

**US 64 - NC 49 Corridor Study**  
(Raleigh to Statesville and Raleigh to Charlotte)

**POSTCARD SURVEY TECHNICAL REPORT**

**Prepared for**



**North Carolina Department of Transportation**  
**Transportation Planning Branch**

**Prepared by**



**May 2004**

**US 64 - NC 49 Corridor Study**  
(Raleigh to Statesville and Raleigh to Charlotte)

**POSTCARD SURVEY TECHNICAL REPORT**

**TABLE OF CONTENTS**

<b>LIST OF FIGURES .....</b>	<b>iii</b>
<b>LIST OF TABLES .....</b>	<b>iii</b>
<b>1 PREFACE.....</b>	<b>1</b>
<b>2 SURVEY DESIGN APPROACH .....</b>	<b>1</b>
2.1 METHODOLOGY .....	1
2.2 SURVEY OPERATION .....	1
<b>3 SURVEY RESULTS.....</b>	<b>3</b>
3.1 SURVEYS COLLECTED.....	3
3.2 SURVEY QUESTION RESULTS .....	3
3.2.1 Vehicle Occupancy .....	3
3.2.2 Trip Purpose.....	5
3.2.3 Trip Frequency.....	10
3.2.4 Other Routes .....	10

**APPENDIX (under separate cover)**

Postcard Survey Database

**US 64 - NC 49 Corridor Study**  
(Raleigh to Statesville and Raleigh to Charlotte)

**POSTCARD SURVEY TECHNICAL REPORT**

**TABLE OF CONTENTS**

**List of Figures**

Figure 2-1. Postcard Survey Location Map .....	2
Figure 2-2. Postcard Survey Sample.....	4
Figure 3-1. Vehicle Occupancy Distribution.....	5
Figure 3-2. Distribution of Trips by Purpose.....	5
Figure 3-3. Trip Origin and Destination Distribution (Eastbound) .....	7
Figure 3-4. Trip Origin-and Destination Distribution (Westbound) .....	8
Figure 3-5. Major Trip Origination-Destination Pairs.....	9
Figure 3-6. Trip Frequency .....	10

**List of Tables**

Table 3-1. Top Five Home-Based Work Origin-Destination Pairs .....	6
Table 3-2. Top Five Home-Based Non-Work Origin-Destination Pairs .....	6
Table 3-3. Top Five Non-Home-Based Origin-Destination Pairs .....	6

# 1 Preface

The North Carolina Department of Transportation (NCDOT) is conducting a comprehensive study of the US 64 and NC 49 corridors from Raleigh to Statesville and Raleigh to Charlotte. Through the NCDOT's Strategic Highway Corridors planning initiative, herein referred to as the Strategic Highway Corridors Concept, US 64 and NC 49 have been identified as corridors of statewide significance, vital to the State's interest in preserving mobility and connectivity to travel destinations within and just outside of North Carolina. The purpose of the corridor study is to develop an improvement master plan that will enhance the long-term mobility of passengers and freight in the central portion of the State, foster economic growth and development, relieve congestion on I-40 and I-85, promote environmental stewardship, and optimize transportation funding. The master plan will examine the interrelationship between land use and transportation, provide guidance for multi-modal and inter-modal solutions, address financial feasibility, and be conducted with consideration of the National Environmental Policy Act (NEPA) and North Carolina's NEPA/Section 404 merger process.

A comprehensive assessment of the region's transportation system requires inventorying existing conditions, such as travel supply and demand, and using this data to analyze the current system performance and to identify deficiencies. The US 64 – NC 49 Corridor Study will use data from available traffic counts, travel time surveys, origin-destination postcard surveys, roadside origin-destination interview surveys, and video license plate matching surveys in developing a travel demand model for the study area.

The purpose of this report is to document the postcard survey design and summarize the survey results.

## 2 Survey Design Approach

### 2.1 Methodology

The postcard survey was designed to capture the origin, destination, purpose, and frequency of each surveyed motorist's trip as well as the number of people in the vehicle and other routes typically used to make a similar trip.

### 2.2 Survey Operation

The postcard survey was completed using information collected from the Video Origin-Destination Survey. The video study captured point-to-point movements of vehicles between five video stations on Interstate 40 and Interstate 85. These movements were obtained by matching the license plates of vehicles passing the survey stations.

