CONNECTOR 2000 ASSOCIATION, INC.

EVENT NOTICE NO. 2009-4

May 11, 2009

CUSIP Prefix 20786L

*Submitted in compliance with the provisions of the Continuing Disclosure Agreement dated February 11, 1998 (the "**Disclosure Agreement**") between Connector 2000 Association, Inc., a South Carolina non-profit public benefit corporation (the "**Association**") and U.S. Bank, National Association, as successor in trust to First Union National Bank, in its capacity as dissemination agent (the "**Trustee**") relating to the Connector 2000 Association, Inc. Toll Road Revenue Bonds (Southern Connector Project, Greenville, South Carolina), Series 1998A, Series 1998B and Series 1998C (the "**Bonds**").*

INTRODUCTION

This is an "Event Notice" filed pursuant to that certain Continuing Disclosure Agreement dated February 11, 1998 (the "***Disclosure Agreement***") between the Association and the Trustee relating to the Bonds. Capitalized terms not otherwise defined herein have the meaning set forth in the Disclosure Agreement, if defined therein.

The Bonds were sold by the Association on January 27, 1998 to Lehman Brothers, Inc. and Mesirow Financial, Inc., as managing underwriters (the "***Underwriters***") pursuant to a Bond Purchase Agreement executed on that date between the Association and the Underwriters. A final Official Statement dated February 3, 1998 (the "***Official Statement***") was prepared in connection with the sale of the Bonds. The closing of the sale of the Bonds took place February 11, 1998 (the "***Closing Date***").

OTHER INFORMATION

On April 28, 2009, the Association filed Event Notice 2009-3 containing, among other things, the final Traffic and Revenue Study (the "***Study***") prepared by Stantec Engineering ("***Stantec***") and Real Estate Study prepared for Stantec by The Furman Company. Section 4.4 of the Study contained a typographical error in the date of the recommended alternate toll schedule. This Event Notice supplements and amends Event Notice 2009-3 and attaches a complete copy of the Study, including the corrected alternative toll schedule.

Traffic and Revenue Report for Southern Connector

Prepared for Connector 2000 Association, Inc.

May 4, 2009

Stantec Consulting Services Inc.
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New York, NY 10010
Tel: (212) 366-5600
Fax: (202) 366-5629

May 4, 2009

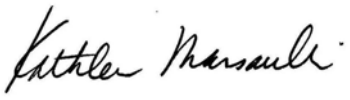
Connector 2000 Association, Inc.
P.O. Box 408
Piedmont, SC 26973

Attention: **Mr. Peter Femia**
Executive Vice President/General Manager

Stantec Consulting Services Inc. has prepared this traffic and revenue study for the Southern Connector for the Connector 2000 Association, its advisors, and the South Carolina Department of Transportation. We are pleased to submit this report presenting our analysis and forecasts for the Project.

Sincerely,

STANTEC CONSULTING SERVICES INC.



Kathleen Massarelli, AICP
Senior Transportation Planner

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Attachment: Final Traffic and Revenue Report for Southern Connector

Table of Contents

1.0 Introduction

Stantec Consulting Services Inc. was retained by the Board of Directors of the Connector 2000 Association, Inc. to complete a detailed investment grade traffic and revenue study for a forecast period of at least 50 years. The Connector 2000 Association, its advisors and the South Carolina Department of Transportation intend to use this study to potentially restructure the bonded indebtedness of the Southern Connector and/or possibly transfer the operation of the toll road to a concessionaire.

This report summarizes the analysis of the traffic and revenue potential of the toll road. As part of this analysis, recent trends in traffic and revenue on the Southern Connector were evaluated. In addition, recent and projected demographic and development trends in the area were evaluated and levels of congestion on competing roads were identified. For the forecasting procedure, Stantec used information from the travel demand model developed by Greenville Pickens Area Transportation Study (GPATS), the Metropolitan Planning Organization for the Greenville region, supplemented by an evaluation of potential land use development projects in the area prepared by Grubb & Ellis│The Furman Co. (Furman). The Furman report is included in the Appendix to this report.

1.1 DESCRIPTION

Bonds were issued in 1998 to finance substantially all of the costs of the Southern Connector. The Connector 2000 Association is operating the Southern Connector as a toll facility pursuant to a License Agreement with the South Carolina Department of Transportation (SCDOT). It opened to toll paying traffic on March 14, 2001.

The 16-mile Southern Connector is located in Greenville County, South Carolina, south of the downtown area of the City of Greenville. It was built to interstate standards and is designated as I-185. As shown in Figure 1.1.1, the Southern Connecter together with the toll-free section of I-185 north of I-85 and I-385 forms a circumferential interstate route leading into the City of Greenville. Within the City, I-185 connects to Church Street (US 29) and I-385 connects to North Street (SC 183).

The Southern Connector extends south from toll-free I-185 at its interchange with I-85 and east to its terminus at I-385 near the cities of Mauldin and Simpsonville. North from the western terminus of the Connector, toll-free I-185 provides access into downtown Greenville. I-85 provides access to Atlanta to the southwest and to Charlotte to the northeast. I-385 provides access to the City of Greenville in the north and to I-26 and Columbia and Charleston in the south.

The Southern Connector has four intermediate interchange locations. From the west at the interchange I-185 with I-85, the Connector proceeds southeast to an interchange with SC 153, continues east to interchanges with S.C. 20, with U.S. 25 south of the Donaldson Center and Matrix Industrial Parks, and with Fork Shoals Road before turning northeast and terminating at

an interchange with I-385 at its intersection with U.S. 276 and Standing Springs Road, between the cities of Mauldin and Simpsonville. Posted speeds on the Connector are 65 mph.

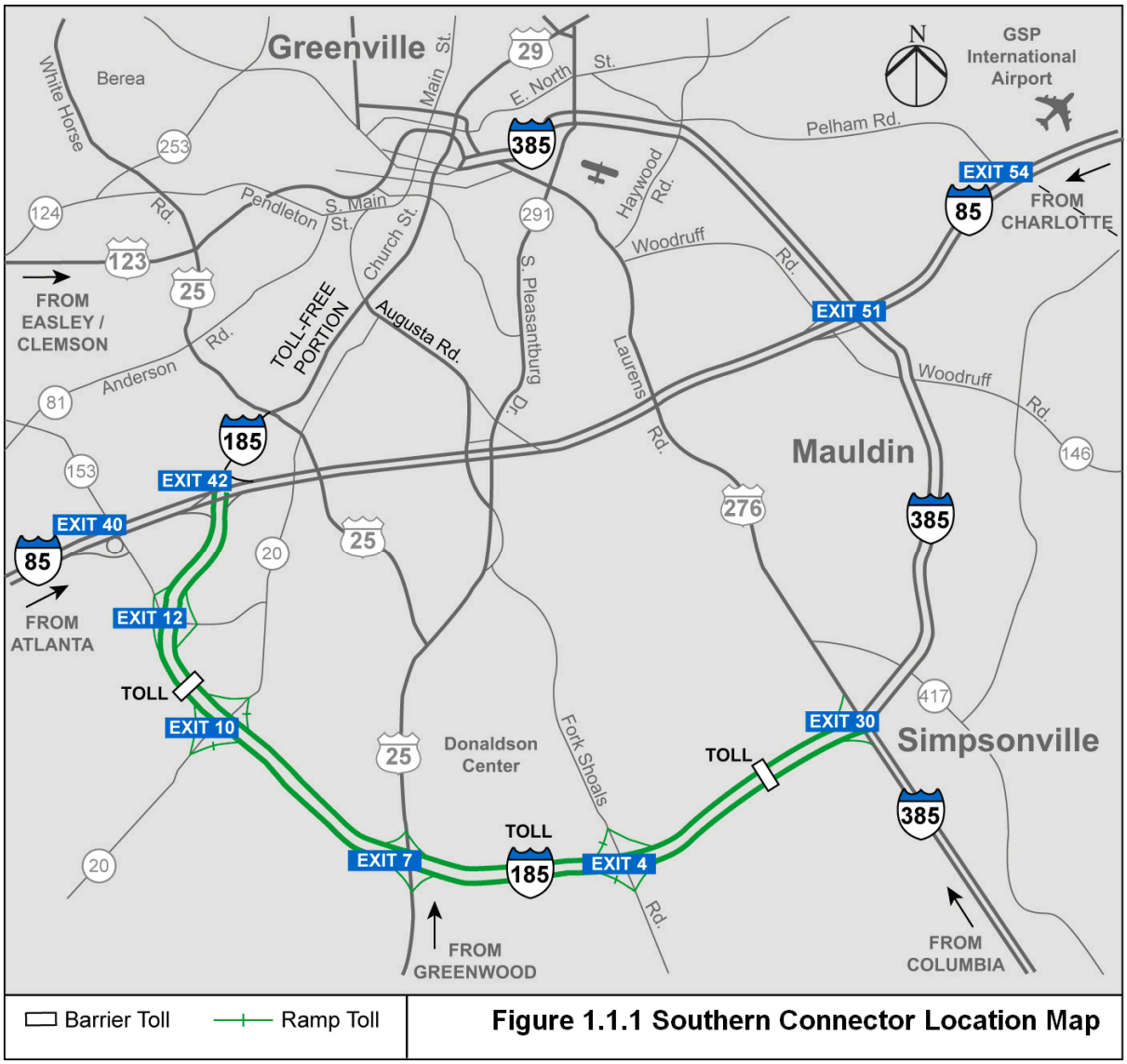


Figure 1.1.1 Southern Connector Location Map

1.2 TOLL COLLECTION

As shown on the map, tolls are collected at two across-the-road mainline plazas and two ramp locations. The West Toll Plaza is located between SC 153 and SC 20 and the East Toll Plaza is located between I-385 and Fork Shoals Road. Tolls are also collected on the ramps to and from the east at SC 20 and to and from the west at Fork Shoals Road. The Southern Connector is a fully closed plaza/ramp system; no traffic can use the road without paying a toll.

Customers of the Southern Connector may pay by cash or by Palmetto Pass (PalPass). This electronic toll collection (ETC) prepaid toll account allows users to travel through dedicated lanes without stopping and have their tolls automatically deducted from a prepaid account.

Each mainline plaza consists of four toll collection lanes. The two left lanes are unattended; the left-most lane is an express PalPass lane and the second-from-left lane is for exact change payment (coin only). The two right lanes are attended and for cash payment, change and receipts. PalPass is accepted for payment in each lane. The speed limit through the express lane is 45 mph. The ramp plazas each consist of one unattended lane requiring either exact change or PalPass payment.

The toll rates for the entire 50-year term of the License Agreement, which permits the Association to operate the Southern Connector, were set by the SCDOT pursuant to Section 57-5-1340 of the South Carolina Code of Laws, 1976, as amended under Section 6.4 of the License Agreement. The initial rates established by SCDOT were adjusted and approved by SCDOT on January 3, 2005 to their current levels. SCDOT permits the Association to implement discounts to encourage utilization of the Southern Connector. Figure 1.2.1 summarizes the opening year (effective 3/14/01) and current (effective 1/3/05) toll rates by class on the Southern Connector.

Figure 1.2.1
Toll Rates

	Tolls Effective 3/14/01				Tolls Effective 1/3/05			
	Mainline		Ramp		Mainline		Ramp	
Class	Cash	PalPass	Cash	PalPass	Cash	PalPass	Cash	PalPass
2-axle	$0.75	$0.60	$0.50	$0.50	$1.00	$0.75	$0.50	$0.50
3-axle	$1.50	$1.20	$0.50	$0.50	$1.80	$1.35	$0.50	$0.50
4-axle	$2.00	$1.60	$0.50	$0.50	$2.40	$1.80	$0.50	$0.50
5-axle	$2.50	$2.00	$0.50	$0.50	$3.00	$2.25	$0.50	$0.50
6+-axle	$3.00	$2.40	$0.50	$0.50	$3.60	$2.70	$0.50	$0.50

As shown in Figure 1.2.1, PalPass users currently receive a 25 percent discount from mainline tolls; no discount is received at ramp toll collection locations. The discount is available to all users of all vehicle classes. The effect of the 2005 toll adjustment was a 33 percent increase for two-axle/cash tolls and a 20 percent increase for multi-axle/cash tolls. The resulting toll cost over 16 miles is approximately 12.5 cents per mile for two-axle vehicles paying cash and 9.4 cents per mile for two-axle vehicles using PalPass. To encourage the use of PalPass, the magnitude of the PalPass discount was increased in terms of percentage from a 20 percent discount pre-adjustment to a 25 percent discount as part of the adjustment. This allowed cash users to convert to PalPass and avoid an increase in tolls. There was no increase in ramp toll rates as part of the 2005 adjustment.

2.0 Traffic and Revenue Characteristics

During the first four years the Southern Connector was open, traffic grew at an average annual growth rate of 15.5 percent. Following the toll increase in 2005, the annual average daily traffic decreased by 3.3 percent in that year. From 2005 to 2007 traffic has resumed to increase, but at a slightly lower average annual growth rate of 8.6 percent. Due to the high price of gasoline during the summer months and general economic conditions, 2008 compared with 2007 indicates that traffic has decreased 3.4 percent and revenue decreased 3.9 percent. Figure 2.0.1 shows the annual transactions and annual average daily traffic (AADT) for all years the Southern Connector has been open. The high growth in the first few years is representative of "ramp-up", which is the time it takes motorists to gain knowledge and become comfortable with a new roadway.

Figure 2.0.1
Southern Connector Traffic and Revenue Growth

Year	Annual Transactions	Annual Average Daily Traffic	% Change	Annual Revenue[(1)]	% Change
2001	2,658,741	9,105		$ 2,067,396	
2002	3,966,717	10,868	19.4%	$ 2,953,883	42.9%
2003	4,566,095	12,510	15.1%	$ 3,333,252	12.8%
2004	5,129,949	14,016	12.0%	$ 3,769,428	13.1%
2005	4,948,535	13,558	-3.3%	$ 4,660,649	23.6%
2006	5,434,691	14,890	9.8%	$ 5,084,643	9.1%
2007	5,839,205	15,998	7.4%	$ 5,452,944	7.2%
2008[(2)]	5,653,527	15,447	-3.4%	$ 5,238,985	-3.9%

Notes: (1) Annual revenue for 2001 through 2007 is audited and may differ from monthly data shown elsewhere in this report.
(2) 2008 represents unaudited numbers.

As shown in Figure 2.0.1, there was large traffic growth from 2001 to 2004. The toll increase that took place in January 2005 decreased the transactions in 2005 by 3.3 percent; however the gross revenues increased 23.7 percent. Transactions and revenues resumed increasing at levels of almost 10 percent in 2006 and 7 percent in 2007. As noted above, decreases in 2008 are the result of the high price of gasoline and general economic conditions. Figures 2.0.2 and 2.0.3 show the monthly comparisons for 2006, 2007, and 2008 for traffic and revenue respectively.

Historical traffic growth, characteristics of the Southern Connector users and proposed land use development in the area south of Greenville are the base for future traffic and toll revenue growth. Each element reacts to changes in conditions and contributes differently to future performance.

Figure 2.0.2
Southern Connector Monthly Traffic Comparison
Average Daily Traffic (ADT)

Month	2006 ADT	'06 to '07 % Change	2007 ADT	'07 to '08 % Change	2008 ADT
January	12,366	14.3%	14,133	-0.2%	14,109
February[1]	13,303	10.7%	14,724	3.9%	15,302
March	14,721	9.3%	16,089	-3.5%	15,530
April	14,663	11.4%	16,339	-1.5%	16,091
May	15,039	8.7%	16,342	-1.7%	16,069
June	15,561	7.0%	16,652	-5.0%	15,813
July	14,880	6.7%	15,869	-3.3%	15,342
August	14,823	11.8%	16,571	-6.1%	15,565
September	15,876	5.7%	16,783	-6.0%	15,770
October	15,892	6.6%	16,945	-8.0%	15,585
November	16,715	0.3%	16,773	-6.2%	15,735
December	14,789	-0.5%	14,713	-1.5%	14,492
Total	14,890	7.4%	15,998	-3.4%	15,447

Notes: (1) In February 2007 the Greenville, South Carolina area experienced a heavy ice storm and February 2008 is a leap year.

Figure 2.0.3
Southern Connector Monthly Revenue Comparison

Month	2006 Revenue[2]	'06 to '07 % Change	2007 Revenue[2]	'07 to '08 % Change	2008 Revenue[2]
January	$ 358,281	12.6%	$ 403,460	-0.9%	$ 399,861
February[1]	$ 346,980	10.0%	$ 381,726	7.3%	$ 409,501
March	$ 409,859	14.5%	$ 469,355	-4.9%	$ 446,574
April	$ 418,102	9.7%	$ 458,784	-2.7%	$ 446,345
May	$ 442,478	7.5%	$ 475,808	-2.4%	$ 464,417
June	$ 445,060	5.8%	$ 470,651	-5.5%	$ 444,579
July	$ 438,819	5.4%	$ 462,461	-4.2%	$ 442,885
August	$ 435,105	10.4%	$ 480,167	-6.5%	$ 449,186
September	$ 446,850	4.8%	$ 468,149	-5.8%	$ 440,960
October	$ 461,984	4.1%	$ 480,991	-7.8%	$ 443,664
November	$ 476,516	-0.3%	$ 475,143	-8.2%	$ 436,319
December	$ 404,812	3.9%	$ 420,516	-1.4%	$ 414,693
Total	$ 5,084,844	7.1%	$ 5,447,213	-3.8%	$ 5,238,985

Notes: (1) In February 2007 the Greenville, South Carolina area experienced a heavy ice storm and February 2008 is a leap year.
(2) Represent unaudited numbers.

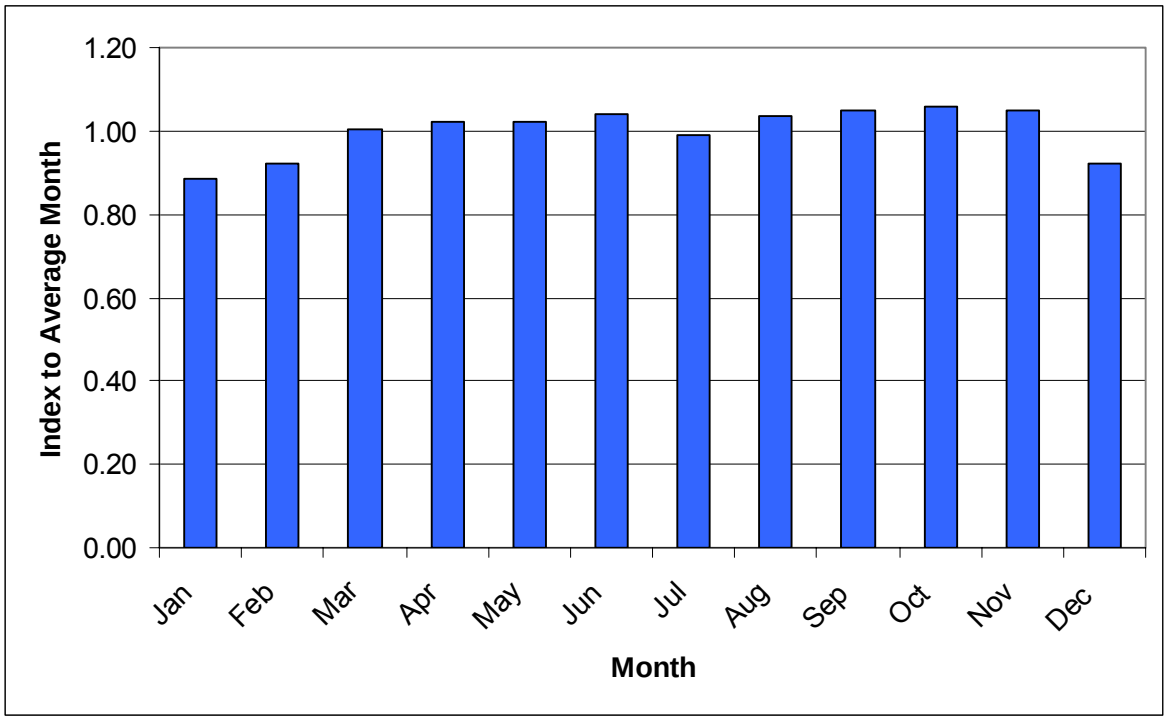
2.1 MONTHLY TRAFFIC VARIATIONS

Figure 2.1.1 and Figure 2.1.2 below show the average daily traffic (ADT) by month and indexed to the 2007 AADT. Monthly traffic is generally higher in the autumn months because of high travel for home Clemson University football games. Overall, the Southern Connector is not affected by the seasons and only varies from 0.88 in January to 1.06 in October in the monthly traffic comparison.

Figure 2.1.1
Southern Connector 2007 Monthly Traffic

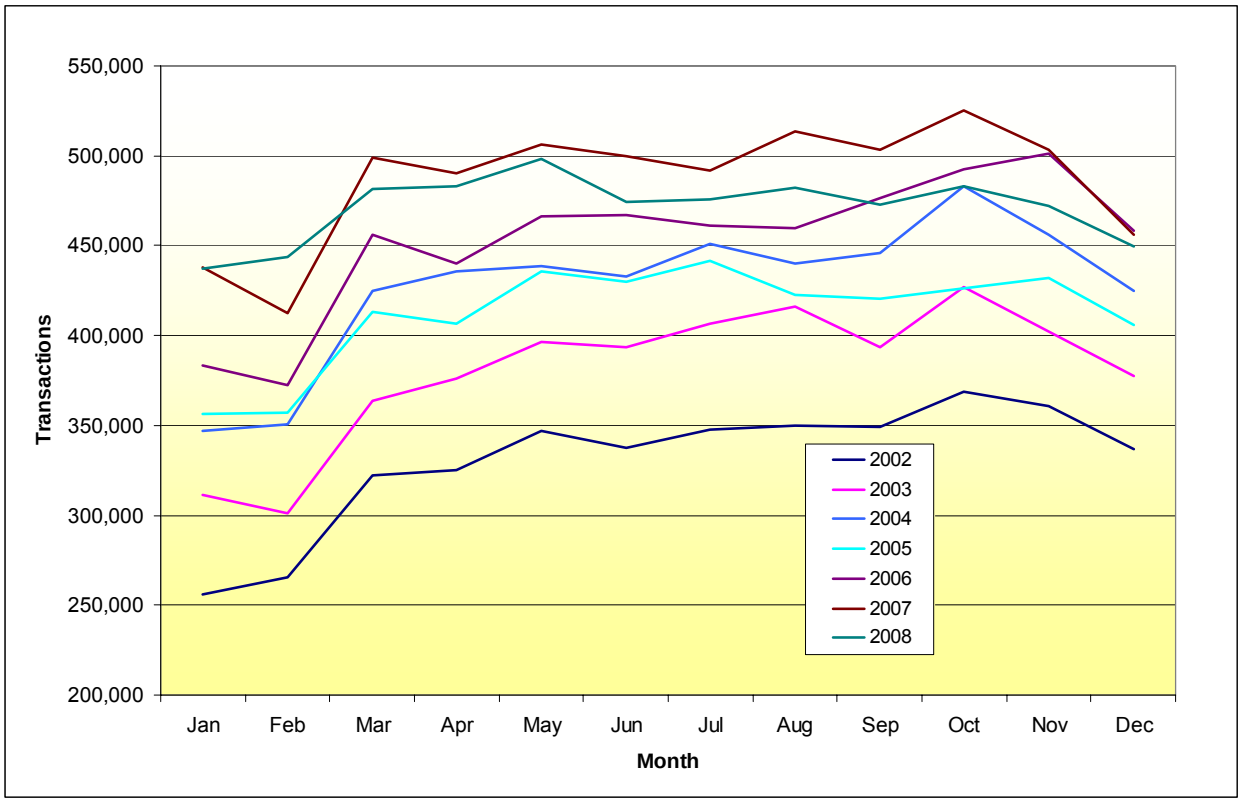
Month	ADT	Index
January	14,133	0.88
February	14,724	0.92
March	16,089	1.01
April	16,339	1.02
May	16,342	1.02
June	16,652	1.04
July	15,869	0.99
August	16,571	1.04
September	16,783	1.05
October	16,945	1.06
November	16,773	1.05
December	14,713	0.92
AADT	15,998	1.00

Figure 2.1.2
2007 Monthly ADT Variations



Since the Southern Connector opened in 2001 the seasonal traffic pattern has remained fairly consistent, as shown in Figure 2.1.3.

