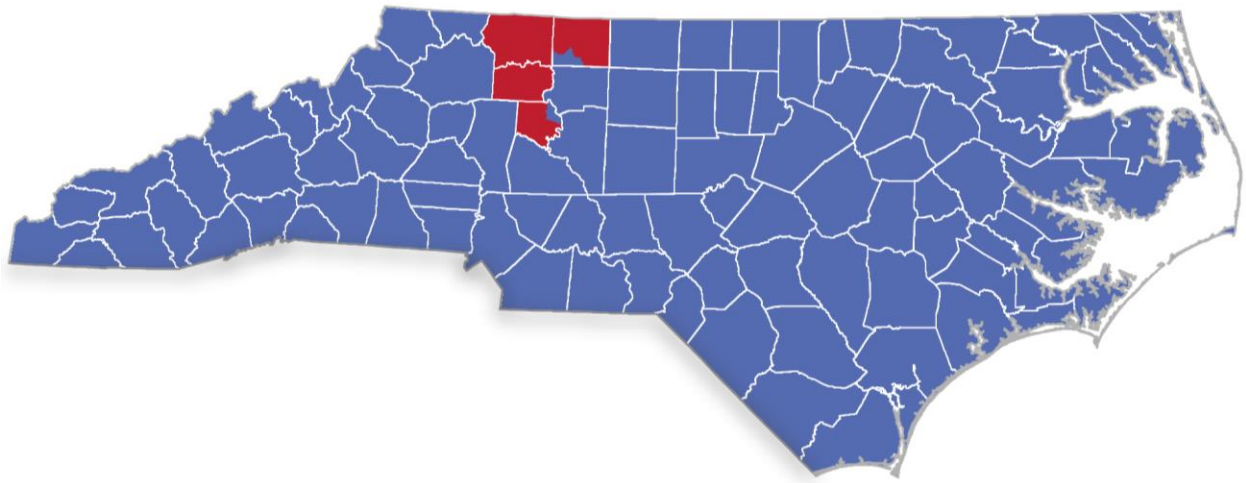


# ENVIRONMENTAL JUSTICE

## Northwest Piedmont Rural Planning Organization

Version 2 (Updated June 2016)



**NORTHWEST PIEDMONT**  

---

**RURAL PLANNING ORGANIZATION**

# **ENVIRONMENTAL JUSTICE**

## Northwest Piedmont Regional Data Scan

Version 2 (Updated April 2016)



Prepared by:  
Malinda Ford, GIS Manager  
Piedmont Triad Regional Council

**TABLE OF CONTENTS**

**OVERVIEW..... I**

**What is Environmental Justice? ..... I**

**Purpose ..... I**

**The Legal Framework..... I**

**Considerations ..... 3**

**THE DATA SCAN..... 4**

**American Community Survey ..... 4**

**Methodology ..... 5**

**RPO Regional Summary ..... 6**

**Summary by County ..... 8**

        Davie County (RPO Portion Only) ..... 8

        Stokes County (RPO Portion Only)..... 9

        Surry County ..... 10

        Yadkin County..... 11

**Summary by Characteristic ..... 12**

        Race..... 12

        Age ..... 14

        Poverty Status..... 16

        Unemployment..... 18

        Educational Attainment ..... 20

        Language..... 22

        Disability..... 24

        Vehicle Availability..... 26

        Female Householders with Children..... 28

**REFERENCES ..... 30**

**APPENDIX ..... 31**

## LIST OF TABLES

Table 1: State and Regional Characteristics .....	5
Table 2: Environmental Justice Impact Summary .....	6
Table 3: Environmental Impact Summary for Davie County (RPO Portion Only) .....	8
Table 4: Environmental Impact Summary for Stokes County (RPO Portion).....	9
Table 5: Environmental Impact Summary for Surry County .....	10
Table 6: Environmental Impact Summary for Yadkin County.....	11
Table 7: Minority Population .....	12
Table 8: Older Adult Population (Age 60 Years and Over).....	14
Table 9: Population Living in Poverty .....	16
Table 10: Unemployed Population (Ages 20-64) .....	18
Table 11: Population Age 25 Years and Older Without a High School Diploma.....	20
Table 12: English as a Second Language Population (Ages 5+).....	22
Table 13: Population with a Disability .....	24
Table 14: Households Without Access to a Vehicle .....	26
Table 15: Female Households with Children.....	28
Table 16: 2014 ACS Poverty Factors .....	31
Table 17: 2014 ACS Poverty Thresholds .....	31

## LIST OF MAPS

Map 1: Total Number of Environmental Justice Variables by Census Tract (2014).....	7
Map 2: Higher than Average Minority Population .....	13
Map 3: Higher than Average Older Adult Population .....	15
Map 4: Higher than Average Population Living in Poverty .....	17
Map 5: Higher than Average Unemployment Rates (Ages 20-64).....	19
Map 6: Higher than Average Population (Ages 25+) Without a High School Diploma.....	21
Map 7: Higher than Average Population Speaking English as a Second Language .....	23
Map 8: Higher than Average Population with a Disability .....	25
Map 9: Higher than Average Households without Access to a Vehicle.....	27
Map 10: Higher than Average Households with a Female Householder with Her Own Children ....	29

## OVERVIEW

### What is Environmental Justice?

Environmental Justice is a term that describes the way in which consideration is given to both the positive and negative impacts of public investment for programs, projects, policies or activities on minority and low income populations. The concept originates from a variety of federal laws, policies and executive orders.

There are three fundamental principles of Environmental Justice:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations.
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

### Purpose

One of the core duties of the Northwest Piedmont Rural Planning Organization (NWPRPO) is to provide a forum for public input into the transportation planning process. To that end, it is the responsibility of the NWPRPO to ensure that every interested party has a voice. The identification of traditionally under-represented communities is the focus of this document. Its purpose is to identify and document geographic locations with under-represented communities that represent potential environmental justice issues in the Piedmont Triad Region for use by the Piedmont Triad Regional Council (PTRC), the North Carolina Department of Transportation (NCDOT) and our local planning partners as transportation planning and project delivery activities occur.

Because many roadway improvements involve the use of federal funding, environmental justice issues play an important role in transportation planning and project development within the region. Public involvement and transportation planning processes should actively consider and promote environmental justice considerations. When these issues are addressed early in the planning stages of a project, it can reduce conflicts during project development, prevent project delays and keep project costs down.

With this information, the NWPRPO and its planning partners will be able to employ appropriate strategies to ensure that the negative impacts of a proposed transportation project are considered, minimized and mitigated. Data derived from this document can also be used to assist local government and NWPRPO staff in understanding the spatial demographic patterns throughout the region. This information can influence public outreach strategies, ensure the full engagement of traditionally underserved populations and actively address the transportation needs of these communities in a positive, proactive manner.

### The Legal Framework

A variety of federal laws, policies and orders provide the legal underpinning for environmental justice considerations. The relevant laws listed herein include a brief description of the relationship of each act to environmental justice.

*Title VI of the 1964 Civil Rights Act*

Under Title VI and related statutes, each Federal agency is required to ensure that no person is excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving Federal financial assistance on the basis of race, color, national origin, age, sex, disability, or religion.

*The Civil Rights Restoration Act of 1987*

This Act clarified the intent of Title VI to include all programs and activities of Federal-aid recipients, sub-recipients and contractors whether those programs and activities are federally funded or not.

*The National Environmental Policy Act of 1969*

Commonly referred to by the acronym NEPA, this Act stressed the importance of providing for "all Americans safe, healthful, productive, and esthetically pleasing surroundings", and requires federal agencies to take a "systematic, interdisciplinary approach" to give consideration to environmental and community factors in decision-making.

*Federal-aid Highway Act of 1970: 23 United States Code 109(h)*

This Act established further basis for equitable treatment of communities being affected by transportation projects. It requires consideration of the anticipated effects of proposed transportation projects upon residences, businesses, farms, and accessibility of public facilities, tax base, and other community resources.

*Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*

On February 11, 1994, President Clinton signed this Executive Order which requires that each Federal agency administer and implement its programs, policies, and activities that affect human health or the environment so as to identify and avoid "disproportionately high and adverse" effects on minority and low-income populations.

*DOT Order on Environmental Justice to Address Environmental Justice in Minority Populations and Low-Income Populations (DOT Order 5610.2)*

In April 1997, the U.S. Department of Transportation (DOT) issued this Order to describe the process for incorporating environmental justice principles into all DOT existing programs, policies, and activities.

*FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (DOT Order 6640.23)*

In December 1998, FHWA issued guidance that requires implementation of environmental justice principles in all FHWA programs, policies and activities.

*Implementing Title VI Requirements in Metropolitan and Statewide Planning, 1999*

This memorandum issued by FHWA and the Federal Transit Administration (FTA) provides clarification on how to ensure that environmental justice is considered during planning certification reviews. While Title VI and environmental justice have often been raised during project development, this document recognizes that the law also applies equally to the processes and products of planning.

## Considerations

According to the guidance provided by the Federal Highway Administration (FHWA), all “reasonably foreseeable adverse social, economic, and environmental effects on minority populations and low-income populations” must be identified and addressed as the investment of federal funds are being considered. These adverse effects include, but are not limited to:

- Bodily impairment, infirmity, illness, or death.
- Air, noise, and water pollution
- Soil contamination.
- Destruction or disruption of man-made or natural resources.
- Destruction or diminution of aesthetic values.
- Destruction or disruption of community cohesion or a community's economic vitality.
- Vibration.
- Displacement of persons, businesses, farms, or nonprofit organizations.
- Adverse employment effects.
- Destruction or disruption of the availability of public and private facilities and services.
- The denial of, reduction in, or significant delay in the receipt of benefits of DOT programs, policies, or activities.
- Increased traffic congestion, isolation, exclusion, or separation of minority or low-income individuals within a given community or from the broader community.