Of the five video station locations, Station #2, located on I-40/I-85 east of Greensboro in Guilford County (see Figure 2-1), was selected for the survey due to its central location between Charlotte and Raleigh. Video at Station #2 was taken on Wednesday, October 15,



N.T.S.

Postcard Survey Site  
@ Mount Hope  
Church Road



**LEGEND**

-  Regional Study Area Boundary
-  Study Corridor
-  Video Survey Location



US 64 - NC 49  
Corridor Study

Postcard Survey Location Map

Figure  
2-1

2003 from 7:00 am to 7:00 pm. The North Carolina Department of Motor Vehicles (NCDMV) used the recorded plate numbers to provide a list of vehicle owner addresses.

Postcard surveys were sent out to 32,953 North Carolina motorists who were recorded driving past Video Station #2. The video imaging identified the traffic composition as 91% passenger cars, 3% single-unit trucks, 5% combination trucks and 1% other/unknown.

A copy of a sample postcard survey form is shown on Figure 2-2. Postcard recipients were asked to complete the survey and return the self-addressed, postage-paid reply card. All survey forms received by December 26, 2003 were entered into the postcard survey database.

### **3 Survey Results**

The following subsections provide a summary of the number of surveys collected and the survey question results. The postcard survey database is provided in an appendix under separate cover.

#### **3.1 Surveys Collected**

A total of 3,384 postcard surveys were returned, which equates to an approximate 10% response rate. Of all the surveys returned, 93% were from people driving passenger cars, 3% were from people driving single-unit trucks, 4% were from people driving combination trucks and 1% were from people driving unknown vehicle types.

A total of 2,934 surveys provided a complete and usable set of origin and destination location data. The remaining postcards either had sections left blank or had unusable origin and destination data.

#### **3.2 Survey Question Results**

##### **3.2.1 Vehicle Occupancy**

Average vehicle occupancy recorded by the postcard survey site was 1.4 persons per vehicle. Figure 3-1 shows the vehicle occupancy distribution from the survey results.

PRESORTED  
STANDARD  
U. S. POSTAGE  
PAID  
CHARLOTTE, NC  
PERMIT NO. 3307

North Carolina Department of Transportation  
Statewide Planning Branch  
1554 Mail Service Center  
Raleigh, NC 27699

PL-1 T-16 P-3 \*\*\*\*\*AUTO\*\*5-DIGIT 27265  
17379  
WRIGHT RONALD  
4003 TESA CT  
HIGH POINT NC 27265-9526



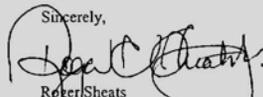
Dear Vehicle Owner,

The North Carolina Department of Transportation (NCDOT) is engaged in a study of future transportation needs through the central portion of the state between Charlotte and Raleigh and Statesville. You have received this survey form because of a trip taken along I-40/I-85 on October 15, 2003 in the Greensboro area. We need your help to plan for future transportation improvements effectively by providing information about the trip you were making.

Your answers to the questions on this form will be completely confidential. They will be grouped with other survey responses for this location and reported only as a percentage of the total collected.

Please take a few minutes to answer the questions, refold the form so that the return address is shown on the outside, seal it closed with tape, and mail it as soon as possible. The postage has been prepaid.

Your prompt completion and return of this survey form is greatly appreciated. This information will help the NCDOT do their best to improve the transportation system of the region.

Sincerely,  
  
Roger Sheats  
Deputy Secretary for Environment, Planning, and Local Governmental Affairs

Dear Motorist:

The North Carolina Department of Transportation (NCDOT) is collecting information on travel patterns through the central portions of North Carolina between Charlotte and Raleigh and between Statesville and Raleigh. This information is critical to the development of future improvements to the transportation system. Your cooperation will help the NCDOT serve your travel needs better. Please take a few moments to complete this postage-paid form and mail it back today, even if you have received more than one card. Please answer the following questions about the specific trip you were making on **I-40/I-85 east of Greensboro on Wednesday, October 15, 2003.**

- A. How many persons, including you, were in the vehicle? (Please circle only one response)  
1      2      3      4      5      6 or More
- B. What was the primary purpose of this trip? (Please circle only one response)  
1-Home to work      2-Work to Home      3-Business-related  
4-School      5-Shopping      6-Other
- C. How often do you make this one-way trip? (Please circle only one response)  
1-More than 5 times a week      2-5 times a week      3-2-4 times a week  
4-2-4 times a month      5-Once a month or less
- D. What other route(s) besides I-40 and I-85 do you typically use to make this trip?  
I 77 - I 40
- E. Where did you begin your trip? Please try to be as specific as possible.

