June 15, 2007

Mr. David Joyner
Executive Director
North Carolina Turnpike Authority
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612

Re: Sketch Level Traffic and Revenue Study – Proposed Yadkin River Toll Bridge

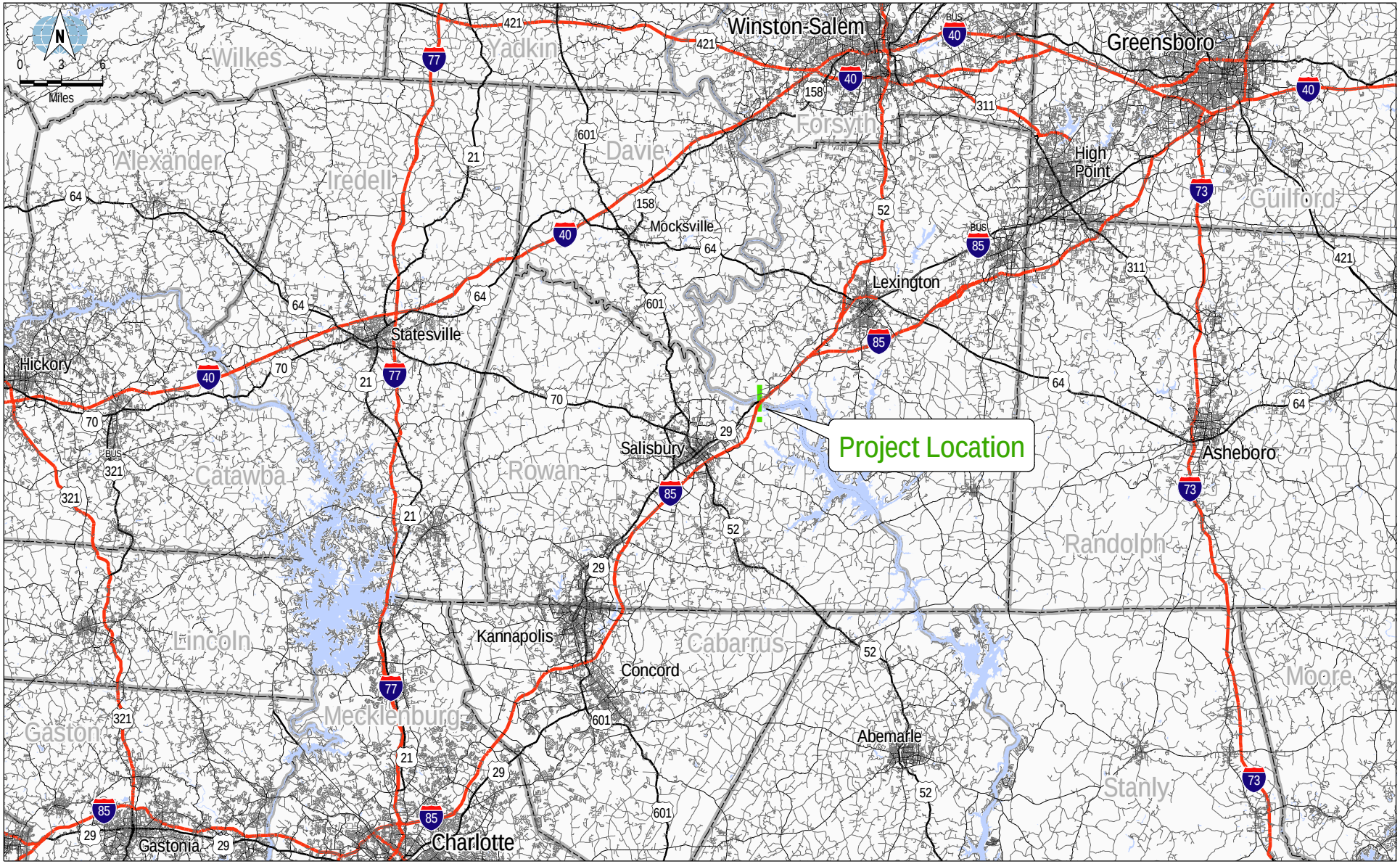
Dear Mr. Joyner:

The proposed bridge on I-85 across the Yadkin River north of the Town of Salisbury is one of several candidate toll facilities under consideration by the North Carolina Turnpike Authority (NCTA). I-85 is a major interstate that extends from Montgomery, Alabama to Petersburg, Virginia. In North Carolina it connects Charlotte to the Triad and Triangle Regions. The new interstate bridge would replace the existing interstate bridge constructed in 1955, which is projected to reach its life expectancy by 2010 according to the NC Department of Transportation (NCDOT). The bridge that crosses the Yadkin River immediately west of I-85 on US 29/70 would be replaced also. The location of the proposed bridge replacement projects are shown in Figures 1 and 2.

The primary objective of this study was to determine the potential toll revenue that could be generated if tolls were collected on the I-85 replacement bridge. The study was conducted at a "sketch-level" of detail. This level of analysis is intended to provide broad estimates of traffic, revenue, and toll rate sensitivity. This level of study is not intended for use in direct support of project financing. A more detailed, comprehensive traffic and revenue study would be required for that purpose.

PROJECT DESCRIPTION

Replacement of the existing I-85 Yadkin River Bridge is included in the current State Transportation Improvement Program (STIP). The STIP shows construction beginning in fiscal year 2008 and ending in fiscal year 2012. Current plans show the bridge replacement on new alignment slightly to the west of the existing bridge. The NCTA was requested to study the concept of a toll bridge because NCDOT funds may not be available to replace the existing bridge as scheduled.



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REGIONAL LOCATION MAP

FIGURE 1

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PROJECT LOCATION

FIGURE 2

The proposed project would be approximately 6.8 miles long, extending from north of Long Ferry Road (Exit 81) in Rowan County to I-85 Business (Exit 87). In addition to the construction of the bridge and its approaches, I-85 would be widened from four to eight lanes. This is consistent with recent reconstruction projects which have widened I-85 from two to four lanes per direction from Exits 68 to 81. Other elements of the project include the relocation of the existing NC 150 interchange and a new bridge over the Yadkin River on the parallel US 29/70, which is also in poor condition. Segments of US 29/70 would be widened to two lanes in each direction also.

SCOPE OF WORK

As a part of this study, inventories of the operating conditions of I-85, US 29/70 and other major roadways in the project vicinity were conducted including traffic counts and speed-delay studies. Information on planned transportation improvements was reviewed to determine the prospective impact of these improvements on the traffic and revenue potential of the proposed toll bridge.

Previous reports and study materials related to the project were also reviewed, including the Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) prepared for the I-85 Yadkin River Bridge project by NCDOT.

Supplemental traffic counts by vehicle class were conducted at all ramps of the 13 interchanges on I-85 from Exits 68 through 86. A 24-hour classification count by direction was also performed on I-85 between Long Ferry Road (Exit 81) and Hackett Street. This information facilitated the development of the spreadsheet travel demand model used in the traffic and revenue analysis described below. Funded improvements to other roadways in the vicinity of the project were also considered during the traffic modeling.

TRAFFIC MODEL

A spreadsheet model was developed to simulate traffic demand on I-85 in the project study area. The model was to assign traffic between the project I-85 Yadkin River Toll Bridge and the nearest toll-free alternative route. Historical traffic trend data and traffic forecasts from the EA, FONSI and other documents were used to develop toll-free traffic forecasts on I-85 for future years 2013 (opening year), 2015, 2020, 2025 and 2030. The spreadsheet traffic model was run for each of the referenced years to estimate the amount of traffic that would be expected to remain on I-85 if tolls were collected on the bridge, and the amount of traffic which could be expected to divert to toll-free US 29/70.

CORRIDOR GROWTH ANALYSIS

Future growth is particularly important in determining the ability of a project to be financed in full or in part by tolls. A variety of data were reviewed regarding historical and forecasted growth in the region. These data include county-level historical and forecasted population, household, employment, and household income growth for the region. The growth analysis was

conducted to provide a reasonableness check for the future year traffic projections developed for this traffic and revenue analysis.

The growth in trucking along I-85 is important to the feasibility of this project also. I-85 is one of the major truck routes in North Carolina. Over 22 percent of the estimated 52,000 vehicles per day projected to cross the Yadkin River on I-85 in 2007 will be trucks with five-or-more axles. Because of this high truck utilization, forecasts of freight shipment data to, from and within North Carolina were reviewed to provide a reasonableness check for the commercial vehicle forecasts developed for this analysis.

TRAFFIC AND REVENUE ANALYSIS

The traffic classification counts were used to disaggregate the traffic into two categories - passenger cars/light trucks and heavy trucks. The passenger car/light truck category consisted of single-unit vehicles with up to four axles. The heavy truck category consisted of multi-unit, tractor-trailers having three-or-more axles. These categories were selected due to their very different probabilities for diversion.

The traffic and revenue analysis was conducted using the average daily traffic volumes generated from the spreadsheet models. The model assigned traffic to I-85 and surrounding roadways under both toll and toll-free conditions. A review of the reasonableness of the results, particularly under toll condition, was performed using various evaluation techniques including corridor share and capture rate.

A toll sensitivity analysis was performed for the project as well. Conducted for the opening year of 2013, passenger car-based toll rates from $0.50 to $2.50 were tested. The sensitivity analysis aided the selection of the optimal toll for the proposed bridge. Based on the traffic modeling results, 40-year preliminary estimates of annual traffic and revenue from 2013 to 2052 were prepared.

EXISTING TRAFFIC CONDITIONS

To provide a strong basis for initiating the sketch-level traffic and revenue analysis, an inventory of existing corridor characteristics and traffic conditions was taken. The major competing route (US 29/70) and complementary routes to the proposed toll bridge were identified. Speed and delay characteristics were measured to identify existing, typical operating conditions, which were paramount in establishing baseline traffic and travel conditions important to the operation of the spreadsheet diversion model used in this analysis.

Available traffic counts were obtained from a number of sources. These counts were supplemented by new vehicle classification counts taken at all ramps along I-85 from Exits 68 to 86, and on I-85 between Long Ferry Road and Hachett Road.

A year 2007 baseline traffic profile along I-85 was used in developing estimates of both future-year toll and toll-free traffic volumes for the proposed I-85 Yadkin River Bridge Replacement project. This was accomplished following a review of historical traffic count trends, prior study traffic volume forecasts, and an economic/corridor growth assessment.

EXISTING HIGHWAY SYSTEM

I-85 connects Charlotte to the Triad and Triangle Regions and carries a mixture of intrastate and interstate traffic. The 2005 average annual daily traffic volume (AADT) for I-85 from the Yadkin River to I-85 Business (Exit 87) ranged from 55,000 to 59,000 vehicles per day (vpd). South of the river from Long Ferry Road (Exit 81) to south of NC 152 (Exit 68), the AADT ranged from 54,000 to 69,000 vpd.

I-85 passes through or near the towns of Kannapolis, Concord, Salisbury, Spencer, East Spencer, and Lexington. The interstate through these areas has undergone and continues to undergo considerable reconstruction. Currently, I-85 carries two lanes per direction and a 65 mile per hour (mph) posted speed limit south of Exit 68. North of Exit 68 to just south of Exit 70 (Webb Road), the highway carries three lanes per direction, but widens to four lanes per direction from south of Exit 70 to the existing construction zone immediately north of Exit 76 (Innes Street). The posted speed is 65 mph generally and 55 mph in the construction zone.