Conversely, the potential positive impacts to these same communities resulting from the investments of public funds or programs should also be identified and quantified. These include enhanced economic development opportunities, improved access to the transportation network and improved safety.

## THE DATA SCAN

The Piedmont Triad Regional Council obtained the data for analysis and mapping for this document from the U.S. Census Bureau's American Community Survey (ACS) 5-year estimates for the 2010 to 2014 period. While the federal definition of environmental justice primarily focuses on minority and low income populations, other traditionally underserved populations within the NWPRPO Region were also considered. Nine population characteristics were considered in this data scan:

- **Age:** Individuals included in this category are persons of at least 60 years of age or older.
- **Race:** Individuals included in this category are persons of at least one of the following minority racial or ethnic classes: African American, American Indian, Asian, Pacific Islander, or Latino.
- **Poverty Status:** Individuals are included in this category if the total family income was at or below the national designated poverty threshold. See Appendix A for the 2010 HHS Poverty Guidelines.
- **Unemployment:** Individuals included in this category are ages 20 to 64 that were unemployed at the time the survey was conducted.
- **Education Attainment:** Individuals are included in this category if they are 25 years or older and have not obtained a High School Diploma or a GED.
- **Language:** Individuals are included in this category if they are 5 years old or over whose first language is not English.
- **Disability:** Individuals included in this category consider themselves to have one or more of the following difficulties: hearing, vision, cognitive, ambulatory, self-care and independent living.  
*Note: Disability status was not included in the original 2012 data scan due to changes made to the ACS in 2008. The updated disability portion of the ACS 5-year estimate was not available until 2013.*
- **Vehicle Availability:** Households in this category were included if a passenger car, van or pick-up truck was unavailable for the use of household members.
- **Female Homeowners or Renters with Children:** Households are included in this category if the homeowner or renter is a female, whose marriage status is single and lives with their own children.

## American Community Survey

The U.S. Census Bureau has made changes to the way social and economic characteristics were collected since the 2000 Census that should be noted when using data from the American Community Survey (ACS). Where the 2000 Census was conducted with the traditional 'long form' format, the ACS is an ongoing survey intended to provide communities with data every year. The ACS is collected by sending the survey to a small percentage of the population yearly and on a rotating basis. The Census Bureau then compiles the information, releasing estimates in 1 and 5 year intervals.

For this Data Scan, the ACS 5-year estimates were utilized for the 2010 to 2014 period. According to the U.S. Census Bureau, the 5-year estimates use data that is collected over 60 months. It is the largest sample size and the most reliable of the estimates available. However, it should be noted that the 5 year data collection acts like an average for the 5 years represented, which masks isolated year to year changes.



The ACS 5 year data is best used for analyzing small populations that are not available with the ACS 1-year estimates. However, the ACS does not follow up with respondents who do not return or complete the survey, which is different than the Decennial Census. As a result, the reliability of the data is not as high as the 2000 Census and so the data includes a variable margin of error that should be considered when performing statistical analysis.

## Methodology

Using data from the U.S. Census Bureau ACS 5-year estimates for 2010 to 2014, the identified characteristics were collected and compared at the State, Northwest Piedmont Rural Planning Organization Region (NWPRPO) (see *Table 1*) and County levels. The NWPRPO consists of the entire portions of Surry and Yadkin Counties, and includes the majority of Davie and Stokes Counties (except for portions within the Winston-Salem MPO). To calculate statistics for the portion of Davie and Stokes Counties within the RPO, 2010 census block population data was used to determine the percentage of residents in the RPO area for each intersecting census tracts. This percentage was applied to all demographic characteristics for each intersecting census tract. The County averages (using only the RPO portion in each county) were used to determine appropriate benchmarks for each characteristic (Tables 3 - 15).

**Table 1: State and Regional Characteristics**

	North Carolina			Northwest Piedmont RPO		
	Universe Population	# Impacted	% Impacted	Universe Population	# Impacted	% Impacted
<b>Population Characteristic</b>						
Total Population	9,750,405	-	-	167,880	-	-
Age 60 years and over	9,750,405	1,908,443	19.6%	167,880	40,862	24.3%
Minority	9,750,405	3,455,877	35.4%	167,880	24,990	14.9%
Below Poverty	9,496,939	1,669,147	17.6%	165,944	31,907	19.2%
Unemployed (Ages 20-64)	4,473,117	431,224	9.6%	71,370	6,321	8.9%
Without High School Diploma (Age 25 years and over)	6,495,047	947,402	14.6%	117,338	25,886	22.1%
English as a Second Language (Age 5 years and over)	9,132,159	1,009,317	11.1%	158,693	12,775	8.1%
With a Disability	9,551,760	1,280,361	13.4%	166,316	27,039	16.3%
<b>Household Characteristics</b>						
Without Access to a Vehicle	3,742,514	244,937	6.5%	66,784	3,936	5.9%
Female Householder with Children	3,742,514	293,077	7.8%	66,784	4,137	6.2%

Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

Census tract data was used due to the geographic limitations of the ACS. Using the set benchmarks for each county, census tracts with higher-than-average percentages for each characteristic were then identified and mapped for the entire region. Finally, using ArcGIS, a map was created identifying the total number of characteristics exhibited by each census tract, illustrating a greater understanding of how these populations are spatially distributed throughout the region.

## RPO Regional Summary

Much of the Piedmont Triad faces concerns regarding environmental justice. The Northwest Piedmont RPO area is comprised of 42 census tracts. Within the area, 40 of these census tracts (or 95.2%) were found to have above average conditions for at least one environmental justice characteristic.

None of the census tracts showed above average conditions for all nine environmental justice characteristics. However, two census tracts did show above average conditions for eight variables. These tracts, located in and around Mount Airy, represent the areas most vulnerable to environmental justice in the RPO region.

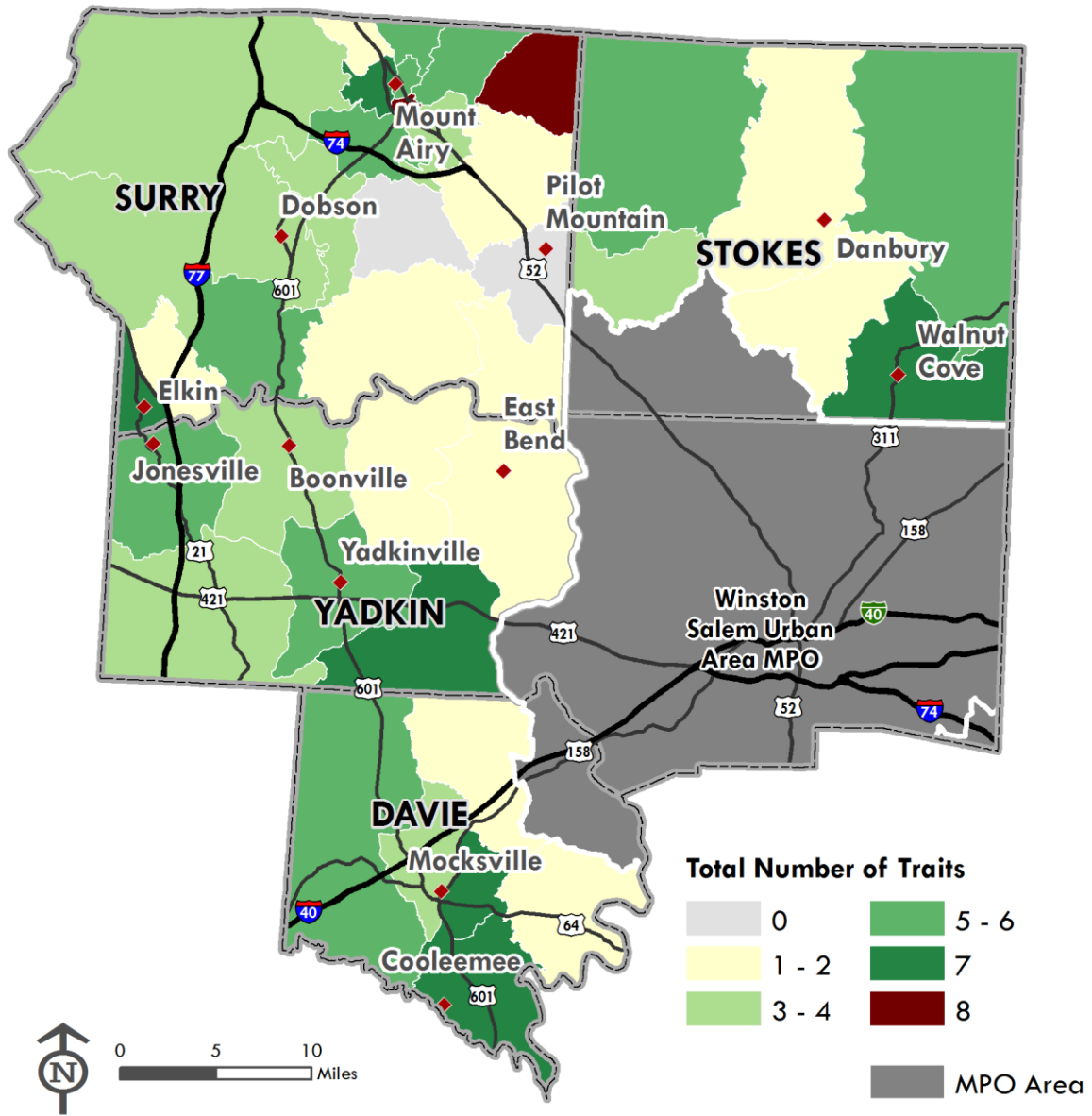
Another two census tracts showed no above average conditions for any environmental justice characteristic. These tracts are located in Surry County around Pilot Mountain and south of Mount Airy.

