

Chapter 2

Review of Demographics and Land Use

INTRODUCTION

Chapter 2 presents and analyzes demographic data and land use to assess the need for transit in the Central Maryland region, including the area served by the Regional Transit Agency (RTA) of Central Maryland. It includes an analysis of population and demographic data, and analysis of land use and travel patterns that provide a context for evaluating the existing transit network. It includes a general population profile, identification and evaluation of underserved population subgroups, and a review of the demographic characteristics pertinent to a Title VI analysis. Data sources include the U.S. Census Bureau and American Community Survey (ACS) estimates. This chapter also presents a land use profile based on the major trip generators and commuting patterns in Anne Arundel County, Howard County, and the portions of Northern Prince George's County served by the RTA. This information will inform the evaluation of the current transit network and guide the development of service alternatives and subsequent plan recommendations.

This chapter is divided into the following two sections.

- Population Profile
- Community and Land Use

POPULATION PROFILE

This section provides an analysis of current and future population trends for the Central Maryland region, as well as an analysis of the demographics of population groups that often depend on transportation options beyond an automobile.

Population Trends, 1990-2015

Table 2-1 presents information on population trends for the state of Maryland and the Central Maryland region for the period from 1990 to 2015. During the 25-year period, the state, region, and county all experienced population growth. The region as a whole experienced a population growth of over 40 percent for this period, led by a 62 percent growth in Howard County's population. The City of Laurel and Anne Arundel County (less the City of Annapolis) also exceeded statewide growth rates with population increases over 30 percent, compared to the statewide figure of 24 percent. Of note is that this combined regional population (846,403) exceeds that of the City of Baltimore (621,849 in 2015) and is close to the overall

population of Prince George’s County (909,535 in 2015—some of which is included in the Central Maryland estimate).

Table 2-1: Historic and Current Population, 1990-2015

Place	Population				Population Percent Change		
	1990	2000	2010	2015	1990 - 2000	2000 - 2010	1990-2015
Maryland	4,781,468	5,296,486	5,773,552	5,930,538	10.8%	9.0%	24.0%
Central Maryland ¹	601,557	721,620	811,462	846,403	20.0%	12.5%	40.7%
Anne Arundel County ²	394,591	453,818	499,262	516,439	15.0%	10.0%	30.9%
Howard County	187,328	247,842	287,085	304,115	32.3%	15.8%	62.3%
Prince George's County (Laurel) ³	19,638	19,960	25,115	25,849	1.6%	25.8%	31.6%

Source: U.S. Census Bureau 1990, 2000 & 2010, and 2015 American Community Survey 5-Year Estimates

Notes:

1. Includes Anne Arundel County, minus Annapolis + Howard County + only Laurel of Prince George’s County.
2. The City of Annapolis is excluded from the population.
3. Only includes the City of Laurel.

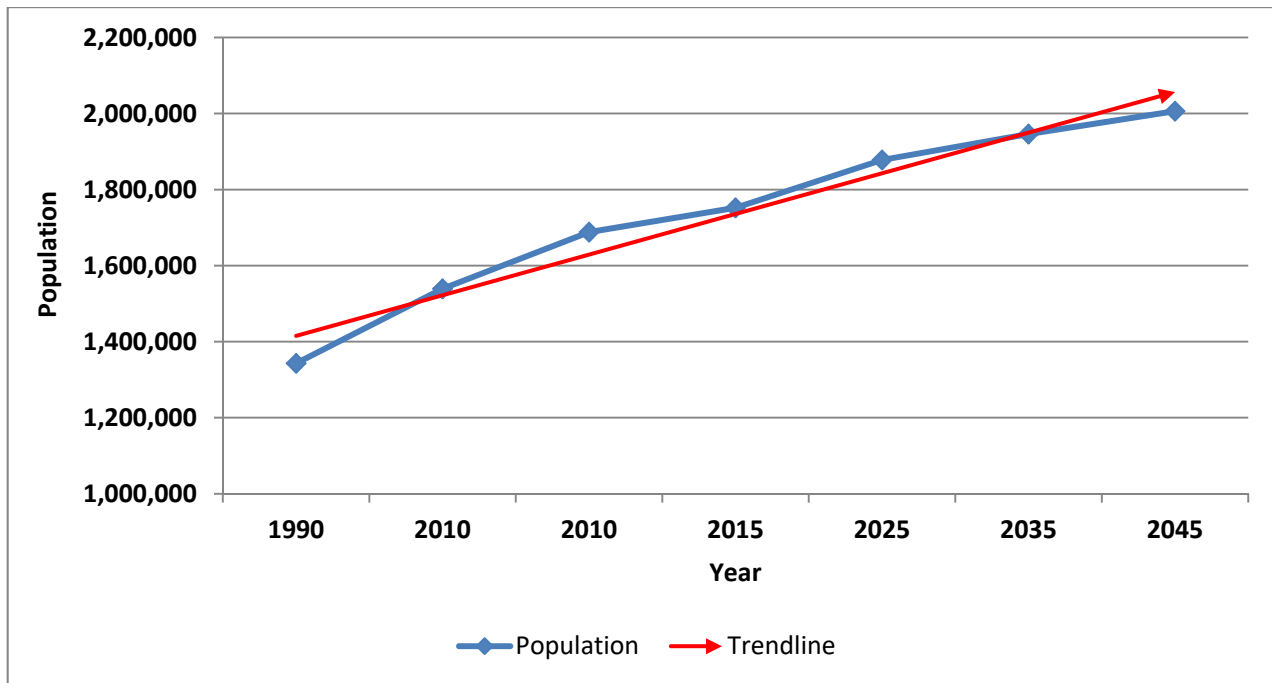
Population Forecasts, 2025-2045

The Maryland Department of Planning, Projections and State Data Center prepare county population projections for the state in 10-year increments. Currently forecasts are available through the year 2045, and these are presented in Table 2-2. Because these are county-level estimates it is not possible to separate the area of Prince George’s County served by the RTA, or the City of Annapolis from Anne Arundel County. However, the basic picture presented by the county-level data is that the population growth will continue for the region, but at a much slower pace as can be seen in Figure 2-1 which shows the trend line.

Table 2-2: Future Population Projections, 2025-2045

Place	2025 Population Projection	2035 Population Projection	2045 Population Projection
Maryland	6,336,500	6,676,900	6,968,700
Central Maryland			
Anne Arundel County	584,400	608,950	637,900
Howard County	355,700	369,500	372,350
Prince George's County	938,000	967,850	995,900

Source: Maryland Department of Planning, Projections and State Data Center, 2017

Figure 2-1: Historical and Projected Population, 1990-2045

Note: Population projections (2025, 2035, & 2045) are on available at the countywide level. The above numbers include countywide population for Anne Arundel, Howard, and Prince George’s Counties.

Demographic Change—Aging Population

In addition to overall population growth, another factor which will affect the need for public transportation is the aging of the baby boomer generation in the Central Maryland region. Table 2-3 presents projections from the Maryland Department of Aging indicating that over the period 2010-2040 the population of persons 60 and above will increase 50.4 percent in Anne Arundel County, 82.34 percent in Howard County, and 68.3 percent in Prince George’s County. The growth in this age group peaks by 2030 and then begins to decline.

While a significant number of persons continue to drive as they age, the percentage of non-drivers increases as a cohort ages, increasing the need and demand for public transportation to maintain mobility. Both Howard and Anne Arundel County have programs to provide demand-responsive transportation to seniors, age 55 and above in Anne Arundel, and 60 and above in Howard County. The implication is that these services will face calls to expand, and there will be a need to implement and maintain quality fixed-route services and provide travel training to those who do not know how to use public transportation.

Table 2-3: Central Maryland 60+ Population Projections by Jurisdiction

Jurisdiction	2010	2020	2030	2040	Percent Change 2010-20140
Anne Arundel County	92,695	120,290	142,972	139,412	50.4%
Howard County	44,750	65,120	82,140	81,599	82.3%
Prince George's County	137,473	192,853	233,444	231,367	68.3%
Regional Total	274,918	378,263	458,556	452,378	64.6%
State of Maryland	1,058,253	1,439,791	1,717,931	1,701,414	60.8%

