



Motorist who live and work in the Greenville-Spartanburg area and regularly use I-85 between White Horse Road and SC 129 intuitively know the traffic conditions along the interstate. Collectively, these motorists know where traffic slows down, where and when congestion is likely to occur, and which interchange ramps will backup. Can the conditions be measured and quantified in a way that identifies the traffic conditions in the peak travel hours? The use of field observations and calibration of the VISSIM traffic simulation model as described in Chapter 3 make it possible to tabulate the conditions for comparison purposes. This chapter provides a wide spectrum of data based on the traffic conditions in 2010, making it possible to benchmark the effectiveness of I-85 today. Without changes in travel demand, shifts in modes of travel, operational improvements, or adding highway capacity; traffic conditions will grow worse as traffic increases in the future. These projected increases in traffic are modeled for the design year 2035. The data in this chapter establishes the baseline from which future conditions are projected.

CHAPTER 4: EFFECTIVENESS OF EXISTING I-85

4.1 FIELD OBSERVATIONS

Field visits were made during May 2010 and September 2010 to observe existing conditions. During these visits, traffic conditions during both the AM and PM peak hours were noted. Vehicular trips up and down the corridor during both peak hours were made and speed, delay, and queuing observations were noted. A visit to the Traffic Management Center (TMC) in Greenville, SC was also made in order to discuss traffic conditions with local SCDOT personnel and observe existing traffic conditions further. A summary of observations regarding traffic conditions on I-85 during these field visits are shown in Exhibits 18 and 19.

CORRIDOR ANALYSIS OF INTERSTATE 85: GREENVILLE AND SPARTANBURG COUNTIES



Exhibit 18: AM Peak Hour Observed Traffic Conditions

I-85 SEGMENT	NORTHBOUND DESCRIPTION	SOUTHBOUND DESCRIPTION
South end of study to Augusta Rd.	Light to moderate traffic	Light to moderate traffic
Augusta Rd. to S. Pleasantburg Dr.	Light to moderate traffic	Light to moderate traffic
S. Pleasantburg Dr. to Mauldin Rd.	Light to moderate traffic	Light to moderate traffic
Mauldin Rd. to US 276 (Laurens Rd.)	Light to moderate traffic	Light to moderate traffic
US 276 (Laurens Rd.) to SC 146 (Woodruff Rd.)	Moderate Traffic	Light to moderate traffic
SC 146 (Woodruff Rd.) to I-385	Moderate Traffic	Moderate Traffic
I-385 to Pelham Rd.	Congestion extended approximately ¾ mile in advance of Pelham Rd. off-ramp; speeds estimated at 45 mph	Congestion (at its peak) extended approximately 2.5 miles in advance of the I-385/Woodruff Rd. C-D off-ramp; speeds estimated at 20 mph
Pelham Rd. to SC 14	Moderate Traffic	Congestion extended approximately ¼ mile in advance of Pelham Rd. off-ramp; speeds estimated at 45 mph
SC 14 to Aviation Dr.	Light to moderate traffic	Moderate Traffic
Aviation Dr. to Brockman-McClimon Rd.	Light to moderate traffic	Light to moderate traffic
Brockman-McClimon Rd. to SC 101	Light to moderate traffic	Light to moderate traffic
SC 101 to SC 290 (E. Main St.)	Light to moderate traffic	Light to moderate traffic
SC 290 (E. Main St.) to US 29	Light to moderate traffic	Light to moderate traffic
US 29 to SC 129 (Fort Prince Blvd.)	Light to moderate traffic	Light to moderate traffic
SC 129 (Fort Prince Blvd.) to I-85 Business	Light to moderate traffic	Light to moderate traffic

Exhibit 19: PM Peak Hour Observed Traffic Conditions

I-85 SEGMENT	NORTHBOUND DESCRIPTION	SOUTHBOUND DESCRIPTION
South end of study to Augusta Rd.	Light to moderate traffic	Light to moderate traffic
Augusta Rd. to S. Pleasantburg Dr.	Light to moderate traffic	Light to moderate traffic
S. Pleasantburg Dr. to Mauldin Rd.	Light to moderate traffic	Light to moderate traffic
Mauldin Rd. to US 276 (Laurens Rd.)	Light to moderate traffic	Light to moderate traffic
US 276 (Laurens Rd.) to SC 146 (Woodruff Rd.)	Light to moderate traffic	Light to moderate traffic
SC 146 (Woodruff Rd.) to I-385	Light to moderate traffic	Light to moderate traffic
I-385 to Pelham Rd.	Congestion (at its peak) extended approximately 1000 feet beyond the Pelham Rd. off-ramp; speeds estimated at 55 mph	Congestion extended approximately 2.5 miles in advance of the I-385/Woodruff Rd. C-D off-ramp; speeds estimated at 20 mph
Pelham Rd. to SC 14	Light to moderate traffic	Congestion extended approximately 1 mile in advance of the Pelham Rd. off-ramp to mile marker 55; speeds estimated at 35 mph
SC 14 to Aviation Dr.	Light to moderate traffic	Moderate traffic
Aviation Dr. to Brockman-McClimon Rd.	Light to moderate traffic	Light to moderate traffic
Brockman-McClimon Rd. to SC 101	Light to moderate traffic	Light to moderate traffic
SC 101 to SC 290 (E. Main St.)	Moderate traffic	Light to moderate traffic
SC 290 (E. Main St.) to US 29	Light to moderate traffic	Light to moderate traffic
US 29 to SC 129 (Fort Prince Blvd.)	Light to moderate traffic	Light to moderate traffic
SC 129 (Fort Prince Blvd.) to I-85 Business	Light to moderate traffic	Light to moderate traffic



Vehicle Classification Data

Vehicle classification count data on I-385 and I-85 on either side of the I-385 and I-85 interchange were made available from the I-85/I-385 Interchange Improvements Study (Florence & Hutcheson, November 2009) report. The percentages of trucks were calculated using this data. The vehicles identified as trucks in this study included the following FHWA vehicle classes:

- Class 5 – Two-axle, six-tire, single-unit trucks
- Class 6 - Three-axle single-unit trucks
- Class 7 – Four or more axle single-unit trucks
- Class 8 – Four or fewer single-trailer trucks
- Class 9 – Five-axle single-trailer trucks
- Class 10 – Six or more axle single-trailer trucks
- Class 11 – Five or fewer axle multi-trailer trucks
- Class 12 – Six-axle multi-trailer trucks
- Class 13 – Seven or more axle multi-trailer trucks

The observed vehicle classification count data are summarized in Exhibit 20.

Exhibit 20: I-85 Vehicle Classification Data

CLASS	I-85 BETWEEN WOODRUFF RD. & I-385		I-85 BETWEEN I-385 AND PELHAM	
	NORTHBOUND	SOUTHBOUND	NORTHBOUND	SOUTHBOUND
1-4*	88.5	87.6	83.9	85.2
5-7	4.2	4.1	3.0	2.6
8-13	7.3	8.3	13.1	12.2

- Class 1 – Motorcycle
- Class 2 – Passenger Car
- Class 3 – Two-axle, four-tire single-unit vehicles
- Class 4 - Bus

4.2 MEASURES OF EFFECTIVENESS

Several key measures of effectiveness (MOE's) were evaluated for the existing I-85 based on current traffic conditions. These MOE's include average travel time, delay, average travel speed, level of service (LOS), density, queue length, emissions, fuel consumption, and total network delay. The VISSIM simulation model was run for the existing (2010) AM and PM peak hours. The output data for the performance measures provided in the remainder of this chapter are broken into three sections including network performance, freeway analysis, and intersection analysis. These results show the traffic conditions on both the I-85 mainline as well as the side street intersections.

NETWORK PERFORMANCE

AM PEAK HOUR

Exhibit 21 shows a summary of the average delay time per vehicle and the average speed on a network-wide basis for the AM peak hour.

Exhibit 21: Existing (2010) AM Peak Hour Network Performance Summary

EXISTING (2010) AM PEAK HOUR NETWORK PERFORMANCE SUMMARY	
PARAMETER	VALUE
Average delay time per vehicle (seconds)	164.7982
Average speed (mph)	37.7252



Exhibit 22 shows a summary of emissions and fuel consumption for the study area during the AM peak hour. The data is broken down by interchange. In general, each interchange area extends approximately half the distance to the upstream and downstream interchanges.

