

Technical Memorandum 4

Existing Demographics



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1.0 Introduction

1.1 Corridor Location and Overview

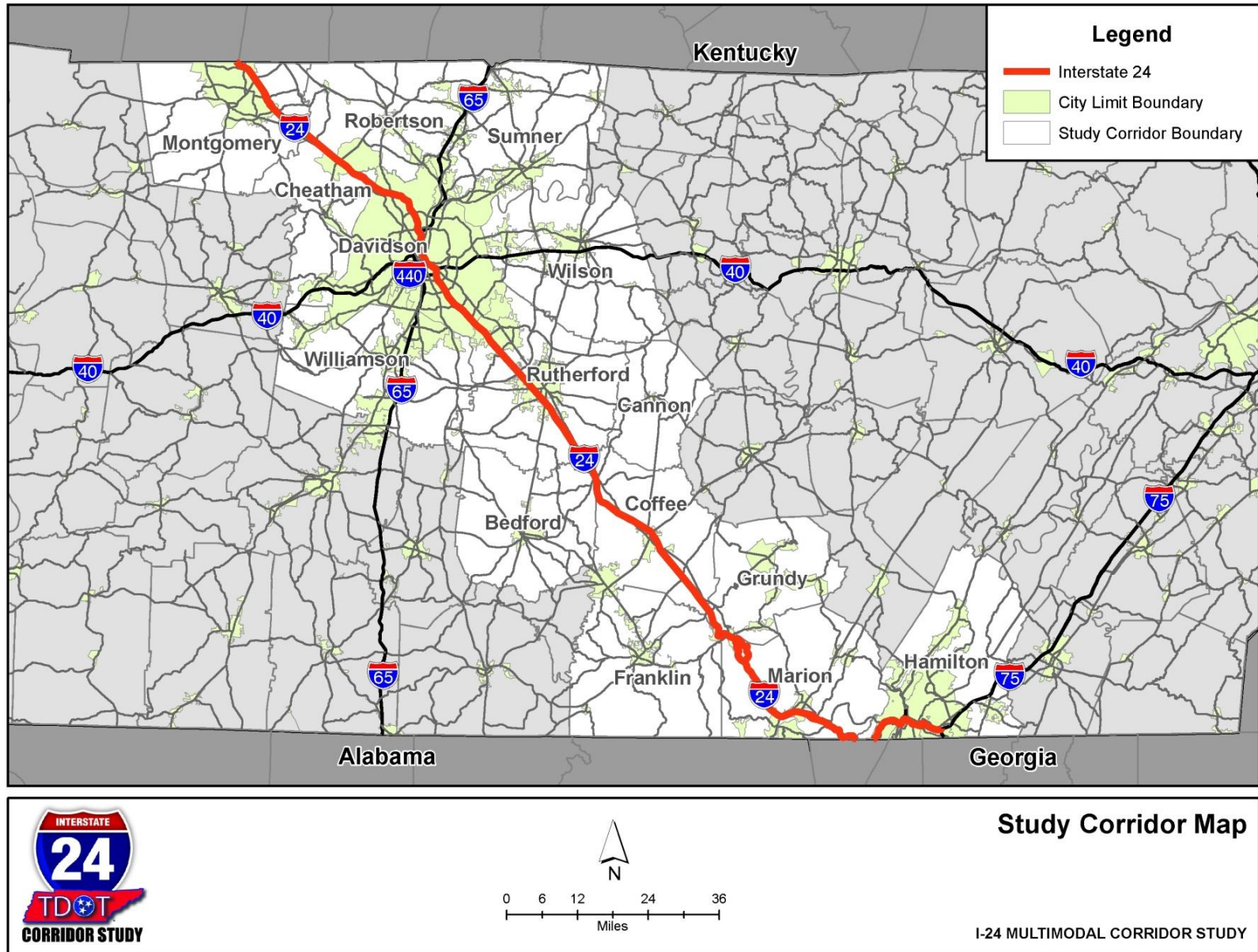
The purpose of the I-24 Multimodal Corridor Study is to examine potential multimodal transportation improvements that would address existing and emerging transportation system issues associated with this strategic corridor through central Tennessee connecting the Clarksville, Nashville and Chattanooga urban areas. The corridor extends from the Kentucky border to where it meets I-75 in Hamilton County, a distance of approximately 185 miles (refer to Figure 1.1).

The analysis of corridor needs will go through a structured process of characterizing existing and projected corridor conditions, describing the purpose and need for corridor improvements, defining a set of performance measures against which to evaluate improvement options, and evaluating potential corridor improvements against these performance measures to develop a set of recommended improvements.

1.2 Purpose of This Document in the Study Process

This document summarizes existing demographic data for the study area for the year 2010 and as projected to 2040. The specific demographic data examined includes population, households and employment. Data is presented at the county level for three corridor areas used throughout the study: Clarksville, Nashville, and Chattanooga, and for the Corridor as a whole.

Figure 1.1: Study Corridor Map



2.0 Corridor Level Demographics

The following section looks at demographics for the entire corridor. Table 2.1 shows population, households and employment by county, for the three defined Corridor Areas, and for the entire corridor, for 2010 and 2040. Figure 2.1 shows the Corridor Areas and the counties included in each Corridor Area. Corridor Areas are based on commute patterns in the I-24 Corridor.

Table 2.1: I-24 Corridor Demographics

| County | POP10 | POP40 | % Change | HH10 | HH40 | % Change | EMP10 | EMP40 | % Change |
|-----------------------------------|------------------|------------------|------------|----------------|------------------|------------|------------------|------------------|------------|
| Montgomery | 172,331 | 254,284 | 48% | 63,673 | 93,953 | 48% | 63,904 | 109,453 | 71% |
| Robertson | 66,283 | 87,164 | 32% | 24,197 | 31,820 | 32% | 27,334 | 49,982 | 83% |
| Cheatham | 39,105 | 41,236 | 5% | 14,520 | 15,311 | 5% | 15,745 | 23,035 | 46% |
| Williamson | 183,182 | 334,781 | 83% | 64,886 | 118,585 | 83% | 120,782 | 306,361 | 154% |
| Davidson | 626,681 | 777,037 | 24% | 259,499 | 321,759 | 24% | 534,523 | 790,003 | 48% |
| Sumner | 160,645 | 232,586 | 45% | 60,975 | 88,281 | 45% | 54,796 | 88,019 | 61% |
| Wilson | 113,993 | 172,285 | 51% | 42,563 | 64,328 | 51% | 52,526 | 96,250 | 83% |
| Rutherford | 262,604 | 531,193 | 102% | 96,232 | 194,657 | 102% | 130,072 | 244,975 | 88% |
| Bedford | 45,058 | 72,364 | 61% | 16,530 | 26,547 | 61% | 25,648 | 30,587 | 19% |
| Cannon | 13,801 | 16,199 | 17% | 5,364 | 6,315 | 18% | 5,431 | 10,426 | 92% |
| Warren ¹ | 39,839 | 46,668 | 17% | 15,850 | 18,567 | 17% | 17,427 | 47,576 | 173% |
| Coffee | 52,796 | 77,680 | 47% | 20,926 | 30,789 | 47% | 30,713 | 62,703 | 104% |
| Franklin | 41,052 | 50,912 | 24% | 16,011 | 19,857 | 24% | 15,417 | 28,644 | 86% |
| Grundy | 13,703 | 12,340 | -10% | 5,405 | 4,867 | -10% | 4,822 | 7,481 | 55% |
| Marion | 28,237 | 26,145 | -7% | 11,403 | 10,558 | -7% | 10,293 | 17,743 | 72% |
| Sequatchie ¹ | 14,112 | 20,683 | 47% | 5,519 | 8,089 | 47% | 3,868 | 7,619 | 97% |
| Hamilton | 336,463 | 407,436 | 21% | 136,682 | 165,311 | 21% | 233,597 | 266,561 | 14% |
| Catoosa GA ¹ | 63,942 | 104,565 | 64% | 24,475 | 40,123 | 64% | 14,684 | 26,187 | 78% |
| Christian, KY (part) ¹ | 10,143 | 19,616 | 93% | 3,631 | 7,144 | 97% | 1,961 | 5,365 | 174% |
| Dade, GA (part) ¹ | 4,603 | 4,402 | -4% | 1,501 | 1,458 | -3% | 506 | 525 | 4% |
| Walker, GA (part) ¹ | 37,620 | 41,660 | 11% | 14,723 | 16,297 | 11% | 5,705 | 6,407 | 12% |
| Corridor Area | POP10 | POP40 | % Change | HH10 | HH40 | % Change | EMP10 | EMP40 | % Change |
| <i>Clarksville Corridor Area</i> | 221,579 | 315,136 | 42% | 81,824 | 116,408 | 42% | 81,610 | 137,853 | 69% |
| <i>Nashville Corridor Area</i> | 1,605,934 | 2,398,869 | 49% | 623,033 | 921,505 | 48% | 1,014,669 | 1,755,526 | 73% |
| <i>Chattanooga Corridor Area</i> | 498,680 | 617,231 | 24% | 199,708 | 246,703 | 24% | 273,475 | 332,523 | 22% |
| Corridor Total | POP10 | POP40 | % Change | HH10 | HH40 | % Change | EMP10 | EMP40 | % Change |
| Total | 2,326,193 | 3,331,236 | 43% | 904,565 | 1,284,616 | 42% | 1,369,754 | 2,225,902 | 63% |