Street Address / Place Name  
Nearest Cross Street  
City, Village, Town  
State  
Zip Code

Street Address / Place Name  
Nearest Cross Street  
City, Village, Town  
State  
Zip Code

After completing this survey form, please fold it so that the return address is on the outside, seal with tape, and mail it as soon as possible. Postage has been prepaid. Thank you for your help. Information or questions: (919) 715-5482 ext. 380

NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES



**BUSINESS REPLY MAIL**  
FIRST-CLASS MAIL PERMIT NO 287 CHARLOTTE NC  
POSTAGE WILL BE PAID BY ADDRESSEE

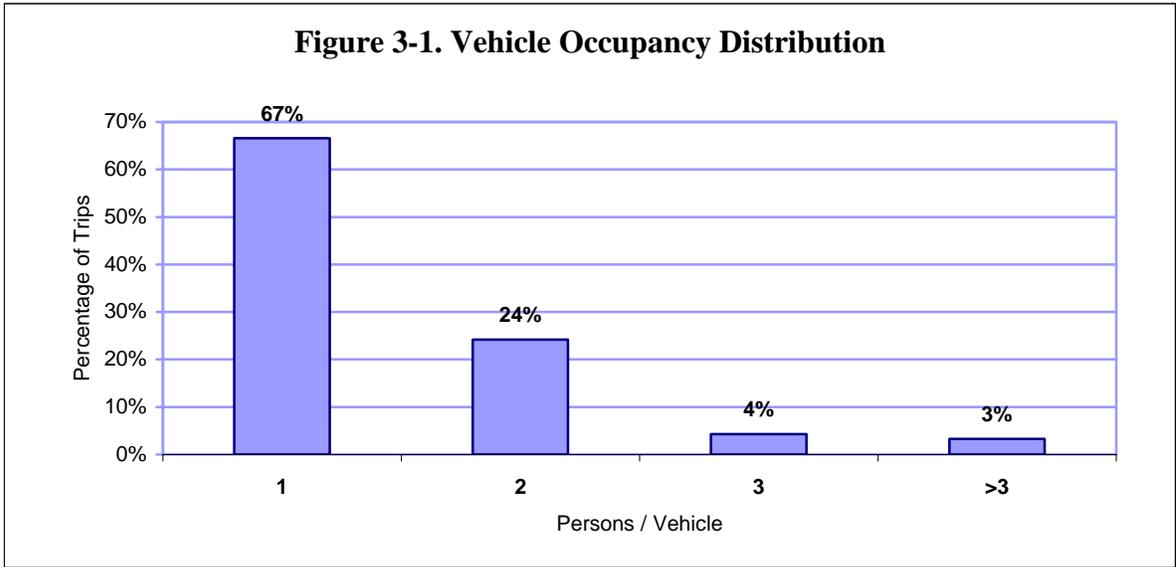
KUBILINS TRANSPORTATION GROUP INC  
800 W HILL ST STE 202  
CHARLOTTE NC 28254-3800