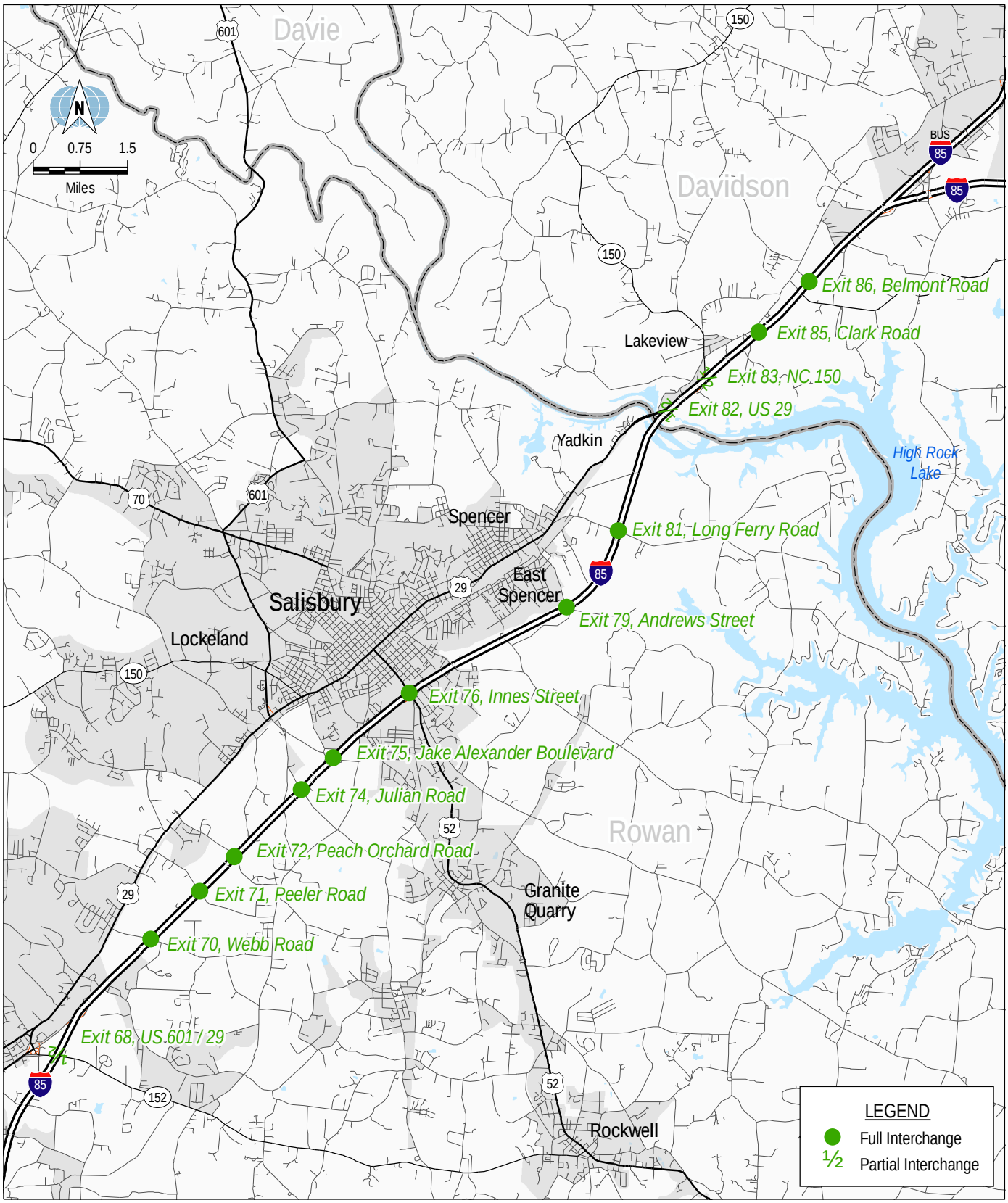
The construction zone runs from north of Exit 76 to Exit 81 (Long Ferry Road). The construction in this area is scheduled to be complete late this year and will provide four travel lanes per direction from Exit 70 to Exit 81.

The final segment to be reconstructed, which includes the new Yadkin River Bridge, is a 6.8-mile segment that extends from Exit 81 to Exit 87 (I-85 Business). This segment is scheduled for completion during fiscal year 2012.

Figure 3 illustrates the location of the I-85 interchanges in the project vicinity. The toll project would provide additional capacity in an area currently served by the following facilities:

- US 29/70 is a northeast-southwest roadway, paralleling I-85 from the Yadkin River through the City of Charlotte. US 29/70 would serve as the alternate toll-free route if the I-85 Yadkin River Bridge Replacement project were constructed as a toll facility. It is generally a four-lane, undivided roadway with signalized and unsignalized intersections throughout its length. At the north end, south of its interchange with I-85, the posted speed limit is 55 mph. The speed limit drops to 35 mph entering the Town of Spencer, and drops again to 20 mph at 3rd Street. The speed limit remains in the range of 20-35 mph throughout Spencer and Salisbury, increasing to 45 mph and then 55 mph at the southern outskirts of Salisbury near the intersections with Julian and Peach Orchard Roads, respectively.

- Belmont Road (Exit 86**)** provides for east-west travel between I-85 and Old Salisbury Road in Davidson County. It is an undivided two-lane roadway with a 45 mph speed limit.



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I-85 INTERCHANGES IN THE STUDY AREA

FIGURE 3

- Clark Road (Exit 85) provides for east-west travel between I-85 and Old Salisbury Road in Davidson County. It is primarily a two-lane roadway. No posted speed limits were observed.

- NC 150 (Exit 83) is generally a north to south roadway in the study area. NC 150 extends throughout Davidson County paralleling US 52 into the Winston-Salem metro area. From its intersection with Old Salisbury Road to I-85, NC 150 is a two-lane roadway with a 50 mph speed limit.

- Long Ferry Road (Exit 81) provides for east-west travel between I-85 and US 29/70 through East Spencer in Rowan County. It is an undivided two-lane roadway with a 55 mph speed limit in the vicinity of I-85. The speed limit drops to 45 mph near Snider Street and to 35 mph approaching the at-grade railroad crossing between Long Street and US 29.

- Andrews Street (Exit 79) provides for east-west travel between I-85 and US 29/70 primarily through the Town of Spencer in Rowan County. Between I-85 and Tanglewood Drive the posted speed limit along this two-lane roadway is 45 mph. West of Tanglewood Drive the speed limit drops to 35 mph to the vicinity of Long Street. From west of Long Street to US 29, Andrews Street becomes four lanes and overpasses the railroad tracks. The bridge overpass bears a sign indicating it has a 35 ton weight limitation in the eastbound direction. No weight limit signing was observed in the westbound direction. Andrews Street is the major detour route used by the Town of Salisbury when incidents occur on I-85.

- Innes Street (Exit 76) is the primary route from I-85 into downtown Salisbury (Main Street/US 29/70). It is generally a five-lane facility with two lanes per direction and a center turn lane at mid-block or turn lanes at signalized intersections. There are approximately six signalized intersections between I-85 and Main Street.

- Jake Alexander Boulevard (Exit 75) is a partial ring road around the western half of Salisbury. It begins at Stokes Ferry Road on the south side of Salisbury and ends at West Innes Street on the north of Salisbury. Between I-85 and main Street, it is two-lanes per direction with a raised median and traffic signals at major crossroads. The posted speed is 45 to 50 mph.

- Julian Road (Exit 74) carries a single lane per direction between I-85 east to Old Concord Road. The posted speed varies between 50 to 55 mph.

- Peach Orchard Road (Exit 72) provides for east-west travel between I-85 and US 29 in Rowan County. It is an undivided two-lane roadway with a 45 mph speed limit and an at-grade railroad crossing immediately east of US 29.

- Peeler Road (Exit 71) provides for east-west travel between I-85 and US 29 in Rowan County. It is an undivided two-lane roadway with a 45 mph speed limit and an at-grade railroad crossing immediately east of US 29.

- Webb Road (Exit 70) provides for east-west travel between I-85 and US 29 in Rowan County. It is an undivided two-lane roadway with a 45 mph speed limit and an at-grade railroad crossing immediately east of US 29.

- NC 152 (Exit 68) between US 29 and I-85 carries two lanes per direction with a center turn lane and a posted speed limit of 45 mph. East of I-85 the roadway becomes a two-lane roadway with a 55 mph speed limit.

TRAFFIC VOLUMES

Existing traffic data from the NCDOT database were reviewed to aid in understanding historical traffic trends and traffic growth rates in the study area, particularly along I-85. This information was supplemented by new traffic counts at all I-85 interchange ramps from NC 152 (Exit 68) to Belmont Road (Exit 86) and a count on I-85 between Long Ferry Road (Exit 81) and Hackett Street.

Average Daily Traffic - Figure 4 provides a summary of average annual daily traffic volumes along I-85 and US 29/70 for years 2000 and 2005. All volumes are shown in thousands of vehicles.

AADT along I-85 between NC 152 (Exit 68) and Innes Street (Exit 76) were consistently in the range of 59,000 to 62,000 vpd in 2000. It is probable that these volumes were somewhat constrained by the then on-going reconstruction of I-85, which began in 1997. In fact, two reconstruction projects had commenced prior to 2000. The first, between Exits 68 and 71 began in August 1997 and was completed in August 2001. The second, between Exits 71 and 74, began in summer 1998 and ended in summer 2003.

North of Innes Street (Exit 76), 2000 AADTs ranged from 57,000 vpd from north of NC 150 (Exit 83) to 60,000 vpd north of the US 29/70 ramps (Exit 82). It is probable that the I-85 reconstruction projects also impacted traffic growth along this section. However, short-distance, local interchange-to-interchange trips between Innes Street (Exit 76) and Belmont Road (Exit 86) would not likely have been impacted.

However, this condition changed in early 2001 with the commencement of reconstruction of I-85 between Julian Road (Exit 74) and Innes Street (Exit 76). This project was completed in November 2006, and reconstruction of I-85 between Innes Street (Exit 76) and Long Ferry Road (Exit 81) began in January 2005. This project is scheduled for completion by November 2007.

With completion of the reconstruction projects between US 601/29 (Exit 68) and Julian Road (Exit 74), traffic volumes on I-85 increased to between 68,000 to 69,000 vpd. However, as shown in Figure 4, north of Innes Street (Exit 76), most segments experienced declines in AADTs between years 2000 and 2005 of about 1,000 to 2,000 vpd. In fact, based on counts taken in April 2007, traffic crossing the Yadkin River Bridge continued to decline, from 54,000 vpd in 2005 to under 52,000 vpd in 2007.

Figure 5 presents a year 2007 traffic profile along I-85 based on 24-hour vehicle classification counts conducted at each interchange ramp from US 601/29 (Exit 68) to Belmont Road (Exit 86). A 24-hour vehicle classification count was also performed on I-85 north of Long Ferry Road (Exit 81).

AADTs range from approximately 64,000 vpd between US 601/29 and Julian Road to 55,000 to 56,000 vpd between Julian Road and Innes Street. It should be noted that the highest interchange volumes occur at the Julian Road, Jake Alexander Boulevard and Innes Street interchanges. Except for the Julian Road ramps to/from the north, each ramp carries daily volumes in the 4,000 to 6,000 vpd range, evidence of sizable local traffic movements. Most of the other ramps carry between 1,000 to 2,000 vehicles per day.

