2040LRTP

2016-2040 Rural Long Range Transportation Plan

Appalachian Council of Governments

ADOPTED June 24, 2016

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Introduction

Appalachian Council of Governments (ACOG) is responsible for transportation planning activities within the rural portion of our six-county region while the urbanized areas are addressed by three Metropolitan Organizations (MPO's): the Anderson Area Transportation Study (ANATS), Greenville-Pickens Area Transportation Study (GPATS), and the Spartanburg Area Transportation Study (SPATS)—see map. This arrangement is managed and funded by the South Carolina Department of Transportation (SCDOT) and the United States Department of Transportation (USDOT) through its components including the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA). This layered approach provides financial and technical resources to ensure compliance with federal and state laws and policies regarding the transportation system. ACOG's 44-Member Board of Directors sets policy for the Council of Governments. Two-thirds of the members are local elected officials, including state legislators, county council members, and mayors or city council members. County councils appoint the remaining citizen and minority members, some of whom may also be elected officials. The ACOG Board appoints a Regional Transportation Committee that meets regularly to coordinate transportation projects and update various plans, including this Rural Long Range Transportation Plan (RLRTP). ACOG staff also participates on study and technical committees for ACOG region MPO's to promote cooperation, consistency and communication between the varied transportation planning agencies in the area. Public participation is accomplished in various ways as outlined the ACOG Public Participation Plan found in **Appendix B**. We also coordinate closely with our member jurisdictions and use public comments made during their respective planning efforts to inform the rural transportation program.

This is the third comprehensive RLRTP for the rural area of the Appalachian Region which consists of the following six counties: Anderson, Cherokee, Greenville, Oconee, Pickens and Spartanburg. According to the 2010 Census, the total population for the six-county region is 1.17 million people of which 28 percent or approximately 330,000 are located in the rural areas.

Planning Process

Federal Guidance

On December 4, 2015, President Obama signed into law the Fixing America's Surface Transportation Act, or "FAST Act." It is the first law enacted in over ten years that provides long-term funding certainty for surface transportation, meaning States and local governments can move forward with critical transportation projects, like new highways and transit lines, with the confidence that they will have a Federal partner over the long term.

Overall, the FAST Act largely maintains current program structures and funding shares between highways and transit. It is a down-payment for building a 21st century transportation system. The law also makes changes and reforms to many Federal transportation programs, including streamlining the approval processes for new transportation projects, providing new safety tools, and establishing new

programs to advance critical freight projects. (See more at: https://www.transportation.gov/fastact#sthash.uDfDo5ck.dpuf).

The FAST Act will continue MAP-21's emphasis on a performance-based approach to transportation decision-making to support the seven national goals of the federal-aid highway program. These seven national performance goals include:

Goal area	**National goal**
Safety	To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
Infrastructure condition	To maintain the highway infrastructure asset system in a state of good repair
Congestion reduction	To achieve a significant reduction in congestion on the National Highway System
System reliability	To improve the efficiency of the surface transportation system
Freight movement and economic vitality	To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
Environmental sustainability	To enhance the performance of the transportation system while protecting and enhancing the natural environment
Reduced project delivery delays	To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

The previous transportation authorization, MAP-21, describes Federal Planning Factors issued by Congress to emphasize a national perspective. Under the FAST Act these existing planning factors remain unchanged. However, the FAST Act does add two additional factors to consider. The eight existing planning factors and two newly added factors (in **BOLD** and *italics*) are as follows:

1. Support the economic vitality of the United States, the States, nonmetropolitan areas, and metropolitan areas, especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety of the transportation system for motorized and nonmotorized users;
3. Increase the security of the transportation system for motorized and nonmotorized users;
4. Increase the accessibility and mobility of people and freight;

5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;

6. Enhance the integration and connectivity of the transportation system, across and between modes throughout the State, for people and freight;

7. Promote efficient system management and operation;

8. Emphasize the preservation of the existing transportation system;

9. ***Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and***

10. ***Enhance travel and tourism.***

State Guidance

ACOG adheres to the SCDOT Statewide Transportation Planning Process found in **Appendix A**.

South Carolina Act 114

Each project must be financially constrained in order to be identified in the Transportation Improvement Plan (TIP). Moreover, each road widening, functional intersection and new-location roadway improvement projects must be rated and ranked in accordance with South Carolina Act 114. SCDOT performs the ranking; however each COG may add regional specific ranking criteria if approved by SCDOT.

State C-Fund Law

The law stipulates that counties spend at least 25% of their apportionment of C-funds based on a biennial averaging of expenditures, on the state highway system for construction, improvements and maintenance. Furthermore, counties are to spend no more than 75% of their apportionment each year on their local system. Also, the balance of uncommitted funds carried forward from one year into the next cannot exceed 300% of the county's total apportionment for the most recent year.

Each COG, in partnership with SCDOT, is responsible for implementing a transportation planning process that fully complies with the federal planning requirements established by the FAST Act. Through this process, each COG establishes regional goals and objectives, identifies the current condition of the transportation system, provides research and data analysis, identifies and prioritizes transportation needs for input to the Statewide Multi-Modal Transportation Plan and STIP. The rural planning process is based on the development and maintenance of regional long range transportation plans, which is the foundation for this document.

The vision of a safe, multi-modal, and inter connected transportation system for the Appalachian Region can become a reality. This plan is intended to serve as a tool and guide for the future success in the implementation of the region's transportation system.

ACOG Transportation Goals

As established by the Advisory and Policy committees, the long-range transportation goals for the ACOG region are listed below:

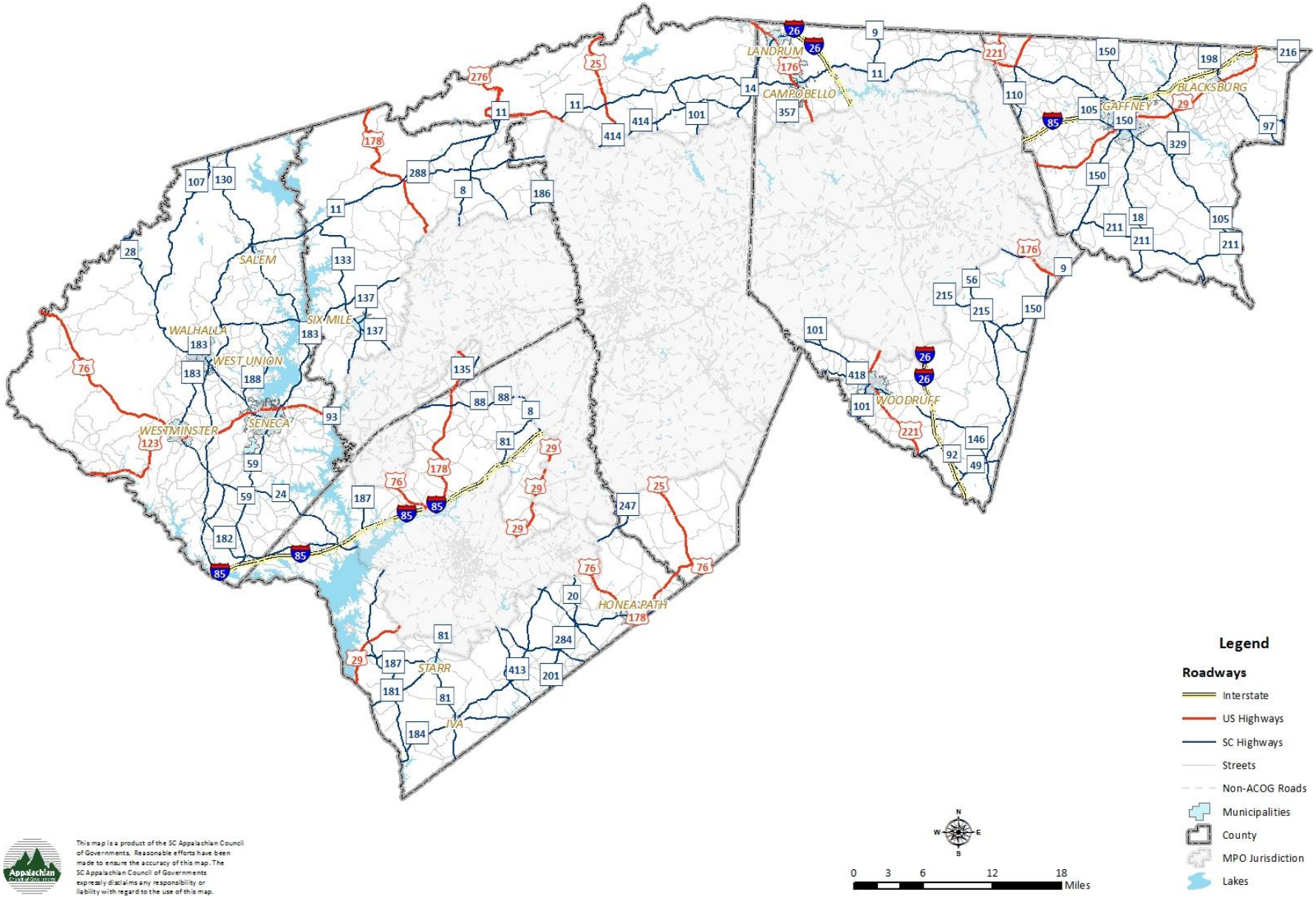
1. Identify the current condition of the transportation system.
2. Provide research and data analysis to state and local governments.
3. Assist local governments with transportation and land use planning.
4. Coordinate transit efforts with regional transit authorities and human service providers.
5. Identify and prioritize transportation needs for input to the Statewide Multi-Modal Transportation Plan and STIP.
6. Implement a transportation planning process that fully complies with the federal planning requirements established by the FAST Act.
7. Develop a Rural Planning Work Program (RPWP).

In accordance with the aforementioned goals, The ACOG Rural Long Range Transportation Plan will focus on the following key elements:

- Demographic Trends and Projections
- Roadway Network
- Intersections and Safety
- Bridge Replacement
- Maintenance and Resurfacing
- Signalization
- Mass Transit
- Bicycle and Pedestrian Facilities
- Environmental Screening

By focusing on these elements there will be a comprehensive plan in place that be built upon in the future and that addresses the needs for the next 25 years.

Map 1. ACOG Region



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1 Demographic Trends and Projections

1.1 Population

The ACOG region is a vibrant and growing area, and it is important to understand how the population is changing in order to better plan for future transportation needs. The six-county region has a population of 1,220,688. The primary population centers are in Greenville and Spartanburg Counties with populations of 482,752 and 293,542 respectively. Their combined populations make up nearly 64 percent of all people living in the region, and they are also the most urbanized counties. The remaining counties tend to be more rural, with the exception of Anderson.

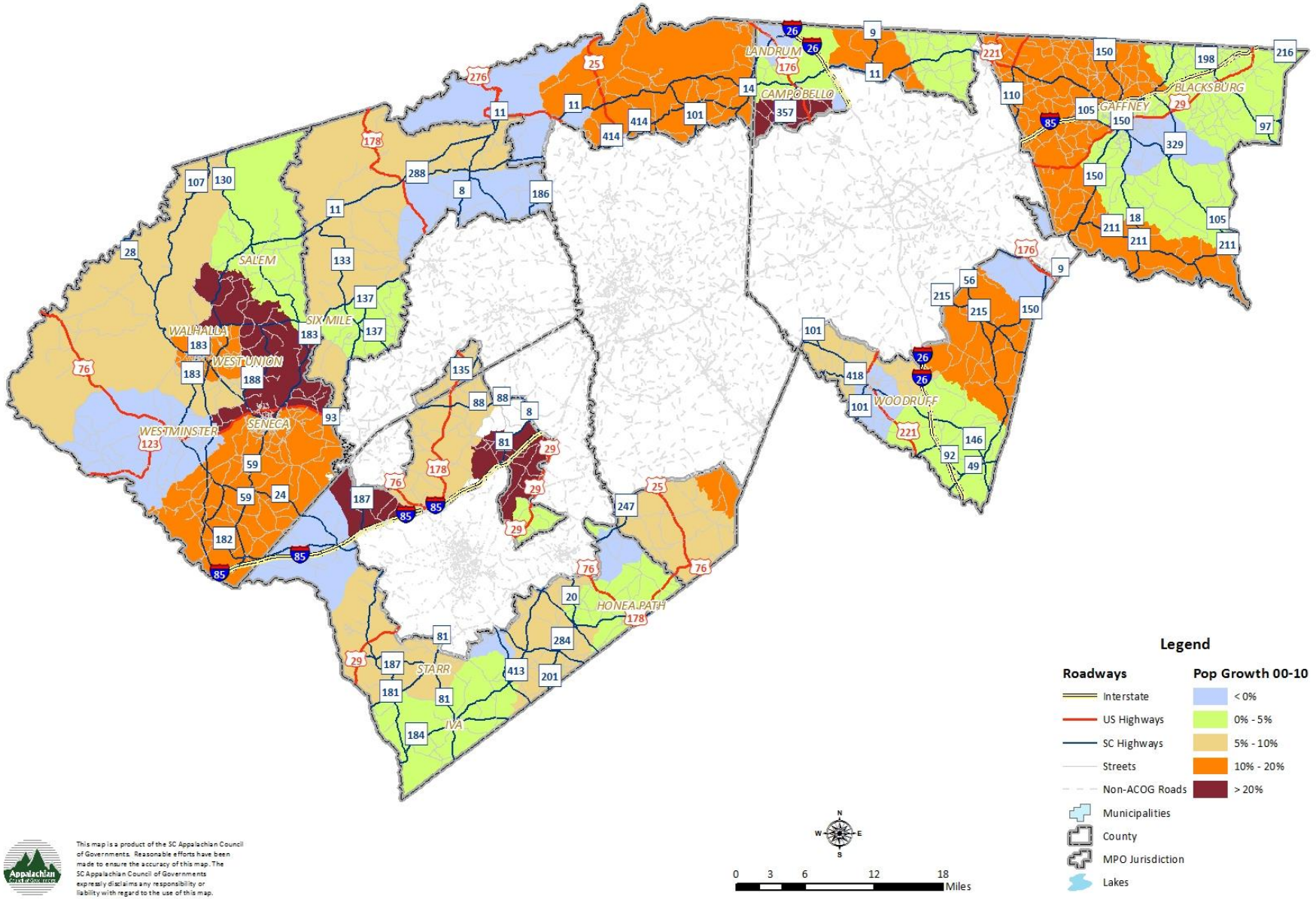
The region has experienced a significant growth trend over the last 20 years. Between 2000 and 2010 the region increased by 142,841 people (13.9 percent) with a 2014 estimated population of 1,220,688. There is a clear hierarchy of growth in the Upstate. Greenville, Spartanburg and Anderson Counties lead the way, adding 71,609 people (18.9 percent), 30,516 people (12 percent), and 21,386 people (12.9 percent) respectively. The second tier of growth consists of Pickens, Oconee, and Cherokee Counties. These counties saw an increase of 8,467 people (7.6 percent), 8,058 people (12.2 percent) and 2,805 people (5.3 percent) respectively. It is significant to note that the growth rates in the smaller counties that make up the majority of the rural COG planning area have strong growth rates that match or exceed those of larger counties. The strong growth being seen in the smaller counties indicates that pressures on the transportation system in the ACOG planning area is increasing. This makes the rural planning effort very important to keep pace with future growth.

Table 1. Population by County, 1999-2014

	1990	2000	2010	2014	Change (00 - 10)	% Change (00 - 10)
Anderson	145,177	165,740	187,126	192,810	21,386	12.9%
Cherokee	44,506	52,537	55,342	56,024	2,805	5.3%
Greenville	320,127	379,616	451,225	482,752	71,609	18.9%
Oconee	57,494	66,215	74,273	75,192	8,058	12.2%
Pickens	93,896	110,757	119,224	120,368	8,467	7.6%
Spartanburg	226,793	253,791	284,307	293,542	30,516	12.0%
ACOG Region	887,993	1,028,656	1,171,497	1,220,688	142,841	13.9%

Source: U.S. Bureau of the Census 2011-2014 Population Estimates

Map 2. Regional Growth Rate by Census Tract, 2000-2010



This map is a product of the SC Appalachian Council of Governments. Reasonable efforts have been made to ensure the accuracy of this map. The SC Appalachian Council of Governments expressly disclaims any responsibility or liability with regard to the use of this map.

Although all parts of the ACOG region have seen significant growth since 2010, **Map 2** displays some of the higher growth areas by census tract over the last 15 years. It is evident from this map that the areas of highest percentage growth are:

- **Western Cherokee County in the Grassy Pond/Macedonia area**. This is largely defined as the area between the City of Gaffney and the Cowpens area, just across the Spartanburg County line between US Highway 29 and SC Scenic Highway 11. Growth in this area is largely tied to development along I-85, which is a major impetus for growth in the Upstate as well as some "spillover" growth from eastern Spartanburg.

- **Northern Pickens County in the mountains**. This region is sparsely populated. The actual number of people moving to this area is relatively low, but in terms of a percentage increase, it is significant. Retirees that desire a scenic mountain home comprise a significant portion of the people that are moving to this area.

- **Western Anderson and southern Oconee Counties**. This area is defined as the area near the Townville and Fair Play area adjacent to Lake Hartwell. This area is also seeing growth tied to increased demand for lakefront housing that is convenient to I-85.

- **Eastern Anderson County**. Much of this growth is associated with growth in Powdersville and Greenville.

- **Northern Spartanburg County**. The area around Inman and US Highway 176 are quickly becoming targets for developments in suburban Spartanburg.

1.2 Households

As the Upstate grows in population, the number of households also increases. Household size across the nation has been on the decline, and that trend is true in South Carolina and the ACOG region too. The number of households can be indicative of the amount of traffic more so than the actual population. All households generate traffic of some kind, even though everyone in that household may not drive.

The number of households in the ACOG region increased between 2000 and 2010 by approximately 55,000. Following the real population trends, Greenville Spartanburg and Anderson added the most households. Greenville County has seen the largest increase in households, adding 26,975 during this period. Spartanburg County added 11,511 households and Anderson County added 8,180 households.

Table 2. Households by County, 1990-2010

	1990	2000	2010	Change (00 - 10)	% Change (00 - 10)
Anderson	55,481	65,649	73,829	8,180	12.5%
Cherokee	16,456	20,495	21,519	1,024	5.0%
Greenville	122,878	149,556	176,531	26,975	18.0%
Oconee	22,358	27,283	30,676	3,393	12.4%
Pickens	33,422	41,306	45,228	3,922	9.5%
Spartanburg	84,503	97,735	109,246	11,511	11.8%
ACOG Region	335,098	402,024	457,029	55,005	13.7%

Source: U.S. Bureau of the Census 2010

1.3 Housing

As the population in the Upstate grows, so does the need for new housing. It is important to recognize the role of housing in transportation planning. As the number of housing units grows, the amount of traffic generated from new developments increases too. This, in turn, affects the travel and commute patterns of the region. An example of the impacts from housing can be seen in numerous areas. In Greenville County, along the Woodruff Road corridor, residential and commercial development along the southern parts of the corridor near Simpsonville has drastically increased traffic along the corridor heading into Greenville. In Spartanburg County, residential development in and around Boiling Springs has created additional traffic that has caused significant problems along US 176 and other roads. As more development occurs in rural areas it will cause similar issues throughout the planning area. Additional investment will be needed to continue to meet the increasing needs.

Trends in the local housing market are relatively stable. The largest three counties, Greenville, Spartanburg, and Anderson, have maintained consistent new home starts over the five year period. The smaller three counties, while stable, have more fluctuation in new home start trends as they are affected more by market changes.

Greenville County has seen the largest housing increase, with over 9,000 new permits over the 5-year period, and that trend is expected to continue. Its location at the center of the Upstate, rapidly expanding employment base, and its proximity to I-85 and I-385 has been a major impetus for its suburban housing market. Areas of southeastern Greenville County such as Five Forks, Mauldin, and Simpsonville have seen some of the fastest growth.

Spartanburg County is the second largest and second most populated county in the Upstate. Its location at the intersection of I-85 and I-26 has helped to position it and its housing marker for growth. Spartanburg County has seen over 4,500 new housing units since 2010 and that trend is expected to continue. Spartanburg has seen a noticeable increase in the number of new residential permits issued each year with over 1,300 additional units in 2015 (compared to 501 in 2011). Spartanburg County has three distinct areas of growth: Boiling Springs to the north of the city, Roebuck to the southwest of the city, and the Greer-Duncan-Lyman area in the western part of the county. It should be noted that this analysis is based on numbers for the unincorporated county. Municipal data was unavailable.

Anderson County has seen over 2,600 new residential permits since 2010 and this trend is expected to continue. Anderson has seen consistent growth in permits every year during the 2011-2015 time period; averaging an increase of 31 percent annually (the highest annual rate in the Upstate). Anderson County benefits from its location on I-85, Lake Hartwell, and suburban growth from neighboring counties. Its fastest growing areas are in the northwestern part of the county in the vicinity of Lake Hartwell. Lakefront development for vacation and/or retiree homes is becoming more common in this area. The area northeast of the city between I-85 and US-29 towards Greenville is another area that has seen growth and is identified for future growth. The Powdersville area in the northeastern part of the county is seeing rapid suburbanization due to its proximity and ease of access to Greenville.

Oconee and Pickens Counties show similar trends in the number of new residential permits issued each year, although Pickens County is increasing at a higher rate than Oconee. Since 2012, residential permits in Pickens County have grown on average 29 percent per year, compared to 15 percent per year in Oconee County. Development tends to be around Lakes Hartwell and Keowee in both counties. Pickens also has growth areas around Clemson, and the southeastern portion of the county in and around Easley which is seeing "spillover" growth tied to Greenville County.

Figure 1. Annual Residential Building Permits by County, 2011-2015

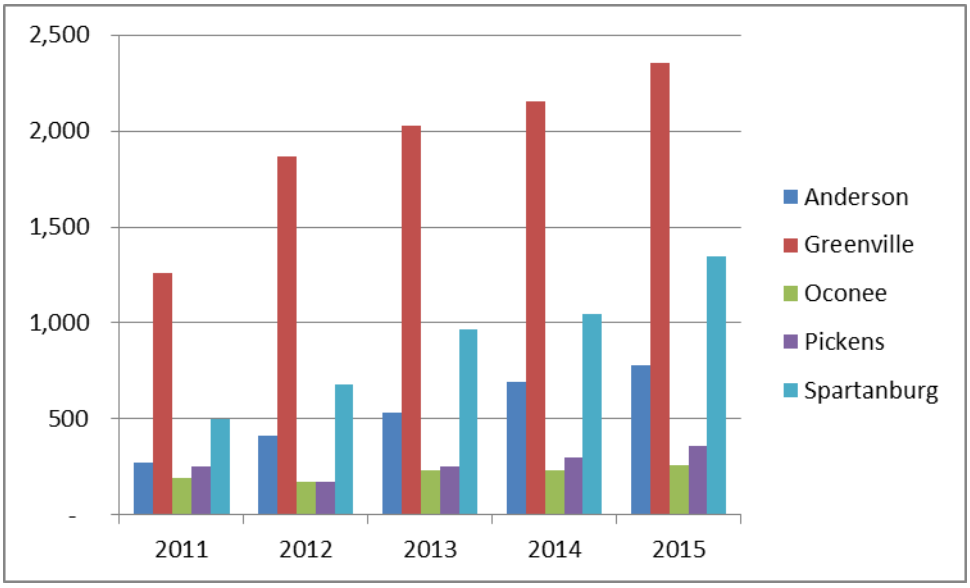


Table 3. Annual Residential Building Permits by County, 2011-2015

	2011	2012	2013	2014	2015	Total 2011-2015
Anderson	271	414	531	692	780	2,688
Cherokee*						
Greenville	1,262	1,869	2,025	2,152	2,355	9,663
Oconee	195	173	229	235	256	1,088
Pickens	249	172	253	300	361	1,335
Spartanburg	501	680	966	1,049	1,346	4,542
Total	2,478	3,308	4,004	4,428	5,098	19,316

*County-wide data unavailable

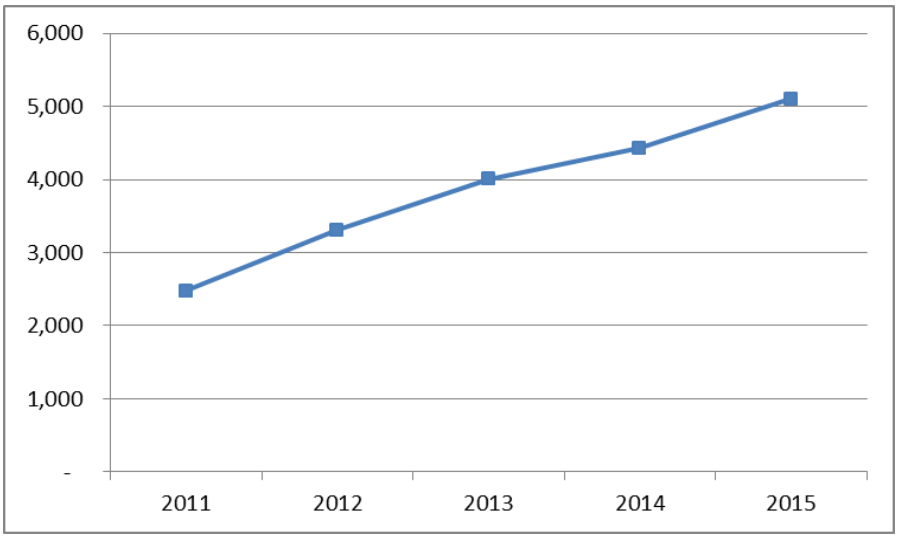
Source: The Market Edge, www.themarketedge.com

Compiled by *InfoMentum - A Decision Support System for Upstate South Carolina*

Residential building permit data for Cherokee County was unavailable. It is presumable that trends are steady based on other patterns in the region. A detailed trends and analysis based on this data area not plausible due to the lack of information.

The ACOG region has seen a steady increase in new housing unit permits during the 2011-2015 period. In 2011 there were approximately 2,500 new residential permits issued, and in 2015 there were about 5,100 permits issued. This is a difference of nearly 2,600 permits, and it reflects a steady increase of 20 percent per year. This trend is expected to continue for the region.

Figure 2. Total Residential Permits for the ACOG Region: 2011-2015



1.4 Population Projections

The ACOG region is expected to be the most populous region in South Carolina for the foreseeable future. The new population will tend to be concentrated in the urban MPO areas; however the rural areas of the COG will increasingly feel the effects of the expanding influence of development and growth in the region.

Population growth is expected in all counties in the COG. Greenville County will continue to be the primary population center in the Upstate. It will also have the most growth in terms of real population, exceeding 540,000 by 2030. This increase reflects a change of approximately 91,000 or 20 percent over the next 20 years. Most of the growth in Greenville will occur within the urban MPO jurisdiction. ACOG's in-house population projections for Greenville County depict more growth; exceeding 630,000 by 2030 and nearly 750,000 by 2040. ACOG's projections are based on an exponential regression model of 2000 and 2010 Census data plus the latest Census population projections from 2011-2015.

Spartanburg County is the second largest population center in the Upstate, and it is expected to retain that status in the future. It has the second largest projected population increase of approximately 47,000 or 16 percent over the next 20 years. Much of the growth will occur within the MPO jurisdictions, however, there is some growth expected to the south of the MPO that could impact the non-MPO area.

Anderson County is expected to have an increase of approximately 31,000, representing a 17 percent increase. Anderson County will see much of its growth outside of the MPO areas, particularly in the northwestern portion of the county in vicinity of Lake Hartwell, Pendleton, and around the Townville community. Another key growth area in the non-MPO region is located northeast of Anderson, between I-85 and US Highway 29 towards Powdersville.

Oconee and Pickens Counties are projected to see a consistent increase in population over the next 20 years; population projections for 2030 are approximately 89,000 (a 20 percent increase) and 133,000 (an 11 percent increase) respectively. The growth in both counties will be focused around Lakes Hartwell and Keowee, and will include the cities such as Clemson, Central, Seneca, and Walhalla. The growth of second homes and retirement communities around the lakes will be an important factor in planning for growth in this region.

Cherokee County is projected to have the lowest population of the COG counties in 2030, including an expected population near 57,000 (a 4 percent increase). The growth in Cherokee will likely occur along I-85 in the vicinity of Gaffney, the largest city and county seat, and to the southeast towards Cherokee Falls and the Broad River.