Note: ¹ These counties were included for modeling purposes.

Figure 2.1: Study Corridor Areas

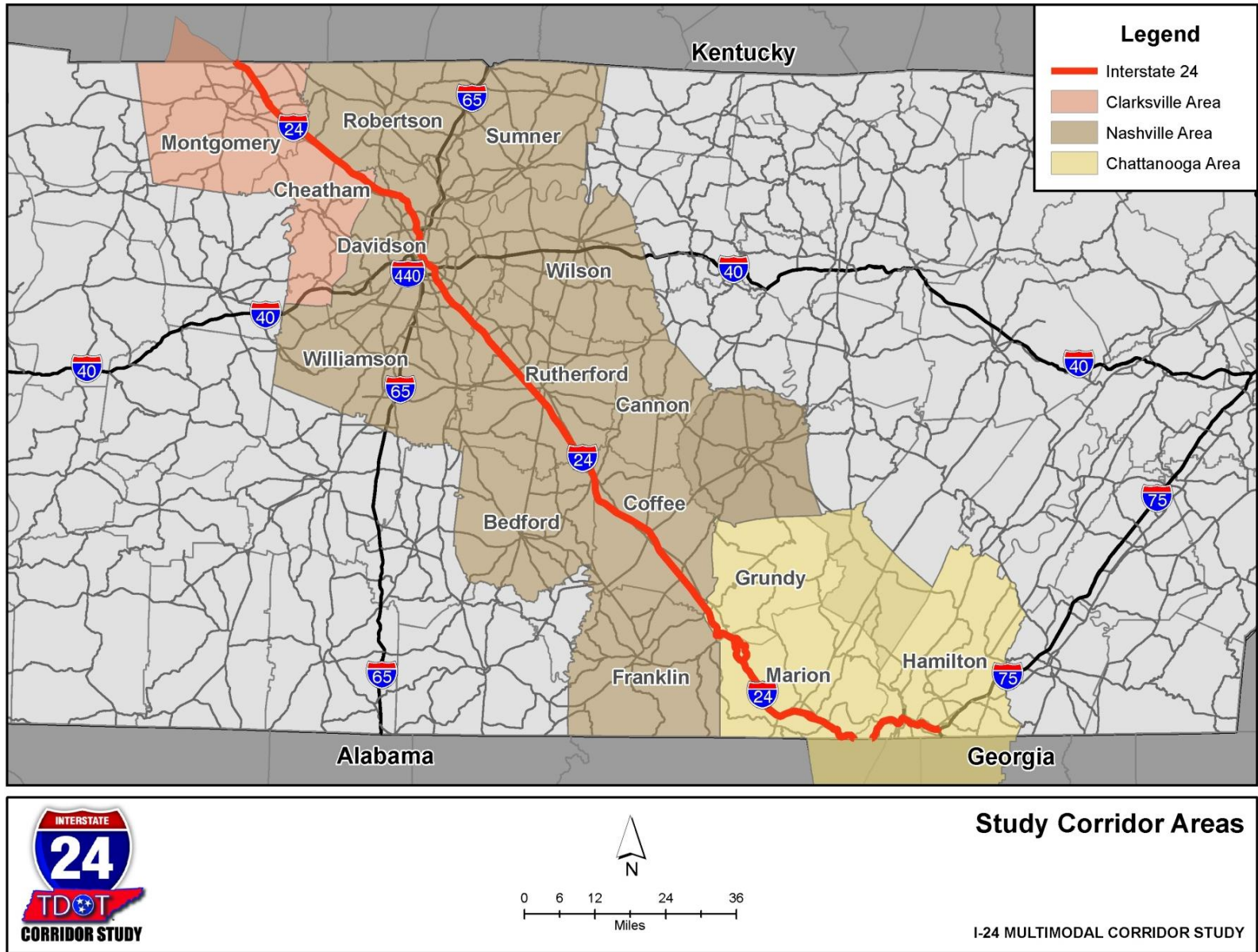


Figure 2.2: 2010 Population by County