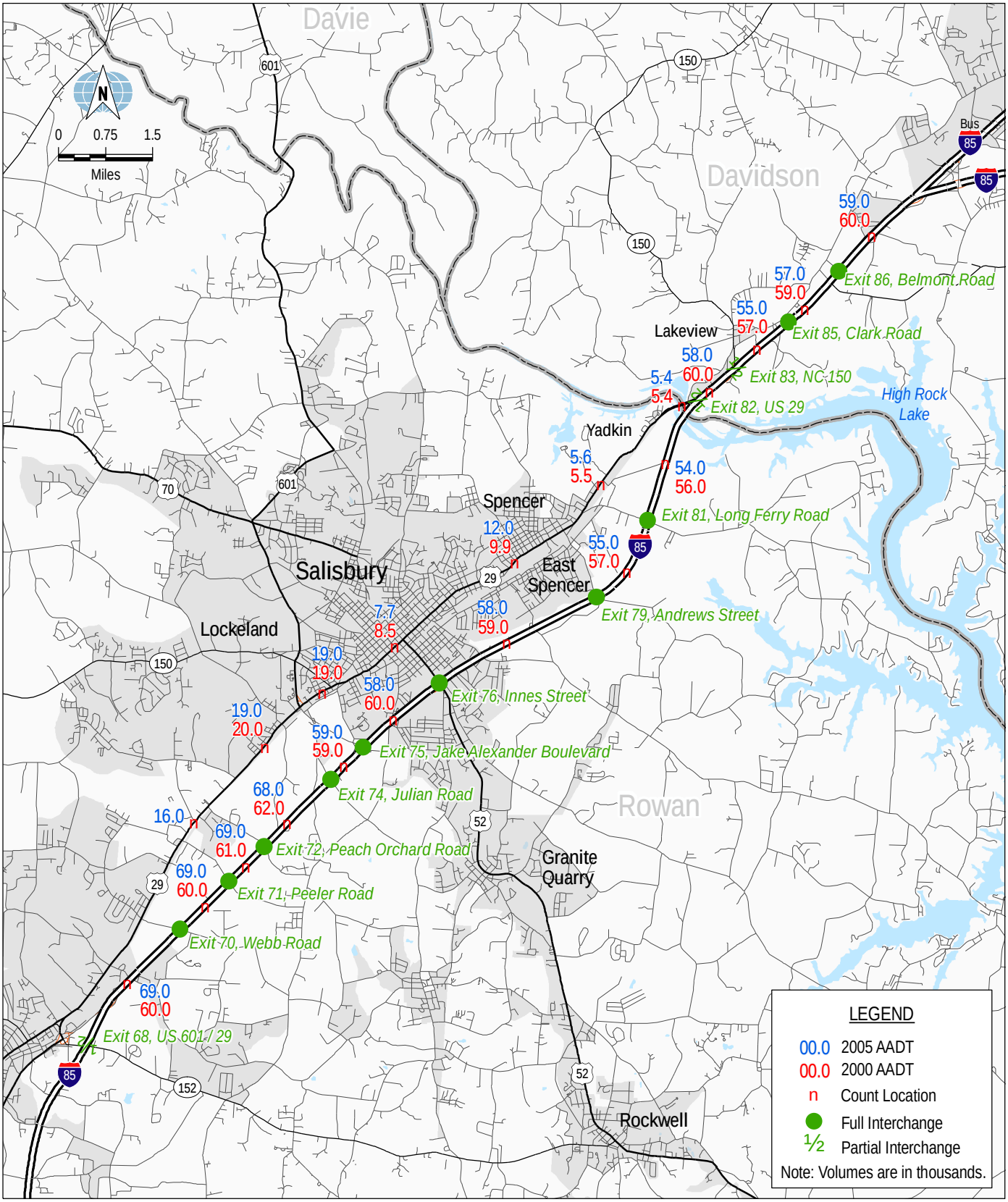
Along US 29/70, year 2005 volumes were very similar to those in year 2000. Between Jake Alexander Boulevard and Peach Orchard Road, the 2005 AADT declined slightly. This would be expected, as some trips returned to I-85 after the completion of the reconstruction projects. AADTs on US 29/Main Street between Innes Street and Long Ferry Road showed a 2,000 vpd increase in 2005. This may be an indication of local, short-distance trips being made on US 29 that would have used I-85 in the absence of reconstruction activities.

Table 1 provides historical AADTs and average annual traffic growth rates at the two Yadkin River crossings. Except for year 2007, the volumes presented are from counts provided by the NCDOT. The volumes shown also support the fact that reconstruction activities influence demands on I-85 and US 29. For example, between years 2000 and 2005 when reconstruction on I-85 was at its height, AADTs at the I-85 Yadkin River crossing declined at a rate of 0.7 percent per annum, while increasing on the US 29 crossing by 3.7 percent per annum or 900 vpd.

Vehicle Classification - In an effort to develop a year 2007 "baseline' traffic profile along I-85, supplemental 24-hour vehicle classification counts were performed. The 14 interchange and I-85 count locations are shown in Figure 6. As might be expected, trucks represent a significant percentage of the vehicle mix on this facility. Table 2 shows that 26.1 percent of the vehicles counted on I-85 between Long Ferry Road and Hackett Street were light and heavy trucks, most of which were heavy trucks with five-or-more axles.

On the interchange ramps, heavy truck volumes generally represent 5 to 8 percent or less of the vehicle mix. Only at the Peeler Road (Exit 71), Andrews Street (Exit 79) and Belmont Road

Proposed Yadkin River Toll Bridge
Sketch Level Traffic and Revenue Study



2000 AND 2005 AVERAGE ANNUAL DAILY TRAFFIC VOLUMES (AADT)

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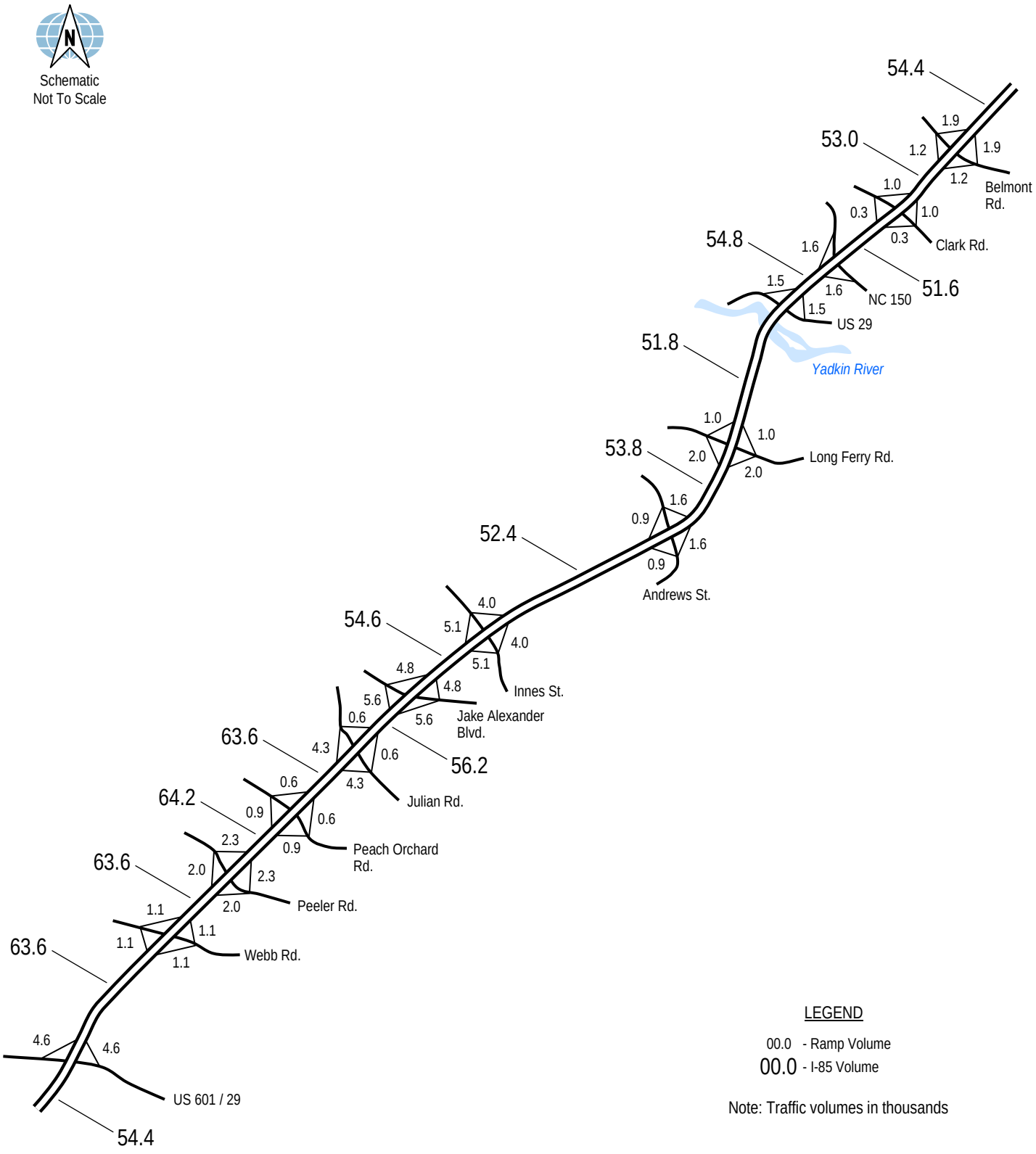
FIGURE 4



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YEAR 2007 AVERAGE ANNUAL DAILY TRAFFIC VOLUMES

FIGURE 5

Table 1
Traffic Volume Trends

Year	I-85 [1]	US 29/70 [1]
1985	25,000	3,800
AAPC [2]	0.2	(0.4)
1990 [3]	25,300	3,700
AAPC [2]	12.5	4.8
1995 [4]	45,600	4,900
AAPC [2]	4.2	(2.1)
2000	56,000	4,500
AAPC [2]	(0.7)	3.7
2005	54,000	5,400
AAPC [2]	(2.1)	---
2007 [5]	51,800	n.a.

n.a. - Not available.

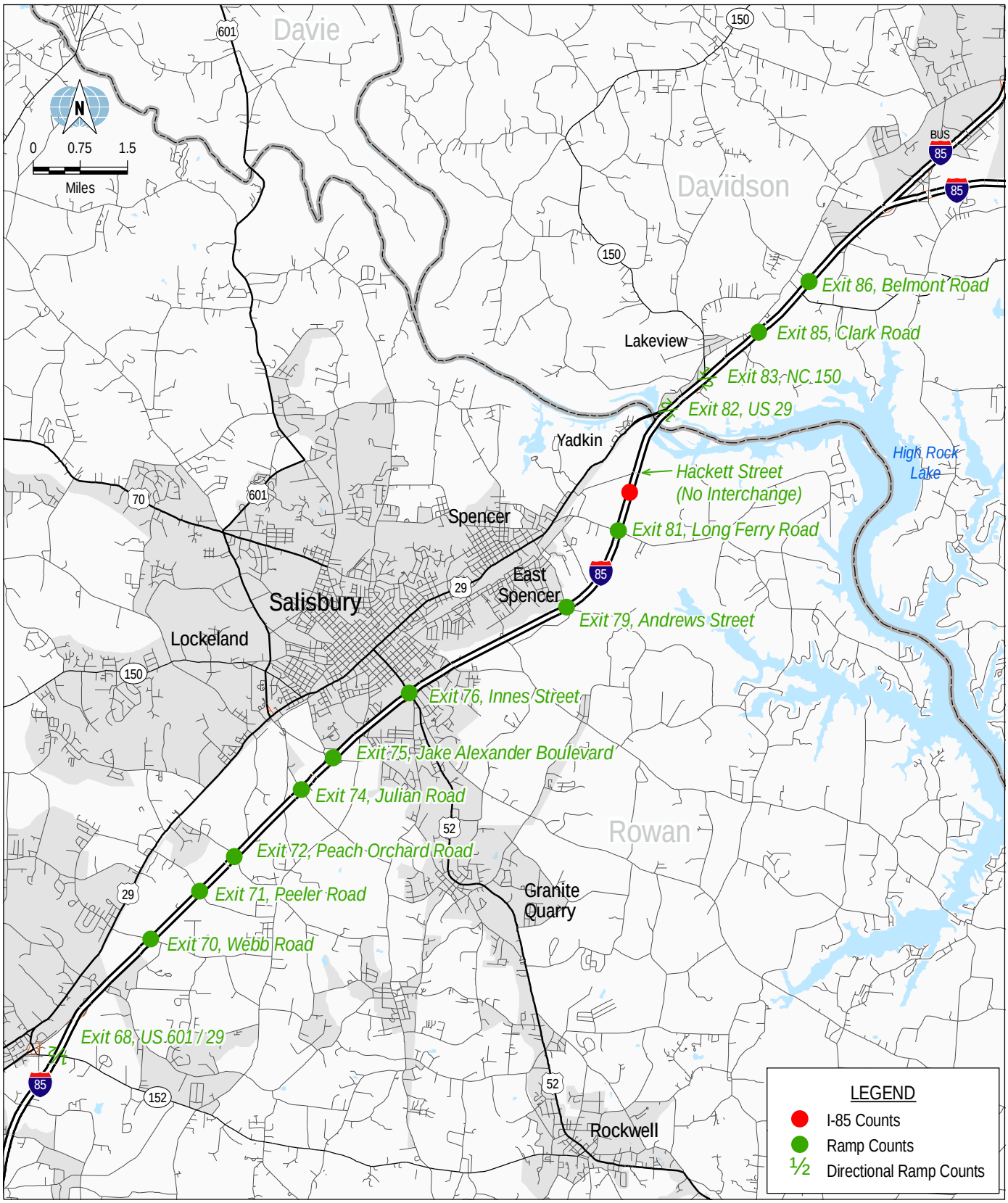
[1] Average annual daily traffic volumes provided by the North Carolina Depatment of Transporation (NCDOT), Traffic Survey Unit

[2] AAPC - Average Annual Percent Change

[3] Volume on US 29/70 is a 1992 AADT.