Figure 2.1.3
Monthly Transactions 2002 – 2008



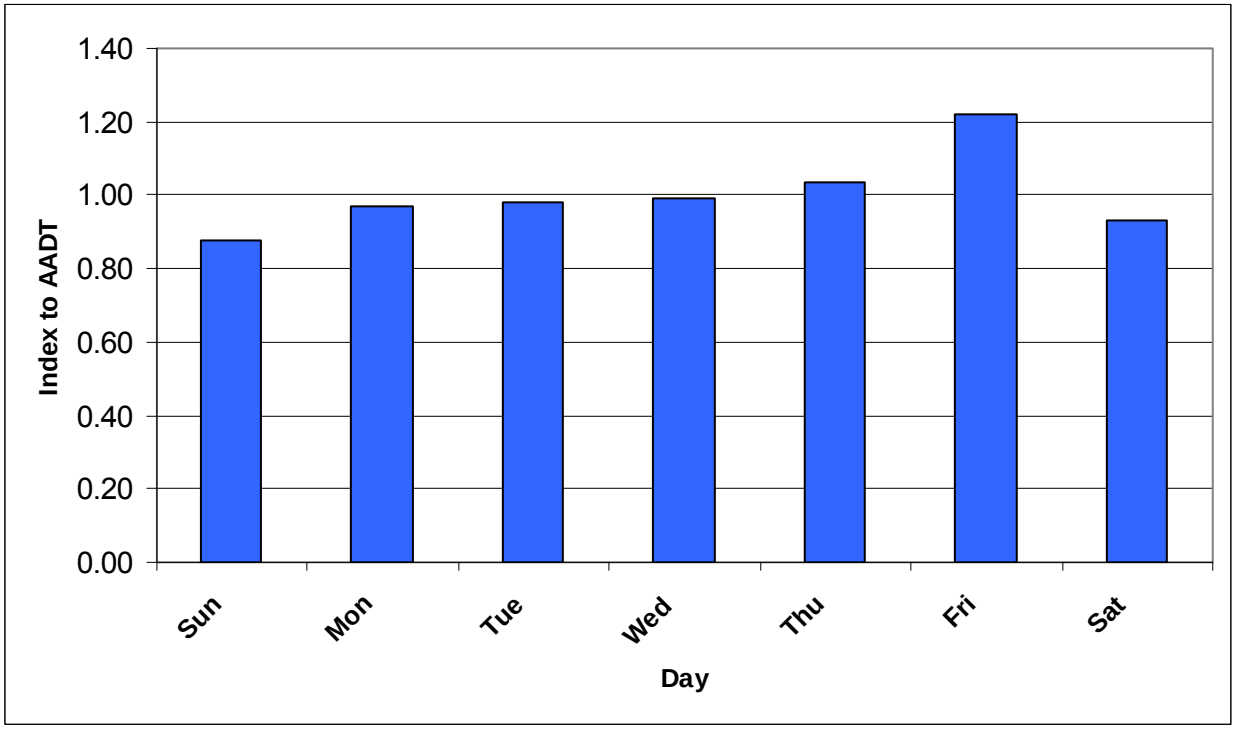
2.2 DAILY TRAFFIC VARIATIONS

Figure 2.2.1 and Figure 2.2.2 show the average traffic for each day of the week for the entire year indexed to the AADT for 2007. Sunday shows the least amount of traffic with only 88 percent of the AADT. The work week shows consistent traffic with the exception of Friday when traffic averages more than 22 percent greater than the AADT. The Southern Connector in Greenville serves as a regional bypass for weekend travel; therefore Friday carries the highest percentage of weekday traffic all year round. The daily variations of the Southern Connector traffic have been fairly consistent since the toll road opened in 2001.

Figure 2.2.1
Southern Connector 2007 Daily Traffic

Day	ADT	Index
Sunday	14,030	0.88
Monday	15,478	0.97
Tuesday	15,640	0.98
Wednesday	15,869	0.99
Thursday	16,531	1.03
Friday	19,552	1.22
Saturday	14,895	0.93
AADT	15,988	1.00

Figure 2.2.2
2007 Daily ADT Variation



2.3 TRAFFIC AND TOLL REVENUE BY LOCATION

Figure 2.3.1 shows the traffic and revenue by toll plaza location. The mainline section accounts for 92.9 percent of the transactions and 96.2 percent of the total toll revenue. Since the toll rate on the ramp is only 50 cents, it only accounts for 3.8 percent of the toll revenue even though 7 percent of the transactions take place on the ramps. The ramp plazas have showed development over the years, in 2005 the ramps accounted for 6.4 percent of the total transactions compared to the 7.0 percent in 2007. In order to maintain the balance of the toll structure, the toll rates on the ramps should remain at one-half of the rates at the plazas.

Figure 2.3.1
2008 Traffic and Revenue by Location

Toll Locations	Transactions	Percent	Toll	Toll Revenue(1)	Percent
West Mainline	*2,476,695*	*43.8%*			
East Mainline	*2,773,501*	*49.1%*			
Mainline Subtotal	5,250,196	92.9%	$ 0.96	$ 5,037,320	96.2%
SC-20	*168,489*	*3.0%*			
Fork Shoals Road	*234,842*	*4.2%*			
Ramp Subtotal	403,331	7.1%	$ 0.50	$ 201,666	3.8%
Total	5,653,527	100.0%	$ 0.93	$ 5,238,985	100.0%

Notes: (1) Unaudited. May not add due to rounding.

2.4 TRAFFIC AND TOLL REVENUE BY VEHICLE CLASS AND PAYMENT TYPE

There are two categories into which vehicles can be grouped: vehicle class and payment type (Palmetto Pass vs. cash). A Palmetto Pass (PalPass) is an electronic toll device (transponder) that allows customers to pre-pay tolls through a cash advance or credit card charge and drive through a dedicated toll lane without stopping for a manual transaction. Transponders can be obtained by submitting an application that can be obtained at any of the manned toll lanes, calling the customer service number, or applying online at the Southern Connector's website.

With regard to vehicle class, two axle passenger cars account for 96.9 of the traffic and 92.3 percent of the total toll revenue. The percentage of two axle vehicles has continued to increase slowly over the past few years. Figure 2.4.1 shows the breakdown of transactions, average toll rate, and toll revenue by vehicle class.

Figure 2.4.1
Traffic and Revenue by Class

Year	Vehicle Class	Transactions	Percent	Average Toll	Toll Revenue(1)	Percent
2006	Two Axle	$ 5,250,674	96.6%	$ 0.89	$ 4,671,230	91.9%
	More than Two Axle	$ 184,017	3.4%	$ 2.25	$ 413,614	8.1%
	Total	$ 5,434,691		$ 0.94	$ 5,084,844	
2007	Two Axle	$ 5,651,730	96.8%	$ 0.89	$ 5,021,926	92.2%
	More than Two Axle	$ 187,475	3.2%	$ 2.27	$ 425,287	7.8%
	Total	$ 5,839,205		$ 0.93	$ 5,447,213	
2008	Two Axle	$ 5,477,252	96.9%	$ 0.88	$ 4,837,782	92.3%
	More than Two Axle	$ 176,275	3.1%	$ 2.28	$ 401,202	7.7%
	Total	$ 5,653,527		$ 0.93	$ 5,238,985	

Notes: (1) Unaudited. May not add due to rounding.

Figure 2.4.2 shows the traffic and toll revenue by payment type for 2006, 2007, and 2008. PalPass is the electronic toll collection (ETC) method used by the Southern Connector. The figure displays the amount of traffic that uses the specified payment method and percent it contributes to the total toll revenue.

Figure 2.4.2
Traffic and Revenue by Payment Type

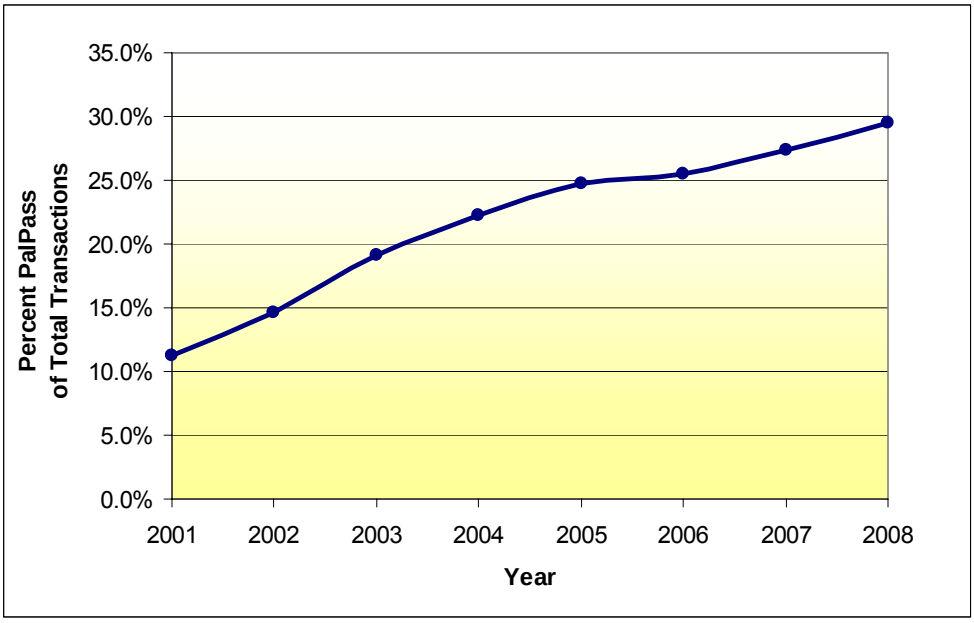
Year	Payment Type	Transactions	Percent	Average Toll	Toll Revenue[(1)]	Percent
2006	Cash	$ 4,047,748	74.5%	$ 1.01	$ 4,073,439	80.1%
	PalPass	$ 1,386,943	25.5%	$ 0.73	$ 1,011,405	19.9%
	Total	$ 5,434,691		$ 0.94	$ 5,084,844	
2007	Cash	$ 4,239,279	72.6%	$ 1.01	$ 4,288,273	78.7%
	PalPass	$ 1,599,926	27.4%	$ 0.72	$ 1,158,941	21.3%
	Total	$ 5,839,205		$ 0.93	$ 5,447,213	
2008	Cash	$ 3,983,928	70.5%	$ -	$ -	-
	PalPass	$ 1,669,599	29.5%	$ -	$ -	-
	Total	$ 5,653,527		$ 0.93	$ 5,238,985	

Notes: (1) Unaudited. May not add due to rounding.

Figure 2.4.3 displays the percent of total transactions that were PalPass transactions since the opening year in 2001 to 2008. PalPass transactions accounted for 11.3 percent of the total transactions in the opening year of 2001 and have increased to account for 29.5 percent of the total trips by the end of 2008.

Electronic Toll Collection usage at the Southern Connector is relatively low when compared to other U.S. toll roads due to the low percentage of commuters using the toll road. A road side interview survey conducted by URS Consultants in 2005 indicated that approximately 40 percent of the Southern Connector traffic is commuters. The percent of PalPass users is predicted to continue to grow in the future as the number of commuters and other regular users increases.

Figure 2.4.3
PalPass Usage 2001 to 2008



2.5 2008 TRAFFIC TRENDS

The following Figure 2.5.1 displays 2008 traffic transactions. Toll transactions for 2008 indicate that traffic is declining due to the increase in fuel prices during the summer months and the economic downturn.

Figure 2.5.1
2008 vs. 2007 Traffic and Toll Revenue

Month	2007 ADT	2008 ADT	Percent Change
January	14,133	14,109	-0.2%
February	14,724	15,302	3.9%
March	16,089	15,530	-3.5%
April	16,339	16,091	-1.5%
May	16,342	16,069	-1.7%
June	16,652	15,813	-5.0%
July	15,869	15,342	-3.3%
August	16,571	15,565	-6.1%
September	16,783	15,770	-6.0%
October	16,945	15,585	-8.0%
November	16,773	15,735	-6.2%
December	14,713	14,492	-1.5%
Year to Date	15,998	15,447	-3.4%

It is likely that motorists will adjust their travel patterns in the future if there are higher gasoline prices. Figure 2.5.2 compares the Federal Highway Administration (FHWA) vehicles miles traveled in the United States and South Carolina with transactions on the Southern Connector for first ten months of 2008. The vehicle miles traveled throughout the United States and in South Carolina have been uniformly decreasing in 2008 due to the higher price of gasoline during the summer months and general economic conditions. For the period January through August, Southern Connector performance was better than either the country or the state, but this did not continue through September and October.

Figure 2.5.2
Comparison of Monthly Travel Growth 2008 vs. 2007

	Percent Change in Vehicle Miles of Travel		Percent Change in Transactions
Month	United States	South Carolina	Southern Connector
January	-1.8%	-2.9%	-0.2%
February	-0.5%	-0.4%	3.9%
March	-4.4%	-5.1%	-3.5%
April	-1.6%	-3.6%	-1.5%
May	-3.8%	-3.6%	-1.7%
June	-5.1%	-5.4%	-5.0%
July	-3.6%	-4.6%	-3.3%
August	-5.6%	-7.4%	-6.1%
September	-4.7%	-8.4%	-6.0%
October*	-3.5%	-6.7%	-8.0%

*Preliminary data for US and South Carolina
Sources: US Department of Transportation, Federal Highway Administration and Connector 2000 Association

Figure 2.5.3 compares the Southern Connector's transaction percent change with the gas prices in the South Carolina Area. For the period between April 2002 and December 2008, the highest price of gasoline in the region occurred on July 7, 2008 and has continually decreased through the end of the year. Prior to 2005, the high increase in Southern Connector transactions indicate "ramp-up", which is the time it takes motorists to gain knowledge and become comfortable with a new roadway. In 2005, the percent decrease in traffic is a result of the toll increase that took place in January 2005. The Southern Connector transactions then reverted to similar previous growth rates until higher prices in gasoline occurred in 2008.

Figure 2.5.3
Comparison of Growth Rates of SC Transactions and Price of Gasoline

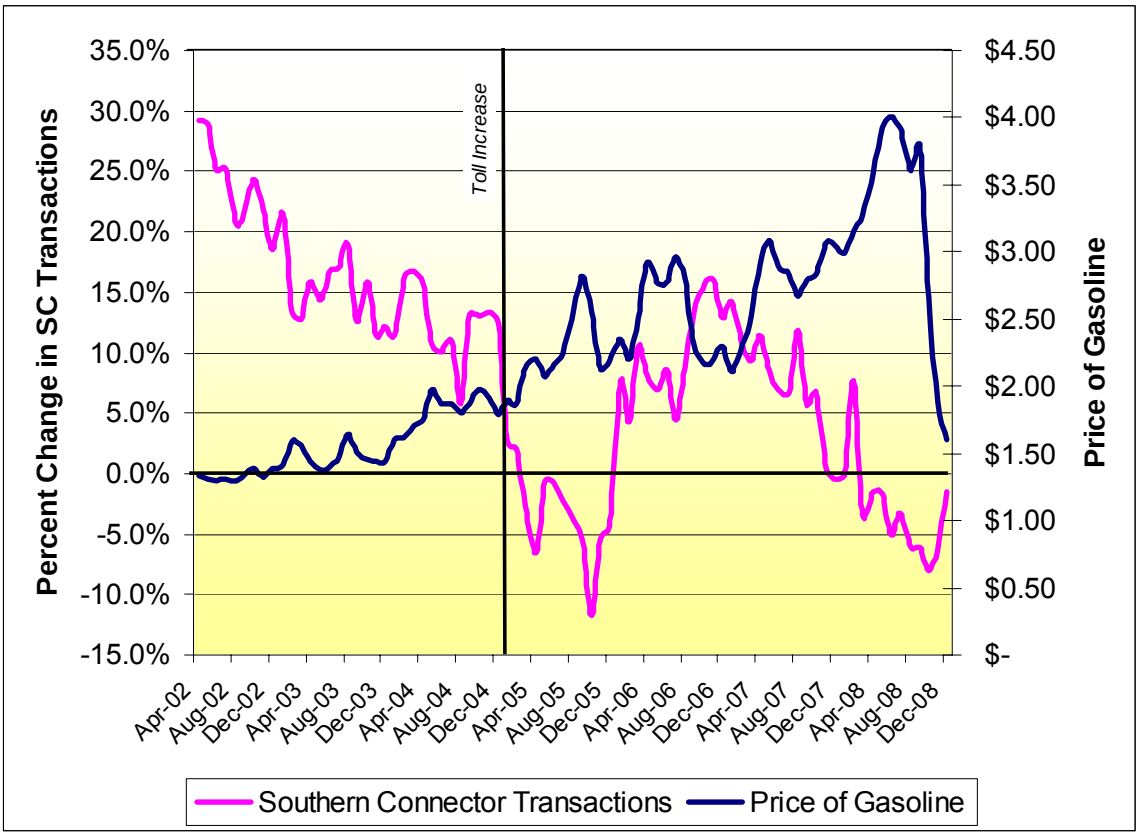
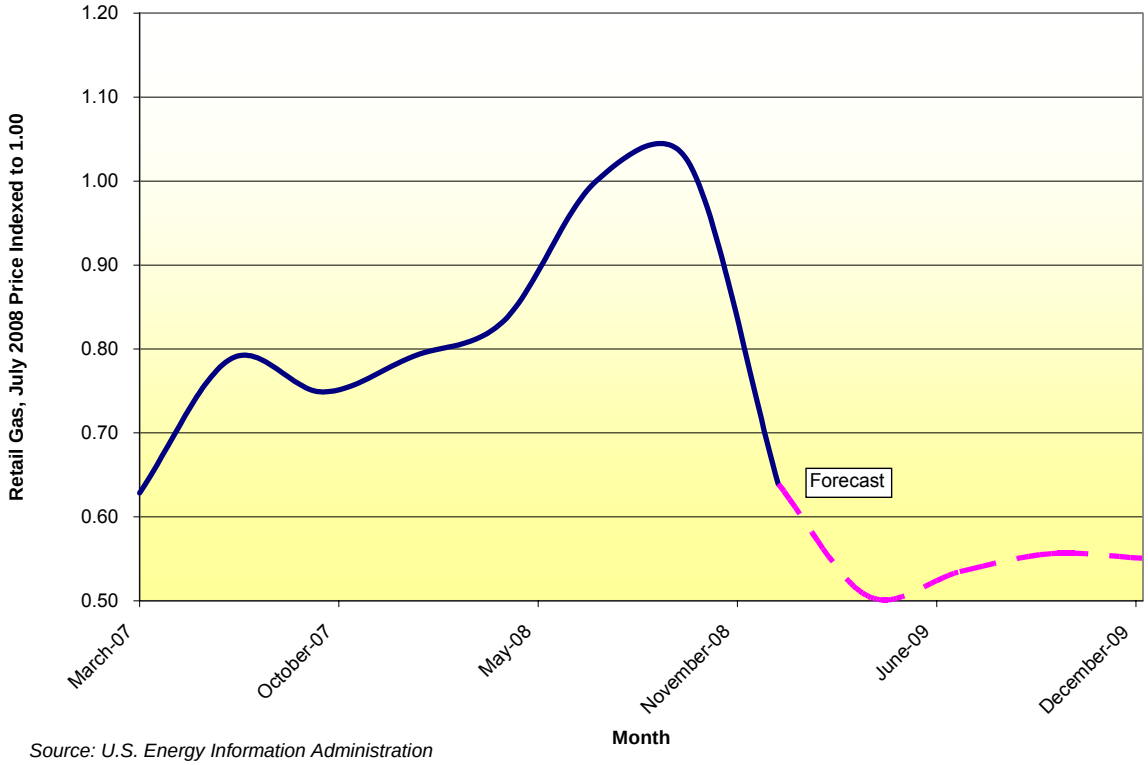


Figure 2.5.4 displays the U.S. Energy Information Administration's gasoline price forecasts for the US east region. Over the next year, gas prices across the country will follow standard seasonal patterns, but are projected to be fairly stable.

Figure 2.5.4
US East Coast Retail Gasoline Prices and Short-Term Forecasts
(July 2008 Indexed to 1.00)



Source: U.S. Energy Information Administration

2.6 SPEED STUDIES

During the August 2008 site visit, Stantec collected speed data while traveling through the study area. All directions of the Southern Connector interstates were driven or observed in both the AM and PM peak hours and off-peak periods. While significant traffic volumes were noted on I-85, I-385 and the toll free section of I-185, little congestion was actually observed. The notable exception was northbound I-385, south of I-85, in the AM peak hour. Bumper-to-bumper traffic was observed extending south almost to Simpsonville. In the southbound direction on the same section of I-385, congestion on some ramps leading to local roads was also observed during the AM peak hour. The cause seemed to be volumes exceeding the capacity of the road at the traffic signal at the top of the ramp.

I -185 does not parallel I-385, so for many trip origins and destinations I-185 is not a useful alternative. However, for some longer trips, the use of I-185 for part of the trip may provide an alternative routing to the portions of I-385 that are prone to peak period congestion. In general, trips from the south-east to the north-west might divert from I-385 at the intersection of the two expressways. These southeast to northwest trips are a small share of the trips on I-385 relative to the trips headed towards the Greenville core on I-385.

In the PM peak hour, some slight congestion was noted on northeast bound I-85 near the ramp to southbound I-385. This congestion was slight both in its effect on speeds and the length of roadway affected.

Figure 2.6.1 summarizes speed data observed on the interstate system from field visits. As shown, average speeds on the Southern Connector are about the same or faster than on I-85, I-385 and the toll free section of I-185. When comparing the distances traveling via I-85 directly from the Altanta area traveling northeast, the Southern Connector route is actually slightly longer. Since the speeds on I-85 and the Southern Connector are generally similar, a trip via I-85 results in a shorter trip. The data display the lack of competitive ability that the Southern Connector currently has with I-85 and supports the resulting low share of traffic the Southern Connector carries in the corridor. As congestion on I-85 and I-385 increases, the Southern Connector will become a more viable alternative for these bypass trips in the future.

Figure 2.6.1
Observed Speeds on Interstate Routes

Interstate	Direction	Speed		
		AM	PM	Off-Peak
Southern Connector (I-185)	Eastbound	60	63	60
	Westbound	64	62	65
I-185 (toll free section N of I-85)	Northeast bound	n/d	n/d	54
	Southeast bound	n/d	n/d	n/d
I-85	Eastbound	63	62	62
	Westbound	63	61	60
I-385	Northbound	35	56	n/d
	Southbound	60	61	n/d

Notes:
n/d: not driven during the field study
Speeds reflect the general speed of the vehicular flow and not necessarily the speed limit or the highest speed attainable.

2.7 IMPACT OF 2005 TOLL INCREASE

On January 3, 2005, tolls on the Southern Connector were increased at the Mainline Plazas. For passenger cars, cash tolls were increased by one-third (from $0.75 to $1.00) and PalPass tolls were increased 25 percent (from $0.60 to $0.75). As a result of the toll increase, a comparison of the results for 2004 and 2005 indicates that total traffic at the plazas in 2005 decreased 4 percent and toll revenues increased 24.5 percent. Since the increase in the PalPass toll made it equivalent to the cash toll prior to the toll increase, PalPass usage at the Mainline plazas increased from 21.8 percent in 2004 to 24.1 percent in 2005.

The effect of the toll increase on traffic, or “toll elasticity”, is a result of the alternatives available to motorists. Elasticity is a negative factor, the greater the absolute value of the elasticity factor, the greater the loss of traffic due to a toll increase. The major impact on traffic volumes is generally due to the shift of traffic resulting from the attractiveness and potential cost benefits of

competing routes. Motorists also curtail trips by carpooling, consolidating trips and foregoing trips.

In order to estimate the elasticity resulting from a toll increase, it is necessary to remove the effects of normal growth on facility performance by calculating pro forma traffic and revenue as though the toll increase had not occurred and then comparing the pro forma values to actual performance after the toll increase. The following Figure 2.7.1 presents the actual results for transactions and revenue at the mainline plazas for 2004, 2005 and 2006 and the pro forma values for 2005 as though the toll increase had not taken place. The pro forma values are based on the assumption that traffic and revenues in 2005 would have increased by the same percent as in 2006, the year after the toll increase.

Figure 2.7.1
2005 Toll Increase at Mainline Plazas

Year	Revenue	Transactions	Average Toll
2003 Actual	$ 3,196,451	4,284,985	$ 0.75
2004 Actual	$ 3,618,363	4,826,334	$ 0.75
2005 Actual	$ 4,506,182	4,632,702	$ 0.97
2006 Actual	$ 4,901,983	5,068,968	$ 0.97
Percent Change			
'03 - '04	13.2%	12.6%	0.5%
'04 - '05	24.5%	-4.0%	29.7%
'05 - '06	8.8%	9.4%	-0.6%
2005 Est. % Change[1]	11.0%	11.0%	
Pro Forma[1]	$ 4,016,073	5,358,455	$ 0.75
Impact of Toll Increase	12.2%	-13.5%	29.8%

Elasticity[2] =	-0.455

Notes: [1] Pro Forma 2005 with no toll increases, if annual traffic growth was to be the average of 2004 and 2006 growth
[2] Percent change in traffic for each 1 percent increase in toll.

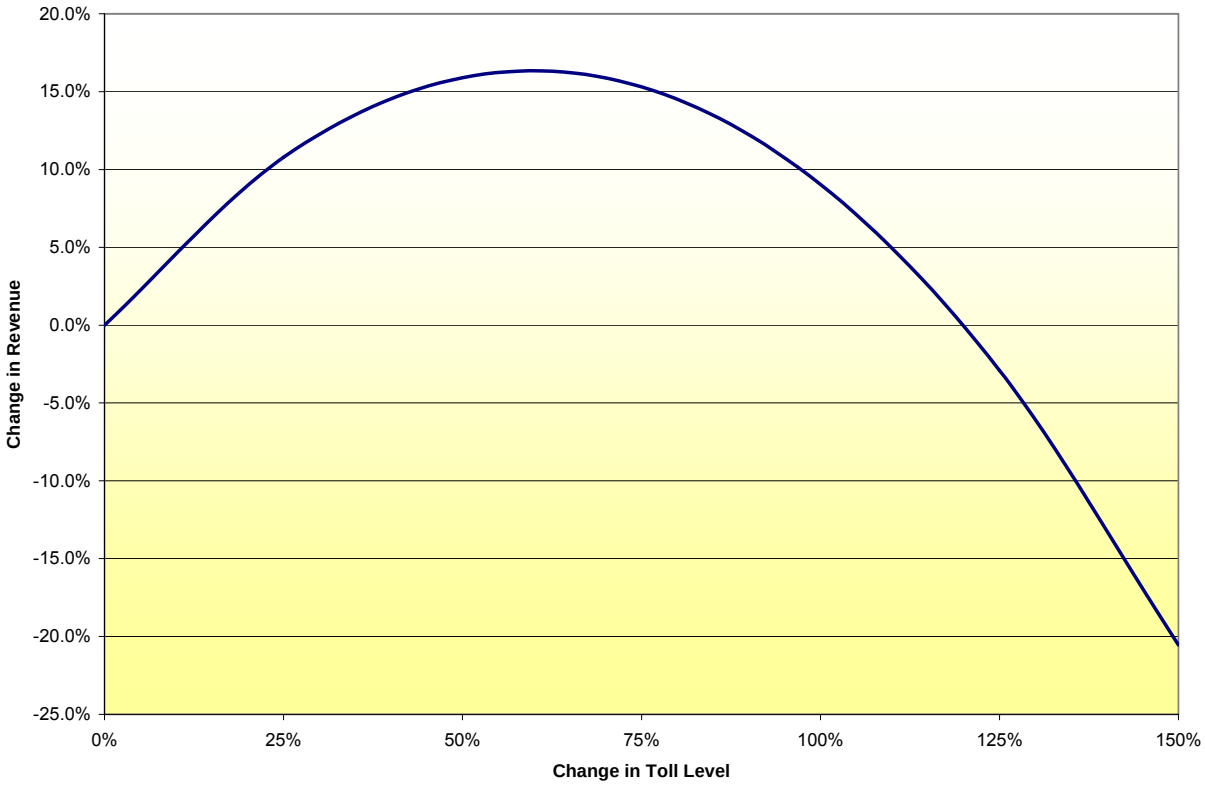
As shown in Figure 2.7.1, after adjusting for normal growth, the effect of the average toll increase of 29.8 percent is estimated to be a traffic decrease of 13.5 percent. This results in an estimated elasticity of -0.455, or a decrease in traffic of 45.5 percent for each 100 percent increase in toll rates. Moderate elasticity ranges from -0.20 to -0.40, therefore this falls at the high end of moderate elasticity. Elasticity can be higher or lower depending on the factors that influence route choice, as noted above.