Table 4. SCORS Population Projections by County, 2010-2030

	2010	2015	2020	2025	2030
Anderson	187,126	193,300	199,500	209,000	218,500
Cherokee	55,342	56,100	56,800	57,000	57,300
Greenville	451,225	473,300	495,400	518,800	542,300
Oconee	74,273	76,600	78,900	84,000	89,100
Pickens	119,224	121,600	123,800	128,300	132,900
Spartanburg	284,307	295,100	305,800	318,500	331,200
ACOG Region	1,171,497	1,216,000	1,260,200	1,315,600	1,371,300
SC	4,625,364	4,823,200	5,020,800	5,235,500	5,451,700
USA	310,233,000	325,540,000	341,387,000	357,452,000	373,504,000

Source: U.S. Bureau of the Census, SC Department of Health and Environmental Control, SC Office of Research and Statistics
US Projections by US Bureau of the Census, Annual Projections of the Total Resident Population (NP-T1)

Figure 3. SCORS Population Growth & Projections by County, 2010-2030

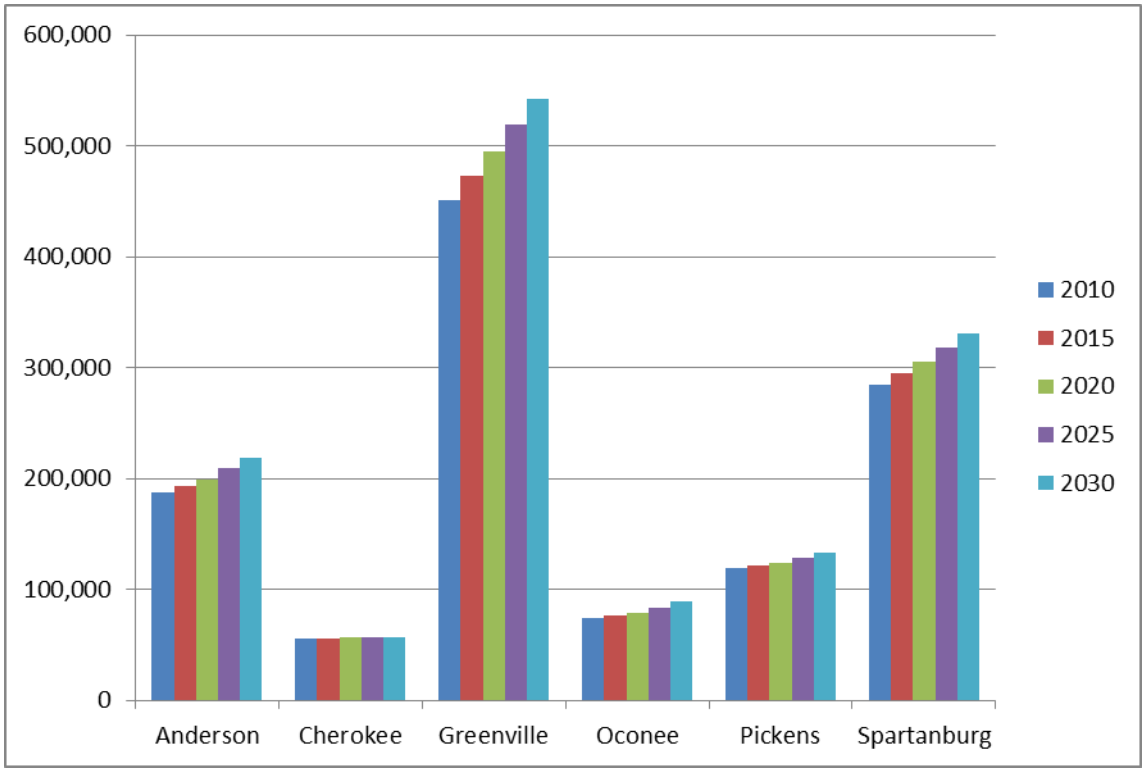


Table 5. ACOG Population Projections by County, 2015-2040

	Method*	2015	2020	2025	2030	2035	2040
Anderson	AAI	195,000	204,000	214,000	224,000	233,000	243,000
Cherokee	AAI	56,000	57,000	59,000	60,000	61,000	62,000
Greenville	ER	491,000	536,000	584,000	636,000	693,000	755,000
Oconee	AAR	76,000	79,000	83,000	87,000	91,000	95,000
Pickens	AAI	122,000	125,000	129,000	133,000	136,000	140,000
Spartanburg	AAI	297,000	312,000	326,000	341,000	355,000	370,000
ACOG Region**	LR	1,237,000	1,306,000	1,376,000	1,446,000	1,515,000	1,585,000

Source: ACOG Population Projections (rounded to nearest 1,000)
* AAI-Average Annual Increase; AAR-Average Annual Rate; ER-Exponential Regression ,LR-Linear Regression
**The ACOG Region was separately projected; therefore the total does not reflect a sum of each County's projected population

Figure 4. ACOG Population Growth & Projections by County, 2020-2040

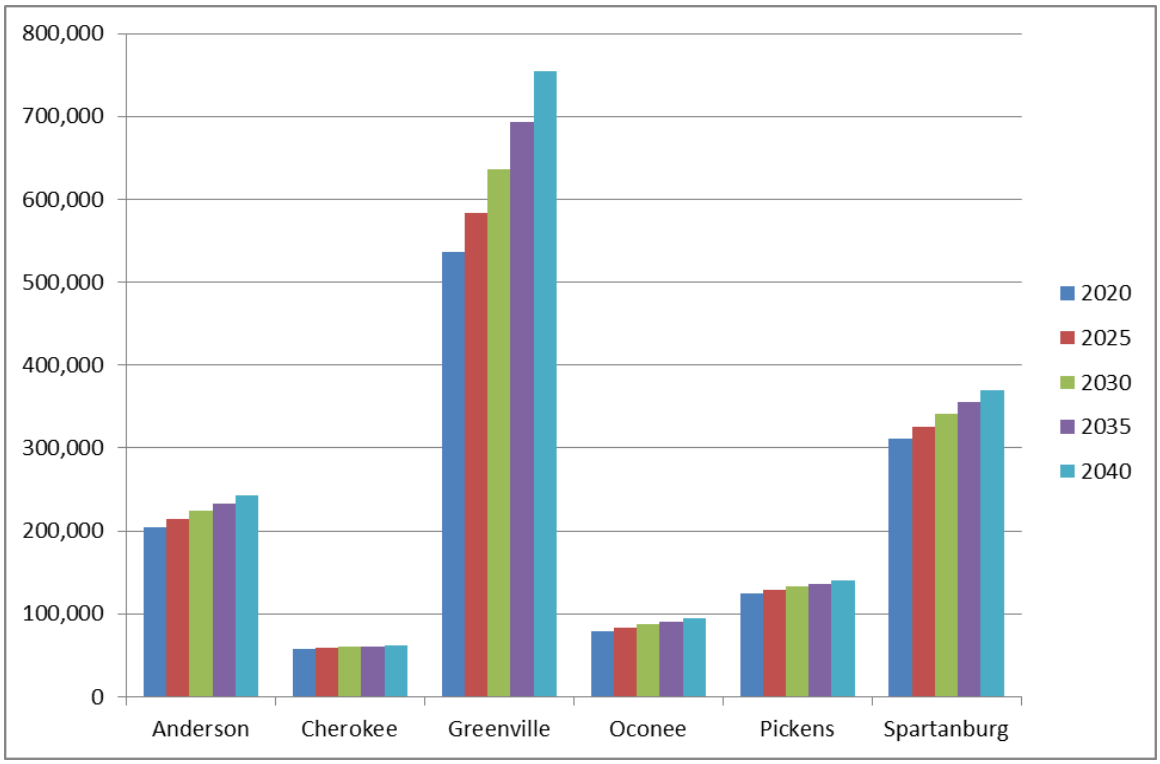


Table 6. Projected Population Change by County 2015 – 2030, SCORS and ACOG

	SCORS Projections		ACOG Projections	
	Population Change	% Change	Population Change	% Change
Anderson	25,200	13%	29,000	15%
Cherokee	1,200	2%	4,000	7%
Greenville	69,000	15%	145,000	30%
Oconee	12,500	16%	11,000	15%
Pickens	11,300	9%	11,000	9%
Spartanburg	36,100	12%	44,000	15%
ACOG Region	155,300	13%	209,000	17%
SC	628,500	13%	N/A	N/A
USA	47,964,000	15%	N/A	N/A

According to projections by the South Carolina Office of Research and Statistics (SCORS), the ACOG region as a whole is expected to gain more than 155,000 new residents by 2030. This increase reflects a projected change of 13 percent over the next 15 years. Projections by the ACOG show more robust growth, especially in Greenville, Spartanburg and Anderson Counties. ACOG projections estimate the region's 2015-2030 growth at 209,000 residents, or 17 percent increase. A significant portion of this growth will occur in areas that fall under the Rural Planning Area. It will be necessary to identify areas within the rural study area that are expected to experience the greatest growth. This will help to identify potential needs and plan for the future infrastructure needs of the region through the Rural Long Range Transportation Plan (RLRTP).

1.5 Identified Needs

There is a substantial amount of growth forecasted for the ACOG region over the next 20 years. The Upstate's location along the booming I-85 corridor between Charlotte and Atlanta makes the area attractive to new industry. Job growth brings residents and development which put additional strain on the transportation infrastructure in the region. Much of the forecasted growth is within the urban MPO jurisdiction. In the rural areas, however, availability of large tracts of land, a favorable market, and limits within already developed areas is expected to lead to considerable growth in housing in the rural areas. There are several key areas of projected growth as identified below:

- The **Seneca – Walhalla** area is the largest area of projected growth in the rural COG region. Lakes Hartwell and Jocassee are a major impetus for new growth. Lakefront property is popular among retirees and the convenient access to I-85 and the college town atmosphere provided by Clemson is a large draw to the area.

- **Northwestern Anderson County**, particularly the Townville community, is connected with the Clemson – Seneca area. Growth there is likely to be focused around Lake Hartwell.

- The **Gaffney** area is projected to see moderate growth. It is focused along I-85 and the areas between the City and the interstate. The southern portion of the county could see more investment if Duke Energy decides to resume construction of its nuclear power station in the Cherokee Falls community.

- **Spartanburg County** is expected to see some moderate growth in the rural COG area just south of the MPOs. It is on the periphery of the growth seen in the greater Spartanburg area that is largely within the more urban MPO.

The highest projected growth area in the rural COG region is in Anderson County, northeast of the City. The area between I-85 and US-29 towards Greenville is the focus of the new growth.

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2 Roadway Network

2.1 Existing Conditions

The rural ACOG region is served by a two primary interstates and a large network of state and federal highways. **Table 7** contains a list of primary highways and interstates in the region, as well as the average annual daily traffic (AADT) volume for 2015. The counts are taken from the stations with the highest volume for the given road. **Maps 3-8** show the locations of these roads by county.

Interstates provide access to and from neighboring cities, regions, and ports. They are essential to transportation and the economic vitality of the Upstate.

- **Interstate 85** is the most important route in the Upstate. It provides the impetus for much of the economic development in the region, and provides a direct link to neighboring Charlotte, NC and Atlanta, GA. Most of the highway exists in urbanized areas that are not part of the rural ACOG area. Cherokee County contains the most of rural I-85. I-85 is six lanes wide through most of the urban areas of Greenville, Spartanburg, and Anderson, and it is four lanes wide in the rest of the region. Plans currently exist to widen the remaining sections of I-85 to six lanes in Anderson and Cherokee Counties.

- **Interstate 26** is the other major interstate in the region. It links the Upstate to the rest of South Carolina and to the Port of Charleston to the south. It also connects the Upstate to Asheville, to the north. A recent extension of I-26 from Asheville, NC created a new terminus in the Tri-Cities area of Tennessee at I-81. The interstate intersects I-85 in Spartanburg County near the city of Spartanburg. It serves as a major conduit for trucks to access the Port of Charleston, one of the largest ports on the East Coast. Sixty (60) percent of goods shipped through the port originate in the Upstate. I-26 in the Upstate is located entirely within Spartanburg County, and it is a four lane interstate throughout the county, with the exception a recently widened one-mile stretch of six lanes near the City of Spartanburg.

- **Interstate 385** is an interstate spur that connects Greenville and the Upstate to the rest of South Carolina. The interstate connects to I-26 in Clinton and it provides access to Columbia and the Port of Charleston. It also serves as a major commuter corridor for the southern suburbs of Greenville.

- Other minor interstates include **I-185** in Greenville and **I-585** in Spartanburg. I-185 is a toll-road that is also known as the Southern Connector. It connects the southern portions of Greenville County to the City and to I-385. I-585 is a spur in Spartanburg that serves to connect the City to I-85 and the I-85 Business Loop.

United States Highways tend to impact the rural areas of the six-county region more directly. These roads provide access to many small cities and towns across the Upstate and are the work horses of the rural areas.

- **U.S. Highway 29** is one of the most important highways in the Upstate. Historically it has been the most important route through the Upstate. Many cities grew up along this highway and can trace their expansion and primary business districts to the areas that this route follows. It parallels I-85 and connects all of the major cities in the Upstate to each other including four county seats. It also connects the area to Atlanta and Charlotte. US-29 enters South Carolina in western Anderson County from Georgia. Cities along its route from west to east include Starr, Anderson, Greenville, Greer, Lyman, Wellford, Spartanburg, Cowpens, Gaffney, and Blacksburg. It then exits the state into North Carolina near Kings Mountain.

- **U.S. Highway 123** is an important highway in the northwestern part of the region. It connects Greenville to Easley, Clemson, Seneca, and Westminster and the state of Georgia. In Pickens County, west of Easley it exists as a limited access highway and serves as one of the primary gateways to the City of Clemson. Its route serves as the primary commercial corridor in each of the aforementioned cities except Greenville.

- **U.S. Highway 76** is an important north-south connector highway in the western portion of the ACOG region. It enters the state from North Carolina in northern Oconee County where it proceeds to connect to the following cities: Westminster, Seneca, Clemson, Pendleton, Anderson, Belton, and Honea Path. Its path takes it to the southeast where it terminates in Charleston. Its route is co-signed with US-123 as well as US-76 along its path through the region, and it intersects with I-85 in Anderson County. Its path serves as the primary commercial corridor for many towns.

- **U.S. Highway 178** enters the region from North Carolina in northern Pickens County. It connects the cities of Pickens, Liberty, Anderson, Belton, and Honea Path. It intersects I-85 in Anderson County, and it exits the region at the southern tip of Greenville County.

- **U.S. Highway 276** enters the region from North Carolina in northern Greenville County. It is an important route for the rural region as it serves to connect important tourist destinations like Caesar's Head and Table Rock to Greenville and I-85. The majority of its route is in the Greenville urban area, where it connects growing suburban areas like Traveler's Rest, Mauldin, and Simpsonville to Greenville. It intersects I-85 in Greenville, and it exits the region in southern Greenville County.

- **U.S. Highway 25** enters the region from North Carolina in northern Greenville County. Similar to US-276, its route exists primarily in the Greenville urban area. It does not intersect any municipalities in the region, but it does serve to connect the rural area and Greenville to western North Carolina to the north, and Greenwood to the south. It also intersects I-85 in Greenville.

- **U.S. Highway 176** enters the region from North Carolina in northern Spartanburg County. It parallels I-26, and connects the towns of Landrum, Campobello, Inman, Spartanburg, and Pacolet. While most of its path is in the Spartanburg urban area, it is an important link for developing communities around Spartanburg. It intersects I-26 near Inman, I-85 near

Spartanburg, and it is co-signed as I-585 in Spartanburg. This route connects the region to Hendersonville, NC and Asheville, NC to the north and Union, Columbia, and Charleston to the south.

- **U.S. Highway 221** enters the region from North Carolina in northwestern Cherokee County. It connects the cities of Chesnee, Spartanburg, and Woodruff. It exists primarily within the urban area of Spartanburg. However, it is the primary access route for the City of Woodruff, which is within the rural COG area. It intersects I-85 and I-26 near Spartanburg. It connects the region to Rutherfordton, NC to the north and Greenwood to the south.

The South Carolina Department of Transportation (SCDOT) controls the majority of other roads in the state. There are numerous state designated highways in the rural COG area, and these routes are important to the rural economy, however, due to the large number of them it is impractical to list all of them.

State highways of note for transportation planning purposes:

- **S.C. Scenic Highway 11** is a national scenic byway. The route begins near the South Carolina – Georgia border at I-85 and arcs through the northern portion of the COG region, ending in Gaffney near I-85. Its status as a national scenic byway is crucial for the rural COG region because tourists and travelers use this road to see the natural beauty of the Upstate. This highway is the longest state highway that does not enter an urban region in the six-county area. It connects towns like Westminster, Walhalla, Salem, Campobello, Chesnee, and Gaffney, but is primarily a rural highway. The most urban section of this highway is in Gaffney, where it turns in to Floyd Baker Blvd, which is the primary commercial corridor in the city.

- **S.C. Highway 93** connects many cities and towns in southern Pickens County. The highway has some of the highest traffic counts in the rural COG area because it connects many large apartment complexes in the Town of Central to the City of Clemson and Clemson University.

- **S.C. Highway 28** connects Seneca to I-85. The highway is important because it is the primary access route for out-of-state property owners who own property on the lakes in Oconee and Pickens Counties. It has some of the highest traffic counts in the rural COG area.

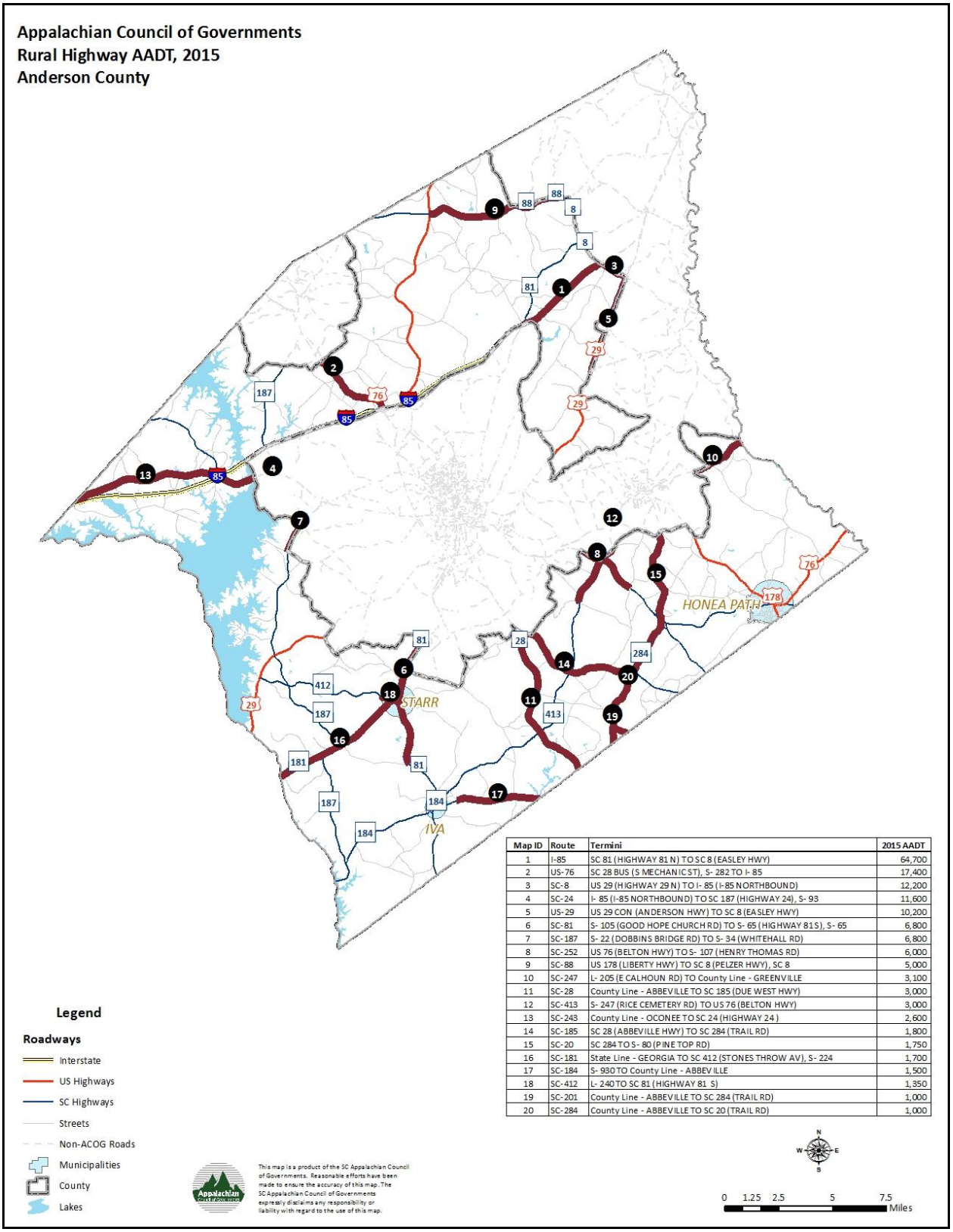
Table 7. Rural Highway AADT, 2015

Map ID	County	Route	Termini	2015 AADT
1	Anderson	I-85	SC 81 (HIGHWAY 81 N) TO SC 8 (EASLEY HWY)	64,700
21	Cherokee	I-85	SC 110 (BATTLEGROUND RD) TO S- 39 (MACEDONIA RD) (CHEROKEE)	60,500
66	Spartanburg	I-85	SC 110 (BATTLEGROUND RD) TO S- 39 (MACEDONIA RD) (CHEROKEE)	60,500
43	Oconee	I-85	State Line - GEORGIA TO SC 11 (S HIGHWAY 11 NO)	41,300
67	Spartanburg	I-26	SC 11 (HIGHWAY 11) TO SC 292 (HIGHWAY 292)	27,800
44	Oconee	US-76	SC 28 (BLUE RIDGE BLVD), SC 59 TO S- 21 (N WALNUT ST)	26,900
22	Cherokee	SC-11	S- 566 TO S- 481	23,400
45	Oconee	SC-28	US 76 (SANDIFER BLVD) TO SC 188 (KEOWEE SCHOOL RD), S- 135	19,900
2	Anderson	US-76	SC 28 BUS (S MECHANIC ST), S- 282 TO I- 85	17,400
33	Greenville	US-25	SC 414 TO SC 11	14,600
68	Spartanburg	US-221	SC 146 TO SC 101 (HIGHWAY 101), L- 2405	13,400
69	Spartanburg	US-176	S- 30 (WHITESTONE GLENDALE RD) TO SC 9 (S PINE ST)	13,000
23	Cherokee	US-29	SC 105 (HYATT ST) TO S- 89 (W RUTLEDGE AVE)	12,400
24	Cherokee	SC-105	S- 467 (WILLIS ST) TO I- 85	12,300
3	Anderson	SC-8	US 29 (HIGHWAY 29 N) TO I- 85 (I-85 NORTHBOUND)	12,200
25	Cherokee	SC-18	SC 105 (E FREDERICK ST) TO SC 105 (UNION ST), L- 1016	11,800
4	Anderson	SC-24	I- 85 (I-85 NORTHBOUND) TO SC 187 (HIGHWAY 24), S- 93	11,600
46	Oconee	SC-130	US 76 (CLEMSON BLVD) TO S- 1 (OLD CLEMSON HWY)	11,300
57	Pickens	SC-133	US 76 (TIGER BLVD) TO S- 102 (PIKE RD)	11,300
58	Pickens	SC-93	County Line - OCONEE TO S- 320 (PERIMETER RD)	10,900
47	Oconee	SC-59	S- 523 TO US 76 (SANDIFER BLVD)	10,800
5	Anderson	US-29	US 29 CON (ANDERSON HWY) TO SC 8 (EASLEY HWY)	10,200
48	Oconee	SC-11	SC 28 (BLUE RIDGE BLVD) TO S- 3 (E MAIN ST)	10,100
49	Oconee	SC-93	US 76 (CLEMSON BLVD) TO County Line - PICKENS	10,100
50	Oconee	SC-188	SC 28 (BLUE RIDGE BLVD) TO S- 60	8,600
26	Cherokee	SC-5	US 29 (E CHEROKEE ST) TO S- 30 (OAK GROVE RD)	7,800
27	Cherokee	SC-150	SC 18 CON (N LOGAN ST) TO I- 85	7,500
70	Spartanburg	SC-101	US 221 (N MAIN ST) TO SC 146 (HIGHWAY 101), S- 51	7,300
51	Oconee	SC-24	SC 59 (WEST OAK HWY) TO SC 59 (TOKEENA RD)	7,000
6	Anderson	SC-81	S- 105 (GOOD HOPE CHURCH RD) TO S- 65 (HIGHWAY 81 S), S- 65	6,800
7	Anderson	SC-187	S- 22 (DOBBINS BRIDGE RD) TO S- 34 (WHITEHALL RD)	6,800
71	Spartanburg	SC-146	US 221 (LAURENS RD) TO S- 450	6,500
8	Anderson	SC-252	US 76 (BELTON HWY) TO S- 107 (HENRY THOMAS RD)	6,000
28	Cherokee	US-221	County Line - SPARTANBURG TO S- 76 (STUDEBAKER RD)	6,000
59	Pickens	US-178	US 123 (TIGER BLVD) TO L- 492 (FLAT ROCK RD)	5,600
72	Spartanburg	SC-215	SC 56 (HIGHWAY 56) TO US 221 (S CHURCH ST EXT)	5,600
60	Pickens	SC-183	County Line - OCONEE TO S- 157 (GAP HILL RD), L- 157	5,500
52	Oconee	SC-183	SC 28 (W MAIN ST) TO SC 11 (NORTH HWY 11)	5,200

Map ID	County	Route	Termini	2015 AADT
73	Spartanburg	SC-295	S- 34 TO US 176 (S PINE ST)	5,200
9	Anderson	SC-88	US 178 (LIBERTY HWY) TO SC 8 (PELZER HWY), SC 8	5,000
74	Spartanburg	SC-11	S- 100 (OLD ISLAND FORD RD) TO US 221 (N ALABAMA AVE)	4,900
34	Greenville	SC-101	S- 171 (N RUTHERFORD RD) TO SC 414, S- 44	4,700
75	Spartanburg	SC-110	I- 85 (INTERSTATE 85) TO County Line - CHEROKEE	4,500
29	Cherokee	SC-329	US 29 (W CHEROKEE ST) TO SC 18 (SHELBY HWY)	4,300
35	Greenville	SC-247	County Line - ANDERSON TO US 25 (AUGUSTA RD)	4,300
76	Spartanburg	US-29	SC 110 (BATTLEGROUND RD), S- 566 TO County Line - CHEROKEE	4,300
53	Oconee	US-123	S- 631 (N ALEXANDER ST) TO US 76 (LONG CREEK HWY)	4,100
36	Greenville	SC-11	US 276 (GEER HWY) TO US 25	4,000
37	Greenville	SC-414	US 25 TO SC 101	3,600
30	Cherokee	SC-110	S- 106 (PICKLE SPRINGS RD) TO US 221 ALT (CLIFFSIDE HWY)	3,400
38	Greenville	SC-14	S- 113 (FEWS CHAPEL RD) TO County Line - SPARTANBURG	3,400
77	Spartanburg	SC-56	SC 215 (STONE STATION RD) TO S- 88 (CAROLINA COUNTRY CLUB RD)	3,400
10	Anderson	SC-247	L- 205 (E CALHOUN RD) TO County Line - GREENVILLE	3,100
61	Pickens	SC-137	L- 2510 (BELLE SHOALS RD) TO SC 133 (MT OLIVET RD)	3,100
11	Anderson	SC-28	County Line - ABBEVILLE TO SC 185 (DUE WEST HWY)	3,000
12	Anderson	SC-413	S- 247 (RICE CEMETERY RD) TO US 76 (BELTON HWY)	3,000
39	Greenville	US-276	SC 11 TO S- 457 (EBENEZER CHURCH RD)	2,800
62	Pickens	SC-8	SC 135 (DACUSVILLE HWY) TO SC 288 (TABLE ROCK RD)	2,800
63	Pickens	SC-186	S- 162 (THOMAS MILL RD) TO S- 26 (PACE BRIDGE RD)	2,800
40	Greenville	SC-253	SC 290 (LOCUST HILL RD), S- 140 TO SC 414, S- 117	2,700
64	Pickens	SC-135	SC 186 (EARLS BRIDGE RD) TO S- 109	2,700
13	Anderson	SC-243	County Line - OCONEE TO SC 24 (HIGHWAY 24)	2,600
41	Greenville	US-76	County Line - ANDERSON TO US 25 (AUGUSTA RD)	2,600
78	Spartanburg	SC-49	I- 26 (INTERSTATE 26) TO County Line - UNION	2,600
31	Cherokee	SC-198	I- 85 TO S- 214	2,500
65	Pickens	SC-11	County Line - OCONEE TO S- 49, S- 143	2,500
79	Spartanburg	SC-92	US 221 (HIGHWAY 221) TO I- 26 (INTERSTATE 26)	2,400
42	Greenville	SC-288	County Line - PICKENS TO US 276 (GEER HWY)	2,200
54	Oconee	SC-243	SC 59 TO County Line - ANDERSON	2,100
14	Anderson	SC-185	SC 28 (ABBEVILLE HWY) TO SC 284 (TRAIL RD)	1,800
15	Anderson	SC-20	SC 284 TO S- 80 (PINE TOP RD)	1,750
16	Anderson	SC-181	State Line - GEORGIA TO SC 412 (STONES THROW AV), S- 224	1,700
80	Spartanburg	SC-9	State Line - NORTH CAROLINA TO SC 11 (HIGHWAY 11)	1,700
17	Anderson	SC-184	S- 930 TO County Line - ABBEVILLE	1,500
32	Cherokee	SC-55	SC 5 (KINGS CREEK DR) TO County Line - YORK	1,400
55	Oconee	SC-107	SC 28 (HIGHLANDS HWY) TO S- 82 (MARY T WYATT DR)	1,400
18	Anderson	SC-412	L- 240 TO SC 81 (HIGHWAY 81 S)	1,350
81	Spartanburg	SC-150	S- 93 TO SC 9 (S PINE ST)	1,300

Map ID	County	Route	Termini	2015 AADT
56	Oconee	SC-182	S- 75 TO SC 24 (WEST OAK HWY)	1,150
19	Anderson	SC-201	County Line - ABBEVILLE TO SC 284 (TRAIL RD)	1,000
20	Anderson	SC-284	County Line - ABBEVILLE TO SC 20 (TRAIL RD)	1,000