Exhibit 22: Existing (2010) AM Peak Hour Emissions and Fuel Consumption Summary

EXISTING (2010) AM PEAK HOUR EMISSIONS AND FUEL CONSUMPTION SUMMARY					
Node ID	Interchange	CO Emissions (g/hr)	NOx Emissions (g/hr)	VOC Emissions (g/hr)	Fuel Consumption (gal/hr)
119	Augusta Rd.	69,995	13,618	16,222	1,001
2	S. Pleasantburg Dr.	26,525	5,161	6,147	379
3	Mauldin Rd.	68,551	13,338	15,887	981
4	US 276 (Laurens Rd.)	105,157	20,460	24,371	1,504
48	Woodruff Rd.	60,879	11,845	14,109	871
6	I-385	156,329	30,416	36,231	2,236
59	Pelham Rd.	136,264	26,512	31,581	1,949
8	SC 14	75,206	14,632	17,430	1,076
9	Aviation Dr.	37,300	7,257	8,645	534
10	Brockman-McClimon Rd.	62,383	12,137	14,458	892
80	SC 101	118,220	23,001	27,399	1,691
93	SC 290	126,489	24,610	29,315	1,810
101	US 29	98,772	19,217	22,891	1,413
113	SC 129	64,956	12,638	15,054	929
15	I-85 Business	56,968	11,084	13,203	815
	TOTAL	1,263,993	245,927	292,943	18,083

PM PEAK HOUR

Exhibit 23 shows a summary of the average delay time per vehicle and the average speed on a network-wide basis for the PM peak hour.

Exhibit 23: Existing (2010) PM Peak Hour Network Performance Summary

EXISTING (2010) PM PEAK HOUR NETWORK PERFORMANCE SUMMARY	
PARAMETER	VALUE
Average delay time per vehicle (seconds)	118.9703
Average speed (mph)	42.6985

Exhibit 24 shows a summary of emissions and fuel consumption for the study area during the PM peak hour. The data is broken down by interchange. In general, each interchange area extends approximately half the distance to the upstream and downstream interchanges.

Exhibit 24: Existing (2010) PM Peak Hour Emissions and Fuel Consumption Summary

EXISTING (2010) PM PEAK HOUR EMISSIONS AND FUEL CONSUMPTION SUMMARY					
Node ID	Interchange	CO Emissions (g/hr)	NOx Emissions (g/hr)	VOC Emissions (g/hr)	Fuel Consumption (gal/hr)
119	Augusta Rd.	83,336	16,214	19,314	1,192
2	S. Pleasantburg Dr.	31,984	6,223	7,412	458
3	Mauldin Rd.	78,805	15,333	18,264	1,127
4	US 276 (Laurens Rd.)	116,705	22,706	27,047	1,670
48	Woodruff Rd.	78,054	15,187	18,090	1,117
6	I-385	204,568	39,802	47,411	2,927
59	Pelham Rd.	143,512	27,922	33,260	2,053
8	SC 14	89,138	17,343	20,659	1,275
9	Aviation Dr.	47,173	9,178	10,933	675
10	Brockman-McClimon Rd.	77,529	15,084	17,968	1,109
80	SC 101	140,945	27,423	32,665	2,016
93	SC 290	141,824	27,594	32,869	2,029
101	US 29	111,975	21,786	25,951	1,602
113	SC 129	71,875	13,984	16,658	1,028
15	I-85 Business	23,960	4,662	5,553	343
	TOTAL	1,441,384	280,441	334,055	20,621



FREEWAY ANALYSIS

The following tables summarize the I-85 mainline LOS for each section along the freeway as well as the travel times between each interchange for the AM and PM peak hours. In general, the LOS, density, and average speed are shown for basic freeway segments.

AM PEAK HOUR

Exhibits 25 through 27 show the output data provided by the VISSIM modeling software for the AM peak hour.

Exhibit 25: Existing (2010) AM Peak Hour Freeway Level of Service Table

EXISTING (2010) AM PEAK HOUR I-85 MAINLINE LEVEL OF SERVICE TABLE						
SECTION DESCRIPTION	SB			NB		
	DENSITY (VPMP)	AVG. SPEED (MPH)	LOS	DENSITY (VPMP)	AVG. SPEED (MPH)	LOS
Between I-85 Business Interchange and North End of Study	17.2	62.5	B	15.1	62.4	B
Between SC 129 and I-85 Business Interchange	15.4	61.4	B	14.4	61.0	B
Between US 29 and SC 129	21.6	59.9	C	17.7	61.1	B
Between SC 290 and US 29	21.8	59.8	C	17.2	61.4	B
Between SC 101 and SC 290	23.5	51.5	C	17.0	61.3	B
Between Brockman-McClimon Rd. and SC 101	21.6	59.6	C	15.2	61.2	B
Between Aviation Dr. and Brockman-McClimon Rd.	16.2	62.6	B	11.6	63.1	B
Between SC 14 and Aviation Dr.	14.1	62.5	B	9.7	62.3	A
Between Pelham Rd. and SC 14	69.2	29.1	F	16.9	60.3	B
Between I-385 and Pelham Rd.	98.1	11.6	F	59.5	24.5	F
Between Woodruff Rd. and I-385	11.4	48.6	B	11.1	62.6	B
Between Laurens Rd. and Woodruff Rd.	18.3	60.9	C	20.3	56.7	C
Between Mauldin Rd. & Laurens Rd.	21.1	59.2	C	20.7	59.0	C
Between Pleasantburg Dr. and Mauldin Rd.	13.7	62.6	B	12.4	63.1	B
Between Augusta Rd. and Pleasantburg Dr.	13.7	62.6	B	12.4	63.1	B
Between South End of Study and Augusta Rd.	16.1	61.2	B	12.4	63.1	B
Between I-85 Business Interchange and North End of Study	17.3	61.5	B	19.6	59.0	C

Exhibit 26: Existing (2010) AM Peak Hour I-85 NB Travel Times

EXISTING (2010) AM PEAK HOUR NORTHBOUND I-85 TRAVEL TIME			
TT SEGMENT ID	SEGMENT LABEL	TRAVEL TIME (SEC.)	AVERAGE SPEED (MPH)
100	From South End of Study to Augusta Rd./Pleasantburg Dr./Mauldin Rd. C-D off-ramp	72.8	60.9
101	From Augusta Rd./Pleasantburg Dr./Mauldin Rd. C-D off-ramp to C-D on-ramp	98.5	63.1
102	From Augusta Rd./Pleasantburg Dr./Mauldin Rd. C-D on-ramp to Laurens Rd. off-ramp	94.5	54.7
103	From Laurens Rd. off-ramp to on-ramp	16.0	61.1
104	From Laurens Rd. on-ramp to Woodruff Rd. off-ramp	106.6	57.6
105	From Woodruff Rd./I-385 C-D off-ramp to C-D on-ramp	64.2	62.2
106	From I-385 on-ramp to Pelham Rd. off-ramp	341.4	24.4
107	From Pelham Rd. off-ramp to on-ramp	47.5	57.8
108	From Pelham Rd. on-ramp to SC 14 off-ramp	76.9	60.2
109	From SC 14 off-ramp to Aviation Dr. on-ramp	84.6	62.2
110	From Aviation Dr. on-ramp to Brockman-McClimon Rd. off-ramp	38.9	63.1
111	From Brockman-McClimon Rd. off-ramp to on-ramp	52.0	62.2
112	From Brockman-McClimon Rd. on-ramp to SC 101 off-ramp	57.0	61.2
113	From SC 101 off-ramp to on-ramp	52.4	62.1
114	From SC 101 on-ramp to SC 290 off-ramp	152.6	60.3
115	From SC 290 off-ramp to on-ramp	51.1	61.3
116	From SC 290 on-ramp to US 29 off-ramp	109.5	60.0
117	From US 29 off-ramp to on-ramp	19.9	61.8
118	From US 29 on-ramp to SC 129 off-ramp	90.5	59.8
119	From SC 129 off-ramp to on-ramp	22.6	60.7
120	From SC 129 on-ramp to I-85 Bus. split	48.1	61.3
121	From I-85 Bus. split to North End of Study	40.6	61.8
Total Travel Time (sec.)		1738.4	
Total Travel Time (min.)		29.0	

CORRIDOR ANALYSIS OF INTERSTATE 85: GREENVILLE AND SPARTANBURG COUNTIES



Exhibit 27: Existing (2010) AM Peak Hour I-85 SB Travel Times

EXISTING (2010) AM PEAK HOUR SOUTHBOUND I-85 TRAVEL TIME			
TT SEGMENT ID	SEGMENT LABEL	TRAVEL TIME (SEC.)	AVERAGE SPEED (MPH)
200	North End of study to I-85 Bus. on-ramp	42.4	59.9
201	I-85 Bus. on-ramp to SC 129 on-ramp	65.2	60.1
202	SC 129 on-ramp to US 29 off-ramp	95.2	59.4
203	US 29 off-ramp to on-ramp	8.1	60.3
204	US 29 on-ramp to SC 290 off-ramp	139.8	56.7
205	SC 290 off-ramp to on-ramp	48.7	60.6
206	SC 290 on-ramp to SC 101 off-ramp	168.9	56.7
207	SC 101 off-ramp to on-ramp	52.4	61.0
208	SC 101 on-ramp to Brockman-McClimon Rd. off-ramp	53.8	59.4
209	Brockman-McClimon Rd. off-ramp to on-ramp	49.5	60.8
210	Brockman-McClimon Rd. on-ramp to Aviation Dr. off-ramp	28.3	62.6
211	Aviation Dr. off-ramp to SC 14 on-ramp	101.5	56.4
212	SC 14 on-ramp to Pelham Rd. off-ramp	237.5	21.4
213	Pelham Rd. off-ramp to on-ramp	80.4	36.7
214	Pelham Rd. on-ramp to I-385/Woodruff Rd. C-D off-ramp	533.0	13.1
215	I-385/Woodruff Rd. C-D off-ramp to on-ramp	83.9	60.7
216	I-385/Woodruff Rd. C-D on-ramp to Laurens Rd. off-ramp	97.2	60.4
217	Laurens Rd. off-ramp to on-ramp	18.2	54.9
218	Laurens Rd. on-ramp to Augusta Rd./Pleasantburg Dr./Mauldin Rd. C-D off-ramp	95.1	58.7
219	Augusta Rd./Pleasantburg Dr./Mauldin Rd. C-D off-ramp to on-ramp	77.3	62.3
220	Augusta Rd./Pleasantburg Dr./Mauldin Rd. C-D on-ramp to South End of study	87.5	61.5
Total Travel Time (sec.)		2163.8	
Total Travel Time (min.)		36.1	