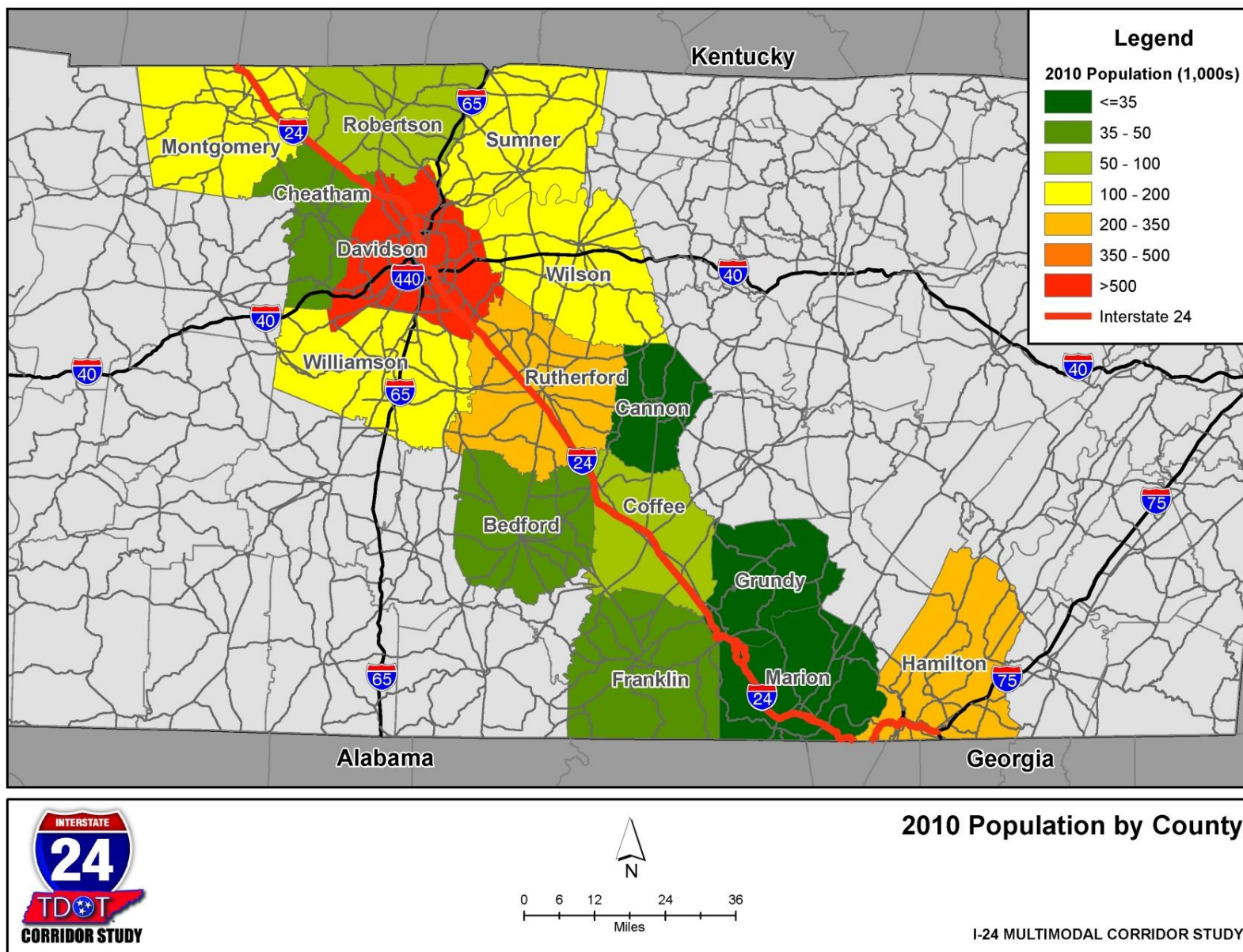


Figure 2.3: 2040 Population by County

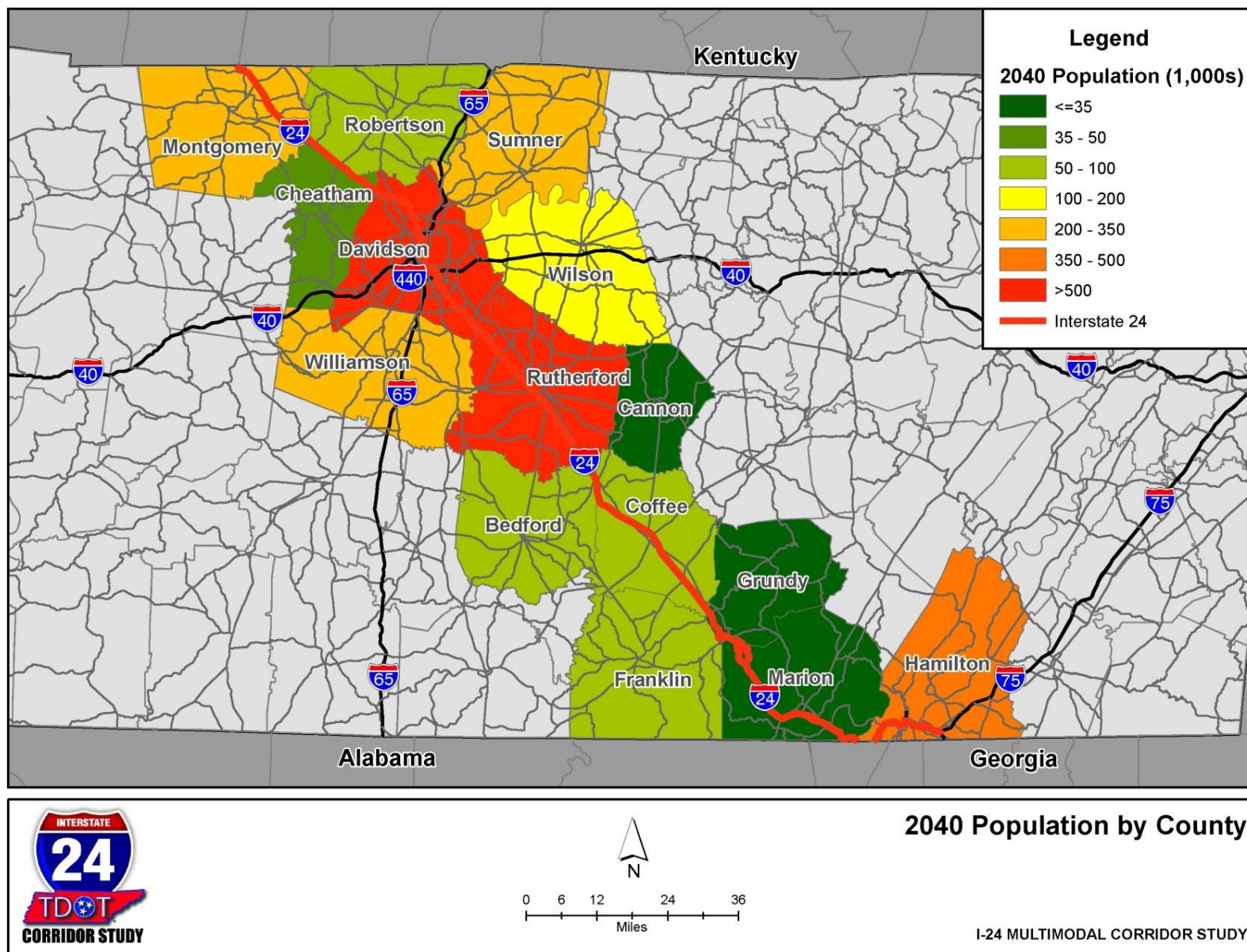
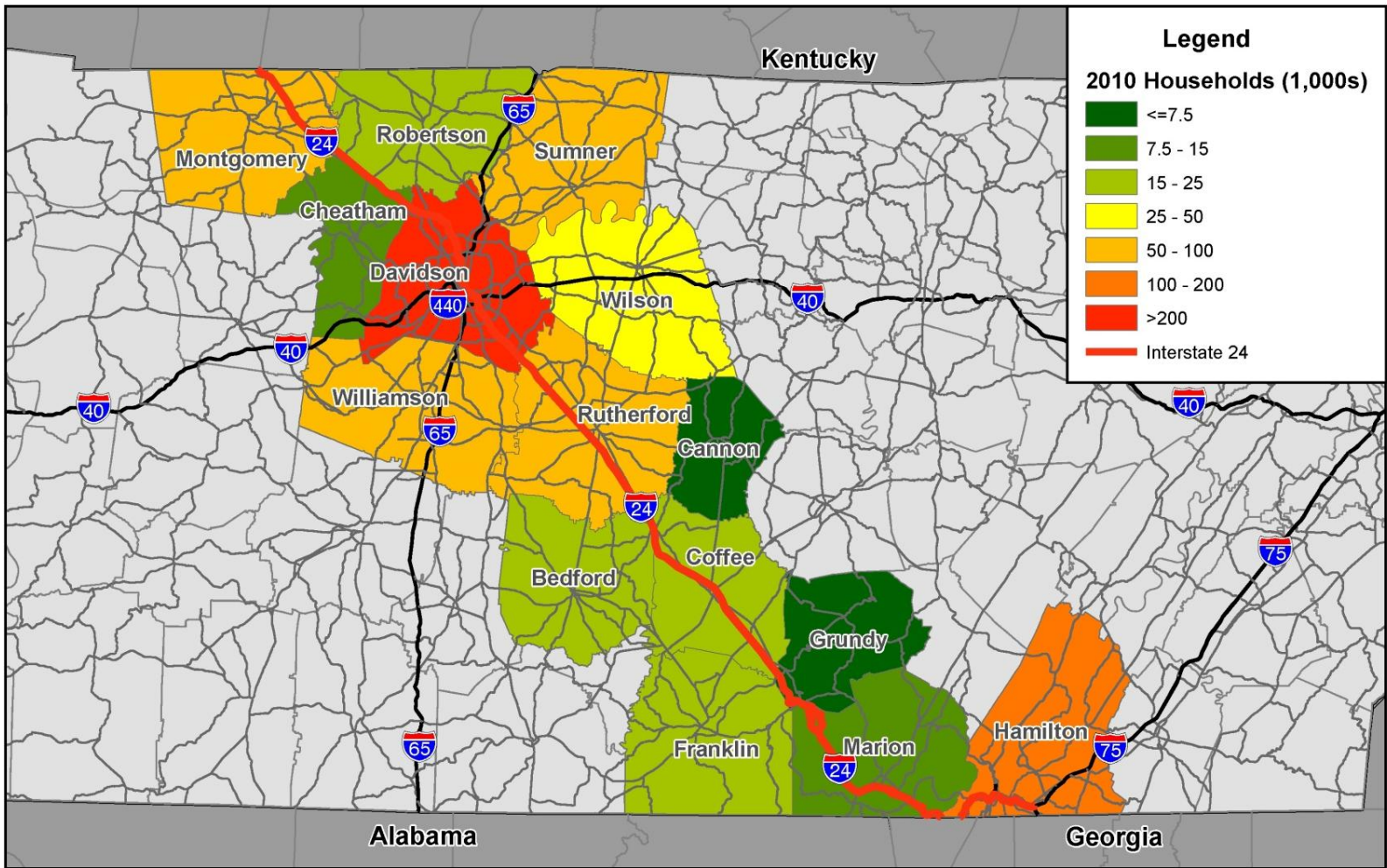