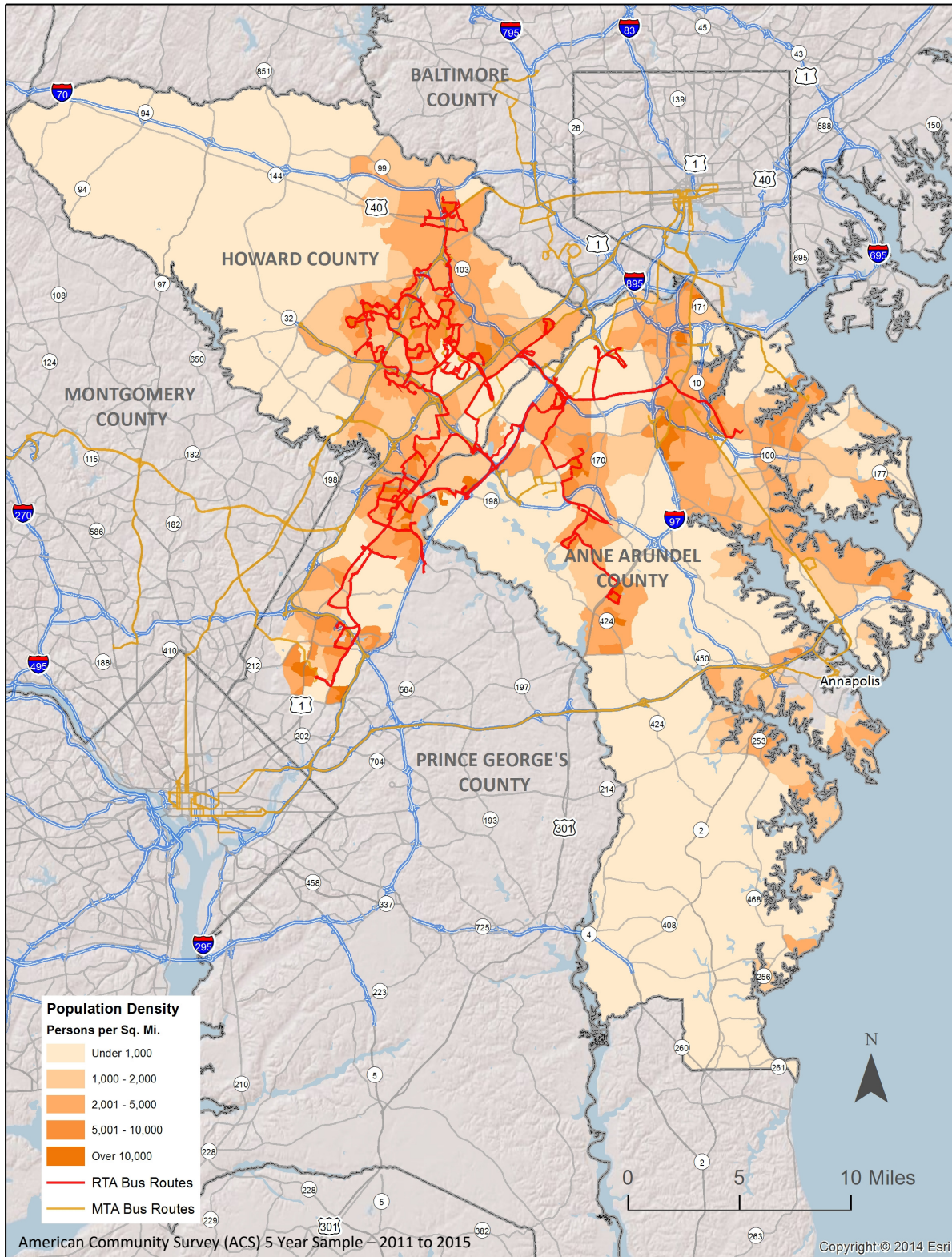
Population Density

The population of the region is not spread uniformly across this large area, but is concentrated in a number of population centers that have developed around historic communities, transportation facilities, or as a result of planned development. Figure 2-2 presents a map of the region showing the population density in terms of per persons per square mile.

As can be seen in the population density map, the Central Maryland region has a greater population density in Eastern Howard County and in Western and Northern Anne Arundel County. Portions of Anne Arundel County on the peninsulas extending into the Chesapeake Bay also have higher population densities. Western Howard County and Southern Anne Arundel County are both rural in nature by policy, as the counties have adopted land-use plans that preserve low density and limit development. Much of the region has developed with typical suburban land use patterns with relatively low residential density, though there are areas with concentrations of multi-family and townhouse development.

Population density is often an effective indicator of the types of public transit services that are most feasible within a study area. While exceptions exist, an area with a density of 2,000 persons per square mile will generally be able to sustain frequent, daily fixed route transit service. Conversely, an area with a population density below 2,000 persons per square mile may be better suited for deviated fixed route, flex schedule, or dial-a-ride service. As can be seen in the map, the existing transit network generally provides service in or between the areas with supportive residential density.

Figure 2-2: Population Density



Employment Density

Figure 2-3 presents employment densities for the region, again with the transit network as an overlay. As can be seen employment is more concentrated, but in a number of areas that represent key destinations for transit services. These include the Columbia area, Ellicott City, Elkridge, Jessup, Laurel, College Park, Arundel Mills, Glen Burnie, and Annapolis. Several other major employment centers do not appear on the density map as having a high density, because the employment is spread out over large areas—Baltimore-Washington Thurgood Marshall Airport (BWI), Fort Meade and the National Security Agency (NSA).

Figure 2-4 presents a map with the location of jobs in the region, showing the number of jobs by location, rather than the density of employment. As expected, jobs are concentrated along the I-95/U.S.1/295 corridor, with major concentrations in Columbia, North Laurel, the Gateway, Guilford and Jessup areas of Howard County; in Brooklyn Park/North Linthicum, BWI, Arundel Mills, National Business Park/Fort Meade, Parole and Annapolis.

Figure 2-3: Employment Density: Jobs Per Square Mile

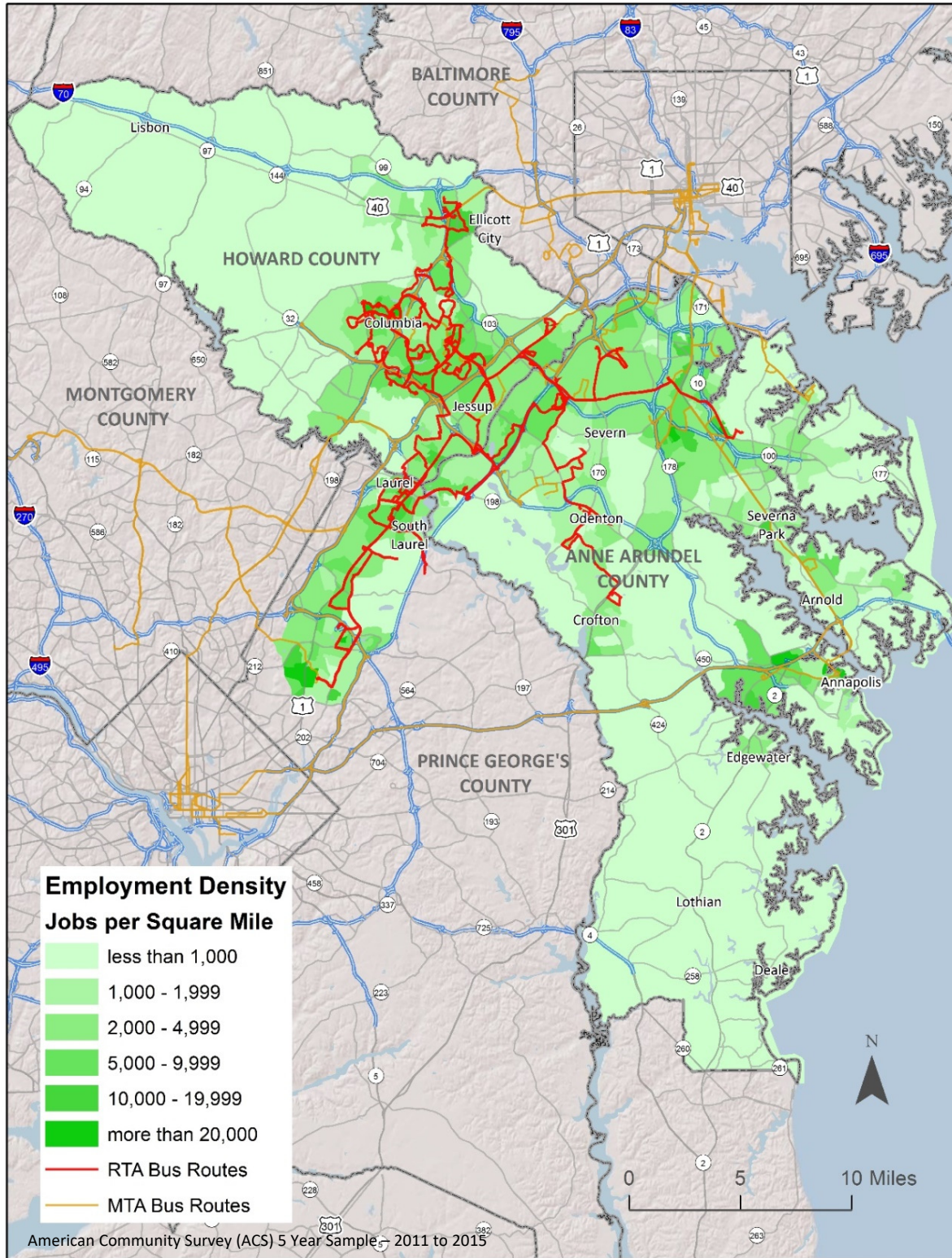
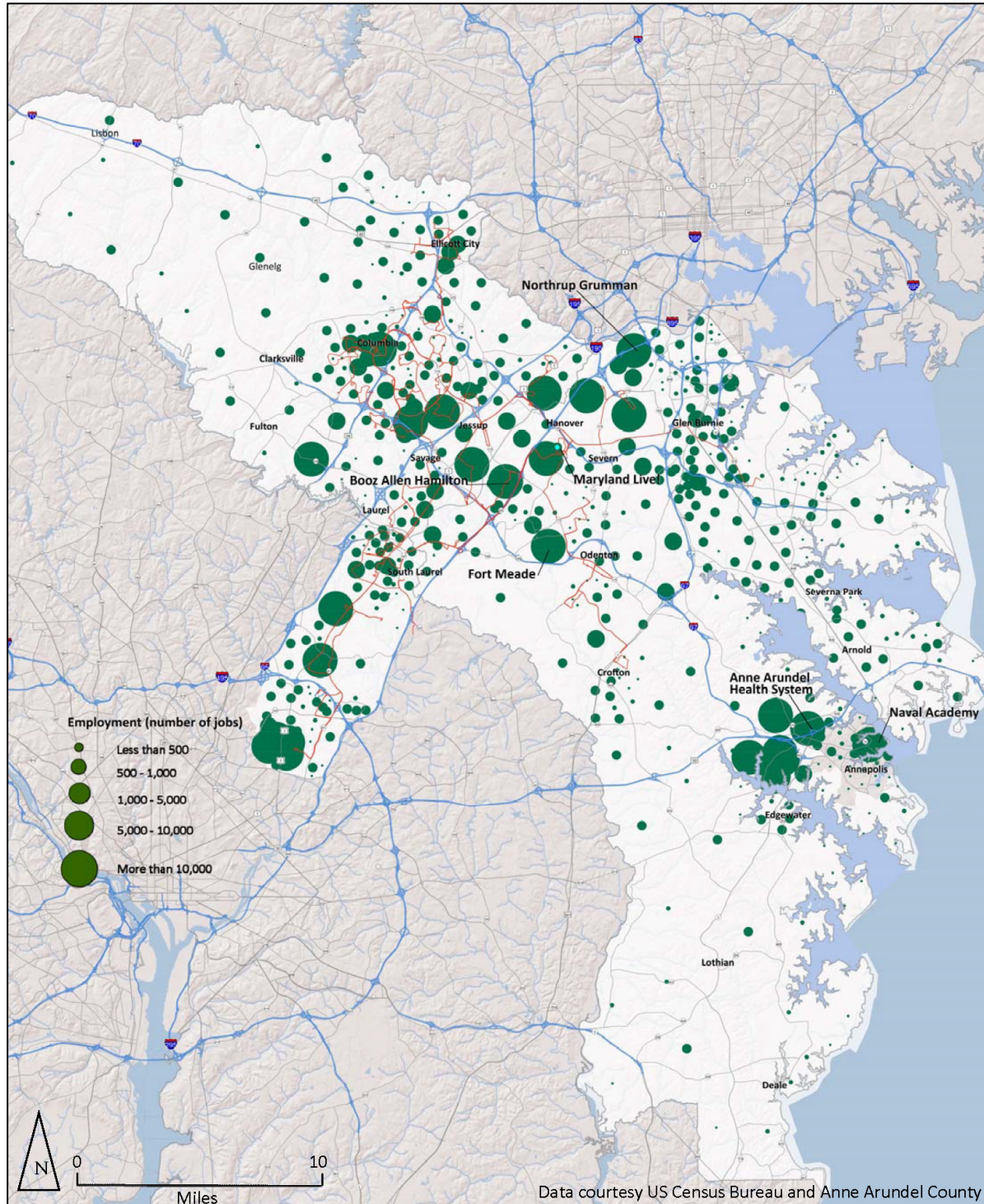