Exhibits 28 and 29 show the comparison between the VISSIM model simulation travel time along the I-85 freeway and the computed average travel time, as provided by the INRIX data. The graphs are shown for both the northbound and southbound directions in the AM peak hour.

Exhibit 28: Existing (2010) AM Peak Hour I-85 NB Travel Time Graph

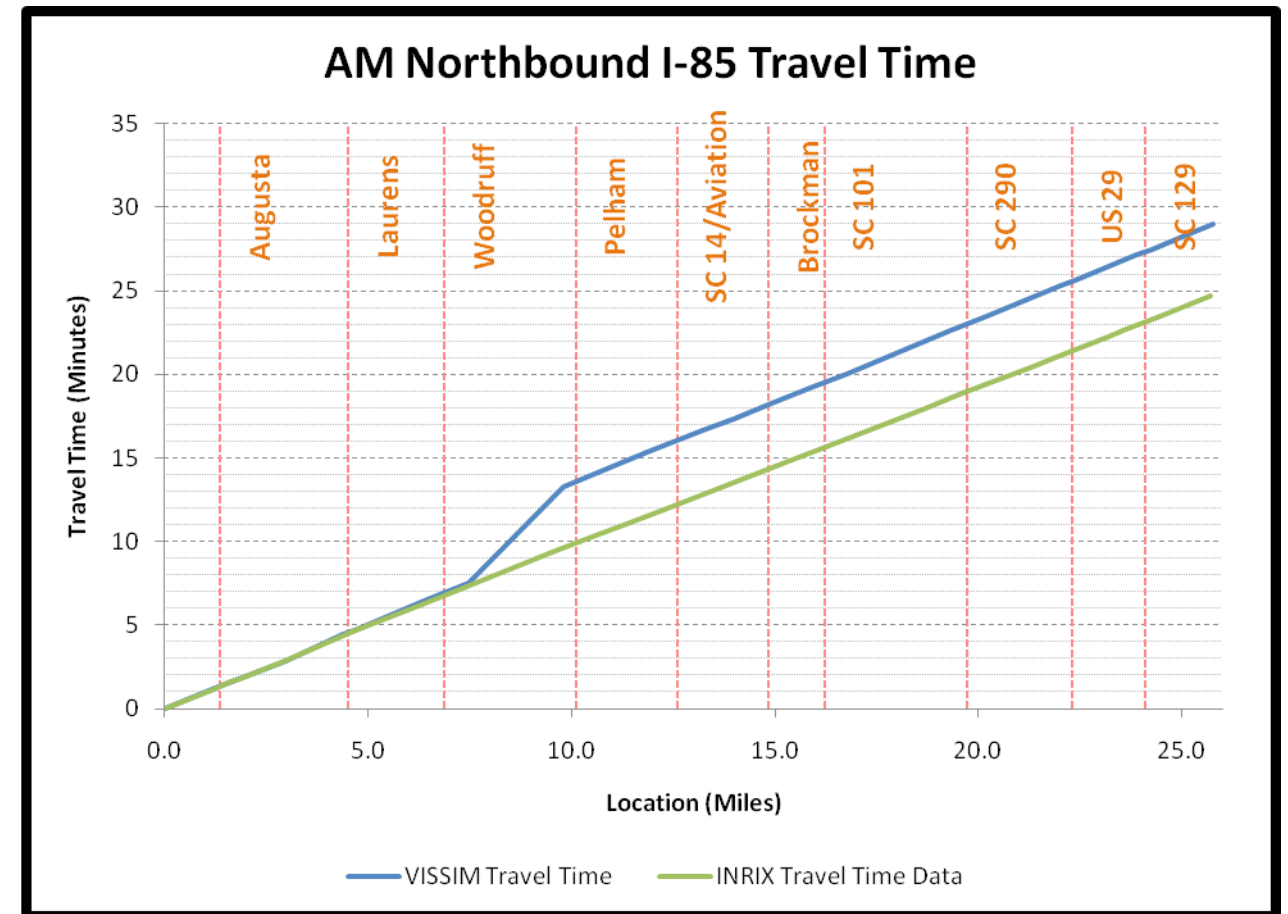
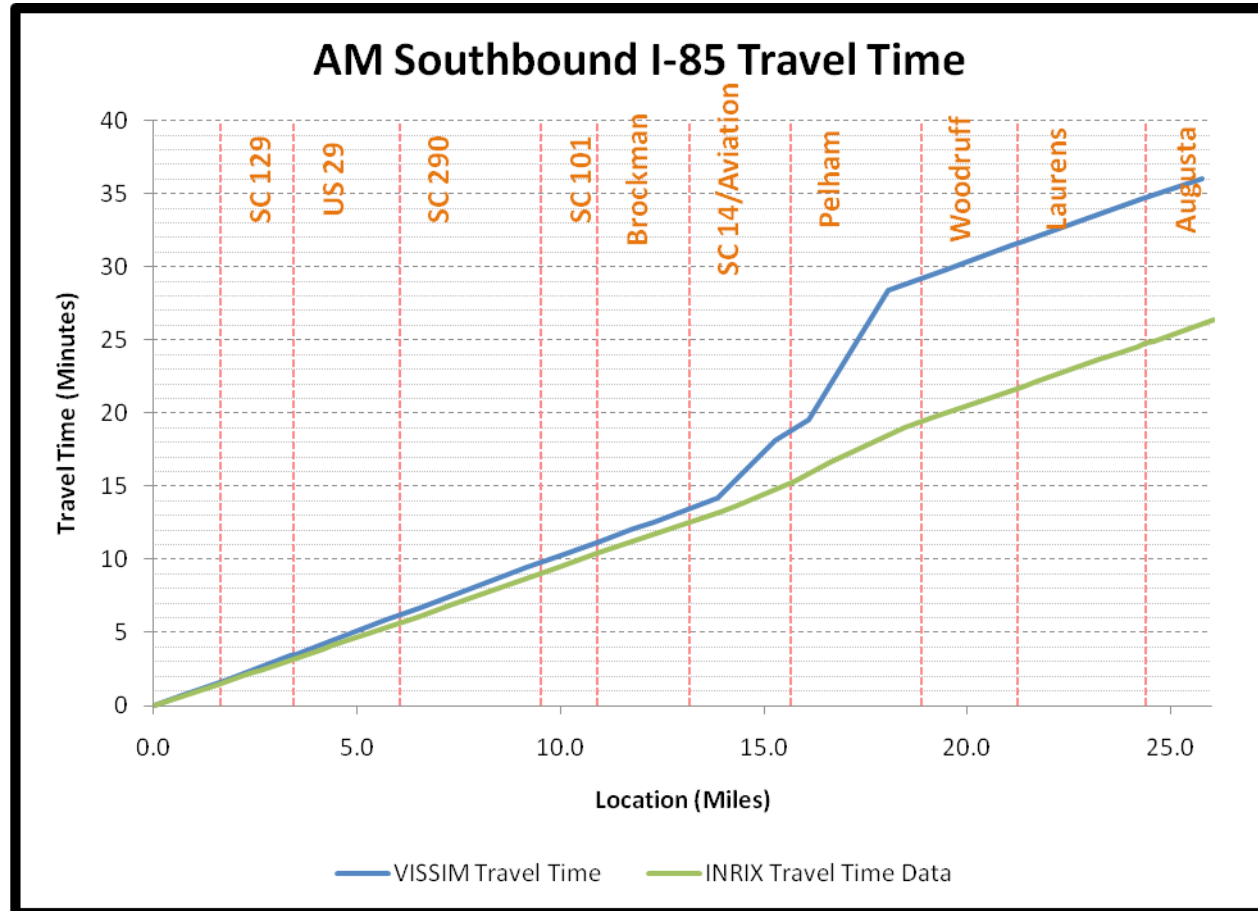




Exhibit 29: Existing (2010) AM Peak Hour I-85 SB Travel Time Graph



PM PEAK HOUR

Exhibits 30 through 32 show the output data provided by the VISSIM modeling software for the PM peak hour.