[4] Volume on US 29/70 is a 1996 AADT.

[5] Conducted in April 2007.



LOCATION OF SUPPLEMENTAL CORRIDOR TRAFFIC COUNTS

FIGURE 6

Table 2
Vehicle Classification at Selected Locations

Count No.	I-85 Interchange	Location	Ramp or Mainline	Count Orientation (To/From)	Vehicle Classification Percent			Total Vehicles
					Passenger Vehicles	Light Trucks	Heavy Trucks	
1	68	U.S. 601/29	R	North	88.2%	6.7%	5.2%	9,218
2	70	Webb Road	R	North	86.7%	8.0%	5.2%	2,253
			R	South	86.4%	7.2%	6.4%	2,254
3	71	Peeler Road	R	North	68.1%	11.4%	20.6%	4,548
			R	South	63.7%	18.1%	18.2%	4,005
4	72	Peach Orchard Road	R	North	84.2%	8.4%	7.4%	1,278
			R	South	91.7%	6.8%	1.5%	1,829
5	74	Julian Road	R	North	91.2%	5.0%	3.8%	1,165
			R	South	89.6%	5.2%	5.2%	8,598
6	75	Jake Alexander Boulevard	R	North	83.3%	8.6%	8.1%	9,754
			R	South	89.6%	5.2%	5.1%	11,280
7	76	Innes Street	R	North	86.9%	7.5%	5.5%	7,954
			R	South	91.9%	5.0%	3.1%	10,208
8	79	Andrews Street	R	North	82.6%	8.0%	9.4%	3,098
			R	South	80.2%	8.1%	11.7%	1,783
9	81	Long Ferry Road	R	North	83.4%	9.8%	6.8%	2,041
			R	South	77.1%	17.0%	5.9%	3,941
10	I-85	Between Long Ferry Road and Hackett Street	M	NB and SB	74.0%	3.8%	22.3%	51,844
11	82	U.S. 29	R	North	91.3%	4.0%	4.7%	2,916
12	83	NC 150	R	South	91.9%	5.5%	2.7%	3,221
13	85	Clark Road	R	North	89.6%	5.9%	4.5%	2,096
			R	South	84.5%	10.1%	5.4%	625
14	86	Belmont Road	R	North	89.9%	8.0%	2.1%	3,855
			R	South	73.9%	12.8%	13.3%	2,355

Source: Seasonally adjusted 24-hour manual counts conducted in April 2007.

(Exit 86) interchanges did heavy truck volumes exceed 10 percent of the total traffic. On the other hand, the percentage of light commercial vehicles, single-unit trucks with two to four axles, exceeded the percentage of heavy commercial vehicles at most interchanges, indicating the long-distance nature of the heavy truck trips.

Passenger cars represent approximately 74 percent of the vehicle mix on I-85 and between 85 and 90 percent on most interchanges.

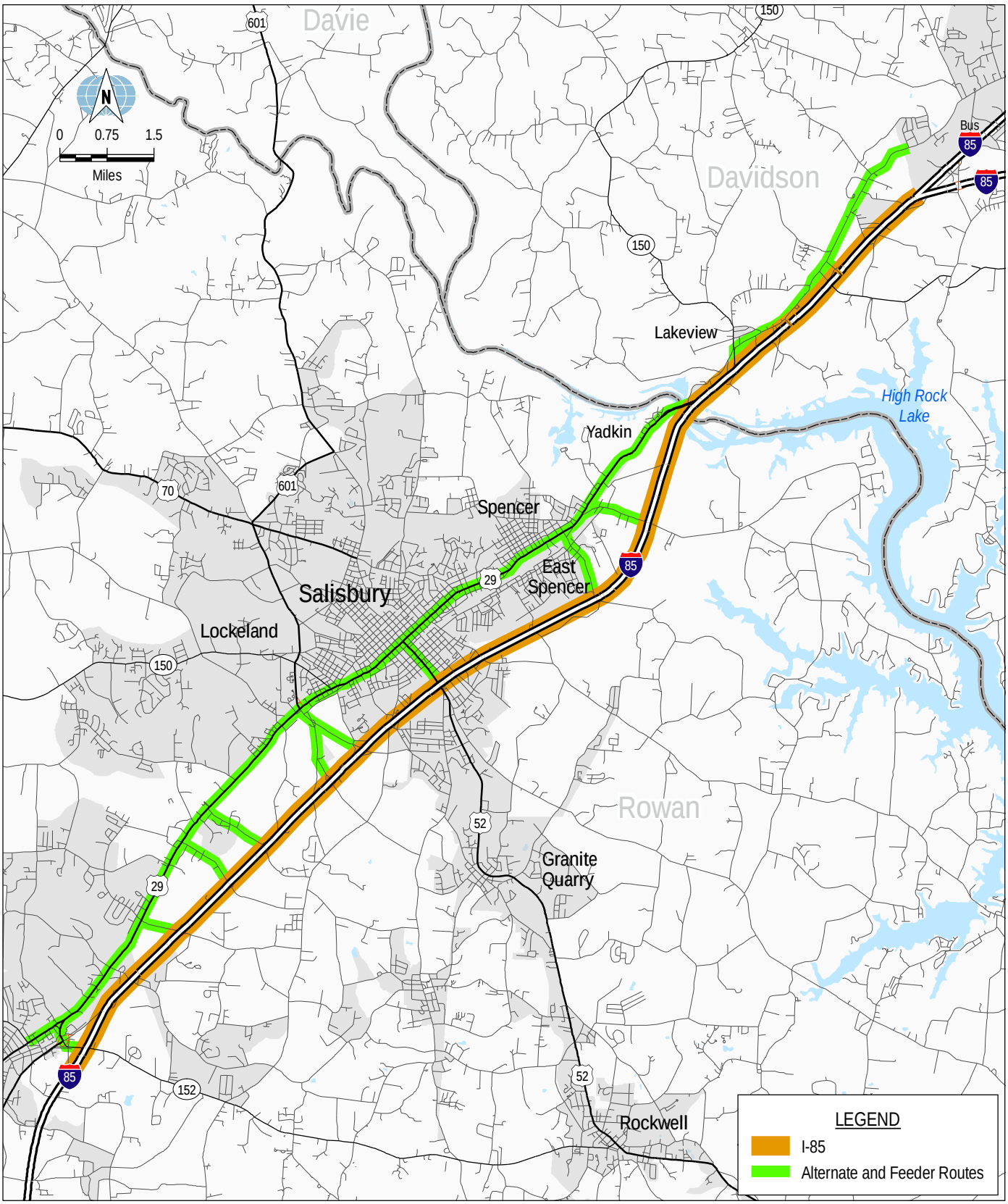
TRAVEL TIME ASSESSMENT

Speed and delay characteristics were measured on 14 roads in the study area. The locations and extent of the measurements on I-85, US 29/70 and major connecting routes are shown on Figure 7 and described below.

- I-85 from south of NC 152 (Exit 68) to Business I-85;
- US 29/70 from south of NC 152 (Exit 68) to I-85 junction;
- Belmont Road (Exit 86) from I-85 to Old Salisbury Road;
- Clark Road (Exit 85) from I-85 to Old Salisbury Road;
- NC 150 (Exit 83) from I-85 to Old Salisbury Road;
- Long Ferry Road (Exit 81) from I-85 to US 29/70;
- Andrews Street (Exit 79) from I-85 to US 29/70;
- Innes Street (Exit 76) from I-85 to US 29/70 (Main Street);
- Jake Alexander Boulevard (Exit 75) from I-85 to US 29/70 (South Main Street);
- Julian Road (Exit 74) from I-85 to Jake Alexander Boulevard;
- Peach Orchard Road (Exit 72) from I-85 to US 29/70 (South Main Street);
- Peeler Road (Exit 71) from I-85 to US 29/70 (South Main Street);
- Webb Road (Exit 70) from I-85 to US 29/70 (South Main Street); and
- NC 152 (Exit 68) from I-85 to North Main Street, China Grove.

Average weekday speeds were calculated for the peak and off-peak periods and were used in the spreadsheet traffic model. Speeds on I-85 and most other roads measured were generally found to be at or near the posted speed limits in both peak and off-peak periods and in both travel directions.

Table 3 provides a summary of the average observed speeds during peak periods for five typical movements including I-85 and US 29, which would serve as the alternate toll-free route if tolls were collected on the I-85 Yadkin River Bridge. Speeds along major connecting routes such as Innes and Andrews Streets and Long Ferry Road are also shown in Table 3.



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TRAVEL TIME ROUTES

FIGURE 7

Table 3
Average Speeds on Selected Routes
Peak Periods

Facility	Start Point	End Point	Direction	Distance (mi)	Average Observed Speeds (mph) AM Peak	PM Peak
I-85	Innes Street	SR 47	Northbound	9.5	66	67
	SR 47	Innes Street	Southbound	9.5	66	67
U.S. 29	Innes Street	I-85	Northbound	6.7	40	39
	I-85	Innes Street	Southbound	6.7	40	42
Innes Street	I-85	U.S. 29	Westbound	0.9	28	20
	US 29	I-85	Eastbound	0.9	20	N/A
Andrews Street	I-85	U.S. 29	Westbound	1.2	35	30
	US 29	I-85	Eastbound	1.2	38	33
Long Ferry Road	I-85	U.S. 29	Westbound	1.1	36	27
	US 29	I-85	Eastbound	1.1	36	36

Source: Travel time runs performed in March and April 2007.

CORRIDOR GROWTH ASSESSMENT

The economic growth of a region has a significant role in the success of any toll facility such as the proposed Yadkin River Bridge. As the major crossing of the Yadkin River on I-85 between the Greensboro and Charlotte metropolitan areas, the bridge serves both local and long-distance traffic. Interstate 85 is also a major commercial vehicle corridor between its termini in Montgomery, Alabama in the south and Petersburg, Virginia in the north. As part of this study, historical trends and forecasts of population, household and employment growth for counties in the project vicinity and for the State of North Carolina as a whole were reviewed. These counties included Cabarrus, Davidson and Rowan.