**Table 2: Environmental Justice Impact Summary**

<b>Above Average for:</b>	<b>Northwest Piedmont RPO Average</b>	<b># Impacted Census Tracts</b>	<b>% Impacted Census Tracts</b>
Older Adult Population (Ages 60 years and over)	24.3%	21	50.0%
Minority Population	14.9%	18	42.9%
Population Living in Poverty	19.2%	18	42.9%
Unemployment (Ages 20 to 64)	8.9%	20	47.6%
Population without a High School Diploma (Ages 25 years and over)	22.1%	16	38.1%
Population Speaking a Language other than English	8.1%	12	28.6%
Disability Population	16.3%	22	52.4%
Households without Access to a Vehicle	5.9%	16	38.1%
Households with a Female Householder with Children	6.2%	18	42.9%
<b>Census Tract Summary</b>			
Total Census Tracts in PTRPO		42	-
# Above Average for Any One Characteristic		40	95.2%
# Above Average for All Characteristics		0	0.0%
# Below Average for All Characteristics		2	4.8%

Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

Map I: Total Number of Environmental Justice Variables by Census Tract (2014)



Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

## Summary by County

### Davie County (RPO Portion Only)

Davie County is comprised of seven census tracts, three of which are split by the RPO and Winston-Salem MPO boundary. The tracts in the northeast portion of the County, around Bermuda Run, were above average for only one environmental justice variable – Age. The tracts around Mocksville and Cooleemee were above average for seven variables. No tracts within the County exhibited all nine characteristics or were below average for all characteristics (Table 3).

**Table 3: Environmental Impact Summary for Davie County (RPO Portion Only)**

	Davie County (RPO Portion Only)				
	Universe Population	# Impacted	% Impacted	Impacted Tracts	% Impacted
<b>Population Characteristic</b>					
Total Population	29,588				
Age 60 years and over	29,588	6,673	22.6%	4	57.1%
Minority	29,588	5,425	18.3%	3	42.9%
Below Poverty	29,287	5,101	17.4%	3	42.9%
Unemployed (Ages 20-64)	13,329	1,277	9.6%	3	42.9%
Without High School Diploma (Age 25 years and over)	20,246	3,571	17.6%	2	28.6%
English as a Second Language (Ages 5 years and over)	27,906	2,492	8.9%	2	28.6%
With a Disability	29,332	3,925	13.4%	3	42.9%
<b>Household Characteristics</b>					
Without Access to a Vehicle	11,340	603	5.3%	3	42.9%
Female Householder with Children	11,340	753	6.6%	3	42.9%
<b>Summary of Impacted Census Tracts</b>					
Total Census Tracts in County				7	-
# Above Average for Any One Characteristic				7	100.0%
# Above Average for All Characteristics				0	0.0%
# Below Average for All Characteristics				0	0.0%

Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

### Stokes County (RPO Portion Only)

Stokes County is comprised of nine census tracts, three of which are completely contained in the Winston-Salem MPO boundary and were not included in this data analysis, and two of which split the RPO-MPO boundary. Within the study area, all six were found to have above average conditions for at least one environmental justice characteristic, but no census tracts exhibited all nine environmental justice characteristics (Table 4).

**Table 4: Environmental Impact Summary for Stokes County (RPO Portion)**

	Stokes County (RPO Portion)				
	Universe Population	# Impacted	% Impacted	Impacted Tracts	% Impacted
<b>Population Characteristic</b>					
Total Population	26,800				
Age 60 years and over	26,800	7,026	26.2%	2	33.3%
Minority	26,800	2,699	10.1%	2	33.3%
Below Poverty	26,504	5,121	19.3%	2	33.3%
Unemployed (Ages 20-64)	11,613	1,190	10.2%	3	50.0%
Without High School Diploma (Age 25 years and over)	19,622	4,310	22.0%	3	50.0%
English as a Second Language (Ages 5 years and over)	25,489	760	3.0%	1	16.7%
With a Disability	26,586	4,272	16.1%	4	66.7%
<b>Household Characteristics</b>					
Without Access to a Vehicle	10,890	562	5.2%	2	33.3%
Female Householder with Children	10,890	628	5.8%	4	66.7%
<b>Summary of Impacted Census Tracts</b>					
Total Census Tracts in County				6	-
# Above Average for Any One Characteristic				6	100.0%
# Above Average for All Characteristics				0	0.0%
# Below Average for All Characteristics				0	0.0%

Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

## Surry County

Surry County is comprised of 22 census tracts. Within the County, 20 were found to have above average conditions for at least one environmental justice characteristic. Many census tracts within the Mount Airy and Elkin areas exhibited a high instance of multiple characteristics. No census tracts exhibited all nine environmental justice characteristics. Two census tract showed no above average characteristics (Table 5).

**Table 5: Environmental Impact Summary for Surry County**

	Surry County				
	Universe Population	# Impacted	% Impacted	Impacted Tracts	% Impacted
<b>Population Characteristic</b>					
Total Population	73,391				
Age 60 years and over	73,391	18,050	24.6%	11	50.0%
Minority	73,391	11,292	15.4%	10	45.5%
Below Poverty	72,390	14,367	19.8%	10	45.5%
Unemployed (Ages 20-64)	30,189	2,617	8.7%	11	50.0%
Without High School Diploma (Age 25 years and over)	50,993	12,249	24.0%	9	40.9%
English as a Second Language (Ages 5 years and over)	69,289	6,195	8.9%	6	27.3%
With a Disability	72,606	12,732	17.5%	11	50.0%
<b>Household Characteristics</b>					
Without Access to a Vehicle	29,380	1,979	6.7%	9	40.9%
Female Householder with Children	29,380	2,003	6.8%	7	31.8%
<b>Summary of Impacted Census Tracts</b>					
Total Census Tracts in County				22	-
# Above Average for Any One Characteristic				20	90.9%
# Above Average for All Characteristics				0	0.0%
# Below Average for All Characteristics				2	9.1%

Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

## Yadkin County

Yadkin County is comprised of seven census tracts. Within the County, all seven tracts were found to have above average conditions of at least one environmental justice characteristic. No Census tracts within Yadkin County exhibited all nine environmental justice characteristics (Table 6).

**Table 6: Environmental Impact Summary for Yadkin County**

	Yadkin County				
	Universe Population	# Impacted	% Impacted	Impacted Tracts	% Impacted
<b>Population Characteristic</b>					
Total Population	38,101				
Age 60 years and over	38,101	9,113	23.9%	4	57.1%
Minority	38,101	5,574	14.6%	3	42.9%
Below Poverty	37,763	7,318	19.4%	3	42.9%
Unemployed (Ages 20-64)	16,239	1,237	7.6%	3	42.9%
Without High School Diploma (Age 25 years and over)	26,477	5,756	21.7%	2	28.6%
English as a Second Language (Ages 5 years and over)	36,009	3,328	9.2%	3	42.9%
With a Disability	37,792	6,110	16.2%	4	57.1%
<b>Household Characteristics</b>					
Without Access to a Vehicle	15,174	792	5.2%	2	28.6%
Female Householder with Children	15,174	753	5.0%	4	57.1%
<b>Summary of Impacted Census Tracts</b>					
Total Census Tracts in County				7	-
# Above Average for Any One Characteristic				7	100.0%
# Above Average for All Characteristics				0	0.0%
# Below Average for All Characteristics				0	0.0%

Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

## Summary by Characteristic

### Race

The geographic distribution of minority communities is a primary consideration of the federal government's Environmental Justice guidelines. To calculate the average percent minority population for each county and census tract, the number of White, non-Hispanic individuals was subtracted from the total population. Therefore, minority individuals are persons of at least one of the following racial or ethnic classes: African American, American Indian, Asian, Pacific Islander, or Hispanic/Latino.