Exhibit 30: Existing (2010) PM Peak Hour Freeway Level of Service Table

EXISTING (2010) PM PEAK HOUR I-85 MAINLINE LEVEL OF SERVICE TABLE						
SECTION DESCRIPTION	SB			NB		
	DENSITY (VPMP/L)	AVG. SPEED (MPH)	LOS	DENSITY (VPMP/L)	AVG. SPEED (MPH)	LOS
Between I-85 Business Interchange and North End of Study	18.0	57.8	C	17.3	61.5	B
Between SC 129 and I-85 Business Interchange	15.2	61.7	B	17.2	59.6	B
Between US 29 and SC 129	21.2	60.4	C	21.9	58.9	C
Between SC 290 and US 29	20.7	60.7	C	20.3	60.4	C
Between SC 101 and SC 290	27.0	50.1	D	21.3	59.8	C
Between Brockman-McClimon Rd. and SC 101	23.9	58.4	C	21.1	59.6	C
Between Aviation Dr. and Brockman-McClimon Rd.	17.5	62.5	B	15.2	62.7	B
Between SC 14 and Aviation Dr.	14.4	62.3	B	14.3	61.4	B
Between Pelham Rd. and SC 14	23.2	60.9	C	26.9	56.3	D
Between I-385 and Pelham Rd.	61.6	30.3	F	18.5	60.8	C
Between Woodruff Rd. and I-385	17.5	52.8	B	9.9	63.3	A
Between Laurens Rd. and Woodruff Rd.	25.8	57.5	C	18.3	58.7	C
Between Mauldin Rd. & Laurens Rd.	29.0	55.1	D	22.5	56.8	C
Between Pleasantburg Dr. and Mauldin Rd.	20.7	61.1	C	11.7	63.2	B
Between Augusta Rd. and Pleasantburg Dr.	20.7	61.1	C	11.7	63.2	B
Between South End of Study and Augusta Rd.	22.6	59.5	C	11.7	63.2	B
Between I-85 Business Interchange and North End of Study	25.7	59.3	C	18.2	59.5	C

* Section descriptions are defined as Interstate segments between interchange on-ramps and off-ramps.

CORRIDOR ANALYSIS OF INTERSTATE 85: GREENVILLE AND SPARTANBURG COUNTIES



Exhibit 31: Existing (2010) PM Peak Hour I-85 NB Travel Time

EXISTING (2010) PM PEAK HOUR NORTHBOUND I-85 TRAVEL TIME			
TT SEGMENT ID	SEGMENT LABEL	TRAVEL TIME (SEC.)	AVERAGE SPEED (MPH)
100	From South End of Study to Augusta Rd./Pleasantburg Dr./Mauldin Rd. C-D off-ramp	72.5	61.3
101	From Augusta Rd./Pleasantburg Dr./Mauldin Rd. C-D off-ramp to on-ramp	98.3	63.1
102	From Augusta Rd./Pleasantburg Dr./Mauldin Rd. C-D on-ramp to Laurens Rd. off-ramp	103.4	50.0
103	From Laurens Rd. off-ramp to on-ramp	16.1	60.8
104	From Laurens Rd. on-ramp to Woodruff Rd. off-ramp	103.9	59.1
105	From Woodruff Rd./I-385 C-D off-ramp to C-D on-ramp	64.2	62.3
106	From I-385 on-ramp to Pelham Rd. off-ramp	140.4	59.4
107	From Pelham Rd. off-ramp to on-ramp	46.6	59.0
108	From Pelham Rd. on-ramp to SC 14 off-ramp	84.5	54.8
109	From SC 14 off-ramp to Aviation Dr. on-ramp	86.0	61.2
110	From Aviation Dr. on-ramp to Brockman-McClimon Rd. off-ramp	39.1	62.8
111	From Brockman-McClimon Rd. off-ramp to on-ramp	54.1	59.8
112	From Brockman-McClimon Rd. on-ramp to SC 101 off-ramp	58.5	59.7
113	From SC 101 off-ramp to on-ramp	54.0	60.2
114	From SC 101 on-ramp to SC 290 off-ramp	158.8	58.0
115	From SC 290 off-ramp to on-ramp	52.8	59.3
116	From SC 290 on-ramp to US 29 off-ramp	112.0	58.7
117	From US 29 off-ramp to on-ramp	20.2	60.8
118	From US 29 on-ramp to SC 129 off-ramp	95.4	56.7
119	From SC 129 off-ramp to on-ramp	23.3	58.8
120	From SC 129 on-ramp to I-85 Bus. split	48.9	60.2
121	From I-85 Bus. split to North End of Study	41.3	60.8
Total Travel Time (sec.)		1574.3	
Total Travel Time (min.)		26.2	

Exhibit 32: Existing (2010) PM Peak Hour I-85 SB Travel Times

EXISTING (2010) AM PEAK HOUR SOUTHBOUND I-85 TRAVEL TIME			
TT SEGMENT ID	SEGMENT LABEL	TRAVEL TIME (SEC.)	AVERAGE SPEED (MPH)
200	North End of study to I-85 Bus. on-ramp	42.4	59.9
201	I-85 Bus. on-ramp to SC 129 on-ramp	65.2	60.1
202	SC 129 on-ramp to US 29 off-ramp	95.2	59.4
203	US 29 off-ramp to on-ramp	8.1	60.3
204	US 29 on-ramp to SC 290 off-ramp	139.8	56.7
205	SC 290 off-ramp to on-ramp	48.7	60.6
206	SC 290 on-ramp to SC 101 off-ramp	168.9	56.7
207	SC 101 off-ramp to on-ramp	52.4	61.0
208	SC 101 on-ramp to Brockman-McClimon Rd. off-ramp	53.8	59.4
209	Brockman-McClimon Rd. off-ramp to on-ramp	49.5	60.8
210	Brockman-McClimon Rd. on-ramp to Aviation Dr. off-ramp	28.3	62.6
211	Aviation Dr. off-ramp to SC 14 on-ramp	101.5	56.4
212	SC 14 on-ramp to Pelham Rd. off-ramp	237.5	21.4
213	Pelham Rd. off-ramp to on-ramp	80.4	36.7
214	Pelham Rd. on-ramp to I-385/Woodruff Rd. C-D off-ramp	533.0	13.1
215	I-385/Woodruff Rd. C-D off-ramp to on-ramp	83.9	60.7
216	I-385/Woodruff Rd. C-D on-ramp to Laurens Rd. off-ramp	97.2	60.4
217	Laurens Rd. off-ramp to on-ramp	18.2	54.9
218	Laurens Rd. on-ramp to Augusta Rd./Pleasantburg Dr./Mauldin Rd. C-D off-ramp	95.1	58.7
219	Augusta Rd./Pleasantburg Dr./Mauldin Rd. C-D off-ramp to on-ramp	77.3	62.3
220	Augusta Rd./Pleasantburg Dr./Mauldin Rd. C-D on-ramp to South End of study	87.5	61.5
Total Travel Time (sec.)		2163.8	
Total Travel Time (min.)		36.1	

CORRIDOR ANALYSIS OF INTERSTATE 85: GREENVILLE AND SPARTANBURG COUNTIES



Exhibits 33 and 34 show the comparison between the VISSIM model simulation travel time along the I-85 freeway and the computed average travel time, as provided by the INRIX data. The graphs are shown for both the northbound and southbound directions in the PM peak hour.