The following Figure 2.7.2 and Figure 2.7.3 show the revenue change that can be expected at various levels of toll increase, given an elasticity factor of -0.455. For example, revenues would increase by approximately 16 percent with a toll increase of 50 percent. Maximum revenues can be expected at a toll level that is between 50 and 75 percent higher than Existing Toll rates.

Figure 2.7.2
Impact of Revenue on Toll Increases
Elasticity = -0.455

Toll Increase	Traffic Impact	Revenue Change
0%	0.0%	0.0%
25%	-11.4%	10.8%
50%	-22.7%	15.9%
75%	-34.1%	15.3%
100%	-45.5%	9.0%
125%	-56.8%	-2.9%
150%	-68.2%	-20.5%

Figure 2.7.3
Impact of Revenue on Toll Increases
Elasticity Curve, Elasticity = -0.455



It should be noted that elasticity is a measure of the impact of "real" toll increases and is not adjusted to reflect inflation. In general, if toll increases in line with inflation are implemented periodically, there is little impact on traffic volumes. A decrease in toll rates could result in increased traffic; however, there is no evidence to indicate that the traffic increases are sufficient to yield higher toll revenues.

3.0 Socioeconomic and Demographic Factors

The major factors affecting traffic generation for potential users of the Southern Connector are population, employment, and land use in the area served by the toll road. To support the reasonableness of the GPATS forecasts, historical and projected data from the GPATS model were compared to information from other governmental agencies including the U.S. Bureau of Census and the South Carolina Budget and Control Board, and a private socioeconomic forecasting firm, Woods and Poole Economics. Information was also obtained from two reports prepared for the Southern Connector: the 2007 Property Availability Study prepared by Coldwell Banker Commercial Caine and the Economic and Demographic Overview of Greenville County, SC, prepared by Southern Municipal Advisors, Inc. In addition, Grubb & Ellis│Furman Co. (Furman), a major real estate company in Greenville, prepared estimates of population and employment in the Southern Connector corridor based on anticipated land use developments in the area.

3.1 POPULATION

Greenville County, as reported by the U.S. Bureau of the Census, has been growing at a faster rate than the state of South Carolina. Between 1990 and 2000, the population of Greenville County increased from 320,127 to 379,616, an average annual rate of increase of 1.7 percent, compared to a growth rate of 1.4 percent for the State. As shown in the following Figure 3.1.1, County growth through 2006 is estimated to have continued to outpace the State.

Figure 3.1.1
Greenville County Population
1990 – 2006

Area	Total Population			Average Annual Rate of Growth	
	1990	2000	2006	'90-'00	'00-'06
Greenville County	320,127	379,616	417,166	1.7%	1.6%
South Carolina	3,486,310	4,012,012	4,321,249	1.4%	1.2%

Source: U.S. Bureau of the Census

Long term population estimates for Greenville County indicate that growth is anticipated to slow down. Figure 3.1.2 presents projections through 2030 from three sources: South Carolina Budget and Control Board, Office of Research and Statistics; Woods & Poole Economics, Inc., a nationally-recognized demographics forecasting firm; and GPATS, the Metropolitan Planning Organization for the Greenville area.

Figure 3.1.2
Greenville County Estimated Population
2000 - 2030

Source		2000	2010	2020	2030
SC Budget & Control Board	Population	379,616	431,630	480,060	528,180
	AAGR		1.3%	1.1%	1.0%
Woods & Poole	Population	381,135	433,323	474,214	520,042
	AAGR		1.3%	0.9%	0.9%
GPATS	Population	379,616	426,570	474,430	521,990
	AAGR		1.2%	1.1%	1.0%

Sources: U. S. Bureau of the Census; Woods & Poole Economics, Inc.; and South Carolina Budget and Control Board, Office of Research and Statistics

Estimated growth rates for the County from the three sources are roughly the same through 2030. Population forecasts for the last year of the period range from 520,000 to 528,000, a difference of less than two percent. By 2030, population in the County is projected to increase by approximately 107,000, which is 25 percent greater than the current level.

The geographic base for the GPATS regional transportation model used for this study includes parts of Greenville, Pickens, Anderson, Laurens, and Spartanburg Counties. The following Figure 3.1.3 shows the population for the year 2000 and the projections for 2010, 2020, and 2030 for the portion of each County included in the study area. Greenville County is the most significant portion of the model, accounting for approximately 75 percent of the population in 2010.

Figure 3.1.3
GPATS Model Area Estimated Population
2000 - 2030

County	Total Population			
	2000	2010	2020	2030
Greenville	360,631	413,585	466,252	518,932
Pickens	63,860	73,991	84,134	94,268
Anderson	18,618	25,871	33,126	40,379
Laurens	5,002	6,302	8,011	9,722
Spartanburg	16,941	21,541	26,146	30,746
Total	465,052	541,290	617,669	694,047
Average Annual Rate of Growth				
		'00-'10	'10 - '20	'20 - '30
Greenville		1.4%	1.2%	1.1%
Pickens		1.5%	1.3%	1.1%
Anderson		3.3%	2.5%	2.0%
Laurens		2.3%	2.4%	2.0%
Spartanburg		2.4%	2.0%	1.6%
Total		1.5%	1.3%	1.2%

Source: Greenville Pickens Area Transportation Study

Growth rates for the sections of Greenville County included in the model area have growth rates slightly higher than the rates for the full County. The highest growth rates are for Laurens and

Anderson counties. Both counties are on the south side of the city of Greenville, as is the Southern Connector.

3.2 EMPLOYMENT

Employment in Greenville County, as reported by the U.S. Bureau of Census, has been growing at slightly lower rates than the population. Between 1990 and 2000, the employment of Greenville County, in terms of employment by place of residence of the worker, grew at an average annual rate of 1.5 percent. As shown in Figure 3.2.1, the average annual growth rates of total employment for Greenville County and South Carolina are similar to the population growth rates.

Figure 3.2.1
Greenville County Employment
1990 - 2006

Area	Total Employment			Average Annual Rate of Growth	
	1990	2000	2006	90 - '00	00 - '06
Greenville County	161,895	188,489	202,923	1.5%	1.2%
South Carolina	1,603,425	1,824,700	1,964,710	1.3%	1.2%

Source: US Bureau of the Census
U.S Bureau of Census Estimates

As shown in Figure 3.2.2, employment in the GPATS model area is estimated to increase from 269,007 jobs in 2000 to 395,914 jobs in 2030. This is an average annual rate of increase of 1.3 percent and represents more than 125,000 new jobs. This rate of growth is slightly higher than that forecasted by Woods & Poole for Greenville County: 289,333 jobs in 2000 and 405,318 in 2030, an average annual rate of growth of 1.1 percent. The U.S. Bureau of Census and Woods & Poole include data for the entire counties shown while the GPATS data include only the areas within their model boundaries. The Woods & Poole and GPATS model data represent employment by place of work and not place of residence of the worker. Although this differs fundamentally in concept from the U.S. Bureau of Census, the objective here is to compare the anticipated growth from these forecasts.

Figure 3.2.2
Greenville Area Estimated Employment
2000 – 2030

Source		2000	2030
Woods & Poole	Employment	289,333	405,318
	AAGR		1.1%
GPATS	Employment	269,007	395,914
	AAGR		1.3%

Sources: U. S. Bureau of the Census; and Woods & Poole Economics, Inc.

The forecast of total employment in the GPATS model area was based on the assumption that area-wide employment would grow in proportion to population. The new jobs were first distributed based on known developments since 2000 and proposed and planned near-term land use improvement projects. The remainder of the forecasted new jobs was then distributed

throughout the region. Estimated GPATS model area employment for 2000 and 2030 is shown in the following Figure 3.2.3 by county.

Figure 3.2.3
GPATS Model Area Estimated Employment
2000 - 2030

County	Total Employment		Change	
	2000	2030	AAGR	Number of Jobs
Greenville	233,559	330,322	1.2%	96,763
Pickens	22,079	37,123	1.7%	15,044
Anderson	2,311	6,334	3.4%	4,023
Laurens	2,037	3,874	2.2%	1,837
Spartanburg	9,021	18,261	2.4%	9,240
Total	269,007	395,914	1.3%	126,907

Source: Greenville Pickens Area Transportation Study

Employment in Greenville County is projected to increase as a slower rate than in the surrounding counties. Residential development outside of Greenville will attract new retail and commercial development. As a result, the share of jobs in Greenville will decrease as it increases in the other counties.

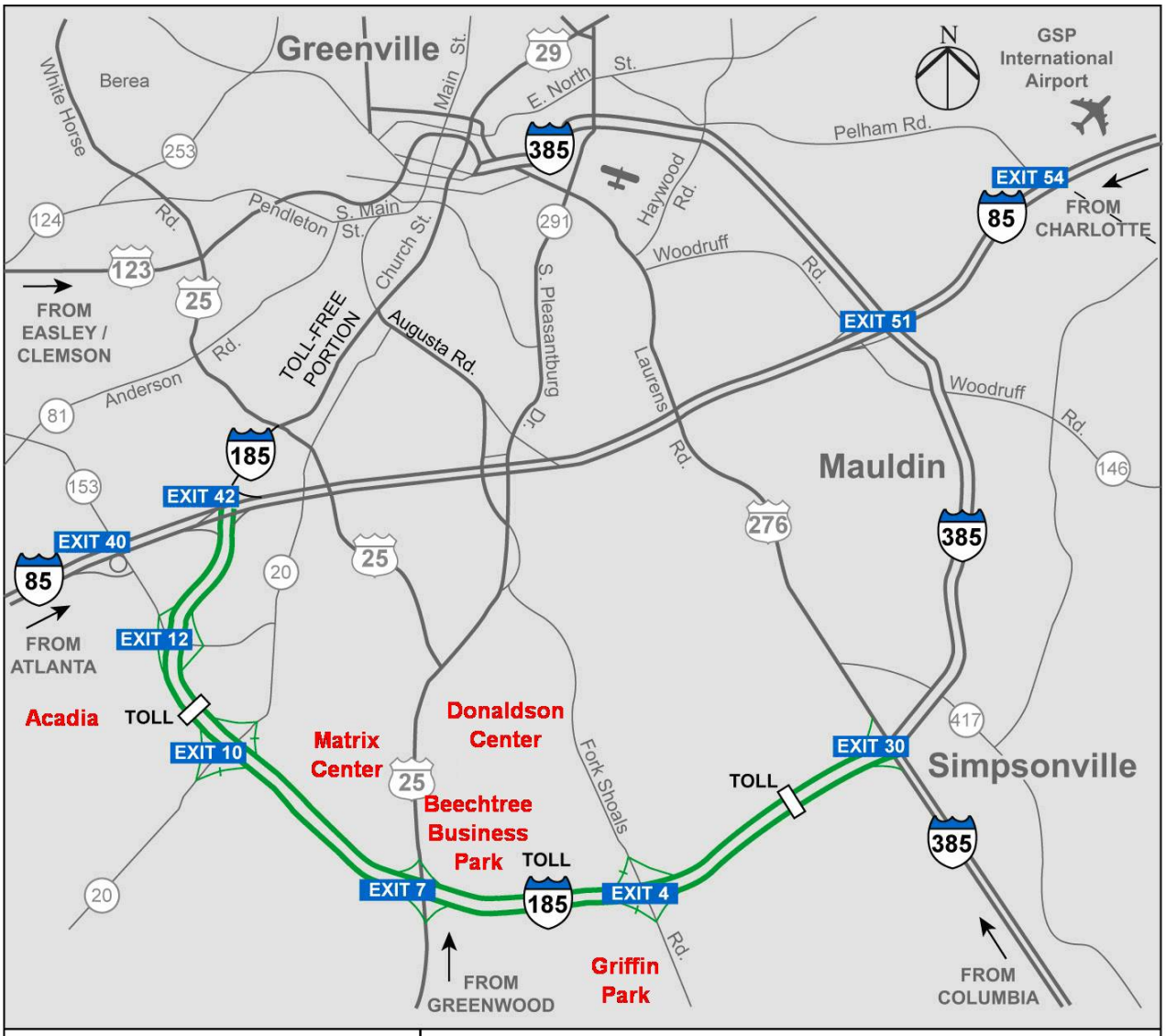
Figure 3.2.4
Employment Distribution
2000 - 2030

County	Percent of Total Employment	
	2000	2030
Greenville	86.8%	83.4%
Pickens	8.2%	9.4%
Anderson	0.9%	1.6%
Laurens	0.8%	1.0%
Spartanburg	3.4%	4.6%
Total	100.0%	100.0%

Source: Greenville Pickens Area Transportation Study

3.3 PROPERTY AVAILABILITY STUDY

The 2007 Property Availability Study was conducted for the Association by Coldwell Banker Commercial Caine to identify and provide information about parcels available for development in the Southern Connector corridor, including a listing of all available properties of 25 or more acres within one mile of the toll road and a description of these parcels in terms of size and type of potential development. The study effort included a physical inventory of the area, a review of county and real estate records and interviews with local government agencies, utilities, property developers and real estate professionals. The study addressed major existing projects and projects under development in the area and the status of utility availability, shown in Figure 3.3.1.



Major findings of the study are:

- The western part of the Southern Connector corridor has the most industrial zoned property, the central part has the most residential zoned property and the eastern part has a mix of industrial, commercial, and residential uses.

- Major business parks in the corridor include:
    - South Carolina Technology and Aviation Center (formerly known as the Donaldson Center Business Park) in the northeast quadrant of the intersection of Route 25 and the Southern Connector. SCTAC, a 2,300-acre business and industrial park, was converted from an Air Force base to a "multi-modal" industrial park and has modern airport facilities and railway access. Approximately 80 companies are located at Donaldson and it is nearly fully developed but has some potential for new development.
    - Matrix Business and Technology Center in the northwest quadrant of the intersection of Route 25 and the toll road. Matrix has over 1,000 acres of available land and has been developing slowly since the early 1990s due to a lack of infrastructure and a slow economy.
    - Beechtree Business Park along Route 25, two miles north of the Southern Connector. At the present time, six firms are located at this 432-acre development.
- Residential projects currently under development in the corridor are:
    - Griffin Park on West Georgia Road and Fork Shoals Road planned as a mixed use with 1,062 houses and 26 acres of commercial development.
    - Acadia, a 300-acre residential and commercial development is located along the south side of the Southern Connector between Route 153 and SC 20.
- The Grove Creek Crossing Site is a 35-acre potential retail development site in the northwest quadrant of the interchange of the Southern Connector and US 25. This location is under consideration for development by major retailing concessions.
- There are three sites known as Connector 1, 3 and 5 at the western terminus with residential and industrial development. Connector Site 1 is being developed as the Acadia Subdivision noted above and is also suitable for high-profile industrial development. Connector Site 3, along the western sector of the Southern Connector, is zoned residential and industrial but likely to be rezoned to residential only due to topographic, utility and access concerns. Connector Site 5, a 100-acre industrial site, is one of few remaining available sites in Greenville with rail access.

Regarding utilities in the area, there is a lack of adequate sewer service south of the Southern Connector. Since there are no trunk lines in the area between US 25 and Fork Shoals Road, the type and size of development has been limited.

3.4 REAL ESTATE STUDY

In order to estimate future population and employment in the area served by the Southern Connector, a local real estate firm, Grubb & Ellis│The Furman Co. (Furman) prepared a study of projected development patterns in the area along the road and in the broader surrounding area served by the route. The study includes an assessment of demographic trends, available buildings and vacant tracts of land, zoning and entitlements, utility/infrastructure availability and economic development initiatives, as well as residential, retail, office and industrial sectors of the overall real estate market.

Population forecasts for the study area were based on an analysis of historical trends, an evaluation of current development patterns and an estimate of land available for residential development. Historically, population growth in the Greenville area has been stable with a generally upward trend. During the first five years of this decade, there has been high growth in Greenville County, with a concentration of development in the Mauldin, Simpsonville, Fountain Inn and Enoree Planning Areas in the southeast quadrant of the County. This area has attracted development due to the availability of sewer services, quality schools, and supply of vacant land at affordable prices.

Based on these considerations, Furman prepared estimates of future residential development in the study area. In general, these forecasts are similar to those developed for the regional transportation model, but more accurately located in the study area.

Furman prepared projections of commercial land use based on historical growth patterns in the study area; the availability of vacant land, transportation, utilities and infrastructure; and current zoning classifications.

Due to the proximity of the South Carolina Technology and Aviation Center (formerly Donaldson Center Industrial Air Park) and The Matrix Business & Technology Park, there are a number of opportunities for large companies to relocate or expand their businesses to the Southern Connector in this area. The availability of rail is also an advantage for industrial development in this area. However, Furman also indicated that there are vacant land and buildings available in other sections of the Greenville area that are well suited for commercial and industrial development.

Furman noted that the availability of utilities and infrastructure will have a significant impact on location and timing of development activity. Water service, electricity and natural gas service are not a concern in the Southern Connector area; however, the relative lack of sanitary sewer service is a constraint to development in this area.

4.0 Projected Traffic and Revenue

Based on the historical traffic and revenue performance of the Southern Connector, the projection of population and employment included the GPATS Regional Transportation Demand Model, the traffic forecasts developed by the model, and the evaluation of land use development presented in the Real Estate Study, Stantec has developed 50-year estimates of traffic and revenue for the toll road under the existing toll rates and under a revised schedule of rates.

4.1 ESTIMATED 2008 TRAFFIC AND REVENUE

The first step in preparing the traffic and revenue forecasts for the toll road was to review performance for the full year 2008. For this analysis, the mainline toll plaza and the ramp plazas were considered separately for cash and for PalPass transactions.

As would be expected, cash transactions and revenue decreased in 2008 in reaction to the general economic conditions and decreased during the summer months due to higher fuel prices. PalPass transactions represent the commuters and other regular users of the toll road and increased approximately 4.4 percent during the period. The overall result, since PalPass users account for less transactions than cash users, there was a decrease in traffic of 3.4 percent and a decrease in revenue of 3.9 percent.

4.2 TRAFFIC FORECASTING PROCEDURE

As part of this toll revenue study, Stantec used the travel demand model developed by Greenville Pickens Area Transportation Study (GPATS) to generate travel forecasts for the Southern Connector facility. The GPATS Travel Demand Model was developed to assist in the analysis of the transportation system in the Greenville-Pickens area. GPATS is the Metropolitan Planning Organization (MPO) for the Greenville-Pickens region of South Carolina.

The GPATS model is designed to be a “state of the practice” model that follows the format of a traditional four-step modeling process of trip generation, trip distribution, mode split, and trip assignment. Model features are summarized as follows:

- Model area – The coverage area includes a major portion of Greenville County and Pickens County, and small pieces of Anderson, Laurens and Spartanburg Counties.
- Highway network – The network includes all regionally and locally significant roads in the Greenville study area and was developed in TransCAD from GIS layers.
- Transportation Analysis Zone (TAZ) system – The zone system is based on the 2000 U.S. Census boundary geography, and the larger Census areas are divided into smaller zones where required.
- Trip generation – A cross-classification trip production process and a regression based trip attraction process are used to generate average weekday trips in the study area. The model has six primary trip purposes: Home-Based Work, Home-Based School, Home-Based Other, Non Home-Based, External, and Commercial Vehicle.
- Freight model – Freight (Truck) trips are treated as separate trip purposes with truck-specific trip generation and distribution parameters.

- Trip assignment – Auto and truck vehicle trips are assigned using a combination of stochastic equilibrium and all-or-nothing assignments, depending on the trip purpose.
- Toll implementation – Tolls are implemented in the model by including a time penalty for travel on the Southern Connector, a fairly standard procedure in transportation modeling.

The traffic model is a planning tool that replicates existing traffic patterns based on the interaction of socioeconomic factors and the available highway network. By applying the algorithms for the current condition to forecasts of future population and employment and the future roadway network, this tool can be used to forecast future traffic patterns. Accordingly, the drivers of the model are the forecasts of population and employment utilized in the model.

For this study, Stantec has received the most recent version of this model, and has tested the model by replicating model results provided by GPATS. Stantec has compiled the available traffic counts in the study area, and has compared these counts to the base year model runs, I-185 volumes by link, as well as volumes by link of the parallel sections of I-85.

Stantec used the model in its entirety with no modifications to the computer processes; however, Stantec did review the demographic and development assumptions in the Southern Connector corridor and model inputs for population and employment were modified based on information developed specifically for this area.

As noted above, Stantec requested that Grubb & Ellis|The Furman Co. (Furman) review land use forecasts in the study area as well as the expected timing of this development. Based on this review, Furman furnished Stantec with projections of housing units and non-residential floor space for the study area for the years 2012, 2020, and 2030. Detailed information was provided for the parts of the Gantt, Mauldin, Simpsonville, and Southside communities that are located adjacent to the Southern Connector. At the request of Stantec, Furman prepared these forecasts by the zones (TAZ) used in the GPATS model so that the Furman data could be incorporated into the GPATS model for use in developing Southern Connector travel forecasts. The table below shows the TAZ data provided by Furman aggregated into communities. This table compares the employment and household forecasts derived from the Furman land use data to the employment and household forecasts provided by Greenville-Pickens Area Transportation Study (GPATS).

Figure 4.2.1
Comparison of Demographic Forecasts for Study Area

	Employment			Number of Households		
2005	GPATS			GPATS		
Study Area Total	16,287			9,516		
2012	GPATS	Furman	Difference	GPATS	Furman	Difference
Gantt	8,539	8,027	-6%	2,481	2,353	-5%
Mauldin	1,683	1,685	0%	1,720	1,884	10%
Simpsonville	6,783	5,569	-18%	3,873	3,880	0%
Southside	4,681	3,591	-23%	3,201	3,100	-3%
Study Area Total	21,686	18,871	-13%	11,275	11,217	-1%
Growth over 2005	33.10%	15.90%		18.50%	17.90%	
2020	GPATS	Furman	Difference	GPATS	Furman	Difference
Gantt	9,992	9,306	-7%	3,060	3,113	2%
Mauldin	1,872	1,872	0%	2,109	2,279	8%
Simpsonville	9,067	6,752	-26%	4,503	5,184	15%
Southside	4,449	1,663	-63%	3,657	3,895	7%
Study Area Total	25,380	19,593	-23%	13,329	14,472	9%
Growth over 2005	55.80%	20.30%		40.10%	52.10%	
2030	GPATS	Furman	Diff.	GPATS	Furman	Diff.
Gantt	11,808	10,180	-14%	3,770	3,145	-17%
Mauldin	2,104	2,286	9%	2,571	2,541	-1%
Simpsonville	11,918	7,407	-38%	5,270	5,233	-1%
Southside	9,757	7,766	-20%	4,212	4,597	9%
Study Area Total	35,587	27,639	-22%	15,823	15,516	-2%
Growth over 2005	118.50%	69.70%		66.30%	63.10%	

To convert housing units to adult population, the Furman housing units were multiplied by the household occupancy factor provided by GPATS for each TAZ. The population class distribution from the GPATS model was then used to allocate population to purpose class.

Overall, the Furman forecasts of population growth (based on household growth shown in Figure 4.2.1) by 2030 of 63% over 2005 and a nearly 70% growth in employment. In the aggregate, the population forecasts based on Furman household data are not appreciably different from the forecasts developed by the GPATS. The population growth by 2030 is slightly less than the GPATS growth, 63% versus 66%. The Furman forecasts do show differences in new housing compared to the GPATS forecast. The table above shows that the Furman projections anticipate more housing growth in Mauldin by 2012 than the GPATS forecast does, and more housing growth in all the communities by 2020. Generally, the Furman forecasts shows housing growth to occur sooner (by 2020) than the GPATS forecast does.

The Furman forecast growth in employment is substantial (70% between 2005 and 2030), but it is smaller than the employment growth shown by GPATS (118%). The GPATS forecast shows short term employment growth by 2020 (55%), that the Furman analysis does not support. There is also a major office development shown in Simpsonville by the GPATS model that the Furman study did not include in their forecast (In the GPATS model this development is located between Main St and I-385 north of Curtis St.). Furman has confirmed that development for an apartment complex has begun at this location and has reason to believe that future development will presumably be retail and service projects. If this large office development

supporting nearly 5,000 employees is not included in the comparison, then the Furman forecasts are only 8% smaller than the GPATS forecasts for employment by 2030.

The GPATS future year trip tables were updated using the Furman land use data. The GPATS model uses adult population and employment for the demographic input to the trip generation forecast model. In order to input the Furman data into the GPATS model, the Furman data was converted to population and employment in units consistent with the GPATS model.

To convert the non-residential floor space to employment, each land use type was multiplied by the appropriate employment per square foot rate. GPATS Employment data is grouped into five main categories:

- Industrial
- Retail
- High Turnover Retail
- Office
- Service

The rates used for each category are shown in the following table:

Figure 4.2.2
Trip Generation Rates by Employment Type

Land Use Type	Sq Ft per Employees(1)
Commercial/shopping	300-500
Medical	247-308
Office	247-398
Business Park	317
Light Industrial	433
Warehousing	784
Manufacturing	550

(1) Trip Generation, Institute of Transportation Engineers, 1997

Following the conversion for housing units and floor space to population and employment, a database with the updates was prepared for inclusion in the GPATS model. The model was then run though all the steps to produce trip tables and highway assignments for each planning year using the revised land use data.