Figure 2-4: Central Maryland Employment—Number of Jobs



Transit Dependent Populations

Public transportation need may be determined by identifying the relative sizes and locations of transit dependent populations. Transit dependent populations may include individuals who do not have access to a personal vehicle or who are unable to drive themselves due to age restrictions or disability. The analyses of transit dependent population uses data from the American Community Survey five-year estimates (2010-2014) and presented by Census block group. Determining the location of these populations assists in the evaluation of current transit services and the extent to which services meet community needs.

Transit Dependent Index (TDI)

The Transit Dependence Index (TDI) is an aggregate measure that utilizes recent data from the American Community Survey (ACS) 5-Year Estimates and the United States Decennial Census to display relative concentrations of transit dependent populations. Five factors make up the TDI calculation:

- Population density per square mile,
- Zero vehicle households,
- Elderly population,
- Youth population, and
- Below poverty population.

For each factor, individual block groups were classified according to the prevalence of the vulnerable population relative to the study area average. The factors were then combined to create an overall index depicting the relative transit dependence of each block group (low, elevated, moderate, high, or very high)—as compared to the average values of the study area.

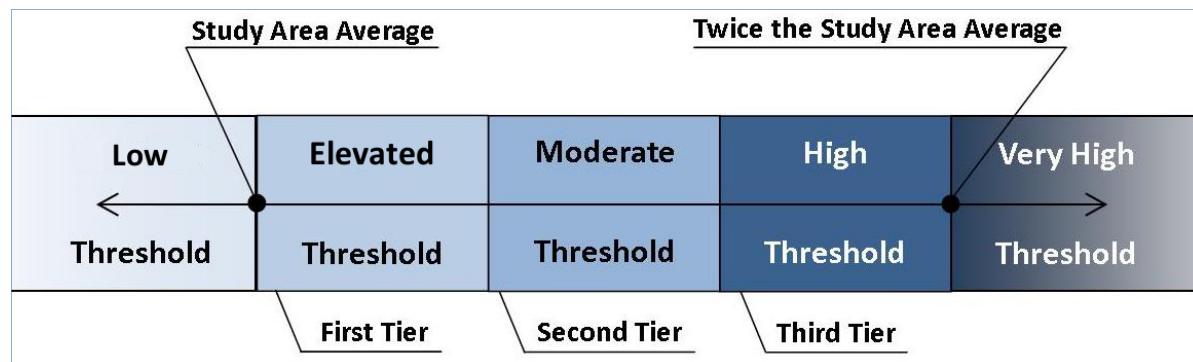
The classifications are determined by comparing transit dependent populations of each block group to the average for the entire study area. A block group classified as “low” may still have a significant transit dependent population, since classifications are relative; a block group with a “low” classification may have as high as the area average transit dependent population. Classifications are defined in Table 2-4.

Table 2-4: Transit Dependent Index Classifications

Number of Persons or Households	Class
Less than or equal to the study area average	Low
Greater than the study area average and up to 1.33 times the average	Elevated
Greater than 1.33 times the average and up to 1.67 times the average	Moderate
Greater than 1.67 times the average and up to two times the average	High
Greater than two times the study area average	Very high

From a transit perspective, the TDI illustrates the areas of greatest overall need. While some block groups show low need, they may include major destinations that should be served by transit. It should be noted that because of the different factors considered, it is possible that a given Census tract could be identified as having a high transit need or dependence based on having a high proportion of seniors—who might well have higher incomes and higher auto ownership, with relatively little need for transit services. Or a given tract may have a high youth population that results in a ranking of high need—but again with higher incomes and auto ownership it may have a lower need for transit. The impact of these factors is more evident in the analysis of the individual factors that make up the overall index. The individual factors are presented later in this chapter.

As illustrated in Figure 2-5, the relative classification system utilizes averages in ranking populations. For example, areas with less than average transit dependent population fall into the low classification, and areas that are more than twice the average are classified as “very high”. Classifications elevated, moderate, and high fall between the average and twice the average; these classifications are divided into thirds.

Figure 2-5: Transit Dependent Populations Classification System

Transit Dependence Index—Density

Figure 2-6 displays the results of the TDI analysis of Central Maryland, based on the density of the populations with higher levels of transit need. Areas shown in darker shading are reflective of a higher density of persons with a potentially greater need for public transportation. The high needs areas are somewhat scattered, but again the existing transit network generally connects these areas, though in many cases it would require transfers for riders to access major activity centers.

Transit Dependence Index—Percentage

The Transit Dependence Index Percent (TDIP) provides a complement to the TDI density analysis. It is nearly identical to the TDI measure with the exception of the population density. By removing the population per square mile factor the TDIP measures the degree rather than the amount of vulnerability. TDIP represents the percentage of population within the block group with socioeconomic characteristics above the average, and follows the TDI's five-tiered categorization of very low to very high. Figure 2-7 presents a map showing areas in which a high percentage of the population with a transit need is located, rather than where there are high numbers of persons in need.

By showing the degree of need rather than the total amount of need, TDIP can show where there is high transit need in areas with lower population densities. In other words, TDI will show high need in areas with larger transit dependent populations, and TDIP will show high need in areas where transit dependent persons make up a larger *portion* of the total population, regardless of population size. As can be seen in the map, based on percentage areas some lower density areas such as Wayson's Corners in Anne Arundel County now show some level of transit dependence, though in many cases areas with a high density of need also have a high percentage of residents that potentially need transit services.