This economic assessment uses population, employment and household growth trends and forecasts as a means of assessing future growth in traffic volumes on I-85. Since this is a sketch-level traffic and revenue study, an independent economic analysis was not conducted. However, such an analysis with additional focus on tourism and trucking industry growth trends would be necessary for any later study that would be used to support project financing.

WSA utilized forecasts of socioeconomic data produced by the Cabarrus-Rowan Metropolitan Planning Organization, North Carolina State Demographics Unit and the 2006 Woods and Poole, Economic and Demographic data source. Forecasts of population, household, employment, and income were complied and reviewed as part of this assessment. The economic growth analysis was used as a reasonableness check for future-year traffic growth and volume forecasts developed for this traffic and revenue study.

HISTORIC GROWTH

Data on the region's socioeconomic growth for years 1990 and 2000 were collected from the U.S. Census Bureau and Bureau of Labor Statistics.

Population, household and median household income statistics for Cabarrus, Davidson, and Rowan Counties are shown in Table 4. Historical growth trends for the State of North Carolina are also provided. The only county to exceed statewide growth in population and households between 1990 and 2000 was Cabarrus County. While slower than Cabarrus County, Davidson and Rowan Counties also experienced population and household growth during the 1990s.

Table 4
Historical Socioeconomic Growth

	Population			Households			Median Household Income		
Location	1990	AAPC	2000	1990	AAPC	2000	1990 [(1)]	AAPC	2000
Cabarrus County	98,935	2.9	131,063	37,515	2.8	49,519	$ 40,177	1.4	$ 46,140
Davidson County	126,677	1.5	147,246	48,944	1.7	58,156	37,217	0.4	38,640
Rowan County	110,605	1.7	130,340	42,512	1.6	49,940	35,139	0.7	37,494
North Carolina	6,628,637	2.0	8,049,313	2,517,026	2.2	3,132,013	35,529	1.0	39,184

Notes: AAPC Denotes Average Annual Percent Change
(1) 1990 income data were adjusted to 1999 dollars using U.S. Bureau of Labor Statistics, Consumer Price Index data for South Urban areas.
Source: U.S. Census Bureau

The same trend was observed for median household income growth. While Cabarrus County exceeded the statewide income growth, both Davidson and Rowan Counties experienced slightly lower income growth than did the State of North Carolina.

Historical employment growth from 1990 to 2005 is shown in Table 5. As with population and household growth trends, Cabarrus County employment growth also exceeded that of the State. Employment growth averaged 2.7 percent per annum from 1990 to 2000 in Cabarrus County, compared with approximately 1.0 percent in both Davidson and Rowan Counties, and 1.7 percent for the State.

Table 5
Historical Employment Growth

Location	1990	AAPC	2000	AAPC	2005	AAPC 1990 - 2005
Cabarrus County	53,678	2.7	69,761	1.2	73,988	2.2
Davidson County	70,570	0.9	76,957	(0.9)	73,432	0.3
Rowan County	56,540	1.0	62,530	0.4	63,806	0.8
North Carolina	3,352,165	1.7	3,969,235	0.7	4,112,828	1.4

Note: AAPC Denotes Average Annual Percent Change
Source: U.S. Bureau of Labor Statistics.

Between 2000 and 2005 employment growth in Cabarrus County was 1.2 percent per annum, or 0.5 percent greater than statewide employment growth.

Since the I-85 corridor attracts longer-distance trips, it is likely that statewide employment growth is the more important factor in corridor traffic demand. Therefore, the local fluctuations in employment growth should have minimal impact on future traffic demand.

SOCIOECONOMIC GROWTH FORECASTS

In addition to reviewing historical growth trends, estimates of future growth for the three-county region and the State were reviewed. Population, household, and employment forecasts were collected from three different sources for years 2000 to 2010, 2010 to 2020, and 2020 to 2030.

As shown above in Table 6 Cabarrus County is forecast to continue to experience significant growth between 2000 and 2030. With population growth forecast at 2.7 percent annually this county is expected to experience growth at a rate almost double that of the State. This same trend is seen for both household and employment growth during the 30-year period.

Table 6
Forecasted Socioeconomic Growth

Location	2000	AAPC 2000-2010	2010	AAPC 2010-2020	2020	AAPC 2020-2030	2030	AAPC 2000-2030
Population								
Cabarrus County [1]	131,063	3.1	177,089	2.7	230,262	2.3	288,042	2.7
Davidson County [2]	147,250	1.0	162,201	1.0	178,407	0.9	194,452	0.9
Rowan County [1]	130,340	1.5	151,847	1.6	177,661	1.6	208,752	1.6
North Carolina [2]	8,046,813	1.5	9,349,175	1.4	10,709,704	1.2	12,090,086	1.4
Households								
Cabarrus County [1]	46,519	3.7	66,664	2.6	86,458	2.3	108,005	2.8
Davidson County [3]	58,410	1.3	66,580	1.1	74,340	0.9	81,240	1.1
Rowan County [1]	49,940	1.6	58,361	1.6	68,461	1.7	80,715	1.6
North Carolina [3]	3,147,880	1.7	3,719,320	1.3	4,232,450	1.0	4,683,430	1.3
Employment								
Cabarrus County [1]	57,990	2.5	74,373	3.7	106,850	2.5	136,608	2.9
Davidson County [2]	74,120	0.6	78,710	1.4	90,390	1.2	102,060	1.1
Rowan County [1]	49,616	1.3	56,454	2.2	70,283	1.6	82,012	1.7
North Carolina [2]	4,924,920	1.1	5,492,070	1.5	6,365,460	1.3	7,238,760	1.3

[1] Data provided by the Cabarrus-Rowan Metropolitan Planning Organization.
[2] Data provided by the North Carolina State Demographics Unit.
[3] Data taken from The Complete Economic and Demographic Data Source 2006, Woods Poole Economics, Washington, D.C.

Growth forecasts over the 30-year period for Davidson and Rowan Counties are in general, at rates similar to those experienced between 1990 and 2000. The two counties are forecast to have similar growth in all three categories.

Data was also collected on the region's trucking industry given the high percentage of commercial vehicles using I-85. According to 2007 traffic counts conducted on I-85 near the existing Yadkin River Bridge, commercial vehicles account for over 26 percent of all traffic at this location, with heavy commercial vehicles comprising 22 percent of the traffic volume.

The United States Department of Transportation's Freight Analysis Framework predicts that truck traffic will increase significantly between 2005 and 2020. Specifically, in North Carolina

total freight shipments to, from, and within the State was expected to increase from 511 million tons in 1998 to 756 million tons by 2010. This represents an average annual increase of over 3.3 percent. Between 2010 and 2020, total freight tonnage is forecast to increase to 944 million, an increase of nearly 2.3 percent annually.

TRAFFIC AND REVENUE ANALYSIS

A summary of the traffic and revenue analysis conducted for the proposed Yadkin River toll bridge study is presented below. In addition to an overview of the traffic and revenue forecasting methodology, this section also presents information on basic study assumptions, toll rate sensitivity analysis, and estimates of gross and net toll revenue.

TRAFFIC AND REVENUE FORECASTING METHODOLOGY

The traffic and revenue estimates for this study were prepared using a spreadsheet travel demand forecasting model. Traffic assignments to the Yadkin River Bridge were made using a diversion assignment technique. This process involved comparing the travel times and distances for trips using the proposed tolled bridge versus the best toll-free alternative route.

The estimated share of total traffic that would be expected to use the toll bridge is a function of travel time and distance savings, a monetary value placed on these savings and the toll charges being tested in any given traffic assignment. In general, as the total costs to use the Yadkin River Bridge increased in comparison to the best alternative free route, the share of traffic on the bridge decreased. At lower toll rates, a higher share of traffic would continue using the bridge.

In addition to the traffic counts which were conducted as part of this study, previous traffic counts were made available by the NCDOT. Due to the construction on I-85 in the area, it was necessary to adjust the traffic counts to develop an I-85 baseline traffic volume estimate. Based on historical counts and the traffic counts collected as part of this study, it was estimated that traffic volumes on I-85 at the Yadkin River Bridge would total 60,000 vpd in 2007 in the absence of impacts caused by the various I-85 reconstruction projects. Based on two traffic forecasts developed for prior studies by NCDOT, it was assumed that traffic on I-85 in the vicinity of the Yadkin River bridge project would grow by 2.5 percent annually over the forecast period. The toll-free volumes which were used as inputs for the spreadsheet model are shown in Table 7.

Table 7
Average Daily Toll-Free Traffic Volumes
I-85 Yadkin River Bridge

Year	Total Vehicles	Cars/ Light Trucks	Heavy Trucks
2013	69,600	54,100	15,500
2015	73,100	56,800	16,300
2020	82,700	64,300	18,400
2025	93,600	72,800	20,800
2030	105,900	82,300	23,600

Traffic and revenue forecasts were prepared for each of three individual toll rates scenarios, referred to as Low, Medium, and High toll rates. The passenger car and heavy truck toll rates for each of these three scenarios are shown in Table 8.

Table 8
Assumed Toll Rates
I-85 Yadkin River Bridge

	Toll Rate Scenario					
	Low		Medium		High	
Year	Passenger Cars	Heavy Trucks	Passenger Cars	Heavy Trucks	Passenger Cars	Heavy Trucks
2013	$ 0.50	$ 1.50	$ 1.00	$ 3.00	$ 1.50	$ 4.50
2015	0.50	1.50	1.00	3.00	1.50	4.50
2020	0.75	2.25	1.25	3.75	2.00	6.00
2025	1.00	3.00	1.50	4.50	2.25	6.75
2030	1.25	3.75	1.75	5.25	2.50	7.50

Statewide and local Transportation Improvement Programs (TIP) and the area's Long Range Transportation Plans (LRTP) were reviewed as a part of the study. Drivers' travel behavior is heavily influenced by the travel conditions of roadways available in their region of travel. Any capacity-enhancing improvements planned for roadways in the area could negatively impact traffic volumes at the proposed toll bridge. Table 9 lists the major funded projects which could influence travel behavior on I-85. As shown, additional construction is programmed for I-85, which will add the capacity needed to meet future forecasted traffic demand.

Table 9
Major Funded Highway Improvements
2007-2013

Roadway	Limits		County	Description	Year of Construction	Status
	From	To				
I-85	North of Exit 81	Exit 87	Davidson	Additional Lanes and Bridge Reconstruction	2008	Programmed in the TIP
I-85	North of SR 1002	North of SR 2120	Rowan	Rehabilitate Bridges and Widen to Eight Lanes	2007	Construction In Progress
I-85	NC 73	US 29/601	Rowan	Add Additional Lanes	Beyond 2012	Planning/Design In Progress

Source: NCDOT Division 9, State Transportation Improvement Program 2007-2012.

BASIC ASSUMPTIONS

For this analysis, a single project configuration was studied, which assumed the toll bridge would open to traffic by January 1, 2013. Additional assumptions are as follows:

- There would be no discount of toll rates for electronic toll payment;
- The percentage of light and heavy trucks crossing the Yadkin River would remain constant at 4 and 22 percent, respectively, based on year 2007 counts performed at the bridge;
- Based on long-term historical data, inflation would be 3 percent per annum;
- An estimate was made of the value of time (VOT) using readily available income and other demographic data. The primary variables included average household income and work trip travel times. The passenger car value of time for the average driver was estimated at $0.224 cents per minute in 2013 dollars. The commercial vehicle VOT estimated at 2.5 times the passenger car value. Values of time were assumed to increase at an average of 3.43 per annum, which assumes a real per annum income growth of just under 0.5 percent;

- An estimate of the vehicle operating cost (VOC) was calculated based on selected out-of-pocket costs associated with vehicle operation including fuel, tires, oil and maintenance. Passenger car VOC was estimated to be $0.188 cents per mile in 2013. Given the higher operating costs of commercial vehicles, VOCs were estimated to be four times the passenger car value. Values of time were assumed to increase at an inflation rate of 3 percent per annum over the forecast period;

- Light and heavy truck toll rates would be 2 and 3 times the passenger car toll rates, respectively;

- Traffic and revenue would increase by 2 percent per annum from 2030 to 2040, and 1.5 percent per annum beyond 2040;

- The Yadkin River Bridge would be well-maintained, operated efficiently, effectively signed and promoted to encourage maximum use; and

- Motor fuel would remain in adequate supply and no national or regional emergency would arise that would abnormally restrict the use of motor vehicles.