The GPATS network forecast volumes were adjusted to develop the future year traffic and revenue projections for Southern Connector. The results of the model were factored to be consistent with the base year actual traffic performance. To establish Future Year traffic and revenue forecasts, the adjustment factors described above were applied to all model year results (2012, 2020, and 2030) for mainline segments and ramps as appropriate. The resulting volumes were then used to establish traffic flow at the tolling facilities along Southern Connector for the planning years noted above. The traffic growth trend indicated by the model output was then used to develop annual growth rates for the forecast period.

4.3 ESTIMATED TRAFFIC AND REVENUE, CURRENTLY PROPOSED TOLLS

The traffic and revenue forecast developed for the currently proposed tolls are based on toll rates to be implemented January 1, 2011, January 1, 2016, and every four years thereafter until 2058. The existing and currently proposed toll rates are shown in Figure 4.3.1.

Figure 4.3.1
Currently Proposed Toll Schedule

Vehicle Class	Payment Type	Effective				
		3-Jan-05	1-Jan-11	1-Jan-16	1-Jan-20	1-Jan-24
Mainline Toll Plazas						
2 Axle	Cash	$ 1.00	$ 1.25	$ 1.50	$ 1.75	$ 2.00
	PalPass	$ 0.75	$ 1.00	$ 1.25	$ 1.50	$ 1.75
3 Axle	Cash	$ 1.80	$ 2.55	$ 3.00	$ 3.60	$ 4.20
	PalPass	$ 1.35	$ 2.10	$ 2.55	$ 3.00	$ 3.75
4 Axle	Cash	$ 2.40	$ 3.40	$ 4.00	$ 4.80	$ 5.60
	PalPass	$ 1.80	$ 2.80	$ 3.40	$ 4.00	$ 5.00
5 Axle	Cash	$ 3.00	$ 4.25	$ 5.00	$ 6.00	$ 7.00
	PalPass	$ 2.25	$ 3.50	$ 4.25	$ 5.00	$ 6.25
6 Axle	Cash	$ 3.60	$ 5.10	$ 6.00	$ 7.20	$ 8.40
	PalPass	$ 2.70	$ 4.20	$ 5.10	$ 6.00	$ 7.50
SC 20 and Fork Shoals Ramp Toll Plazas						
All Vehicle Classes	Cash	$ 0.50	$ 0.65	$ 0.75	$ 0.85	$ 1.00
	PalPass	$ 0.50	$ 0.65	$ 0.75	$ 0.85	$ 1.00

Projected traffic for the Southern Connector through 2057 under the currently proposed toll schedule was prepared based on the results for 2008, the growth rates indicated by the GPATS model with the adjustments to population and employment growth developed by the Furman study, and current economic conditions. The projections for the period 2008 through 2057 are presented in Figure 4.3.2.

It is to be noted that the forecasts developed represent a longer term trendline representing projected average performance over the years. Individual years will vary from this trendline, possibly significantly, in both positive and negative directions. When a toll increase is in line with inflation, the impact on traffic volumes is insignificant. After the year 2032, the toll rates in the currently proposed toll schedule become in line with inflation, therefore there is a small percent decrease in traffic volumes.

Figure 4.3.2
Southern Connector – Estimated Traffic and Revenue
Currently Proposed Toll Schedule

Year	Annual Traffic				Annual Toll Revenue				
	Mainline Plazas	Ramps	Total	Percent Change	Average Toll	Mainline Plazas	Ramps	Total	Percent Change
2007	5,429,000	410,000	5,839,000		$ 0.93	$ 5,242,000	$ 205,000	$ 5,447,000	
2008	5,250,000	403,000	5,653,000	-3.2%	$ 0.93	$ 5,036,000	$ 203,000	$ 5,239,000	-3.8%
2009	5,250,000	403,000	5,653,000	0.0%	$ 0.92	$ 5,026,000	$ 202,000	$ 5,228,000	-0.2%
2010	5,200,000	403,000	5,603,000	-0.9%	$ 0.91	$ 4,919,000	$ 202,000	$ 5,121,000	-2.0%
2011	4,795,000	383,000	5,178,000	-7.6%	$ 1.17	$ 5,815,000	$ 249,000	$ 6,064,000	18.4%
2012	4,938,000	395,000	5,333,000	3.0%	$ 1.17	$ 5,979,000	$ 257,000	$ 6,236,000	2.8%
2013	5,136,000	411,000	5,547,000	4.0%	$ 1.17	$ 6,209,000	$ 267,000	$ 6,476,000	3.8%
2014	5,444,000	435,000	5,879,000	6.0%	$ 1.17	$ 6,571,000	$ 283,000	$ 6,854,000	5.8%
2015	5,880,000	470,000	6,350,000	8.0%	$ 1.16	$ 7,086,000	$ 306,000	$ 7,392,000	7.8%
2016	5,905,000	494,000	6,399,000	0.8%	$ 1.40	$ 8,599,000	$ 371,000	$ 8,970,000	21.3%
2017	6,377,000	534,000	6,911,000	8.0%	$ 1.40	$ 9,275,000	$ 400,000	$ 9,675,000	7.9%
2018	6,824,000	571,000	7,395,000	7.0%	$ 1.40	$ 9,912,000	$ 429,000	$ 10,341,000	6.9%
2019	7,301,000	611,000	7,912,000	7.0%	$ 1.40	$ 10,593,000	$ 459,000	$ 11,052,000	6.9%
2020	7,174,000	622,000	7,796,000	-1.5%	$ 1.64	$ 12,231,000	$ 529,000	$ 12,760,000	15.5%
2021	7,532,000	654,000	8,186,000	5.0%	$ 1.64	$ 12,843,000	$ 556,000	$ 13,399,000	5.0%
2022	7,909,000	686,000	8,595,000	5.0%	$ 1.64	$ 13,485,000	$ 583,000	$ 14,068,000	5.0%
2023	8,304,000	721,000	9,025,000	5.0%	$ 1.64	$ 14,159,000	$ 612,000	$ 14,771,000	5.0%
2024	8,166,000	719,000	8,885,000	-1.6%	$ 1.89	$ 16,050,000	$ 719,000	$ 16,769,000	13.5%
2025	8,492,000	748,000	9,240,000	4.0%	$ 1.89	$ 16,692,000	$ 748,000	$ 17,440,000	4.0%
2026	8,747,000	771,000	9,518,000	3.0%	$ 1.89	$ 17,193,000	$ 771,000	$ 17,964,000	3.0%
2027	9,001,000	793,000	9,794,000	2.9%	$ 1.89	$ 17,691,000	$ 793,000	$ 18,484,000	2.9%
2028	8,826,000	797,000	9,623,000	-1.7%	$ 2.13	$ 19,629,000	$ 877,000	$ 20,506,000	10.9%
2029	9,082,000	820,000	9,902,000	2.9%	$ 2.13	$ 20,198,000	$ 902,000	$ 21,100,000	2.9%
2030	9,345,000	844,000	10,189,000	2.9%	$ 2.13	$ 20,784,000	$ 929,000	$ 21,713,000	2.9%
2031	9,532,000	861,000	10,393,000	2.0%	$ 2.13	$ 21,199,000	$ 947,000	$ 22,146,000	2.0%
2032	9,333,000	860,000	10,193,000	-1.9%	$ 2.36	$ 23,041,000	$ 1,032,000	$ 24,073,000	8.7%
2033	9,520,000	877,000	10,397,000	2.0%	$ 2.36	$ 23,502,000	$ 1,053,000	$ 24,555,000	2.0%
2034	9,710,000	895,000	10,605,000	2.0%	$ 2.36	$ 23,972,000	$ 1,074,000	$ 25,046,000	2.0%
2035	9,904,000	913,000	10,817,000	2.0%	$ 2.36	$ 24,451,000	$ 1,095,000	$ 25,546,000	2.0%
2036	10,102,000	931,000	11,033,000	2.0%	$ 2.60	$ 27,434,000	$ 1,210,000	$ 28,644,000	12.1%
2037	10,305,000	950,000	11,255,000	2.0%	$ 2.60	$ 27,983,000	$ 1,235,000	$ 29,218,000	2.0%
2038	10,511,000	969,000	11,480,000	2.0%	$ 2.60	$ 28,542,000	$ 1,259,000	$ 29,801,000	2.0%
2039	10,721,000	988,000	11,709,000	2.0%	$ 2.60	$ 29,113,000	$ 1,284,000	$ 30,397,000	2.0%
2040	10,935,000	1,008,000	11,943,000	2.0%	$ 2.83	$ 32,395,000	$ 1,411,000	$ 33,806,000	11.2%
2041	11,045,000	1,018,000	12,063,000	1.0%	$ 2.83	$ 32,719,000	$ 1,425,000	$ 34,144,000	1.0%
2042	11,155,000	1,028,000	12,183,000	1.0%	$ 2.83	$ 33,046,000	$ 1,439,000	$ 34,485,000	1.0%
2043	11,267,000	1,038,000	12,305,000	1.0%	$ 2.83	$ 33,377,000	$ 1,454,000	$ 34,831,000	1.0%
2044	11,379,000	1,049,000	12,428,000	1.0%	$ 3.07	$ 36,520,000	$ 1,573,000	$ 38,093,000	9.4%
2045	11,493,000	1,059,000	12,552,000	1.0%	$ 3.07	$ 36,885,000	$ 1,589,000	$ 38,474,000	1.0%
2046	11,608,000	1,070,000	12,678,000	1.0%	$ 3.07	$ 37,254,000	$ 1,605,000	$ 38,859,000	1.0%
2047	11,724,000	1,081,000	12,805,000	1.0%	$ 3.06	$ 37,626,000	$ 1,621,000	$ 39,247,000	1.0%
2048	11,841,000	1,091,000	12,932,000	1.0%	$ 3.30	$ 40,926,000	$ 1,746,000	$ 42,672,000	8.7%
2049	11,960,000	1,102,000	13,062,000	1.0%	$ 3.30	$ 41,335,000	$ 1,764,000	$ 43,099,000	1.0%
2050	12,079,000	1,113,000	13,192,000	1.0%	$ 3.30	$ 41,749,000	$ 1,781,000	$ 43,530,000	1.0%
2051	12,200,000	1,124,000	13,324,000	1.0%	$ 3.30	$ 42,166,000	$ 1,799,000	$ 43,965,000	1.0%
2052	12,322,000	1,136,000	13,458,000	1.0%	$ 3.53	$ 45,630,000	$ 1,931,000	$ 47,561,000	8.2%
2053	12,445,000	1,147,000	13,592,000	1.0%	$ 3.53	$ 46,086,000	$ 1,950,000	$ 48,036,000	1.0%
2054	12,570,000	1,158,000	13,728,000	1.0%	$ 3.53	$ 46,547,000	$ 1,969,000	$ 48,516,000	1.0%
2055	12,695,000	1,170,000	13,865,000	1.0%	$ 3.53	$ 47,012,000	$ 1,989,000	$ 49,001,000	1.0%
2056	12,822,000	1,182,000	14,004,000	1.0%	$ 3.77	$ 50,648,000	$ 2,127,000	$ 52,775,000	7.7%
2057	12,951,000	1,194,000	14,145,000	1.0%	$ 3.77	$ 51,154,000	$ 2,148,000	$ 53,302,000	1.0%

4.4 ESTIMATED TRAFFIC AND REVENUE, REVISED TOLLS

An alternative traffic and revenue forecast was developed based on revised toll rates to be implemented July 1, 2009, January 1, 2012, and every four years thereafter until 2058. The characteristics of the revised tolls, as shown in Figure 4.4.1, are:

- Cash tolls for passenger cars at the Mainline plazas are increased in three stages: 25 cents on July 1, 2009, an additional 25 cents on January 1, 2012, and an additional 25 cents on January 1, 2016. The total increase of 75 percent reaches the maximum indicated for the maximum revenue producing increase indicated by the elasticity factor developed from the results of the 2005 toll increase. Cash tolls at the mainline plazas for other vehicle classes are increased commensurately.

- The discount currently available to PalPass users at the Mainline barriers is eliminated in two steps so that by 2016 PalPass tolls are at the same rate as cash tolls. The advantage of Electronic Toll Collection (ETC) is the improved service provided to the motorist due to the time savings and, by 2016, this should be sufficient reason to retain the participation rate of PalPass users.

- After 2016, toll rate increases of 25 cents for passenger cars at the plazas and commensurate increases for other vehicle classes are proposed at four-year intervals. The impacts of these increases will be offset by increases in the inflation rate. Since the revised toll rates increase at a faster schedule than the currently proposed rates, the toll increases become in line with inflation after the year 2028 and there are no significant reductions in traffic due to toll increases in following years.

- The tolls at the two ramp locations are increased to maintain the same relationship (after rounding) to the cash passenger car toll rates at the mainline barriers.

Figure 4.4.1
Revised Toll Schedule

Vehicle Class	Payment Type	Effective					
		3-Jan-05	1-Jul-09	1-Jan-12	1-Jan-16	1-Jan-20	1-Jan-24
Mainline Toll Plazas							
2 Axle	Cash	$ 1.00	$ 1.25	$ 1.50	$ 1.75	$ 2.00	$ 2.25
	PalPass	$ 0.75	$ 1.00	$ 1.35	$ 1.75	$ 2.00	$ 2.25
3 Axle	Cash	$ 1.80	$ 2.55	$ 3.00	$ 3.60	$ 4.20	$ 4.80
	PalPass	$ 1.35	$ 2.10	$ 2.55	$ 3.60	$ 4.20	$ 4.80
4 Axle	Cash	$ 2.40	$ 3.40	$ 4.00	$ 4.80	$ 5.60	$ 6.40
	PalPass	$ 1.80	$ 2.80	$ 3.40	$ 4.80	$ 5.60	$ 6.40
5 Axle	Cash	$ 3.00	$ 4.25	$ 5.00	$ 6.00	$ 7.00	$ 8.00
	PalPass	$ 2.25	$ 3.50	$ 4.25	$ 6.00	$ 7.00	$ 8.00
6 Axle	Cash	$ 3.60	$ 5.10	$ 6.00	$ 7.20	$ 8.40	$ 9.60
	PalPass	$ 2.70	$ 4.20	$ 5.10	$ 7.20	$ 8.40	$ 9.60
SC 20 and Fork Shoals Ramp Toll Plazas							
All Vehicle Classes	Cash	$ 0.50	$ 0.65	$ 0.75	$ 0.85	$ 1.00	$ 1.10
	PalPass	$ 0.50	$ 0.65	$ 0.75	$ 0.85	$ 1.00	$ 1.10

Based on the forecasts developed for the currently proposed tolls, the revised rates shown above, and the elasticity factor developed from the results of the 2005 toll increase, traffic and revenue forecasts were prepared for an alternative scenario with higher rates. An additional factor included in the forecasts was a shift of cash transactions to PalPass from 2008 to 2015 since the PalPass toll rate will continue to provide a discount. In 2016, this advantage will no longer be available so there will be no additional shift to PalPass. The forecasts with the revised tolls are shown in Figure 4.4.2.

Figure 4.4.2
Southern Connector – Estimated Traffic and Revenue
Revised Tolls

Year	Annual Traffic				Annual Toll Revenue				
	Mainline Plazas	Ramps	Total	Percent Change	Average Toll	Mainline Plazas	Ramps	Total	Percent Change
2007	5,429,000	410,000	5,839,000		$ 0.93	$ 5,242,000	$ 205,000	$ 5,447,000	
2008	5,250,000	403,000	5,653,000	-3.2%	$ 0.93	$ 5,036,000	$ 203,000	$ 5,239,000	-3.8%
2009	4,988,000	390,000	5,378,000	-4.9%	$ 1.04	$ 5,371,000	$ 223,000	$ 5,594,000	6.8%
2010	4,678,000	376,000	5,054,000	-6.0%	$ 1.15	$ 5,570,000	$ 244,000	$ 5,814,000	3.9%
2011	4,823,000	383,000	5,206,000	3.0%	$ 1.18	$ 5,916,000	$ 249,000	$ 6,165,000	6.0%
2012	4,537,000	381,000	4,918,000	-5.5%	$ 1.45	$ 6,868,000	$ 286,000	$ 7,154,000	16.0%
2013	4,719,000	396,000	5,115,000	4.0%	$ 1.45	$ 7,136,000	$ 297,000	$ 7,433,000	3.9%
2014	5,002,000	420,000	5,422,000	6.0%	$ 1.45	$ 7,557,000	$ 315,000	$ 7,872,000	5.9%
2015	5,402,000	454,000	5,856,000	8.0%	$ 1.45	$ 8,154,000	$ 340,000	$ 8,494,000	7.9%
2016	5,456,000	479,000	5,935,000	1.3%	$ 1.75	$ 9,981,000	$ 408,000	$ 10,389,000	22.3%
2017	5,892,000	518,000	6,410,000	8.0%	$ 1.75	$ 10,777,000	$ 440,000	$ 11,217,000	8.0%
2018	6,304,000	554,000	6,858,000	7.0%	$ 1.75	$ 11,528,000	$ 471,000	$ 11,999,000	7.0%
2019	6,746,000	593,000	7,339,000	7.0%	$ 1.75	$ 12,332,000	$ 504,000	$ 12,836,000	7.0%
2020	6,709,000	597,000	7,306,000	-0.4%	$ 2.00	$ 14,028,000	$ 597,000	$ 14,625,000	13.9%
2021	7,044,000	627,000	7,671,000	5.0%	$ 2.00	$ 14,730,000	$ 627,000	$ 15,357,000	5.0%
2022	7,397,000	659,000	8,056,000	5.0%	$ 2.00	$ 15,466,000	$ 659,000	$ 16,125,000	5.0%
2023	7,766,000	692,000	8,458,000	5.0%	$ 2.00	$ 16,239,000	$ 692,000	$ 16,931,000	5.0%
2024	7,707,000	703,000	8,410,000	-0.6%	$ 2.25	$ 18,145,000	$ 773,000	$ 18,918,000	11.7%
2025	8,016,000	731,000	8,747,000	4.0%	$ 2.25	$ 18,870,000	$ 804,000	$ 19,674,000	4.0%
2026	8,256,000	753,000	9,009,000	3.0%	$ 2.25	$ 19,437,000	$ 828,000	$ 20,265,000	3.0%
2027	8,496,000	775,000	9,271,000	2.9%	$ 2.25	$ 20,000,000	$ 852,000	$ 20,852,000	2.9%
2028	8,390,000	781,000	9,171,000	-1.1%	$ 2.49	$ 21,939,000	$ 937,000	$ 22,876,000	9.7%
2029	8,633,000	803,000	9,436,000	2.9%	$ 2.49	$ 22,575,000	$ 964,000	$ 23,539,000	2.9%
2030	8,884,000	827,000	9,711,000	2.9%	$ 2.49	$ 23,230,000	$ 992,000	$ 24,222,000	2.9%
2031	9,061,000	843,000	9,904,000	2.0%	$ 2.49	$ 23,694,000	$ 1,012,000	$ 24,706,000	2.0%
2032	9,242,000	860,000	10,102,000	2.0%	$ 2.74	$ 26,585,000	$ 1,118,000	$ 27,703,000	12.1%
2033	9,427,000	877,000	10,304,000	2.0%	$ 2.74	$ 27,117,000	$ 1,141,000	$ 28,258,000	2.0%
2034	9,616,000	895,000	10,511,000	2.0%	$ 2.74	$ 27,659,000	$ 1,163,000	$ 28,822,000	2.0%
2035	9,808,000	913,000	10,721,000	2.0%	$ 2.74	$ 28,212,000	$ 1,187,000	$ 29,399,000	2.0%
2036	10,004,000	931,000	10,935,000	2.0%	$ 2.99	$ 31,393,000	$ 1,304,000	$ 32,697,000	11.2%
2037	10,204,000	950,000	11,154,000	2.0%	$ 2.99	$ 32,020,000	$ 1,330,000	$ 33,350,000	2.0%
2038	10,408,000	969,000	11,377,000	2.0%	$ 2.99	$ 32,661,000	$ 1,356,000	$ 34,017,000	2.0%
2039	10,617,000	988,000	11,605,000	2.0%	$ 2.99	$ 33,314,000	$ 1,383,000	$ 34,697,000	2.0%
2040	10,829,000	1,008,000	11,837,000	2.0%	$ 3.24	$ 36,812,000	$ 1,512,000	$ 38,324,000	10.5%
2041	10,937,000	1,018,000	11,955,000	1.0%	$ 3.24	$ 37,180,000	$ 1,527,000	$ 38,707,000	1.0%
2042	11,047,000	1,028,000	12,075,000	1.0%	$ 3.24	$ 37,552,000	$ 1,542,000	$ 39,094,000	1.0%
2043	11,157,000	1,038,000	12,195,000	1.0%	$ 3.24	$ 37,927,000	$ 1,558,000	$ 39,485,000	1.0%
2044	11,269,000	1,049,000	12,318,000	1.0%	$ 3.49	$ 41,253,000	$ 1,678,000	$ 42,931,000	8.7%
2045	11,381,000	1,059,000	12,440,000	1.0%	$ 3.49	$ 41,666,000	$ 1,695,000	$ 43,361,000	1.0%
2046	11,495,000	1,070,000	12,565,000	1.0%	$ 3.49	$ 42,083,000	$ 1,712,000	$ 43,795,000	1.0%
2047	11,610,000	1,081,000	12,691,000	1.0%	$ 3.49	$ 42,503,000	$ 1,729,000	$ 44,232,000	1.0%
2048	11,726,000	1,091,000	12,817,000	1.0%	$ 3.73	$ 45,995,000	$ 1,855,000	$ 47,850,000	8.2%
2049	11,843,000	1,102,000	12,945,000	1.0%	$ 3.73	$ 46,455,000	$ 1,874,000	$ 48,329,000	1.0%
2050	11,962,000	1,113,000	13,075,000	1.0%	$ 3.73	$ 46,919,000	$ 1,893,000	$ 48,812,000	1.0%
2051	12,082,000	1,124,000	13,206,000	1.0%	$ 3.73	$ 47,388,000	$ 1,911,000	$ 49,299,000	1.0%
2052	12,202,000	1,136,000	13,338,000	1.0%	$ 3.98	$ 51,053,000	$ 2,044,000	$ 53,097,000	7.7%
2053	12,324,000	1,147,000	13,471,000	1.0%	$ 3.98	$ 51,564,000	$ 2,065,000	$ 53,629,000	1.0%
2054	12,448,000	1,158,000	13,606,000	1.0%	$ 3.98	$ 52,079,000	$ 2,085,000	$ 54,164,000	1.0%
2055	12,572,000	1,170,000	13,742,000	1.0%	$ 3.98	$ 52,600,000	$ 2,106,000	$ 54,706,000	1.0%
2056	12,698,000	1,182,000	13,880,000	1.0%	$ 4.23	$ 56,446,000	$ 2,245,000	$ 58,691,000	7.3%
2057	12,825,000	1,194,000	14,019,000	1.0%	$ 4.23	$ 57,011,000	$ 2,268,000	$ 59,279,000	1.0%

A comparison of estimated revenues with currently proposed and revised tolls is presented in Figure 4.4.3. The implementation of the revised tolls effective July 1, 2009, with cash tolls 25 percent greater than existing tolls, is reflected in the 7.0 percent differential in revenues in that year. The full effect is not evident until 2010, when the revised tolls are in effect for the full year and toll revenues are 13.5 percent greater with the revised tolls. If the toll increase were to be implemented at a different time, there would be a relative change in annual revenues.

The January 1, 2012 toll increase, which reflects cash tolls that are 50 percent greater than current levels results in toll revenues that are approximately 14.7 percent greater than revenues with the current toll schedule. The increase in 2016 and the elimination of the discount now available to PalPass users, results in revenues 15.8 percent greater than revenue with the current toll schedule.

Figure 4.4.3
Comparison of Estimated Toll Revenue with Currently Proposed and Revised Tolls

Year	Currently Proposed Tolls	Revised Tolls	Difference	
			Amount	Percent
2007	$ 5,447,000	$ 5,447,000	$ -	0.0%
2008	5,239,000	$ 5,239,000	$ -	0.0%
2009	5,228,000	$ 5,594,000	$ 366,000	7.0%
2010	5,121,000	$ 5,814,000	$ 693,000	13.5%
2011	6,064,000	$ 6,165,000	$ 101,000	1.7%
2012	6,236,000	$ 7,154,000	$ 918,000	14.7%
2013	6,476,000	$ 7,433,000	$ 957,000	14.8%
2014	6,854,000	$ 7,872,000	$ 1,018,000	14.9%
2015	7,392,000	$ 8,494,000	$ 1,102,000	14.9%
2016	8,970,000	$ 10,389,000	$ 1,419,000	15.8%
2017	9,675,000	$ 11,217,000	$ 1,542,000	15.9%
2027	18,484,000	$ 20,852,000	$ 2,368,000	12.8%
2037	29,218,000	$ 33,350,000	$ 4,132,000	14.1%
2047	39,247,000	$ 44,232,000	$ 4,985,000	12.7%
2057	53,302,000	$ 59,279,000	$ 5,977,000	11.2%

4.5 SENSITIVITY ANALYSIS

In addition to the forecasts of traffic and revenue for a base case scenario presented above, Stantec has prepared projections for “high” and “low” scenarios to test the sensitivity of the forecasts. For the base case scenario, the overall projected growth trend is based on the model output for selected horizon years. Annual variations in the trend for the base case scenario were developed by Stantec based on the timing and magnitude of anticipated socioeconomic conditions, including the current economic recession and land use and population developments as projected by GPATS and the Furman report. The annual growth rates for the alternative scenarios were then estimated by Stantec based on different rates of recovery from the recession and different implementation schedules for the proposed developments.