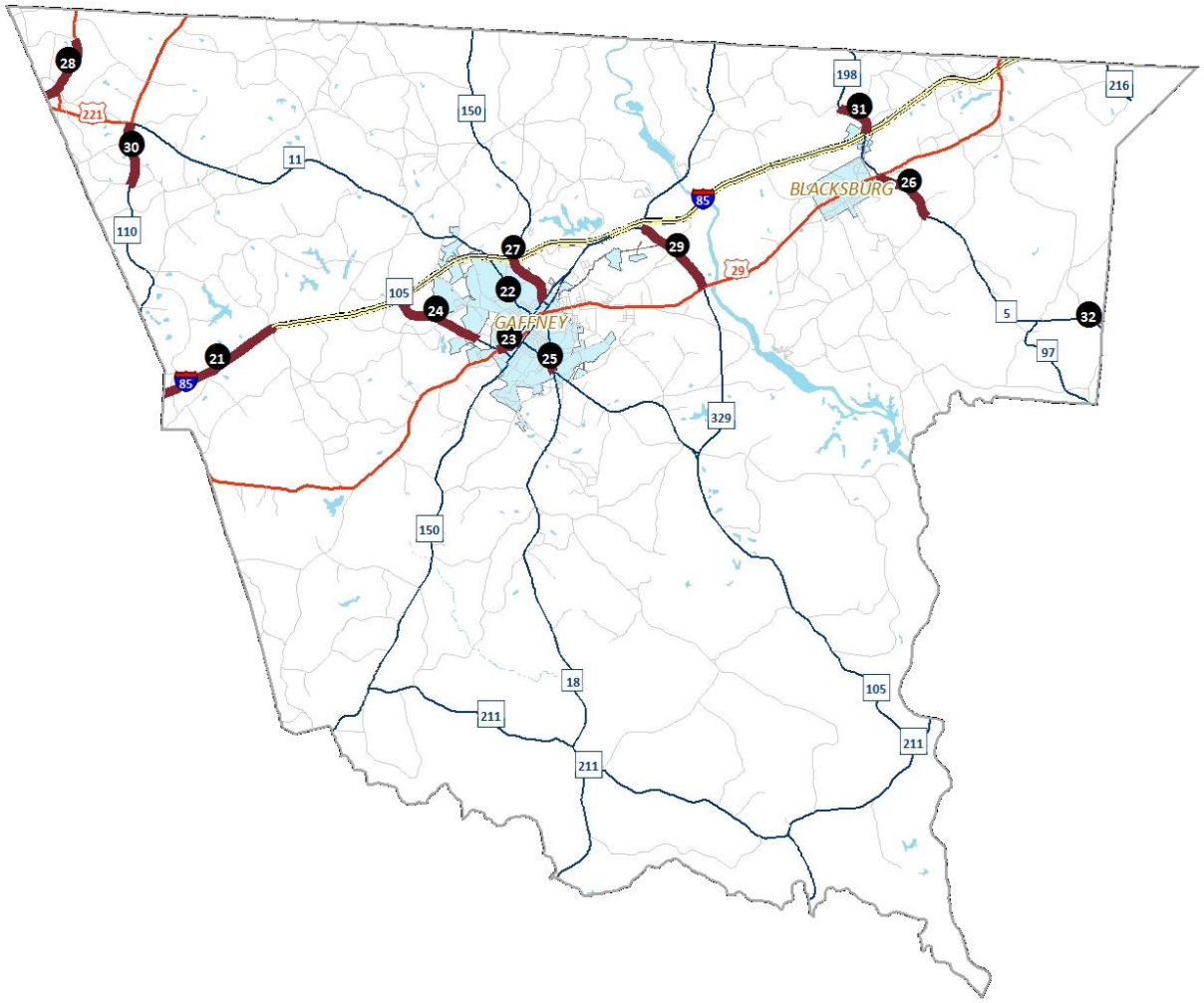
Map 3. Anderson County Traffic Counts, 2015



Map ID	Route	Termini	2015 AADT
1	I-85	SC 81 (HIGHWAY 81 N) TO SC 8 (EASLEY HWY)	64,700
2	US-76	SC 28 BUS (S MECHANIC ST), S- 282 TO I- 85	17,400
3	SC-8	US 29 (HIGHWAY 29 N) TO I- 85 (I-85 NORTHBOUND)	12,200
4	SC-24	I- 85 (I-85 NORTHBOUND) TO SC 187 (HIGHWAY 24), S- 93	11,600
5	US-29	US 29 CON (ANDERSON HWY) TO SC 8 (EASLEY HWY)	10,200
6	SC-81	S- 105 (GOOD HOPE CHURCH RD) TO S- 65 (HIGHWAY 81 S), S- 65	6,800
7	SC-187	S- 22 (DOBBINS BRIDGE RD) TO S- 34 (WHITEHALL RD)	6,800
8	SC-252	US 76 (BELTON HWY) TO S- 107 (HENRY THOMAS RD)	6,000
9	SC-88	US 178 (LIBERTY HWY) TO SC 8 (PELZER HWY), SC 8	5,000
10	SC-247	L- 205 (E CALHOUN RD) TO County Line - GREENVILLE	3,100
11	SC-28	County Line - ABBEVILLE TO SC 185 (DUE WEST HWY)	3,000
12	SC-413	S- 247 (RICE CEMETERY RD) TO US 76 (BELTON HWY)	3,000
13	SC-243	County Line - OCONEE TO SC 24 (HIGHWAY 24)	2,600
14	SC-185	SC 28 (ABBEVILLE HWY) TO SC 284 (TRAIL RD)	1,800
15	SC-20	SC 284 TO S- 80 (PINE TOP RD)	1,750
16	SC-181	State Line - GEORGIA TO SC 412 (STONES THROW AV), S- 224	1,700
17	SC-184	S- 930 TO County Line - ABBEVILLE	1,500
18	SC-412	L- 240 TO SC 81 (HIGHWAY 81 S)	1,350
19	SC-201	County Line - ABBEVILLE TO SC 284 (TRAIL RD)	1,000
20	SC-284	County Line - ABBEVILLE TO SC 20 (TRAIL RD)	1,000

Map 4. Cherokee County Traffic Counts, 2015

Appalachian Council of Governments
Rural Highway AADT, 2015
Cherokee County



Map ID	Route	Termini	2015 AADT
21	I-85	SC 110 (BATTLEGROUND RD) TO S- 39 (MACEDONIA RD) (CHEROKEE)	60,500
22	SC-11	S- 566 TO S- 481	23,400
23	US-29	SC 105 (HYATT ST) TO S- 89 (W RUTLEDGE AVE)	12,400
24	SC-105	S- 467 (WILLIS ST) TO I- 85	12,300
25	SC-18	SC 105 (E FREDERICK ST) TO SC 105 (UNION ST), L- 1016	11,800
26	SC-5	US 29 (E CHEROKEE ST) TO S- 30 (OAK GROVE RD)	7,800
27	SC-150	SC 18 CON (N LOGAN ST) TO I- 85	7,500
28	US-221	County Line - SPARTANBURG TO S- 76 (STUDEBAKER RD)	6,000
29	SC-329	US 29 (W CHEROKEE ST) TO SC 18 (SHELBY HWY)	4,300
30	SC-110	S- 106 (PICKLE SPRINGS RD) TO US 221 ALT (CLIFFSIDE HWY)	3,400
31	SC-198	I- 85 TO S- 214	2,500
32	SC-55	SC 5 (KINGS CREEK DR) TO County Line - YORK	1,400

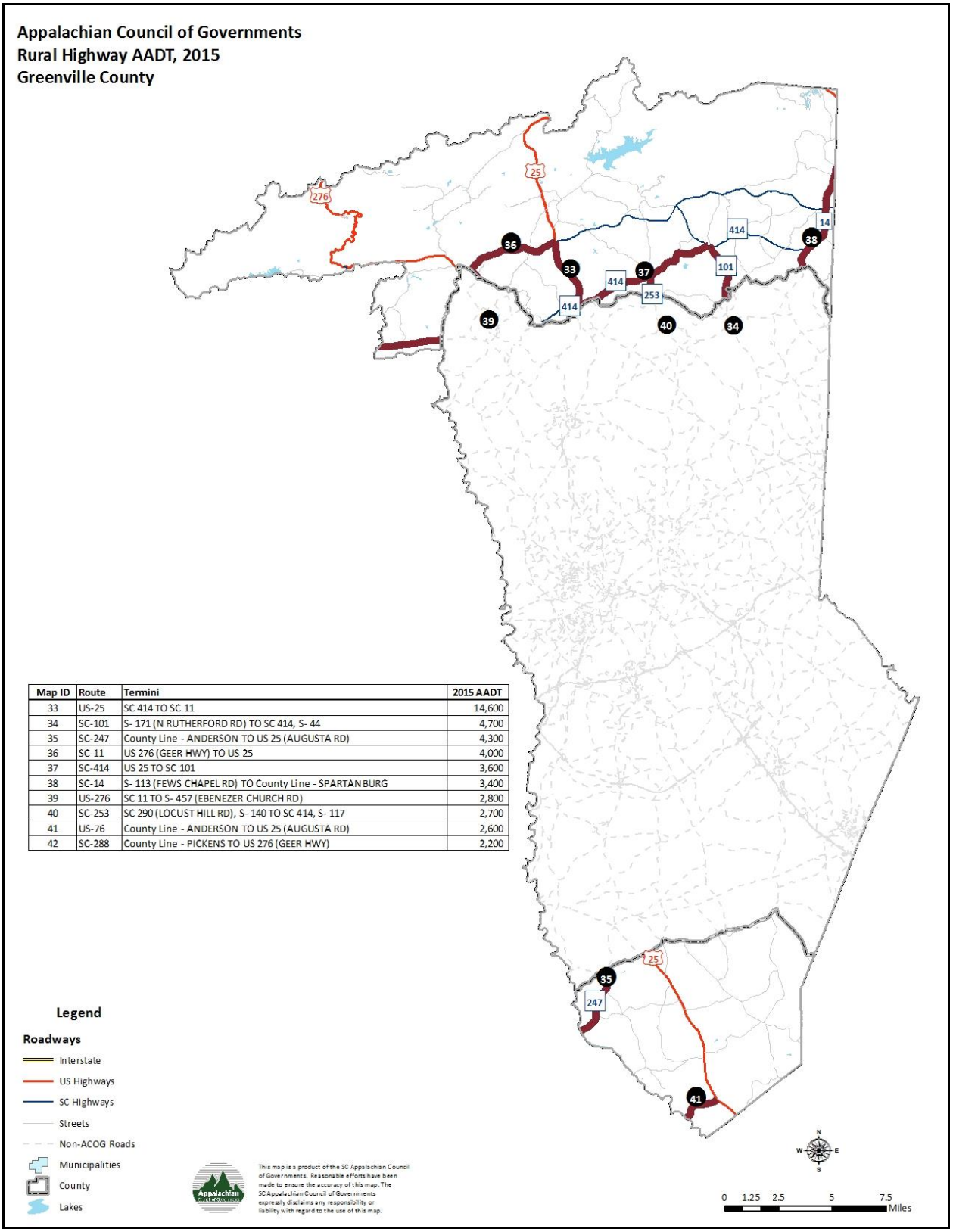
Legend

Roadways
- Interstate
- US Highways
- SC Highways
- Streets
- Non-ACOG Roads
- Municipalities
- County
- Lakes

N W E S

0 0.75 1.5 3 4.5 Miles

Map 5. Greenville County Traffic Counts, 2015

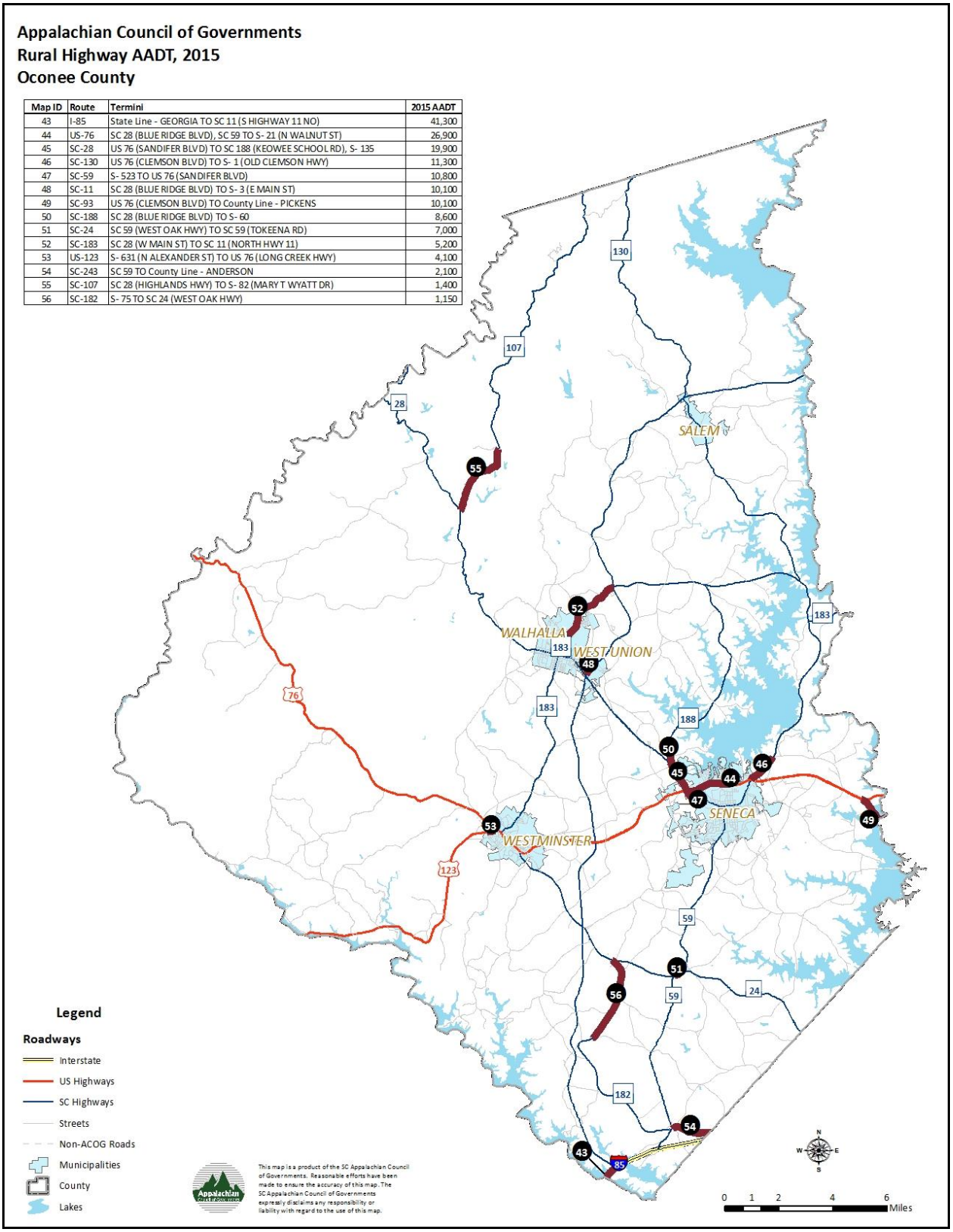


Map ID	Route	Termini	2015 AADT
33	US-25	SC 414 TO SC 11	14,600
34	SC-101	S- 171 (N RUTHERFORD RD) TO SC 414, S- 44	4,700
35	SC-247	County Line - ANDERSON TO US 25 (AUGUSTA RD)	4,300
36	SC-11	US 276 (GEER HWY) TO US 25	4,000
37	SC-414	US 25 TO SC 101	3,600
38	SC-14	S- 113 (FEWS CHAPEL RD) TO County Line - SPARTANBURG	3,400
39	US-276	SC 11 TO S- 457 (EBENEZER CHURCH RD)	2,800
40	SC-253	SC 290 (LOCUST HILL RD), S- 140 TO SC 414, S- 117	2,700
41	US-76	County Line - ANDERSON TO US 25 (AUGUSTA RD)	2,600
42	SC-288	County Line - PICKENS TO US 276 (GEER HWY)	2,200

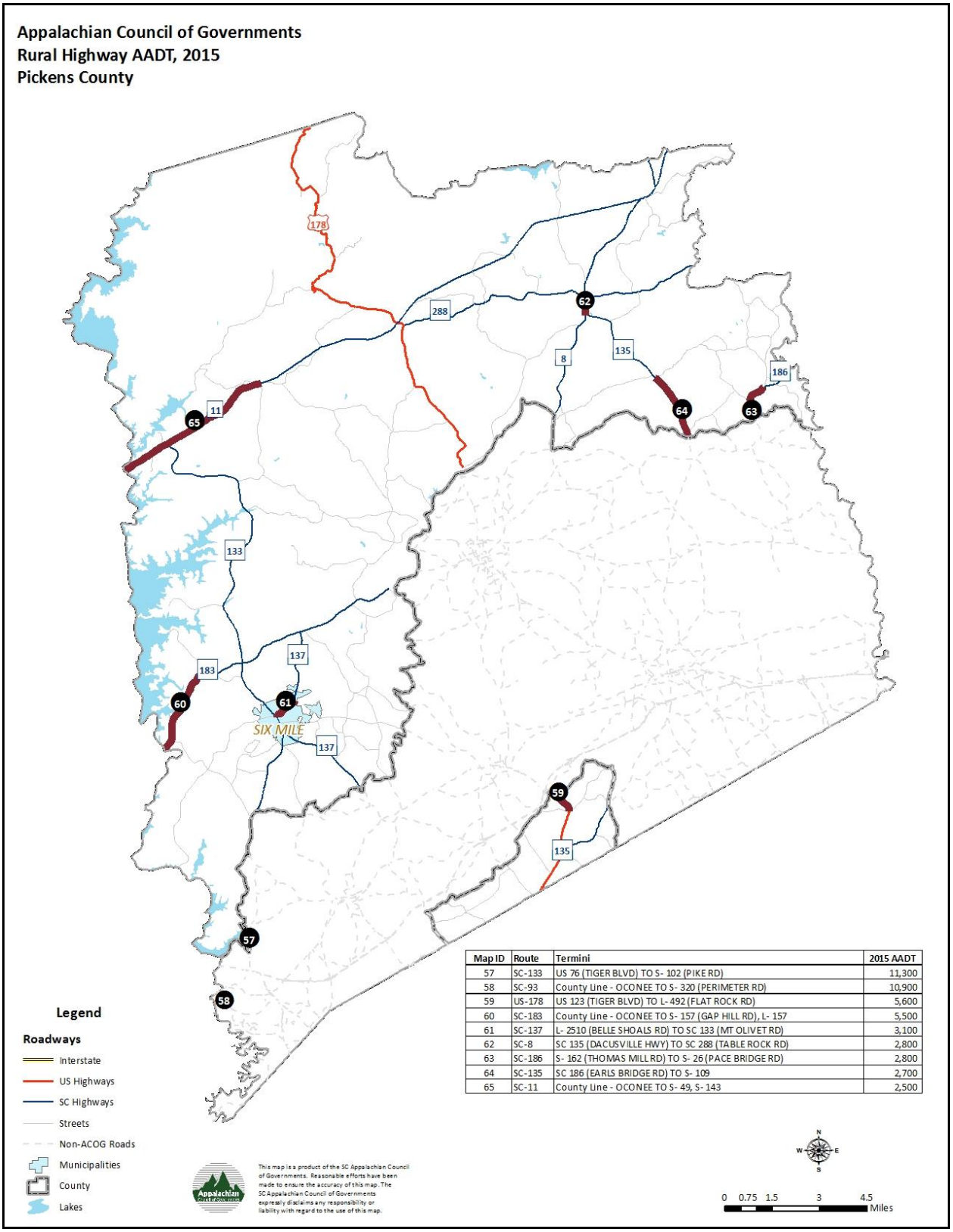
Map 6. Oconee County Traffic Counts, 2015

Appalachian Council of Governments
Rural Highway AADT, 2015
Oconee County

Map ID	Route	Termini	2015 AADT
43	I-85	State Line - GEORGIA TO SC 11 (S HIGHWAY 11 NO)	41,300
44	US-76	SC 28 (BLUE RIDGE BLVD), SC 59 TO S- 21 (N WALNUT ST)	26,900
45	SC-28	US 76 (SANDIFER BLVD) TO SC 188 (KEOWEE SCHOOL RD), S- 135	19,900
46	SC-130	US 76 (CLEMSON BLVD) TO S- 1 (OLD CLEMSON HWY)	11,300
47	SC-59	S- 523 TO US 76 (SANDIFER BLVD)	10,800
48	SC-11	SC 28 (BLUE RIDGE BLVD) TO S- 3 (E MAIN ST)	10,100
49	SC-93	US 76 (CLEMSON BLVD) TO County Line - PICKENS	10,100
50	SC-188	SC 28 (BLUE RIDGE BLVD) TO S- 60	8,600
51	SC-24	SC 59 (WEST OAK HWY) TO SC 59 (TOKEENA RD)	7,000
52	SC-183	SC 28 (W MAIN ST) TO SC 11 (NORTH HWY 11)	5,200
53	US-123	S- 631 (N ALEXANDER ST) TO US 76 (LONG CREEK HWY)	4,100
54	SC-243	SC 59 TO County Line - ANDERSON	2,100
55	SC-107	SC 28 (HIGHLANDS HWY) TO S- 82 (MARY T WYATT DR)	1,400
56	SC-182	S- 75 TO SC 24 (WEST OAK HWY)	1,150

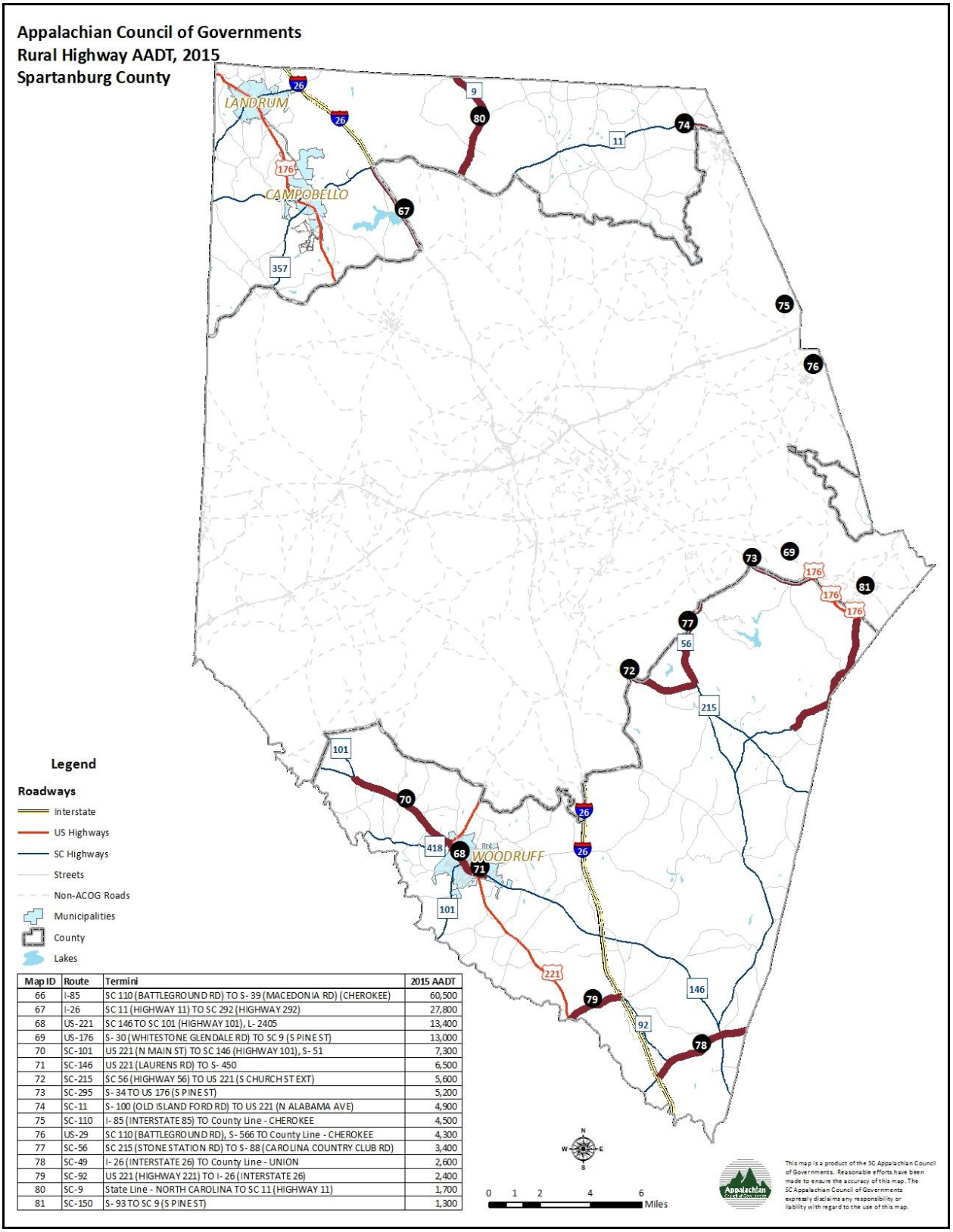


Map 7. Pickens County Traffic Counts, 2015



Map ID	Route	Termini	2015 AADT
57	SC-133	US 76 (TIGER BLVD) TO S- 102 (PIKE RD)	11,300
58	SC-93	County Line - OCONEE TO S- 320 (PERIMETER RD)	10,900
59	US-178	US 123 (TIGER BLVD) TO L- 492 (FLAT ROCK RD)	5,600
60	SC-183	County Line - OCONEE TO S- 157 (GAP HILL RD), L- 157	5,500
61	SC-137	L- 2510 (BELLE SHOALS RD) TO SC 133 (MT OLIVET RD)	3,100
62	SC-8	SC 135 (DACUSVILLE HWY) TO SC 288 (TABLE ROCK RD)	2,800
63	SC-186	S- 162 (THOMAS MILL RD) TO S- 26 (PACE BRIDGE RD)	2,800
64	SC-135	SC 186 (EARLS BRIDGE RD) TO S- 109	2,700
65	SC-11	County Line - OCONEE TO S- 49, S- 143	2,500

Map 8. Spartanburg County Traffic Counts, 2015



Map ID	Route	Termini	2015 AADT
66	I-85	SC 110 (BATTLEGROUND RD) TO S- 39 (MACEDONIA RD) (CHEROKEE)	60,500
67	I-26	SC 11 (HIGHWAY 11) TO SC 292 (HIGHWAY 292)	27,800
68	US-221	SC 146 TO SC 101 (HIGHWAY 101), L- 2405	13,400
69	US-176	S- 30 (WHITESTONE GLENDALE RD) TO SC 9 (S PINE ST)	13,000
70	SC-101	US 221 (N MAIN ST) TO SC 146 (HIGHWAY 101), S- 51	7,300
71	SC-146	US 221 (LAURENS RD) TO S- 450	6,500
72	SC-215	SC 56 (HIGHWAY 56) TO US 221 (S CHURCH ST EXT)	5,600
73	SC-295	S- 34 TO US 176 (S PINE ST)	5,200
74	SC-11	S- 100 (OLD ISLAND FORD RD) TO US 221 (N ALABAMA AVE)	4,900
75	SC-110	I- 85 (INTERSTATE 85) TO County Line - CHEROKEE	4,500
76	US-29	SC 110 (BATTLEGROUND RD), S- 566 TO County Line - CHEROKEE	4,300
77	SC-56	SC 215 (STONE STATION RD) TO S- 88 (CAROLINA COUNTRY CLUB RD)	3,400
78	SC-49	I- 26 (INTERSTATE 26) TO County Line - UNION	2,600
79	SC-92	US 221 (HIGHWAY 221) TO I- 26 (INTERSTATE 26)	2,400
80	SC-9	State Line - NORTH CAROLINA TO SC 11 (HIGHWAY 11)	1,700
81	SC-150	S- 93 TO SC 9 (S PINE ST)	1,300

2.2 Strategic Corridor Network

As part of the 2040 South Carolina Multimodal Transportation Plan, the statewide Strategic Corridor Network was updated. These corridors provide connection both locally and regionally for the movement of goods and people for business and personal purposes.

The corridors are updated and determined through a quantitative process intended to both identify and differentiate these corridors. The roadways here categorized on a three scale rating: Low (1), Medium (2) and High (3). Below is a summary of the criterion used for this exercise:

1. Average Annual Daily Traffic
2. Truck Average Annual Daily Traffic
3. Statewide and Regional Connectivity
4. Parallel Reliever Potential
5. Multimodal Connectivity
6. Population Totals and Population Growth to 2040
7. Census Urbanized Area Classifications
8. Employment Impacts
9. Tourism Impacts

Once the roadways were scored and ranked, they were split into "Tiers," intended to differentiate the corridors by means of their overall importance to the region and the state. The tier system is summarized as follows:

Tier 1: Roadways that are on the South Carolina primary and secondary network AND receive a high cumulative quantitative score.

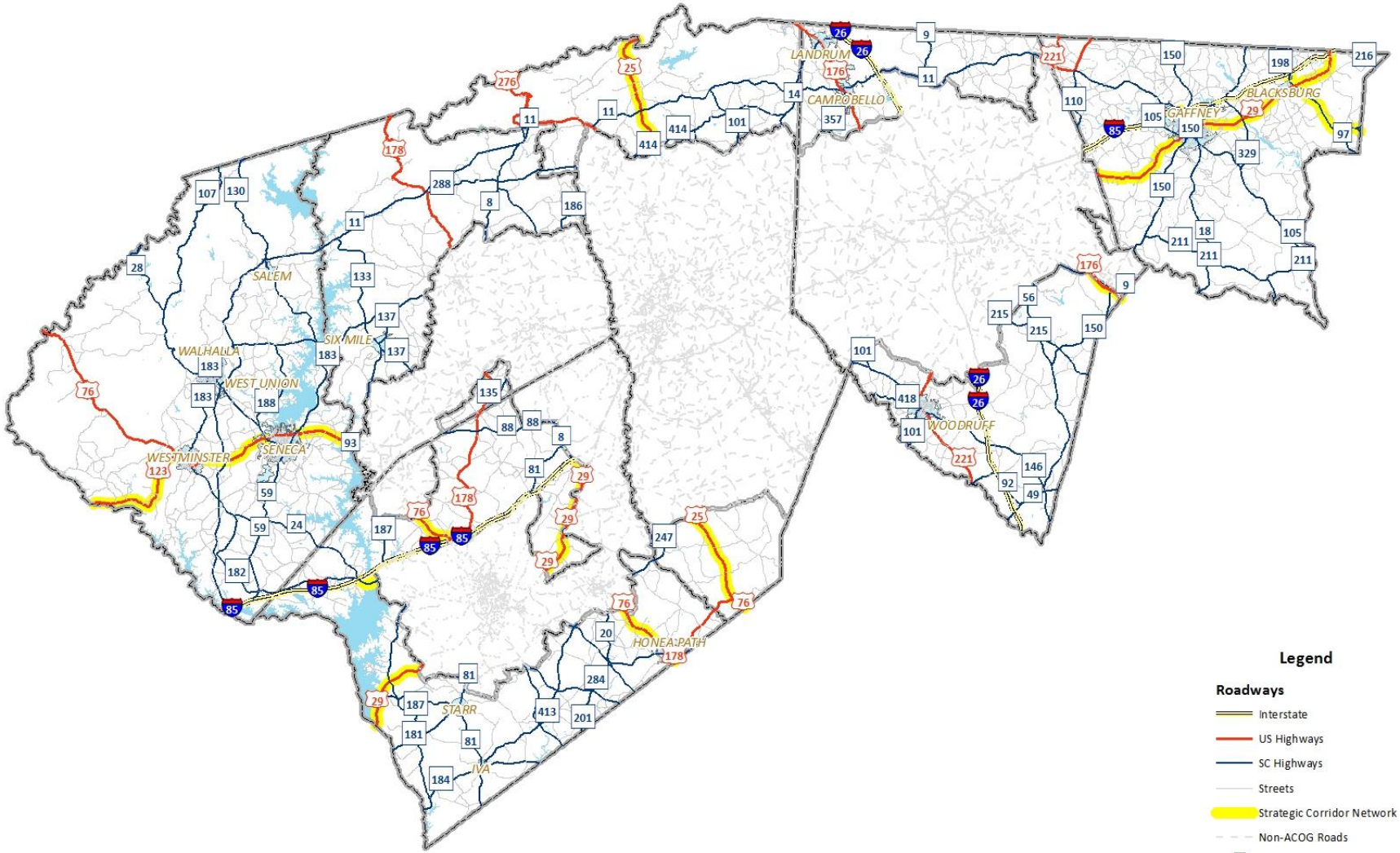
Tier 2: Roadways that are on the South Carolina primary and secondary network AND receive a medium cumulative quantitative score.