Any significant departure from these basic assumptions could materially affect traffic and revenue potential on the proposed Yadkin River toll bridge.

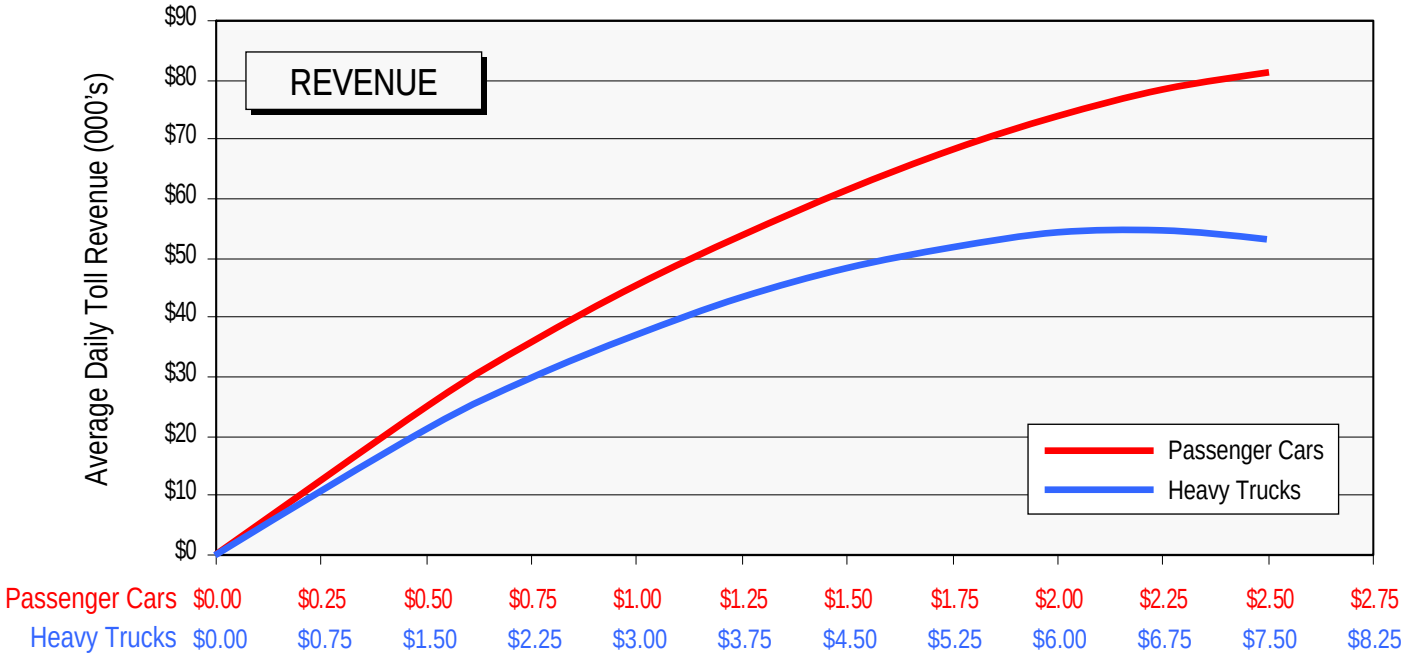
TOLL SENSITIVITY ANALYSIS

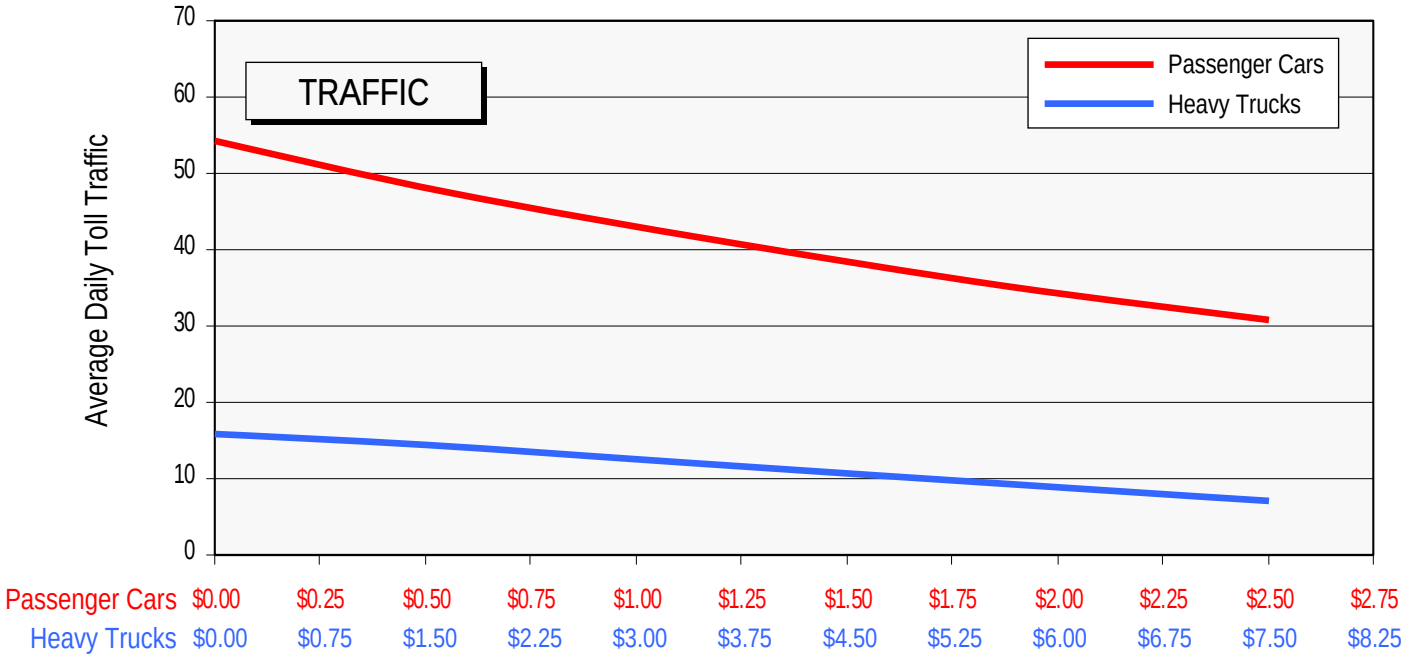
In order to determine the optimal toll rate for opening year 2013, a toll sensitivity analysis was performed. Traffic assignments were performed to assess the diversionary impacts of various passenger car and commercial vehicle toll rates. Passenger car toll rates from $0.50 to $2.50 were used in the analysis. The results of the toll sensitivity analysis is a toll sensitivity curve, which is shown in Figure 8.

An opening year passenger car-based toll rate of $2.00 would maximize the toll revenue. However, considering that the revenue maximizing rate would likely divert a significant traffic volume to US 29, slightly lower rates were chosen for further analysis. Toll rates of $0.50, $1.00 and $1.50 were selected as the opening year toll rates for the Low, Medium and High toll rate scenarios, respectively.

ESTIMATED YADKIN RIVER BRIDGE AADT

Based on the results of the toll sensitivity analysis, preliminary estimates of AADT for each of the toll scenarios are presented in Table 10. As shown, opening year 2013 estimated traffic demand at the Low, Medium and High toll rates is 62,700, 55,800 and 49,800 vehicles per day, respectively. These volumes represent traffic retention rates of 90, 80 and 72 percent of the 69,600 vpd toll-free demand. By year 2030, the estimated AADT for the three toll rate scenarios is 92,500 vpd (Low), 89,100 vpd (Medium) and 83,600 vpd (High). Based on a toll-free AADT





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ESTIMATED 2013 TOLL SENSITIVITY CURVES

FIGURE 8

estimate of 105,900 vpd, the percent of traffic retained at the three toll rate scenarios is estimated to be 87, 84 and 79 percent.

Table 10
Average Annual Daily Traffic
I-85 Yadkin River Bridge

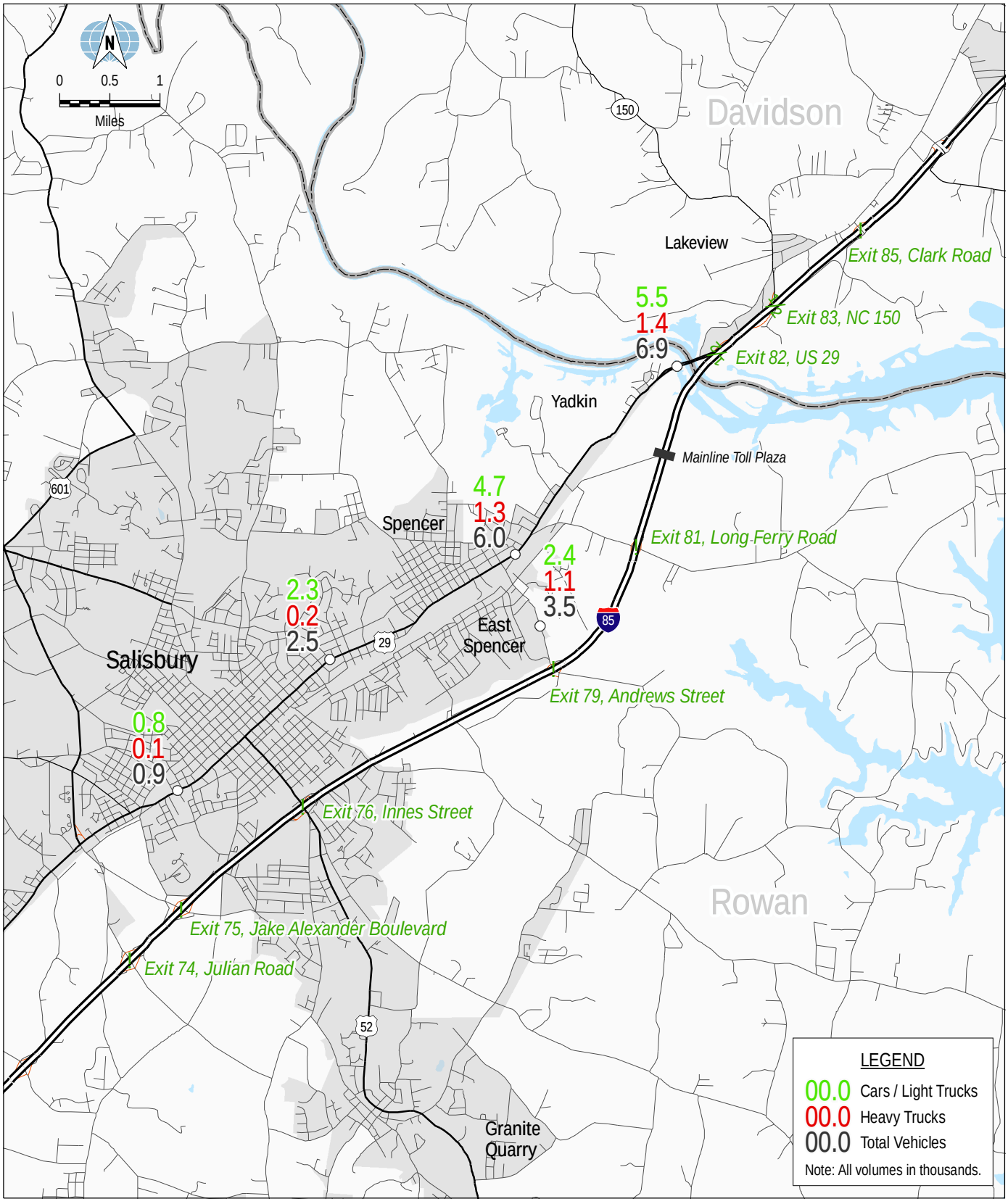
	Toll Rate Scenario								
	Low			Medium			High		
Year	Cars	Trucks	Total	Cars	Trucks	Total	Cars	Trucks	Total
2013	48,600	14,100	62,700	43,500	12,300	55,800	39,200	10,600	49,800
2020	56,800	16,400	73,200	53,300	14,800	68,100	49,100	12,900	62,000
2025	63,500	18,400	81,900	60,300	17,000	77,300	56,400	15,100	71,500
2030	71,700	20,800	92,500	69,500	19,600	89,100	65,700	17,900	83,600