**Table 7: Minority Population**

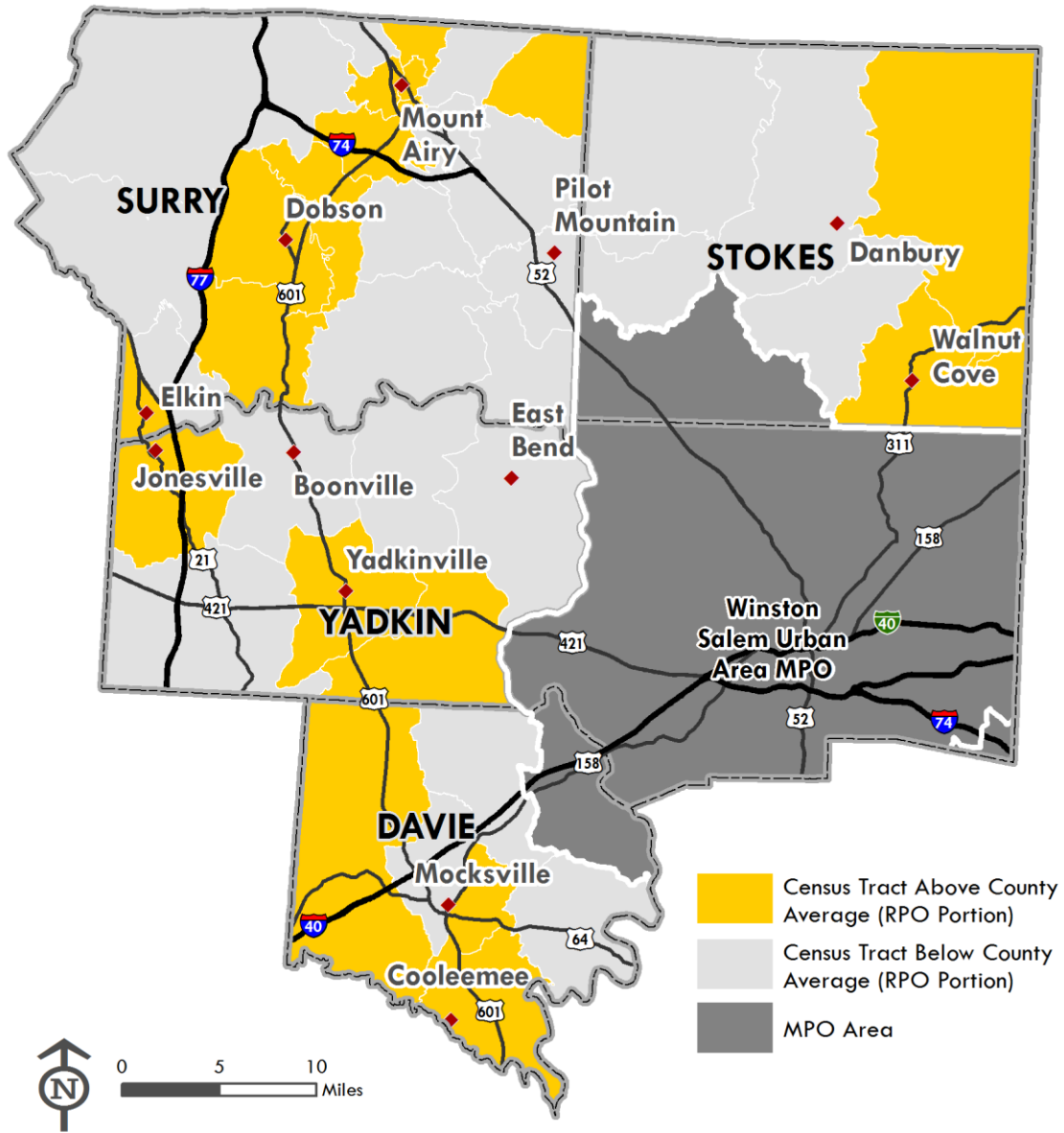
County:	Universe Population	Minority Population	% Minority Population (County Average)	Total Tracts	Impacted Tracts	% Tracts Impacted
Davie (RPO Portion)	29,588	5,425	18.3%	7	3	42.9%
Stokes (RPO Portion)	26,800	2,699	10.1%	6	2	33.3%
Surry	73,391	11,292	15.4%	22	10	45.5%
Yadkin	38,101	5,574	14.6%	7	3	42.9%
<b>RPO</b>	<b>167,880</b>	<b>24,990</b>	<b>14.9%</b>	<b>42</b>	<b>18</b>	<b>42.9%</b>

Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

North Carolina's population consists of 35.4% minority population. The Piedmont Triad Region's minority population proportion is slightly less at 34.0% while the Northwest Piedmont RPO's minority proportion is much lower at 14.9%. Davie County has the highest proportion of minority population (18.3%) while Stokes County has the lowest proportion (10.1%). Census tracts with higher than the county average for minority population can be seen in Map 2.



Map 2: Higher than Average Minority Population



Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

## Age

Age is an important environmental justice consideration because older adults generally experience increased difficulties recovering from disasters, adjusting to economic changes or stresses, dealing with injuries and exposure to illness or pollution. Individuals included in this category are 60 years of age or older.



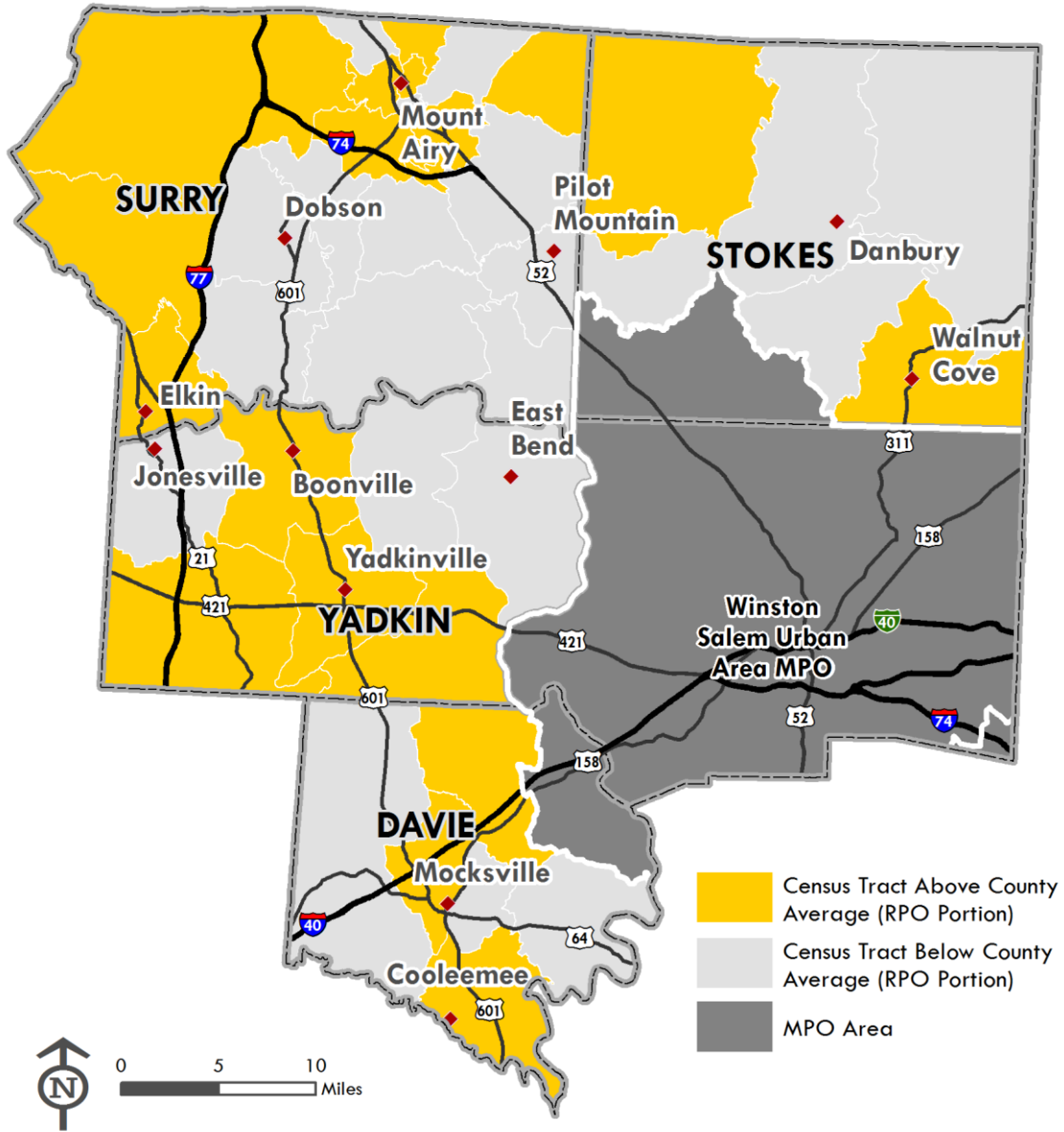
**Table 8: Older Adult Population (Age 60 Years and Over)**

County:	Universe Population	Older Adult Population	% Older Adult Population (County Average)	Total Tracts	Impacted Tracts	% Tracts Impacted
Davie (RPO Portion)	29,588	6,673	22.6%	7	4	57.1%
Stokes (RPO Portion)	26,800	7,026	26.2%	6	2	33.3%
Surry	73,391	18,050	24.6%	22	11	50.0%
Yadkin	38,101	9,113	23.9%	7	4	57.1%
<b>RPO</b>	<b>167,880</b>	<b>40,862</b>	<b>24.3%</b>	<b>42</b>	<b>21</b>	<b>50.0%</b>

Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

North Carolina's population consists of 19.6% older adults, age 60 years and over. The Piedmont Triad Region's older adult population proportion is slightly higher at 20.7% and the Northwest Piedmont RPO region is even higher at 24.3%. These rural counties have a higher proportion of older adults than other urban counties. Census tracts with higher than the county average for older adults are shown on Map 3.

Map 3: Higher than Average Older Adult Population



Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

## Poverty Status

Similar to older adults, families living in poverty may experience increased difficulties recovering from disasters, adjusting to economic stresses, dealing with injuries or illness and exposure to pollution.

Poverty statistics in the American Community Survey (ACS) are calculated for all people except institutionalized people, people in military group quarters, people in college dormitories, and unrelated individuals under 15 years old. The ACS uses a set of dollar

value thresholds that vary by family size and composition to determine who is in poverty. Further, poverty thresholds for people living alone or with nonrelatives (unrelated individuals) vary by age (under 65 years or 65 years and older). The poverty thresholds for two-person families also vary by the age of the householder. If a family's total income is less than the dollar value of the appropriate threshold, then that family and every individual in it are considered to be in poverty. Similarly, if an unrelated individual's total income is less than the appropriate threshold, then that individual is considered to be in poverty.



Because the ACS is a continuous survey, people respond throughout the year. Income questions specify a period covering the last 12 months, so the income thresholds are determined by multiplying the base-year poverty threshold (1982) by the average of the monthly inflation factors for the 12 months preceding the data collection (see Appendix).