For all scenarios, no growth is forecast for 2010. For the low and base case scenarios, no growth is forecast again in 2011; for the high growth scenario, an increase of two percent is

forecast for 2011. For the base case forecast, the average annual rate of growth (before adjusting for the effect of the elasticity due to toll increases) between 2010 and 2017 is 5.7 percent, reflecting the implementation of the proposed land use developments. During the same period, traffic growth before adjustments for elasticity is estimated to increase at an annual average of 4.5 percent in the low scenario and 7.8 percent in the high scenario. After 2017, growth rates are forecast to taper down to a nominal level (one percent by the year 2041) due to the uncertainties of longer term conditions. The results for the “high” and “low” scenarios, with toll rates at the currently proposed levels are shown in Figures 4.5.1 and 4.5.2 and with toll rates at the revised levels are shown in Figures 4.5.3 and 4.5.4.

Figure 4.5.1
Southern Connector – Estimated Traffic and Revenue
Currently Proposed Tolls – High Scenario

Year	Annual Traffic				Annual Toll Revenue				
	Mainline Plazas	Ramps	Total	Percent Change	Average Toll	Mainline Plazas	Ramps	Total	Percent Change
2007	5,429,000	410,000	5,839,000		$ 0.93	$ 5,242,000	$ 205,000	$ 5,447,000	
2008	5,250,000	403,000	5,653,000	-3.2%	$ 0.93	$ 5,036,000	$ 203,000	$ 5,239,000	-3.8%
2009	5,250,000	403,000	5,653,000	0.0%	$ 0.92	$ 5,026,000	$ 202,000	$ 5,228,000	-0.2%
2010	5,301,000	411,000	5,712,000	1.0%	$ 0.91	$ 5,018,000	$ 206,000	$ 5,224,000	-0.1%
2011	4,983,000	399,000	5,382,000	-5.8%	$ 1.17	$ 6,038,000	$ 259,000	$ 6,297,000	20.5%
2012	5,282,000	423,000	5,705,000	6.0%	$ 1.17	$ 6,390,000	$ 275,000	$ 6,665,000	5.8%
2013	5,705,000	456,000	6,161,000	8.0%	$ 1.17	$ 6,891,000	$ 297,000	$ 7,188,000	7.8%
2014	6,275,000	502,000	6,777,000	10.0%	$ 1.16	$ 7,569,000	$ 326,000	$ 7,895,000	9.8%
2015	6,903,000	552,000	7,455,000	10.0%	$ 1.16	$ 8,313,000	$ 359,000	$ 8,672,000	9.8%
2016	6,932,000	581,000	7,513,000	0.8%	$ 1.40	$ 10,088,000	$ 436,000	$ 10,524,000	21.4%
2017	7,487,000	627,000	8,114,000	8.0%	$ 1.40	$ 10,881,000	$ 470,000	$ 11,351,000	7.9%
2018	8,086,000	678,000	8,764,000	8.0%	$ 1.40	$ 11,737,000	$ 508,000	$ 12,245,000	7.9%
2019	8,652,000	725,000	9,377,000	7.0%	$ 1.40	$ 12,542,000	$ 544,000	$ 13,086,000	6.9%
2020	8,581,000	745,000	9,326,000	-0.5%	$ 1.64	$ 14,620,000	$ 633,000	$ 15,253,000	16.6%
2021	9,010,000	782,000	9,792,000	5.0%	$ 1.64	$ 15,351,000	$ 665,000	$ 16,016,000	5.0%
2022	9,461,000	821,000	10,282,000	5.0%	$ 1.64	$ 16,118,000	$ 698,000	$ 16,816,000	5.0%
2023	9,934,000	863,000	10,797,000	5.0%	$ 1.64	$ 16,924,000	$ 733,000	$ 17,657,000	5.0%
2024	9,767,000	861,000	10,628,000	-1.6%	$ 1.89	$ 19,182,000	$ 861,000	$ 20,043,000	13.5%
2025	10,158,000	895,000	11,053,000	4.0%	$ 1.89	$ 19,949,000	$ 895,000	$ 20,844,000	4.0%
2026	10,463,000	922,000	11,385,000	3.0%	$ 1.89	$ 20,548,000	$ 922,000	$ 21,470,000	3.0%
2027	10,766,000	949,000	11,715,000	2.9%	$ 1.89	$ 21,144,000	$ 949,000	$ 22,093,000	2.9%
2028	10,556,000	954,000	11,510,000	-1.7%	$ 2.13	$ 23,458,000	$ 1,050,000	$ 24,508,000	10.9%
2029	10,863,000	982,000	11,845,000	2.9%	$ 2.13	$ 24,138,000	$ 1,080,000	$ 25,218,000	2.9%
2030	11,178,000	1,011,000	12,189,000	2.9%	$ 2.13	$ 24,838,000	$ 1,112,000	$ 25,950,000	2.9%
2031	11,401,000	1,031,000	12,432,000	2.0%	$ 2.13	$ 25,335,000	$ 1,134,000	$ 26,469,000	2.0%
2032	11,163,000	1,030,000	12,193,000	-1.9%	$ 2.36	$ 27,535,000	$ 1,236,000	$ 28,771,000	8.7%
2033	11,386,000	1,050,000	12,436,000	2.0%	$ 2.36	$ 28,085,000	$ 1,260,000	$ 29,345,000	2.0%
2034	11,614,000	1,071,000	12,685,000	2.0%	$ 2.36	$ 28,647,000	$ 1,286,000	$ 29,933,000	2.0%
2035	11,846,000	1,093,000	12,939,000	2.0%	$ 2.36	$ 29,220,000	$ 1,311,000	$ 30,531,000	2.0%
2036	12,083,000	1,115,000	13,198,000	2.0%	$ 2.59	$ 32,785,000	$ 1,449,000	$ 34,234,000	12.1%
2037	12,325,000	1,137,000	13,462,000	2.0%	$ 2.59	$ 33,440,000	$ 1,478,000	$ 34,918,000	2.0%
2038	12,572,000	1,160,000	13,732,000	2.0%	$ 2.59	$ 34,109,000	$ 1,507,000	$ 35,616,000	2.0%
2039	12,823,000	1,183,000	14,006,000	2.0%	$ 2.59	$ 34,791,000	$ 1,538,000	$ 36,329,000	2.0%
2040	13,079,000	1,206,000	14,285,000	2.0%	$ 2.83	$ 38,713,000	$ 1,689,000	$ 40,402,000	11.2%
2041	13,210,000	1,218,000	14,428,000	1.0%	$ 2.83	$ 39,100,000	$ 1,706,000	$ 40,806,000	1.0%
2042	13,342,000	1,231,000	14,573,000	1.0%	$ 2.83	$ 39,491,000	$ 1,723,000	$ 41,214,000	1.0%
2043	13,476,000	1,243,000	14,719,000	1.0%	$ 2.83	$ 39,886,000	$ 1,740,000	$ 41,626,000	1.0%
2044	13,610,000	1,255,000	14,865,000	1.0%	$ 3.06	$ 43,642,000	$ 1,883,000	$ 45,525,000	9.4%
2045	13,747,000	1,268,000	15,015,000	1.0%	$ 3.06	$ 44,079,000	$ 1,902,000	$ 45,981,000	1.0%
2046	13,884,000	1,281,000	15,165,000	1.0%	$ 3.06	$ 44,520,000	$ 1,921,000	$ 46,441,000	1.0%
2047	14,023,000	1,293,000	15,316,000	1.0%	$ 3.06	$ 44,965,000	$ 1,940,000	$ 46,905,000	1.0%
2048	14,163,000	1,306,000	15,469,000	1.0%	$ 3.30	$ 48,908,000	$ 2,090,000	$ 50,998,000	8.7%
2049	14,305,000	1,319,000	15,624,000	1.0%	$ 3.30	$ 49,397,000	$ 2,111,000	$ 51,508,000	1.0%
2050	14,448,000	1,333,000	15,781,000	1.0%	$ 3.30	$ 49,891,000	$ 2,132,000	$ 52,023,000	1.0%
2051	14,592,000	1,346,000	15,938,000	1.0%	$ 3.30	$ 50,390,000	$ 2,154,000	$ 52,544,000	1.0%
2052	14,738,000	1,359,000	16,097,000	1.0%	$ 3.53	$ 54,529,000	$ 2,311,000	$ 56,840,000	8.2%
2053	14,886,000	1,373,000	16,259,000	1.0%	$ 3.53	$ 55,074,000	$ 2,334,000	$ 57,408,000	1.0%
2054	15,034,000	1,387,000	16,421,000	1.0%	$ 3.53	$ 55,625,000	$ 2,357,000	$ 57,982,000	1.0%
2055	15,185,000	1,401,000	16,586,000	1.0%	$ 3.53	$ 56,181,000	$ 2,381,000	$ 58,562,000	1.0%
2056	15,337,000	1,415,000	16,752,000	1.0%	$ 3.77	$ 60,526,000	$ 2,546,000	$ 63,072,000	7.7%
2057	15,490,000	1,429,000	16,919,000	1.0%	$ 3.77	$ 61,131,000	$ 2,572,000	$ 63,703,000	1.0%

Figure 4.5.2
Southern Connector – Estimated Traffic and Revenue
Currently Proposed Tolls – Low Scenario

Year	Annual Traffic				Annual Toll Revenue				
	Mainline Plazas	Ramps	Total	Percent Change	Average Toll	Mainline Plazas	Ramps	Total	Percent Change
2007	5,429,000	410,000	5,839,000		$ 0.93	$ 5,242,000	$ 205,000	$ 5,447,000	
2008	5,250,000	403,000	5,653,000	-3.2%	$ 0.93	$ 5,036,000	$ 203,000	$ 5,239,000	-3.8%
2009	5,250,000	403,000	5,653,000	0.0%	$ 0.92	$ 5,026,000	$ 202,000	$ 5,228,000	-0.2%
2010	5,200,000	403,000	5,603,000	-0.9%	$ 0.91	$ 4,919,000	$ 202,000	$ 5,121,000	-2.0%
2011	4,748,000	380,000	5,128,000	-8.5%	$ 1.17	$ 5,758,000	$ 247,000	$ 6,005,000	17.3%
2012	4,843,000	387,000	5,230,000	2.0%	$ 1.17	$ 5,863,000	$ 252,000	$ 6,115,000	1.8%
2013	4,988,000	399,000	5,387,000	3.0%	$ 1.17	$ 6,029,000	$ 259,000	$ 6,288,000	2.8%
2014	5,187,000	415,000	5,602,000	4.0%	$ 1.17	$ 6,260,000	$ 270,000	$ 6,530,000	3.8%
2015	5,499,000	440,000	5,939,000	6.0%	$ 1.16	$ 6,626,000	$ 286,000	$ 6,912,000	5.8%
2016	5,472,000	458,000	5,930,000	-0.2%	$ 1.40	$ 7,967,000	$ 344,000	$ 8,311,000	20.2%
2017	5,909,000	495,000	6,404,000	8.0%	$ 1.40	$ 8,594,000	$ 371,000	$ 8,965,000	7.9%
2018	6,323,000	529,000	6,852,000	7.0%	$ 1.40	$ 9,184,000	$ 397,000	$ 9,581,000	6.9%
2019	6,766,000	567,000	7,333,000	7.0%	$ 1.40	$ 9,814,000	$ 425,000	$ 10,239,000	6.9%
2020	6,647,000	577,000	7,224,000	-1.5%	$ 1.64	$ 11,333,000	$ 490,000	$ 11,823,000	15.5%
2021	6,980,000	606,000	7,586,000	5.0%	$ 1.64	$ 11,899,000	$ 515,000	$ 12,414,000	5.0%
2022	7,259,000	630,000	7,889,000	4.0%	$ 1.64	$ 12,375,000	$ 535,000	$ 12,910,000	4.0%
2023	7,549,000	655,000	8,204,000	4.0%	$ 1.64	$ 12,870,000	$ 557,000	$ 13,427,000	4.0%
2024	7,352,000	648,000	8,000,000	-2.5%	$ 1.89	$ 14,449,000	$ 648,000	$ 15,097,000	12.4%
2025	7,572,000	667,000	8,239,000	3.0%	$ 1.89	$ 14,882,000	$ 667,000	$ 15,549,000	3.0%
2026	7,724,000	680,000	8,404,000	2.0%	$ 1.89	$ 15,180,000	$ 680,000	$ 15,860,000	2.0%
2027	7,878,000	694,000	8,572,000	2.0%	$ 1.89	$ 15,484,000	$ 694,000	$ 16,178,000	2.0%
2028	7,658,000	692,000	8,350,000	-2.6%	$ 2.13	$ 17,030,000	$ 761,000	$ 17,791,000	10.0%
2029	7,811,000	706,000	8,517,000	2.0%	$ 2.13	$ 17,370,000	$ 776,000	$ 18,146,000	2.0%
2030	7,967,000	720,000	8,687,000	2.0%	$ 2.13	$ 17,718,000	$ 792,000	$ 18,510,000	2.0%
2031	8,126,000	734,000	8,860,000	2.0%	$ 2.13	$ 18,072,000	$ 808,000	$ 18,880,000	2.0%
2032	7,957,000	733,000	8,690,000	-1.9%	$ 2.36	$ 19,642,000	$ 880,000	$ 20,522,000	8.7%
2033	8,116,000	748,000	8,864,000	2.0%	$ 2.36	$ 20,035,000	$ 898,000	$ 20,933,000	2.0%
2034	8,279,000	763,000	9,042,000	2.0%	$ 2.36	$ 20,436,000	$ 916,000	$ 21,352,000	2.0%
2035	8,444,000	778,000	9,222,000	2.0%	$ 2.36	$ 20,844,000	$ 934,000	$ 21,778,000	2.0%
2036	8,613,000	794,000	9,407,000	2.0%	$ 2.60	$ 23,387,000	$ 1,032,000	$ 24,419,000	12.1%
2037	8,785,000	810,000	9,595,000	2.0%	$ 2.60	$ 23,855,000	$ 1,053,000	$ 24,908,000	2.0%
2038	8,961,000	826,000	9,787,000	2.0%	$ 2.60	$ 24,332,000	$ 1,074,000	$ 25,406,000	2.0%
2039	9,140,000	842,000	9,982,000	2.0%	$ 2.60	$ 24,819,000	$ 1,095,000	$ 25,914,000	2.0%
2040	9,323,000	859,000	10,182,000	2.0%	$ 2.83	$ 27,617,000	$ 1,203,000	$ 28,820,000	11.2%
2041	9,416,000	868,000	10,284,000	1.0%	$ 2.83	$ 27,893,000	$ 1,215,000	$ 29,108,000	1.0%
2042	9,510,000	876,000	10,386,000	1.0%	$ 2.83	$ 28,172,000	$ 1,227,000	$ 29,399,000	1.0%
2043	9,606,000	885,000	10,491,000	1.0%	$ 2.83	$ 28,453,000	$ 1,239,000	$ 29,692,000	1.0%
2044	9,702,000	894,000	10,596,000	1.0%	$ 3.06	$ 31,133,000	$ 1,341,000	$ 32,474,000	9.4%
2045	9,799,000	903,000	10,702,000	1.0%	$ 3.06	$ 31,444,000	$ 1,354,000	$ 32,798,000	1.0%
2046	9,897,000	912,000	10,809,000	1.0%	$ 3.06	$ 31,759,000	$ 1,368,000	$ 33,127,000	1.0%
2047	9,996,000	921,000	10,917,000	1.0%	$ 3.06	$ 32,076,000	$ 1,382,000	$ 33,458,000	1.0%
2048	10,096,000	930,000	11,026,000	1.0%	$ 3.30	$ 34,889,000	$ 1,489,000	$ 36,378,000	8.7%
2049	10,197,000	940,000	11,137,000	1.0%	$ 3.30	$ 35,238,000	$ 1,503,000	$ 36,741,000	1.0%
2050	10,299,000	949,000	11,248,000	1.0%	$ 3.30	$ 35,590,000	$ 1,518,000	$ 37,108,000	1.0%
2051	10,401,000	959,000	11,360,000	1.0%	$ 3.30	$ 35,946,000	$ 1,534,000	$ 37,480,000	1.0%
2052	10,506,000	968,000	11,474,000	1.0%	$ 3.53	$ 38,899,000	$ 1,646,000	$ 40,545,000	8.2%
2053	10,611,000	978,000	11,589,000	1.0%	$ 3.53	$ 39,288,000	$ 1,662,000	$ 40,950,000	1.0%
2054	10,717,000	988,000	11,705,000	1.0%	$ 3.53	$ 39,681,000	$ 1,679,000	$ 41,360,000	1.0%
2055	10,824,000	997,000	11,821,000	1.0%	$ 3.53	$ 40,078,000	$ 1,696,000	$ 41,774,000	1.0%
2056	10,932,000	1,007,000	11,939,000	1.0%	$ 3.77	$ 43,177,000	$ 1,813,000	$ 44,990,000	7.7%
2057	11,041,000	1,018,000	12,059,000	1.0%	$ 3.77	$ 43,609,000	$ 1,832,000	$ 45,441,000	1.0%

Figure 4.5.3
Southern Connector – Estimated Traffic and Revenue
Revised Tolls – High Scenario

Year	Annual Traffic				Annual Toll Revenue				
	Mainline Plazas	Ramps	Total	Percent Change	Average Toll	Mainline Plazas	Ramps	Total	Percent Change
2007	5,429,000	410,000	5,839,000		$ 0.93	$ 5,242,000	$ 205,000	$ 5,447,000	
2008	5,250,000	403,000	5,653,000	-3.2%	$ 0.93	$ 5,036,000	$ 203,000	$ 5,239,000	-3.8%
2009	4,988,000	390,000	5,378,000	-4.9%	$ 1.04	$ 5,371,000	$ 223,000	$ 5,594,000	6.8%
2010	4,769,000	383,000	5,152,000	-4.2%	$ 1.15	$ 5,682,000	$ 249,000	$ 5,931,000	6.0%
2011	5,013,000	399,000	5,412,000	5.0%	$ 1.18	$ 6,141,000	$ 259,000	$ 6,400,000	7.9%
2012	4,853,000	408,000	5,261,000	-2.8%	$ 1.45	$ 7,337,000	$ 306,000	$ 7,643,000	19.4%
2013	5,241,000	440,000	5,681,000	8.0%	$ 1.45	$ 7,917,000	$ 330,000	$ 8,247,000	7.9%
2014	5,765,000	484,000	6,249,000	10.0%	$ 1.45	$ 8,701,000	$ 363,000	$ 9,064,000	9.9%
2015	6,342,000	533,000	6,875,000	10.0%	$ 1.45	$ 9,563,000	$ 400,000	$ 9,963,000	9.9%
2016	6,404,000	563,000	6,967,000	1.3%	$ 1.75	$ 11,703,000	$ 479,000	$ 12,182,000	22.3%
2017	6,917,000	608,000	7,525,000	8.0%	$ 1.75	$ 12,636,000	$ 517,000	$ 13,153,000	8.0%
2018	7,470,000	657,000	8,127,000	8.0%	$ 1.75	$ 13,644,000	$ 558,000	$ 14,202,000	8.0%
2019	7,993,000	703,000	8,696,000	7.0%	$ 1.75	$ 14,595,000	$ 597,000	$ 15,192,000	7.0%
2020	8,025,000	715,000	8,740,000	0.5%	$ 2.00	$ 16,759,000	$ 715,000	$ 17,474,000	15.0%
2021	8,426,000	751,000	9,177,000	5.0%	$ 2.00	$ 17,597,000	$ 751,000	$ 18,348,000	5.0%
2022	8,847,000	789,000	9,636,000	5.0%	$ 2.00	$ 18,477,000	$ 789,000	$ 19,266,000	5.0%
2023	9,289,000	828,000	10,117,000	5.0%	$ 2.00	$ 19,401,000	$ 828,000	$ 20,229,000	5.0%
2024	9,219,000	841,000	10,060,000	-0.6%	$ 2.25	$ 21,676,000	$ 926,000	$ 22,602,000	11.7%
2025	9,587,000	875,000	10,462,000	4.0%	$ 2.25	$ 22,543,000	$ 963,000	$ 23,506,000	4.0%
2026	9,875,000	901,000	10,776,000	3.0%	$ 2.25	$ 23,219,000	$ 992,000	$ 24,211,000	3.0%
2027	10,161,000	928,000	11,089,000	2.9%	$ 2.25	$ 23,893,000	$ 1,020,000	$ 24,913,000	2.9%
2028	10,034,000	935,000	10,969,000	-1.1%	$ 2.49	$ 26,208,000	$ 1,122,000	$ 27,330,000	9.7%
2029	10,325,000	962,000	11,287,000	2.9%	$ 2.49	$ 26,968,000	$ 1,154,000	$ 28,122,000	2.9%
2030	10,625,000	990,000	11,615,000	2.9%	$ 2.49	$ 27,750,000	$ 1,188,000	$ 28,938,000	2.9%
2031	10,837,000	1,009,000	11,846,000	2.0%	$ 2.49	$ 28,305,000	$ 1,211,000	$ 29,516,000	2.0%
2032	11,054,000	1,030,000	12,084,000	2.0%	$ 2.74	$ 31,758,000	$ 1,339,000	$ 33,097,000	12.1%
2033	11,275,000	1,050,000	12,325,000	2.0%	$ 2.74	$ 32,393,000	$ 1,365,000	$ 33,758,000	2.0%
2034	11,501,000	1,071,000	12,572,000	2.0%	$ 2.74	$ 33,041,000	$ 1,393,000	$ 34,434,000	2.0%
2035	11,731,000	1,093,000	12,824,000	2.0%	$ 2.74	$ 33,702,000	$ 1,420,000	$ 35,122,000	2.0%
2036	11,965,000	1,115,000	13,080,000	2.0%	$ 2.99	$ 37,501,000	$ 1,560,000	$ 39,061,000	11.2%
2037	12,205,000	1,137,000	13,342,000	2.0%	$ 2.99	$ 38,251,000	$ 1,592,000	$ 39,843,000	2.0%
2038	12,449,000	1,160,000	13,609,000	2.0%	$ 2.99	$ 39,016,000	$ 1,623,000	$ 40,639,000	2.0%
2039	12,698,000	1,183,000	13,881,000	2.0%	$ 2.99	$ 39,796,000	$ 1,656,000	$ 41,452,000	2.0%
2040	12,952,000	1,206,000	14,158,000	2.0%	$ 3.23	$ 43,975,000	$ 1,810,000	$ 45,785,000	10.5%
2041	13,081,000	1,218,000	14,299,000	1.0%	$ 3.23	$ 44,415,000	$ 1,828,000	$ 46,243,000	1.0%
2042	13,212,000	1,231,000	14,443,000	1.0%	$ 3.23	$ 44,859,000	$ 1,846,000	$ 46,705,000	1.0%
2043	13,344,000	1,243,000	14,587,000	1.0%	$ 3.23	$ 45,307,000	$ 1,864,000	$ 47,171,000	1.0%
2044	13,478,000	1,255,000	14,733,000	1.0%	$ 3.48	$ 49,280,000	$ 2,009,000	$ 51,289,000	8.7%
2045	13,612,000	1,268,000	14,880,000	1.0%	$ 3.48	$ 49,773,000	$ 2,029,000	$ 51,802,000	1.0%
2046	13,748,000	1,281,000	15,029,000	1.0%	$ 3.48	$ 50,271,000	$ 2,049,000	$ 52,320,000	1.0%
2047	13,886,000	1,293,000	15,179,000	1.0%	$ 3.48	$ 50,774,000	$ 2,069,000	$ 52,843,000	1.0%
2048	14,025,000	1,306,000	15,331,000	1.0%	$ 3.73	$ 54,944,000	$ 2,221,000	$ 57,165,000	8.2%
2049	14,165,000	1,319,000	15,484,000	1.0%	$ 3.73	$ 55,494,000	$ 2,243,000	$ 57,737,000	1.0%
2050	14,307,000	1,333,000	15,640,000	1.0%	$ 3.73	$ 56,049,000	$ 2,265,000	$ 58,314,000	1.0%
2051	14,450,000	1,346,000	15,796,000	1.0%	$ 3.73	$ 56,609,000	$ 2,288,000	$ 58,897,000	1.0%
2052	14,594,000	1,359,000	15,953,000	1.0%	$ 3.98	$ 60,987,000	$ 2,447,000	$ 63,434,000	7.7%
2053	14,740,000	1,373,000	16,113,000	1.0%	$ 3.98	$ 61,597,000	$ 2,471,000	$ 64,068,000	1.0%
2054	14,888,000	1,387,000	16,275,000	1.0%	$ 3.98	$ 62,213,000	$ 2,496,000	$ 64,709,000	1.0%
2055	15,036,000	1,401,000	16,437,000	1.0%	$ 3.98	$ 62,835,000	$ 2,521,000	$ 65,356,000	1.0%
2056	15,187,000	1,415,000	16,602,000	1.0%	$ 4.22	$ 67,430,000	$ 2,688,000	$ 70,118,000	7.3%
2057	15,339,000	1,429,000	16,768,000	1.0%	$ 4.22	$ 68,104,000	$ 2,715,000	$ 70,819,000	1.0%

Figure 4.5.4
Southern Connector – Estimated Traffic and Revenue
Revised Tolls – Low Scenario

