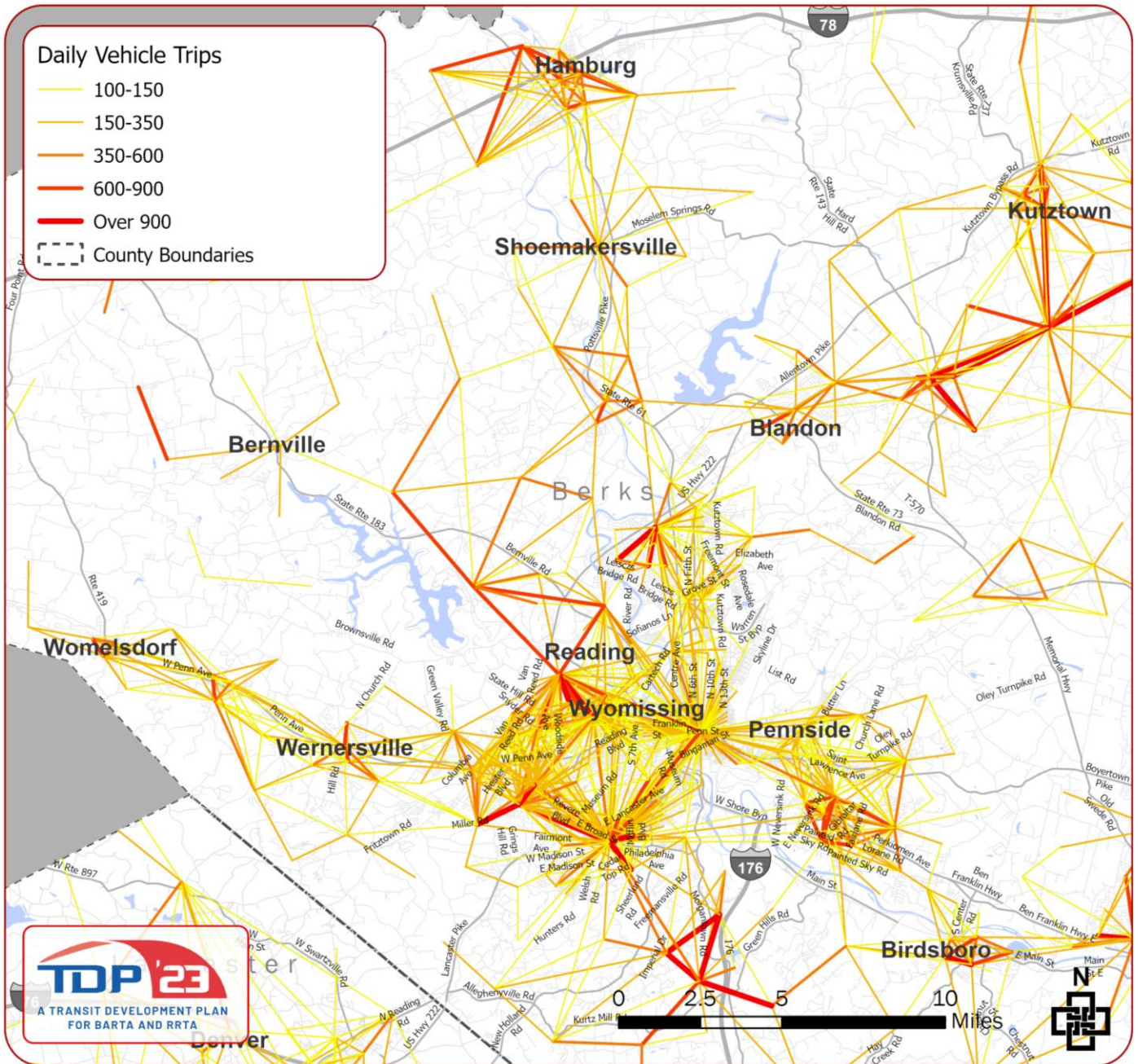


Figure 22: Daily Vehicle Trips: Lancaster County