Figure 2-6: Transit Need Index-Based on Density of High Needs Populations

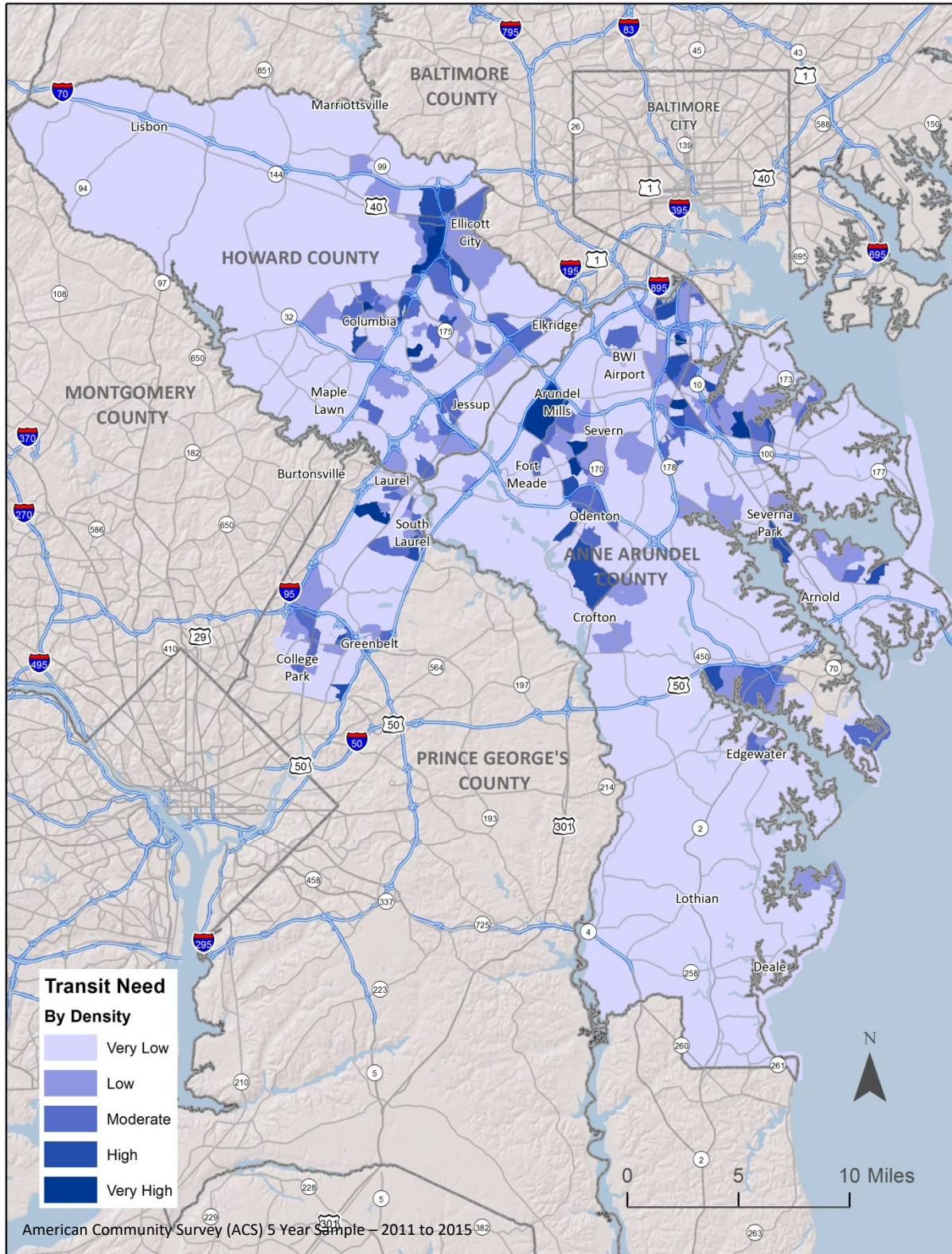
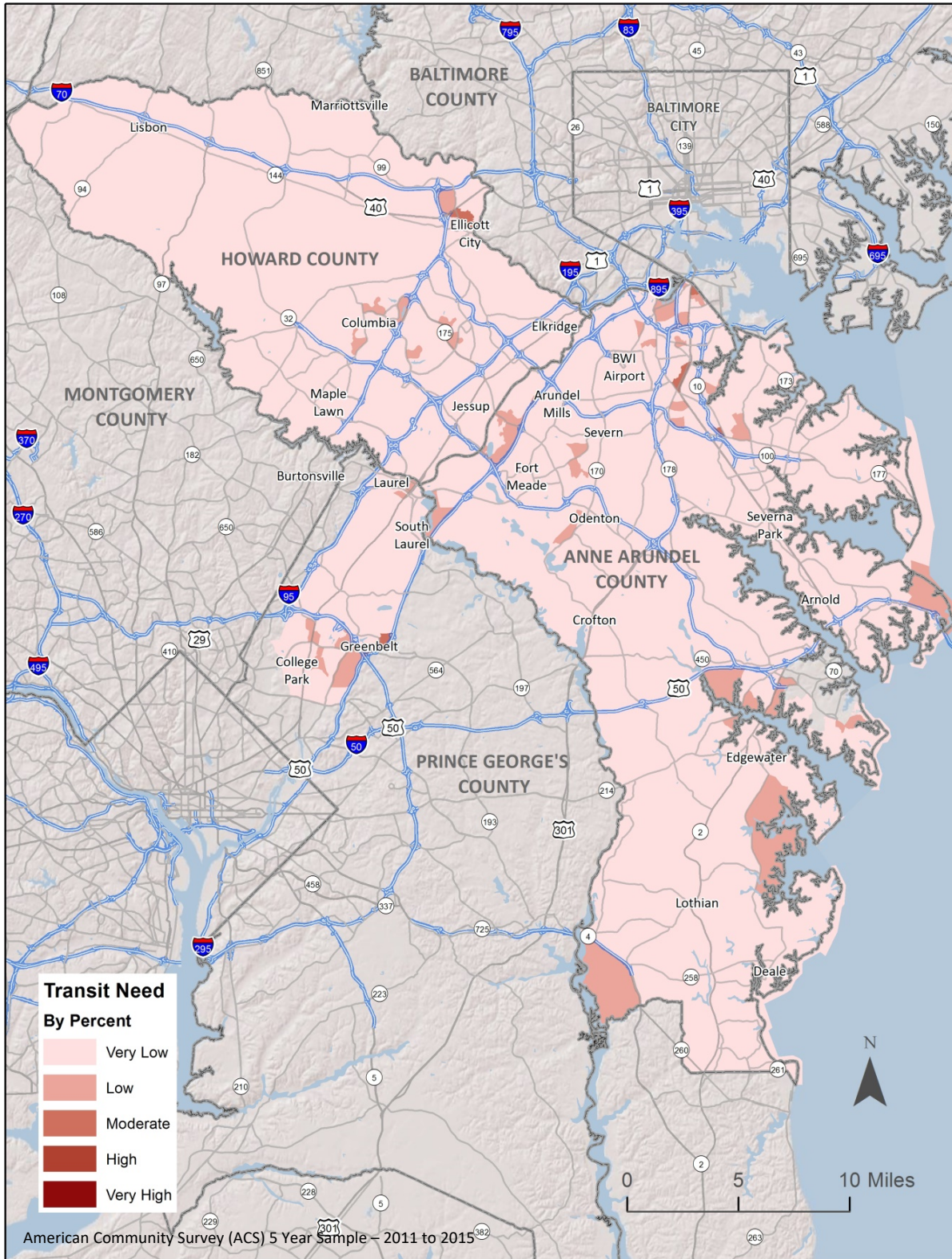


Figure 2-7: Transit Need Index-Percentage



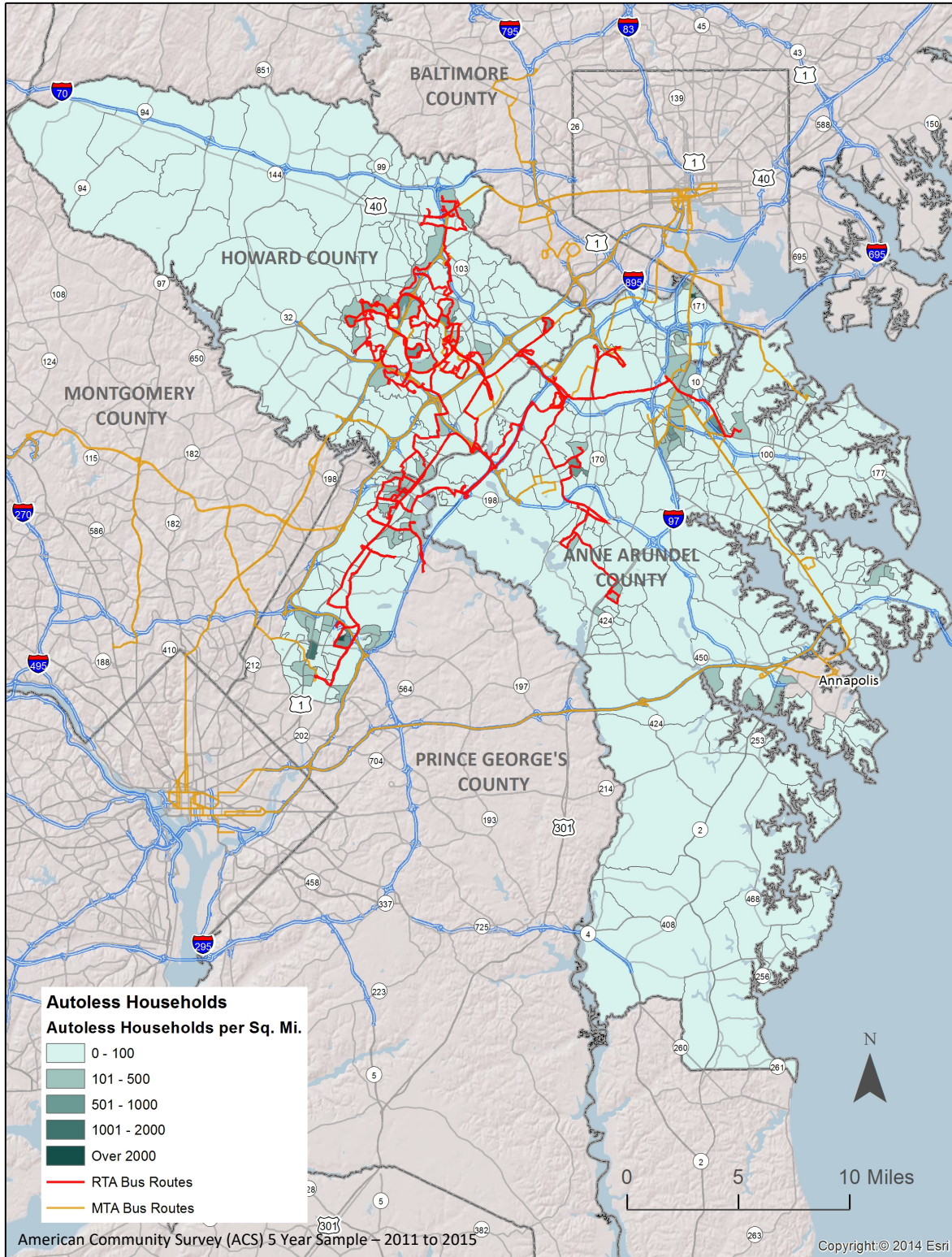
Analysis of Individual Needs Factors

As noted above, the use of a combined index of potential transit dependence can sometimes mask variations that may indicate a greater or lesser need for transit based in the impact of one or two factors. For that reason each of the factors is presented separately.

Autoless Households

Households without at least one personal vehicle are more likely to depend upon the mobility offered by public transit than those households with access to a car. Although households with no automobiles are reflected in both the TDI and TDIP measures, displaying this segment of the population is important because many land uses in the region are at distances too far for non-motorized travel. Figure 2-8 presents the relative density of households with no personal vehicles available, with the existing RTA and MTA transit networks. As can be seen, the result of many years of planning is that essentially all the areas that are relatively high in autoless households are served at some level by the existing transit network.