Exhibit 33: Existing (2010) PM Peak Hour I-85 NB Travel Time Graph

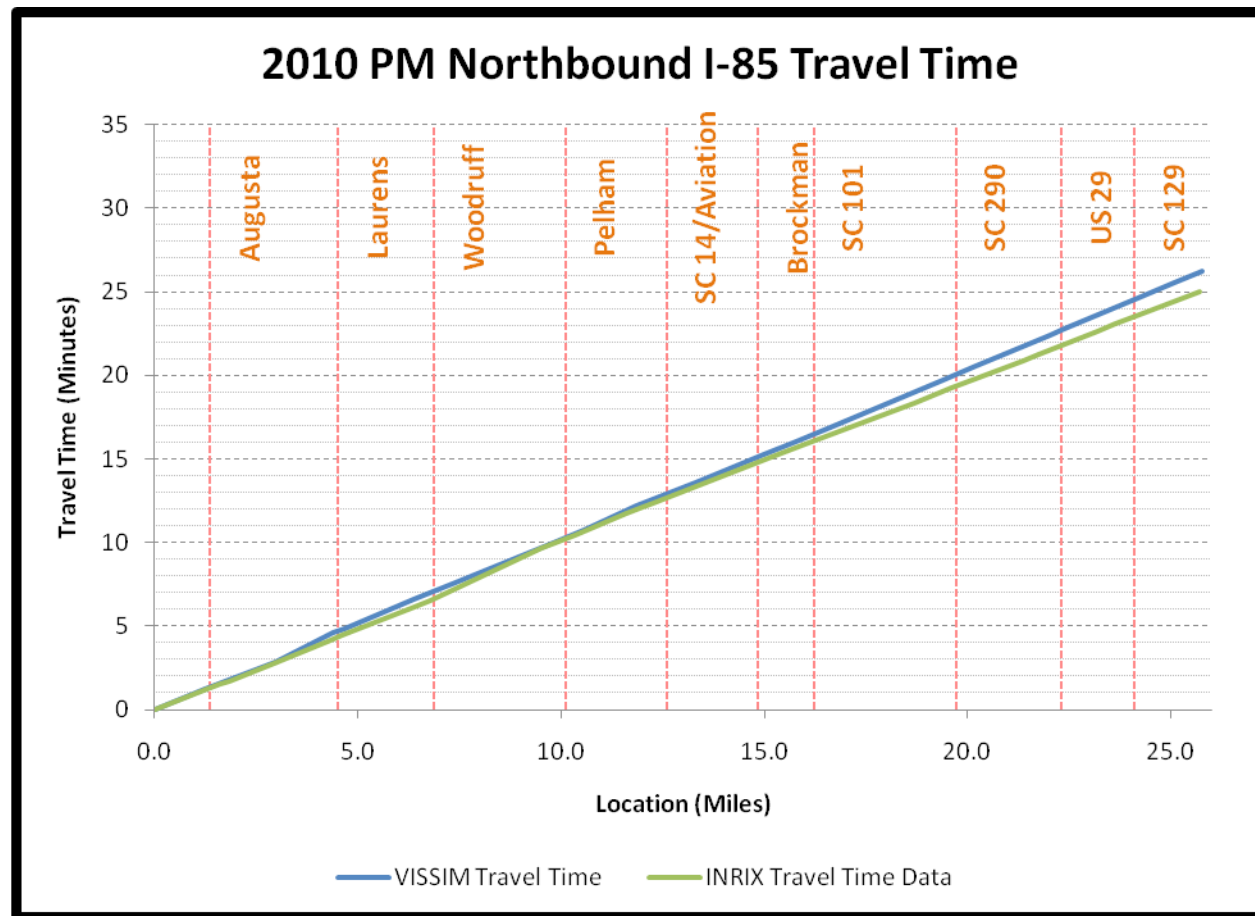
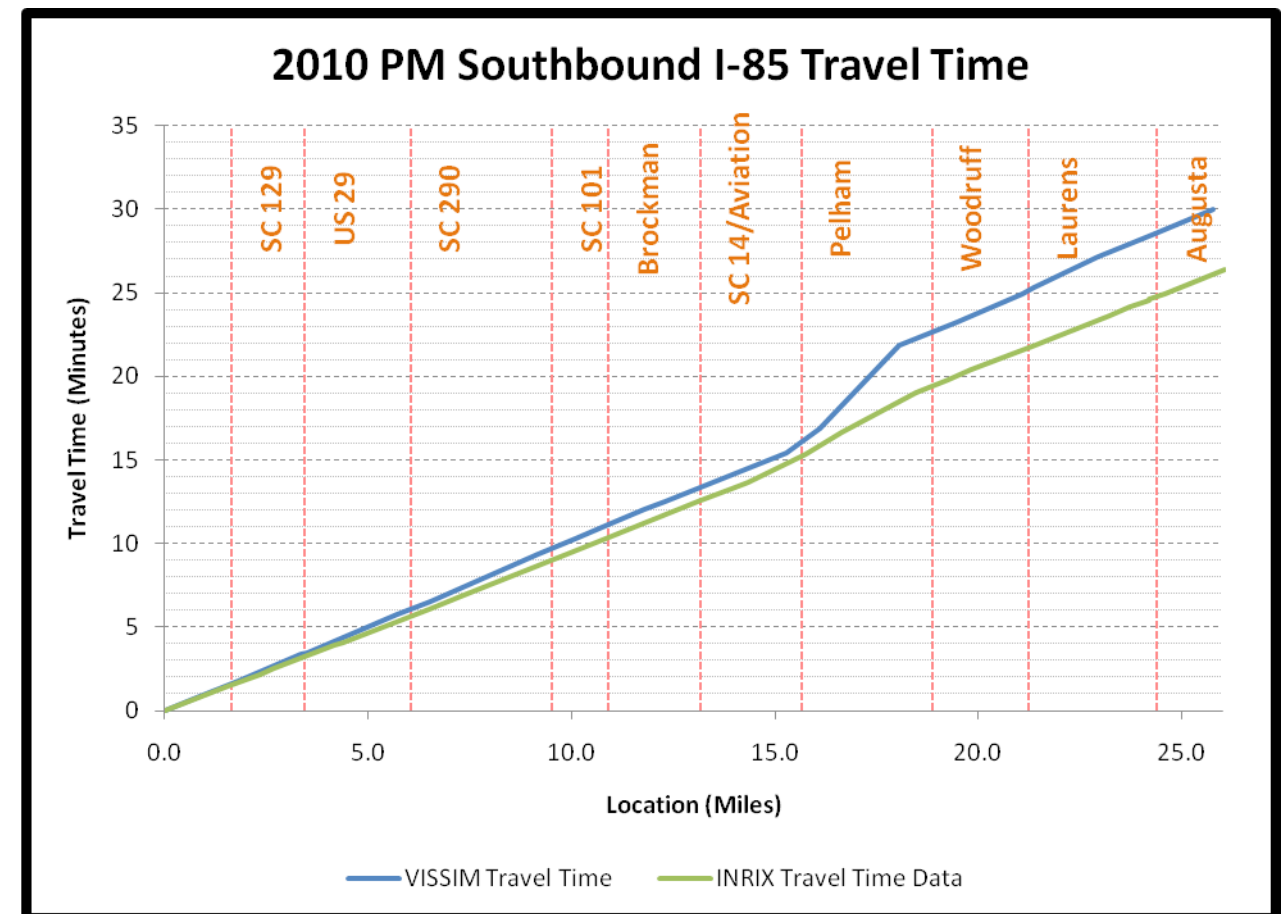


Exhibit 34: Existing (2010) PM Peak Hour I-85 SB Travel Time Graph





INTERSECTION ANALYSIS

The following tables summarize the intersection delay and LOS for each signalized and unsignalized intersection in the study area as well as the simulated and observed queue lengths for each intersection approach. These values are provided for both the AM and PM peak hours.

AM PEAK HOUR

Exhibits 35 through 37 show the output data provided by the VISSIM modeling software for the AM peak hour.

Exhibit 35: Existing (2010) AM Peak Hour Signalized Intersection LOS

EXISTING (2010) AM PEAK HOUR SIGNALIZED INTERSECTION DELAY & LOS				
NODE ID	INTERSECTION	VOLUME (VPH)	AVG. DELAY (SEC.)	LOS
17	Augusta Rd. @ Chalmers Rd.	1852	6.0	A
119	Augusta Rd. @ I-85 SB Ramps	1838	5.9	A
1	Augusta Rd. @ I-85 NB Ramps	1805	14.2	B
19	Augusta Rd. @ Woodmede Way	1388	11.5	B
28	Pleasantburg Dr. @ Chalmers Rd.	1753	12.5	B
27	Pleasantburg Dr. @ Impact Dr./Melvin Dr.	2593	5.9	A
120	Mauldin Rd. @ I-85 SB Ramps	2173	5.6	A
3	Mauldin Rd. @ I-85 NB Ramps	2719	9.7	A
36	Mauldin Rd. @ Parkins Mill Rd.	2629	11.2	B
43	US 276 (Laurens Rd.) @ Duvall Dr.	2471	9.7	A
49	Woodruff Rd. @ Woodruff Industrial Dr.	1320	4.6	A
122	Woodruff Rd. @ I-85 SB Ramps	1753	12.3	B
5	Woodruff Rd. @ I-85 NB Ramps	1909	17.0	B
48	Woodruff Rd. @ Carolina Point Pkwy./I-85 NB On-Ramp	1843	6.7	A
59	Pelham Rd. @ The Pkwy./I-85 SB On-Ramp	3213	79.7	E
123	Pelham Rd. @ I-85 SB Ramps	2770	62.2	E
7	Pelham Rd. @ I-85 NB Ramps	2919	37.9	D
64	Pelham Rd. @ Garlington Rd./Boland Ct.	2582	27.8	C
70	SC 14 @ Johns Rd.	3202	18.6	B
8	SC 14 @ I-85 Ramps	2434	38.0	D
84	SC 101 @ BMW Entrance/Caliber Ridge Rd.	2594	29.2	C
124	SC 101 @ I-85 SB Ramps	2138	12.7	B
11	SC 101 @ I-85 NB Ramps	2203	14.3	B
80	SC 101 @ Freeman Farm Rd./Plemmons Rd.	2396	10.5	B
93	SC 290 @ McAuley Rd.	3014	27.0	C
125	SC 290 @ I-85 SB Ramps	3923	39.3	D
12	SC 290 @ I-85 NB Ramps	3926	38.0	D
88	SC 290 @ Spartangreen Blvd.	3616	9.7	A
101	US 29 @ Nazareth Church Rd./Tyger Lake Dr.	1916	8.8	A