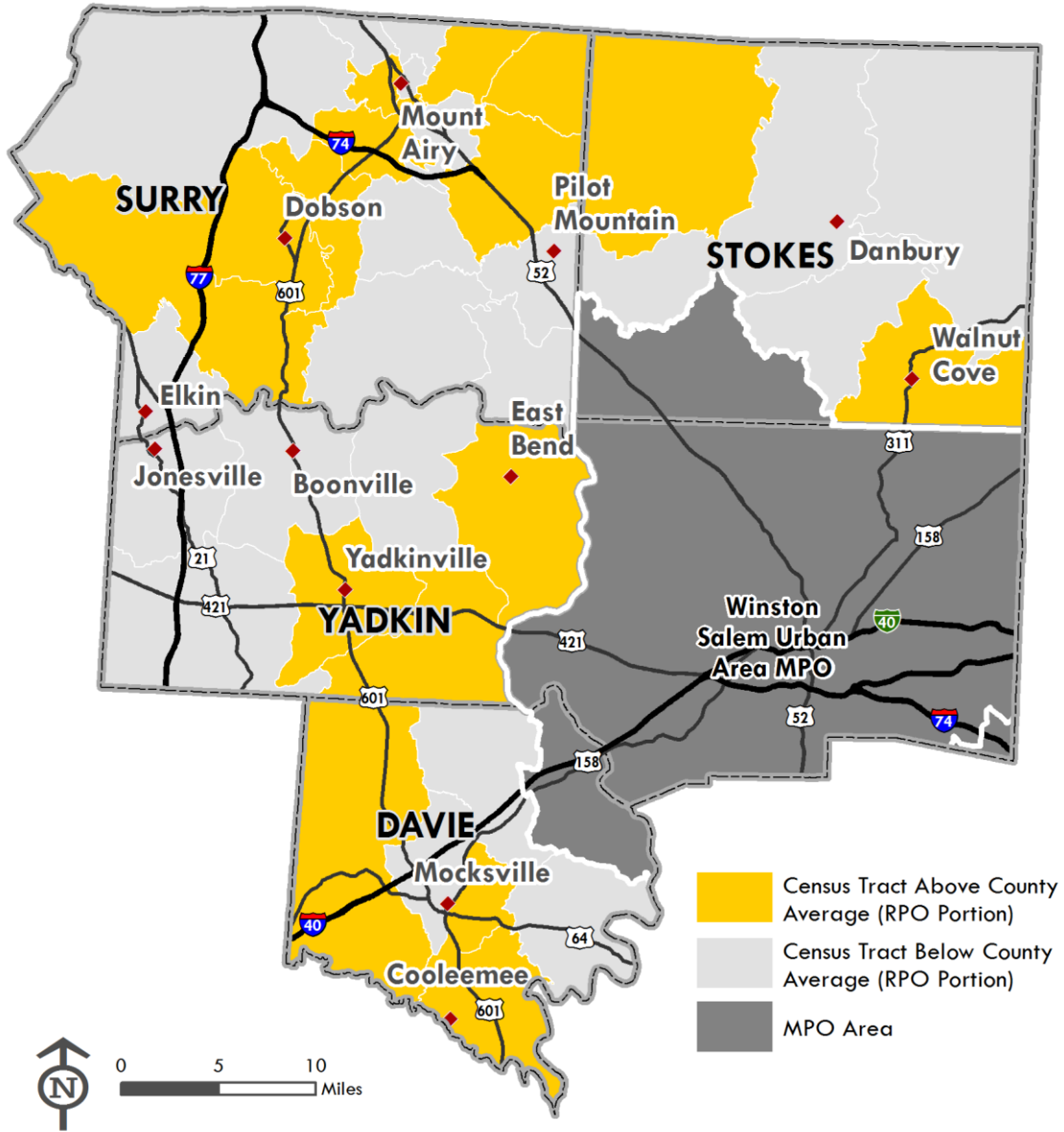
**Table 9: Population Living in Poverty**

County:	Universe Population	Impacted Population	% Impacted (County Average)	Total Tracts	Impacted Tracts	% Tracts Impacted
Davie (RPO Portion)	29,287	5,101	17.4%	7	3	42.9%
Stokes (RPO Portion)	26,504	5,121	19.3%	6	2	33.3%
Surry	72,390	14,367	19.8%	22	10	45.5%
Yadkin	37,763	7,318	19.4%	7	3	42.9%
<b>RPO</b>	<b>165,944</b>	<b>31,907</b>	<b>19.2%</b>	<b>42</b>	<b>18</b>	<b>42.9%</b>

Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

Compared to the 17.6% of North Carolina's population lives below the poverty threshold, the Piedmont Triad's poverty rate is slightly higher at 18.3% and the Northwest Piedmont RPO region even higher at 19.2%. Census tracts with higher than the county average for population living in poverty are located in both urban and rural parts of the region (Map 4).

Map 4: Higher than Average Population Living in Poverty



Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

## Unemployment

Long-term unemployment often puts individuals and households at higher risk of slipping into poverty. As previously mentioned, families living in poverty may experience increased difficulties recovering from disasters, adjusting to economic stresses, dealing with injuries or illness and exposure to pollution. Individuals included in this category are ages 20 to 64 that were unemployed at the time of responding to the American Community Survey.



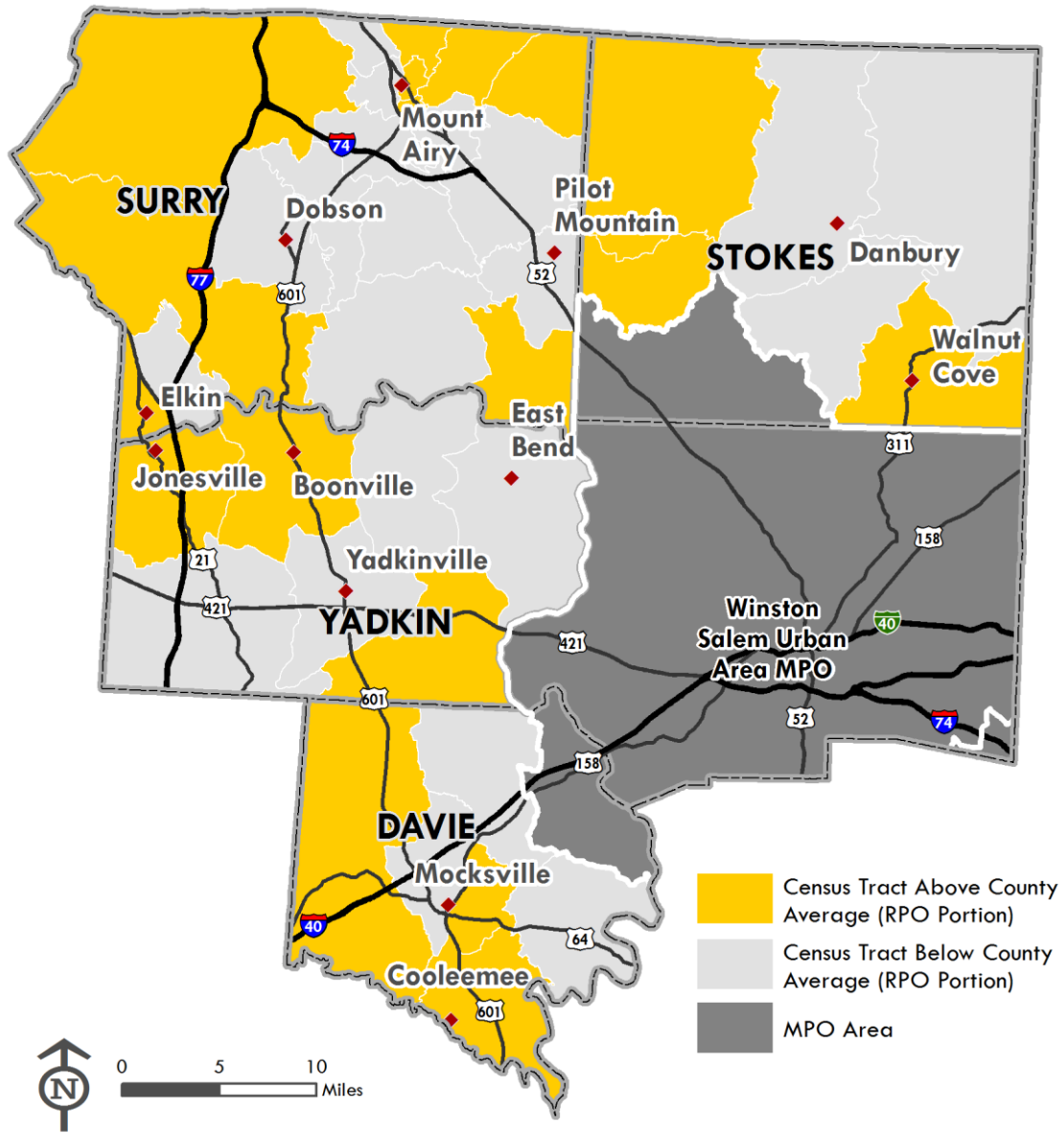
**Table 10: Unemployed Population (Ages 20-64)**

County:	Universe Population	Unemployed Population	% Unemployed (County Average)	Total Tracts	Impacted Tracts	% Tracts Impacted
Davie (RPO Portion)	13,329	1,277	9.6%	7	3	42.9%
Stokes (RPO Portion)	11,613	1,190	10.2%	6	3	50.0%
Surry	30,189	2,617	8.7%	22	11	50.0%
Yadkin	16,239	1,237	7.6%	7	3	42.9%
<b>RPO</b>	<b>71,370</b>	<b>6,321</b>	<b>8.9%</b>	<b>42</b>	<b>20</b>	<b>47.6%</b>

Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

North Carolina has an unemployment rate of 9.6%. The Piedmont Triad Region’s unemployment rate is about the same at 9.5%; however the Northwest Piedmont RPO region is slightly lower at 8.9%. Stokes County has the highest poverty rate in the RPO region at 10.2%. Census tracts with higher than the county average for unemployment rates are highlighted in Map 5.