US 64 - NC 49  
Corridor Study

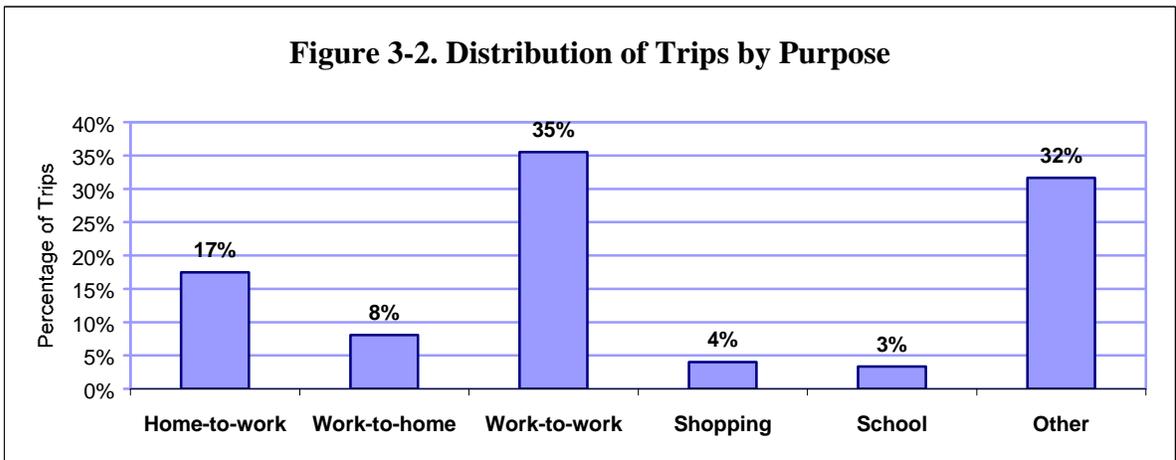
Postcard Survey Sample

Figure  
2-2



### 3.2.2 Trip Purpose

Figure 3-2 illustrates the trip purpose classification results for the postcard survey. From the results below, the data shows that the most popular trip purposes were “work-to-work” and “other,” with approximately 35% and 32% respectively. “Other” is best described as “recreational” and “personal” trips that are not shopping or school related.



For this study, three major origination-destination pattern categories were identified: home-based-work, home-based-non-work, and non-home-based. The top five origin-destination pairs by category are provided in Table 3-1 through Table 3-3. Most trips, regardless of category, were made between Alamance County and Guilford County.

**Table 3-1. Top Five Home-Based Work Origin-Destination Pairs**

<b>Origin County</b>	<b>Destination County</b>	<b>Number of Trips</b>	<b>Percentage of Trips</b>
Alamance NC	Guilford NC	178	5.3%
Guilford NC	Alamance NC	157	4.6%
Guilford NC	Guilford NC	138	4.1%
Guilford NC	Orange NC	28	0.8%
Orange NC	Guilford NC	26	0.8%