Figure 2.4: 2010 Households by County



2010 Households by County

I-24 MULTIMODAL CORRIDOR STUDY

Figure 2.5: 2040 Households by County

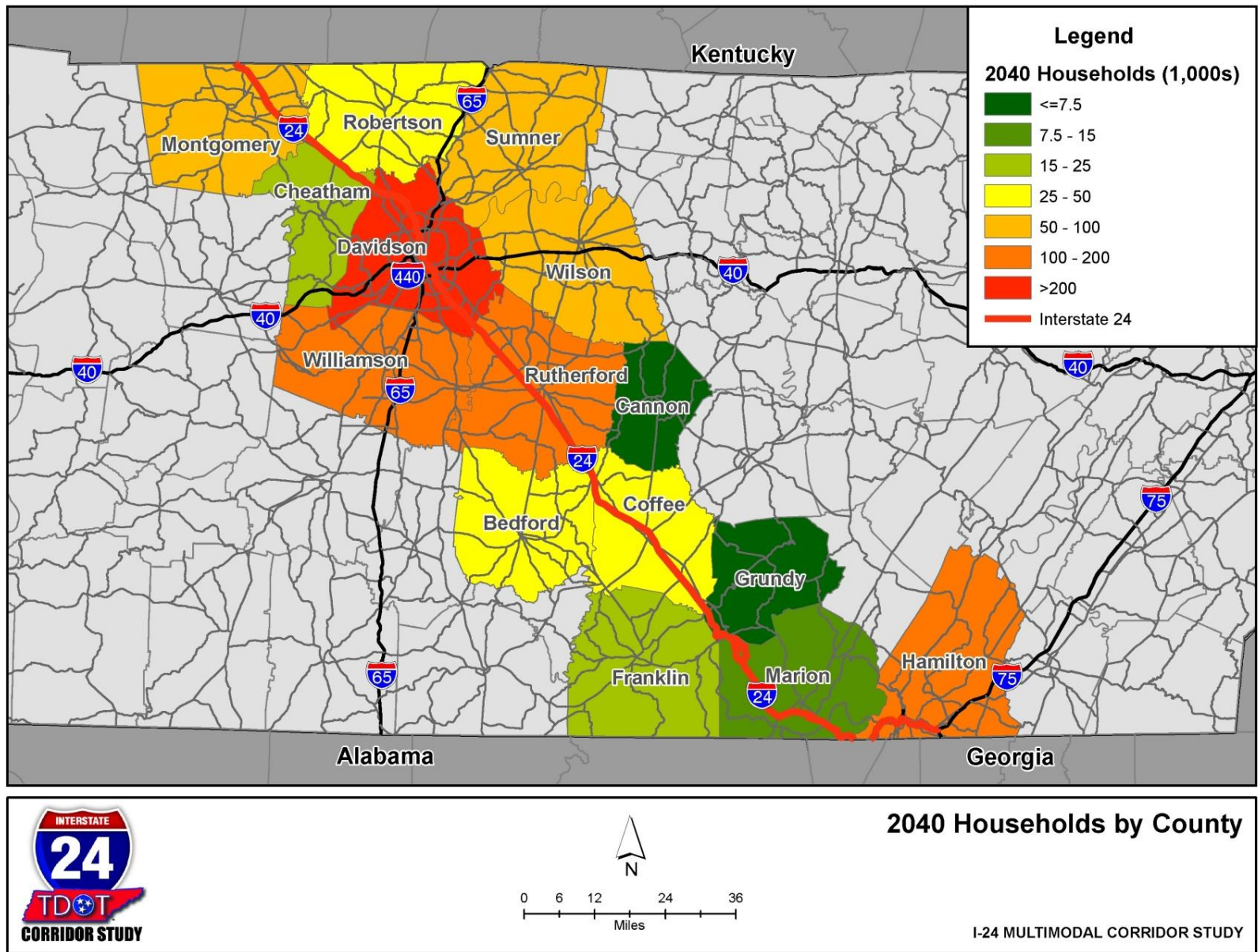


Figure 2.6: 2010 Employment by County