Tier 3: Roadways that are on the South Carolina primary and secondary network AND receive a low cumulative quantitative score. Tier 3 also includes roadways that scored high on the quantitative factors, but are not classified as primary or secondary highways.

Map 9 shows the Strategic Corridor Network in the ACOG study area. The 2040 Statewide Multimodal Plan recommended improvements to the network; however the improvements recommended in the ACOG region were within the MPO areas.

Map 9. Strategic Corridor Network

Appalachian Council of Governments
Strategic Corridor Network



2.3 Freight Network

The movement of goods is critical to the economic health of a state, particularly in one such as South Carolina that has access to major ocean ports, seven regional airports, inland ports, rail lines and highways. The purpose behind the development of South Carolina's first Statewide Freight Plan (SFP) is to satisfy the requirements of MAP-21 legislation and more importantly respond to the critical role of transportation infrastructure and freight movement to the economy of the state.

Similar to the national freight focus, a Strategic Freight Network is identified in the SFP. This system reflects the roadways, railroads, and other transportation infrastructure needed for the efficient movement of goods in to, out of, and through SC. The identification of a Strategic Freight Network in South Carolina assists the state in identifying its critical rural freight corridors and helps SCDOT justify the inclusion of significant corridors in the National Freight Network. The process of identifying this network in South Carolina can support SCDOT in making prioritization decisions regarding investments in transportation infrastructure across the state and can inform SCDOT of what roadway corridors, in addition to those included in the National Freight Network, need particular attention to support efficient and safe goods movement. The two major freight networks in the ACOG region are highways and rail.

2.3.1 Highway

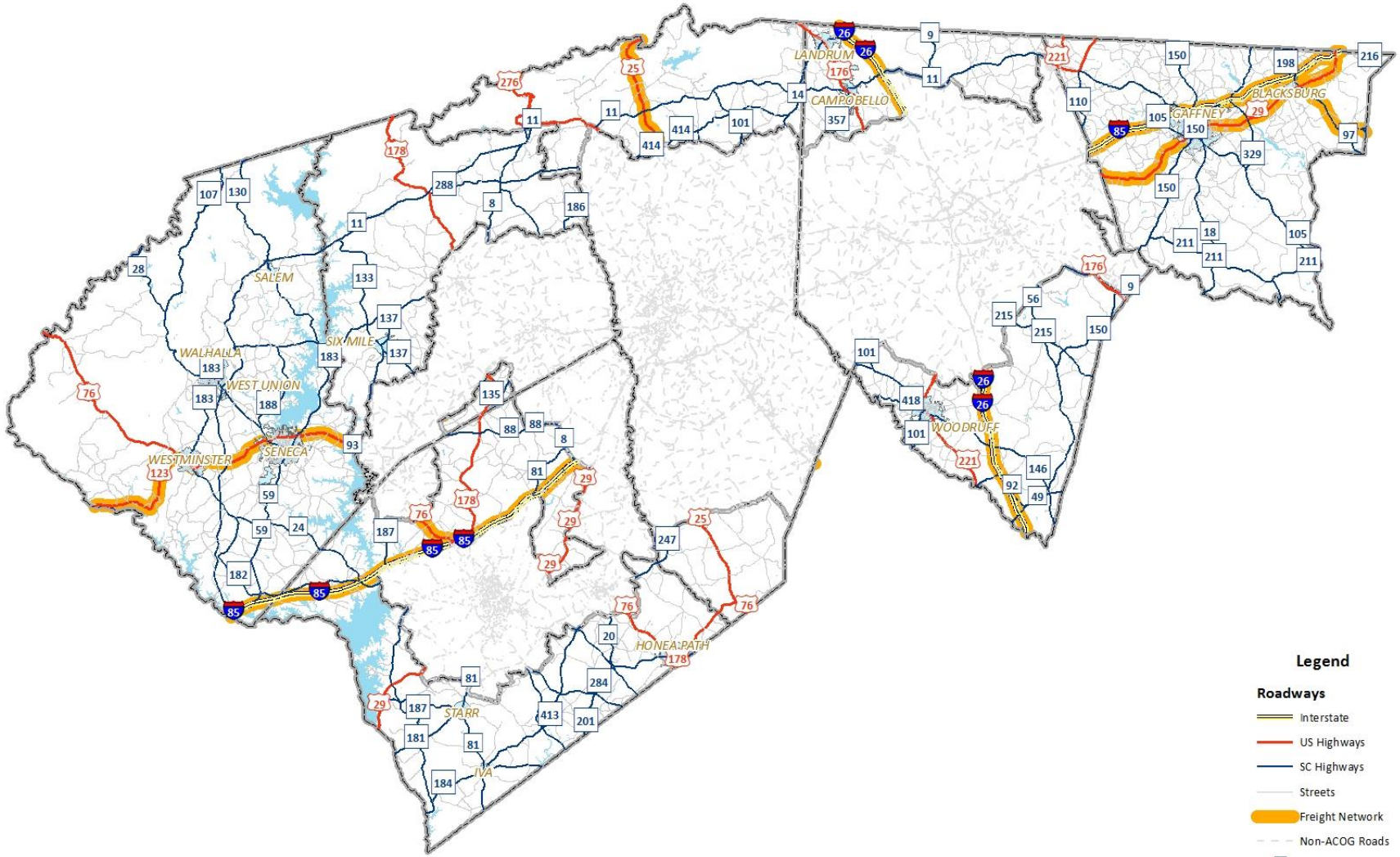
Highway goods movement is a cornerstone to the national freight transportation system. Highway, or "trucking", transports 70 percent of all the tonnage in the U.S. This takes place as "over-the-road" or short to long distance truck trips and "final mile" or pick-up and delivery movements. The dominance of the mode is derived through access and availability. Except where shippers or receivers have constructed facilities with immediate access to rail, water, or air assets, trucks serve as a connector between the alternative mode and the user or as the single transport mode. **Map 10** shows the Highway Freight Network in the ACOG region.

2.3.2 Rail

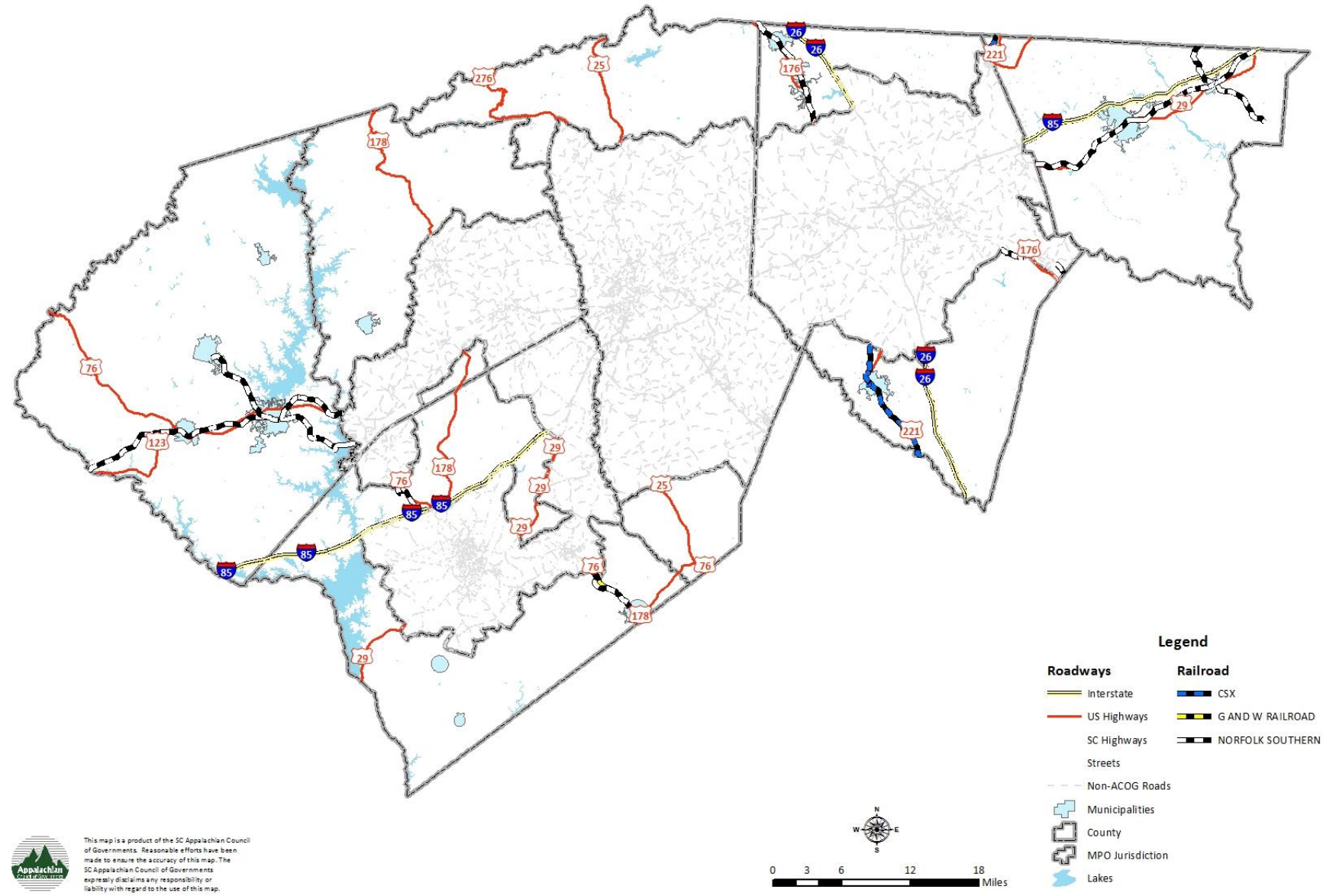
Railroad transport provides a relatively lower cost, higher capacity and low environmental impact landside solution to the long distance movement of goods. Operating a variety of rail car configurations, (e.g. tanker, open top hopper, side load, closed boxcar, flatcar) and the ability to compile trains of over 100 units; rail provides shippers with a low cost solution to moving goods. Due to the nature of the load-unload and overall train operations, rail typically reduces rates or costs to the shipper as the distance traveled increases. With a limited number of locomotives or power units required to transport the significant volume of goods, in comparison to other landside solutions (e.g. truck) the impact on air quality, noise pollution, and other environmental factors is significantly reduced. **Map 11** shows the Rail Network in the ACOG region.

Map 10. ACOG Freight Corridor Network

Appalachian Council of Governments
Statewide Freight Network



Map 11. ACOG Railroad Network

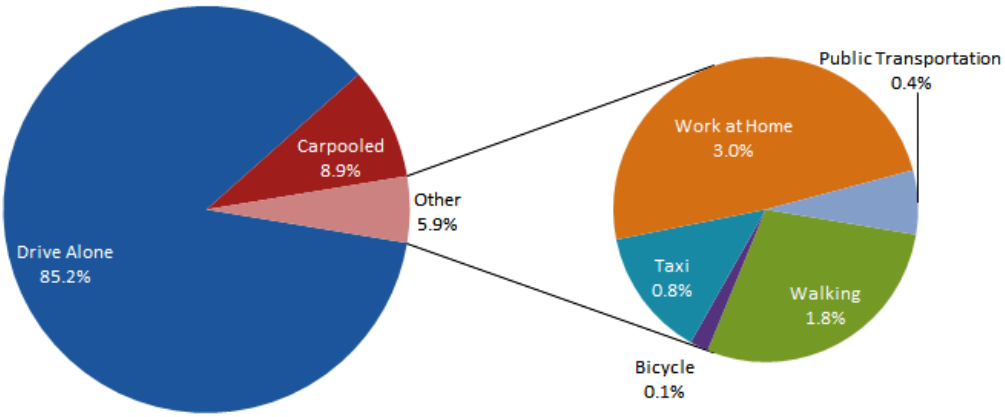


2.4 Trends and Analysis

2.4.1 Mode Choice

The dominant mode of transportation in the Upstate continues to be the automobile. **Figure 5** shows the 2013 census commute data for the ACOG region.

Figure 5. ACOG Region Commute Modes, 2013



More than 85 percent of workers indicated that they drive to work alone; 9 percent carpool and approximately 2 percent walk. Public transit is not a popular option, but given the sprawling nature of the region and the relatively cheap cost of gasoline it is not a surprise. Pickens County residents have the highest percentage of bike and pedestrian commuters at 3.5 percent, while Anderson County residents have the highest percentage of single person auto commute trips at nearly 87 percent. **Table 8** shows commuter data for each county in the region.

Table 8. 2013 Commuter Data

County Name	Travel Mode	Number	Pct
Anderson County	Car, truck, or van: Drove alone	66,147	86.9%
	Car, truck, or van: Carpooled	6,142	8.1%
	Public transportation	355	0.5%
	Walking	860	1.3%
	Bicycle	66	0.1%
	Taxi	728	1.1%
	Work at Home	1455	2.2%

County Name	Travel Mode	Number	Pct
Cherokee County	Car, truck, or van: Drove alone	17,051	84.9%
	Car, truck, or van: Carpooled	2,139	10.6%
	Public transportation	2	0.0%
	Walking	239	1.4%
	Bicycle	0	0.0%
	Taxi	239	1.4%
	Work at Home	273	1.6%
Greenville County	Car, truck, or van: Drove alone	173,025	84.8%
	Car, truck, or van: Carpooled	17,192	8.4%
	Public transportation	595	0.3%
	Walking	3114	1.8%
	Bicycle	173	0.1%
	Taxi	1557	0.9%
	Work at Home	6575	3.8%
Oconee County	Car, truck, or van: Drove alone	22,587	82.9%
	Car, truck, or van: Carpooled	2,900	10.6%
	Public transportation	141	0.5%
	Walking	271	1.2%
	Bicycle	0	0.0%
	Taxi	248	1.1%
	Work at Home	813	3.6%
Pickens County	Car, truck, or van: Drove alone	41,483	85.4%
	Car, truck, or van: Carpooled	3,745	7.7%
	Public transportation	316	0.7%
	Walking	1286	3.1%
	Bicycle	166	0.4%
	Taxi	249	0.6%
	Work at Home	913	2.2%
Spartanburg County	Car, truck, or van: Drove alone	101,332	85.1%
	Car, truck, or van: Carpooled	11,715	9.8%
	Public transportation	344	0.3%
	Walking	1621	1.6%
	Bicycle	101	0.1%
	Taxi	507	0.5%
	Work at Home	2635	2.6%
ACOG Region	Car, truck, or van: Drove alone	421,625	85.2%
	Car, truck, or van: Carpooled	43,833	8.9%
	Public transportation	1,753	0.4%

	Walking	7,391	1.8%
	Bicycle	506	0.1%
	Taxi	3,528	0.8%
	Work at Home	12,663	3.0%

Source: U.S. Bureau of the Census, 2013 Journey to Work Data

2.4.2 APCOG Travel Model Analysis: Current and Future Regional Traffic

The APCOG Regional Travel Demand Model was designed to support corridor planning, project-level travel forecasts, air quality conformity (cost-benefit measures), air quality analysis (pollution of HC, NOX, CO), environmental documents, freight planning, economic development studies, toll studies, public transportation planning, land use and zoning scenario planning, evacuation scenario planning, and many other land use and transportation planning activities.

When simplified, the basic purpose of the APCOG Model is to replicate traffic conditions in the ACOG region on an average weekday, in base year 2010 and forecast year 2040.

Maps 12 and 13 show the 2010 APCOG Existing + Committed Model Network and the corresponding Level of Service, which takes into account current roadway attributes (e.g. speed limit, number of lanes, etc.) as well as any fiscally constrained projects programmed in the region. In order to calibrate the model for accuracy, 2010 traffic counts are used to compare and contrast travel model outputs. Once the 2010 model is calibrated, future year models can give planners a quantitative look at future traffic conditions, assuming a continuation of existing trends. **Maps 14 and 15** show the 2040 APCOG Existing + Committed Model Network and corresponding Level of Service.

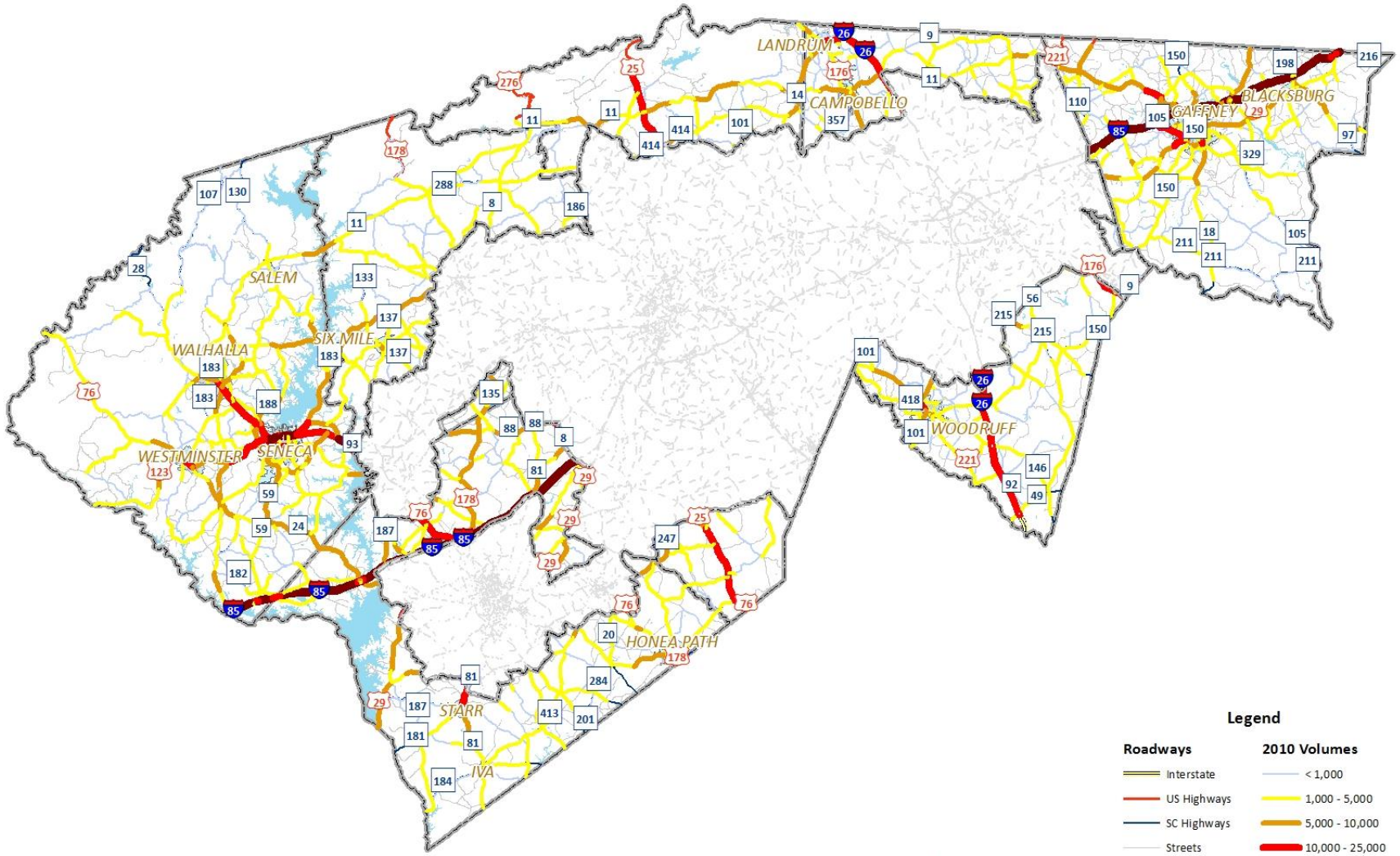
Table 9 summarizes the lanes miles and Level of Service for model years 2010 and 2040. According to the 2010 Model, the vast majority of the roadway segments in the rural area are operating at Level of Service A. This trend continues in 2040, with a migration of some lane miles from LOS A to LOS B and LOS C. In both model years, nearly 100% of the model network operates at or below capacity (LOS D).

Table 9. Analysis of Regional Level of Service, 2010 & 2040

	2010 Model		2040 Model	
LOS	**Lane Miles**	**Percent**	**Lane Miles**	**Percent**
A	1,865	80.6%	1,555	67.3%
B	360	15.6%	530	22.9%
C	86	3.7%	197	8.5%
D	0	0%	27	1.1%
E	0	0%	2	0.1%
F	1	0.1%	1	0.1%

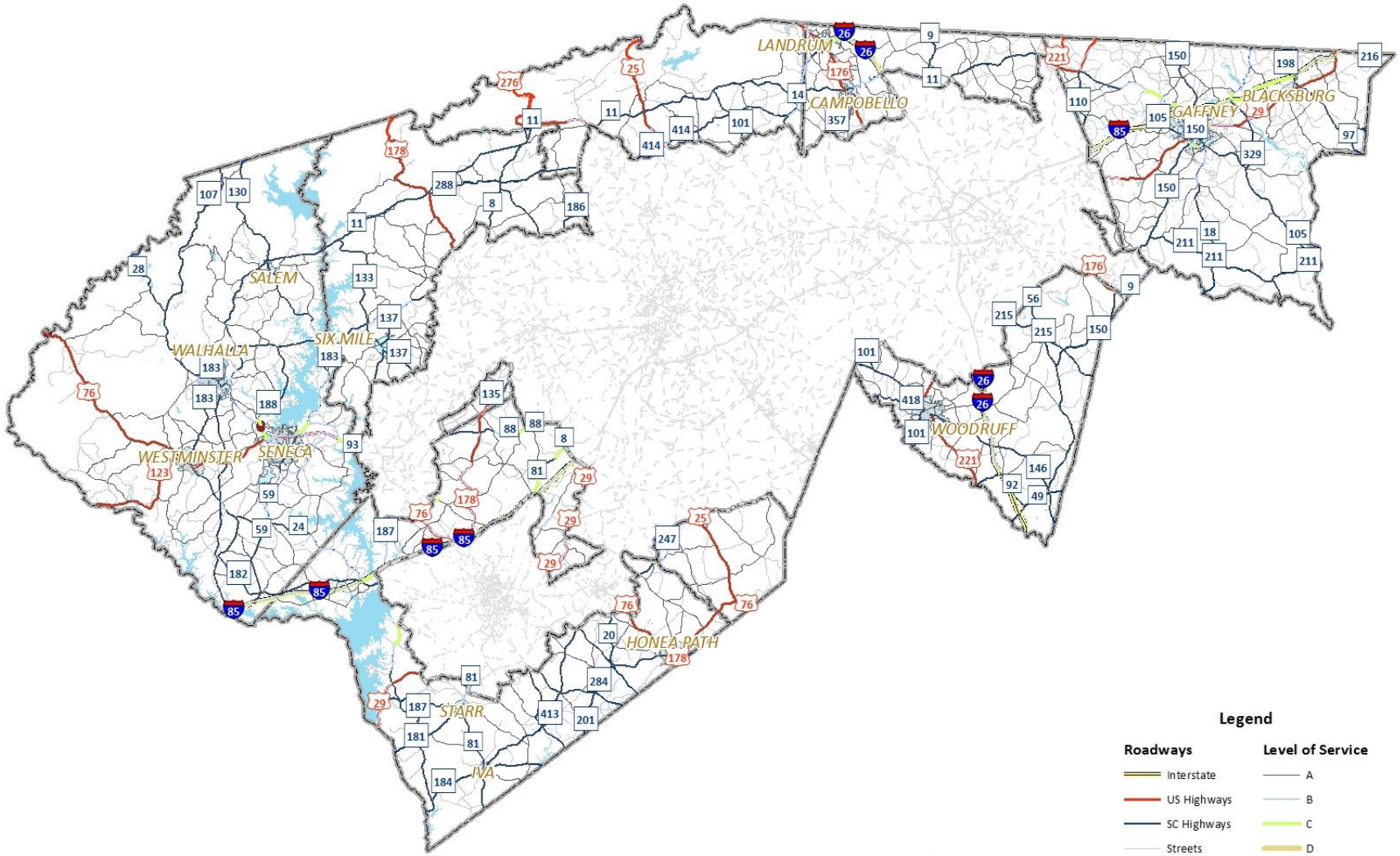
Map 12. 2010 APCOG E+C Model Network

Appalachian Council of Governments
2010 APCOG E+C Model Network



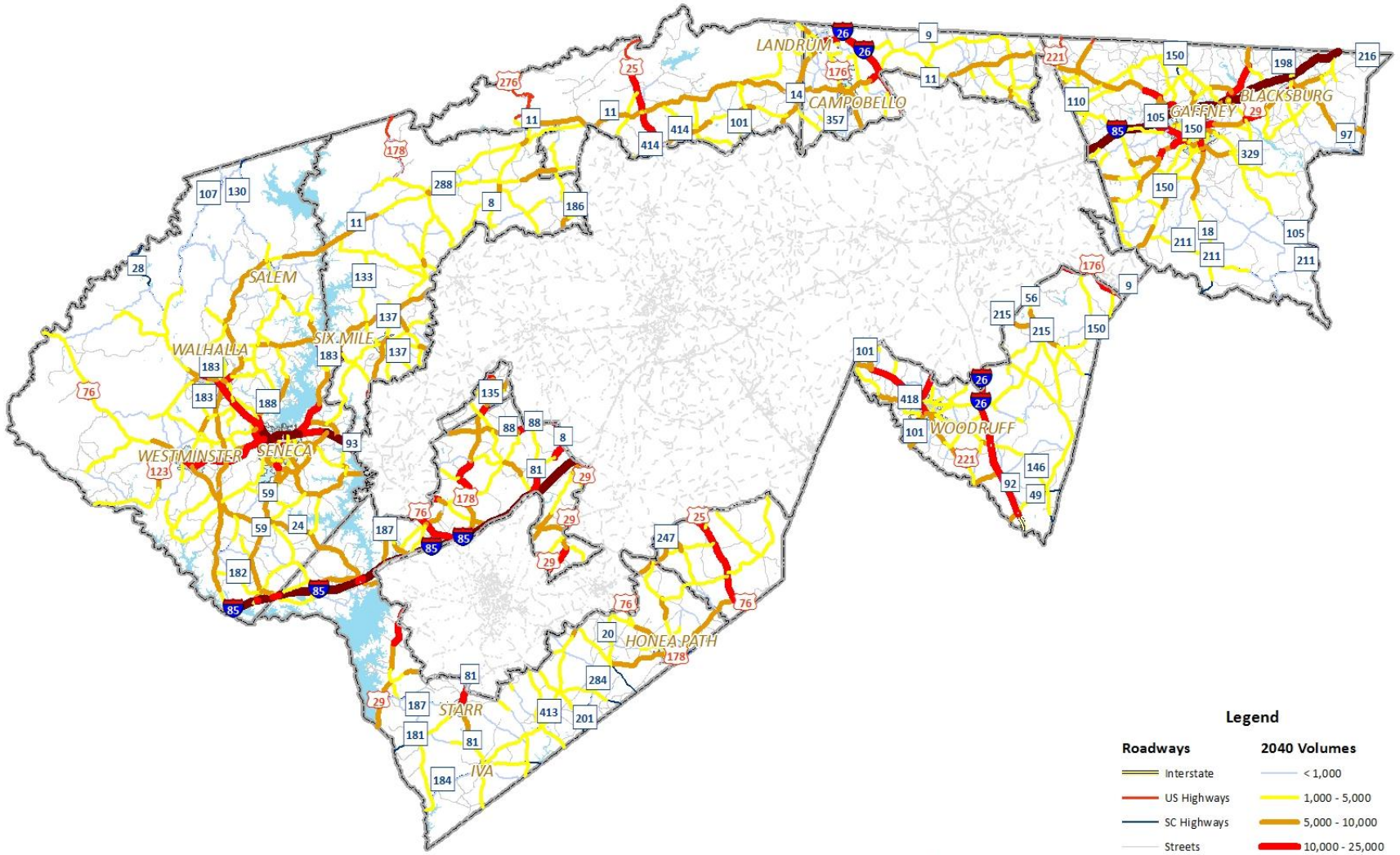
Map 13. 2010 APCOG E+C Level of Service

Appalachian Council of Governments
2010 APCOG E+C Level of Service



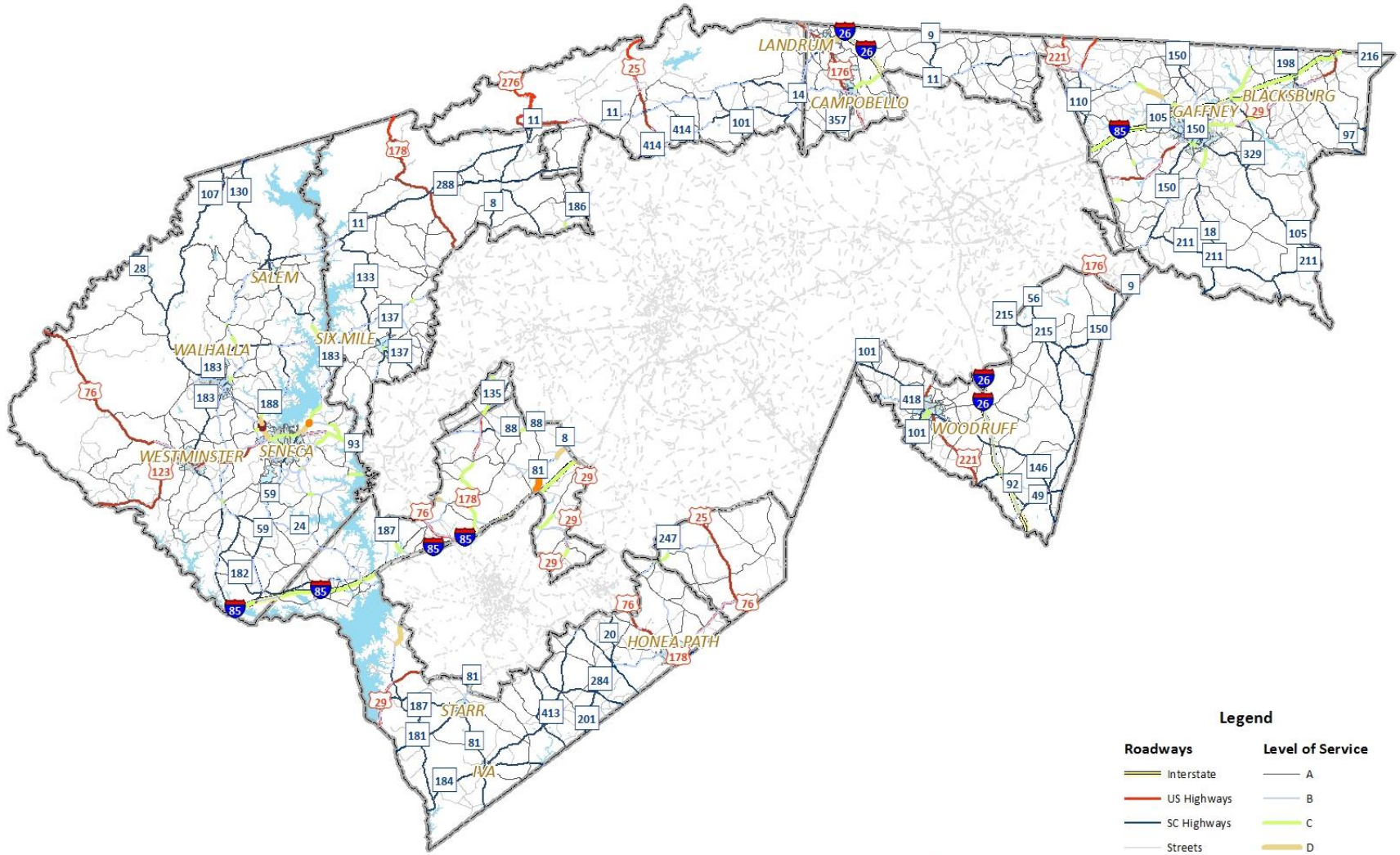
Map 14. 2040 APCOG E+C Model Network

Appalachian Council of Governments
2040 APCOG E+C Model Network



Map 15. 2040 APCOG E+C Level of Service

Appalachian Council of Governments
2040 APCOG E+C Level of Service



2.5 Identified Needs

As the ACOG region continues to grow, roadway capacity projects will continue to be a staple in the MPO areas. However, as the travel model analysis indicates, capacity is not as important of an issue in the rural areas. The greatest needs identified consist of projects that mitigate intersection safety issues, roadway quality issues, and other function and safety issues.