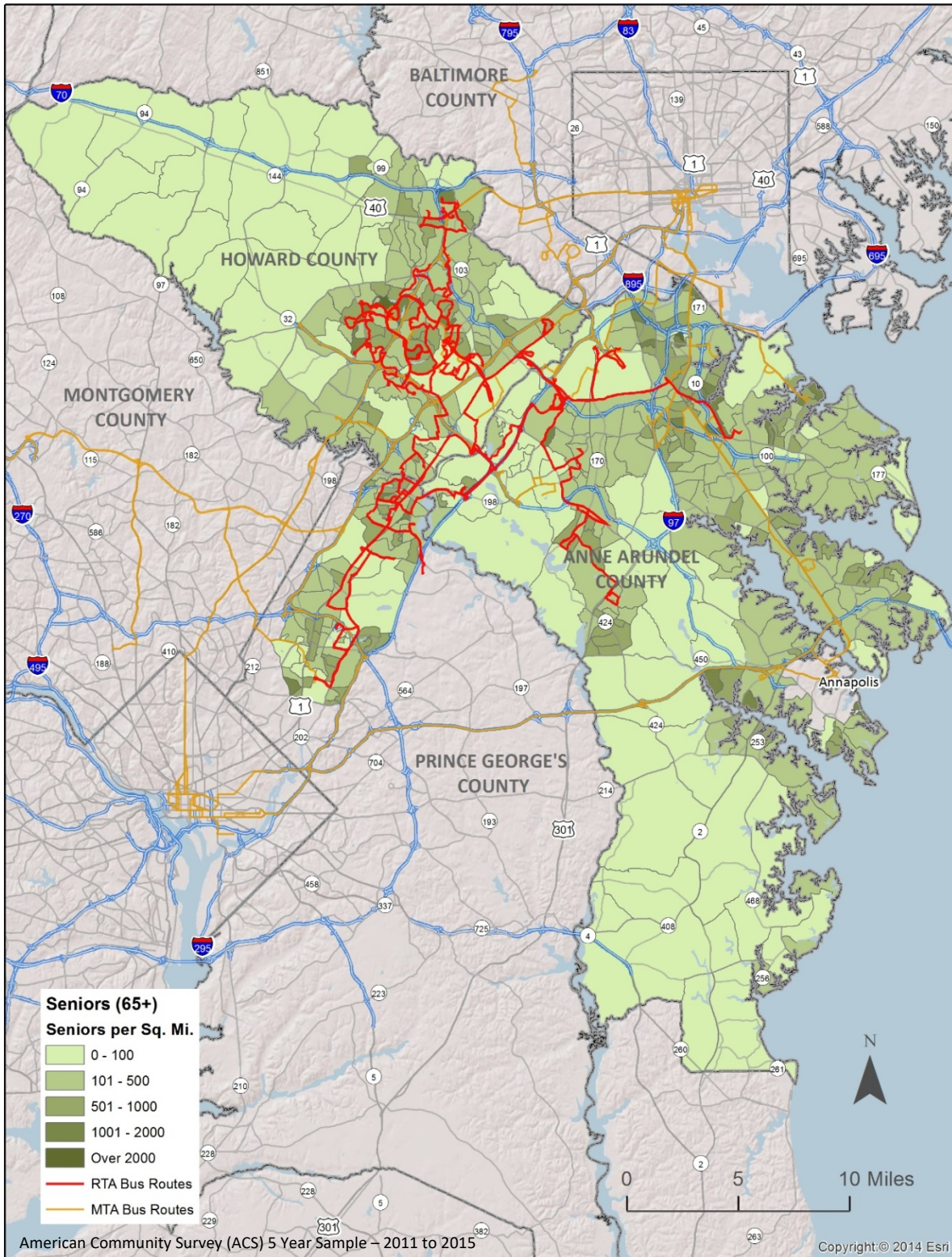
Figure 2-8: Autoless Households



Older Populations

Individuals ages 65 and older may scale back their use of personal vehicles as they age, leading to a greater reliance on public transportation compared to those in other age brackets. Illustrated in Figure 2-9, the senior population is more dispersed throughout the region. Areas in Southern Howard County, Central Anne Arundel, Severn, South Glen Burnie, Harundale, Crofton, Arnold, Severna Park, Jacobsville, Lake Shore, Edgewater, Heritage Harbour, all show moderate to high densities of seniors but are not served by fixed-route services. In both Anne Arundel and Howard there are significant county-wide demand-response programs providing transportation for senior populations in areas with limited fixed-route transit service.

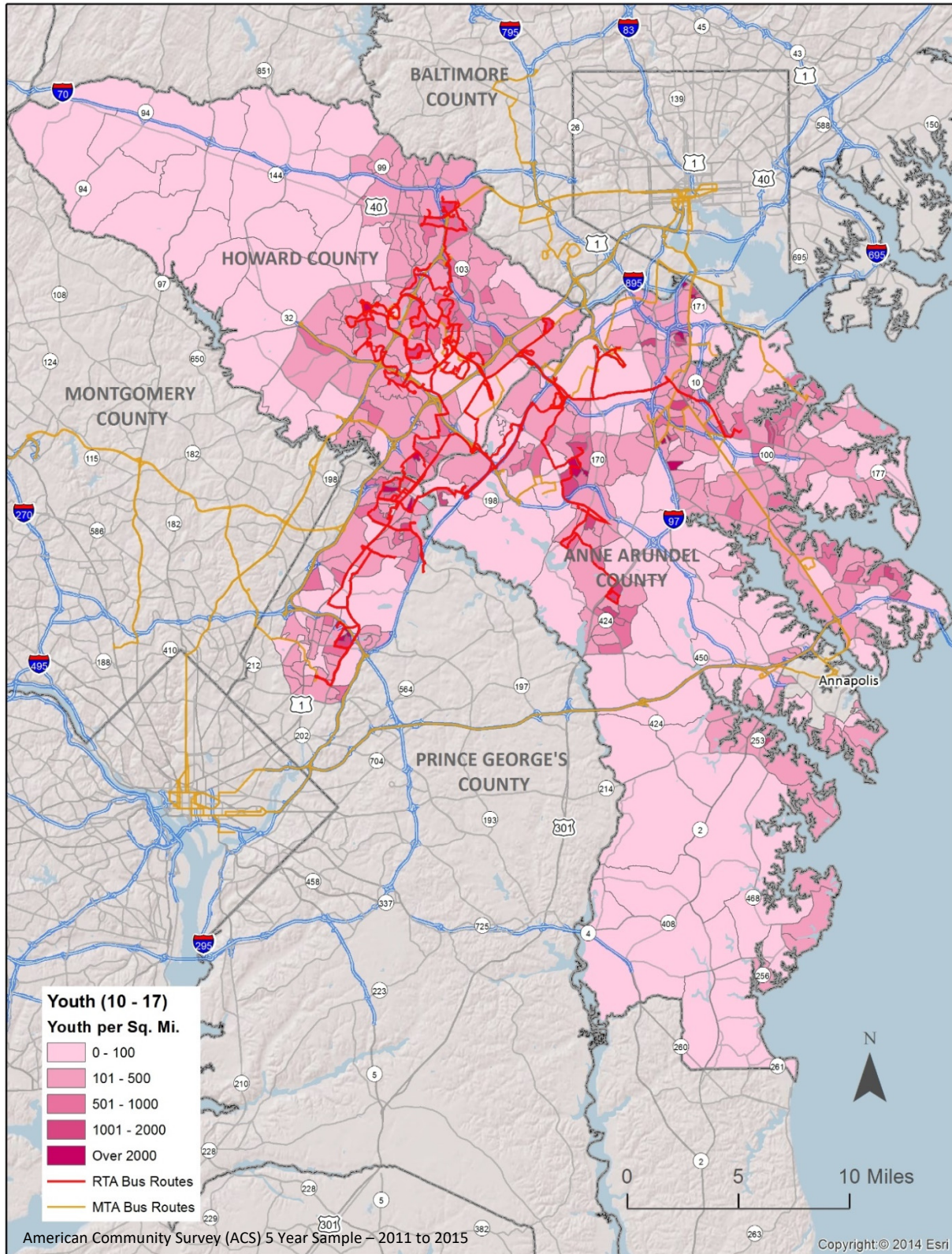
Figure 2-9: Older Populations (Persons Ages 65 and Older)



Youth Populations

Youths and teenagers, ages 10 to 17, who cannot drive or are just starting to drive but do not have an automobile available may utilize public transit to reach jobs, activities, shopping or social activities. The youth population is also dispersed throughout the study area, but there are particular areas with a high density of youth lacking transit service in Howard County along Route 103 in between Ellicott City and Route 100, in the River Hill area, in the Kings Contrivance area east of Route 29, in the Elkridge area west of I-95, and in the Waterloo/Sherwood Crossing area west of I-95. In the portion of Prince George's County served by the RTA an area with a high density of youth population lacking RTA or MTA service is the Ammendale/West Beltsville area. In Anne Arundel County residential areas of Fort Meade, Arundel Hills and areas east of I-97 south of I-695, Pasadena, Crofton, Millersville, Severna Park, and along College Parkway to Saint Margarets are all areas with a moderate or high density of youth and minimal or no fixed-route transit. The density of youth populations can be seen in Figure 2-10.