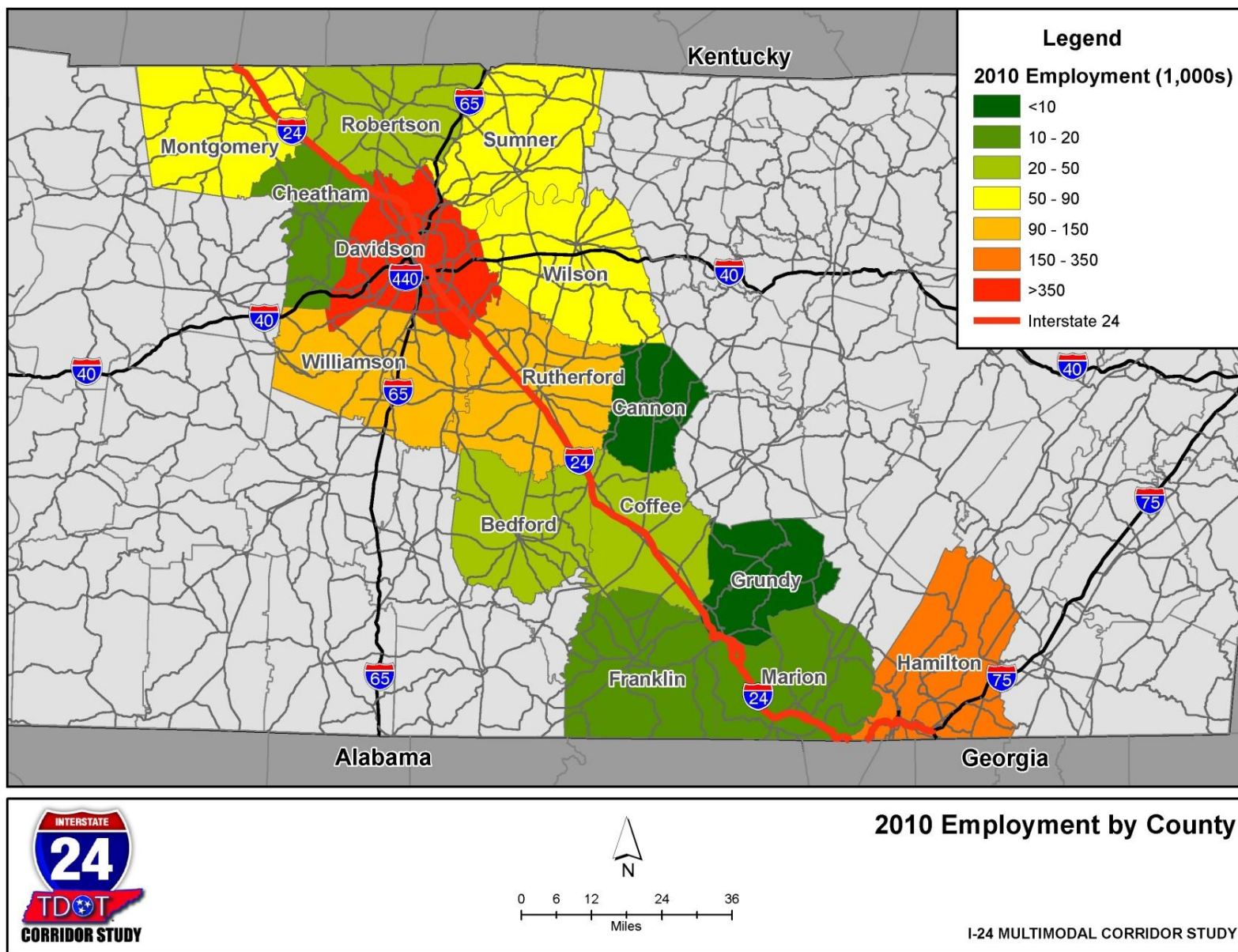
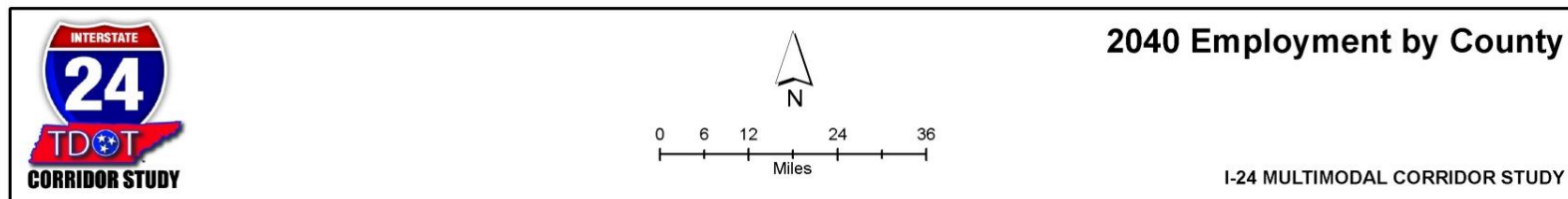
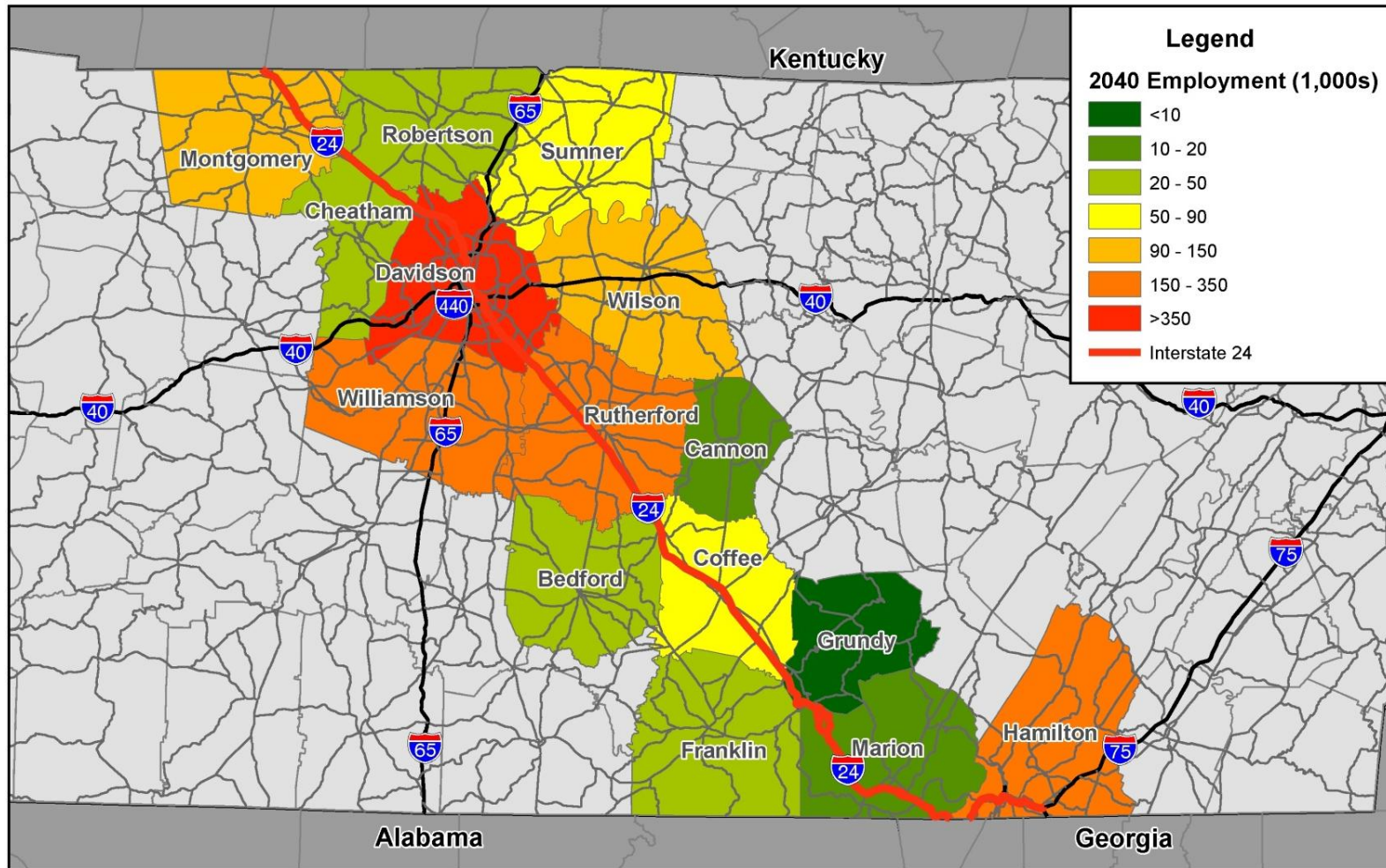


Figure 2.7: 2040 Employment by County



Sources for the demographic data presented in Table 2.1 are listed below.