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Exhibit 36: Existing (2010) AM Peak Hour Unsignalized Intersection LOS

EXISTING (2010) AM PEAK HOUR UNSIGNALIZED INTERSECTION DELAY & LOS			
NODE ID	INTERSECTION	SIDE STREET AVG. DELAY (SEC.)	LOS
32	Mauldin Rd. @ N. Kings Rd.	25.6	D
40	US 276 (Laurens Rd.) @ Frontage Rd.	59.0	F
121	US 276 (Laurens Rd.) @ St. Joseph's Dr.	147.6	F
66	SC 14 @ E. Phillips Rd.	6.2	A
77	Brockman-McClimon Rd. Ramps @ Brockman-McClimon Rd.	10.6	B
104	US 29 @ Old Spartanburg Hwy.	11.2	B
126	US 29 @ I-85 SB Ramps	12.0	B
13	US 29 @ I-85 NB On-Ramp	8.7	A
97	US 29 @ I-85 NB Off-Ramp/New Hope Rd.	8.6	A
14	SC 129 @ I-85 NB Ramps	15.3	C
108	SC 129 @ Falling Creek Rd.	5.2	A
113	SC 129 @ Fort Prince Rd.	11.2	B
127	SC 129 @ I-85 SB Ramps	8.2	A

Exhibit 37: Existing (2010) AM Peak Hour Queue Summary

EXISTING (2010) AM PEAK HOUR QUEUE SUMMARY				
NODE ID	INTERSECTION	APPROACH	AVERAGE QUEUE (FT.)	OBSERVED QUEUE
17	Augusta Rd. @ Chalmers Rd.	SB Augusta	3.7	Field observation confirms minimal queuing on all approaches
		WB Chalmers	28.9	
		NB Augusta	20.5	
119	Augusta Rd. @ I-85 SB Ramps	SB Off-Ramp	19.2	Field observation confirms minimal queuing on all approaches
		NB Augusta	3.4	
		SB Augusta	4.2	
1	Augusta Rd. @ I-85 NB Ramps	SB Augusta	4.9	Field observation confirms minimal queuing on all approaches
		NB Off-Ramp	77.7	
		NB Augusta	14.1	
19	Augusta Rd. @ Woodmede Way	WB Driveway	8.3	Field observation confirms minimal queuing on all approaches
		NB Augusta	6.2	
		EB Woodmede	62.9	
		SB Augusta	7.9	
28	Pleasantburg Dr. A Chalmers Rd.	EB Chalmers	85.6	Field observation confirms minimal queuing on all approaches
		SB Pleasantburg	6.0	
		NB Pleasantburg	10.8	
		WB Chalmers	2.3	
27	Pleasantburg Dr. @ Impact Dr./ Melvin Dr.	SB Pleasantburg	7.2	Field observation confirms minimal queuing on all approaches
		NB Pleasantburg	10.0	
		EB Impact	14.2	
		WB Melvin	8.7	
32	Mauldin Rd. @ N. Kings Rd.	EB Mauldin	0.0	Field observation confirms minimal queuing on all approaches
		SB Kings	25.8	
		WB Mauldin	0.7	
120	Mauldin Rd. @ I-85 SB Ramps	WB Mauldin	7.9	Field observation confirms minimal queuing on all approaches
		SB Off-Ramp	17.1	
		EB Mauldin	8.5	
3	Mauldin Rd. @ I-85 NB Ramps	NB Off-Ramp	20.1	Field observation confirms minimal queuing on all approaches
		EB Mauldin	45.4	
		WB Mauldin	26.2	
36	Mauldin Rd. @ Parkins Mill Rd.	WB Mauldin	18.2	Field observation confirms minimal queuing on all approaches
		EB Mauldin	55.2	
		SB Parkins Mill	124.9	

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Exhibit 37: Existing (2010) AM Peak Hour Queue Summary Continued

EXISTING (2010) AM PEAK HOUR QUEUE SUMMARY				
NODE ID	INTERSECTION	APPROACH	AVERAGE QUEUE (FT.)	OBSERVED QUEUE
43	US 276 (Laurens Rd.) @ Duvall Dr.	NB Duvall	52.0	Field observation confirms minimal queuing on all approaches
		WB Laurens	13.6	
		EB Laurens	24.6	
40	US 276 (Laurens Rd.) @ Frontage Rd.	SB Frontage	29.1	Field observation confirms minimal queuing on all approaches
		EB Laurens	37.9	
		WB Laurens	10.3	
121	US 276 (Laurens Rd.) @ St. Joseph's Dr.	EB Laurens	16.9	Field observation showed minor queuing on NB St. Joseph's approach
		NB St. Joseph's	1641.8	
		WB Laurens	78.7	
49	Woodruff Rd. @ Woodruff Industrial Dr.	NB Woodruff Industrial	11.3	Field observation confirms minimal queuing on all approaches
		EB Woodruff	3.4	
		SB Power Dr.	9.5	
		WB Woodruff	2.6	
122	Woodruff Rd. @ I-85 SB Ramps	SB Off-Ramp	34.5	Field observation confirms minimal queuing on all approaches
		EB Woodruff	9.5	
		WB Woodruff	13.0	
5	Woodruff Rd. @ I-85 NB Ramps	NB Off-Ramp	81.6	Field observation confirms slight queue on NB off-ramp
		EB Woodruff	4.6	
		WB Woodruff	10.7	
48	Woodruff Rd. @ Carolina Point Pkwy./I-85 NB On-Ramp	NB Carolina Point	22.5	Field observation confirms minimal queuing on all approaches
		WB Woodruff	8.3	
		EB Woodruff	255.3	
59	Pelham Rd. @ The Pkwy./I-85 SB On-Ramp	WB Pelham	175.4	Field observation showed congestion and queuing on EB Pelham approach and minimal queuing on SB Parkway approach
		EB Pelham	1650.0	
		SB The Pkwy.	1389.2	
123	Pelham Rd. @ I-85 SB Ramps	WB Pelham	59.5	Field observation confirms queue on SB off-ramp (~1600 ft.)
		SB Off-Ramp	1546.8	
		EB Pelham	83.3	
7	Pelham Rd. @ I-85 NB Ramps	NB Off-Ramp	1413.1	Field observation confirms queue on NB off-ramp (~1500 ft.)
		EB Pelham	35.3	
		WB Pelham	14.9	

EXISTING (2010) AM PEAK HOUR QUEUE SUMMARY				
NODE ID	INTERSECTION	APPROACH	AVERAGE QUEUE (FT.)	OBSERVED QUEUE
64	Pelham Rd. @ Garlington Rd./ Boland Ct.	WB Pelham	22.0	Field observation confirms congestion and queuing on EB Pelham
		NB Garlington	253.0	
		SB Boland	14.5	
		EB Pelham	271.5	
70	SC 14 @ Johns Rd.	NB SC 14	29.8	Field observation confirms minimal queuing on all approaches
		EB Johns	167.0	
		WB Johns	21.8	
8	SC 14 @ I-85 Ramps	SB SC 14	52.6	Field observation confirms minimal queuing on all approaches
		NB SC 14	50.6	
		SB Off-Ramp	291.7	
		NB Off-Ramp	44.6	
66	SC 14 @ E. Phillips Rd.	SB Off-Ramp	89.4	Field observation confirms minimal queuing on all approaches
		WB Phillips	0.0	
		EB Phillips	0.0	
77	Brockman-McClimon Rd. Ramps @ Brockman-McClimon Rd.	NB SC 14	0.0	Field observation confirms minimal queuing on all approaches
		SB SC 14	0.0	
		WB Brockman Ramps	0.0	
84	SC 101 @ BMW Entrance/ Caliber Ridge Rd.	EB Brockman Ramps	0.0	Field observation confirms minimal queuing on all approaches
		SB Brockman Ramps	0.0	
		WB SC 101	116.9	
124	SC 101 @ I-85 SB Ramps	NB BMW Entrance	27.8	Field observation confirms minimal queuing on all approaches
		SB Caliber Ridge	32.5	
		EB SC 101	184.4	
11	SC 101 @ I-85 NB Ramps	SB Off-Ramp	71.2	Field observation confirms minimal queuing on all approaches
		NB Off-Ramp	62.1	
		EB SC 101	31.3	

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Exhibit 37: Existing (2010) AM Peak Hour Queue Summary Continued