Map 5: Higher than Average Unemployment Rates (Ages 20-64)



Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

## Educational Attainment

Educational attainment is highly correlated to other environmental justice considerations, particularly poverty and unemployment. Without an adequate education, individuals may experience difficulties in obtaining employment or reasonable wages.

Individuals are included in this category if they are 25 years or older and have not obtained a High School Diploma or a GED.



**Table 11: Population Age 25 Years and Older Without a High School Diploma**

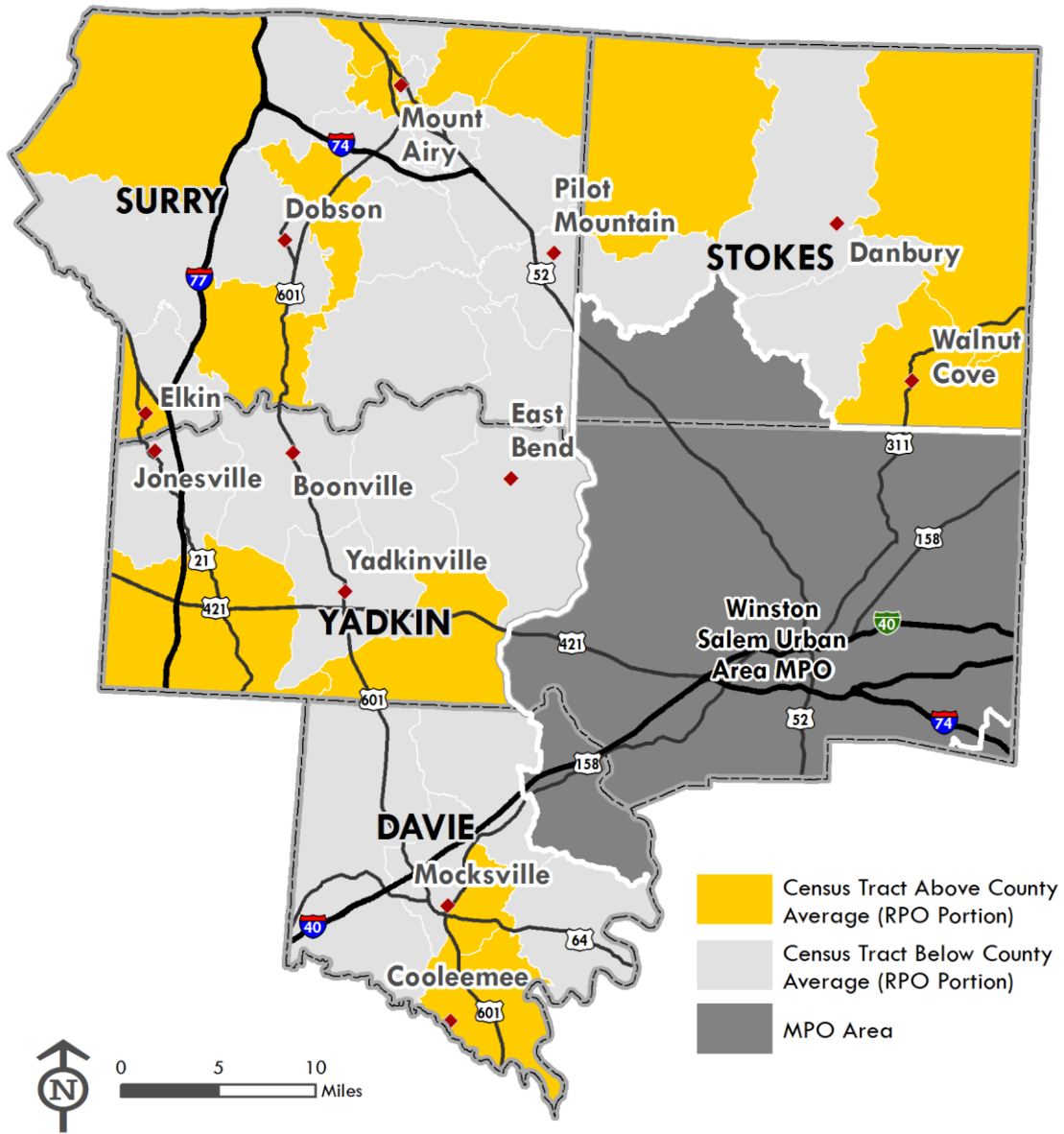
County:	Universe Population	Impacted Population	% Impacted (County Average)	Total Tracts	Impacted Tracts	% Tracts Impacted
Davie (RPO Portion)	20,246	3,571	17.6%	7	2	28.6%
Stokes (RPO Portion)	19,622	4,310	22.0%	6	3	50.0%
Surry	50,993	12,249	24.0%	22	9	40.9%
Yadkin	26,477	5,756	21.7%	7	2	28.6%
<b>RPO</b>	<b>117,338</b>	<b>25,886</b>	<b>22.1%</b>	<b>42</b>	<b>16</b>	<b>38.1%</b>

Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

Compared to the 14.6% of North Carolina's population without a high school diploma, a higher percentage (16.1%) of the Piedmont Triad Region's adult population does not have a high school diploma and an even higher proportion in the Northwest Piedmont RPO (22.1%). Surry County has the highest uneducated rate at 24.0%. Census tracts with higher than the county average for the adult population without a high school diploma are highlighted in Map 6.



Map 6: Higher than Average Population (Ages 25+) Without a High School Diploma



Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

## Language

Public agencies must consider and address language barriers to effectively communicate important community information, particularly in times of disaster.

Individuals are included in this category if they are five years old or older and speak English as a second language. Although listed in varying degrees of proficiency, a sum was derived from the ACS estimates.



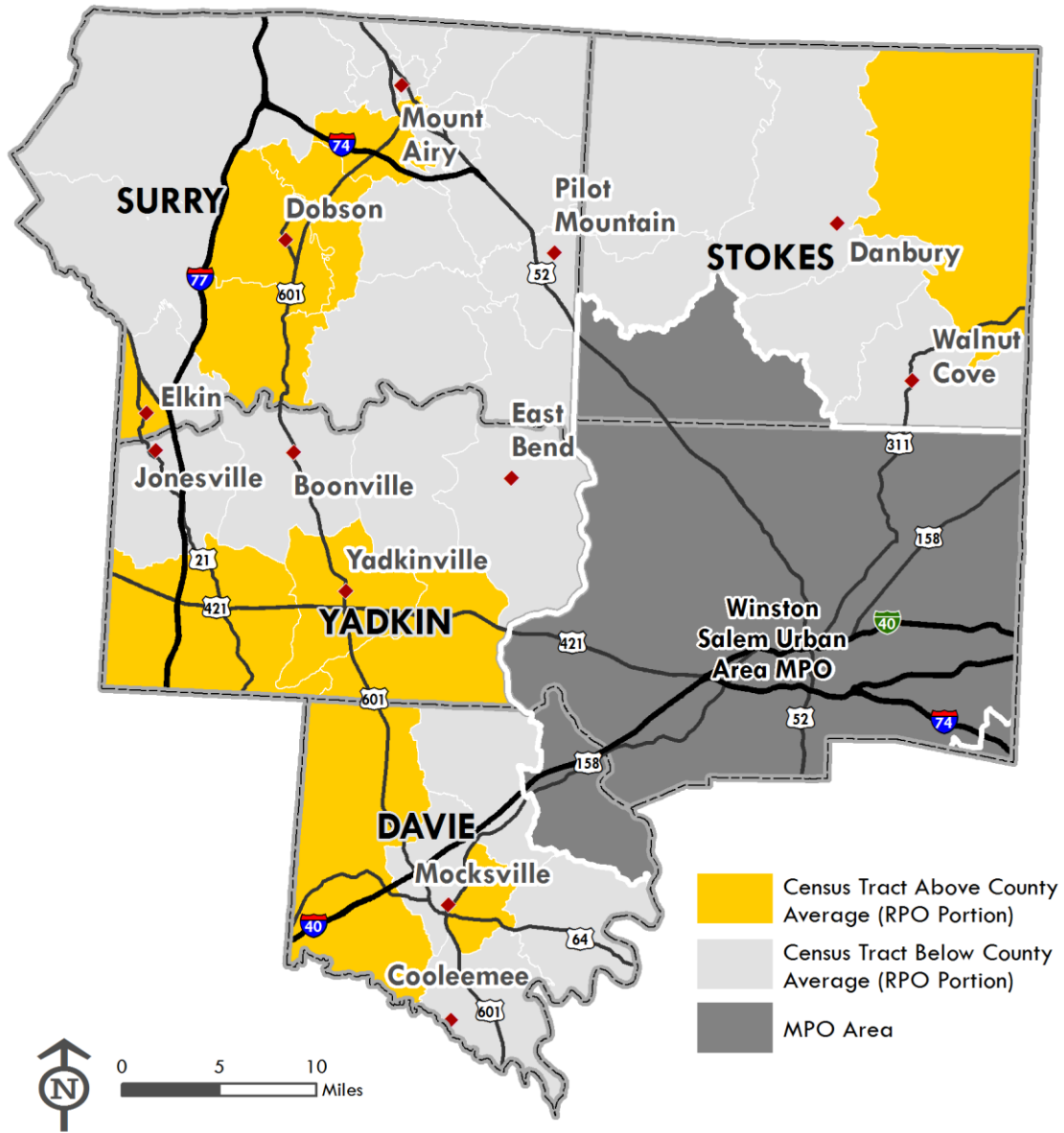
**Table 12: English as a Second Language Population (Ages 5+)**

County:	Universe Population	Impacted Population	% Impacted (County Average)	Total Tracts	Impacted Tracts	% Tracts Impacted
Davie (RPO Portion)	27,906	2,492	8.9%	7	2	28.6%
Stokes (RPO Portion)	25,489	760	3.0%	6	1	16.7%
Surry	69,289	6,195	8.9%	22	6	27.3%
Yadkin	36,009	3,328	9.2%	7	3	42.9%
<b>RPO</b>	<b>158,693</b>	<b>12,775</b>	<b>8.1%</b>	<b>42</b>	<b>12</b>	<b>28.6%</b>

Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

Only 8.1% of the Northwest Piedmont RPO’s population speak a primary language other than English (ages 5 years old and older), compared to 11.2% of the Piedmont Triad Region’s population and 11.1% of the State’s population. Generally, the urban counties have a higher percentage of non-English speakers, but Yadkin County has the highest proportion in the RPO region at 9.2%. Census tracts with a higher percentage than the county average for population speaking English as a second language are highlighted in Map 7.

