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

ROADSIDE ORIGIN-DESTINATION INTERVIEW
TECHNICAL REPORT

Prepared for
North Carolina Department of Transportation
Transportation Planning Branch

Prepared by
TEAM PBSI

May 2004
US 64 - NC 49 Corridor Study  
(Raleigh to Statesville and Raleigh to Charlotte)  
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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 roadside interview survey design and summarize the survey results.

2 Survey Design Approach

2.1 Methodology

The roadside survey was designed to capture the origin, destination, purpose, and frequency of each interviewed motorist’s trip as well as the number of people in the vehicle and other routes typically used to make a similar trip. The North Carolina Department of Transportation conducted vehicle classification counts at each survey location in order to determine the sample size of the survey and to allow for expansion of the data. An objective of this study was to interview approximately 10% of the daily traffic at each survey location.

2.2 Survey Locations

Three locations were selected for the roadside interviews: two on US 64 and one on NC 49. A map of these locations is shown in Figure 2-1. The general location of each site was selected based on where travel patterns within the corridor could best be captured.
US 64 - NC 49 Corridor Study

Survey Locations Map

Figure 2-1

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

US 64 (Davidson)
East of New Bowers Road

US 64 (Chatham)
East of Harold Hart Road

NC 49 (Stanly)
West of Yadkin River Crossing
Specific locations were selected based on field site inspections and discussions with NCDOT and the State Highway Patrol to determine where the interviewers would be safest.

All property owners immediately adjacent to the survey sites were informed of the US 64 - NC49 Corridor Study and the date the roadside survey would be conducted.

2.3 Traffic Control

Traffic control plans were developed in coordination with the NCDOT and the State Highway Patrol. A State Trooper was present at all times and appropriate traffic control was in place in order to safely survey motorists while minimizing disruption to the remaining traffic. Depending on the attributes of each site, the proposed method of traffic control varied. As shown in Figures 2-2 and 2-4, the Davidson (US 64) and Stanly County (NC 49) sites did not require a lane closure. A flagger would wave vehicles to the survey area. Since the Chatham County (US 64) site, as shown in Figure 2-3, was located on a four-lane divided section, traffic control was used to merge all traffic into one lane prior to the interview location. Once traffic was channelized to one lane, a flagger was able to safely wave vehicles to the survey location.

2.4 Proposed Time of Operation

The surveys were scheduled to be conducted on three consecutive weekdays from 30 minutes after sunrise until 30 minutes before sundown, as shown in Table 2-1.

Table 2-1. Proposed Timetable

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday, October 14</td>
<td>US 64 (Chatham Co.)</td>
<td>8:00am – 6:30pm</td>
</tr>
<tr>
<td>Wednesday, October 15</td>
<td>US 64 (Davidson Co.)</td>
<td>8:00am – 6:30pm</td>
</tr>
<tr>
<td>Thursday, October 16</td>
<td>NC 49 (Stanly Co.)</td>
<td>8:00am – 6:30pm</td>
</tr>
</tbody>
</table>
US 64 - NC 49
Corridor Study

US 64 (Davidson Co.) Traffic Control Plan

Figure 2-2
HAROLD HART ROAD
AHEAD
CLOSED
LEFT LANE
PREPARE
TO
STOP
STOP
AHEAD
STOP
FLASHING ARROW PANEL
TO SILER CITY
LEFT
LANE
CLOSED
CLOSED
LEFT LANE
1/2 MILE
INTERVIEWERS
N.T.S.
FLAGGER
MESSAGE
NO. 2
MESSAGE
NO. 1
SURVEY
TRAFFIC
STOP
BE
PREPARED
TO
STOP
1 MILE AHEAD
CHANGEABLE MESSAGE SIGN
Figure 2-3
2.5 Survey Operation

The interviewers were stationed in the median and approached the vehicle after it came to a complete stop. When all interviewers were occupied, the remaining traffic was allowed to pass through. Once stopped, each motorist was informed that the survey was being administered on behalf of the North Carolina Department of Transportation and would be brief. The data collector then asked questions to complete the Motorist Survey chart, shown in Figure 2-5. Very few motorists gave the exact street address for their origin or destination, but most gave a city or zip code for the respective location. Those who refused to answer the survey were allowed to pass.