EXISTING (2010) AM PEAK HOUR QUEUE SUMMARY				
NODE ID	INTERSECTION	APPROACH	AVERAGE QUEUE (FT.)	OBSERVED QUEUE
80	SC 101 @ Freeman Farm Rd./ Plemmons Rd.	SB Plemmons	46.8	Field observation confirms minimal queuing on all approaches
		NB Freeman Farm	19.5	
		EB SC 101	59.5	
		WB SC 101	25.7	
93	SC 290 @ McAuley Rd.	NB McAuley	8.8	Field observation confirms minimal queuing on all approaches
		SB McAuley	110.2	
		EB SC 290	52.4	
		WB SC 290	101.7	
125	SC 290 @ I-85 SB Ramps	SB Off-Ramp	228.0	Field observation confirms minimal queuing on all approaches
		EB SC 290	258.1	
		WB SC 290	130.1	
12	SC 290 @ I-85 NB Ramps	NB Off-Ramp	30.5	Field observation confirms slight queuing on NB Off-Ramp
		WB SC 290	190.4	
		EB SC 290	225.3	
88	SC 290 @ Spartangreen Blvd.	EB SC 290	33.4	Field observation confirms minimal queuing on all approaches
		SB Spartangreen	11.2	
		NB Driveway	20.1	
		WB SC 290	30.8	
104	US 29 @ Old Spartanburg Hwy.	WB US 29	0.0	Field observation confirms minimal queuing on all approaches
		EB US 29	0.0	
		NB Old Spartanburg	201.5	
		SB Syphint	0.1	
126	US 29 @ I-85 SB Ramps	SB Off-Ramp	0.0	Field observation confirms minimal queuing on all approaches
		WB US 29	0.0	
		EB US 29	0.0	
13	US 29 @ I-85 NB On-Ramp	EB US 29	0.0	Field observation confirms minimal queuing on all approaches
		WB US 29	0.2	
97	US 29 @ I-85 NB Off-Ramp/New Hope Rd.	NB Off-Ramp	0.0	Field observation confirms minimal queuing on all approaches
		EB US 29	0.0	
		WB US 29	0.0	
		SB New Hope	0.0	

EXISTING (2010) AM PEAK HOUR QUEUE SUMMARY				
NODE ID	INTERSECTION	APPROACH	AVERAGE QUEUE (FT.)	OBSERVED QUEUE
101	US 29 @ Nazareth Church Rd./ Tyger Lake Dr.	EB US 29	0.2	Field observation confirms minimal queuing on all approaches
		NB Nazareth Church	6.5	
		WB US 29	10.1	
		SB Tyger Lake	1.6	
113	SC 129 @ Fort Prince Rd.	EB SC 129	0.0	Field observation confirms minimal queuing on all approaches
		WB SC 129	0.0	
		SB Fort Prince	0.0	
127	SC 129 @ I-85 SB Ramps	SB Off-Ramp	0.0	Field observation confirms minimal queuing on all approaches
		WB SC 129	0.0	
		EB SC 129	0.0	
14	SC 129 @ I-85 NB Ramps	WB SC 129	0.1	Field observation confirms minimal queuing on all approaches
		NB Off-Ramp	8.4	
		EB SC 129	0.1	
108	SC 129 @ Falling Creek Rd.	SB Falling Creek	2.1	Field observation confirms minimal queuing on all approaches
		NB Falling Creek	0.2	
		EB SC 129	14.8	

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PM PEAK HOUR

Exhibits 38 through 40 show the output data provided by the VISSIM modeling software for the PM peak hour.

Exhibit 38: Existing (2010) PM Peak Hour Signalized Intersection LOS

EXISTING (2010) PM PEAK HOUR SIGNALIZED INTERSECTION DELAY & LOS				
NODE ID	INTERSECTION	VOLUME (VPH)	AVG. DELAY (SEC.)	LOS
17	Augusta Rd. @ Chalmers Rd.	1720	5.1	A
119	Augusta Rd. @ I-85 SB Ramps	1863	10.0	A
1	Augusta Rd. @ I-85 NB Ramps	1705	8.1	A
19	Augusta Rd. @ Woodmede Way	1666	14.1	B
28	Pleasantburg Dr. @ Chalmers Rd.	1955	8.4	A
27	Pleasantburg Dr. @ Impact Dr./Melvin Dr.	3110	7.2	A
120	Mauldin Rd. @ I-85 SB Ramps	1905	4.5	A
3	Mauldin Rd. @ I-85 NB Ramps	2707	7.3	A
36	Mauldin Rd. @ Parkins Mill Rd.	2620	10.5	B
43	US 276 (Laurens Rd.) @ Duvall Dr.	2540	30.4	C
49	Woodruff Rd. @ Woodruff Industrial Dr.	2508	25.6	C
122	Woodruff Rd. @ I-85 SB Ramps	2875	24.4	C
5	Woodruff Rd. @ I-85 NB Ramps	2198	19.0	B
48	Woodruff Rd. @ Carolina Point Pkwy./I-85 NB On-Ramp	1976	9.8	A
59	Pelham Rd. @ The Pkwy./I-85 SB On-Ramp	3194	33.7	C
123	Pelham Rd. @ I-85 SB Ramps	2320	25.4	C
7	Pelham Rd. @ I-85 NB Ramps	2841	24.1	C
64	Pelham Rd. @ Garlington Rd./Boland Ct.	2594	21.6	C
70	SC 14 @ Johns Rd.	3447	18.0	B
8	SC 14 @ I-85 Ramps	2772	31.6	C
84	SC 101 @ BMW Entrance/Caliber Ridge Rd.	2456	26.0	C
124	SC 101 @ I-85 SB Ramps	1928	11.9	B
11	SC 101 @ I-85 NB Ramps	2037	14.1	B
80	SC 101 @ Freeman Farm Rd./Plemmons Rd.	2222	10.2	B
93	SC 290 @ McAuley Rd.	2447	17.5	B
125	SC 290 @ I-85 SB Ramps	3132	31.5	C
12	SC 290 @ I-85 NB Ramps	3556	29.6	C
88	SC 290 @ Spartangreen Blvd.	3177	8.8	A
101	US 29 @ Nazareth Church Rd./Tyger Lake Dr.	2633	12.5	B

Exhibit 39: Existing (2010) PM Peak Hour Unsignalized Intersection LOS

EXISTING (2010) PM PEAK HOUR UNSIGNALIZED INTERSECTION DELAY & LOS			
NODE ID	INTERSECTION	SIDE STREET AVG. DELAY (SEC.)	LOS
32	Mauldin Rd. @ N. Kings Rd.	16.5	C
40	US 276 (Laurens Rd.) @ Frontage Rd.	650.2	F
121	US 276 (Laurens Rd.) @ St. Joseph's Dr.	152.2	F
66	SC 14 @ E. Phillips Rd.	7.4	A
77	Brockman-McClimon Rd. Ramps @ Brockman-McClimon Rd.	7.8	A
104	US 29 @ Old Spartanburg Hwy.	11.6	B
126	US 29 @ I-85 SB Ramps	14.0	B
13	US 29 @ I-85 NB On-Ramp	7.4	A
97	US 29 @ I-85 NB Off-Ramp/New Hope Rd.	21.3	C
14	SC 129 @ I-85 NB Ramps	9.4	A
108	SC 129 @ Falling Creek Rd.	3.6	A
113	SC 129 @ Fort Prince Rd.	9.2	A
127	SC 129 @ I-85 SB Ramps	9.5	A

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Exhibit 40: Existing (2010) PM Peak Hour Queue Summary

EXISTING (2010) PM PEAK HOUR QUEUE SUMMARY				
Node ID	Intersection	Approach	Average Queue (ft.)	Observed Queue
17	Augusta Rd. @ Chalmers Rd.	SB Augusta	4.9	Field observation confirms minimal queuing on all approaches
		WB Chalmers	23.3	
		NB Augusta	6.5	
119	Augusta Rd. @ I-85 SB Ramps	SB Off-Ramp	45.9	Field observation confirms minimal queuing on all approaches
		NB Augusta	6.9	
		SB Augusta	10.9	
1	Augusta Rd. @ I-85 NB Ramps	SB Augusta	3.7	Field observation confirms minimal queuing on all approaches
		NB Off-Ramp	40.2	
		NB Augusta	4.6	
19	Augusta Rd. @ Woodmede Way	WB Driveway	4.3	Field observation confirms minimal queuing on all approaches
		NB Augusta	10.9	
		EB Woodmede	88.5	
		SB Augusta	13.1	
28	Pleasantburg Dr. @ Chalmers Rd.	EB Chalmers	33.6	Field observation confirms minimal queuing on all approaches
		SB Pleasantburg	8.4	
		NB Pleasantburg	9.9	
		WB Chalmers	5.1	
27	Pleasantburg Dr. @ Impact Dr./Melvin Dr.	SB Pleasantburg	12.5	Field observation confirms minimal queuing on all approaches
		NB Pleasantburg	14.1	
		EB Impact	24.5	
		WB Melvin	10.0	
32	Mauldin Rd. @ N. Kings Rd.	EB Mauldin	0.0	Field observation confirms minimal queuing on all approaches
		SB Kings	2.3	
		WB Mauldin	0.2	
120	Mauldin Rd. @ I-85 SB Ramps	WB Mauldin	4.1	Field observation confirms minimal queuing on all approaches
		SB Off-Ramp	9.7	
		EB Mauldin	9.0	
3	Mauldin Rd. @ I-85 NB Ramps	NB Off-Ramp	18.1	Field observation confirms minimal queuing on all approaches
		EB Mauldin	45.1	
		WB Mauldin	13.8	
36	Mauldin Rd. @ Parkins Mill Rd.	WB Mauldin	11.0	Field observation confirms minimal queuing on all approaches
		EB Mauldin	20.9	
		SB Parkins Mill	99.5	