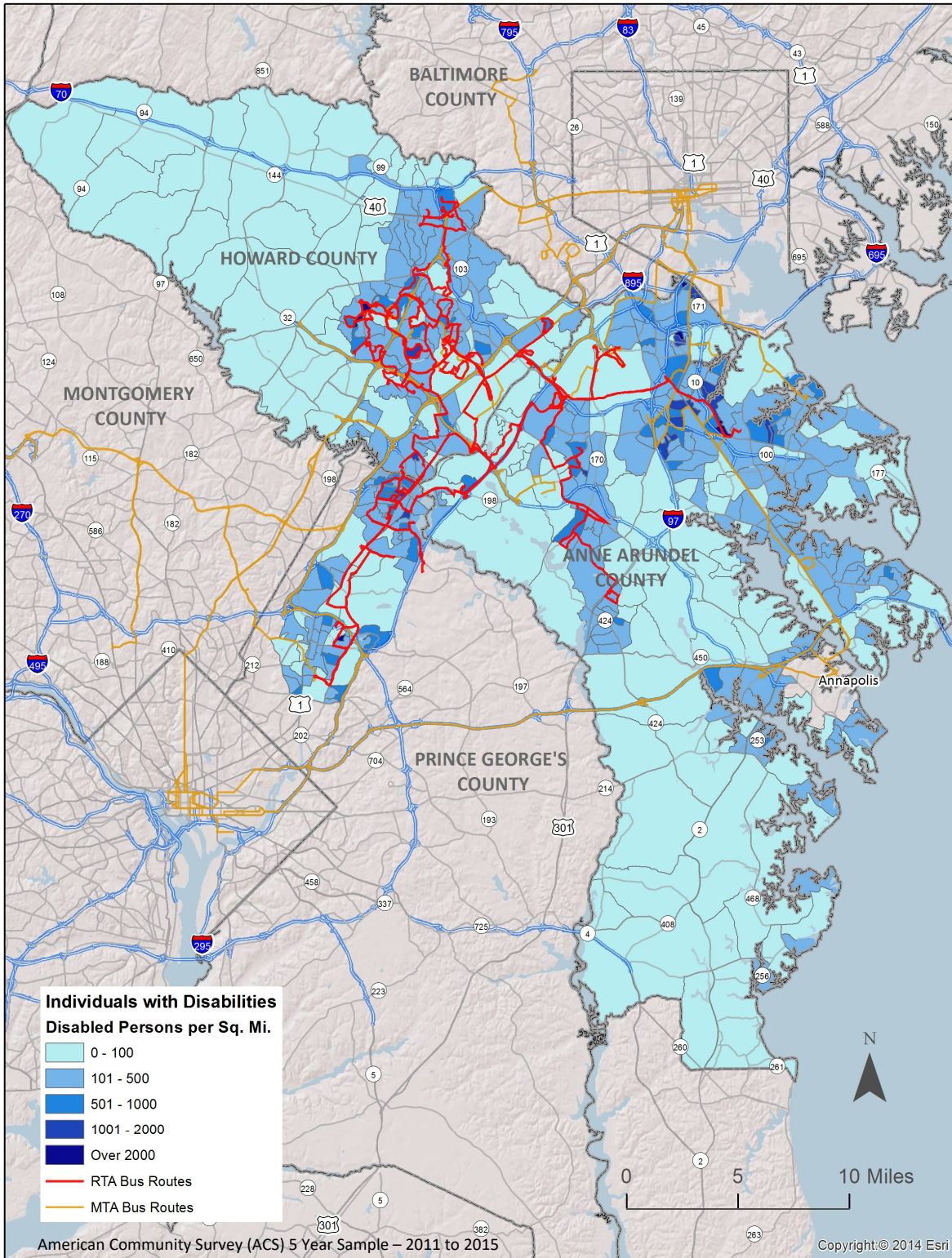
Figure 2-10: Density of Youth Populations (Ages 10-17)



Persons with Disabilities

Due to changes in Census and American Community Survey reporting, the 2010-2014 ACS provides the most recent data available to analyze the prevalence and geographic distribution of individuals with disabilities. Unlike the factors above, data is only available at the tract level, not the block group. Though it cannot show finer trends, this information is still important to consider. Those with disabilities may be unable to operate a personal vehicle and consequently be more likely to rely on public transportation. Figure 2-11 displays that disabled populations are dispersed throughout the region, generally in proportion to the overall population density. Again, as in the case of the senior populations, the area of Anne Arundel east of Route 2 has a relatively high density of persons with disabilities, but no fixed-route transit service. Maintaining the availability of demand-response transportation for persons with disabilities is likely to be the best way to meet the needs in these areas.

Figure 2-11: Individuals with Disabilities



Title VI, Environmental Justice, and Limited English Proficiency Analysis

Minority populations, low-income populations, and populations with limited English proficiency are federally protected. Federally funded public transportation providers are mandated to consider the three population groups when considering transit improvement projects. As part of the Civil Rights Act of 1964, Title VI *prohibits discrimination on the basis of race, color, or national origin in programs and activities receiving federal subsidies*. Executive Order 12898: *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* augments Title VI to include federal protection to low-income populations. This section examines the minority and populations living below the poverty level in Central Maryland and summarizes the prevalence of residents with Limited-English Proficiency (LEP).

Minority Populations

In accordance with FTA Circular 4702.1B: *Title VI Requirements and Guidelines for Federal Transit Administration Recipients*, transit recipients are mandated to ensure there are no disparate impacts towards minority persons for transit improvement projects. To determine whether a transit investment would have a disparate impact it is necessary to first understand where concentrations of minority individuals reside. Figure 2-12 provides a map of the service area showing the Census block groups shaded according to whether they have minority populations of above or below the service area average (32%). As explained in Figure 2-4, only the lowest category of shading is below the service area average percentage of minority population, and the other four categories of shading are all above that average figure—e.g. “Low” to “Very High” are all above 32 percent minority.

Low-Income Populations

FTA Circular 4703.1: *Environmental Justice Policy Guidance for Federal Transit Administration Recipients* provides guidance for identifying and analyzing low-income populations. The Circular identifies low-income populations as “persons whose median household income is at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines”.¹ A low-income population means any readily identifiable group of low-income persons who live in geographic proximity. These individuals face financial hardships that may make ownership and maintenance of a personal vehicle difficult. In such cases, they may be more likely to depend on public transportation.

Figure 2-13 presents a map showing the percentage of the Central Maryland population living below the poverty level by Census block group. Again, the average for the region, the lightest shading in the map, is above average, while the other categories are above the average.

¹ HHS

Because this map represents the percentage of the population, some areas with a high percentage of the population with very low incomes are in more rural areas.

Figure 2-12: Minority Populations

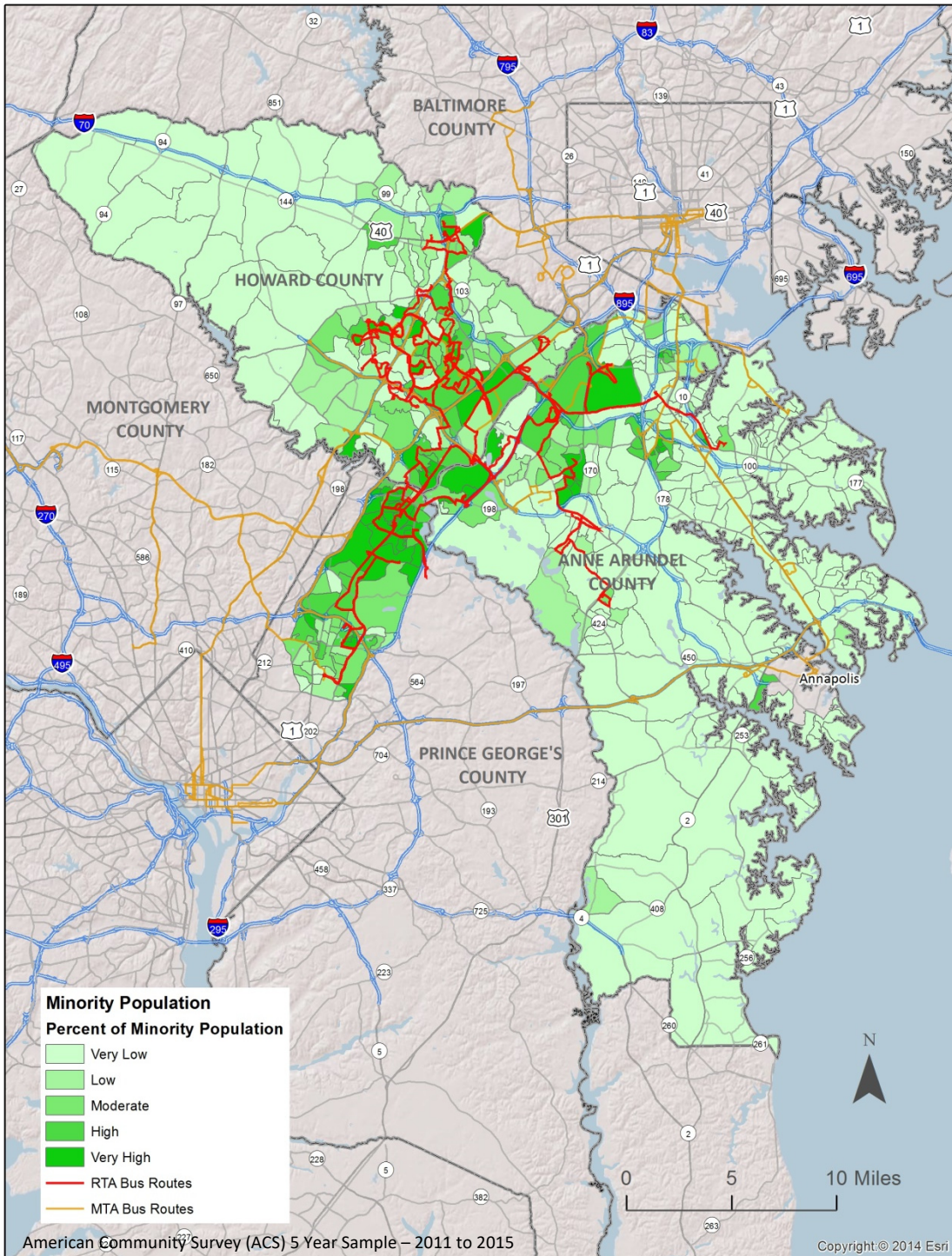
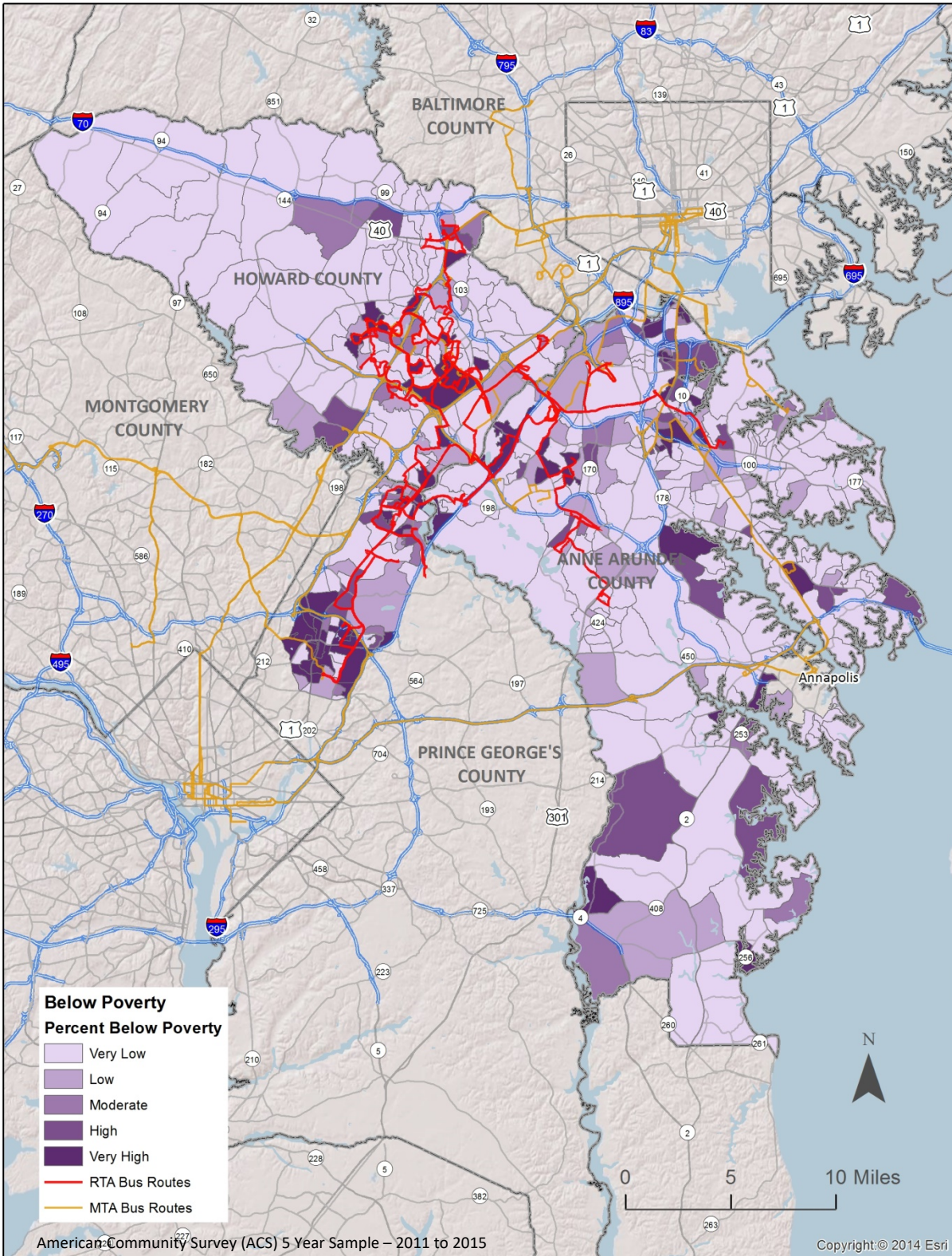