ESTIMATED ALTERNATE ROUTE AADT IMPACTS

As a result of charging a toll to cross the Yadkin River on I-85, a portion of the traffic would likely divert to the US 29/70 river crossing to avoid the toll. While using the alternate free route could result in traveling additional distance at slower speeds, some drivers would be willing to incur these costs to avoid the toll charge. The traffic which would be expected to divert to US 29/70 is shown in Figures 9 through 11 for the Low, Medium and High toll rate scenarios, respectively. It should be noted that these diverted traffic estimates likely represent the maximum diverted volumes at the US 29/70 Yadkin River bridge. It is probable that some of the long-distance trips could choose to divert to routes other than US 29/70, such as I-77. This and other reasons for such sizeable diversions to US 29/70 would be addressed in future more detailed studies should this sketch-level study indicate that the project seems financially feasible.

It is important to note that while these vehicles would cross the Yadkin River via an alternate free route, they would gain access to the bridge from different points. A portion of traffic, primarily those with longer-distance movements would likely exit I-85 at Exits 79 or 81 and turn west on to US 29/70 before turning north to the bridge. For shorter-distance trips, it is likely that drivers will simply use US 29/70 for their entire trip.

The relatively high traffic diversions shown in Figures 9, 10, and 11 reflect the relative ease of bypassing the proposed I-85 toll bridge. Under current operating conditions, traffic using US 29 and Andrews Street to avoid the I-85 toll bridge would incur about one additional mile of driving distance with an additional travel time of about 3 minutes.



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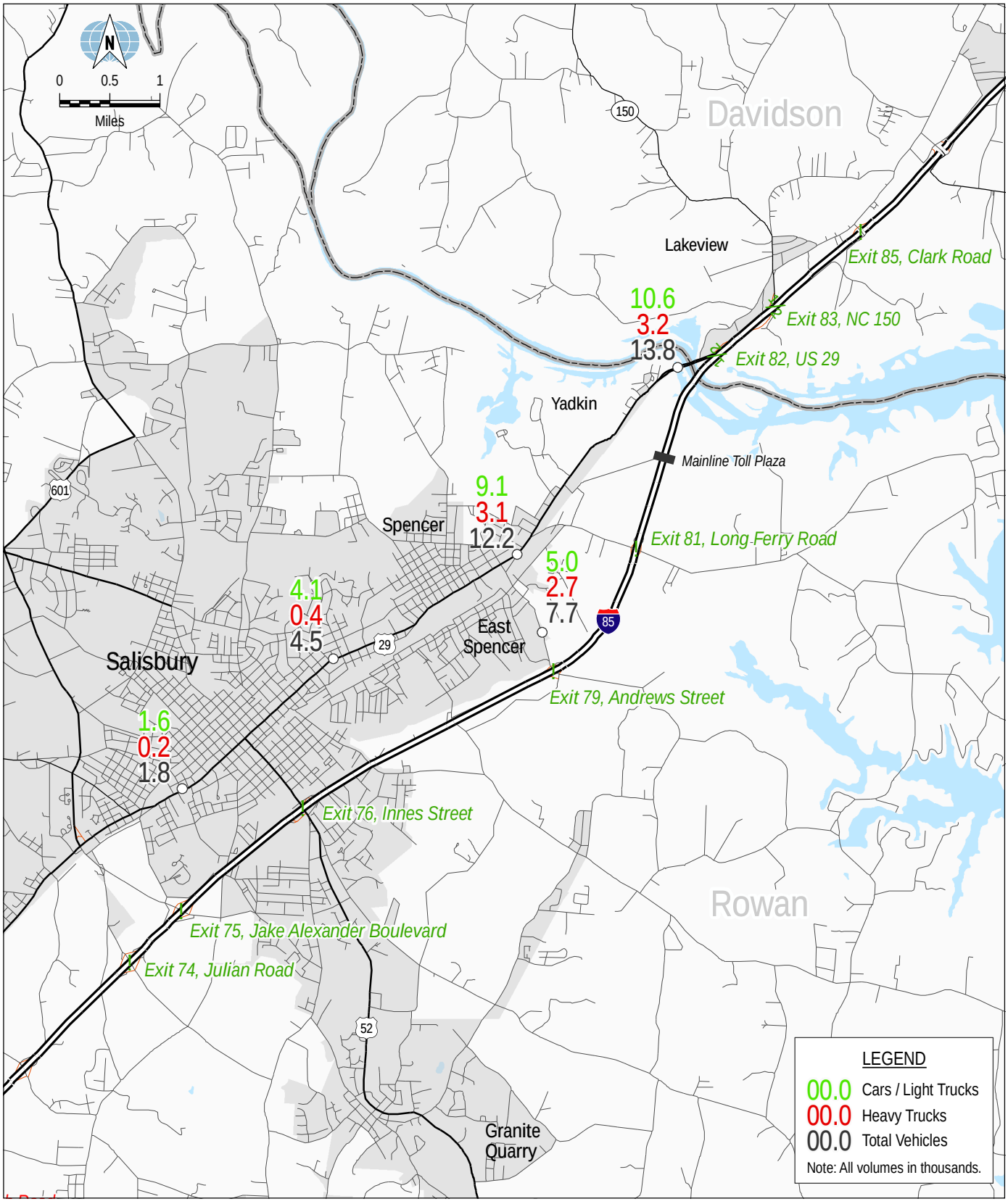
2013 ESTIMATED AVERAGE DAILY TRAFFIC IMPACTS ON US 29 - LOW TOLL RATE SCENARIO

FIGURE 9



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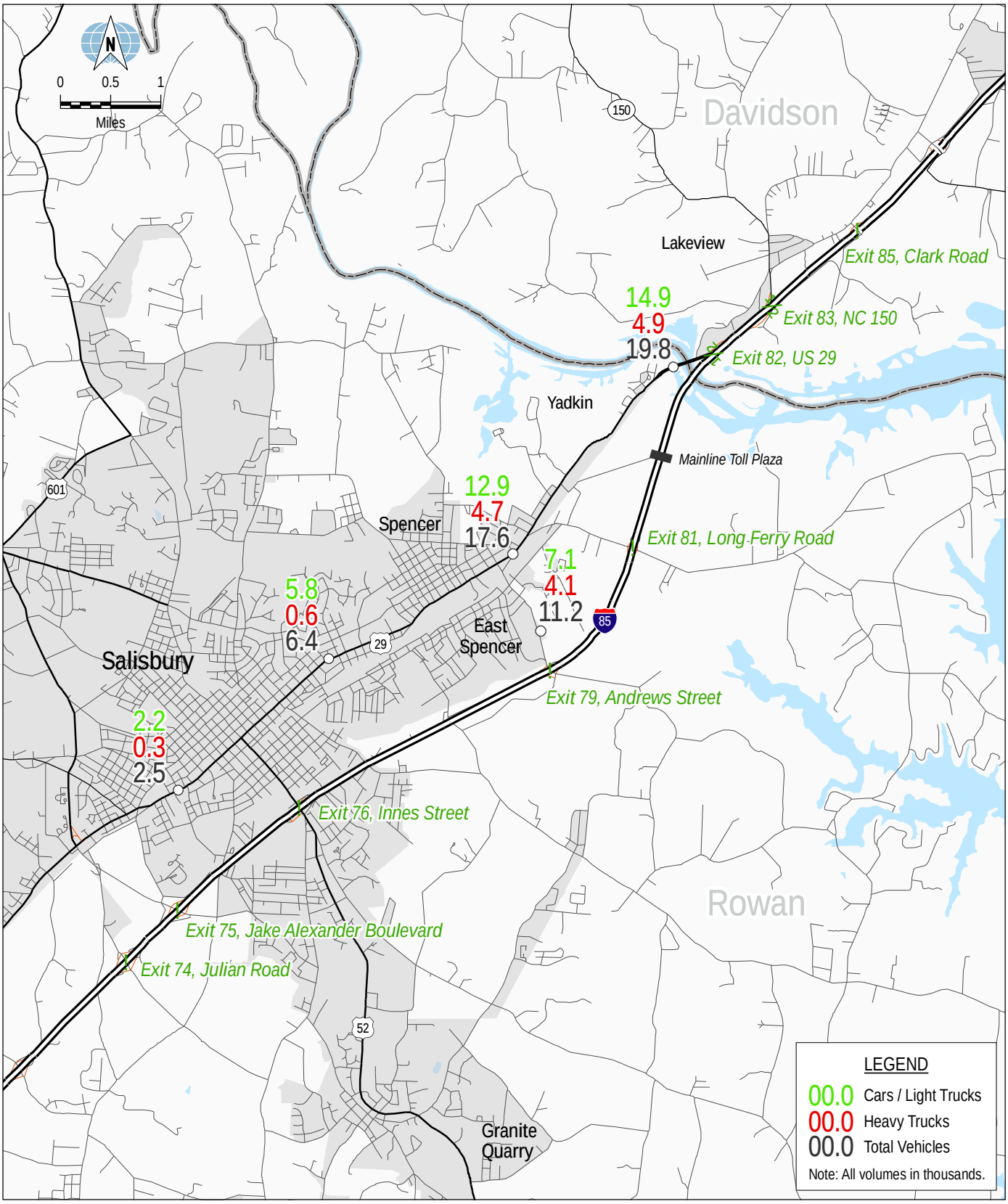
2013 ESTIMATED AVERAGE DAILY TRAFFIC IMPACTS ON US 29 - MEDIUM TOLL RATE SCENARIO

FIGURE 10



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2013 ESTIMATED AVERAGE DAILY TRAFFIC IMPACTS ON US 29 - HIGH TOLL RATE SCENARIO

FIGURE 11

As traffic diverts to the alternative free route, average travel speeds would decrease and the travel time would increase. This was assumed in the WSA sketch level modeling analysis of potential traffic impacts.

While a sizable proportion of the diverted traffic would use US 29 and Andrews Street to avoid the I-85 mainline toll plaza, a smaller portion of the traffic diversions would originate in the Spencer and Salisbury region, which in the absence of a toll likely would use local ramps at Innes Street, and Andrews Street. To avoid the toll, this traffic would be expected to use US 29 directly for the entire trip.

The traffic diversions reflect the relatively high proportion of heavy trucks. Truckers have a tendency to be more aware of alternative free routes. A portion of the trucking community, primarily independent operators, also tends to be more sensitive to toll charges, which, of course, would be higher for trucks than cars.

The diversions of heavy trucks to US 29 and Andrews Street, in particular, would significantly impact operating conditions on these roads. They would also create a significant left turn movement, in the southbound direction, between US 29 and Andrews Street, which would need to be accommodated.