EXISTING (2010) PM PEAK HOUR QUEUE SUMMARY				
Node ID	Intersection	Approach	Average Queue (ft.)	Observed Queue
43	US 276 (Laurens Rd.) @ Duvall Dr.	NB Duvall	307.9	Field observation confirms minimal queuing on all approaches
		WB Laurens	17.4	
		EB Laurens	397.4	
40	US 276 (Laurens Rd.) @ Frontage Rd.	SB Frontage	529.4	Field observation confirms slight queue on SB Frontage Rd.
		EB Laurens	4.0	
		WB Laurens	0.7	
121	US 276 (Laurens Rd.) @ St. Joseph's Dr.	EB Laurens	49.7	Field observation shows minor queuing on NB St. Joseph's approach
		NB St. Joseph's	1009.6	
		WB Laurens	17.2	
49	Woodruff Rd. @ Woodruff Industrial Dr.	NB Woodruff Industrial	142.0	Field observation confirms minimal queuing on all approaches
		EB Woodruff	73.4	
		SB Power Dr.	48.8	
		WB Woodruff	47.2	
122	Woodruff Rd. @ I-85 SB Ramps	SB Off-Ramp	40.0	Field observation confirms minimal queuing on all approaches
		EB Woodruff	102.3	
		WB Woodruff	147.9	
5	Woodruff Rd. @ I-85 NB Ramps	NB Off-Ramp	99.1	Field observation confirms slight queue on NB off-ramp
		EB Woodruff	16.8	
		WB Woodruff	30.8	
48	Woodruff Rd. @ Carolina Point Pkwy./I-85 NB On-Ramp	NB Carolina Point	44.7	Field observation confirms minimal queuing on all approaches
		WB Woodruff	8.6	
		EB Woodruff	143.5	
59	Pelham Rd. @ The Pkwy./I-85 SB On-Ramp	WB Pelham	72.4	Field observation confirms queuing on EB Pelham Rd.
		EB Pelham	307.6	
		SB The Pkwy.	425.4	
123	Pelham Rd. @ I-85 SB Ramps	WB Pelham	258.7	Field observation confirms queuing on Pelham Rd.
		SB Off-Ramp	163.8	
		EB Pelham	133.1	
7	Pelham Rd. @ I-85 NB Ramps	NB Off-Ramp	323.0	Field observation confirms queuing on Pelham Rd. and I-85 NB Off-Ramp
		EB Pelham	228.2	
		WB Pelham	47.6	

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Exhibit 40: Existing (2010) PM Peak Hour Queue Summary Continued

EXISTING (2010) PM PEAK HOUR QUEUE SUMMARY				
NODE ID	INTERSECTION	APPROACH	AVERAGE QUEUE (FT.)	OBSERVED QUEUE
64	Pelham Rd. @ Garlington Rd./ Boland Ct.	WB Pelham	61.7	Field observation confirms minimal queuing on all approaches
		NB Garlington	151.3	
		SB Boland	18.2	
		EB Pelham	126.9	
70	SC 14 @ Johns Rd.	NB SC 14	116.6	Field observation confirms minimal queuing on all approaches
		EB Johns	15.9	
		WB Johns	39.6	
		SB SC 14	42.0	
8	SC 14 @ I-85 Ramps	NB SC 14	51.7	Field observation confirms minimal queuing on all approaches
		SB SC 14	44.8	
		SB Off-Ramp	41.3	
		NB Off-Ramp	140.5	
66	SC 14 @ E. Phillips Rd.	WB Phillips	0.0	Field observation confirms minimal queuing on all approaches
		EB Phillips	0.0	
		NB SC 14	0.0	
		SB SC 14	0.0	
77	Brockman-McClimon Rd. Ramps @ Brockman-McClimon Rd.	NB Brockman Ramps	0.0	Field observation confirms minimal queuing on all approaches
		EB Brockman	0.0	
		SB Brockman Ramps	0.0	
84	SC 101 @ BMW Entrance/ Caliber Ridge Rd.	WB SC 101	79.0	Field observation confirms minimal queuing on all approaches
		NB BMW Entrance	41.3	
		SB Caliber Ridge	25.9	
		EB SC 101	70.6	
124	SC 101 @ I-85 SB Ramps	SB Off-Ramp	73.3	Field observation confirms minimal queuing on all approaches
		EB SC 14	6.0	
		WB SC 14	3.9	
11	SC 101 @ I-85 NB Ramps	NB Off-Ramp	47.4	Field observation confirms minimal queuing on all approaches
		WB SC 101	8.3	
		EB SC 101	27.9	

EXISTING (2010) PM PEAK HOUR QUEUE SUMMARY				
NODE ID	INTERSECTION	APPROACH	AVERAGE QUEUE (FT.)	OBSERVED QUEUE
80	SC 101 @ Freeman Farm Rd./ Plemmons Rd.	SB Plemmons	81.2	Field observation confirms minimal queuing on all approaches
		NB Freeman Farm	46.3	
		EB SC 101	40.0	
		WB SC 101	7.1	
93	SC 290 @ McAuley Rd.	NB McAuley	37.4	Field observation confirms minimal queuing on all approaches
		SB McAuley	56.0	
		EB SC 290	39.9	
		WB SC 290	35.8	
125	SC 290 @ I-85 SB Ramps	SB Off-Ramp	65.9	Field observation confirms slight queuing on SC 290
		EB SC 290	138.4	
		WB SC 290	153.0	
12	SC 290 @ I-85 NB Ramps	NB Off-Ramp	30.9	Field observation confirms slight queuing on SC 290
		WB SC 290	202.8	
		EB SC 290	110.0	
88	SC 290 @ Spartangreen Blvd.	EB SC 290	10.1	Field observation confirms minimal queuing on all approaches
		SB Spartangreen	40.0	
		NB Driveway	36.8	
		WB SC 290	12.7	
104	US 29 @ Old Spartanburg Hwy.	WB US 29	0.0	Field observation confirms minimal queuing on all approaches
		EB US 29	0.0	
		NB Old Spartanburg	0.0	
126	US 29 @ I-85 SB Ramps	SB Syphint	0.0	Field observation confirms minimal queuing on all approaches
		SB Off-Ramp	0.0	
		WB US 29	0.0	
13	US 29 @ I-85 NB On-Ramp	EB US 29	0.0	Field observation confirms minimal queuing on all approaches
		WB US 29	26.6	
		NB Off-Ramp	0.0	
97	US 29 @ I-85 NB Off-Ramp/New Hope Rd.	EB US 29	0.0	Field observation confirms minimal queuing on all approaches
		WB US 29	0.0	
		SB New Hope	0.0	
		NB Off-Ramp	0.0	

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Exhibit 40: Existing (2010) PM Peak Hour Queue Summary Continued

EXISTING (2010) PM PEAK HOUR QUEUE SUMMARY				
NODE ID	INTERSECTION	APPROACH	AVERAGE QUEUE (FT.)	OBSERVED QUEUE
101	US 29 @ Nazareth Church Rd./ Tyger Lake Dr.	EB US 29	0.0	Field observation confirms minimal queuing on all approaches
		NB Nazareth Church	15.0	
		WB US 29	28.9	
		SB Tyger Lake	3.2	
113	SC 129 @ Fort Prince Rd.	EB SC 129	0.0	Field observation confirms minimal queuing on all approaches
		WB SC 129	0.0	
		SB Fort Prince	0.0	
127	SC 129 @ I-85 SB Ramps	SB Off-Ramp	0.0	Field observation confirms minimal queuing on all approaches
		WB SC 129	0.0	
		EB SC 129	0.0	
14	SC 129 @ I-85 NB Ramps	WB SC 129	0.8	Field observation confirms minimal queuing on all approaches
		NB Off-Ramp	1.0	
		EB SC 129	0.0	
108	SC 129 @ Falling Creek Rd.	SB Falling Creek	5.7	Field observation confirms minimal queuing on all approaches
		NB Falling Creek	0.4	
		EB SC 129	0.1	