Year	Annual Traffic				Annual Toll Revenue				
	Mainline Plazas	Ramps	Total	Percent Change	Average Toll	Mainline Plazas	Ramps	Total	Percent Change
2007	5,429,000	410,000	5,839,000		$ 0.93	$ 5,242,000	$ 205,000	$ 5,447,000	
2008	5,250,000	403,000	5,653,000	-3.2%	$ 0.93	$ 5,036,000	$ 203,000	$ 5,239,000	-3.8%
2009	4,988,000	390,000	5,378,000	-4.9%	$ 1.04	$ 5,371,000	$ 223,000	$ 5,594,000	6.8%
2010	4,678,000	376,000	5,054,000	-6.0%	$ 1.15	$ 5,570,000	$ 244,000	$ 5,814,000	3.9%
2011	4,776,000	380,000	5,156,000	2.0%	$ 1.18	$ 5,858,000	$ 247,000	$ 6,105,000	5.0%
2012	4,449,000	374,000	4,823,000	-6.5%	$ 1.45	$ 6,734,000	$ 280,000	$ 7,014,000	14.9%
2013	4,583,000	385,000	4,968,000	3.0%	$ 1.45	$ 6,930,000	$ 289,000	$ 7,219,000	2.9%
2014	4,766,000	400,000	5,166,000	4.0%	$ 1.45	$ 7,200,000	$ 300,000	$ 7,500,000	3.9%
2015	5,052,000	424,000	5,476,000	6.0%	$ 1.45	$ 7,625,000	$ 318,000	$ 7,943,000	5.9%
2016	5,055,000	444,000	5,499,000	0.4%	$ 1.75	$ 9,248,000	$ 378,000	$ 9,626,000	21.2%
2017	5,460,000	480,000	5,940,000	8.0%	$ 1.75	$ 9,986,000	$ 408,000	$ 10,394,000	8.0%
2018	5,842,000	513,000	6,355,000	7.0%	$ 1.75	$ 10,682,000	$ 436,000	$ 11,118,000	7.0%
2019	6,251,000	549,000	6,800,000	7.0%	$ 1.75	$ 11,427,000	$ 467,000	$ 11,894,000	7.0%
2020	6,217,000	554,000	6,771,000	-0.4%	$ 2.00	$ 12,999,000	$ 554,000	$ 13,553,000	13.9%
2021	6,527,000	581,000	7,108,000	5.0%	$ 2.00	$ 13,649,000	$ 581,000	$ 14,230,000	5.0%
2022	6,789,000	605,000	7,394,000	4.0%	$ 2.00	$ 14,194,000	$ 605,000	$ 14,799,000	4.0%
2023	7,060,000	629,000	7,689,000	4.0%	$ 2.00	$ 14,762,000	$ 629,000	$ 15,391,000	4.0%
2024	6,939,000	633,000	7,572,000	-1.5%	$ 2.25	$ 16,336,000	$ 696,000	$ 17,032,000	10.7%
2025	7,147,000	652,000	7,799,000	3.0%	$ 2.25	$ 16,826,000	$ 717,000	$ 17,543,000	3.0%
2026	7,290,000	665,000	7,955,000	2.0%	$ 2.25	$ 17,162,000	$ 731,000	$ 17,893,000	2.0%
2027	7,436,000	678,000	8,114,000	2.0%	$ 2.25	$ 17,506,000	$ 746,000	$ 18,252,000	2.0%
2028	7,279,000	677,000	7,956,000	-1.9%	$ 2.49	$ 19,035,000	$ 813,000	$ 19,848,000	8.7%
2029	7,425,000	691,000	8,116,000	2.0%	$ 2.49	$ 19,416,000	$ 829,000	$ 20,245,000	2.0%
2030	7,574,000	705,000	8,279,000	2.0%	$ 2.49	$ 19,804,000	$ 846,000	$ 20,650,000	2.0%
2031	7,725,000	719,000	8,444,000	2.0%	$ 2.49	$ 20,200,000	$ 863,000	$ 21,063,000	2.0%
2032	7,880,000	733,000	8,613,000	2.0%	$ 2.74	$ 22,664,000	$ 953,000	$ 23,617,000	12.1%
2033	8,037,000	748,000	8,785,000	2.0%	$ 2.74	$ 23,118,000	$ 972,000	$ 24,090,000	2.0%
2034	8,198,000	763,000	8,961,000	2.0%	$ 2.74	$ 23,580,000	$ 992,000	$ 24,572,000	2.0%
2035	8,362,000	778,000	9,140,000	2.0%	$ 2.74	$ 24,052,000	$ 1,012,000	$ 25,064,000	2.0%
2036	8,529,000	794,000	9,323,000	2.0%	$ 2.99	$ 26,763,000	$ 1,111,000	$ 27,874,000	11.2%
2037	8,700,000	810,000	9,510,000	2.0%	$ 2.99	$ 27,298,000	$ 1,133,000	$ 28,431,000	2.0%
2038	8,874,000	826,000	9,700,000	2.0%	$ 2.99	$ 27,844,000	$ 1,156,000	$ 29,000,000	2.0%
2039	9,051,000	842,000	9,893,000	2.0%	$ 2.99	$ 28,401,000	$ 1,179,000	$ 29,580,000	2.0%
2040	9,232,000	859,000	10,091,000	2.0%	$ 3.24	$ 31,383,000	$ 1,289,000	$ 32,672,000	10.5%
2041	9,324,000	868,000	10,192,000	1.0%	$ 3.24	$ 31,697,000	$ 1,302,000	$ 32,999,000	1.0%
2042	9,418,000	876,000	10,294,000	1.0%	$ 3.24	$ 32,014,000	$ 1,315,000	$ 33,329,000	1.0%
2043	9,512,000	885,000	10,397,000	1.0%	$ 3.24	$ 32,334,000	$ 1,328,000	$ 33,662,000	1.0%
2044	9,607,000	894,000	10,501,000	1.0%	$ 3.49	$ 35,169,000	$ 1,430,000	$ 36,599,000	8.7%
2045	9,703,000	903,000	10,606,000	1.0%	$ 3.49	$ 35,521,000	$ 1,445,000	$ 36,966,000	1.0%
2046	9,800,000	912,000	10,712,000	1.0%	$ 3.49	$ 35,876,000	$ 1,459,000	$ 37,335,000	1.0%
2047	9,898,000	921,000	10,819,000	1.0%	$ 3.49	$ 36,235,000	$ 1,474,000	$ 37,709,000	1.0%
2048	9,997,000	930,000	10,927,000	1.0%	$ 3.73	$ 39,212,000	$ 1,582,000	$ 40,794,000	8.2%
2049	10,097,000	940,000	11,037,000	1.0%	$ 3.73	$ 39,604,000	$ 1,597,000	$ 41,201,000	1.0%
2050	10,198,000	949,000	11,147,000	1.0%	$ 3.73	$ 40,000,000	$ 1,613,000	$ 41,613,000	1.0%
2051	10,300,000	959,000	11,259,000	1.0%	$ 3.73	$ 40,400,000	$ 1,630,000	$ 42,030,000	1.0%
2052	10,403,000	968,000	11,371,000	1.0%	$ 3.98	$ 43,524,000	$ 1,743,000	$ 45,267,000	7.7%
2053	10,507,000	978,000	11,485,000	1.0%	$ 3.98	$ 43,959,000	$ 1,760,000	$ 45,719,000	1.0%
2054	10,612,000	988,000	11,600,000	1.0%	$ 3.98	$ 44,399,000	$ 1,778,000	$ 46,177,000	1.0%
2055	10,718,000	997,000	11,715,000	1.0%	$ 3.98	$ 44,843,000	$ 1,795,000	$ 46,638,000	1.0%
2056	10,825,000	1,007,000	11,832,000	1.0%	$ 4.23	$ 48,122,000	$ 1,914,000	$ 50,036,000	7.3%
2057	10,934,000	1,018,000	11,952,000	1.0%	$ 4.23	$ 48,603,000	$ 1,933,000	$ 50,536,000	1.0%

4.6 ASSUMPTIONS

For this report, the forecasts of traffic and revenue have been based on certain assumptions regarding conditions in the area served by the Southern Connector and factors affecting performance of the toll road. Major assumptions include;

- The toll road will continue to be operated efficiently and maintained in a safe and attractive manner, provide adequate capacity to handle traffic demand;
- Toll levels for the base forecasts will remain at current levels; for the alternative forecasts, toll rates will be revised to the levels shown in Figure 4.4.2 and in accordance with the schedule shown in that Figure;
- Transportation improvements in the Greenville area will be the same as those included in the GPATS model and there will be no improvements to existing competing routes to the Southern Connector or construction of any additional competing routes;
- Population and employment trends will be similar to those included in the GPATS model;
- Utility infrastructure in the area served by the Southern Connector will be developed so that it is adequate to serve the projected increases in population and land use development;
- Motor fuel will be in adequate supply and the price of gasoline and diesel fuel will not be significantly higher than the range of prices experienced in 2008 (after adjusted for inflation); and
- Economic conditions in the Greenville Area, South Carolina and the United States will follow a generally normal trend and there will be no major depression, national emergency condition or extended fuel shortage.

* * * * * * * * *

It is Stantec's opinion that the revenue projections are reasonable and that they have been prepared in accordance with accepted practice. However, given the uncertainties within the current international and economic climate, Stantec considers it necessary to state that the traffic and revenue projections are based on the following caveats:

1. This report presents the results of Stantec's consideration of the information available to us as of the date hereof and the applications of Stantec experience and professional judgment to that information. It is not a guarantee of any future events or trends.

2. The traffic and revenue forecasts will be subject to future economic and social conditions and demographic developments that cannot be predicted with certainty.

3. The projections contained in this report, while presented with numerical specificity, are based on a number of estimates and assumptions which, though considered reasonable to us, are inherently subject to significant economic and competitive uncertainties and contingencies, many of which will be beyond Stantec's control and that of the Association. In many instances, a broad range of alternative assumptions could be considered reasonable. Changes in the assumptions used could result in material differences in projected outcomes.

4. If, for any reason, any of these conditions should change due to changes in the economy or competitive environment, or other factors, the consultant's opinions or estimates may require amendment or further adjustments.

REAL ESTATE STUDY

Projected Development For The Southern Connector Service Area

Greenville, South Carolina

Prepared For

Stantec Consulting Services

November 18, 2008

Presented By:

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Assignment

Grubb & Ellis|The Furman Co. is pleased to provide this Real Estate Study for the Southern Connector Service Area. We understand that Stantec has been retained by Connector 2000 Association to perform a Traffic and Revenue Study for the Southern Connector Toll Road in Greenville, South Carolina. This Real Estate Study will be used as a part of the basis for the overall Traffic and Revenue Study.

This report is the result of a comprehensive study of projected future development patterns in the area along the Southern Connector and the broader surrounding area served by the Connector. It includes an assessment of demographic trends, available buildings and vacant tracts of land, zoning and entitlements, utility/infrastructure availability, planned transportation improvements, and economic development initiatives, as well as the residential, retail, office and industrial sectors of the overall real estate market. As requested, this report estimates projected development for the short (5 year), intermediate (15 year), and long (50 year) term time periods.

Summary of Findings

The areas along the Southern Connector were analyzed by Transportation Analysis Zones (TAZ) and the broader surrounding area served by the Connector was analyzed by Planning Areas. A total of twenty-nine TAZ's and four Planning Areas are covered in this study (a detailed map is included in the enclosed Exhibits). A list of references and sources are provided at the end of this report.

POPULATION / HOUSING FORECASTS

To determine the projected number of residential units within the study area, numerous sources were reviewed. The Greenville County Comprehensive Plan, which incorporates census data, housing data (building permits, certificates of occupancy, vacancy rates), and re-zonings, provided the greatest amount of historical and current information. Therefore, it provided the foundation for the projections in this report. The Greenville County Planning Commission's demographic data and housing statistics in each of the County Planning Areas provided in-depth information for this study. The Greenville-Pickens Area Transportation Study (GPATS) provides mapping of transportation improvement projects. Other sources of information were used as a system of checks and balances to confirm the integrity of the Comprehensive Plan, thereby resulting in a calibrated model from which to draw conclusions and make projections on future population and housing.

Population forecasts were based on three elements: an analysis of historical trends, an evaluation of current development patterns, and an estimate of land available for residential development.

Historical Trends

Because the current task is to forecast population over a time period of 50 years, it is instructive to take a longer view of growth trends. Growth rates for the entire Greenville County, and particularly in each of the four Planning Areas serving the Southern Connector, were assessed

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on a decade-by-decade basis from 1910 through 2000. While the number of new residents added each decade has been growing, the percentage change in population each decade has been declining. When developing population forecasts, many analysts assume that population grows exponentially, with a consistent percentage growth occurring each year, in the same way that interest accrues on a savings account. Instead, a long-term population growth more often occurs in a relatively arithmetic or linear fashion, with similar numbers of new persons added in each time period. While the amount of growth remains relatively constant or increases slightly, the rate of growth normally declines over the long term. The rate of growth (or percentage growth) in Greenville County has declined over the past century, while the absolute growth (number of new persons) per decade has remained relatively stable, with a general upward trend.

Current Development Trends

The first five years of the 21st century have produced record-high growth in residential development in Greenville County, with new subdivisions approved in a widespread pattern across Greenville County, but with a notable concentration in the southeastern quadrant of the county, made up of the Mauldin, Simpsonville, Fountain Inn and Enoree Planning Areas. Approximately half of all new subdivision lots approved from 2000 through 2005 are contained within these four planning areas. This recent development has taken place in those locations due to accessible and adequate public sewer, quality schools, an abundant supply of developable land, and lower land prices. This population growth trend will continue in these areas until development stretches beyond sewer availability and enters into neighboring counties where public services and quality schools do not exist. The result will be a shift into other outlying, unincorporated areas within Greenville County. In some cases where rezoning allows and premium land prices permit, infill development will occur on a limited basis. However, these occurrences are predicted well into the future as a generous supply of vacant, developable land still exists in the Enoree, Mauldin, Simpsonville, and Fountain Inn Planning Areas.

Growth in the Eastside planning area, traditionally the highest growth area in the county, is beginning to moderate, as relatively little land remains available for new development. Planning Areas in the north, south and western quadrants of the County should generally continue on their current population trends as nothing looms on the horizon to significantly alter those trends. Historically, the presence of industrial properties, a lack of adequate infrastructure, below-average schools, and job location has contributed to slower growth in those areas.

Land Available for Residential Development

A population forecast that simply assumes that historical growth trends and current development trends will continue runs the risk of forecasting more population than can be accommodated by the remaining available land in an area. To address this issue, as a part of the Greenville County Comprehensive Plan, the Greenville County Planning Commission generated an estimate of developable land for each of the county's 16 planning areas. The county tax assessor's database was used to identify all vacant land with residential zoning or no zoning. Government-owned land, parks, churches, and other public lands were removed from the database. In addition, all non-vacant residential or un-zoned parcels of five acres or greater, where the assessed value of buildings and improvements was less that $6,000 per acre, were included as developable parcels. The thresholds for selecting these non-vacant developable

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parcels were set at a level that selected the large parcels with a single house that are often sold and developed as subdivisions. This estimate of vacant and developable land was used to constrain the growth forecast in each Planning Area, so that the forecast growth does not exceed the land available to accommodate new development.

Additionally, once the model created for this study was used to generate population forecasts for the 15 and 50 year time periods, each TAZ was closely reviewed by aerial topography to assess the development capacity of the remaining vacant land with respect to topography, land use cover, water features, and other physical constraints.

Population Forecast by Planning Area

The U. S. Census Bureau produces population forecasts for each state through 2030. In South Carolina, the Office of Research and Statistics, a division of the Budget and Control Board, is the designated Census "State Data Center." The State Data Center is responsible for producing forecast allocates the Census statewide population forecast among the state's 46 counties. The State Data Center's 2030 population forecast for Greenville County is 521,990. The population forecast for each Planning Area was developed by taking an average of three different forecasts.

The simplest way to forecast population for each Planning Area in Greenville County is a linear regression forecast based on the 1980, 1990 and 2000 populations for each Planning Area. This method produces a countywide forecast of 526,807 persons in 2030, which is one percent higher than the State Data Center forecast for the county. While this method produces reasonable results for some areas, it predicts a continuing decline in population in the oldest parts of the area—Greenville, Gantt and Poinsett Planning Areas. This problem is addressed by adjusting the census trend forecast to maintain stable population in those areas.

A second forecast is a development trend forecast, based on a complex process which accounts for actual approved subdivisions and multifamily developments in each planning district for the previous five years, and assumes that this growth trend continues through 2030 if sufficient developable land exists to support this level of development. This method produces a forecast of 722,214 persons in 2030, which is 38 percent higher than the State Data Center forecast for the county.

A third forecast was developed, which proportionally reduces the development trend forecast for each planning district so the county total population matches the State Data Center forecast. By averaging these three forecasts and applying a constraint factor, a forecast for each planning district so that the county population matches the State Data Center forecast.

After averaging and constraining the three different forecasts, minor adjustments were made to the forecast for several Planning Areas, to derive a final 2030 population forecast for Greenville County of 543,822, which is 4.2 percent higher that the State Data Center forecast. Without these adjustments, several Planning Areas would have shown unlikely population declines.

Allocation of Population Forecasts to Traffic Analysis Zones

An important application of the population forecasts is the development of a regional travel model which predicts future traffic volumes on the major roads within the Greenville-Pickens

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Area Transportation Study (GPATS) boundary. Planning Areas are subdivided into Traffic Analysis Zones (TAZs), and the Planning Area population forecasts are then allocated among these zones. This allocation was performed by the Greenville County Planning Commission and is accomplished by developing a Growth Index for the TAZs in each Planning Area. The Growth Index evaluates each TAZ relative to the other TAZs within the same Planning Area, based on the following: (1) the percent of the total undeveloped area within the TAZ; (2) the share of vacant or developable land in the Planning Area contained within each TAZ; (3) the percent change in dwelling units that has occurred in the TAZ since 2000; (4) the percent of total residential development in the Planning Area since 2000. Based on a scoring system for these Growth Index criteria, each TAZ is designated as Low, Moderate, or High growth. The total growth forecast for the Planning Area is then distributed accordingly to each TAZ. The enclosed maps show population densities and changes by Planning Area and TAZ in for the period from 2000 to 2030.

To calculate the number of projected housing units in each TAZ, the forecasted populations were adjusted by the historical vacancy rate and average household size in its particular Planning Area. It should be noted that these two figures were assumed to remain constant over the 50 year study period.

Significant Residential Projects

Acadia (Gantt Planning Area – TAZ 185)
This project is a 290 acre Traditional Neighborhood Development (mixed-use) located along the Southern Connector between Highway 153 and Highway 20. Acadia has a main entrance on Highway 153 and will have a future secondary entrance on Highway 20. The neighborhood is planned for up to 700 residential units and 50,000 square feet of commercial space. Construction began in 2006 and there are currently 19 residential units occupied. Complete build-out is anticipated to take approximately 15 to 20 years.

Griffin Park (Southside Planning Area – adjacent to TAZ 339)
Griffin Park is located in the southeastern quadrant of the intersection of Fork Shoals Road and West Georgia Road. It is planned as a Traditional Neighborhood Development (mixed-use) project consisting of 1,100 residential units and 30 acres of commercial land. Construction began in 2007 and currently 2 units are occupied. Complete build-out is anticipated to take approximately 15 to 20 years.

COMMERCIAL LAND USE PROJECTIONS

The commercial land use projections contained in this study were compiled from multiple sources. We first looked at historical growth patterns of the study area to help us project future development in each of the 30 TAZ's along the Southern Connector. We then took into account the amount of vacant acreage available for development within each TAZ. Transportation, utility, and infrastructure availability were analyzed to help distribute regional growth projections among the TAZ's. The Southern Connector 2007 Property Availability Study was referenced to assess population and development growth projections according to the existing inventory of land and buildings. Greenville County's Southern Connector Future Land Use Map and current zoning classifications were also factors in determining what type of development would be most likely to locate in which areas. New, announced, or planned projects were then allocated to the proper areas.

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Grubb & Ellis|The Furman Co.'s retail, office, and industrial brokers were consulted in order to get their perspective on the Southern Connector area in general as well as gain their insight into future projects in the development pipeline. Their general sentiment is that there are still numerous sites (both vacant land and buildings) in Greenville County that are better suited for commercial and industrial development than the available sites along the Southern Connector. Developers would have to work through those available properties first, before many of them begin to look at the Southern Connector area.

The primary land use identified in the Greenville County Southern Connector Future Land Use Map is industrial. Due to the proximity of the South Carolina Technology and Aviation Center (formerly known as the Donaldson Center Industrial Air Park) and The Matrix Business & Technology Park, there are a number of opportunities for large companies to relocate or expand their operations in this area. According to Jim Hill, Research Manager at the Greenville Area Development Corporation (GADC), there are approximately 450 acres available for development at the SCTAC and approximately 872 acres available at The Matrix. This land availability positions the area for some great economic development opportunities in the near future.

The availability of rail is also a major plus for industrial users looking to locate in this area. There are several major rail lines serving the Southern Connector area running in a general north-south direction along Highway 20 (Piedmont Highway), Hwy 25 (Augusta Road), and Hwy 276 (Laurens Road). In addition to rail access, the SCTAC also contains a public airport featuring an 8,000 foot concrete runway. This size facility can accommodate almost any size of aircraft – from a small private charter plane to a large freight or military craft. The SCTAC is also recognized as a major aircraft maintenance and modification center.

UTILITIES AND INFRASTRUCTURE

Aside from overall real estate market conditions, the availability of utilities and infrastructure will have the biggest impact on where and when development activity will occur in the area served by the Southern Connector. The relative lack of sanitary sewer service is one of the main constraints to development in this area.

Historically, utilities and infrastructure have not been used as an economic development tool in the Greenville area. After talking with the local utility providers, it is clear that none of them are willing or able to invest the resources necessary to extend service to these underserved areas in hopes of spurring new development. They all require some level of commitment from a private development entity to give them assurance of increased revenue from a new customer base. The provision of these services is typically negotiated with a developer or prospective business during the entitlement process.

The availability and capacity of the utilities and infrastructure discussed in this report were reviewed within each TAZ to determine if the population forecast and commercial/residential development projected for each TAZ was viable.

Sanitary Sewer:
Western Carolina Regional Sewer Authority provides wastewater treatment services to the Southern Connector area. WCRSA owns and maintains the sewer trunk lines and treatment

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facilities, while sewer sub-districts (Metropolitan, Mauldin, and Simpsonville) maintain the smaller collector lines that feed into the trunk lines.

Sewer service is a major concern in this area, as the sewer authority and its sub-districts are often unwilling to share in the costs of extending service. Several recent projects in the study area such as Griffin Park and Acadia have spent an enormous amount of money to bring sewer to their property in order to make their project viable. These projects are on a large enough scale to be able to justify this expense, but smaller projects would not be able to afford these capital improvements. Commercial and residential development in the Southern Connector service area will continue to follow sewer availability for some time into the future.

WCRSA has several trunk lines in place serving this area. Generally speaking, they cross the Southern Connector in four places: along the Reedy River and Standing Springs Road; between Fork Shoals Road and Reedy Fork Road; between Hwy 25 and Hwy 20; and at I-85 and Hwy 153. Please see the enclosed sewer map showing the location of these lines. As you can see, there is a lack of adequate service to the south of the Southern Connector between Fork Shoals Road and Hwy 25 (Augusta Road).

Water:
Greenville Water System also has adequate service to the Southern Connector corridor, although there are some areas south of the Southern Connector between Fork Shoals Road and Highway 25 (Augusta Road) that do not have service. The land uses in this area are typically rural residential utilizing private well water. However, water service is not seen as a concern for the study area due to the relative ease and reasonable cost associated with extending service, and Greenville Water System's thorough existing coverage.

Electricity:
The availability and capacity of electrical service is not an issue in this area. Duke Energy has lines along almost all thoroughfares serving the Southern Connector. Generally speaking, it is not difficult to get electricity extended to a particular site that may not have service due to the fact that it is a relatively inexpensive process, and Duke's financial return on new infrastructure is usually achieved by revenues derived from the project's electrical consumption.

Natural Gas:
Piedmont Natural Gas provides service to the Southern Connector area, and generally speaking, follows the path of sewer service. They serve several of the major residential subdivisions in the area as well as the major commercial nodes. Piedmont has no plans at this time to extend service to any particular areas or projects, but would be willing to investigate this possibility on a case-by-case basis. Historically speaking, Piedmont Natural Gas has provided service to the majority of commercial and residential projects.

Transportation:

The South Carolina Department of Transportation has recently finished its realignment and widening of West Georgia Road at I-385 which provides improved access to the study area. This project will primarily improve access to I-385, thereby promoting additional growth to the west along West Georgia Road.

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The SCDOT has also recently completed improvements to Highway 20 from Highway 25 to the Southern Connector. A few other projects have been identified by the Greenville Pickens Area Transportation Study (GPATS) in their "Long Range Plans" that will positively affect the Southern Connector service area (see the enclosed GPATS Project Map):

- Fork Shoals Road – widen to 3 lanes from Old Augusta Road to Log Shoals Road
- West Georgia Road – widen to 5 lanes from Neely Ferry Road to Fork Shoals Road
- Hwy 86 – widen to 3 or 5 lanes from Hwy 25 to Hwy 20

Generally speaking, the existing road system in the Southern Connector service area is not an obstacle to future commercial and residential development within the foreseeable future. On a small scale year over year basis, any necessary road improvements (widening, realignment, signalization, etc.) are typically made during construction of the development that justified the improvements, and usually at the expense of the private developer. Larger scale road projects initiated by the SCDOT are usually reactionary, acting to alleviate traffic congestion and improve safety.