**Table 3-2. Top Five Home-Based Non-Work Origin-Destination Pairs**

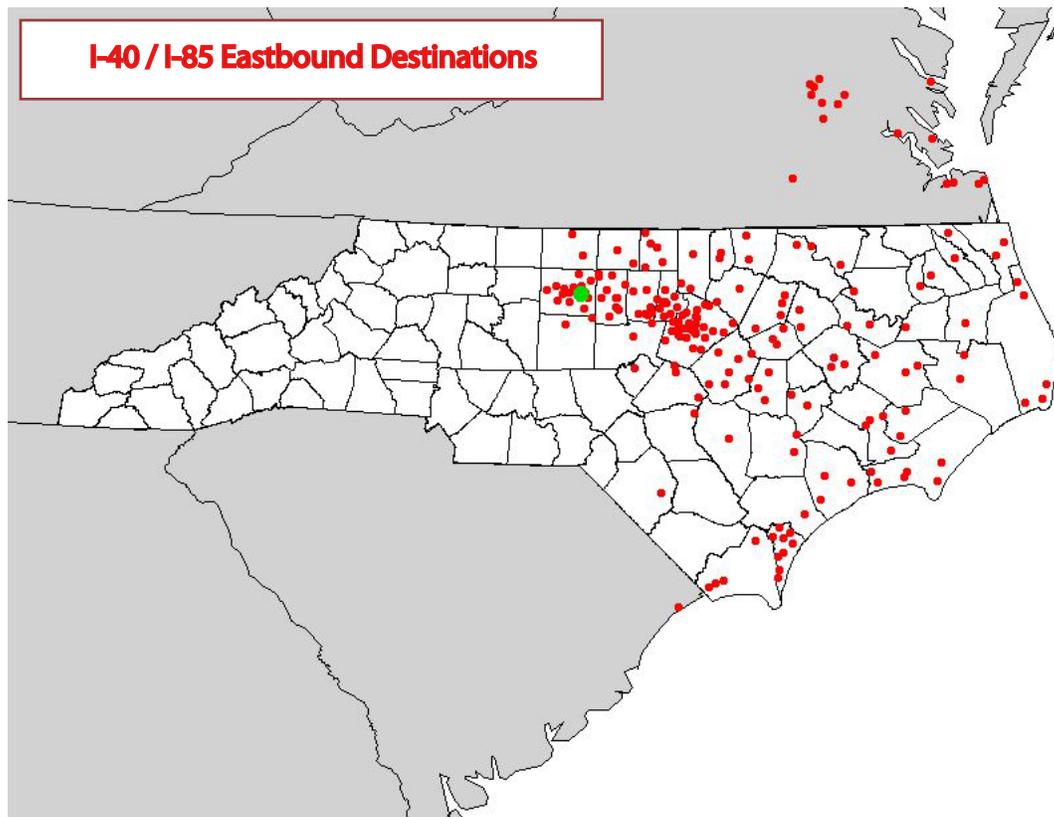
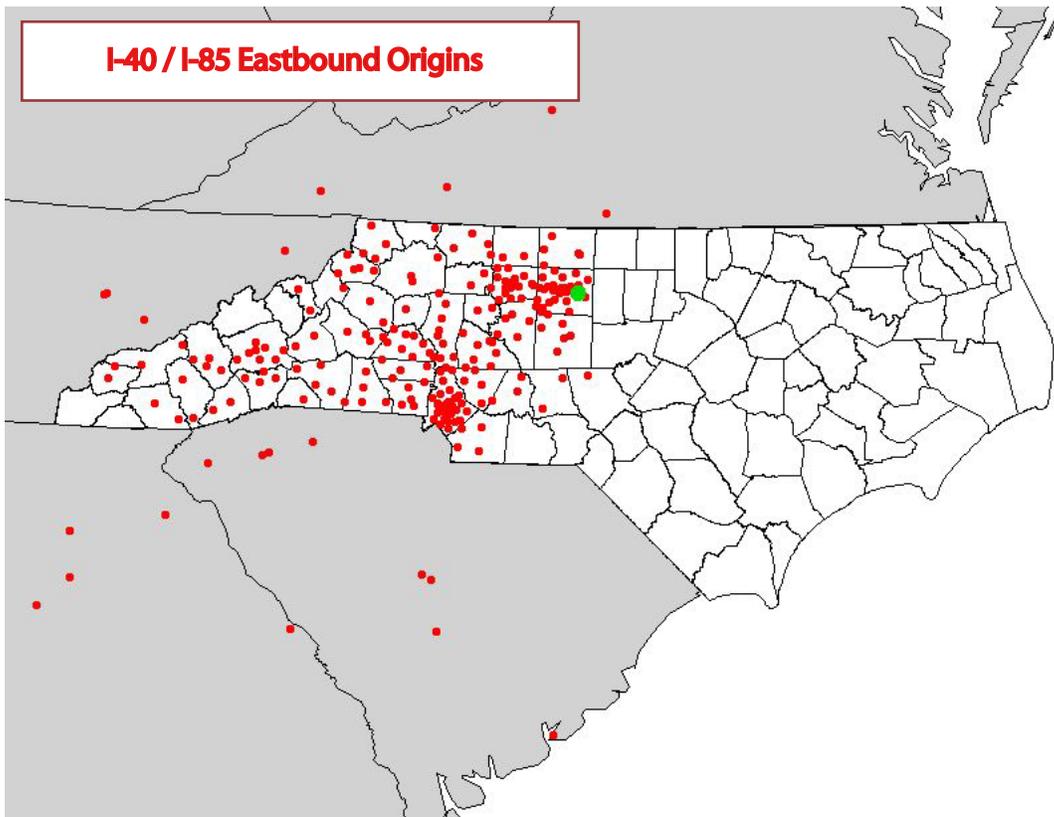
<b>Origin County</b>	<b>Destination County</b>	<b>Number of Trips</b>	<b>Percentage of Trips</b>
Alamance NC	Guilford NC	49	1.4%
Guilford NC	Guilford NC	20	0.6%
Orange NC	Guilford NC	19	0.6%
Guilford NC	Alamance NC	18	0.5%
Wake NC	Guilford NC	12	0.4%

**Table 3-3. Top Five Non-Home-Based Origin-Destination Pairs**

<b>Origin County</b>	<b>Destination County</b>	<b>Number of Trips</b>	<b>Percentage of Trips</b>
Alamance NC	Guilford NC	106	3.1%
Guilford NC	Alamance NC	91	2.7%
Guilford NC	Wake NC	81	2.4%
Wake NC	Guilford NC	72	2.1%
Guilford NC	Guilford NC	65	1.9%

Graphical representations of origin and destination locations for all trip categories at Video Station #2 for each direction of travel are shown in Figures 3-3 and 3-4.