2.6 Survey Instruments

Each interviewer was equipped with a clipboard, 2 pencils, copies of the survey, a copy of the official NCDOT letter explaining the purpose of the survey, and a list of emergency contacts.

2.7 Staffing

Four data collectors were present for each direction of travel during peak hours and at least three were present during off-peak hours.
<table>
<thead>
<tr>
<th># in Vehicle</th>
<th>Purpose of trip</th>
<th>Place</th>
<th>Street Name</th>
<th>City</th>
<th>Zip Code</th>
<th>Place</th>
<th>Street Name</th>
<th>City</th>
<th>Zip Code</th>
<th>Frequency</th>
<th>Other Route(s) Typically Used</th>
</tr>
</thead>
</table>

**Purpose Codes:** HW - Home to Work; WH - Work to Home; S - School; Sh - Shopping; R - Social/Recreational; O - Other

**Place Codes:** H - Home; W - Work; S - School; GS - Grocery Store; Sh - Shopping Center; G - Gas Station; C - Church; R - Restaurant; P - Park; O - Other
3 Survey Results

The following subsections provide a summary of actual survey operations and conditions, traffic data, number of surveys collected, and survey question results of each roadside survey location. The “raw” motorist survey forms are provided in an appendix under separate cover.

3.1 US 64 (Davidson County)

3.1.1 Time of Operation

The date and time of the survey conducted on US 64 in Davidson County was Wednesday, October 15, 2003 from 8:00am until 5:35pm. An hour lunch break was taken between 1:00pm and 2:00pm and no data was collected during this time. The surveys were terminated earlier than the planned time of 6:30pm due to the safety risk of the sun being in the motorists’ eyes and shadows covering the site.

3.1.2 Field Conditions

The surveys were conducted on a clear, sunny day. Figure 3-1 provides a photo of the survey site.

Figure 3-1. US 64 (Davidson Co.) Survey Site

3.1.3 Operational Issues

No operational issues or major traffic disruptions occurred during the survey period.
3.1.4 Traffic Count and Classification

The NCDOT conducted a vehicle classification count for a 24-hour period on the same day as the interviews. The count was taken on US 64 east of Smith Farm Road (SR 2015). Figure 3-2 illustrates the 24-hour directional traffic flow by hour. The count categorized all traffic based on Federal Highway Administration (FHWA) vehicle classifications. (see Table 3-1) For the purpose of this document, three broad categories were identified as combination unit trucks, single unit trucks, and passenger vehicles. Passenger vehicles were identified as any non-commercial vehicle with less than 6 tires or a car or pickup with a trailer, which corresponds to FHWA vehicle classifications 1, 2, 3, and 4. Single unit trucks were identified as a commercial vehicle without a trailer that has 6 or more tires or busses, which corresponds to FHWA vehicle classifications 5, 6, and 7. Combination vehicles were identified as multi-unit commercial vehicles, which corresponds to FHWA vehicle classifications 8, 9, 10, 11, 12, and 13.

The traffic count registered 10,219 vehicles traveling on this segment during a 24-hour period and approximately 5,660 during the time the survey was operational. The classification count recorded 81% passenger cars, 4% single unit trucks, and 15% combination trucks over the 24-hour period.

3.1.5 Surveys Collected

The total number of surveys completed for this site was 1,512. Based on the 24-hour traffic count, 14.8% of the total daily traffic and 26.7% of the traffic during the survey was interviewed.
Figure 3-2
Traffic Volume and Classification Data
US 64 (Davidson Co.)