In essence, the identification of optimum tolls for the proposed Yadkin River I-85 Bridge may be more a case of limiting traffic diversion than optimizing toll revenue. As shown subsequently, significant revenue could be generated at relatively low toll rates, which would reduce the traffic diversions from I-85 onto local routes.

ESTIMATED TRAFFIC AND REVENUE

Using the three tolling scenarios described above, traffic and revenue estimates were prepared for 2013, 2015, 2020, 2025, and 2030. Under the Low toll rate scenario, opening-year traffic on the I-85 Yadkin River bridge was forecast to be 62,700 vpd. The toll volume is forecast to increase to 92,500 vpd by 2030. Based on these traffic volumes, gross toll revenue is forecast to be $46,706 per day in 2013, increasing to $172,141 per day by 2030.

Opening-year tolled traffic is forecast at 55,800 vpd and 49,800 vpd for Medium and High toll rate scenarios, respectively. These traffic volumes result in daily toll revenues of $82,510 and $109,567. Because traffic volume inputs were average annual daily traffic volumes, a factor of 365 was applied to the daily traffic and revenue forecasts to produce annual traffic and revenue estimates. Assuming a full year of operation, opening year (2013) annual forecasted toll revenues totaled $17.0, $30.1 and $40.0 million for the Low, Medium, and High toll rate scenarios, respectively.

Preliminary estimates of annual toll revenue were also prepared for years 2015, 2020, 2025 and 2030. These estimates were based on the toll rates provided in Table 8. Intermediate years

between these control points were estimated through interpolation. Traffic and revenue was assumed to increase by 2.0 percent per annum between 2030 and 2040 and 1.5 percent per annum from 2040 to 2052.

Based on the assumptions listed above, the final annual traffic and revenue forecasts are presented in Table 11. As shown, the 2013 annual revenue estimates presented above are forecast to increase to $62.8, $84.2, and $111.9 million by year 2030 for the Low, Medium and High toll rate scenarios, respectively.

Toll Plaza Requirements

It is assumed that the toll plaza would be designed for high-speed, non-stop toll collection for the users equipped with electronic toll transponders. However, since there is a large volume of interstate traffic at this location, and a proportionally lower volume of every-day commuter traffic, it is likely that the proportion of vehicles using electronic toll collection would be relatively low, at least in the early years of operation. For purposes of this study, it was assumed that 40 percent of traffic would use electronic toll collection in the first year of operation, increasing to about 60 percent by the year 2030.

It was further assumed that cash toll collection lanes would be provided for vehicles not enrolled in an electronic toll program. These lanes are assumed to be adjacent to the main travel lanes in each direction, and only those vehicles without electronic toll collection would be required to stop.

Based on 2007 hourly traffic volumes and the anticipated mix of passenger cars and commercial vehicles, it is estimated that a minimum of four cash toll lanes in each travel direction would be required. It would be preferable to provide five cash toll lanes in each direction. This would be in addition to the minimum of 2 or 3 high-speed, express electronic tolled lanes.

Estimated Net Revenue

Estimates of net revenue were determined by subtracting preliminary estimates of operation and maintenance costs from the gross toll revenue forecasts. Preliminary estimates of operating and maintenance costs related to toll collection were developed for this analysis, including a fixed cost and a variable cost per transaction. The fixed cost was assumed to increase at a 3 percent per annum inflation rate while the variable cost increased in proportion with traffic growth. These O&M costs do not include costs for roadway operations and maintenance. The O&M costs were subtracted from gross toll revenues to produce the estimates of annual net toll revenue presented in Table 12.

Table 11
Annual Toll Transactions and Gross Toll Revenue
I-85 Yadkin River Bridge

	Toll Rate Scenario					
	Low		Medium		High	
Year	Transactions	Revenue	Transactions	Revenue	Transactions	Revenue
2013	22,885	$ 17,047	20,352	$ 30,117	18,181	$ 39,992
2014	23,572	17,554	21,198	31,385	19,006	41,780
2015	24,279	18,075	22,081	32,708	19,871	43,647
2016	24,970	18,594	22,750	33,713	20,612	45,309
2017	25,679	19,128	23,440	34,747	21,381	47,034
2018	26,408	19,678	24,150	35,814	22,179	48,825
2019	27,158	20,243	24,883	36,913	23,007	50,685
2020	26,725	29,815	24,861	45,820	22,603	65,768
2021	27,511	30,695	25,605	47,253	23,390	68,178
2022	28,320	31,600	26,373	48,732	24,205	70,679
2023	29,153	32,533	27,164	50,256	25,048	73,270
2024	30,011	33,492	27,979	51,830	25,921	75,959
2025	29,897	44,520	28,227	62,622	26,112	85,930
2026	30,803	45,870	29,163	64,733	27,058	89,104
2027	31,736	47,261	30,130	66,916	28,039	92,397
2028	32,697	48,695	31,130	69,173	29,055	95,812
2029	33,688	50,171	32,163	71,505	30,109	99,353
2030	33,763	62,831	32,539	84,233	30,496	111,859
2031	34,438	64,088	33,190	85,918	31,106	114,096
2032	35,127	65,369	33,854	87,636	31,728	116,378
2033	35,830	66,677	34,531	89,389	32,363	118,706
2034	36,546	68,010	35,221	91,177	33,010	121,080
2035	37,277	69,371	35,926	93,000	33,670	123,501
2036	38,023	70,758	36,644	94,860	34,343	125,971
2037	38,783	72,173	37,377	96,757	35,030	128,491
2038	39,559	73,617	38,125	98,692	35,731	131,061
2039	40,350	75,089	38,887	100,666	36,446	133,682
2040	41,157	76,591	39,665	102,680	37,174	136,355
2041	41,774	77,739	40,260	104,220	37,732	138,401
2042	42,401	78,906	40,864	105,783	38,298	140,477
2043	43,037	80,089	41,477	107,370	38,873	142,584
2044	43,682	81,291	42,099	108,980	39,456	144,723
2045	44,338	82,510	42,730	110,615	40,047	146,894
2046	45,003	83,748	43,371	112,274	40,648	149,097
2047	45,678	85,004	44,022	113,958	41,258	151,333
2048	46,363	86,279	44,682	115,668	41,877	153,603
2049	47,058	87,573	45,352	117,403	42,505	155,908
2050	47,764	88,887	46,033	119,164	43,142	158,246
2051	48,481	90,220	46,723	120,951	43,790	160,620
2052	49,208	91,573	47,424	122,766	44,446	163,029

Table 12
Net Toll Revenue
I-85 Yadkin River Bridge

	Toll Rate Scenario								
	Low			Medium			High		
Year	Gross Toll Revenue	Toll Collection O&M Expenses	Net Toll Revenue	Gross Toll Revenue	Toll Collection O&M Expenses	Net Toll Revenue	Gross Toll Revenue	Toll Collection O&M Expenses	Net Toll Revenue
2013	$ 17,047	$ 7,733	$ 9,314	$ 30,117	$ 7,631	$ 22,486	$ 39,992	$ 7,545	$ 32,447
2014	17,554	8,022	9,532	31,385	7,921	23,464	41,780	7,828	33,952
2015	18,075	8,325	9,750	32,708	8,226	24,482	43,647	8,127	35,520
2016	18,594	8,587	10,007	33,713	8,489	25,224	45,309	8,387	36,922
2017	19,128	8,857	10,271	34,747	8,760	25,987	47,034	8,655	38,379
2018	19,678	9,136	10,542	35,814	9,040	26,774	48,825	8,932	39,893
2019	20,243	9,424	10,819	36,913	9,329	27,584	50,685	9,219	41,466
2020	29,815	9,721	20,094	45,820	9,628	36,192	65,768	9,515	56,253
2021	30,695	10,029	20,666	47,253	9,936	37,317	68,178	9,822	58,356
2022	31,600	10,347	21,253	48,732	10,254	38,478	70,679	10,139	60,540
2023	32,533	10,675	21,858	50,256	10,582	39,674	73,270	10,467	62,803
2024	33,492	11,014	22,478	51,830	10,922	40,908	75,959	10,806	65,153
2025	44,520	11,364	33,156	62,622	11,272	51,350	85,930	11,156	74,774
2026	45,870	11,726	34,144	64,733	11,637	53,096	89,104	11,519	77,585
2027	47,261	12,099	35,162	66,916	12,013	54,903	92,397	11,894	80,503
2028	48,695	12,485	36,210	69,173	12,403	56,770	95,812	12,282	83,530
2029	50,171	12,883	37,288	71,505	12,805	58,700	99,353	12,683	86,670
2030	62,831	13,294	49,537	84,233	13,220	71,013	111,859	13,098	98,761
2031	64,088	13,693	50,395	85,918	13,617	72,301	114,096	13,491	100,605
2032	65,369	14,103	51,266	87,636	14,026	73,610	116,378	13,895	102,483
2033	66,677	14,527	52,150	89,389	14,446	74,942	118,706	14,312	104,393
2034	68,010	14,962	53,048	91,177	14,880	76,297	121,080	14,742	106,338
2035	69,371	15,411	53,959	93,000	15,326	77,674	123,501	15,184	108,317
2036	70,758	15,874	54,884	94,860	15,786	79,074	125,971	15,639	110,332
2037	72,173	16,350	55,823	96,757	16,259	80,498	128,491	16,109	112,382
2038	73,617	16,840	56,776	98,692	16,747	81,945	131,061	16,592	114,469
2039	75,089	17,345	57,743	100,666	17,250	83,417	133,682	17,090	116,592
2040	76,591	17,866	58,725	102,680	17,767	84,912	136,355	17,602	118,753
2041	77,739	18,402	59,338	104,220	18,300	85,920	138,401	18,130	120,270
2042	78,906	18,954	59,952	105,783	18,849	86,934	140,477	18,674	121,803
2043	80,089	19,522	60,567	107,370	19,415	87,955	142,584	19,235	123,349
2044	81,291	20,108	61,182	108,980	19,997	88,983	144,723	19,812	124,911
2045	82,510	20,711	61,799	110,615	20,597	90,018	146,894	20,406	126,488
2046	83,748	21,333	62,415	112,274	21,215	91,059	149,097	21,018	128,079
2047	85,004	21,973	63,031	113,958	21,851	92,107	151,333	21,649	129,685
2048	86,279	22,632	63,647	115,668	22,507	93,161	153,603	22,298	131,305
2049	87,573	23,311	64,262	117,403	23,182	94,221	155,908	22,967	132,940
2050	88,887	24,010	64,876	119,164	23,878	95,286	158,246	23,656	134,590
2051	90,220	24,730	65,489	120,951	24,594	96,357	160,620	24,366	136,254
2052	91,573	25,472	66,101	122,766	25,332	97,434	163,029	25,097	137,932

DISCLAIMER

Current professional practices and procedures were used in the development of these sketch-level traffic and revenue study findings. However, there is considerable uncertainty inherent in future traffic and revenue forecasts for any toll facility. There may sometimes be differences between forecasted and actual results caused by events and circumstances beyond the control of the forecasters. These differences could be material. Also, it should be recognized that traffic and revenue forecasts in this document are intended to reflect the overall estimated long-term trend. Actual experience in any given year may vary due to economic conditions and other factors.

It is also emphasized that this study is considered sketch level, and findings are subject to considerable refinement. It was not performed at a sufficient level of detail to be used in project financing and is not intended for that purpose. Considerably more detailed studies would be required prior to project financing.

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We sincerely appreciate the opportunity to assist the North Carolina Turnpike Authority in assessing the potential toll traffic and revenue for the proposed replacement Yadkin River Bridge on I-85. We gratefully acknowledge assistance provided to us during this study. We look forward to your comments and guidance on any additional services we can provide in assessing the revenue potential for the bridge.

Respectfully submitted,

WILBUR SMITH ASSOCIATES

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Project Manager