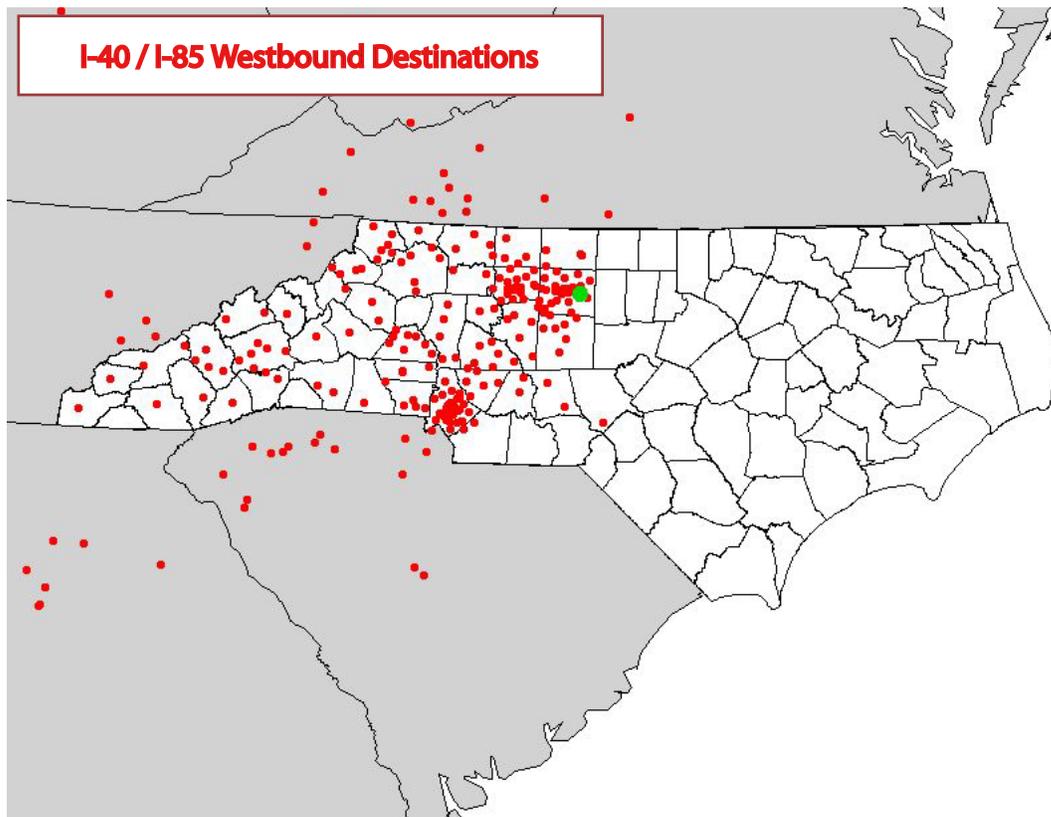
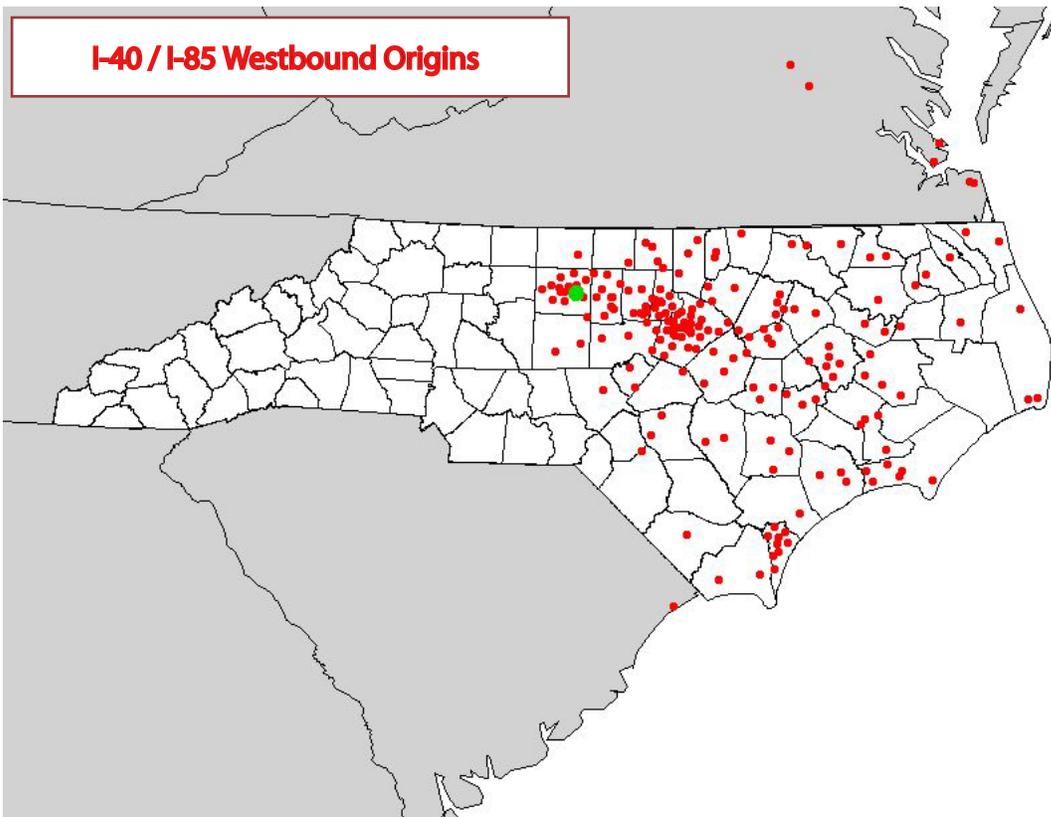
Figure 3-5 illustrates major origination-destination pairs for all trip categories. Thicker lines connecting the origination and destination counties indicate that that trip pattern was identified as occurring with a high frequency. It is important to note that for this graphic the trip begin and end points were identified by counties. The trip connectors begin and end at county centroid locations, not specific zip codes or addresses.