Figure 2-13: Population Living below Poverty Level



Limited-English Proficiency

In addition to providing public transportation for a diversity of socioeconomic groups, it is also important to serve and disseminate information to those of different linguistic backgrounds.

As shown in Table 2-5, Central Maryland study area residents predominately speak English only (approximately 83%). Spanish is the next most prevalent language, spoken by 6.1 percent of the regional population, though only 2.4 percent are persons with Limited English Proficiency (LEP). The next most prevalent language is Korean at 1.48 percent, though in this case there are more Korean speakers who are LEP, 0.9 percent. Of the remaining residents who do not speak English at home, 71 percent are able to speak English well or very well. The remaining 29 percent of Non-English speakers with Limited English Proficiency constitute 2.7 percent of the regional population. Overall, 55,843 individuals (6.0 %) of the regional population are LEP. No population group exceeds the five percent threshold, though there are fifteen language groups each with over 1,000 LEP speakers in the regional population. These results suggest a need to make sure that transit materials are available in Spanish and possibly Korean.

Table 2-5: Limited English Proficiency

	Population	Percent of Total Population	
Central MD Study Area Total Population (Ages 5+)	925,314	-	
Speaks English Only	766,740	82.9%	
Speaks Language Other than English	158,574	17.1%	
Non LEP Population	102,731	11.1%	
LEP Population	55,843	6.0%	
Language Spoken by Non-English Speakers	Non-LEP Population	LEP Population	LEP Population as a Percent of Total Population
Spanish or Spanish Creole	33,910	22,423	2.4%
Korean	5,721	7,993	0.9%
Chinese	7,216	5,679	0.6%
African languages	8,389	2,291	0.2%
Vietnamese	1,763	2,051	0.2%
Other Asian languages	6,482	1,831	0.2%
Other Indic languages	3,299	1,752	0.2%
Tagalog	3,450	1,493	0.2%
Urdu	3,210	1,409	0.2%
Hindi	3,317	1,073	0.1%
Gujarati	1,942	961	0.1%

French (incl. Patois, Cajun)	5,047	895	0.1%
French Creole	1,377	780	0.1%
Russian	1,759	538	0.1%
German	2,627	534	0.1%
Arabic	1,445	532	0.1%
Portuguese or Portuguese Creole	1,653	480	0.1%
Persian	1,227	462	0.0%
Other Indo-European languages	1,466	320	0.0%
Japanese	802	312	0.0%
Thai	244	260	0.0%
Italian	1,332	250	0.0%
Other and unspecified languages	190	240	0.0%
Polish	540	193	0.0%
Other Pacific Island languages	278	170	0.0%
Greek	1,011	162	0.0%
Armenian	160	153	0.0%
Other Slavic languages	705	151	0.0%
Mon-Khmer, Cambodian	173	140	0.0%
Other West Germanic languages	300	76	0.0%
Serbo-Croatian	318	64	0.0%
Laotian	166	63	0.0%
Hungarian	119	47	0.0%
Hebrew	538	34	0.0%
Yiddish	9	12	0.0%
Scandinavian languages	374	11	0.0%
Other Native North American languages	93	8	0.0%
Hmong	0	0	0.0%
Navajo	79	0	0.0%
LEP and Non-LEP Totals	102,731	55,843	6.0%

Source: 2011-2015 ACS 5-Year Estimates, Table B16001.

Regional Employment Travel Patterns

It is important to account for commuting patterns of residents working inside and outside of the Central Maryland region. The region is unique in having both significant employment within each county, commuting between counties, and significant commuting to both Baltimore and Washington, D.C. As shown in Table 2-6, Anne Arundel has a much larger commuting population, with 277,880 commuters compared to 155,666 in Howard County. With several of the major regional employment centers, Anne Arundel has a higher percentage of its residents commute within the County, 58 percent, compared to Howard's 41 percent.

In terms of numbers of commuters rather than percentage, however, the regional nature of commuting is apparent. More Anne Arundel residents commute to Howard County than vice versa (18,142 to 17,512). There are more Howard County commuters to Anne Arundel (17,512) than to Baltimore City (15,692), Baltimore County (12,749), Montgomery (15,759) or the District of Columbia (9,849). Anne Arundel sends more residents to work in Prince George's (26,946) and the District of Columbia (19,591). Combined, these two destinations receive 46,537 Anne Arundel residents, compared to the 33,394 Anne Arundel residents who commute to Baltimore City and County.

Table 2-6: Journey to Work Patterns for Central Maryland

Origin County	Destination																TOTAL
	Anne Arundel County		Howard County		Baltimore County		Baltimore City		Prince George's County		District of Columbia		Montgomery County		Other		
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	
Howard	17,512	11%	63,149	41%	12,749	8%	15,692	10%	14,094	9%	9,849	6%	15,759	10%	6,861	4%	155,666
Anne Arundel	159,848	58%	18,142	7%	11,707	4%	21,687	8%	26,946	10%	19,591	7%	7,809	3%	12,149	4%	277,880

Source: ACS, Five-Year Estimates (2011 - 2015)

Another source of data that provides an understanding of regional employee travel patterns is the Baltimore Metropolitan Council's regional travel demand model. Using data on home-based work trips by all modes (productions) by Regional Planning District, Figure 2-14 presents a map showing all regional connections over 1,000 trips (all income groups combined) for Howard County origins, and Figure 2-15 presents a similar map for Anne Arundel origin areas. Table 2-7 presents the data associated with the Howard County map, and Table 2-8 presents the data supporting the Anne Arundel County map.

From Howard County work trips originating in Columbia, Ellicott City, and Elkridge have Baltimore Metro Center, Fort Meade, Brooklyn Park/Linthicum, and Jessup/Severn as major destinations outside the county. From the Laurel Regional Planning District (RPD), the major destinations are Fort Meade and Columbia. Internally, Columbia is the major destination from the other RPDs, with higher levels of trips than those going to destinations outside the county. Trips to Laurel in Prince George's did not reach the 1,000 level, but from Columbia trips to Calverton and Vansville did reach that threshold.

As an alternative method of identifying regional travel patterns, the study team worked with Sidewalk Labs using Google's aggregate, anonymized historical traffic data in an effort to improve understanding of multimodal travel demand.

Of particular interest was whether aggregate, anonymized data could offer insights for transit planning, such as potential demand for new or adjusted bus routes to meet unmet needs. The available data included comprehensive geographic and temporal coverage, and thus potentially offered complementary dimensions (such as travel patterns at night) to data collected through conventional methods. However, analysis of the data also revealed some noisy, unexpected patterns, which called for deeper investigations against the backdrop of local context.