- POP10: US Department of Commerce, Census Bureau.
- POP40: Tennessee State Data Center (University of Tennessee, Knoxville), UT Center for Business and Economic Research (projections for areas outside Tennessee), except for Chattanooga area where the MPO provided 2040 forecast data.
- HH10: US Department of Commerce, Census Bureau.
- HH40: Estimates based on relationship of Population per Household from the TDOT Statewide Travel Demand Model except for the Chattanooga area where the MPO provided 2040 forecast data.
- EMP10: US Department of Commerce, Bureau of Economic Analysis (BEA).
- EMP40: Extrapolated based on available MPO forecasts or the TDOT Statewide Travel Demand Model, except for Chattanooga area where the MPO provided 2040 forecast data.

As can be seen in Table 2.1, a relatively high rate of growth is expected within the I-24 corridor over the next 30 years. Since the base is 2010, some of that growth has already occurred over the last two years but most of that growth is still to occur. Population in the I-24 Corridor is expected to increase over 40%, households by about the same, and employment by over 60%. Current I-24 Corridor population is approximately 2.3 million and population is expected to grow to approximately 3.3 million by 2040.

There are currently approximately 0.9 million I-24 Corridor households and total households are expected to grow to 1.3 million. Total I-24 Corridor employment is currently approximately 1.4 million and is expected to grow to 2.2 million by 2040.

Figures 2.2 and 2.3 show 2010 and 2040 population by county for the fifteen counties within the I-24 Study Corridor. Examining these color coded maps provides a quick assessment of the relative size of the counties in terms of population between 2010 and 2040. In 2010 Davidson, Hamilton and Rutherford counties are the largest in terms of population. Although Davidson County remains the most populated county in 2040, much of the population growth in the I-24 Corridor is spread to other counties. Rutherford and Williamson Counties in particular show large gains in population.

Figures 2.4 and 2.5 show 2010 and 2040 households by county for the fifteen counties within the I-24 Study Corridor. Similar to population change between 2010 and 2040, Rutherford, Williamson, Wilson, Montgomery and Sumner Counties all show large increases in the number of households by 2040. Davidson County remains the county with the most households in 2040.

Figures 2.6 and 2.7 show 2010 and 2040 employment by county for the fifteen counties within the I-24 Study Corridor. Employment growth at the county level is generally higher than population growth and somewhat more spread between 2010 and 2040. While more of the

employment stays within Davidson, Williamson and Hamilton Counties, there is substantial growth in employment in Rutherford, Montgomery, Robertson, Wilson and Coffee counties.

3.0 Corridor Area and County Level Demographics

The following section looks at each Corridor Area's demographics and those of the associated counties within it. Numbers in this section refer back to Table 2.1.

3.1 Clarksville Area

The Clarksville Corridor Area had a 2010 population of approximately 222,000, households of approximately 82,000 and employment of approximately 82,000. By 2040 the Clarksville Corridor Area is expected to have population of approximately 315,000, households of approximately 116,000 and employment of approximately 138,000.

The Clarksville Corridor Area is expected to track even with the growth that is expected for the I-24 Corridor overall. It has the second highest expected growth of the three Corridor Areas. Population in the Clarksville Corridor Area is expected to grow by 42%, households by approximately the same percentage, and employment by nearly 70%, by 2040.

However, the Clarksville Corridor Area currently has the lowest share of I-24 Corridor population, households, and employment; at about 10% of I-24 Corridor total population and households, and approximately 6% of total I-24 Corridor employment. The Clarksville Corridor Area is composed of Montgomery and Cheatham Counties in Tennessee, and part of Christian County in Kentucky.

3.1.1 Montgomery County

Montgomery County contains the City of Clarksville and part of Fort Campbell. It has fairly large employment concentrations and higher than I-24 Corridor average rates of growth. The employment within Montgomery County is expected to increase by 70% from 2010 to 2040.

3.1.2 Cheatham County

Cheatham County is expected to have low rates of growth for population and households but somewhat higher growth in employment. Population and households for Cheatham County are expected to increase by only 5% between 2010 and 2040. Employment is expected to increase by 46% in the same period.

3.1.3 Christian County, Kentucky (Part – within model area)

The portion of Christian County within the I-24 Corridor Study model is expected to have high rates of growth although the population, households and employment remain relatively low.

3.2 Nashville Area

The Nashville Corridor Area had a 2010 population of approximately 1,600,000, households of approximately 620,000 and employment of approximately 1,000,000. By 2040, the Nashville Corridor Area is expected to have population of approximately 2,400,000, households of approximately 900,000 and employment of approximately 1,800,000.

The Nashville Corridor Area is expected to have a higher rate of growth than the I-24 Corridor overall for population, households and employment. Population in the Nashville Corridor Area is expected to grow by 49%, households by approximately 48%, and employment by about 73%, by 2040. Consistent with this, currently the Nashville Corridor Area has the largest share of population, households, and employment in the I-24 Corridor (near or above 70% of the I-24 Corridor for each variable) and these shares are expected to increase by 2040. As defined for the purposes of the I-24 Corridor Study, the Nashville Corridor Area is comprised by Robertson, Sumner, Wilson, Davidson, Williamson, Rutherford, Bedford, Cannon, Coffee, Franklin, and Warren Counties.

3.2.1 Robertson County

Robertson County's growth is projected to be lower than average for the I-24 Corridor and for the Nashville Corridor Area for population and households, with a higher rate of employment growth projected than for the corridor and the Nashville Corridor Area. Population is projected to be over 87,000 by 2040 and employment nearly 50,000.

3.2.2 Sumner County

Sumner County's growth in population and households is projected to be slightly higher than average for the I-24 Corridor, with a similar rate of population growth projected as for the Nashville Corridor Area, and a somewhat lower growth in employment. Population is projected to be approximately 230,000 by 2040.

3.2.3 Wilson County

Wilson County is projected to have relatively high growth in population, households and employment relative to the I-24 Corridor and the Nashville Corridor Area. Population is expected to exceed 170,000 by 2040.

3.2.4 Davidson County

Davidson County has relatively low projected growth between 2010 and 2040 relative to the I-24 Corridor and the Nashville Corridor area; 24% growth in population and 48% growth in employment, but it is and will remain the largest county in terms of population, households and employment in the I-24 Corridor. Population in 2040 is projected to be approximately 780,000 and employment is projected to be approximately 790,000.

3.2.5 Williamson County

Williamson County has the second highest projected growth of population and households in the I-24 Corridor at 83% between 2010 and 2040, and among the highest growth rates in employment at 154%. Population in 2040 is projected to be over 330,000, and employment over 300,000, making it second only to Davidson County in terms of employment within the I-24 Corridor by 2040.