24-hour Directional Traffic Volumes – US 64 (Davidson Co.)
October 15, 2003

Eastbound Classification Count Data – US 64 (Davidson Co.)
October 15, 2003

Westbound Classification Count Data – US 64 (Davidson Co.)
October 15, 2003
Table 3-1. FHWA Vehicle Classifications

<table>
<thead>
<tr>
<th>Class</th>
<th>Vehicle Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Motorcycles</td>
<td>This class includes all two- or three-wheeled motorized vehicles. These vehicles typically have a saddle-type of seat and are steered by handlebars rather than a steering wheel. This includes motorcycles, motor scooters, mopeds, motor-powered bicycles and three-wheel motorcycles.</td>
</tr>
<tr>
<td>2</td>
<td>Passenger Cars</td>
<td>This class includes all sedans, coupes and station wagons manufactured primarily for the purpose of carrying passengers, including those pulling recreational or other light trailers.</td>
</tr>
<tr>
<td>3</td>
<td>Pickups, Vans and other 2-axle, 4-tire Single Unit Vehicles</td>
<td>This class includes all two-axle, four tire vehicles other than passenger cars, which includes pickups, vans, campers, small motor homes, ambulances, minibuses and carryalls. These types of vehicles which are pulling recreational or other light trailers are included.</td>
</tr>
<tr>
<td>4</td>
<td>Buses</td>
<td>This class includes all vehicles manufactured as traditional passenger-carrying buses with two axles and six tires or three or more axles. This includes only traditional buses, including school and transit buses, functioning as passenger-carrying vehicles. All two-axle, four tire minibuses should be classified as Class 3. Modified buses should be considered to be trucks and classified appropriately.</td>
</tr>
<tr>
<td>5</td>
<td>Two-Axle, Six-Tire Single Unit Trucks</td>
<td>This class includes all vehicles on a single frame, which have two axles and dual rear tires. This includes trucks, camping and recreation vehicles, motor homes, etc.</td>
</tr>
<tr>
<td>6</td>
<td>Three-Axle Single Unit Trucks</td>
<td>This class includes all vehicles on a single frame, which have three axles. This includes trucks, camping and recreation vehicles, motor homes, etc.</td>
</tr>
<tr>
<td>7</td>
<td>Four or More Axle Single Unit Trucks</td>
<td>This class includes all vehicles on a single frame with four or more axles.</td>
</tr>
<tr>
<td>8</td>
<td>Four or Less Axle Single Trailer</td>
<td>This class includes all vehicles with four or less axles consisting of two units, in which the pulling unit is a tractor or single unit truck.</td>
</tr>
<tr>
<td>9</td>
<td>Five-Axle Single Trailer Trucks</td>
<td>This class includes all five-axle vehicles consisting of tow units in which the pulling unit is a tractor or single unit truck.</td>
</tr>
<tr>
<td>10</td>
<td>Six or More Axle Single Trailer Trucks</td>
<td>This class includes all vehicles with six or more axles consisting of two units in which the pulling unit is a tractor or single unit truck.</td>
</tr>
<tr>
<td>11</td>
<td>Five or Less Axle Multi-Trailer Trucks</td>
<td>This class includes all vehicles with five or less axles consisting of three or more units in which the pulling unit is a tractor or single unit truck.</td>
</tr>
<tr>
<td>12</td>
<td>Six-Axle Multi-Trailer Trucks</td>
<td>This class includes all six-axle vehicles consisting of three or more units in which the pulling unit is a tractor or single unit truck.</td>
</tr>
<tr>
<td>13</td>
<td>Seven or More Axle Multi-Trailer Trucks</td>
<td>This class includes all vehicles with seven or more axles consisting of three or more units in which the pulling is a tractor or single unit truck.</td>
</tr>
</tbody>
</table>

3.1.6 Survey Question Results

The average vehicle occupancy recorded was 1.4 persons per vehicle. Figure 3-3 shows the vehicle occupancy distribution.
Figure 3-3. Vehicle Occupancy Distribution - US 64 (Davidson Co.)

The trip purpose classification results is illustrated in Figure 3-4. The work-to-work (WW) trip was the most popular purpose, with approximately 27% of motorists making this kind of trip.

Figure 3-4. Distribution of Trips by Purpose - US 64 (Davidson Co.)

Major origination-destination patterns were identified for three trip purposes: home-based-work, home-based-non-work, and non-home-based. The top five origin-destination pairs by trip purpose can be seen in
Table 3-2 through Table 3-4. Most trips, regardless of purpose, were made within the same county of the survey site.