Map 7: Higher than Average Population Speaking English as a Second Language



Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

## Disability

Access to public transportation is key to independence for people with disabilities. Individuals included in this category are in the noninstitutionalized population and consider themselves to have one or more of the following difficulties: hearing, vision, cognitive, ambulatory, self-care and independent living.



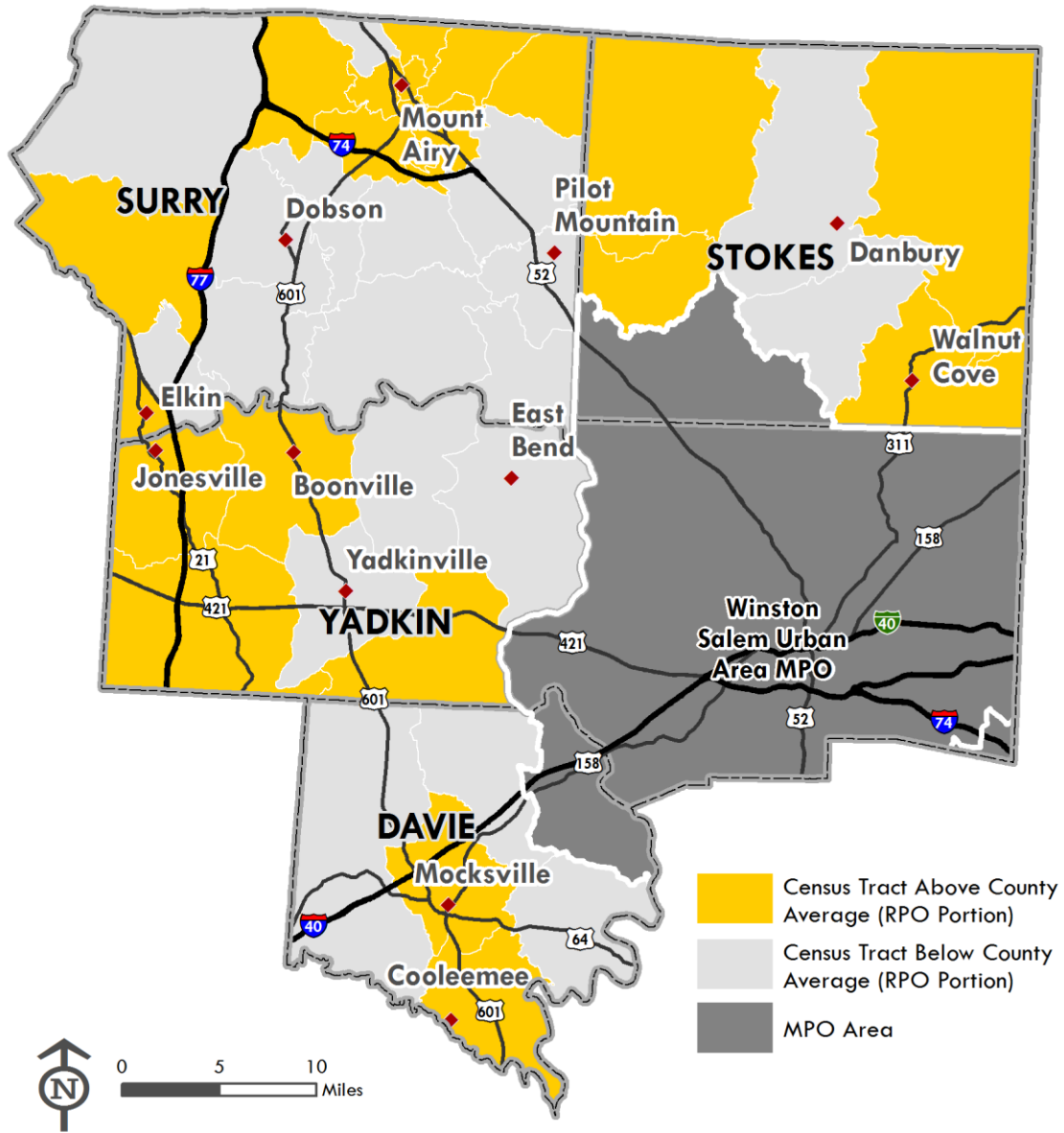
**Table 13: Population with a Disability**

County:	Universe Population	Impacted Population	% Impacted (County Average)	Total Tracts	Impacted Tracts	% Tracts Impacted
Davie (RPO Portion)	29,332	3,925	13.4%	7	3	42.9%
Stokes (RPO Portion)	26,586	4,272	16.1%	6	4	66.7%
Surry	72,606	12,732	17.5%	22	11	50.0%
Yadkin	37,792	6,110	16.2%	7	4	57.1%
<b>RPO</b>	<b>166,316</b>	<b>27,039</b>	<b>16.3%</b>	<b>42</b>	<b>22</b>	<b>52.4%</b>

Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

Almost 16.3% of the Northwest Piedmont RPO's noninstitutionalized population has one or more disabilities, higher than that of 13.0% in the Piedmont Triad and 13.4% across the State. Generally, the urban counties have a lower percentage of their population with a disability. Surry County has the highest proportion with 17.5% of its population with a disability. Census tracts with a higher percentage than the county average for population with a disability are highlighted in Map 8.

Map 8: Higher than Average Population with a Disability



Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

### Vehicle Availability

Individuals without immediate access to a vehicle are dependent on others or alternative forms of transportation to access jobs, healthcare and to services. Individuals living in rural locations may experience more difficulty coping without a vehicle as access to alternate forms of transit maybe limited and distances to services and employment tend to be greater.



Households in this category were included if a passenger car, van or pick-up truck was unavailable for the use of household members.

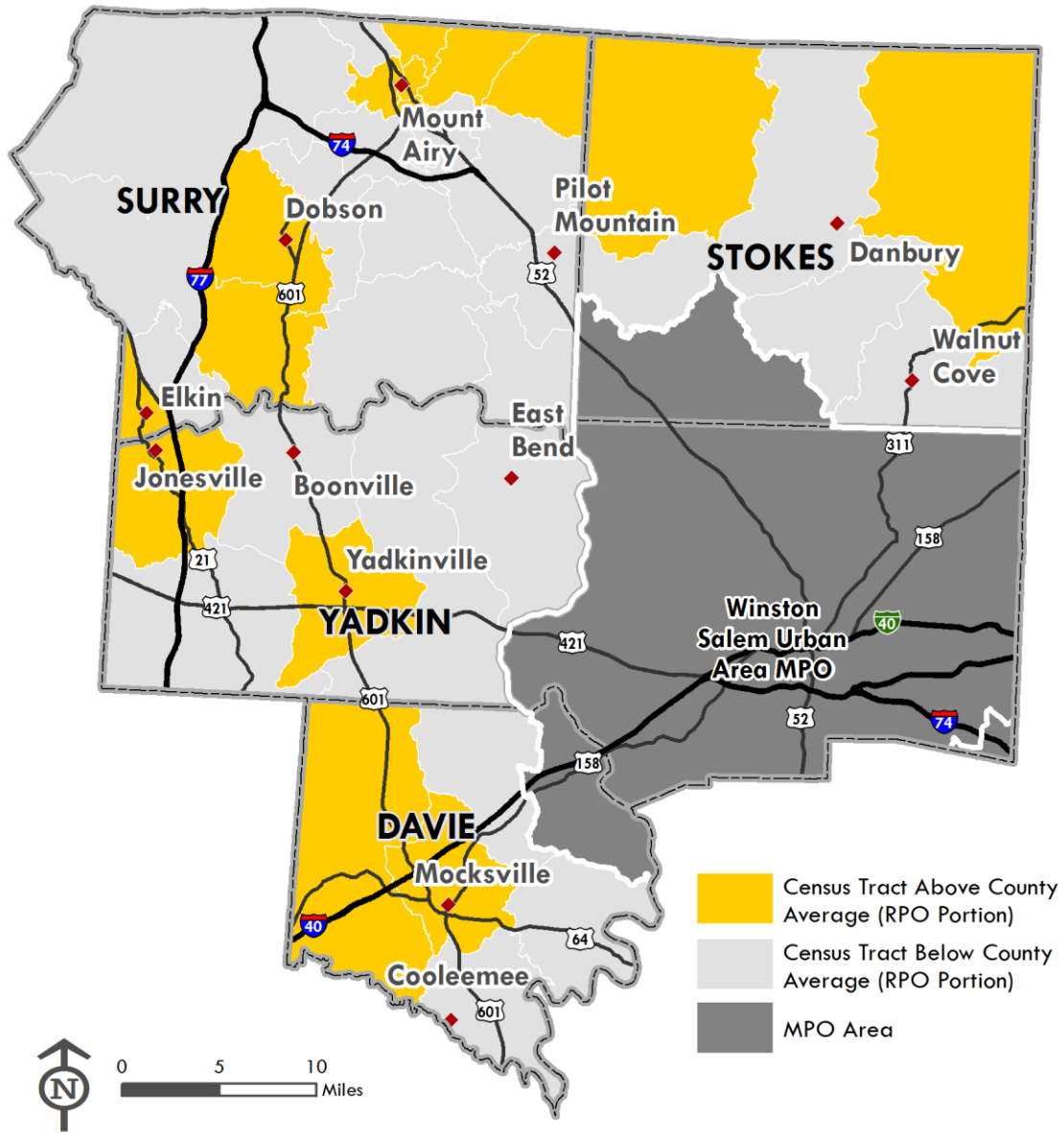
**Table 14: Households Without Access to a Vehicle**

County:	Universe Households	Impacted Households	% Impacted (County Average)	Total Tracts	Impacted Tracts	% Tracts Impacted
Davie (RPO Portion)	11,340	603	5.3%	7	3	42.9%
Stokes (RPO Portion)	10,890	562	5.2%	6	2	33.3%
Surry	29,380	1,979	6.7%	22	9	40.9%
Yadkin	15,174	792	5.2%	7	2	28.6%
<b>RPO</b>	<b>66,784</b>	<b>3,936</b>	<b>5.9%</b>	<b>42</b>	<b>16</b>	<b>38.1%</b>

Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

5.9% of both the Northwest Piedmont RPO households do not have access to a vehicle, compared to the state average of 6.5% and the Piedmont Triad Region average of 6.9%. Surry County has the highest percentage of households without vehicle access at 6.7%. Census tracts with a higher percentage than the county average for households without access to a vehicle are highlighted in Map 9.