2.5.1 Priority Projects

The ACOG Transportation Committee began the process of updating the list of candidate projects in early 2016 by evaluating the condition of the existing transportation network. The deferred maintenance approach employed by SCDOT for the last few decades combined with the State Legislature's unsuccessful attempt to pass a bill to provide long-term financial support to date its transportation program weighed heavily on the committee as did regular reports from the media about the impending failure of the system.

Each county identified its highest priority projects based on field inspections, SCDOT priority lists, and interviews with key staff. To support this fieldwork, ACOG staff prepared maps and trend information discussed in the "Demographic Trends and Projections" and "Roadway Network" sections of this plan. Additionally, data from the Statewide Travel Demand Model was used to validate assumptions. Additionally, SCDOT's 2040 Multimodal Transportation Plan was referenced as a policy guide and strategic tool for maximizing consistency and minimizing conflicts.

The priority for the 5-year lifecycle of the LRTP is to refocus our attention and resources, and to take a practical approach to addressing the needs of the transportation system by allocating future guideshare funds towards intersection improvement projects that will help reduce congestion and system upgrades will improve safety measures.

2.5.2 Project Recommendations

All transportation improvement projects will be evaluated and ranked. Those projects that are required to be rated and ranked in accordance with Act 114 will be done by SCDOT and all other projects that fall outside of Act 114 will be rated and ranked by guidelines established by the ACOG Transportation Committee.

The transportation improvement recommendations within this plan will be broken out in two categories: Priority Projects (fiscally constrained) and Potential Projects (unfunded). Priority Projects listed in the LRTP will be eligible for programming in the Transportation Improvement Program (TIP) when guideshare funds are available. Once approved by the ACOG Board, the project will move to the SCDOT Commission to become part of the State Transportation Improvement Program (STIP). Unfunded projects can be shifted onto the priority projects list if the ranking of a project changes and funding is available. The LRTP is meant to be a living document. Therefore, prior to the next update of the plan (5 years from the approval date), identification of additional transportation projects can be submitted by letter to the ACOG. The identified transportation improvement project(s) will be provided to the ACOG Transportation Committee to determine the appropriate action needed to ensure proper consideration is given to the new project(s).

Map 16 shows the projects selected for long-range funding priority. **Maps 17-22** depict the projects on a county-by-county basis. **Table 10** lists the regional projects by Map ID, which can be used on the County maps to locate each project. These projects are further split into the "Priority Projects" and "Potential Projects" categories.

Table 10. Proposed LRTP Projects

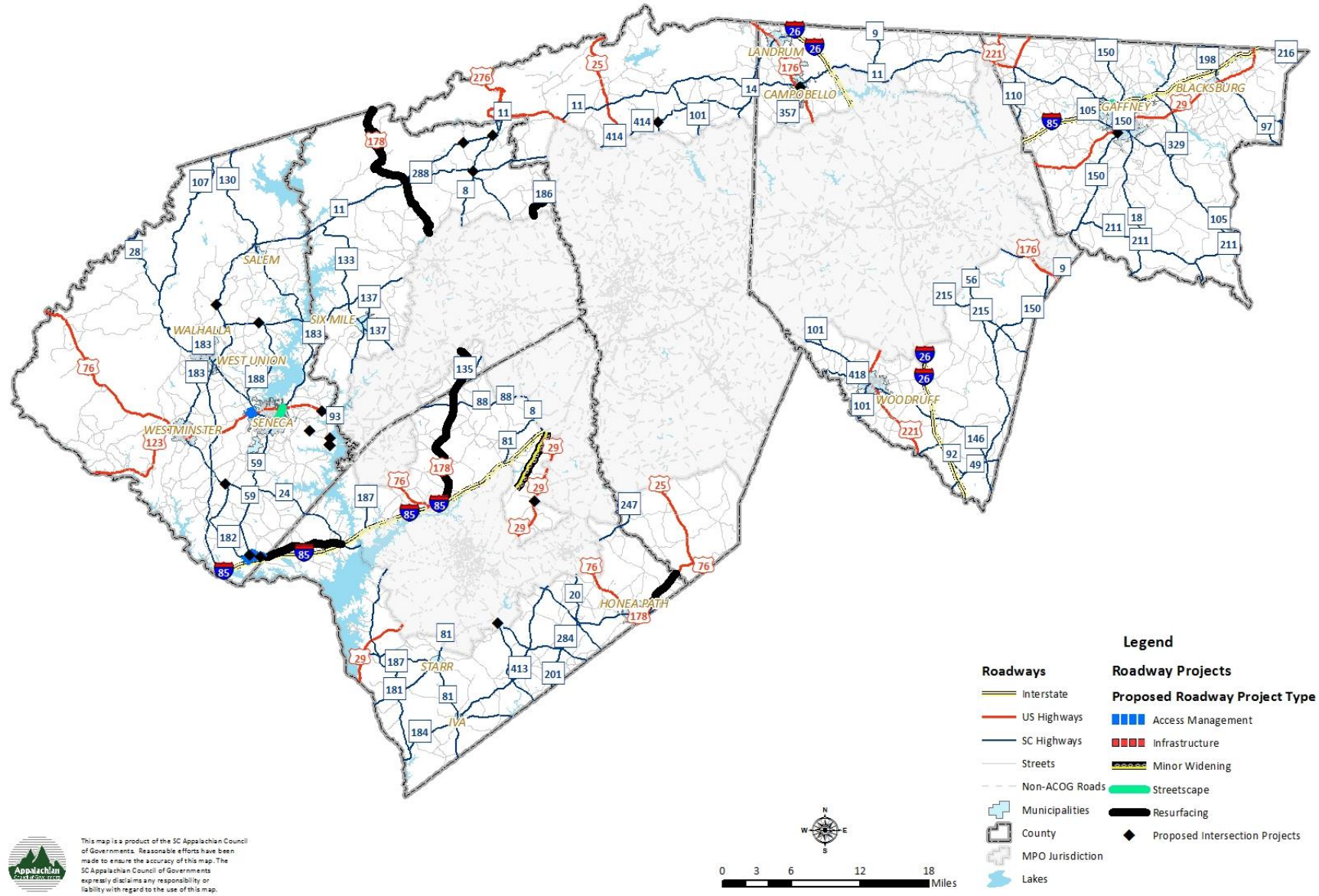
PRIORITY PROJECTS (FISCALLY CONSTRAINED)				
Map No.	**Location**	**Type**	**Roadway Name or Cross Streets**	**Project Description**
1	Anderson County	Intersection	SC 28 (Abbeville Hwy) and SC 185	Realign intersection from Y to a T
2	Anderson County	Intersection	US 29 and S-146/331/Jockey Lot	Close Segment, realign routes, consolidate d-ways, signalize
3	Anderson County	Intersection	Dalrymple Road and Scotts Bridge Road	Realign dangerous intersection
4	Anderson County	Intersection	Welpine Road and US 76	Realign dangerous intersection
6	Cherokee County	Intersection	S Limestone St and E O'Neal St / SC 150 and O'Neal St	Projects to be completed simultaneously; peanut roundabout a possibility
10	Oconee County	Intersection	Clemson Blvd and Davis Creek Rd	Lower grade of Davis Creek Rd., modify ingress/egress for industrial complex
12	Oconee County	Intersection	J P Stevens Rd and W Cherry Rd	Lower road grades; safety improvements
13	Oconee County	Intersection	J P Stevens Rd and Martin Creek Rd	Safety improvements
16	Oconee County	Intersection	SC 59/SC 182/SC 243	Intersection Improvement (Yoders)
18	Oconee County	Intersection	SC 24 at SC 182/S-116 (Oak Creek Road)	Improves intersection with new geometry and turn lanes
24	Spartanburg County	Intersection	US 176 and SC 357	Possible relocation of SC 357 to improve sight line and turn lane additions with traffic control changes
25	Spartanburg County	Intersection	I-26 at SC 14 (EB/WB ramps)	Geometry changes for better sight lines and/or traffic control. Possible traffic circles at ramps
27	Anderson County	Resurfacing	US 178	From Pickens County line to near S-4-29 (0.0 to 9.8)
34	Pickens County	Resurfacing	US 178	GPATS Boundary to Anderson County (3.9 mi)
37	Pickens County	Intersection	SC 135 and US 178	Realign intersection from Y to a T; correct geometric and site distance issues

POTENTIAL PROJECTS (UNFUNDED)				
Map No.	**Location**	**Type**	**Roadway Name or Cross Streets**	**Project Description**
5	Anderson County	Intersection	SC 247 and Murphy Road/Shady Grove Church Road	Realign dangerous intersection
7	City of Gaffney	Intersection	SC 18 (W Frederick St) and US 29 (Granard St)	Widen radius, improve performance for trucks
8	City of Gaffney	Intersection	Buford St and US 29 (Granard St)	Widen radius, improve performance for trucks
9	Greenville County	Intersection	SC 414, SC 253 and Tigerville Road (S-117)	Turn lanes, better intersection performance (N Greenville Univ); Improve pedestrian access with sidewalks and c&g from SC 414 to Tigerville Elementary
11	Oconee County	Intersection	Shiloh Rd and Nebo Church Rd	Realign offset intersection; eliminate Runway Protection Zone encroachment
13	Oconee County	Intersection	J P Stevens Rd and Martin Creek Rd	Safety improvements
14	Oconee County	Intersection	J P Stevens Rd and Shiloh Rd	Safety improvements
15	Oconee County	Intersection	SC 243/182 (Fairplay Blvd) at Whitfield Rd	North of I-85 interchange in Fairplay; improve geometry from scissor intersection to standard intersection
17	Oconee County	Intersection	SC 11 at Pickett Post Road	near new Walhalla High School; realign intersection and possible turn lane on SC 11
19	Oconee County	Intersection	SC 183 at Old Station Road (S-223)	Improves intersection with new geometry and turn lanes
20	Pickens County	Intersection	SC 8 and SC 11	Both NB and SB approaches; correct intersection geometry, especially north going to Caesar's Head
21	Pickens County	Intersection	SC 11 and New Hope Road	Sight distance
22	Pickens County	Intersection	SC 11 and US 178	Possible signalization
23	Pickens County	Intersection	SC 288 and SC 8	Possible signalization
26	City of Gaffney	Access Management	SC 11 Corridor	Twin Bridge Rd to US 29 (Granard St); Pedestrian improvements and landscaping
28	Anderson County	Resurfacing	US 76	From SC 252 to Greenville County line

POTENTIAL PROJECTS (UNFUNDED) CONT…				
Map No.	**Location**	**Type**	**Roadway Name or Cross Streets**	**Project Description**
29	Anderson County	Resurfacing	SC 243	From SC 24 to Oconee County line
30	City of Seneca	Access Management	SC 130 Corridor Phase 1	N Cherry to US 123; SC 130 road diet, landscaping, pedestrian improvements
31	Oconee County	Access Management	Sandifer Blvd at Oconee Medical Center	SC 59 to Sheep Farm Road; Access management, signal timing along corridor
32	Oconee County	Access Management	Fairplay Road Corridor	S-111 to S-23; Several intersection improvements and access management
33	Pickens County	Resurfacing	US 178	Pickens City Limit to NC State Line (16.2 mi)
35	Pickens County	Resurfacing	SC 186	GPATS Boundary to Greenville County (2.5 mi)
36	Anderson County	Resurfacing	S-76 (Midway Road)	SC 8 to L-570 Long Road; Widen very narrow road: add shoulders, set-back ditches; need ROW or permissions

Map 16. ACOG Proposed LRTP Projects

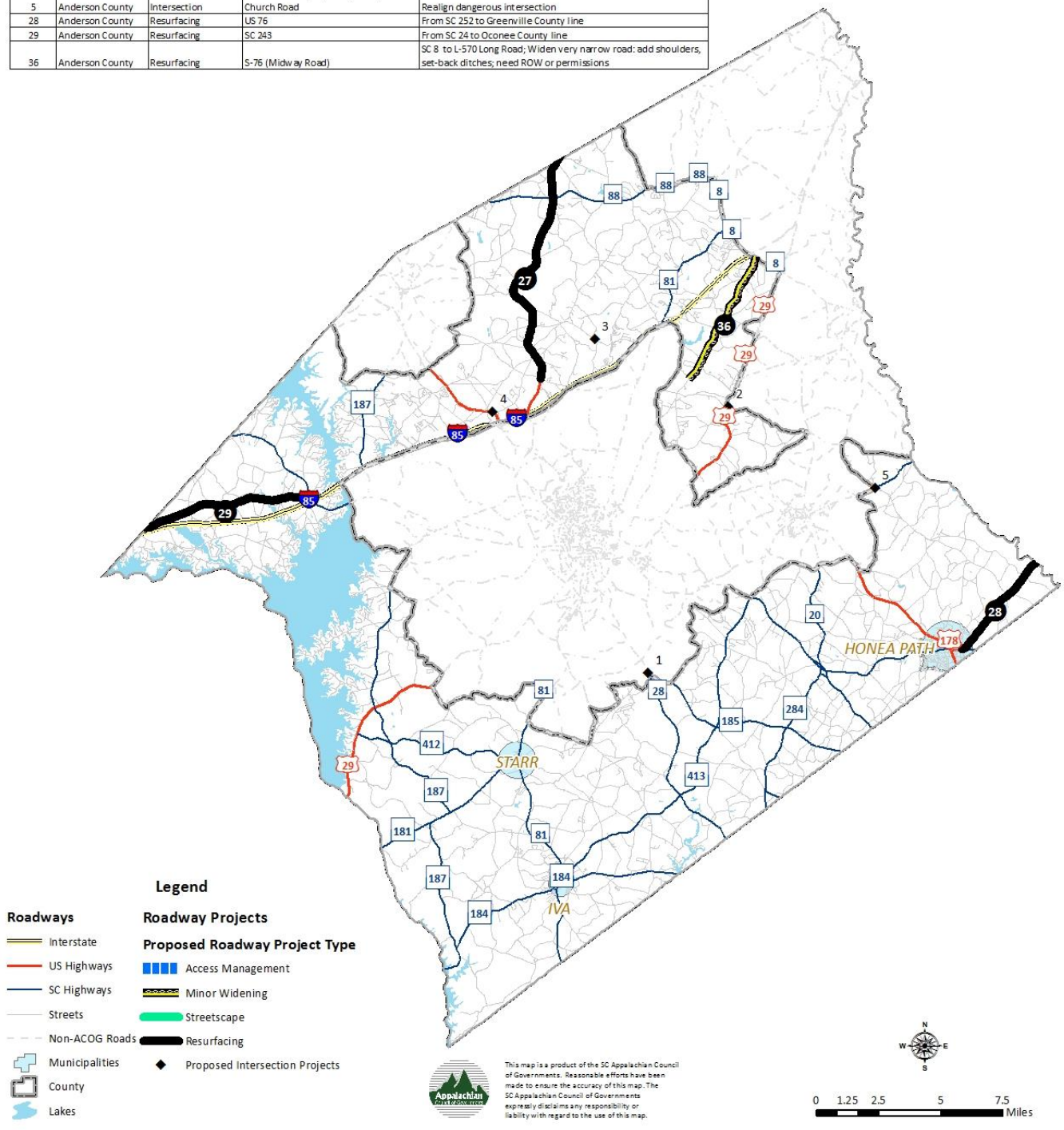
Appalachian Council of Governments
Proposed Roadway and Intersection Projects



Map 17. Anderson County Proposed LRTP Projects

Appalachian Council of Governments
Proposed Roadway and Intersection Projects
Anderson County

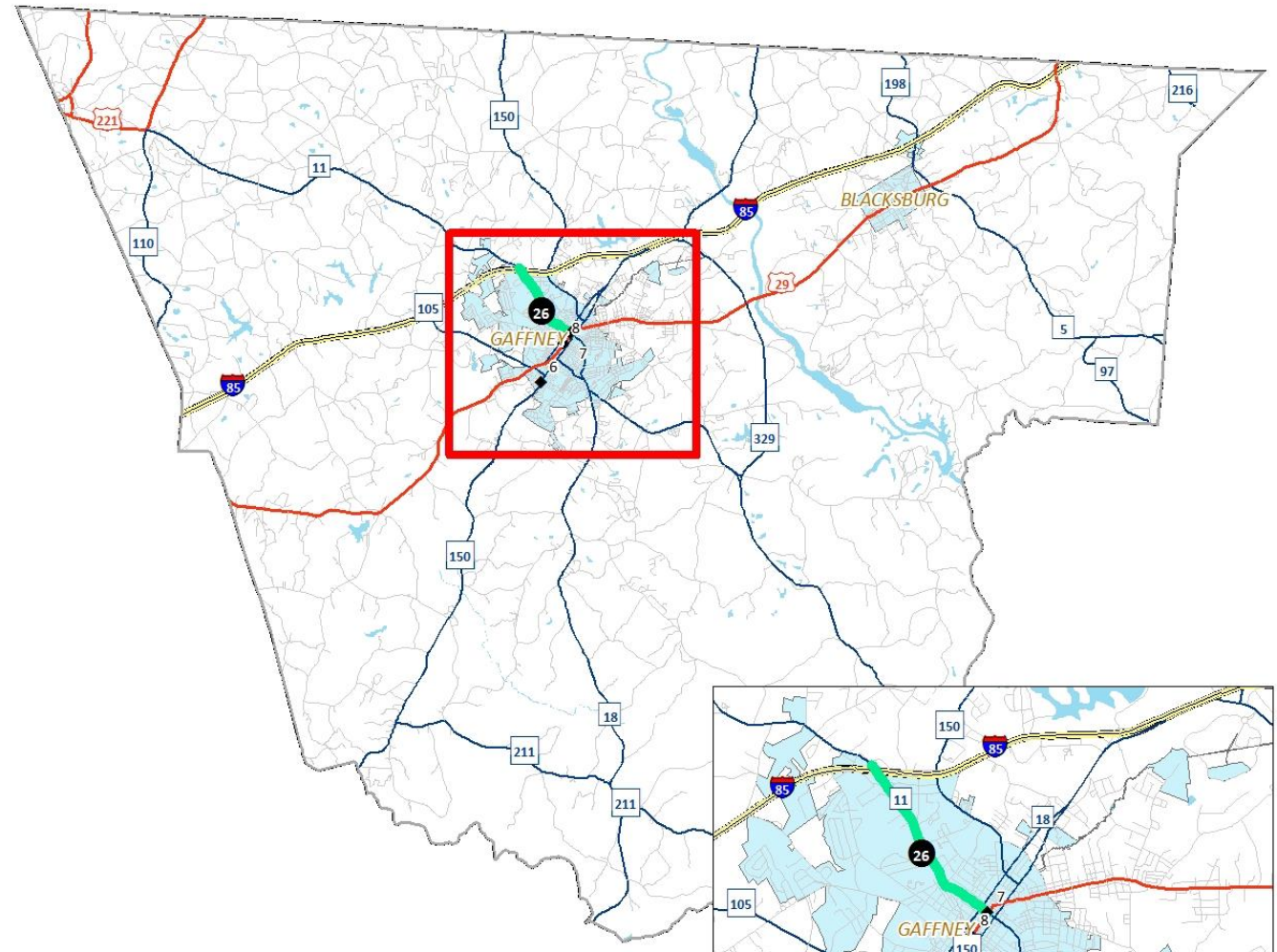
PRIORITY PROJECTS (FISCALLY CONSTRAINED)				
Map No.	**Location**	**Type**	**Roadway Name or Cross Streets**	**Project Description**
1	Anderson County	Intersection	SC 28 (Abbeville Hwy) and SC 185	Realign intersection from Y to a T
2	Anderson County	Intersection	US 29 and S-146/331/Jockey Lot	Close Segment, realign routes, consolidate d-ways, signalize
3	Anderson County	Intersection	Dalrymple Road and Scotts Bridge Road	Realign dangerous intersection
4	Anderson County	Intersection	Welpine Road and US 76	Realign dangerous intersection
27	Anderson County	Resurfacing	US 178	From Pickens County line to near S-4-29 (0.0 to 9.8)
POTENTIAL PROJECTS (FOR FUTURE CONSIDERATION)				
Map No.	**Location**	**Type**	**Roadway Name or Cross Streets**	**Project Description**
5	Anderson County	Intersection	SC 247 and Murphy Road/Shady Grove Church Road	Realign dangerous intersection
28	Anderson County	Resurfacing	US 76	From SC 252 to Greenville County line
29	Anderson County	Resurfacing	SC 243	From SC 24 to Oconee County line
36	Anderson County	Resurfacing	S-76 (Midway Road)	SC 8 to L-570 Long Road; Widen very narrow road: add shoulders, set-back ditches; need ROW or permissions

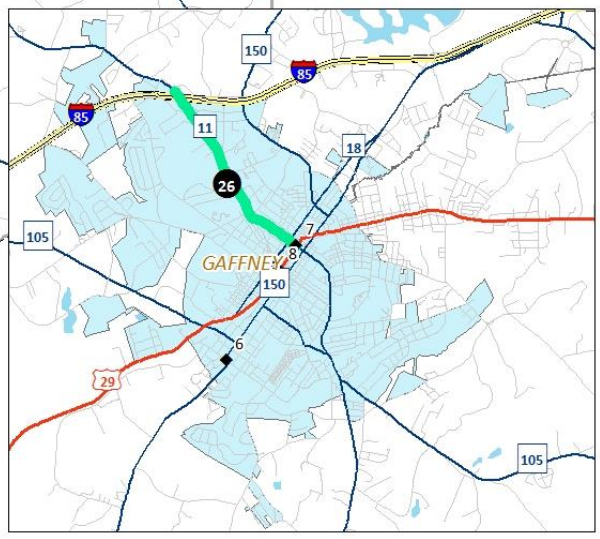


Map 18. Cherokee County Proposed LRTP Projects

Appalachian Council of Governments
Proposed Roadway and Intersection Projects
Cherokee County

PRIORITY PROJECTS (FISCALLY CONSTRAINED)				
Map No.	Location	Type	Roadway Name or Cross Streets	Project Description
6	Cherokee County	Intersection	S Limestone St and E O'Neal St / SC 150 and O'Neal St	Projects to be completed simultaneously; peanut roundabout a possibility
POTENTIAL PROJECTS (FOR FUTURE CONSIDERATION)				
Map No.	Location	Type	Roadway Name or Cross Streets	Project Description
7	City of Gaffney	Intersection	SC 18 (W Frederick St) and US 29 (Granard St)	Widen radius, improve performance for trucks
8	City of Gaffney	Intersection	Buford St and US 29 (Granard St)	Widen radius, improve performance for trucks
26	City of Gaffney	Access Management	SC 11 Corridor	Twin Bridge Rd to US 29 (Granard St); Pedestrian improvements and landscaping





Legend

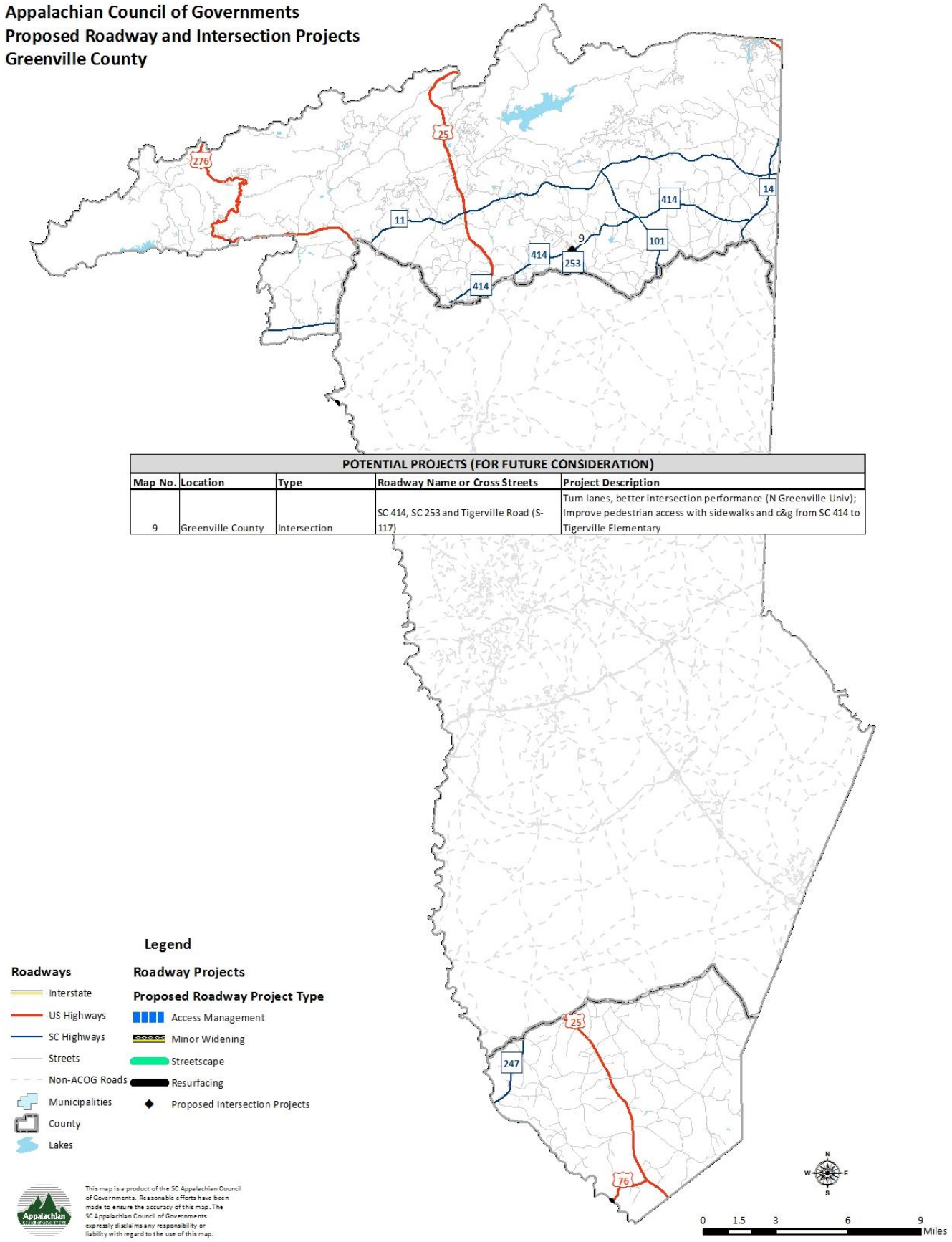
Roadways
- Interstate
- US Highways
- SC Highways
- Streets
- Non-ACOG Roads
- Municipalities
- County
- Lakes