### Table 3-2. Top Five Home-Based Work Origin-Destination Pairs - US 64 (Davidson Co.)

<table>
<thead>
<tr>
<th>Origin County</th>
<th>Destination County</th>
<th>Number of Trips</th>
<th>Percentage of Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Davidson NC</td>
<td>Davidson NC</td>
<td>158</td>
<td>10.4%</td>
</tr>
<tr>
<td>Davidson NC</td>
<td>Randolph NC</td>
<td>36</td>
<td>2.4%</td>
</tr>
<tr>
<td>Randolph NC</td>
<td>Davidson NC</td>
<td>31</td>
<td>2.1%</td>
</tr>
<tr>
<td>Forsyth NC</td>
<td>Randolph NC</td>
<td>11</td>
<td>0.7%</td>
</tr>
<tr>
<td>Davidson NC</td>
<td>Forsyth NC</td>
<td>9</td>
<td>0.6%</td>
</tr>
</tbody>
</table>

### Table 3-3. Top Five Home-Based Non-Work Origin-Destination Pairs - US 64 (Davidson Co.)

<table>
<thead>
<tr>
<th>Origin County</th>
<th>Destination County</th>
<th>Number of Trips</th>
<th>Percentage of Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Davidson NC</td>
<td>Davidson NC</td>
<td>183</td>
<td>12.1%</td>
</tr>
<tr>
<td>Davidson NC</td>
<td>Randolph NC</td>
<td>30</td>
<td>2.0%</td>
</tr>
<tr>
<td>Randolph NC</td>
<td>Davidson NC</td>
<td>16</td>
<td>1.1%</td>
</tr>
<tr>
<td>Forsyth NC</td>
<td>Randolph NC</td>
<td>14</td>
<td>0.9%</td>
</tr>
<tr>
<td>Davidson NC</td>
<td>Forsyth NC</td>
<td>10</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

### Table 3-4. Top Five Non-Home-Based Origin-Destination Pairs - US 64 (Davidson Co.)

<table>
<thead>
<tr>
<th>Origin County</th>
<th>Destination County</th>
<th>Number of Trips</th>
<th>Percentage of Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Davidson NC</td>
<td>Davidson NC</td>
<td>116</td>
<td>7.7%</td>
</tr>
<tr>
<td>Davidson NC</td>
<td>Randolph NC</td>
<td>26</td>
<td>1.7%</td>
</tr>
<tr>
<td>Randolph NC</td>
<td>Davidson NC</td>
<td>22</td>
<td>1.5%</td>
</tr>
<tr>
<td>Forsyth NC</td>
<td>Randolph NC</td>
<td>10</td>
<td>0.7%</td>
</tr>
<tr>
<td>Davidson NC</td>
<td>Forsyth NC</td>
<td>10</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

A graphical representation of origin and destination locations for the drivers interviewed is shown in Figures 3-5 and 3-6.

Figure 3-7 illustrates major origination / destination pairs for all trip purposes. 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.
Trip Origin and Destination Distribution for
US 64 Eastbound (Davidson Co.)
Figure 3-6
Trip Origin and Destination Distribution for US 64 Westbound (Davidson Co.)

US 64 (Davidson) Westbound Origins

US 64 (Davidson) Westbound Destinations
Figure 3-7

Major Trip Origination-Destination Pairs for US 64 (Davidson Co.)

Inter-County Flows

- Green: 5 - 20
- Yellow: 20 - 50
- Orange: 50 - 100
- Red: 100 - 1000
The trip frequency results for the US 64 Davidson County site is illustrated in Figure 3-8. Approximately 23% of the surveyed drivers made the same trip 5 times per week.

![Figure 3-8. Trip Frequency - US 64 (Davidson Co.)](image)

Other routes typically used by those interviewed at this survey included Old US 64, Interstate 40, and Interstate 85.
3.2  **US 64 (Chatham County)**

3.2.1  **Time of Operation**

The date and time of the survey conducted on US 64 in Chatham County was Tuesday, October 21, 2003 from 8:00am until 6:00pm. The decision to postpone the interviews from the original date of October 14th was made jointly by the NCDOT and the consultant team due to the forecast of rain on the scheduled date. An hour lunch break was taken between 1:00pm and 2:00pm and no data was collected during this time. The surveys were terminated 30 minutes earlier than the planned time of 6:30pm due to reduced visibility caused by the site being covered in shadows.