Map 9: Higher than Average Households without Access to a Vehicle



Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

## Female Householders with Children

Female heads of households may be more vulnerable to shifts in the economy and disasters, leaving them at higher risk of slipping into poverty.

Households are included in this category if the homeowner or renter is a single female living with her children.



**Table 15: Female Households with Children**

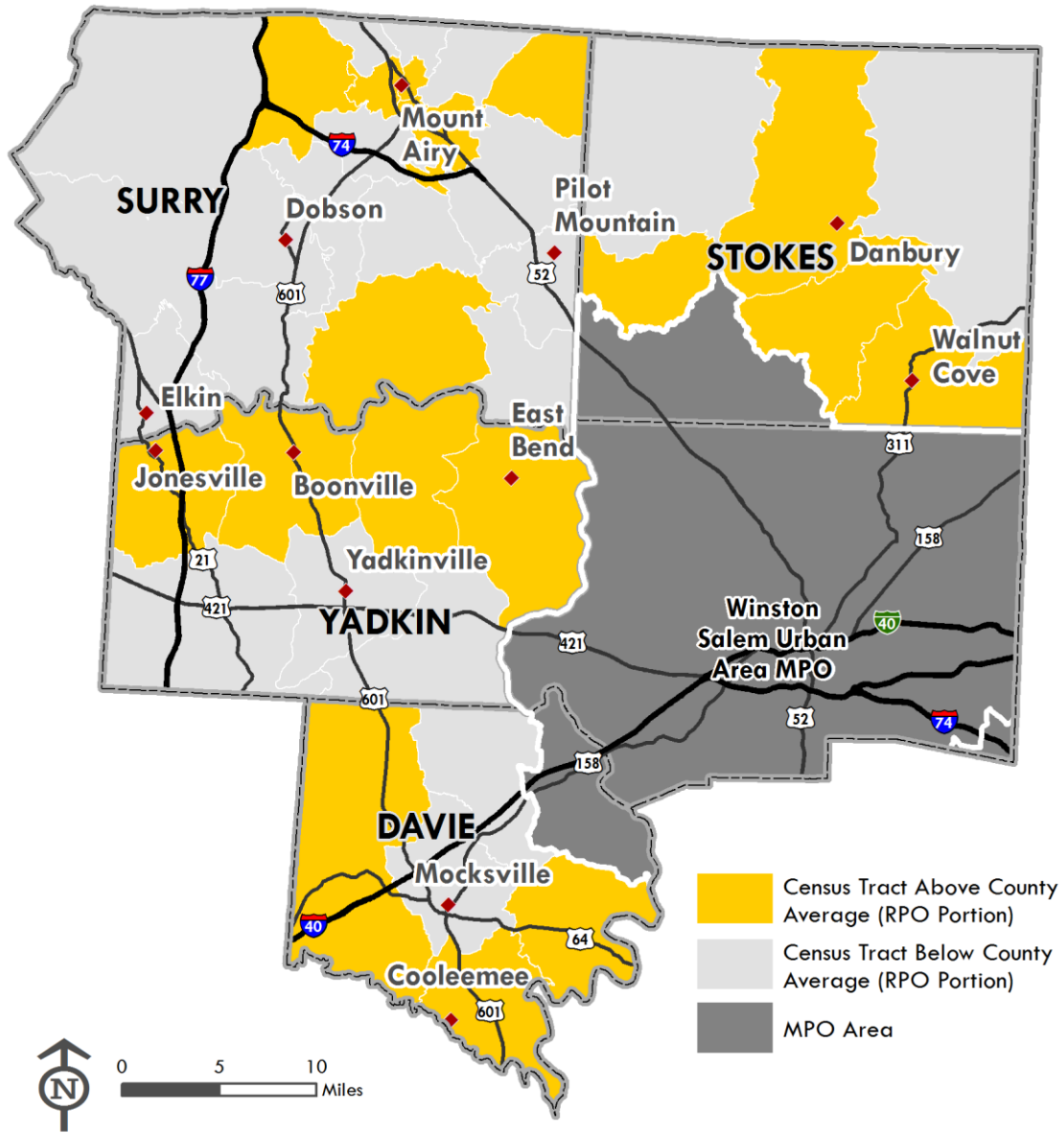
County:	Universe Households	Impacted Households	% Impacted (County Average)	Total Tracts	Impacted Tracts	% Tracts Impacted
Davie (RPO Portion)	11,340	753	6.6%	7	3	42.9%
Stokes (RPO Portion)	10,890	628	5.8%	6	4	66.7%
Surry	29,380	2,003	6.8%	22	7	31.8%
Yadkin	15,174	753	5.0%	7	4	57.1%
<b>RPO</b>	<b>66,784</b>	<b>4,137</b>	<b>6.2%</b>	<b>42</b>	<b>18</b>	<b>42.9%</b>

Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

8.0% of the Piedmont Triad Region's households have female householders living with their own children, compared to the state average of 7.8%. The Northwest Piedmont RPO has an even lower percentage at 6.2%. Generally, the urban counties have a higher percentage of these households. Census tracts with a higher percentage than the county average for these households are highlighted in Map 10.



Map 10: Higher than Average Households with a Female Householder with Her Own Children



Source: U.S. Census Bureau, American Community Survey 2010-2014 5-Year Estimates

## REFERENCES

- Mid-Ohio Regional Planning Commission. 2000. "Environmental Justice Report."  
<http://www.morpc.org/pdf/EnvironmentalJusticeReport.pdf>.
- U.S. Census Bureau. 2014. *American Community Survey 5-year Estimates (2010-2014)*.  
<http://www.factfinder.census.gov/>.
- U.S. Census Bureau. 2014. *American Community Survey and Puerto Rico Community Survey: 2014 Subject Definitions*. [http://www2.census.gov/programs-surveys/acs/tech\\_docs/subject\\_definitions/2014\\_ACSSubjectDefinitions.pdf](http://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2014_ACSSubjectDefinitions.pdf).
- U.S. Department of Transportation, Federal Highway Administration, Federal Transit Administration. 2000. *Environmental Justice: An Overview of Transportation and Environmental Justice*. FHWA-EP-00-013.  
[http://www.fhwa.dot.gov/environment/environmental\\_justice/overview/](http://www.fhwa.dot.gov/environment/environmental_justice/overview/).
- U.S. Department of Transportation, Federal Highway Administration, Office of Planning. 2006. *How to Engage Low-Literacy and Limited English Proficiency Populations in Transportation Decision Making*. FHWA-HEP-06-009.  
[https://www.fhwa.dot.gov/planning/publications/low\\_limited/webbook.pdf](https://www.fhwa.dot.gov/planning/publications/low_limited/webbook.pdf).
- U.S. Environmental Protection Agency. 2016. *Environmental Justice*.  
<https://www.epa.gov/environmentaljustice>.

## APPENDIX

**Table 16: 2014 ACS Poverty Factors**

Interview Month	Poverty Factors
January	2.41382
February	2.41696
March	2.41922
April	2.42226
May	2.42618
June	2.43046
July	2.43464
August	2.43866
September	2.44209
October	2.44544
November	2.44880
December	2.45146

Source: U.S. Census Bureau, American Community Survey 2014 Subject Definitions

**Table 17: 2014 ACS Poverty Thresholds**

Size of family unit	Related children under 18 years								
	None	One	Two	Three	Four	Five	Six	Seven	Eight or more
One person (unrelated individual)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Under 65 years	5,019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
65 years and over	4,626	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two persons	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Householder under 65 years	6,459	6,649	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Householder 65 years and over	5,831	6,624	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three persons	7,546	7,765	7,772	N/A	N/A	N/A	N/A	N/A	N/A
Four persons	9,950	10,112	9,783	9,817	N/A	N/A	N/A	N/A	N/A
Five persons	11,999	12,173	11,801	11,512	11,336	N/A	N/A	N/A	N/A
Six persons	13,801	13,855	13,570	13,296	12,890	12,649	N/A	N/A	N/A
Seven persons	15,879	15,979	15,637	15,399	14,955	14,437	13,869	N/A	N/A
Eight persons or more	17,760	17,917	17,594	17,312	16,911	16,403	15,872	15,738	N/A
Nine persons or more	21,364	21,468	21,183	20,943	20,549	20,008	19,517	19,397	18,649

Source: U.S. Census Bureau, American Community Survey 2014 Subject Definitions