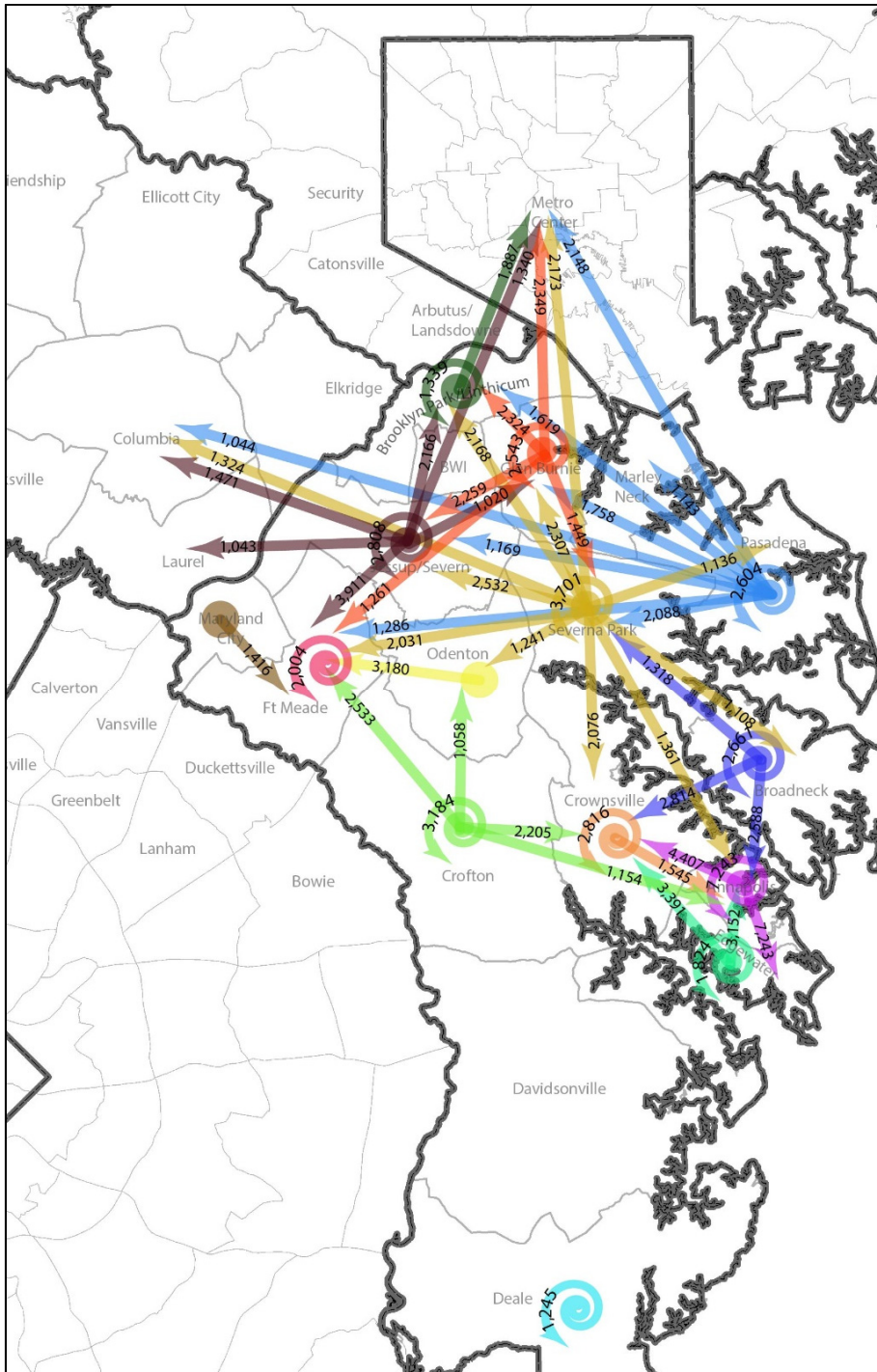
Imbuing the data pattern with local significance and actionable insights would have required a non-trivial amount of analysis, beyond the resources available for the TDP. Given more resources, further analysis would lead to a more definitive assessment of whether—and how—this data source could be used to develop specific recommendations for future transit services.

Table 2-7: Howard County Home-Based Work Trips: Attractions with over 1,000 trips

Origin	Destination	Total
Laurel	Columbia	2,933
Laurel	Laurel	2,474
Laurel	Fort Meade	1,955
Elkridge	Columbia	3,569
Elkridge	City of Baltimore - Metro Center	2,203
Elkridge	Elkridge	1,863
Elkridge	Brooklyn Park/Linthicum	1,672
Elkridge	Fort Meade	1,402
Elkridge	Laurel	1,367
Columbia	Columbia	15,241
Columbia	Fort Meade	3,505
Columbia	Laurel	3,475
Columbia	City of Baltimore - Metro Center	3,422
Columbia	Ellicott City	2,686
Columbia	Clarksville	2,621
Columbia	Elkridge	2,164
Columbia	Jessup/Severn	1,727
Columbia	Brooklyn Park/Linthicum	1,451
Columbia	Vansville	1,333
Clarksville	Columbia	1,790
Ellicott City	Columbia	5,460
Ellicott City	City of Baltimore - Metro Center	3,705
Ellicott City	Ellicott City	3,369
Ellicott City	Security	1,524
Ellicott City	Elkridge	1,370
Ellicott City	Laurel	1,175
Ellicott City	Brooklyn Park/Linthicum	1,148
Ellicott City	Fort Meade	1,126
West Friendship	Columbia	1,158

Source: Baltimore Metropolitan Council Regional Travel Demand Model

Figure 2-15: Home-Based Work Trips from Anne Arundel County Regional Planning Districts-Productions Over 1,000 Trips



Source: Baltimore Metropolitan Council Regional Travel Demand Model

Table 2-8: Anne Arundel County Home-Based Work Trips: Attractions with over 1,000 trips

Origin	Destination	Total
Brooklyn Park/Linthicum	Baltimore City - Metro Center	1,888
Brooklyn Park/Linthicum	Brooklyn Park/Linthicum	1,340
Glen Burnie	Glen Burnie	2,543
Glen Burnie	Baltimore City - Metro Center	2,349
Glen Burnie	Brooklyn Park/Linthicum	2,325
Glen Burnie	Jessup/Severn	2,260
Jessup/Severn	Fort Meade	3,911
Jessup/Severn	Jessup/Severn	2,809
Jessup/Severn	Brooklyn Park/Linthicum	2,167
Jessup/Severn	Columbia	1,472
Jessup/Severn	Baltimore City - Metro Center	1,341
Jessup/Severn	Laurel	1,044
Jessup/Severn	Glen Burnie	1,020
Severna Park	Severna Park	3,701
Severna Park	Jessup/Severn	2,532
Severna Park	Glen Burnie	2,308
Severna Park	Baltimore City - Metro Center	2,173
Severna Park	Brooklyn Park/Linthicum	2,169
Severna Park	Crownsville	2,077
Severna Park	Fort Meade	2,031
Severna Park	Annapolis	1,361
Severna Park	Columbia	1,325
Pasadena	Pasadena	2,605
Pasadena	Baltimore City - Metro Center	2,148
Pasadena	Severna Park	2,089
Pasadena	Glen Burnie	1,758
Pasadena	Brooklyn Park/Linthicum	1,619
Pasadena	Jessup/Severn	1,619
Pasadena	Fort Meade	1,286
Pasadena	Marley Neck	1,143
Pasadena	Columbia	1,044
Maryland City	Fort Meade	1,417
Fort Meade	Fort Meade	2,005
Odenton	Fort Meade	3,180
Crofton	Crofton	3,185
Crofton	Fort Meade	2,533

Origin	Destination	Total
Crofton	Crownsville	2,205
Crofton	Annapolis	1,155
Crofton	Odenton	1,059
Crownsville	Crownsville	2,817
Crownsville	Annapolis	1,545
Broadneck	Crownsville	2,815
Broadneck	Broadneck	2,661
Broadneck	Annapolis	2,588
Broadneck	Severna Park	1,318
Annapolis	Annapolis	7,243
Annapolis	Crownsville	4,408
Annapolis	Annapolis Neck/Edgewater/Mayo	1,248
Annapolis Neck/Edgewater/Mayo	Crownsville	3,391
Annapolis Neck/Edgewater/Mayo	Annapolis	3,152
Annapolis Neck/Edgewater/Mayo	Annapolis Neck/Edgewater/Mayo	1,824
Deale/Lothian	Deale/Lothian	1,245

Source: Baltimore Metropolitan Council Regional Travel Demand Model

On the Anne Arundel side of the region, the higher volume home-based work trip interchanges are more internal, though there are high levels (over 1,000) trips to Baltimore Metro Center (from Brooklyn Park/Linthicum, Jessup/Severn, Glen Burnie, Severna Park and Pasadena). The other major external destination is Columbia, with trips over the 1,000 threshold from Pasadena, Severna Park and Jessup/Severn. Laurel (in Howard County) is a destination for trips from Jessup/Severn.

Major internal work-trip patterns involve Fort Meade as key destination, with work trips originating in Maryland City, Jessup/Severn, Glen Burnie, Pasadena, Severna Park, Odenton and Crofton. Brooklyn Park/Linthicum is also a major destination from Jessup/Severn, Glen Burnie, Severna Park and Pasadena.

Of interest is that the BMC model did not identify any home-based work trip interchanges over 1,000 trips for the BWI RPD. The largest interchanges for BWI are with the Glen Burnie (957 trips), Severna Park (770 trips), RPDs and Jessup Severn (708 trips).

Summary of Needs

When combining the demographic, land-use, and commuter trends contained within this section the following needs and themes emerge:

- This is a very large region, with a population that exceeds that of the City of Baltimore (621,849 in 2015) and is close to the overall population of Prince George’s County (909,535 in 2015—some of which is included in the Central Maryland estimate).
- The region’s population has grown substantially, and is continuing to grow.
- The region’s population of seniors is projected to increase substantially in real numbers and as a percentage of the population.
- The density of population varies considerably across the region, with concentrations of residential density in all three counties served by the RTA. Much of the residential development is lower-density single family, though recent development patterns include a balance of multi-family and single-family residential construction.
- There is a significant population of persons with a high potential need for transit services based on income, auto ownership, age, and disability status. Transit connections are needed to link the residential areas housing this population to employment and services.
- There is a substantial amount of employment across the region, and substantial commuting of residents to employment in Baltimore and Washington, D.C. In addition, many commuters staying within the region cross county lines to reach their jobs, particularly from Howard County to Western Anne Arundel and vice versa.
- The existence of these regional travel demand patterns means that there is a need for both local transit within the counties and regional connections to ensure that workers can reach employment within the region and in the two metro areas (Baltimore and Washington, D.C.).