US 64 - NC 49  
Corridor Study

Trip Origin and Destination Distribution (Eastbound)

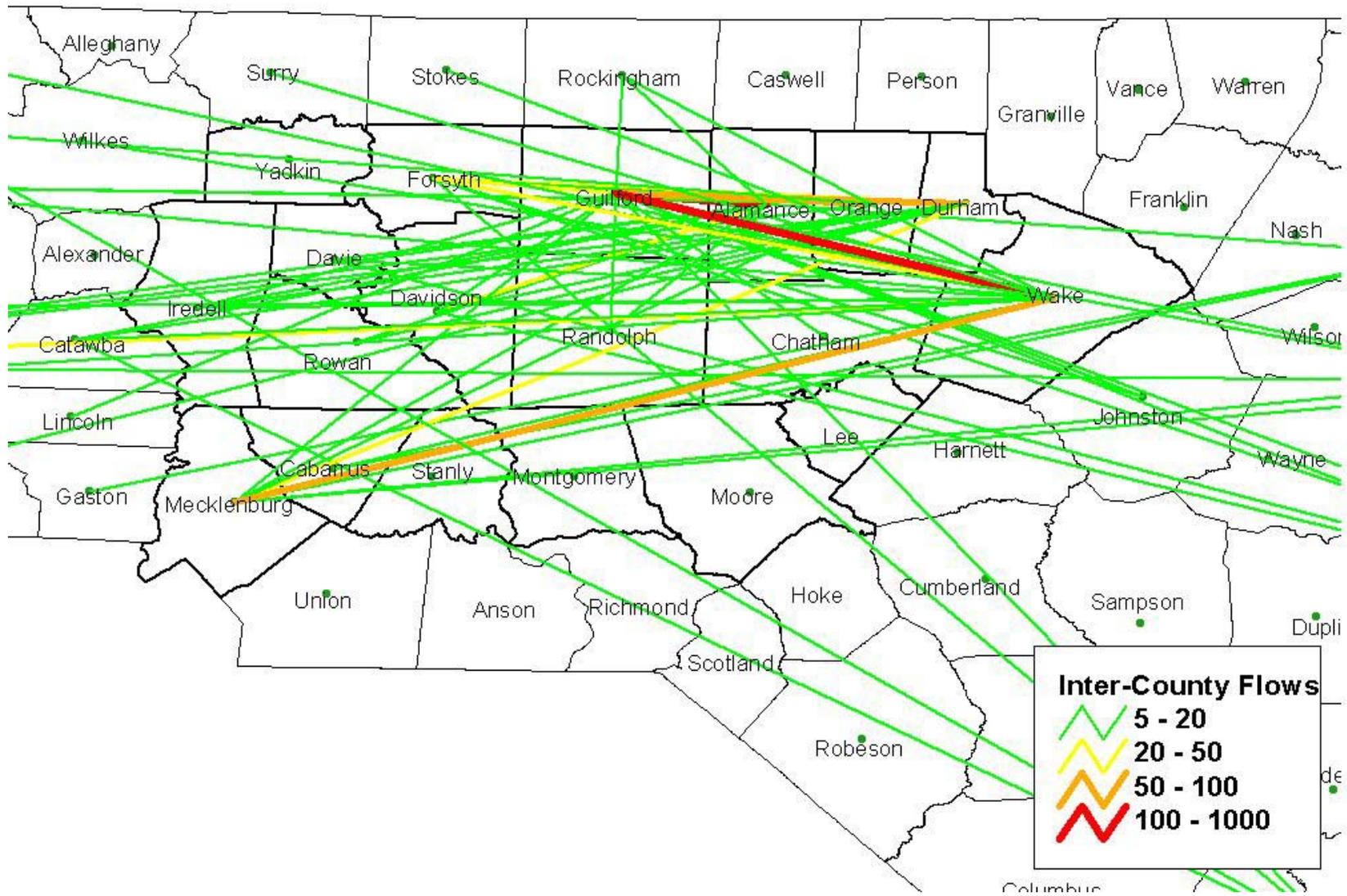
Figure  
3-3



US 64 - NC 49  
Corridor Study

Trip Origin and Destination Distribution (Westbound)

Figure  
3-4



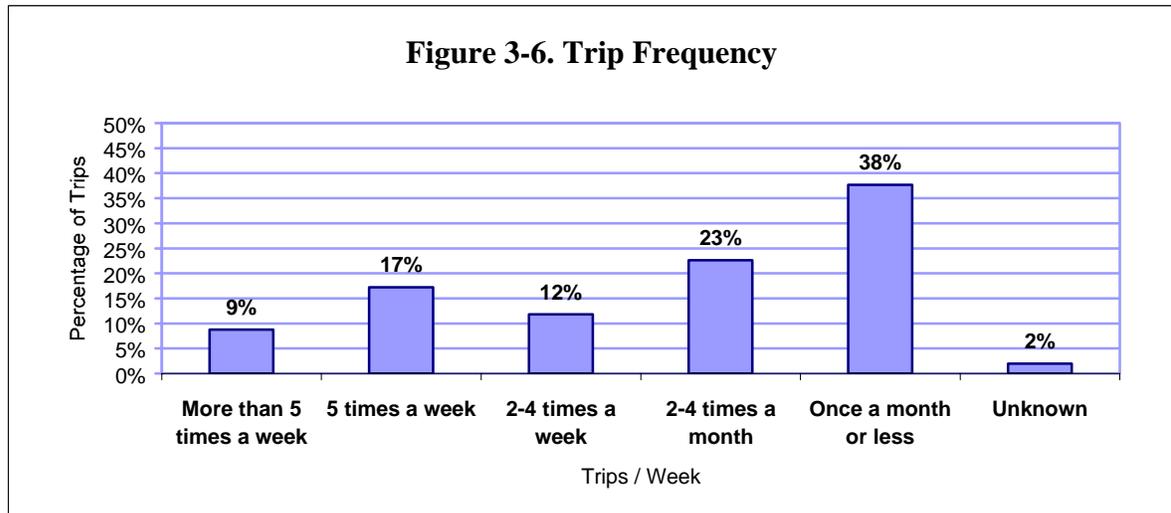
US 64 - NC 49  
Corridor Study

Major Trip Origination-Destination Pairs

Figure  
3-5

### 3.2.3 Trip Frequency

Figure 3-6 illustrated the trip frequency results for the postcard survey site. Approximately 17% of the surveyed drivers made the trip 5 times a week, with the majority of the trips occurring between Alamance and Guilford counties.



### 3.2.4 Other Routes

Other routes utilized by those responding to the postcard survey for similar trip purposes included US 64, US 70, US 421 and US 49.