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References and Sources

Claritas
Existing population and employment numbers for each geographic area, as well as growth rates of the last 15-20 years

CoStar
Commercial real estate database for each geographic area, including existing inventory, recently constructed inventory and inventory to be constructed in the next five years

Courthouse Retrieval System (CRS)
Public records for identifying the quantity of land that remains undeveloped

G2
Grubb & Ellis|The Furman Co. proprietary database, G2, was consulted to evaluate commercial real estate for each geographic area, including existing inventory, recently constructed inventory and inventory to be constructed in the next five years

Greenville County Planning Commission
Southern Connector Future Land Use Map
Greenville County Zoning Map
2004 Greenville County Comprehensive Plan: Population Element
2004 Demographics Report: Population Counts and Projections
2005 Development Activity Report

Greenville County GIS
Zoning and land use information

Coldwell Banker Commercial Caine
2006 Property Availability Study

Greenville-Pickens Area Transportation Study (GPATS)
Long Range Transportation Study (Nov. 2007).
Demographic information (population data) allocated by Transportation Analysis Zones (as provided by Stantec)

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PROJECTED LAND USE – SOUTHERN CONNECTOR SERVICE AREA

(spreadsheet attached)

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Projected Land Use - Southern Connector Service Area

11/18/2008

Planning Area / TAZ	Time Period (5, 15, and 50 years)	Residential Development Number of Dwelling Units Added	Retail Development Number of Square Feet Added	Office Development Number of Square Feet Added	Industrial Development Number of Square Feet Added	Major Projects Number of Units Added	Major Projects Type of Development
Gantt	**2009-2013**	**593**	**43,448**	**21,234**	**750,840**	320 acres vacant (740,000 SF)	**Beechtree** (industrial)
	2014-2023	**1,121**	**86,897**	**42,468**	**1,501,680**		
	2024-2058	**3,628**	**304,139**	**148,636**	**5,255,879**		
Sub-total	*All*	*5,343*	*434,484*	*212,338*	*7,508,398*		
	Thru 2030	***2,185***	***191,173***	***93,429***	***3,303,695***		
183	2009-2013	9	0	0	0		
	2014-2023	15	5,000	0	55,000		
	2024-2058	46	32,500	0	192,500		
	Thru 2030	*33*	*11,500*	*0*	*93,500*		
184	2009-2013	5	0	0	0		
	2014-2023	8	0	0	0		
	2024-2058	25	0	0	0		
	Thru 2030	*19*	*0*	*0*	*0*		
185	2009-2013	259	0	0	95,000	700 DU; 50k SF commercial	**Acadia** (mixed-use)
	2014-2023	359	35,000	10,000	150,000		**Connector Plus** (industrial)
	2024-2058	216	97,500	25,000	730,000		
	Thru 2030	*661*	*54,500*	*15,000*	*391,000*		
186	2009-2013	14	0	0	0		
	2014-2023	25	0	0	100,000		
	2024-2058	81	25,000	0	350,000		
	Thru 2030	*54*	*5,000*	*0*	*170,000*		
277	2009-2013	34	0	0	0	450 acres vacant	**SCTAC (former Donaldson Center)** (industrial)
	2014-2023	112	0	0	65,000		
	2024-2058	22	0	0	227,500		
	Thru 2030	*150*	*0*	*0*	*110,500*		
279	2009-2013	3	0	5,000	310,000		
	2014-2023	4	0	10,000	70,000		
	2024-2058	13	10,000	10,000	245,000		
	Thru 2030	*10*	*2,000*	*17,000*	*429,000*		
283	2009-2013	33	0	0	0		
	2014-2023	71	0	0	110,000		
	2024-2058	384	10,000	0	245,000		
	Thru 2030	*115*	*2,000*	*0*	*159,000*		
284	2009-2013	14	0	0	0		
	2014-2023	37	0	0	65,000		
	2024-2058	343	15,000	0	127,500		
	Thru 2030	*120*	*3,000*	*0*	*90,500*		
Sub-total	*All*	*2,131*	*230,000*	*60,000*	*3,137,500*		
Mauldin	**2009-2013**	**500**	**318,286**	**272,474**	**718,896**		**CU-ICAR**
	2014-2023	**872**	**636,571**	**544,949**	**1,337,792**		**Millenium Campus**
	2024-2058	**2,478**	**2,228,000**	**1,907,320**	**3,632,272**		
Sub-total	*All*	*3,849*	*3,182,857*	*2,724,743*	*5,688,961*		
	Thru 2030	***1,888***	***1,400,457***	***1,198,887***	***2,783,143***		
266	2009-2013	-1	0	0	0		
	2014-2023	-2	0	0	0		
	2024-2058	-5	0	0	0		
	Thru 2030	*-4*	*0*	*0*	*0*		
267	2009-2013	0	0	0	0		
	2014-2023	0	0	0	0		
	2024-2058	0	0	0	0		
	Thru 2030	*0*	*0*	*0*	*0*		
268	2009-2013	352	0	0	0	448 DU; 21 acres commercial	**Brookwood Point** (mixed-use)
	2014-2023	96	20,000	5,000	0	20 acres commercial	**Richardson property**
	2024-2058	130	80,000	5,500	0		
	Thru 2030	*462*	*36,000*	*6,100*	*0*		
269	2009-2013	0	0	8,000	50,000		
	2014-2023	152	10,000	9,000	75,000		
	2024-2058	76	50,000	11,500	182,500		
	Thru 2030	*167*	*20,000*	*19,300*	*161,500*		
270	2009-2013	-26	14,465	3,200	0		
	2014-2023	-13	0	2,400	0		
	2024-2058	-58	25,000	0	0		
	Thru 2030	*-72*	*19,465*	*5,600*	*0*		
273	2009-2013	164	0	0	0		
	2014-2023	326	0	0	65,000		
	2024-2058	1,611	15,000	0	197,500		
	Thru 2030	*594*	*3,000*	*0*	*104,500*		
Sub-total	*All*	*2,801*	*214,465*	*44,600*	*570,000*		

Projected Land Use - Southern Connector Service Area

11/18/2008

Planning Area / TAZ	Time Period (5, 15, and 50 years)	Residential Development Number of Dwelling Units Added	Retail Development Number of Square Feet Added	Office Development Number of Square Feet Added	Industrial Development Number of Square Feet Added	Major Projects: Number of Units Added	Major Projects: Type of Development
Simpsonville	**2009-2013**	**2,609**	**260,758**	**43,106**	**587,798**		
	2014-2023	**5,937**	**521,516**	**86,213**	**1,175,595**		
	2024-2058	**34,541**	**1,825,305**	**301,745**	**4,114,583**		
Sub-total	*All*	*43,088*	*2,607,579*	*431,064*	*5,877,976*		
	Thru 2030	***9,067***	***1,147,335***	***189,668***	***2,586,310***		
271	2009-2013	50	0	0	45,000		
	2014-2023	121	5,000	5,000	75,000		
	2024-2058	1,190	27,500	17,500	182,500		
	Thru 2030	*171*	*10,500*	*8,500*	*156,500*		
327	2009-2013	26	0	0	0		
	2014-2023	47	0	0	0		
	2024-2058	246	12,000	0	0		
	Thru 2030	*95*	*2,400*	*0*	*0*		
329	2009-2013	19	25,000	12,000	101,320		**Georgia Road Commons** (retail, office)
	2014-2023	32	30,000	24,000	127,640		
	2024-2058	179	140,000	84,000	646,740		
	Thru 2030	*70*	*83,000*	*52,800*	*358,308*		
332	2009-2013	18	25,000	6,000	41,800		**Givens Property** (mixed-use)
	2014-2023	38	50,000	12,000	53,600		
	2024-2058	263	90,000	42,000	187,600		
	Thru 2030	*63*	*93,000*	*26,400*	*132,920*		
333	2009-2013	9	15,000	0	55,000		
	2014-2023	16	10,000	0	110,000		
	2024-2058	110	10,000	0	0		
	Thru 2030	*36*	*27,000*	*0*	*165,000*		
336	2009-2013	433	53,726	7,000	0		
	2014-2023	1,056	52,452	14,000	95,000		
	2024-2058	5,316	93,582	24,000	182,500		
	Thru 2030	*1,473*	*124,894*	*25,800*	*131,500*		
Sub-total	*All*	*9,170*	*639,260*	*247,500*	*1,903,700*		
Southside	**2009-2013**	**1,594**	**74,602**	**10,664**	**334,043**		
	2014-2023	**3,496**	**199,203**	**26,329**	**743,085**		
	2024-2058	**17,713**	**547,211**	**79,651**	**5,788,298**		
Sub-total	*All*	*22,804*	*821,016*	*116,645*	*6,865,425*		
	Thru 2030	***5,605***	***383,247***	***52,924***	***2,234,787***		
275	2009-2013	84		0	60,000		
	2014-2023	195	9,000	3,000	100,000		
	2024-2058	1,638	31,500	4,500	230,000		
	Thru 2030	*291*	*15,300*	*3,900*	*206,000*		
278	2009-2013	4	0	0	75,000		**Collins Development** (mixed-use)
	2014-2023	6	16,000	7,000	125,000		
	2024-2058	38	81,000	4,500	537,500		
	Thru 2030	*14*	*32,200*	*7,900*	*307,500*		
281	2009-2013	0	10,000	4,000	210,000	870 acres vacant	**Matrix** (industrial)
	2014-2023	0	10,000	8,000	395,000		
	2024-2058	1	35,000	10,000	1,182,500		
	Thru 2030	*0*	*27,000*	*14,000*	*841,500*		
282	2009-2013	-2	15,000	0	0	35 acres	**Grove Creek** (retail)
	2014-2023	-3	20,000	0	105,000		
	2024-2058	-6	80,000	0	427,500		
	Thru 2030	*-7*	*51,000*	*0*	*190,500*		
285	2009-2013	-2	0	0	85,000		
	2014-2023	-4	0	0	170,000		
	2024-2058	-6	15,000	0	575,000		
	Thru 2030	*-9*	*3,000*	*0*	*370,000*		
339	2009-2013	98	4,200	0	0		**Mixed-use** on NW quadrant of Fork Shoals Rd & W. Georgia Rd
	2014-2023	191	38,400	11,000	75,000		
	2024-2058	1,020	89,400	16,500	262,500	1,100 DU; 30 acres comm.	**Griffin Park** on SE quadrant
	Thru 2030	*360*	*60,480*	*14,300*	*127,500*		
342	2009-2013	114	0	0	0		
	2014-2023	300	5,000	0	55,000		
	2024-2058	3,649	22,500	0	192,500		
	Thru 2030	*1,143*	*9,500*	*0*	*93,500*		
346	2009-2013	20	7,500	2,500	0		
	2014-2023	34	15,000	5,000	75,000		
	2024-2058	162	52,500	10,500	262,500		
	Thru 2030	*74*	*33,000*	*9,600*	*127,500*		
349	2009-2013	-27	0	0	0		
	2014-2023	-26	0	0	88,000		
	2024-2058	-68	10,000	0	308,000		
	Thru 2030	*-81*	*2,000*	*0*	*149,600*		
Sub-total	*All*	*7,411*	*567,000*	*86,500*	*5,596,000*		
Total Planning Areas	**All**	**75,084**	**7,045,935**	**3,484,790**	**25,940,760**		
Total TAZs	**All**	**21,512**	**1,650,725**	**438,600**	**11,207,200**		

EXHIBITS

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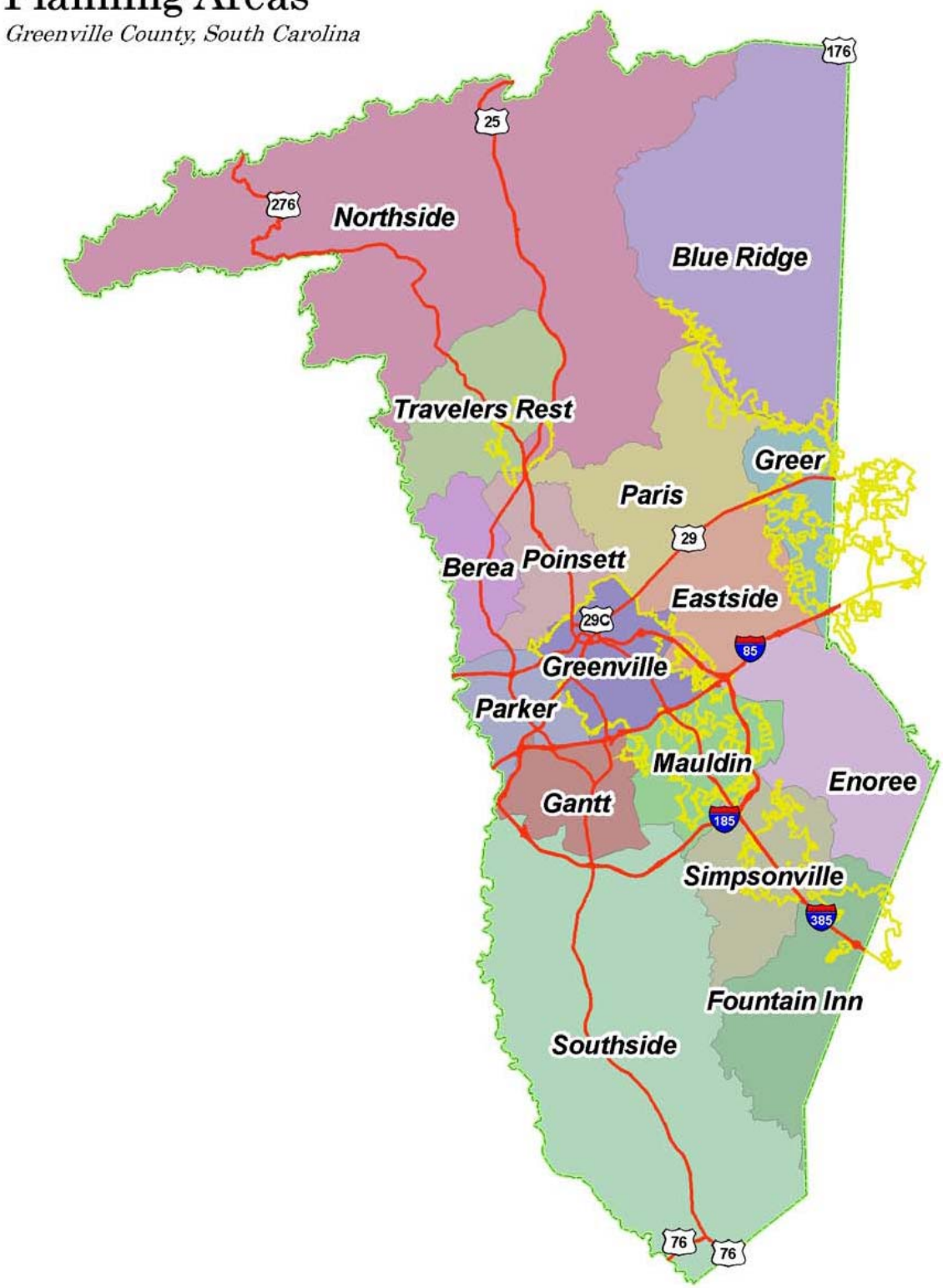
Planning Areas

Greenville County, South Carolina



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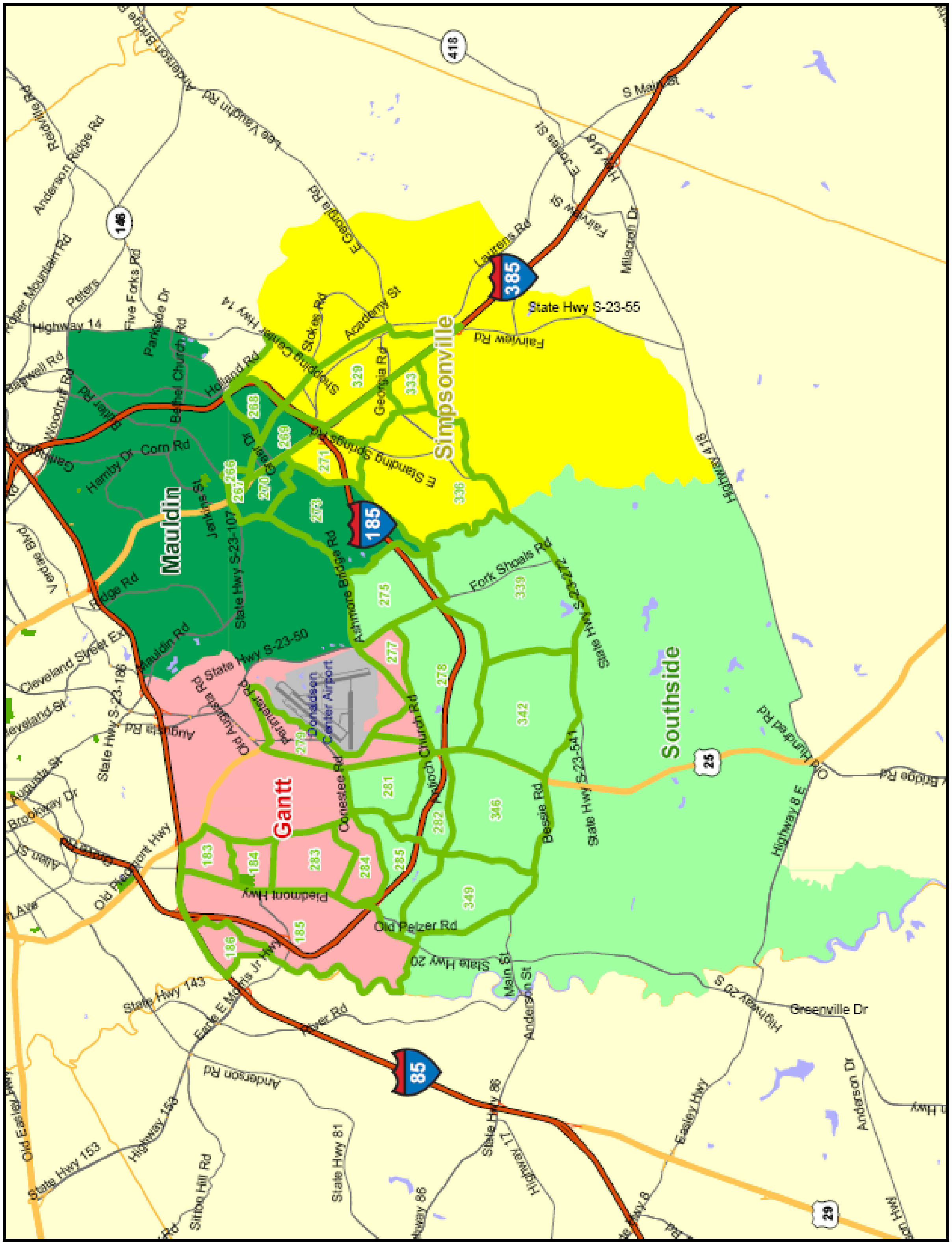
DETAILED MAP OF GREENVILLE COUNTY PLANNING AREAS AND TRANSPORTATION ANALYSIS ZONES (TAZ) WITHIN THE SOUTHERN CONNECTOR SERVICE AREA



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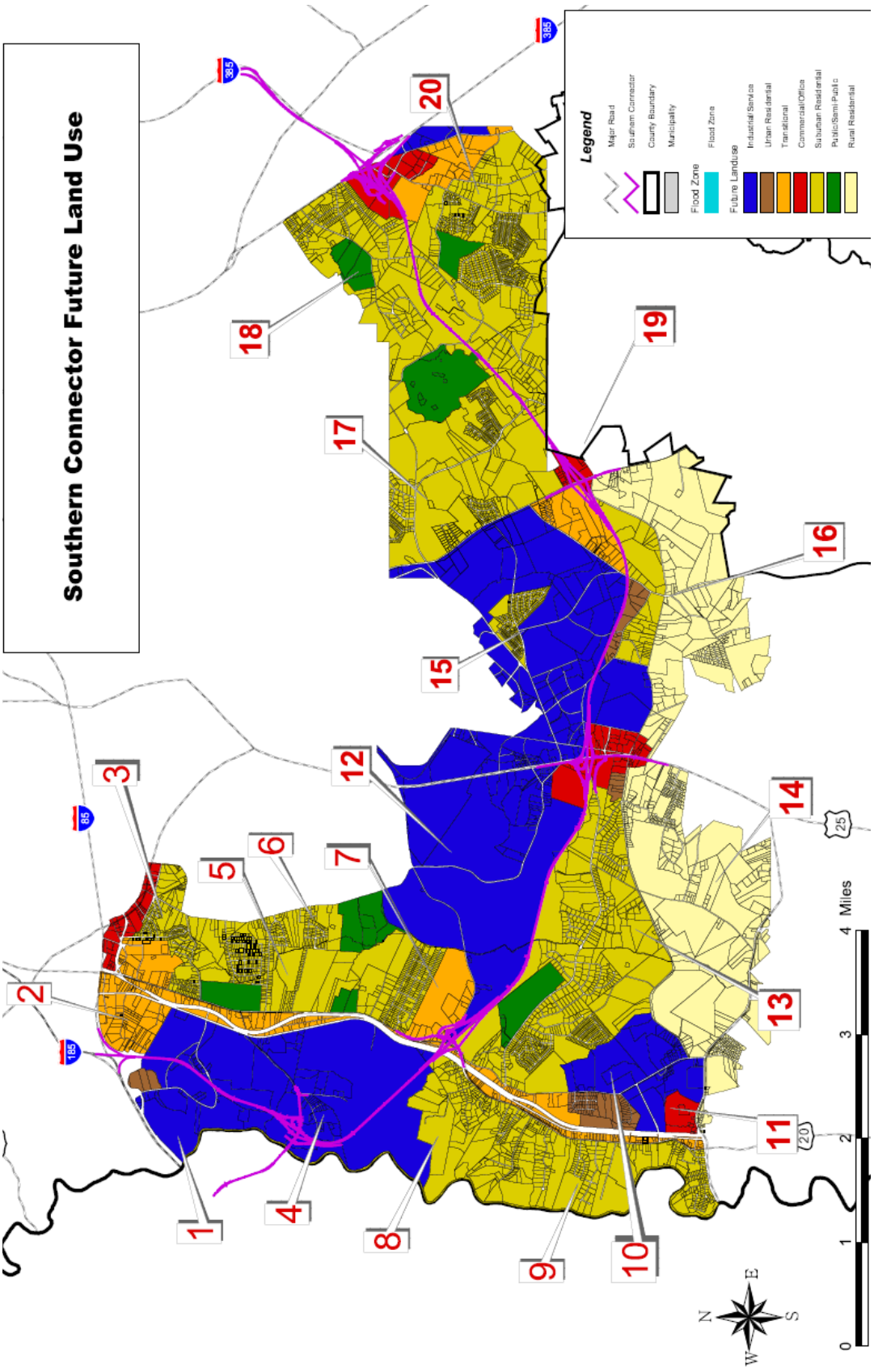

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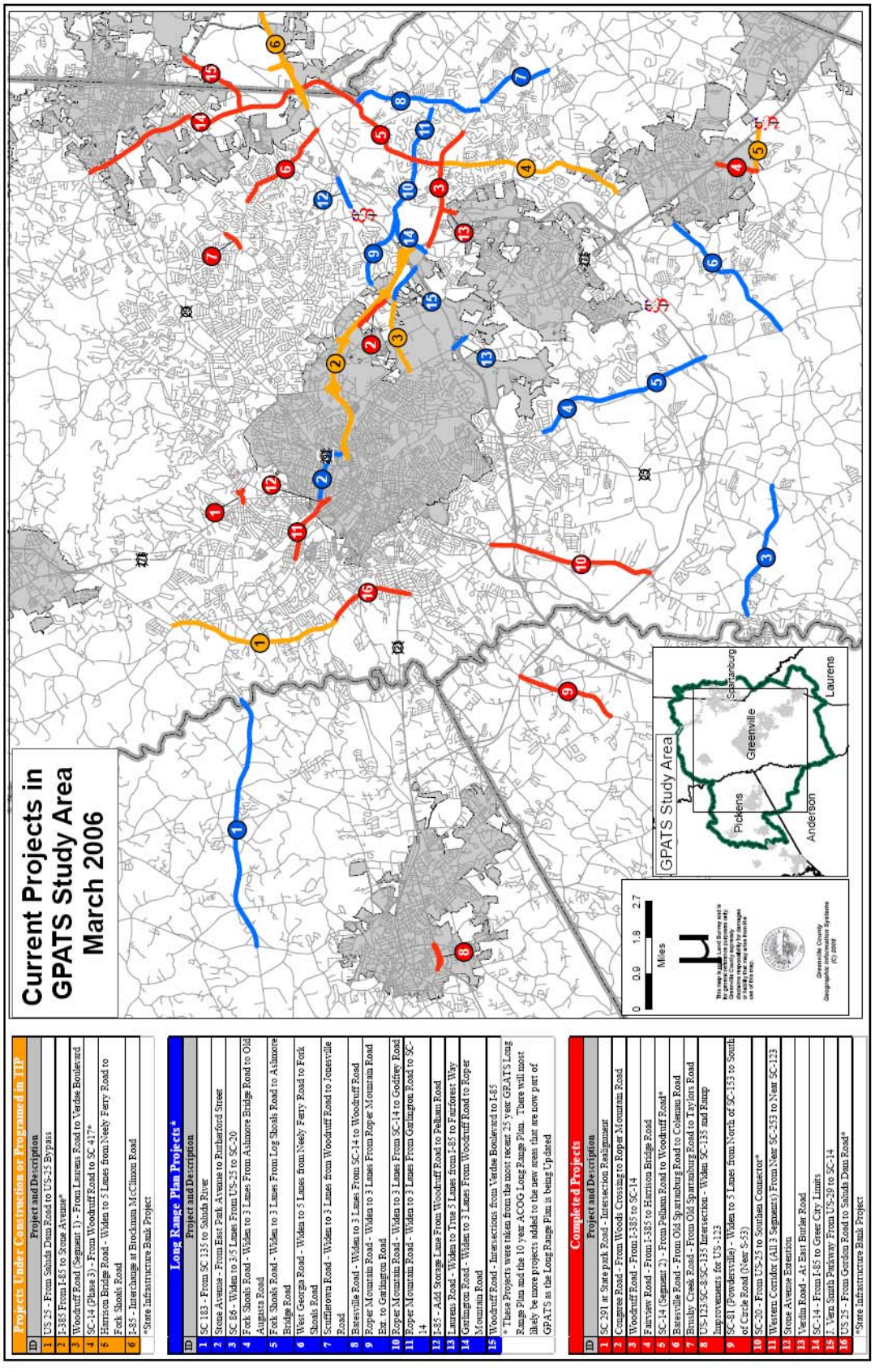