3.2.2  **Field Conditions**

The surveys were conducted on a clear, sunny day. Figure 3-9 provides a photo of the survey site.

Figure 3-9. US 64 (Chatham Co.) Survey Site

3.2.3  **Operational Issues**

No motorists were stopped in the eastbound direction from 12:40pm to 12:45pm to allow the flagger to repair his sign.
3.2.4 Traffic Count and Classification

The NCDOT conducted a vehicle classification count for a 24-hour period on the same day as the interview. The count was taken on US 64 east of Harold Hart Road. Figure 3-10 illustrates the 24-hour directional traffic flow by hour. The count categorized all traffic based on FHWA vehicle classifications (see Table 3-1). For the purpose of this document, three broad categories were identified as combination unit trucks, single unit trucks, and passenger vehicles. Passenger vehicles were identified as any non-commercial vehicle with less than 6 tires or a car or pickup with a trailer, which corresponds to Federal Highway Administration (FHWA) vehicle classifications 1, 2, 3, and 4. Single unit trucks were identified as a commercial vehicle without a trailer that has 6 or more tires or busses, which corresponds to FHWA vehicle classifications 5, 6, and 7. Combination vehicles were identified as multi-unit commercial vehicles, which corresponds to FHWA vehicle classifications 8, 9, 10, 11, 12, and 13.

The traffic count registered 9,964 vehicles traveling on this segment during the 24-hour period and 6,507 vehicles during the time the survey was operational. The classification count recorded 85% passenger cars, 5% single unit trucks, and 10% combination trucks over the 24-hour period.

3.2.5 Surveys Collected

The total number of surveys completed for this site was 1,855. Based on the 24-hour traffic count, 18.6% of the total daily traffic and 28.5% of the traffic during the survey was interviewed.
### 3.2.6 Survey Question Results

The average vehicle occupancy recorded at the US 64 Chatham County survey site was 1.4 people per vehicle. Figure 3-11 shows the vehicle occupancy distribution.

![Figure 3-11. Vehicle Occupancy Distribution - US 64 (Chatham Co.)](chart)

The trip purpose classification results for the US 64 Chatham County site is illustrated in Figure 3-12. The work-to-work (WW) trip was the most popular purpose, with approximately 25% of motorists making this kind of trip.

![Figure 3-12. Distribution of Trips by Purpose - US 64 (Chatham Co.)](chart)

Major origination-destination patterns were identified for three trip purposes: home-based-work, home-based-non-work, and non-home-based. The top five origin-destination pairs by

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**PBS&J Team**

**US 64 – NC 49 Corridor Study**

**Roadside O-D Interview Report**

**May 2004**
trip purpose are shown in 3-5 through Table 3-7. Most trips, regardless of purpose, were
made within the same county of the survey site.

Table 3-5. Top Five Home-Based Work Origin-Destination Pairs – US 64 (Chatham Co.)

<table>
<thead>
<tr>
<th>Origin County</th>
<th>Destination County</th>
<th>Number of Trips</th>
<th>Percentage of Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chatham NC</td>
<td>Chatham NC</td>
<td>169</td>
<td>9.1%</td>
</tr>
<tr>
<td>Randolph NC</td>
<td>Wake NC</td>
<td>34</td>
<td>1.8%</td>
</tr>
<tr>
<td>Chatham NC</td>
<td>Wake NC</td>
<td>26</td>
<td>1.4%</td>
</tr>
<tr>
<td>Wake NC</td>
<td>Chatham NC</td>
<td>26</td>
<td>1.4%</td>
</tr>
<tr>
<td>Wake NC</td>
<td>Guilford NC</td>
<td>25</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

Table 3-6. Top Five Home-Based Non-Work Origin-Destination Pairs – US 64 (Chatham Co.)