3.2.6 Rutherford County

Rutherford County is projected to have high levels of growth. It has the highest projected percentage of population growth of any county in the I-24 Corridor. The population is projected to grow to over 530,000 by 2040, making it second only to Davidson County in terms of population within the I-24 Corridor and the Nashville Corridor Area.

3.2.7 Bedford County

Bedford County is projected to have a higher rates of growth than the I-24 Corridor counties overall and the Nashville Corridor Area for population and households, at 61%, but a relatively low rate of employment growth, at 19%.

3.2.8 Cannon County

Cannon County is projected to have a lower rate of growth than the I-24 Corridor overall for population and households, and a lower rate of growth than the Nashville Corridor Area. Employment is projected to grow at a higher rate than the I-24 Corridor and the Nashville Corridor Area but to remain below 11,000 by 2040.

3.2.9 Coffee County

Coffee County is projected to have a somewhat higher rate of growth than the I-24 Corridor overall for population and households, and a slightly lower rate of growth than the Nashville Corridor Area. Employment is projected to grow at a higher rate and grow to over 60,000 by 2040.

3.2.10 Warren County (included in model)

Warren County is included in the I-24 model because it has a road parallel to I-24 that may be examined for potential improvements. Warren County has a lower rate of growth than the I-24 Corridor and the Nashville Corridor Area for population and households. However, it does have a particularly high projected rate of growth for employment, over 170% from 2010 to 2040, and is expected to have employment over 45,000 by 2040.

3.2.11 Franklin County

Growth in Franklin County is lower than average for population and households in the I-24 corridor overall and the Nashville Corridor Area. Population in 2010 is just over 41,000 and is projected to be about 50,000 in 2040. Employment is projected to grow at a higher rate than the I-24 Corridor overall and the Nashville Corridor Area to over 28,000 by 2040.

3.3 Chattanooga Area

The Chattanooga Corridor Area had a 2010 population of approximately 500,000, households of approximately 200,000 and employment of approximately 270,000. By 2040 the Chattanooga Corridor Area is expected to have a population of approximately 615,000, households of approximately 245,000 and employment of approximately 330,000.

For the purposes of the I-24 Corridor Study, the Chattanooga Corridor Area is defined as Grundy, Sequatchie, Marion, and Hamilton Counties in Tennessee, and Catoosa and parts of Dade and Walker Counties in Georgia.

The Chattanooga Corridor Area is expected to grow less than the I-24 Corridor overall for population, households and employment. Population in the Chattanooga Corridor Area is expected to grow by 24%, households by approximately 24%, and employment by about 22%, by 2040.

3.3.1 Grundy County

Grundy County is the smallest county in the I-24 Corridor in terms of population, with a 2010 population of less than 14,000. Grundy County population and households are projected to decline between 2010 and 2040. Population in 2040 is projected to be about 10% less than in 2010 with a similar decline in households. However, employment is projected to increase in the same period from 5,000 to 7,500.

3.3.2 Marion County

Marion County population and households are projected to decline between 2010 and 2040 by about 7%. Population in 2040 is projected to be just over 26,000. Employment is expected to grow to approximately 18,000 by 2040.

3.3.3 Sequatchie County (included in model)

Sequatchie County is included in the I-24 model because it has a road parallel to I-24 that may be examined for potential improvements. Sequatchie County is a relatively small county with a 2010 population of approximately 14,000. It is projected to have relatively low growth for the I-24 Corridor overall and for the Chattanooga Corridor Area for population and households but higher growth for employment. However, employment is projected to be less than 8,000 in 2040.

3.3.4 Hamilton County

Hamilton County is projected to have fairly low rates of growth relative to the I-24 Corridor overall and somewhat less than the Chattanooga Corridor Area. Population is projected to grow by 21% between 2010 and 2040, from 336,000 to 407,000. Currently the second largest county in the I-24 Corridor in terms of population after Davidson County, it is projected to be the third largest in population by 2040 after Davidson and Rutherford Counties.

3.3.5 Catoosa County, Georgia (within model area)

Catoosa County, Georgia, is projected to have a higher rate of growth than the I-24 Corridor overall and the Chattanooga Corridor Area. Population in 2040 is projected to be over 100,000 compared to about 64,000 in 2010.

3.3.6 Dade County, Georgia (Part – within model area)

The portion of Dade County, Georgia, within the I-24 Model area is the smallest in terms of population, households and employment. It is projected to decline slightly in population and households between 2010 and 2040 and is projected to increase slightly in employment between 2010 and 2040.

3.3.7 Walker County, Georgia (Part – within model area)

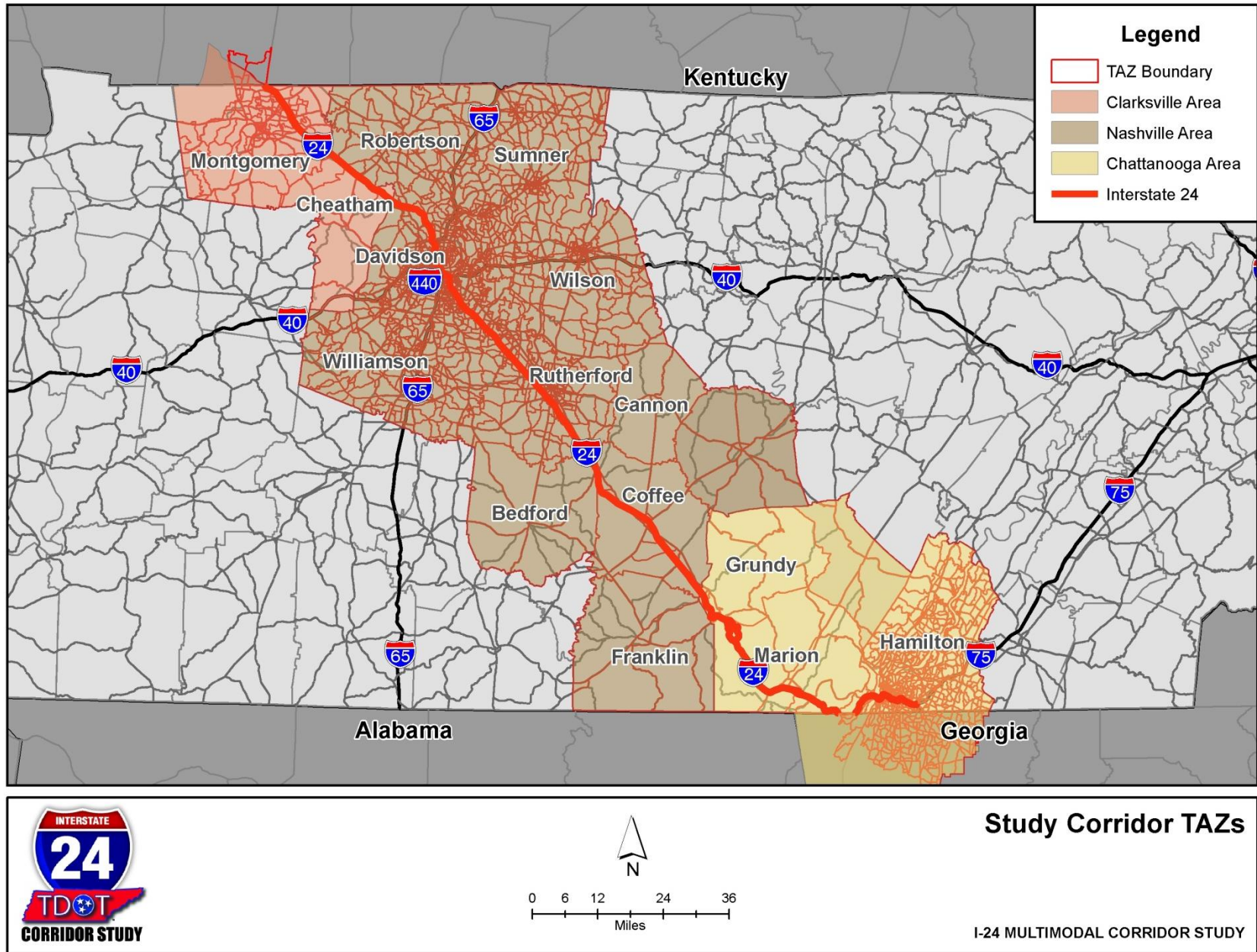
The portion of Walker County, Georgia, within the I-24 Model area has lower rates of growth than the I-24 Corridor overall and the Chattanooga Corridor Area. Population in 2010 was under 38,000 and is projected to be less than 42,000 in 2040.