Roadway Projects

Proposed Roadway Project Type
- Access Management
- Minor Widening
- Streetscape
- Resurfacing
- Proposed Intersection Projects

0 1 2 4 6 Miles

Map 19. Greenville County Proposed LRTP Projects

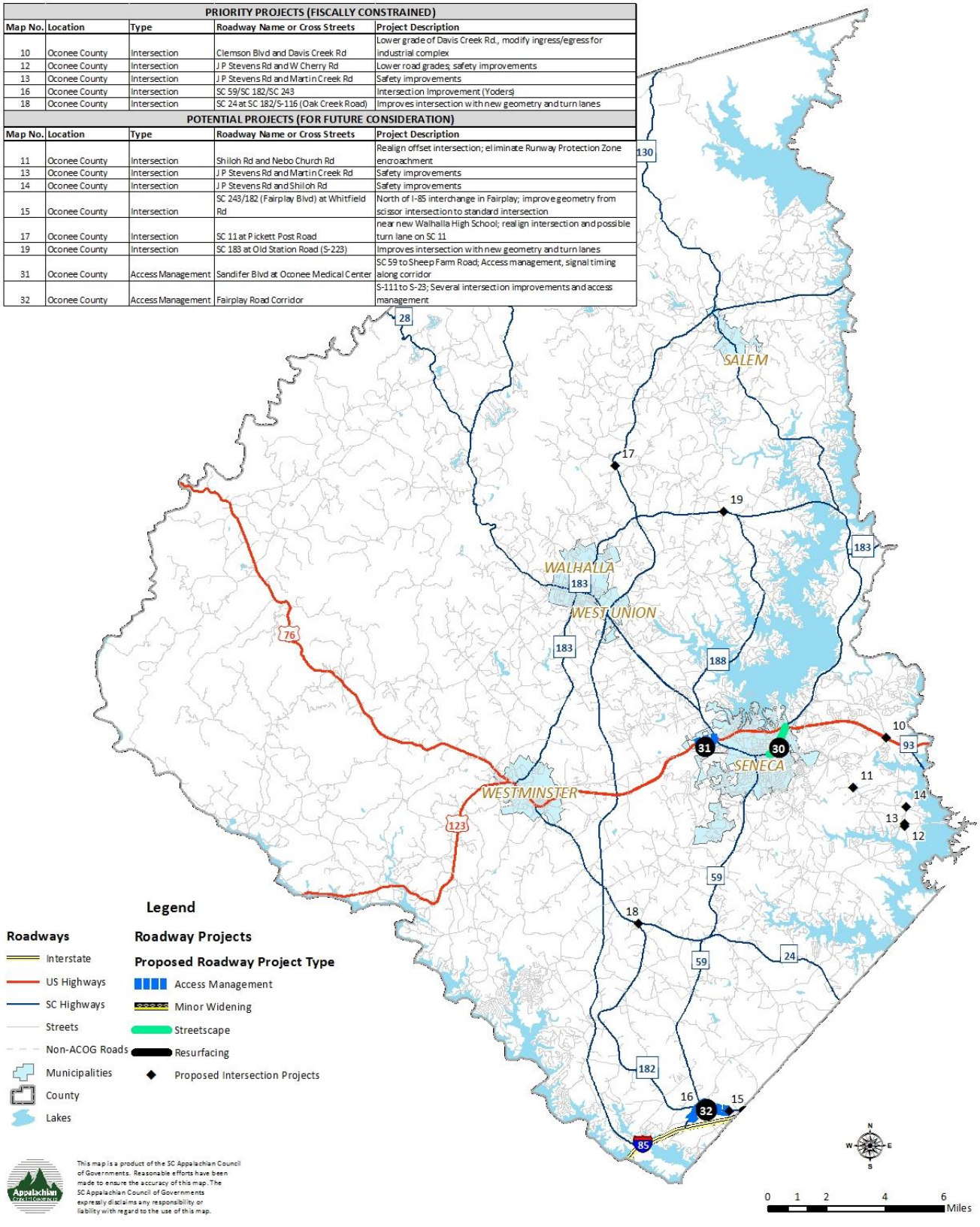


POTENTIAL PROJECTS (FOR FUTURE CONSIDERATION)				
Map No.	**Location**	**Type**	**Roadway Name or Cross Streets**	**Project Description**
9	Greenville County	Intersection	SC 414, SC 253 and Tigerville Road (S-117)	Turn lanes, better intersection performance (N Greenville Univ); Improve pedestrian access with sidewalks and c&g from SC 414 to Tigerville Elementary

Map 20. Oconee County Proposed LRTP Projects

Appalachian Council of Governments
Proposed Roadway and Intersection Projects
Oconee County

PRIORITY PROJECTS (FISCALLY CONSTRAINED)				
Map No.	**Location**	**Type**	**Roadway Name or Cross Streets**	**Project Description**
10	Oconee County	Intersection	Clemson Blvd and Davis Creek Rd	Lower grade of Davis Creek Rd., modify ingress/egress for industrial complex
12	Oconee County	Intersection	J P Stevens Rd and W Cherry Rd	Lower road grades, safety improvements
13	Oconee County	Intersection	J P Stevens Rd and Martin Creek Rd	Safety improvements
16	Oconee County	Intersection	SC 59/SC 182/SC 243	Intersection Improvement (Yoders)
18	Oconee County	Intersection	SC 24 at SC 182/S-116 (Oak Creek Road)	Improves intersection with new geometry and turn lanes
POTENTIAL PROJECTS (FOR FUTURE CONSIDERATION)				
Map No.	**Location**	**Type**	**Roadway Name or Cross Streets**	**Project Description**
11	Oconee County	Intersection	Shiloh Rd and Nebo Church Rd	Realign offset intersection; eliminate Runway Protection Zone encroachment
13	Oconee County	Intersection	J P Stevens Rd and Martin Creek Rd	Safety improvements
14	Oconee County	Intersection	J P Stevens Rd and Shiloh Rd	Safety improvements
15	Oconee County	Intersection	SC 243/182 (Fairplay Blvd) at Whitfield Rd	North of I-85 interchange in Fairplay; improve geometry from scissor intersection to standard intersection
17	Oconee County	Intersection	SC 11 at Pickett Post Road	near new Walhalla High School; realign intersection and possible turn lane on SC 11
19	Oconee County	Intersection	SC 183 at Old Station Road (S-223)	Improves intersection with new geometry and turn lanes
31	Oconee County	Access Management	Sandifer Blvd at Oconee Medical Center	SC 59 to Sheep Farm Road; Access management, signal timing along corridor
32	Oconee County	Access Management	Fairplay Road Corridor	S-111 to S-23; Several intersection improvements and access management

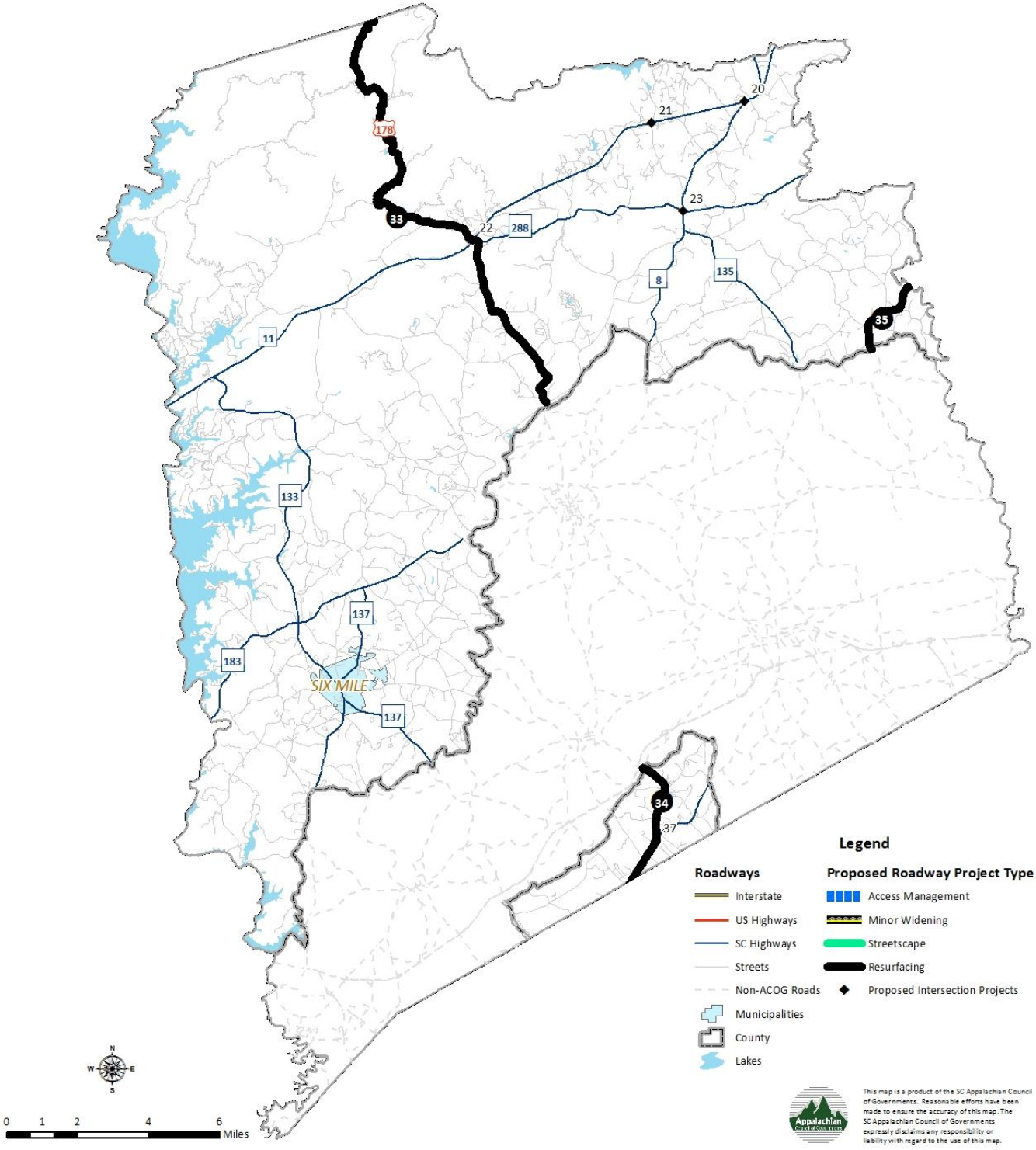


This map is a product of the SC Appalachian Council of Governments. Reasonable efforts have been made to ensure the accuracy of this map. The SC Appalachian Council of Governments expressly disclaims any responsibility or liability with regard to the use of this map.

Map 21. Pickens County Proposed LRTP Projects

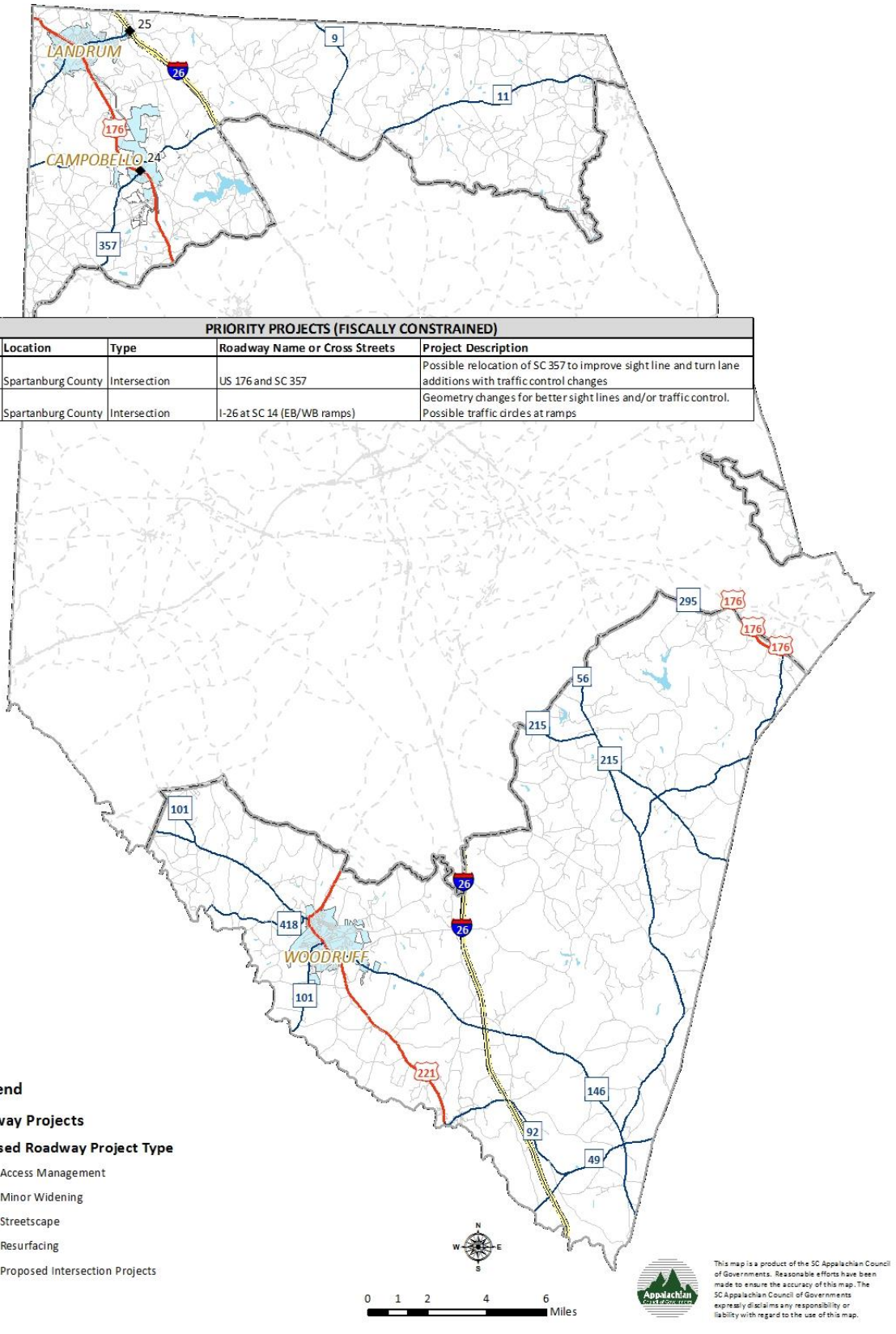
Appalachian Council of Governments
Proposed Roadway and Intersection Projects
Pickens County

PRIORITY PROJECTS (FISCALLY CONSTRAINED)				
Map No.	Location	Type	Roadway Name or Cross Streets	Project Description
34	Pickens County	Resurfacing	US 178	GPATS Boundary to Anderson County (3.9 mi)
37	Pickens County	Intersection	SC 135 and US 178	Realign intersection from Y to aT; correct geometricand site distance issues
POTENTIAL PROJECTS (FOR FUTURE CONSIDERATION)				
Map No.	Location	Type	Roadway Name or Cross Streets	Project Description
20	Pickens County	Intersection	SC 8 and SC 11	Both NB and SB approaches; correct intersection geometry, especially north going to Caesar's Head
21	Pickens County	Intersection	SC 11 and New Hope Road	Sight distance
22	Pickens County	Intersection	SC 11 and US 178	Possible signalizaton
23	Pickens County	Intersection	SC 288 and SC 8	Possible signalizaton
33	Pickens County	Resurfacing	US 178	Pickens City Limit to NC State Line (16.2 mi)
35	Pickens County	Resurfacing	SC 186	GPATS Boundary to Greenville County (2.5 mi)



Map 22. Spartanburg County Proposed LRTP Projects

Appalachian Council of Governments
Potential Roadway and Intersection Projects
Spartanburg County



PRIORITY PROJECTS (FISCALLY CONSTRAINED)				
Map No.	**Location**	**Type**	**Roadway Name or Cross Streets**	**Project Description**
24	Spartanburg County	Intersection	US 176 and SC 357	Possible relocation of SC 357 to improve sight line and turn lane additions with traffic control changes
25	Spartanburg County	Intersection	I-26 at SC 14 (EB/WB ramps)	Geometry changes for better sight lines and/or traffic control. Possible traffic circles at ramps

3 Intersections and Safety

3.1 Existing Conditions

A safe and efficient transportation system is critical to the livelihood of a community. The transportation network facilitates the internal day-to-day functioning of the community and provides access to and from the outside world whereby goods and services are exported and imported. Safety concerns are a major issue on roads in rural areas. Low traffic volumes encourage speeding along some routes and narrow, two-lane roads without paved shoulders can leave little room for error. Furthermore, many rural roads are simply paved dirt roads, and the resulting intersections are often angled in ways that are dangerous due to limited visibility of oncoming traffic.

The need for safety and intersection improvements in rural areas is so widespread, that it is not practical to attempt to address all shortcomings at once. Careful review and prioritization of projects is needed to ensure that resources are used most effectively. An important part of prioritizing improvement projects is identifying opportunities when road widening occurs in a rural area. The new design can often be adjusted to upgrade the safety of the road and its intersections at the same time. However, many rural roads have safety issues but do not need to be or cannot be widened. Fortunately there are a number of options for addressing safety concerns on rural roads. These include:

- *Widening and paving shoulders*. Many rural roads are narrow and have very narrow or no paved shoulders, and frequently grassed shoulders slope steeply down into drainage ditches. This means that drivers veering even slightly out of a lane may lose control. Stabilizing and paving shoulders can provide a needed buffer for travelers on the road. As an added benefit, these can be designed into bike/ pedestrian facilities. Rural accidents involving nonmotorists have extremely high fatality rates due to increased speeds and limited visibility. Providing them facilities outside of the travel lanes can be very beneficial in preventing these accidents.

- *Realigning intersections and curves*. Rural roads are frequently winding and feature dangerous intersections. This can lead to drivers losing control of their vehicle, or failing to yield to oncoming traffic. Redesigning and straightening curves, as well as realigning intersections, can address problem locations.

- *Traffic calming*. Traffic calming can be defined as a combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users. The SCDOT outlines a range of options for traffic calming in their "Traffic Calming Guidelines" publication, including but not limited to speed humps, raised crosswalks and landscaped medians, traffic circles, physically reducing lane widths, and road closures. These guidelines are generally applied to low volume streets with a low amount of through traffic.

- *Other intersection improvements*. Review of the situation at key intersections can result in other suggested improvements, based on the problems that exist there. This can frequently overlap

with other types of improvements, as described in the other chapters about signalization and maintenance.

- *Lowering speed limits*. This low-cost measure can help reduce speeding, and therefore reduce the number of severe accidents on the road. However, enforcement is key in ensuring speed limits are obeyed.

- *Median barriers*. Most prominently, this can be seen in the SCDOT's interstate cable barriers initiative. In general, the purpose of this is to prevent head-on collisions resulting from vehicles crossing over a median.

- *Lane and road restrictions*. This is also primarily used on interstates. Truck lane restrictions can result in fewer fatal accidents involving heavy trucks. A similar concept is designating certain roads as truck routes, while limiting truck access to others.

- *Traffic law enforcement*. Since driver error is a substantial contributing factor to rural accidents, law enforcement can be an important partner in addressing safety concerns in certain target areas. Additionally, law enforcement personnel can be very effective in identifying trouble spots that need to be addressed in some manner.

3.2 Identified Needs

The SCDOT, through their safety program, already evaluates and prioritizes safety projects statewide. **Table 11** is a current list of SCDOT-funded safety projects in the region.

Table 11. ACOG Region Safety Projects, 2014-2019 STIP

COUNTY	PROJECT
Anderson	SC 8 (PELZER HWY) WITH S-485 (ST. PAUL RD)
Anderson	SC 153
Anderson	S-49 (FLAT ROCK RD) MP 0.00 TO MP 9.26
Cherokee	S-34 (TWIN BRIDGE RD)
Cherokee	S-146 (OCONEE ST)
Cherokee	S-146 (E/W OCONEE ST) MP 0.00 TO MP 1.00
Cherokee	S-70 (OLD RACE TRACK RD) MP 0.00 TO MP 2.17
Oconee	SC 24 @ SC 59
Oconee	S-87 @ S-488
Spartanburg	SC 9 @ FOSTER RD
Spartanburg	SC 418 @ FOUNTAIN INN RD

4 Bridges

4.1 Existing Conditions

The Upstate has variable terrain that is typical of the piedmont region. Rivers and streams flowing down from the mountains create obstacles for human traffic. Many bridges exist as a result of this need. In the past, fording or ferrying was the primary method of crossing these waters. Over time technology advanced to the point that bridges were an effective and economical solution to crossing rivers and streams. Because the terrain ridges tend to run from the northwest to the southeast, the roads running perpendicular to the ridges tend to require bridges. This generally translates to an east-west traffic flow. The major cities and I-85 each line up in this way, making the need to the presence and maintenance of adequate bridges that much more important to the future of the Upstate.

The ACOG area has 2,385 SCDOT-maintained bridges; of which 509 bridges are considered substandard by SCDOT. There are two main categories of bridges which are considered substandard and eligible for rehabilitation or replacement. *Structurally deficient* bridges are either restricted to light vehicles only, closed, or require immediate rehabilitation to remain open. *Functionally obsolete* bridges, however, are not necessarily structurally deficient. A functionally obsolete bridge has deck geometry, load carrying capacity, clearance, or approach roadway alignment that no longer meets the criterion for the system in which it is part. There are 224 structurally deficient bridges and 285 functionally obsolete bridges in the Upstate as of May 2015.

Maintaining all of the regions bridges in good, functional condition is a major task. Currently, bridge repair and replacement projects are prioritized by SCDOT. Similar to the pavement management used to prioritize road maintenance projects, SCDOT uses a Bridge Management System (BMS) to prioritize bridges. The development, implementation, and data collection of the BMS began in the early 1990's, with full scale operations starting in 1998. The system provides detailed analyses of South Carolina's bridge needs and prioritizes recommendations. Although replacement projects have been the primary focus, improvements such as widening and raisings, maintenance repairs, and rehabilitations are now being considered.

Statewide bridge inspection continues to be a critical component for federal Bridge Program Funds. SCDOT inspects approximately 6,500 bridges per year and contracts underwater inspections for another 60 each year. The data collected is an integral part of the BMS.

Statewide the number of substandard bridges continues to rise. Current bridge funding levels are far below what is required to make significant improvements to the system. The primary factors that affect this trend are the overall construction history and age of the bridge infrastructure, a historical lack of emphasis on bridge maintenance, and inadequate funding levels. Inadequate funding and the growing transportation needs of our state will prevent a major reduction in the percentage of substandard bridges.

4.2 Identified Needs

The SCDOT has designated 24 bridge projects for funding in the ACOG region (per the 2014-2019 STIP). **Table 12** lists those projects.

Table 12. ACOG Region Bridge Projects, 2014-2019 STIP

COUNTY	PROJECT
Anderson	I-85 @ SENECA RIVER
Anderson	I-85 @ THREE AND TWENTY CREEK
Anderson	US 29 @ US 29
Cherokee	S-223 @ GARNER BRANCH
Cherokee	I-85 NBL & SBL @ SOUTHERN RR
Cherokee	S-41 @ PEOPLES CREEK
Cherokee	S-83 @ BUFFALO CREEK
Cherokee	US 29 @ I-85
Cherokee	SC 18 @ I-85
Cherokee	S-301 @ LIMESTONE CREEK
Cherokee	US 29 @ SOUTHERN RR
Greenville	S-164 @ ENOREE RIVER
Greenville	S-318 @ DAM @ LAKE LANIER
Greenville	US 29 @ S-75
Oconee	I-85 NB @ HARTWELL RESERVOIR
Oconee	I-85 NB @ FAIRPLAY CREEK
Oconee	I-85 SB @ FAIRPLAY CREEK
Oconee	S-34 @ NORFOLK SOUTHERN RR
Pickens	US 123 NB @ S-64
Pickens	US 123 SB @ S-64
Pickens	S-267 @ TWELVE MILE CREEK
Spartanburg	I-85 @ S-2
Spartanburg	S-893 @ ENOREE RIVER
Spartanburg	S-45 @ NORFOLK SOUTHERN RR

5 Maintenance and Resurfacing

5.1 Existing Conditions

Maintenance is an essential part of any transportation network. Proper maintenance keeps a system functioning properly and safely. Improper or deferred maintenance can create hazards, as well as requiring a much larger expense for rebuilding of facilities at a later date. Regular maintenance activities include repaving and resurfacing, chip seal, slope and shoulder maintenance, pavement marking, mowing, drainage system improvements, maintenance of rest areas and other roadside facilities, and related activities.

As the road network grows, so does the maintenance burden for those responsible for the facilities. More than 60% of the ACOG's rural roads are SCDOT maintained. However, since most of these roads serve as local roads they are ineligible for federal aid dollars. Roads classified as a collector, with annualized average daily traffic (AADT) volume of 1,000 or greater are eligible for federal aid dollars. The remaining roads must be maintained with state or local funds. As funding for road maintenance has decreased many roads have not been maintained properly. To this end, counties in the region have begun to allocate funding for road maintenance.

The condition of the state maintained route system is assessed by the SCDOT Pavement management office. One third of the system is assessed annually to determine the surface conditions of the driving lanes. The condition of the pavement is expressed in terms of the Pavement Quality Index (PQI) and is based on pavement surface distress and roughness. The condition categories range from Very poor to Very Good. The PQI scale ranges from 0 to 5, with Poor ranging from 0 to 2.6 and Good ranging from 3.4 to 5. This information is used to prioritize maintenance projects.

Primary roads, US or SC routes, have a higher percentage of facilities that are ranked in the lowest categories of pavement quality, possibly due to heavy use. **Table 13** lists all federal aid eligible primary roads in the ACOG region with PQI scores of less than 2.6. The road segments are categorized by milepost, the system used by the SCDOT. Note that some roads may be within MPO jurisdictions.

Table 13. ACOG Roads with PQI Less than 2.6, Federal Aid Eligible

COUNTY	ROUTE	BMP	EMP	LENGTH	PQI	AADT
Anderson	US-29	0.3	0.8	0.5	2.00	1,150
Anderson	US-29	0.8	4.9	4.1	2.00	1,150
Anderson	US-76	9.8	10.3	0.5	2.10	9,240
Anderson	US-76	10.3	12.5	2.2	2.20	10,645
Anderson	US-76	14.81	15.4	0.59	1.90	6,900
Anderson	SC-20	11.7	18.2	6.5	2.20	3,732
Anderson	SC-28	0	0.12	0.12	2.00	2,000
Anderson	SC-81	0	16.72	16.72	2.20	3,122
Anderson	SC-252	12.62	13.2	0.58	2.30	1,200
Cherokee	US-29	0	11.5	11.5	2.10	3,076
Cherokee	US-29	11.5	14.4	2.9	1.90	3,943
Cherokee	US-29	14.4	14.65	0.25	1.70	3,300
Cherokee	US-29	23.9	24.42	0.52	1.70	1,689
Cherokee	SC-5	2.3	4.71	2.41	2.40	26,000
Cherokee	SC-105	0	0.35	0.35	2.00	26,000
Cherokee	SC-150	2.9	9.7	6.8	2.50	1,008
Cherokee	SC-150	11.12	11.77	0.65	2.50	3,450
Cherokee	SC-150	12.2	13.3	1.1	2.40	2,614
Cherokee	SC-198	0	3.92	3.92	2.60	1,246
Greenville	US-25	33	34	1	2.60	6,750
Greenville	US-29	5.1	15.6	10.5	2.20	15,316
Greenville	US-29	13.21	16.56	3.35	2.60	26,000
Greenville	US-29	16.76	17.6	0.84	2.50	26,000
Greenville	US-276	11.9	26.14	14.24	2.30	1,897
Greenville	US-276	34.57	34.79	0.22	2.50	26,000
Greenville	SC-81	4	4.64	0.64	2.50	4,550
Greenville	SC-183	6.9	7.31	0.41	1.10	6,900
Greenville	SC-253	2.4	3	0.6	2.10	4,500
Greenville	SC-253	3	3.8	0.8	2.30	4,500
Greenville	SC-417	0	2.53	2.53	2.40	6,957
Oconee	SC-24	0	1.4	1.4	2.20	2,450
Oconee	SC-24	1.4	3.1	1.7	2.20	1,948
Oconee	SC-59	13.9	14.21	0.31	2.30	3,884
Oconee	SC-93	0.5	0.86	0.36	2.20	4,350
Oconee	SC-183	13.1	13.8	0.7	2.30	1,350
Oconee	SC-183	13.8	15.9	2.1	2.50	1,317
Oconee	SC-183	17.8	18.16	0.36	1.80	1,300
Oconee	SC-183	20.8	20.97	0.17	2.40	1,600
Pickens	US-76	1.28	1.4	0.12	2.50	26,000
Pickens	SC-8	0	0.19	0.19	2.30	26,000

Spartanburg	US-29	16.6	18.1	1.5	2.10	10,084
Spartanburg	US-29	18.1	20.5	2.4	2.10	12,405
Spartanburg	US-29	0	0.2	0.2	2.00	6,400
Spartanburg	US-29	0.2	0.4	0.2	1.50	6,400
Spartanburg	US-176	16.68	18.76	2.08	2.50	9,398
Spartanburg	US-176	20.3	20.7	0.4	1.80	8,150
Spartanburg	US-176	20.7	21.77	1.07	1.50	8,279
Spartanburg	US-176	24.24	25.12	0.88	2.30	26,000
Spartanburg	SC-56	8.3	22.9	14.6	2.50	1,061
Spartanburg	SC-101	10	11.5	1.5	2.20	1,300
Spartanburg	SC-110	2.7	4.03	1.33	2.60	2,550

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6 Signalization

6.1 Existing Conditions

Signalization is an integral part of a transportation system. Properly used, it can ensure safe and orderly progression of traffic. If improperly installed and maintained, however, it can result in unnecessary delays in traffic flows.