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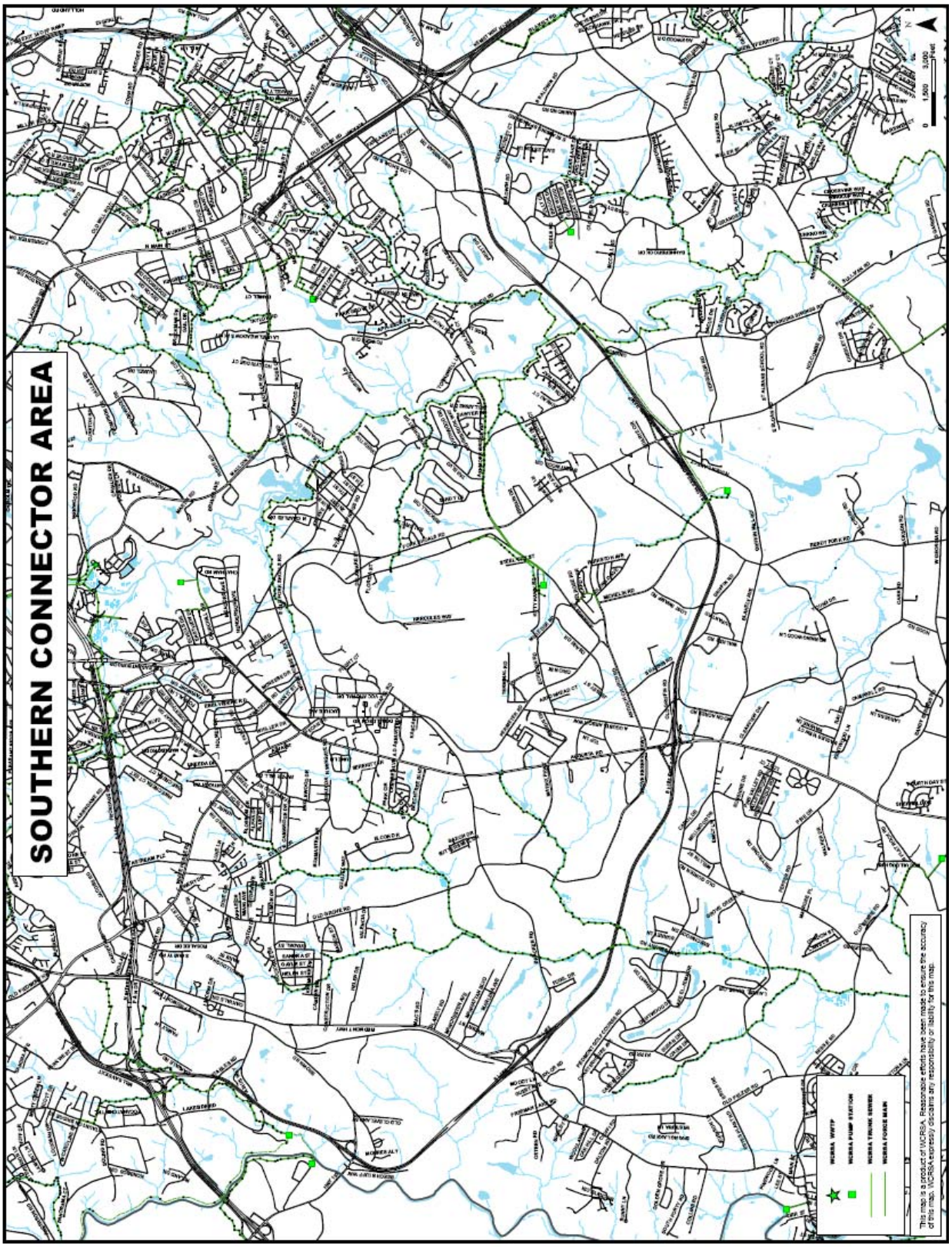
WESTERN CAROLINA REGIONAL SEWER AUTHORITY



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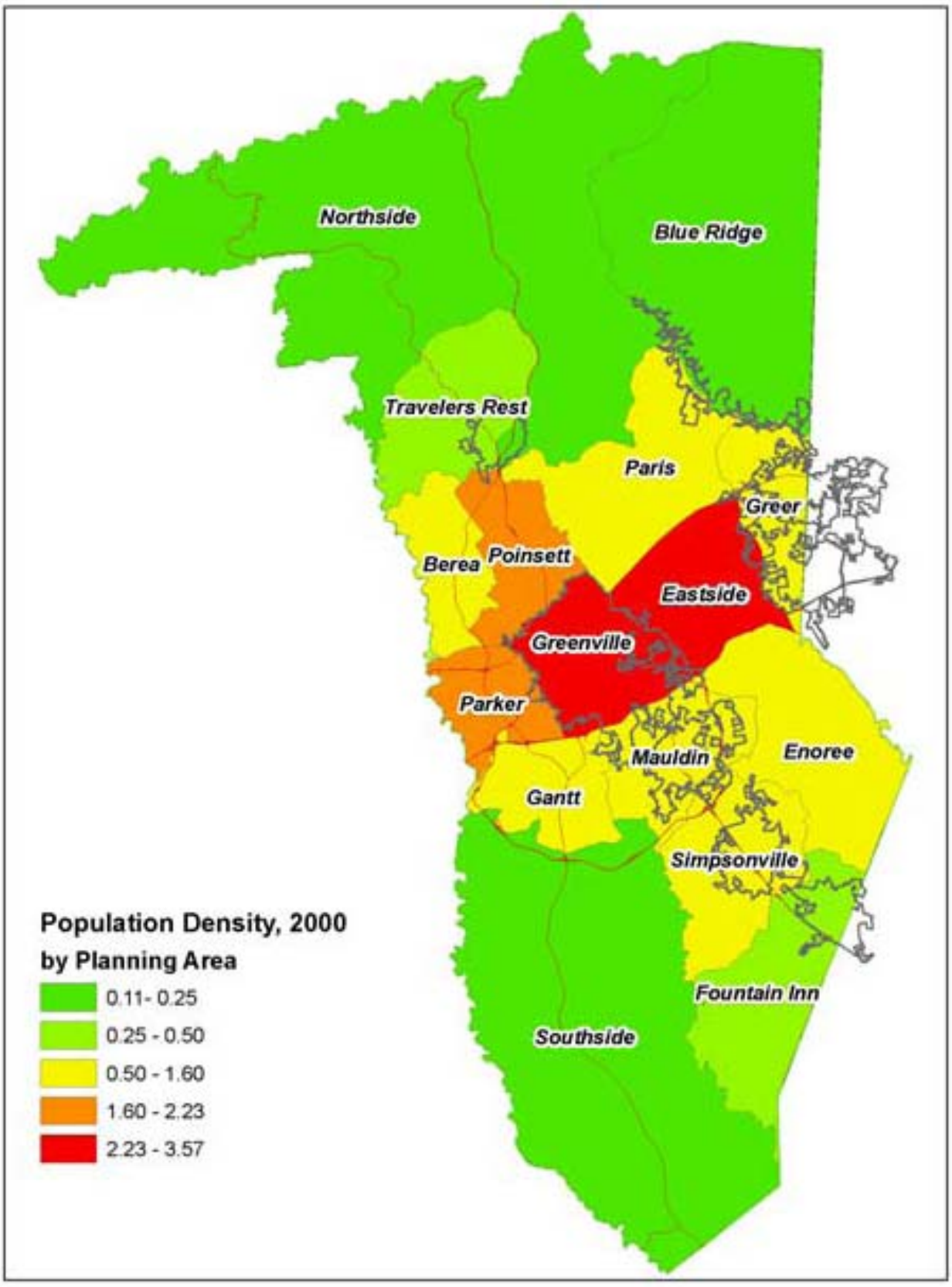

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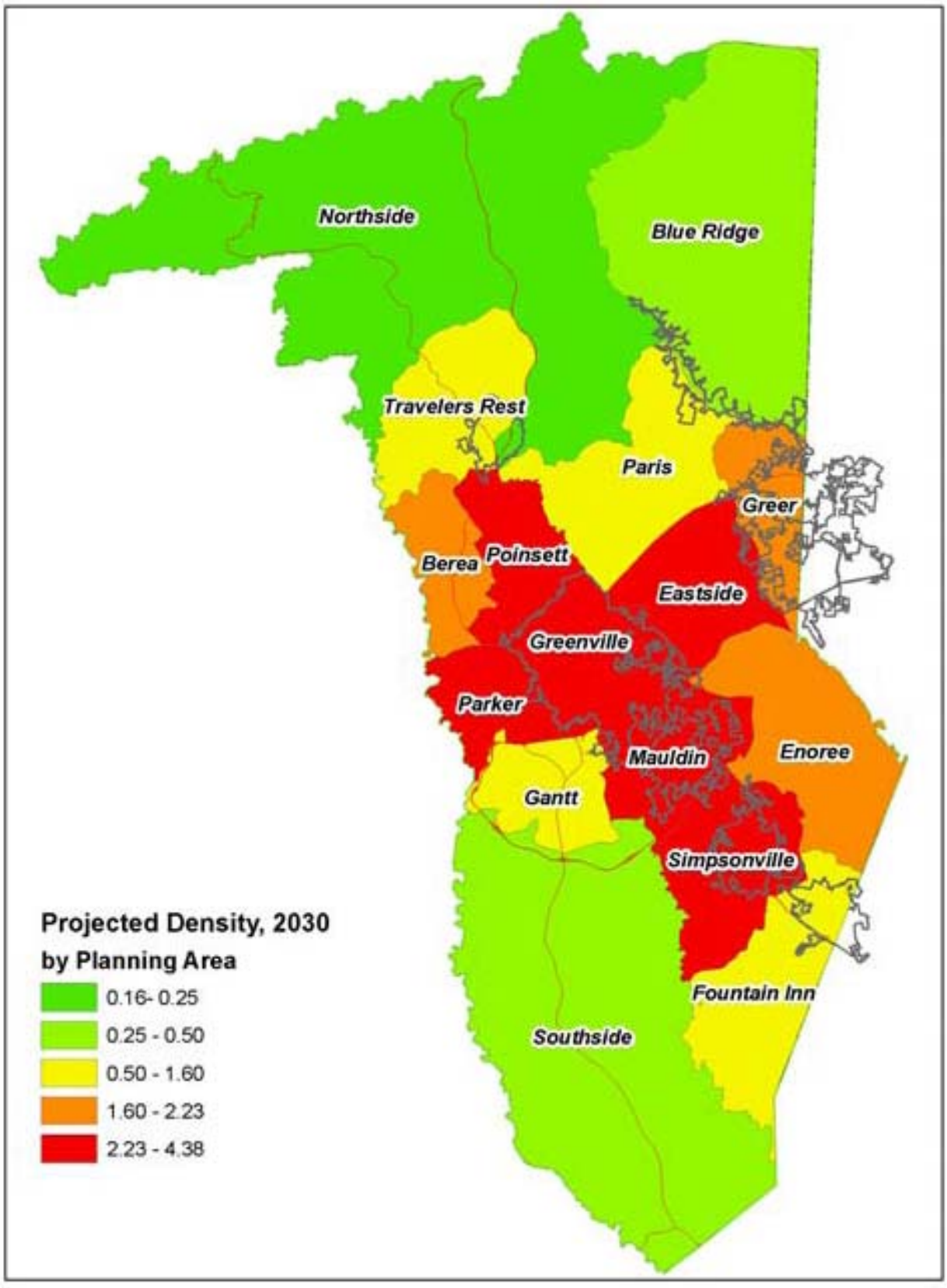

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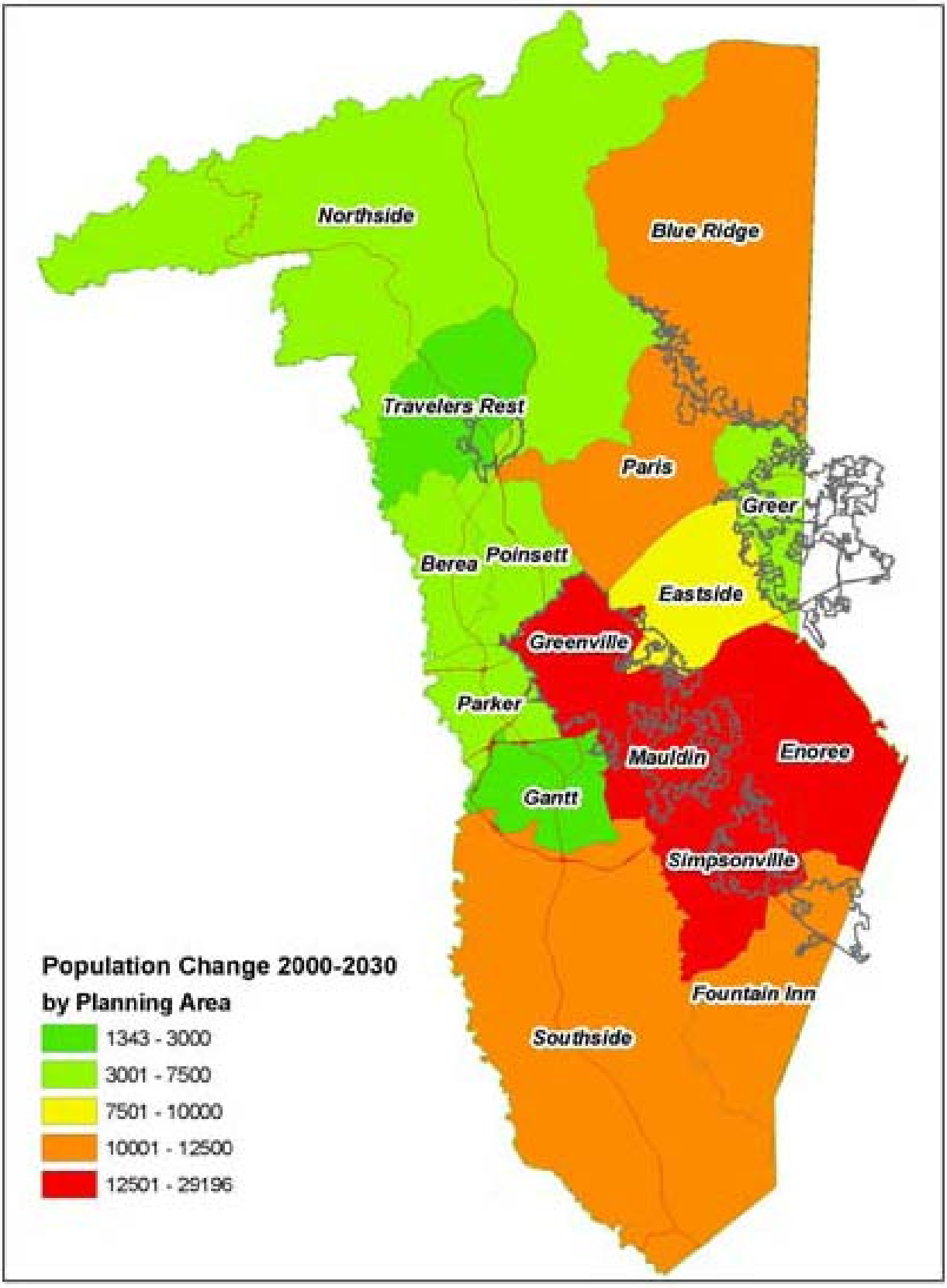

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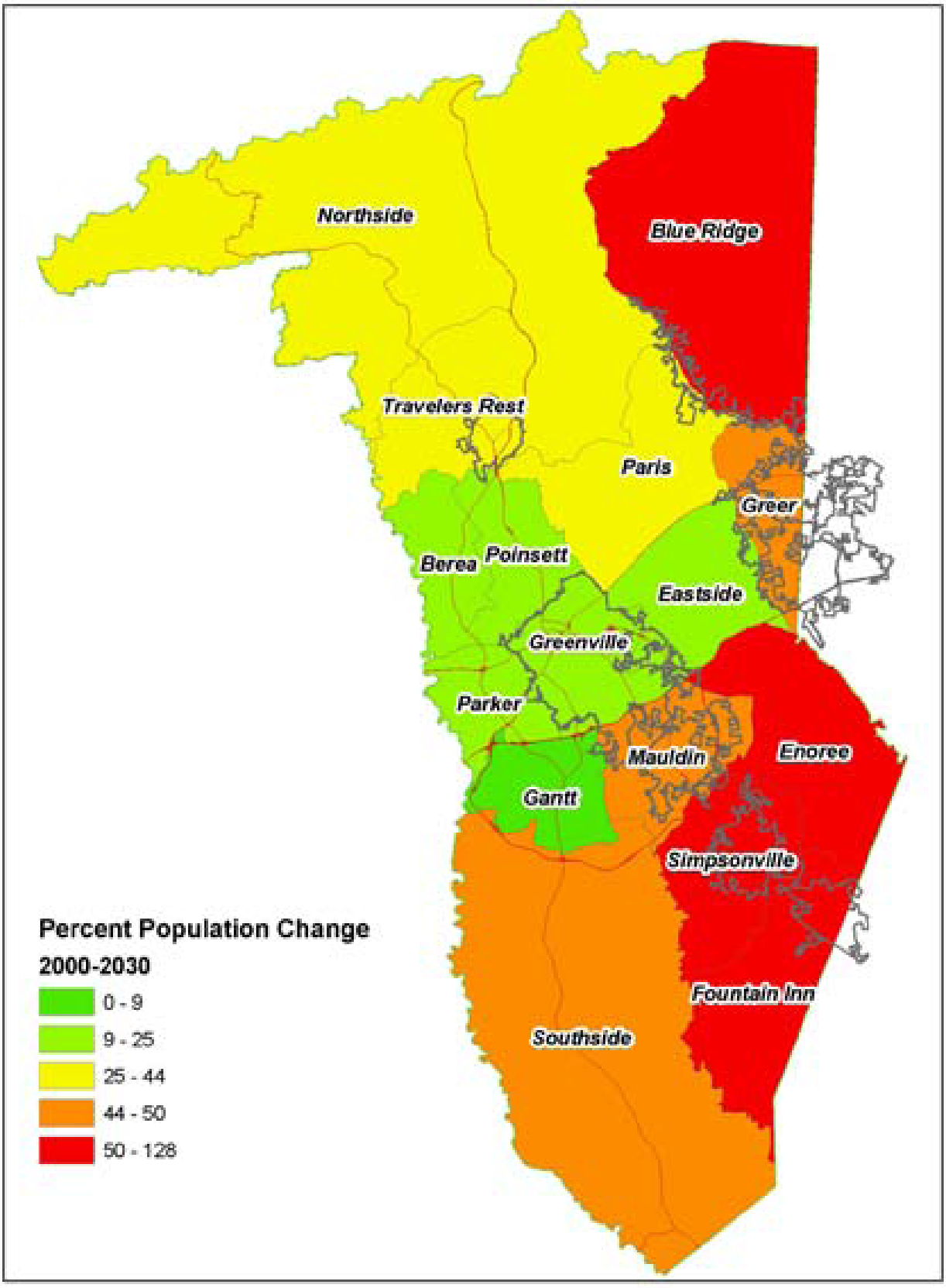

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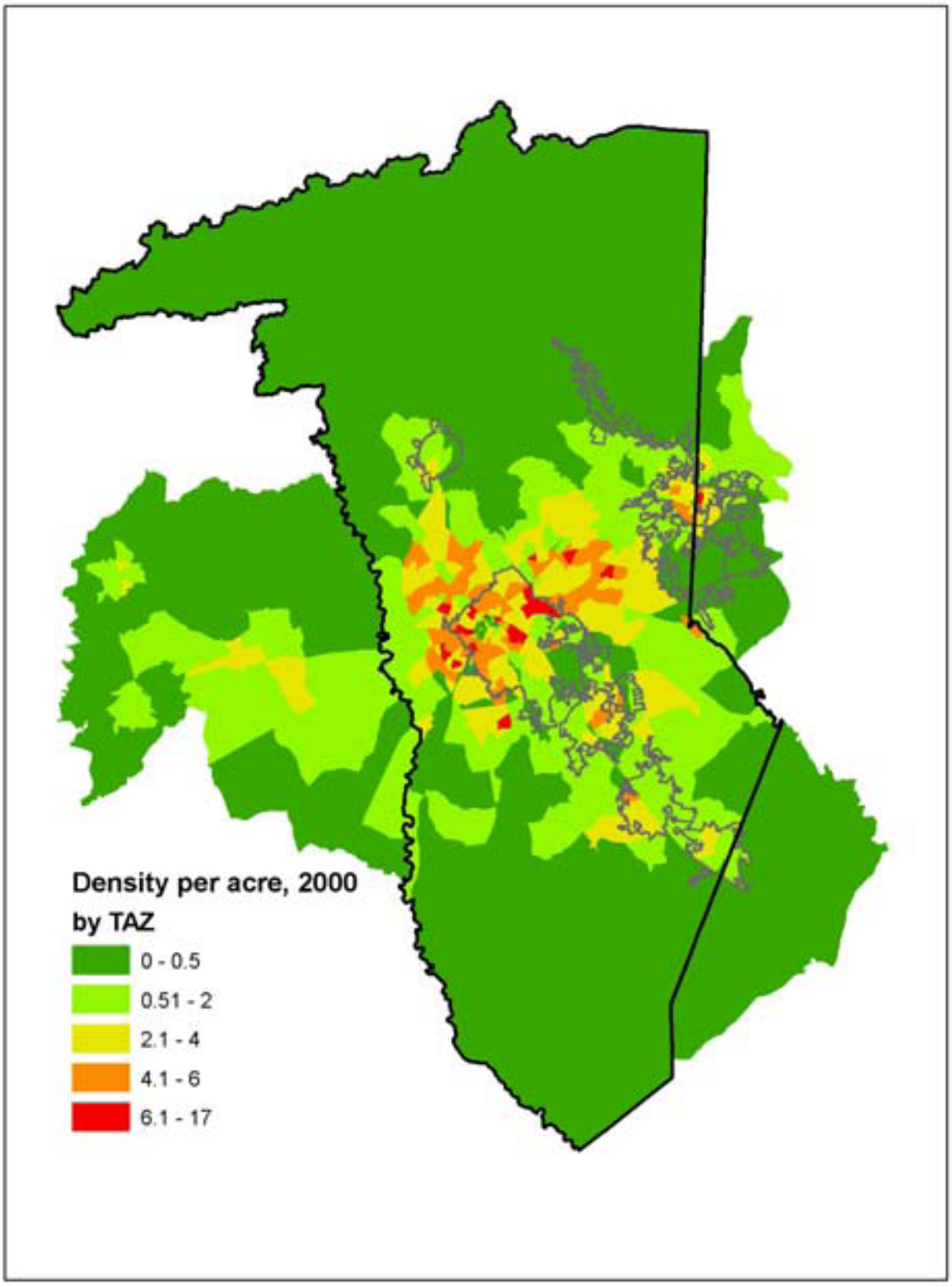

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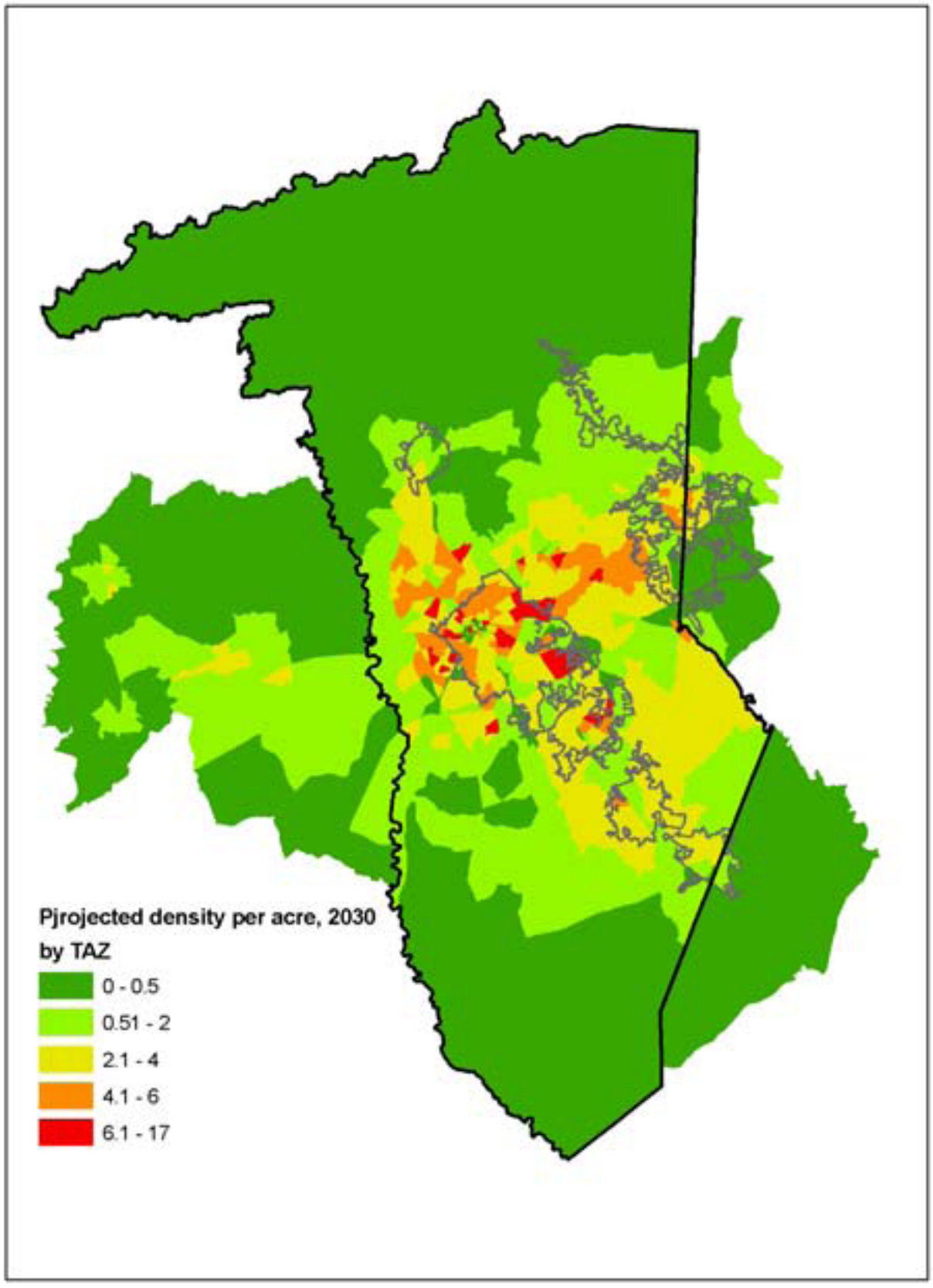

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