4.0 Traffic Analysis Zone (TAZ) Level Demographics

Although demographic data at the TAZ level are not directly examined in this technical memorandum, they are used in the I-24 Corridor Model. TAZ level data is from the MPOs for areas inside MPO boundaries and otherwise from the TDOT Statewide Travel Demand Model. Data sometimes had to be interpolated to the 2010 base year or projected to the 2040 horizon year.

TAZ demographic data form the basis for determining trips and travel patterns throughout the I-24 Corridor. For all TAZs, data on population, households and total employment are available. For the TAZs within MPO boundaries, data on households by income category and employment by type are available. Figure 4.1 shows the TAZs assembled for the I-24 Corridor Study by Corridor Area. These are preliminary TAZs and may be subdivided or otherwise reconfigured in the I-24 Corridor Model to better replicate and predict travel demand within the corridor.

Figure 4.1: I-24 Study Corridor TAZ System



5.0 Environmental Justice

All Federally funded programs, including the transportation planning process, must consider the program's impact on Environmental Justice (EJ) populations. EJ populations include minorities and low income populations. The intention of the focus on EJ populations is to identify potential transportation planning projects and programs that could adversely impact EJ populations early in the project development process. If potential adverse impacts are identified, the impacts can be weighed against other goals and objectives of the planning process, and if appropriate, mitigating changes to the plans and programs can be made.

Planning-level EJ procedures should:

- Assist in identifying plans and programs that have negative EJ impacts
- Document the details of the decision-making process related to impact on EJ populations
- Document how EJ populations were given full and fair opportunities to participate in the planning process
- Provide information to subsequent project development activities that may assist in mitigating negative EJ impacts of plans and programs that proceed beyond the planning level

Geographic areas identified as containing significant EJ populations are dispersed throughout the study corridor, as shown on Figure 5.1 and 5.2. Figure 5.1 uses 2000 Census data to show the percentage of minority populations by census tract within the I-24 Study Corridor. Figure 5.2 shows the percentage of people below the poverty level by Census tract within the I-24 Study Corridor also using 2000 Census Data.

During the course of the I-24 Corridor Study Environmental Justice Data for 2010 will be prepared. It will be necessary to identify EJ communities to be certain that they are engaged in the planning process and to examine potential impacts on EJ communities and their mitigation.

Figure 5.1: Minority Populations in the I-24 Corridor

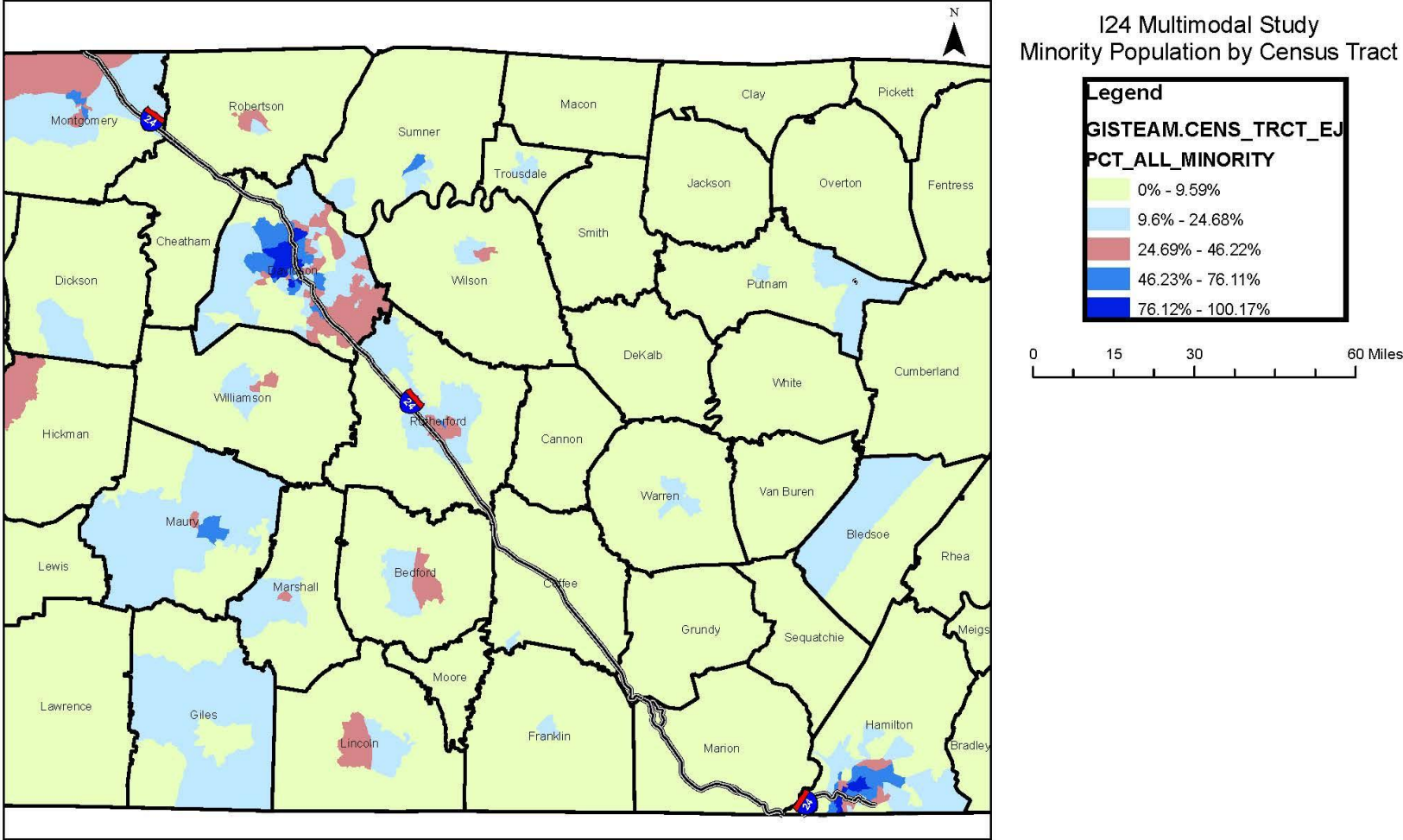


Figure 5.2: Low-Income Populations in the I-24 Corridor