<table>
<thead>
<tr>
<th>Origin County</th>
<th>Destination County</th>
<th>Number of Trips</th>
<th>Percentage of Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chatham NC</td>
<td>Chatham NC</td>
<td>209</td>
<td>11.3%</td>
</tr>
<tr>
<td>Randolph NC</td>
<td>Wake NC</td>
<td>56</td>
<td>3.0%</td>
</tr>
<tr>
<td>Wake NC</td>
<td>Randolph NC</td>
<td>25</td>
<td>1.3%</td>
</tr>
<tr>
<td>Wake NC</td>
<td>Chatham NC</td>
<td>18</td>
<td>1.0%</td>
</tr>
<tr>
<td>Chatham NC</td>
<td>Wake NC</td>
<td>16</td>
<td>0.9%</td>
</tr>
</tbody>
</table>

Table 3-7. Top Five Non-Home-Based Origin-Destination Pairs – US 64 (Chatham Co.)

<table>
<thead>
<tr>
<th>Origin County</th>
<th>Destination County</th>
<th>Number of Trips</th>
<th>Percentage of Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chatham NC</td>
<td>Chatham NC</td>
<td>198</td>
<td>10.7%</td>
</tr>
<tr>
<td>Wake NC</td>
<td>Randolph NC</td>
<td>38</td>
<td>2.0%</td>
</tr>
<tr>
<td>Chatham NC</td>
<td>Wake NC</td>
<td>24</td>
<td>1.3%</td>
</tr>
<tr>
<td>Randolph NC</td>
<td>Wake NC</td>
<td>23</td>
<td>1.2%</td>
</tr>
<tr>
<td>Wake NC</td>
<td>Chatham NC</td>
<td>22</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

A graphical representation of origin and destination locations for the drivers interviewed is shown in Figures 3-13 and 3-14.

Figure 3-15 illustrates major origination / destination pairs for all trip purposes. 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 (Chatham) Eastbound Origins

US 64 (Chatham) Eastbound Destinations

Trip Origin and Destination Distribution for US 64 Eastbound (Chatham Co.)
US 64 (Chatham) Westbound Origins

US 64 (Chatham) Westbound Destinations

Trip Origin and Destination Distribution for
US 64 Westbound (Chatham Co.)
Inter-County Flows

- 5 - 20
- 20 - 50
- 50 - 100
- 100 - 1000

US 64 - NC 49 Corridor Study

Major Trip Origination-Destination Pairs for US 64 (Chatham Co.)

Figure 3-15
The trip frequency results for the US 64 Chatham County site is illustrated in Figure 3-16. Approximately 21% of the surveyed drivers made the same trip 5 times per week.

![Figure 3-16. Trip Frequency - US 64 (Chatham Co.)](image)

Other routes typically used by those interviewed at this survey included Interstate 40 and Interstate 85.
3.3 NC 49 (Stanly County)

3.3.1 Time of Operation

The date and time of the survey conducted on NC 49 was Thursday, October 16, 2003 from 8:15am until 5:50pm. An hour lunch break was taken between 1:00pm and 2:00pm and no data was collected during this time. The surveys were terminated 40 minutes earlier than the planned time of 6:30pm due to the safety risk of the sun being in the motorists’ eyes.

3.3.2 Field Conditions

The survey was conducted on a clear, sunny day. Figure 3-17 provides a photo of the survey site.

Figure 3-17. NC 49 (Stanly Co.) Survey Site

3.3.3 Operational Issues

No operational issues or major traffic disruptions occurred during the survey period.

3.3.4 Traffic Count and Classification

The NCDOT conducted a vehicle classification count for a 24-hour period on the same day as the interviews. The count was taken on NC 49 North of Tucker Town Road (SR 2543). Figure 3-18 illustrates the 24-hour directional traffic flow by hour. The count categorized all traffic based on FHWA vehicle classifications (see Table 3-1). For the purpose of this document, three broad categories were identified as combination unit trucks, single unit trucks, and passenger vehicles.
24-hour Directional Traffic Volumes – NC 49
October 16, 2003

Northbound Classification Count Data – NC 49
October 16, 2003

Southbound Classification Count Data – NC 49
October 16, 2003
Passenger vehicles were identified as any non-commercial vehicle with less than 6 tires or a car or pickup with a trailer, which corresponds to Federal Highway Administration (FHWA) vehicle classifications 1, 2, 3, and 4. Single unit trucks were identified as a commercial vehicle without a trailer that has 6 or more tires or busses, which corresponds to FHWA vehicle classifications 5, 6, and 7. Combination vehicles were identified as multi-unit commercial vehicles, which corresponds to FHWA vehicle classifications 8, 9, 10, 11, 12, and 13.