In the ACOG region all rural traffic signals are generally maintained by SCDOT. Maintenance and repair of traffic signals is a regular function of SCDOT's maintenance staff. The SCDOT frequently conducts traffic studies at intersections to determine whether new traffic signals are needed. The factors considered in determining whether a signal is warranted include the number of vehicles approaching the intersection, frequency and type of accidents, physical layout of the intersection, average speed, and future road construction plans.

In order to assure that signals are efficiently handling traffic flows, the timing of the light cycles for signals are periodically revisited by the maintaining authority. When there are a series of signals along a road, they are frequently connected in a system, which simplifies the process of coordinated signal timing along the road. This can help travelers avoid repeatedly hitting red lights, and can actually improve overall traffic flow on a road. There are more than 600 traffic signals in the SCACOG region. They tend to be located at major intersections along primary routes in the region.

At-grade railroad crossings are another location where signalization is important. SCDOT staff also performs the function of inspecting and maintaining these crossings, and a pool of funding is available to upgrade these crossings as needed. These funds are extremely limited which means that only a few crossings are can be completed on a yearly basis statewide. Prioritization is based on similar criteria to other safety projects.

Intelligent Transportation System (ITS) strategies are increasingly used to manage traffic flow. ITS can be defined as electronics, communications, and information processing that are integrated to improve the efficiency or safety of surface transportation. SCDOT has developed and deployed ITS across the state. These systems include the latest transportation technologies, such as closed circuit television cameras, highway advisory radios, changeable message signs, local Traffic Control Centers (TCC) and a central Traffic Command Center (TMC). A key application for ITS in rural areas is notification of non-routine traffic events, such as major delays due to accidents or construction.

6.2 Identified Needs

Table 14 provides a summary of identified signal needs for the ACOG region. These projects are not so much about installing new signals where there were none, but upgrading equipment and improving signal timing to increase traffic flow efficiency.

Table 14. SCDOT Priority Signalization Projects

COUNTY	ROUTE	DEPARTMENT
Anderson	SC 8 & SC 81 & SC 88	Consultant
Anderson	SC 28 @ S-141 and Corning	Consultant
Anderson	US 29 @ S-48	Consultant
Anderson	SC 8 & S-485 & East Church Road	Participation Agreement
Anderson	S-219 @ S-28 and 333	Consultant
Cherokee	US 221/221conn @ S-146	Consultant
Cherokee	SC 105	Preconstruction
Cherokee	US 221alt. @ SC 11/110	Consultant
Greenville	S-50 @ S-221	Preconstruction
Greenville	S-27 @ S-1912	Participation Agreement
Greenville	US 25 @ S-41	Consultant
Greenville	Harrison Bridge @ Neely Ferry	Participation Agreement
Oconee	S-35 & S-135	Consultant
Oconee	US 123 @ US 76	Consultant
Pickens	S-28	Consultant
Spartanburg	SC 295 @ Dogwood	Consultant
Spartanburg	SC 92	Consultant
Spartanburg	SC-292 & S-52	Preconstruction
Spartanburg	US 221 & S-540 (Airport Rd.)	Consultant

7 Mass Transit

7.1 Existing Conditions

Rural public transportation presents a unique challenge. Long trips and low population densities mean that it is a challenge to get sufficient ridership to support transit routes. In However, the lack of transportation options combined with the prevalence of elderly and low income people in many rural communities; it means that there is a need for such a service.

Each of the three designated MPOs has a fixed route public transit system operating in their respective areas. Greenville is served by the Greenville Transit Authority (GTA), Spartanburg is served by the Spartanburg Area Transit Agency (SPARTA), and Anderson is served by Electric City Transit (ECT). Because these transit providers are located inside the urban areas, they are not included in this study.

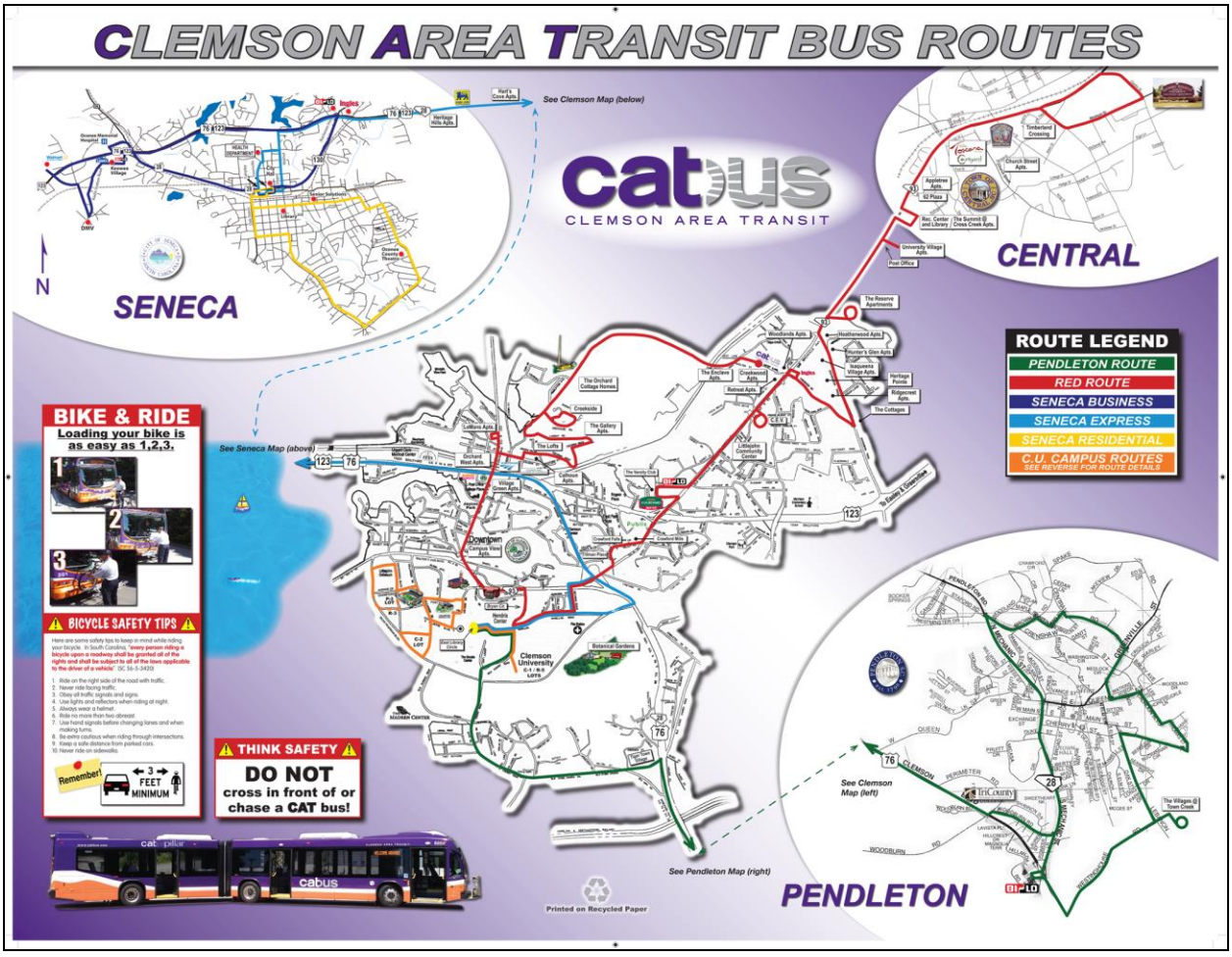
7.2 Transit

7.2.1 Clemson Area Transit

Currently, the only fixed-route transit provider in the rural ACOG study area is Clemson Area Transit (CAT). Founded in 1996, CAT is the largest fare-free transits system in the United States in terms of ridership. It is the one of the most used transit systems in South Carolina. The system was created with the goal of serving Clemson University students. To accomplish that goal, CAT has partnered with the City of Clemson to manage its operations, and is managed by officials from both the City and the University. Its service areas include Clemson University, the City of Clemson, the City of Seneca, the Town of Central, and the Town of Pendleton.

CAT currently operates six routes, which cover parts of three counties: Anderson, Oconee, and Pickens. **Figure 6** shows the current route structure of the CAT system.

Figure 6. CAT Routes, as of May 2016



CAT route schedules are oriented primarily for education and work trips. Some are designed for very specific purposes: for example the NightCat route is geared towards prevention of drinking and driving.

CAT has experienced phenomenal ridership increases over the last few years. This is due to expanded services and routes as well as a very affordable fare. CAT buses have also installed bike racks on their buses to appeal to a wider range of commuters.

7.2.2 Disabilities and Special Needs Boards

Each county in the ACOG region has Disabilities and Special Needs Boards that provide Title IX transportation services for eligible clients in their own counties respectively. Some use agency- operated vehicles while others contract out these services. In addition, a significant number of private transportation companies, including taxicab and shuttle companies operate in the ACOG region. These companies provide specialized services for individuals and groups. This year SCDOT is performing a study to determine the best way to coordinate the transit efforts of these agencies into one region wide system. This effort should result in a more efficient and productive system.

7.3 Regional Transportation

7.3.1 Bus

Greyhound has locations in the cities of Anderson, Duncan, Greenville, and Spartanburg. These locations are not in the ACOG study area but should be noted. They are within driving distance of our residents.

7.3.2 Train

Amtrak does have a stop in our study area. There is a stop in Clemson. It is on the Carolina/ Piedmont line. Figure 7.2 shows the intermodal facilities located within the region.

7.4 Identified Needs

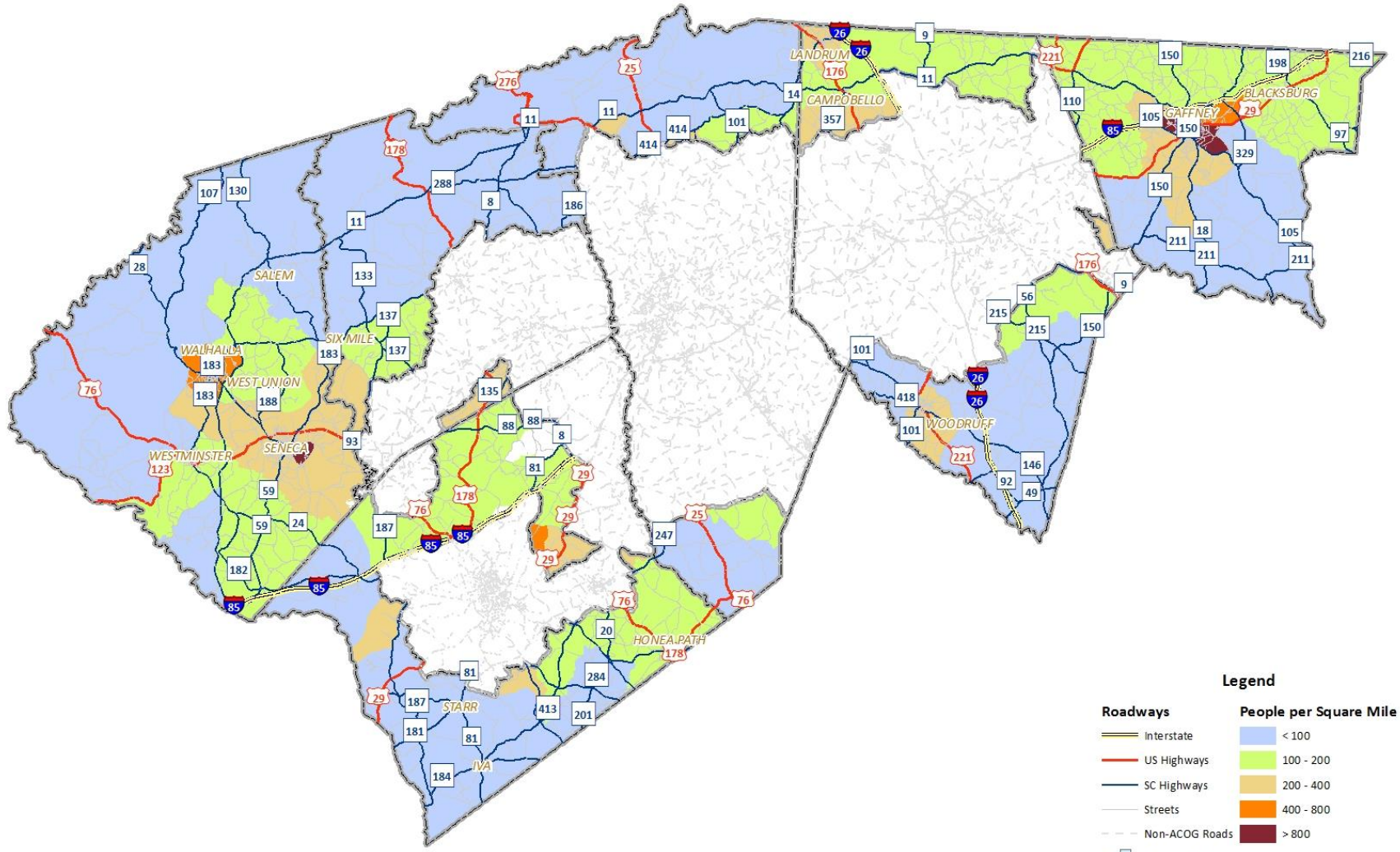
As previously mentioned, population and employment density are determining factors when looking at the viability of fixed route service. **Map 23** shows population density patterns in the region. There are a few moderate density areas in the region: Easley, Clemson, Gaffney, Walhalla, Seneca, Pickens, Pendleton, Westminster, and Central. However, the majority of the rural area is low density.

Another key indicator of transit need is the percentage of households without access to a vehicle. Often these individuals depend on others to provide them transportation, particularly in rural areas where destinations are too far to reach by foot or pedal. **Map 24** shows the concentration of zero vehicle households across the area. There are particularly high concentrations of these households in Gaffney and Clemson-Seneca areas.

The distribution of senior citizens and people with disabilities can also be an indicator of transit need, since many of these individuals may be unable or unwilling to drive an automobile. The ACOG region is becoming a retiree destination. Overall, seniors aged 65 and up, account for 13.25 % of the region population.

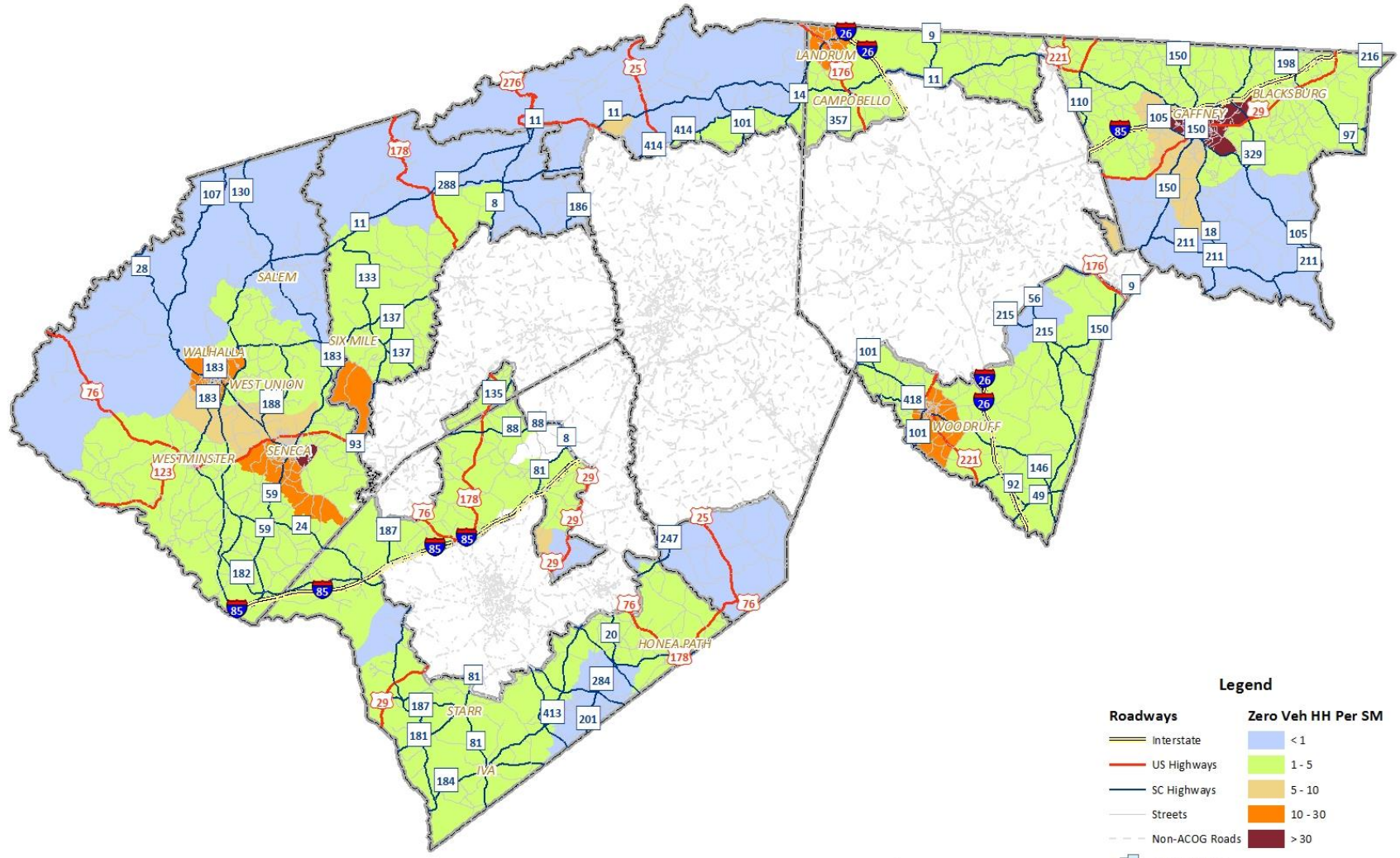
Map 23. ACOG Region, People Per Square Mile, 2010

Appalachian Council of Governments
People per Square Mile by Census Tract, 2010



Map 24. ACOG Region, Zero Vehicle Households Per Square Mile, 2014

Appalachian Council of Governments
Zero Vehicle Households per Square Mile by Census Tract, 2014



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8 Bicycle and Pedestrian Facilities

8.1 Existing Facilities

The facilities available to walkers and bikers are diverse in the rural ACOG area. Walking and biking are, by their nature, localized modes of transportation. So, they tend to be focused around nodes of activity. These nodes are typically existing communities and other places with a relatively dense built environment. The parts of these towns that were constructed before the 1940s, before the widespread use of the automobile, tend to be more pedestrian friendly. However, many business centers and places of employment are no longer located in the historic cores. They tend to locate near major highways or in urban areas. As a result, the demand for pedestrian and bicycle facilities is low.

Historically, roads were designed for pedestrian and equine travel. It is only within the last century that the automobile has replaced the pedestrian as the primary mode of travel. Facilities accommodating pedestrians and bicycles tend to be separate from automobile traffic. Sidewalks and bicycle lanes are the most common modes for each mode, respectively and are becoming more prolific through the nation. Because of the historical connection with pedestrians, and the universal accessibility to walking, it can be assumed that all roads will be used for pedestrian traffic at some point.

Fatality rates for bicycle/ pedestrian traffic are higher in rural areas than in urban areas. Speed is a contributing factor to this problem. According to the National Highway Traffic Safety Administration, a pedestrian hit by a car traveling 20 miles per hour has a 95 percent chance of surviving. At 40 miles per hour the chance of survival drops to 15 percent.

Currently, the ACOG does not fund any bicycle/ pedestrian facilities in rural areas. These are funded on the state or county level.

8.1.1 Pedestrian Facilitates

The many small towns in the region each have their own pedestrian friendly zones that tend to be focused on the historic core of the each community. These zones typically connect downtown areas to adjacent, historic neighborhoods. In many cases the infrastructure may exist but maintenance of these facilities has largely been ignored or differed in favor of higher priority projects in recent times. A key issue to consider for pedestrians is safety. This typically comes in the form of crosswalks. Pedestrians tend to not like to cross large, busy highways. They prefer the more compact environment that the urban cores offer. There are some communities that have significant pedestrian facilities and other that have recently taken steps to enhance the quality of their pedestrian facilities:

- **Central** recently completed a sidewalk enhancement on Main Street. The project created additional parking and worked to enhance the appearance of the historic core of the town fronting a railroad. The second phase will complete the Main Street renovation project. It will work to improve the sidewalks in front of the businesses and remove the power lines overhead.

- **Seneca** recently renovated and enhanced its square downtown. The process converted the square from a largely underused parking lot to an attractive and landscaped public square. It

acts as an anchor for downtown redevelopment, complete with a multi-modal tie in with the CAT system routes. Downtown Seneca has an extensive sidewalk network for a city its size that is well integrated with the surrounding neighborhoods.

- **Gaffney** has one of the larger downtown areas in the rural COG region. Centered on Limestone Street, downtown Gaffney is well connected to its surrounding neighborhoods. It has an extensive sidewalk network and neighborhood streets with low traffic volumes that offer an environment suitable for walking or biking.

Rural areas can present conditions that are threatening to pedestrian travel. In the remainder of the region, the pedestrian and bicycle traffic takes place on rural roads without any specific accommodations made for this type of traffic. Most rural roads are narrow and lack a paved shoulder, bike lanes, and sidewalks. Combined with low visibility and high speeds, these roads can be very dangerous for non-motorized traffic. The volume of this type of traffic is low.

8.1.2 Bicycle Facilities

Bicycling is becoming a more popular mode of transportation. Like pedestrians, bicycles have similar range restrictions. Bicycles have a more extended range than pedestrians, but prefer a similar dedication of facilities. Ultimately most non-recreational travel will have origins and destinations within the same community. Dedicated bike lanes paralleling traffic are the most frequent way of accommodating bikers, but share-the-lane demarcations are also common. Bike paths are another facility. They are completely separate from roadways and offer alternate connections to various destinations. Bike paths tend to be for recreational purposes and always include pedestrians. Bikers are more likely to occupy the same traffic lanes as automobiles, and are required by law to follow the same rules as larger motorized forms of transportation.

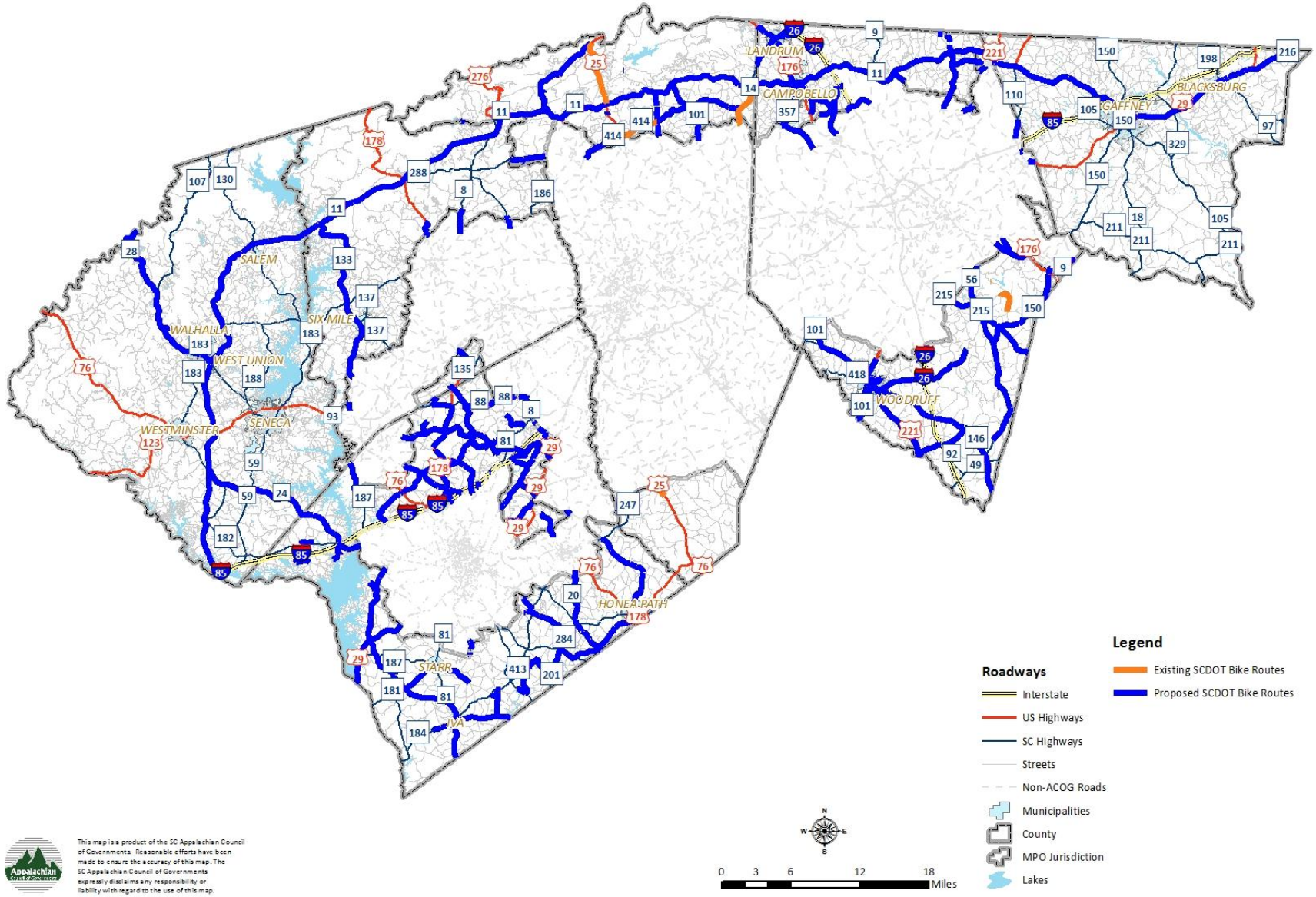
One important aspect of biking is the need for racks. Bicycles need bike-racks just like cars need parking lots. Bike racks can become in many forms, and the objects used for such can even be forms of public art. Transit can also enhance bikers' options by adding bike racks.

Map 25 depicts the existing and proposed ACOG regional bike network from SCDOT. The only community in the rural COG study area that offers bicycle facilities are those areas near Clemson. Most roads extending from the University have dedicated and well maintained bike lanes that extend as far as Central and Pendleton. Racks are included on each of the Clemson Area Transit buses.

It should be noted that the Greenville, Spartanburg, and Anderson MPOs have made a concerted effort to create more bike lanes and bike racks in their respective communities in recent years.

Map 25. Existing and Proposed SCDOT Regional Bicycle Routes

Appalachian Council of Governments
Existing and Proposed SCDOT Bicycle Routes



8.2 Facilities for Recreation

There are many parks and recreational trails in the ACOG region. These facilities are typically designed for leisure activities such as mountain biking or hiking. Users will usually drive to these facilities first, so their presence should be viewed within the context of destinations for vehicles, rather than pedestrian and bicycle traffic alone.

The region has many recreational facilities. Some of the larger facilities include state parks, national forests, and locally designated parks trails:

8.2.1 Trails

8.2.1.1 Palmetto Trail

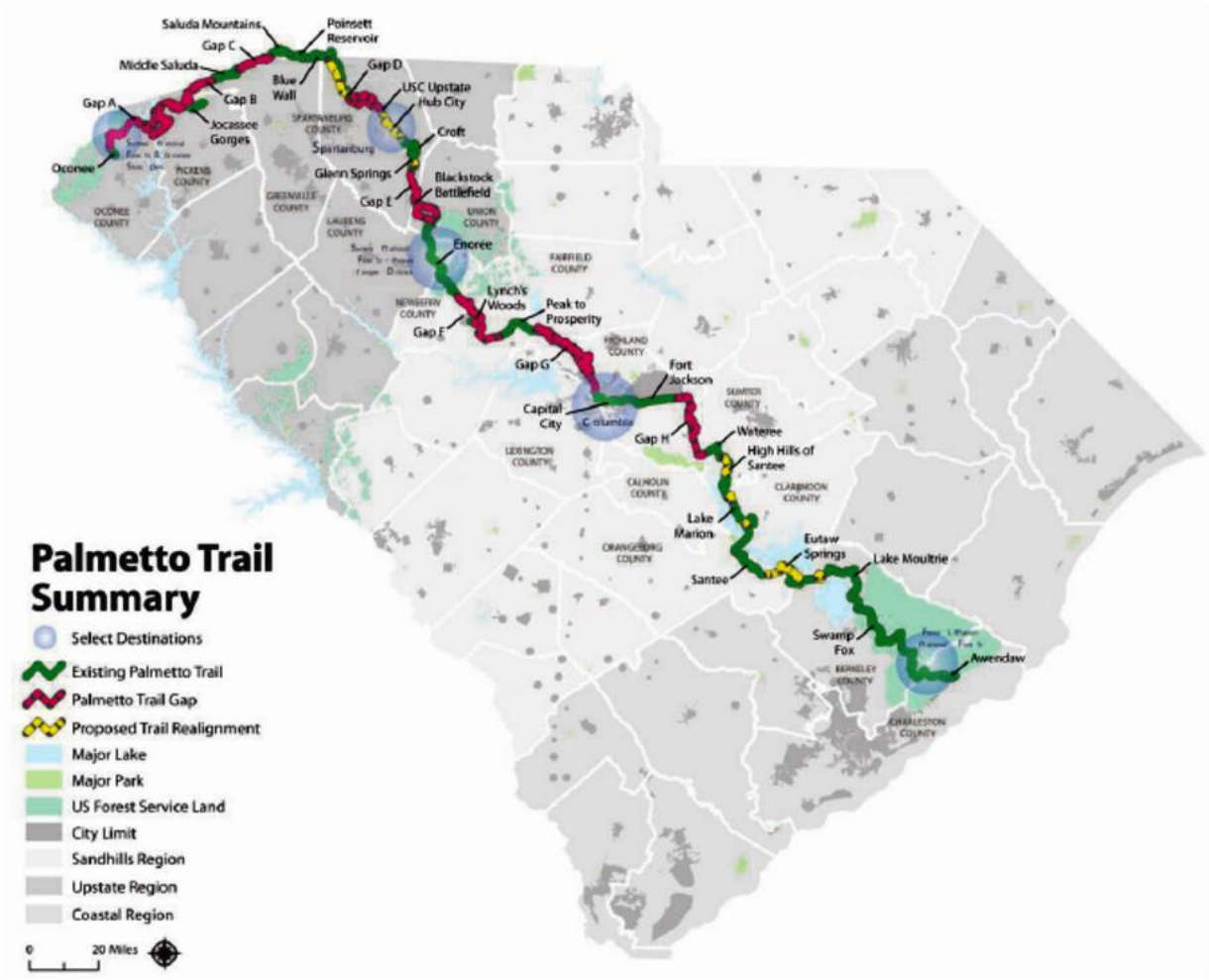
Palmetto Trail was originally conceived in 1994 and will have over 425 miles of bicycling and walking paths through South Carolina once completed. It will go from the mountains to the sea, passing through large cities and small towns, and along lakes and rivers. South Carolina's Palmetto Trail is the state's largest bicycle and pedestrian project. This federally designated Millennium Legacy Trail is a project of the Palmetto Conservation Foundation. It will be one of only 13 cross-state trails in the United States.

Today, the Palmetto Trail is two-thirds complete with nearly 315 miles open to the public. The trail is being built as a series of smaller project sections called "passages." Each of the 15 passages currently open is accessible for single-day or multi-day trips. Together or separate, the passages demonstrate the history, culture and geography of the Palmetto State.

Open Sections in the Upstate

- Oconee Connector (Oconee County)
- Jocassee Gorges Passage (Pickens County)
- Blue Wall Passage (Greenville County)
- USC Upstate Passage (Spartanburg County)
- Hub City Connector (Spartanburg County)
- Glenn Springs Passage (Spartanburg County)

Figure 7. Palmetto Trail Map



Source: http://palmettoconservation.org

8.2.1.2 Rails to Trails

The idea was to convert abandoned or unused rail corridors into public trails. The concept embraces many ideas that community leaders want to promote including: recycling, land conservation, wildlife habitat preservation and non-automobile transportation, historical preservation, physical fitness, and recreation access for wheelchair users. In the rural ACOG area there are two rail-trails: the Mary Black Rail-Trail in Spartanburg and the Blue Ridge Railroad Historical Trail in Oconee.

The Mary Black Rail Trail in Spartanburg is the first to be completed in the Upstate. A defunct rail line extending south from downtown Spartanburg was converted to an urban walking/waking trail. It is approximately two miles long and located within the City of Spartanburg. This trail co-exists as part of the Palmetto Trail system.

The Blue Ridge Railroad Historic Trail in Oconee County is a 2.5 mile trail that follows the bed of railroad that was never completed—the America Civil War got in the way of South Carolina Statesman John C.

Calhoun's rail dream. They did get as far as starting to build three tunnels into the mountain, which are some of the main features of the trail.

8.2.2 Parks

There are a number of parks available to residents of the Upstate. These parks offer numerous recreational hiking and biking opportunities. The Upstate is fortunate to have a variety of parks to choose from, including two Revolutionary War battlefields.

8.2.2.1 State Parks

- *Caesar's Head State Park* has long been a must-see in the South Carolina Upstate. A granitic gneiss outcropping atop the dramatic Blue Ridge Escarpment, it offers breathtaking views year-round.

- *Devils Fork State Park* consists of land around the 7,500-acre Lake Jocassee, which remains mostly undeveloped and the only public access point to the lake is through Devils Fork. Four mountain streams and several waterfalls feed into the lake, making it cooler than others and a great South Carolina trout fishing spot. Plus, the unusually clear water of Lake Jocassee is a haven for scuba divers and swimmers.

- *Jones Gap State Park* contains trails and 11,000 acres of pristine mountain woodlands that join with Caesars Head in what is known as the Mountain Bridge Wilderness Area.

- *Kings Mountain State Park* has miles of forested trails perfect for hiking, two fishing lakes, and sits adjacent to Kings Mountain National Military Park, one of many national park Revolutionary War sites.

- *Oconee State Park* contains several wooded nature trails that wind through the foothills region and serve as the southern trailhead for the Foothills Trail, South Carolina's 80-mile wilderness hike on the Blue Ridge Escarpment.

- *Oconee Station State Historic Site* was originally a military compound and later a trading post. The site offers both recreational opportunities and a unique look at 18th and 19th century South Carolina. Oconee Station, a stone blockhouse used as an outpost by the S.C. State Militia from about 1792 to 1799, and the William Richards House, are the only two structures that remain today.

- *Table Rock State Park* is a 3,000 acre park with facilities at the base of the Blue Ridge Mountains. In addition to its hiking trails and fishing, Table Rock also has its place in history. Many of the Table Rock State Park cabins and other structures built by the CCC remain standing and are on the National Register of Historic Places.

8.2.2.2 National Parks

- *Kings Mountain National Military Park* was called by Thomas Jefferson "The turn of the tide of success." The battle of Kings Mountain, fought October 7th, 1780, was an important American victory during the Revolutionary War. The battle was the first major patriot victory to occur after

the British invasion of Charleston, SC in May 1780. The park preserves the site of this important battle.

- *Cowpens National Battlefield* was a pasturing area at the time of the battle. This Revolutionary War site commemorates the place where Daniel Morgan and his army turned the flanks of Banastre Tarleton's British army. This classic military tactic, known as a double envelopment, was one of only a few in history.

8.2.3 Identified Needs

Both bicycles and pedestrians are localized modes of transportation. Because of their limited range it is important to recognize that travel using each of these modes will tend to be restricted to short distances typically with origins and destinations in the same community for non-recreational travel. It will be important to enhance existing facilities in communities that are already recognized as urban centers while expanding from those areas at the same time. Recreational travel must also be accommodated. Safety is an important concern for bikers and hikers. The shoulders of roads should be assessed and widened appropriately to create a safer environment.

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9 Environmental Screening

In an effort to streamline the project development process, the SCDOT, in partnership with the COG's statewide, are doing early environmental screening by clearly defining the project, purpose and need, design expectations, public concerns, and potential environmental, cultural, and social impacts. The SCDOT process now requires that all new projects in the STIP, as well as high priority long-range plan projects have Advance Planning Project Reports (APPR). The contents of the APPR will include several elements. An introduction will define the purpose of the document and the project sponsor (SCDOT, COG, Other). A description of the existing facility will illustrate the roadway characteristics and existing features such as utilities, railroad crossings, mass transit, bridges, etc. The purpose and need section will give background information with project goals, current roadway deficiencies, traffic data, socioeconomic projections, level of service, accident data, and funding priority. The proposed facility element defines what the requirements are to meet the need of the project, such as design criteria, potential cross sections, bicycle and pedestrian facilities, mass transit accommodations, design techniques, and projected project cost.

A summary of public involvement is included in the APPR, highlighting public meetings, comments, and public involvement activities. Also in the report is a corridor assessment of social, economic, and environmental concerns. This section discusses the environmental screenings and site information, potential cultural resources, public parks and recreational areas, wetlands and water bodies, endangered species, potential displacements, hazardous materials, and community impacts of the project. The final section of the APPR contains recommendations and preliminary plans for the project.

Elements of an Advanced Project Planning Report can include existing and proposed typical cross section information that can be represented using "before" and "after" computer-generated visualizations for select locations throughout the length of the project. Projected traffic volumes are generated using the travel demand model and provide projected average daily traffic volumes for the proposed facility and the no-build scenario. Social, cultural, natural resources, and environmental concerns are identified using GIS database information for the environmental screening process. The total number of crashes at particular locations is summarized by providing statistics on accidents involving fatalities, injuries, and property damage. Cost estimates are also provided for one or more typical cross sections and may prove to be a key variable in the decision making process.

Advanced Project Planning Reports are conducted in close coordination between SCDOT, MPO's, and COG's for projects identified in the STIP and constrained projects included in long range plans. Planning reports typically involve transportation improvement projects, such as a widening and new location alignment(s).

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10 Performance Management

10.1 Introduction

Performance management is a strategic approach that uses system information to make investment and policy decisions to achieve goals set for the multimodal transportation systems in the ACOG study area. This process provides key information to decision makers allowing them to understand the consequences of investment decisions across transportation assets and modes. It is also credited with improving project and program delivery and providing greater transparency and accountability to the public.

Performance-Based Planning and Programming (PBPP) refers to the transportation agencies' application of performance management as standard state of the practice in the planning and programming processes. ACOG's Long Range Transportation Plan and Transportation Improvement Program are now required to incorporate a performance-driven, outcome-based approach to planning.

The goal of PBPP is to ensure that transportation investment decisions – both long-term planning and short-term programming – depend on the ability to meet established goals. In addition to meeting the federal PBPP requirements, PBPP will help the ACOG better communicate the Appalachian Region-specific performance story.

10.2 National Goal Areas

Through the federal rulemaking process, the Federal Highway Administration (FHWA) is requiring state DOT's, MPO's and COG's to monitor the transportation system using specific performance measures. These measures are associated with national goal areas prescribed in MAP-21 and the FAST Act. The following list describes these national goal areas for highway performance as well as performance measures.

HIGHWAY PERFORMANCE MEASURES

National Goal		Performance Area	Performance Measure
PM1	Safety *To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.*	Injuries and Fatalities	Number of Fatalities Fatality Rate per 100 million VMT Number of Serious Injuries Serious Injury Rate per 100 million VMT Number of Non-Motorized Fatalities and Non-Motorized Serious Injurues
PM2	Infrastructure Condition *To maintain the highway infrastructure asset system in a state of good repair.*	Pavement Condition	Percentage of Pavements on the Interstate System in Good Condition Percentage of Pavements on the Interstate System in Poor Condition Percentage of Pavements on the Non-Interstate NHS in Good Condition Percentage of Pavements on the Non-Interstate NHS in Poor Condition
		Bridge Condition	Percentage of NHS bridges classified in Good Condition Percentage of NHS bridges classified in Poor Condition
PM3	System Reliability *To improve the efficiency of the surface transportation system.*	Performance of the NHS	Percentage of Person Miles Traveled on the Interstate System that are Reliable Percentage of Person Miles Traveled on the Non-Interstate NHS that are Reliable
	Freight Movement and Economic Vitality *To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.*	Freight Movement on the Interstate System	Truck Travel Time Reliability Index

10.3 Federal Requirements

10.3.1 Targets

- All MPO's are required to establish performance targets no later than 180 days after SCDOT or a public transportation operator sets performance targets.
- For each performance measure, the Policy Committee or Board of Directors will decide to commit to support a statewide target, or to establish a quantifiable target specific to the planning area.
- SCDOT, MPO's, and public transit operators must coordinate targets for performance measures to ensure consistency to the maximum extent practicable.
- Per SCDOT PL Agreements, all COG's shall comply with the same requirements of the MPO's beginning fiscal year 2019.

10.3.2 Reporting

- The LRTP must describe the performance measures and targets, evaluating the performance of the transportation system, and report on progress made.
- The TIP must link investment priorities to the targets in the LRTP's and describe, to the maximum extent practicable, the anticipated effect of the program toward achieving established targets.
- The MPO must also report baseline roadway transportation system condition and performance data and progress toward the achievement of targets to SCDOT.

10.3.3 Assessments

- FHWA and FTA will not directly evaluate the MPO/COG progress towards meeting targets for required performance measures. The MPO's and COG's performance will be assessed as part of regular cyclical transportation planning process reviews, including Transportation Management Area certification reviews, small MPO self-certification reviews, and the Federal Planning Finding associated with approval of the STIP.
- FHWA will determine if SCDOT has met or made significant progress towards attaining the selected targets for the highway system.

10.4 Performance Measure 1 (PM1) – Safety

South Carolina has the highest traffic fatality rate in the nation. It is 67% higher than the national rate and 40% higher than the states in the Southeast. Reducing the number of transportation-related collisions, injuries, and fatalities is SCDOT's highest priority and makes safety everyone's business. In 2011, the Director of the South Carolina Department of Public Safety (SCDPS), who also serves as the Governor's Representative for Highway Safety in South Carolina, announced the Agency's goal of zero traffic-related deaths in the State. This goal, also strongly supported by SCDOT and the South Carolina Department of Motor Vehicles, became the starting point for the State's update of the strategic highway safety plan (SHSP), entitled Target Zero. Target Zero is an aspirational goal for South Carolina and is based on the philosophy that no fatalities are acceptable. The state will set targets advancing this goal during the next 20 years.

10.4.1 Safety Needs

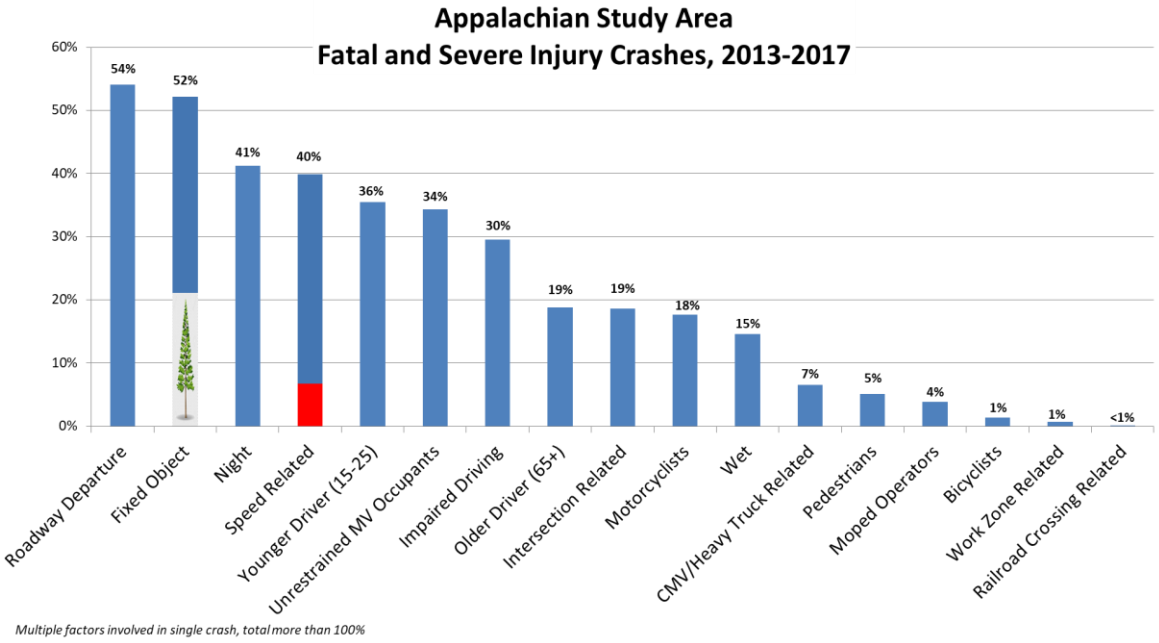
The table below summarizes the relevant 2014-2018 safety statistics in the ACOG region:

ACOG TARGET BASELINE SUMMARY

Year	Traffic Fatalities	Mileage Death Rate*	Severe Injuries	Mileage Severe Injury Rate*	Non-Motorized Fatalities and Severe Injuries
2014	56	1.87	165	5.52	13
2015	81	2.57	203	6.43	14
2016	59	1.79	192	5.84	12
2017	86	2.6	163	4.94	13
2018	73	2.37	191	6.12	17

* Per 100 million vehicle miles of travel

SCDOT provided a summary of ACOG region safety data, which provides perspective on what safety problems the region is experiencing. The graph below depicts the factors that were involved in vehicular crashes in the region from 2013 – 2017:



Based on analysis by the SCDOT safety office, roadway departures and fixed objects are significant factors involved in fatal and serious injury crashes. Countermeasures that can be applied to reduce roadway departures include: paved shoulders, rumble strips, adequate clear zones, cable guardrails, enhanced signalization, pavement friction and horizontal curve improvements.

10.4.2 Safety Targets

SCDOT evaluated and was required to first report on safety targets for the five measures on August 31, 2017. SCDOT recently issued their third annual report on safety targets for the five measures on August

31, 2019. This action started the 180-day clock for ACOG to take action to either set region-specific targets or accept and support the state's targets.

When setting safety performance targets for the state, statisticians performed extensive analysis of the data related to each measure (i.e. traffic fatalities and severe injuries and vehicle miles traveled). South Carolina used a seven data-point graphical analysis with a five-year rolling average. After the data points were plotted and graphical representations of the data were created, trend lines were added to predict future values. The trend lines were based on linear and non-linear equations with R-squared (i.e. best fit measure) values.

Using the models, statisticians predicted the values for the current year. Examining the current and planned education and engineering safety initiatives, they estimated reductions in fatalities and severe injuries to calculate the state's safety performance targets. Staff from the SCDOT Traffic Engineering Office also met with representatives from the MPO's and COG's to deliver a presentation on the state's target-setting methods. The table below shows ACOG, South Carolina, and National baseline information. It also includes the state's targets.

SAFETY TARGETS BASELINES (2014-2018 ROLLING AVERAGE)

	Traffic Fatalities	Mileage Death Rate*	Severe Injuries	Mileage Severe Injury Rate*	Non-Motorized Fatalities and Severe Injuries
SC Baseline	969.4	1.80	2961.6	5.55	391.6
SC Targets**	1011.0	181.90	2781.0	4.98	380.0
ACOG Baseline	71.0	2.24	182.8	5.77	13.8

* Per 100 million vehicle miles of travel

** Targets based on 2016-2020 rolling average

For the 2020 performance period, the ACOG has elected to accept and support the State of South Carolina's safety targets for all five safety performance measures. This means the ACOG will:

- Address areas of concern for fatalities and serious injuries within the rural planning area though coordination with SCDOT and incorporation of safety considerations on all projects;
- Integrate safety goals, objectives, performance measures, and targets into the planning process; and
- Include the anticipated effect toward achieving the targets noted above within the TIP, effectively linking investment priorities to safety target achievement.

10.5 Performance Measure 2 (PM2) – Pavement and Bridge Condition

10.5.1 Bridge Condition

The initial National Bridge Inspection Standards (NBIS) were established as part of the Federal Aid Highway Act of 1970 that were limited to bridges on the Federal-aid highway system. Currently, the NBIS regulations apply to all publicly owned highway bridges longer than twenty feet located on public roads. NBIS are federal regulations (23 CFR 650) establishing requirements for bridge inspection procedures, frequency of inspections, qualifications of personnel, inspection reports, and maintenance of bridge inventory. Information from these inspections is stored in the National Bridge Inventory (NBI) database, created in 1972. The NBI is the aggregation of structure inventory and appraisal data collected by each state to fulfill the requirements of NBIS. The NBI database contains condition information on five aggregate structural units (deck, superstructure, substructure, channel, and culvert) by assigning a condition rating to each of these components of a bridge on a scale from 9 (perfect) to 1 (severe deterioration/failure).

SCDOT's bridge inspection program started in the 1970's. The SCDOT Bridge Maintenance Office manages the bridge inspection program. As required by NBIS, SCDOT performs inspection on non-load restricted bridges biennially and annually on load restricted bridges. SCDOT's bridge inspection data are stored in the Roadway Information Management System (RIMS) and in the SCDOT Bridge Management System (BrM).

10.5.1.1 Bridge Needs

In the Appalachian Region, there are a total of 83 bridges according to the NBI. Of the 83 bridges in the region, 43 (51.8%) are in Good condition.

ACOG 2017 NHS BRIDGE CONDITION DATA

	Bridge Counts	Deck Area (ft^2)	Condition	By Count	By Deck Area
ACOG	83	1,224,595	Good	51.8%	59.2%
			Poor	8.4%	6.0%

10.5.1.2 Bridge Targets

SCDOT is faced with significant challenges in addressing the highway bridge preservation and replacement needs. Approximately 40% percent of NHS bridges by count are approaching or have exceeded their theoretical design life and may need various levels of repairs, rehabilitation, or replacement. With limited resources and increasing travel demands, these circumstances require SCDOT to become more strategic by adopting and implementing performance and risk based approaches to address the bridge program needs.

To set targets for future bridge conditions, it is important to understand bridge deterioration. Deterioration is a long-term process of decline in bridge conditions due to environmental factors, degradation of material, and vehicular loading. Different structural types of bridges, such as concrete

slab, steel, and prestressed concrete, may have similar response and loading mechanisms; however, no two bridges are the same in all respects, especially in their deterioration and aging characteristics.

Most bridge deterioration models are based on statistical regression and/or stochastic modeling. A Markovian process, which has been adopted in many bridge management systems, is a stochastic process that takes the uncertainties involved in the bridge deterioration process into consideration. SCDOT ultimately decided to develop individual probability matrices based on ten-year deck, superstructure, substructure, and culvert ratings for each structure type. Whole bridge ratings were calculated based on the lowest element rating. The table below shows the NHS Bridge condition target recommendations.

NHS BRIDGE CONDITION TARGETS

NHS Bridge Target	By Deck Area	
	% Good	% Poor
2-Year	42.2%	4.0%
4-Year	42.7%	6.0%

The chosen targets are based on the projected conditions using Markovian process for the respective structure type and assumptions that planned construction projects will be finished and inspected within the first performance period as outlined in the methodology above. The 4-year percent poor target for NHS bridges meets the FHWA's 10.0% maximum threshold requirement.

For the 2019 performance period, the ACOG has elected to accept and support the State of South Carolina's NHS Bridge condition target recommendations.

10.5.2 Pavement Condition

Since its inception in 1978, FHWA's Highway Performance Monitoring System (HPMS) has evolved into a robust national repository of data on the extent, condition, performance, use, and operating characteristics of the nation's highways. States report a variety of pavement condition statistics to HPMS each year for roads on the NHS, including, but not limited to, International Roughness Index (IRI) information, cracking, rutting and faulting data. Prior to MAP-21, each State decided its own index on pavement quality measurement.

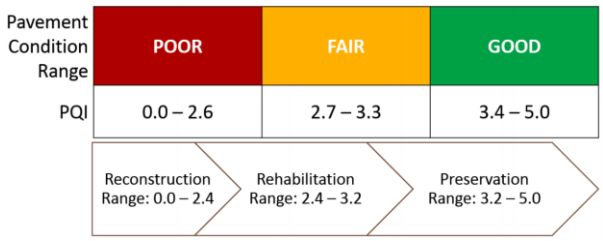
SCDOT started collecting pavement condition data in 2000. In the early 2000s, SCDOT began measuring its pavement condition using PQI, which is a unique pavement index developed for SCDOT.

SCDOT chooses pavement preservation candidates based on the PQI of the roadway section. Once PQI is calculated, a candidate list of potential pavement preservation projects is developed. The type of treatment selected depends on several factors, including traffic condition, cost and location. A set of trigger values used for selecting pavement preservation projects for each route system in South Carolina are as follows:

• US and SC Routes: PQI greater than or equal to 3.2 but less than 4.0

• Federal-aid Secondary Routes: PQI greater than or equal to 3.2 but less than 4.0

• Secondary Routes: PQI greater than or equal to 3.0



10.5.2.1 Pavement Needs

Interstate pavement conditions are generally good in the rural region of the Upstate. Significant rehabilitation and construction work has commenced on the west side of the ACOG study area where SCDOT is expanding Interstate 85 to three lanes in Cherokee County. SCDOT is also performing Interstate preservation work in Anderson County. Most rehabilitation needs are on the non-NHS routes, where only 2% of lane miles are considered in "Good" condition.

ACOG 2017 PAVEMENT CONDITION DATA

System	Good		Fair		Poor		Total	
	Mileage	Percentage	Mileage	Percentage	Mileage	Percentage	Mileage	Percentage
Interstate	218.664	79.60%	55.056	20.04%	1.000	0.36%	274.720	100.00%
Non-Interstate NHS	7.682	2.43%	232.076	73.47%	76.136	24.10%	315.894	100.00%
Grand Total	226.346	38.32%	287.132	48.62%	77.136	13.06%	590.614	100.00%

10.5.2.2 Pavement Targets

Due to envir onmental conditions and traffic loading, pavements deteriorate with age. Well designed, constructed, and maintained roadways are a vital component of any transportation system. One of the main goals of performance-based planning is to apply the right preservation/rehabilitation method to the right pavement at the right time. Proper preventive maintenance treatments are a cost-effective means of obtaining the maximum life and performance from the pavement. Treatments applied too soon add little benefit and treatments applied too late are ineffective, failing to prolong the life of the pavement. The potential savings from following a cost-effective approach to meeting performance objectives for pavements could be significant. The table below shows the Interstate and Non-Interstate NHS pavement condition target recommendations:

INTERSTATE AND NON-INTERSTATE NHS PAVEMENT CONDITION TARGETS

Pavement Target	Interstate		Non-Interstate NHS	
	% Good	% Poor	% Good	% Poor
2-Year	NA	NA	14.9%	4.3%
4-Year	71.0%	3.0%	21.1%	4.6%

The chosen targets are the median projected conditions using average deterioration rates for the respective systems and planned completed construction projects that will be finished in time to be rated by the Department's pavement condition collection contractor. The 4-year percent poor target for interstate pavements meets the FHWA 5.0% minimum threshold requirement.

For the 2019 performance period, the ACOG has elected to accept and support the State of South Carolina's Interstate and non-Interstate NHS Pavement Condition target recommendations.

10.6 Performance Measure 3 (PM3) – System Performance and Freight

10.6.1 System Reliability

Transportation system users desire travel time reliability – consistent and predictable travel times. Travel time reliability is a reflection of the variability of travel time. Travelers and shippers like to know what to expect and travel time reliability gives them greater certainty when using the transportation system. Unreliable travel is caused by non-recurring events, such as weather conditions, work zones, special events, and traffic incidents, as well as fluctuations in traffic volumes.

10.6.1.1 System Reliability Needs

Given the rural nature of the ACOG study area, it is not surprising that both Interstate and Non-Interstate NHS reliability is high. There is very little congestion along the rural sections of Interstate 85, and most NHS roadways are serving small population centers. The table below shows the travel time reliability percentages for each facility:

ACOG 2017 TRAVEL TIME RELIABILITY DATA

	Interstate	Non-Interstate NHS
ACOG	100.0%	94.1%

10.6.1.2 System Reliability Targets

Planning practitioners are increasingly using vehicle probe data to obtain information on travel time reliability. FHWA has acquired a national data set of average travel times for use in performance measurement. This data set is being made available to States and metropolitan planning organizations (MPOs) as a tool for performance measurement. The National Performance Management Research Data Set (NPMRDS) is a vehicle probe-based travel time data set and consists of average travel times reported every 5 minutes on the National Highway System (NHS) as defined in MAP-21 and on the five-mile radius of arterials at border crossings. The table below shows the Travel Time Reliability target recommendations:

TRAVEL TIME RELIABILITY TARGETS

Reliability Target	Interstate	Non-Interstate NHS
2-Year	91.0%	N/A
4-Year	90.0%	81.0%

All Travel Time based measures will be computed using the "Travel Time Metric Dataset" in HPMS for the reporting segments. Beginning in 2018, the State DOTs are required to submit travel time-related metric data and the data necessary for measure computation for reporting segments on NHS into HPMS (i.e., "Travel Time Metric Dataset" in HPMS) by June 15th of each year, 56 and the travel time based metrics are:

- Level of Travel Time Reliability (LOTTR) metrics, corresponding 80th and 50th percentile travel times, directional Average Annual Daily Traffic (DIR_AADT), and vehicle occupancy factor for each of the reporting segments on NHS, as required in 23 CFR 490.511(e).

10.6.2 Freight Movement and Economic Vitality

Understanding performance of the freight transportation system and the challenges that come with increasing demand for freight transportation is important to improving mobility and productivity and establishing goods movement goals in the transportation plan.

10.6.2.1 Freight Reliability Needs

As was the case with System Reliability, Freight Reliability in the rural study area is not a significant issue. According to 2017 data from SCDOT, the truck travel time reliability (TTTR) index for the ACOG study area is 1.08.

The TTTR is the ratio of longer travel times (85th percentile) to a "normal" travel time (50 percentile). If the index equals 1, the corridor is 100% reliable because the longer travel times equal the normal travel times.

ACOG 2017 TRUCK TIME RELIABILITY DATA

	Truck Travel Time Reliability Index
ACOG	1.08

10.6.2.2 Freight Reliability Targets

The Travel Time Reliability (TTR) measure assesses the reliability of roadways on the Interstate and Non-Interstate (NHS) systems. TTR is defined by the FHWA as the percent of person-miles on the (Interstate/NHS) that are reliable. Concerning freight, reliability is the ratio of the Interstate System Mileage providing for reliable Truck Travel Time Reliability (TTTR). Data are derived from the travel time data set found in the National Performance Management Research Data Set (NPMRDS). The metrics to be used are Level of Travel Time Reliability (LOTTR) and the TTTR Index. The table below shows the Truck Travel Time Reliability target recommendations:

TRUCK TIME RELIABILITY TARGETS

Reliability Target	Truck Travel Time Reliability Index
2-Year	1.36
4-Year	1.45

All Travel Time based measures will be computed using the "Travel Time Metric Dataset" in HPMS for the reporting segments. Beginning in 2018, the State DOTs are required to submit travel time-related metric data and the data necessary for measure computation for reporting segments on NHS into HPMS (i.e., "Travel Time Metric Dataset" in HPMS) by June 15th of each year, 56 and the travel time based metrics are:

- Truck Travel Time Reliability (TTTR) metrics, corresponding 95th and 50th percentile truck travel times for each of the reporting segments on Interstate System, as required in 23 CFR 490.611(b).

APPENDICES

Appendix A – SCDOT Statewide Transportation Planning Process

Appendix B – ACOG Public Participation Plan