The traffic count registered 6,708 vehicles traveling on this segment during the 24-hour period and approximately 3,832 during the time the survey was operational. The classification count recorded 82% passenger cars, 5% single unit trucks, and 13% combination trucks over the 24-hour period.

3.3.5 Surveys Collected

The total number of surveys completed for this site was 1,519. Based on the 24-hour traffic count, 22.6% of the total daily traffic and 39.6% of the traffic during the survey was interviewed.

3.3.6 Survey Question Results

The average vehicle occupancy recorded at the NC 49 Stanly County survey site was 1.4 people per vehicle. Figure 3-19 provides the vehicle occupancy distribution.

The trip purpose classification results for the NC 49 site is illustrated in Figure 3-20. Recreational and work-to-work were the most popular purposes, with approximately 25% of motorists making each of these kinds of trips.
Major origination-destination patterns were identified for three trip purposes: home-based-work, home-based-non-work, and non-home-based. The top five origin-destination pairs by trip purpose are shown in 3-8 through Table 3-10. As expected, most trips, regardless of purpose, were made within the same county of the survey site.

Table 3-8. Home-Based Work Origin-Destination Pairs - NC 49 (Stanly Co.)

<table>
<thead>
<tr>
<th>Origin County</th>
<th>Destination County</th>
<th>Number of Trips</th>
<th>Percentage of Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stanly NC</td>
<td>Stanly NC</td>
<td>49</td>
<td>3.2%</td>
</tr>
<tr>
<td>Davidson NC</td>
<td>Stanly NC</td>
<td>27</td>
<td>1.8%</td>
</tr>
<tr>
<td>Stanly NC</td>
<td>Davidson NC</td>
<td>24</td>
<td>1.6%</td>
</tr>
<tr>
<td>Mecklenburg NC</td>
<td>Wake NC</td>
<td>18</td>
<td>1.2%</td>
</tr>
<tr>
<td>Mecklenburg NC</td>
<td>Randolph NC</td>
<td>17</td>
<td>1.1%</td>
</tr>
</tbody>
</table>

Table 3-9. Home-Based Non-Work Origin-Destination Pairs - NC 49 (Stanly Co.)

<table>
<thead>
<tr>
<th>Origin County</th>
<th>Destination County</th>
<th>Number of Trips</th>
<th>Percentage of Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stanly NC</td>
<td>Stanly NC</td>
<td>70</td>
<td>4.6%</td>
</tr>
<tr>
<td>Mecklenburg NC</td>
<td>Wake NC</td>
<td>28</td>
<td>1.8%</td>
</tr>
<tr>
<td>Rowan NC</td>
<td>Stanly NC</td>
<td>25</td>
<td>1.6%</td>
</tr>
<tr>
<td>Davidson NC</td>
<td>Stanly NC</td>
<td>24</td>
<td>1.6%</td>
</tr>
<tr>
<td>Stanly NC</td>
<td>Davidson NC</td>
<td>24</td>
<td>1.6%</td>
</tr>
<tr>
<td>Stanly NC</td>
<td>Rowan NC</td>
<td>24</td>
<td>1.6%</td>
</tr>
</tbody>
</table>
### Table 3-10. Non-Home-Based Origin-Destination Pairs - NC 49 (Stanly Co.)

<table>
<thead>
<tr>
<th>Origin County</th>
<th>Destination County</th>
<th>Number of Trips</th>
<th>Percentage of Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stanly NC</td>
<td>Stanly NC</td>
<td>46</td>
<td>3.0%</td>
</tr>
<tr>
<td>Davidson NC</td>
<td>Stanly NC</td>
<td>35</td>
<td>2.3%</td>
</tr>
<tr>
<td>Stanly NC</td>
<td>Rowan NC</td>
<td>27</td>
<td>1.8%</td>
</tr>
<tr>
<td>Randolph NC</td>
<td>Mecklenburg NC</td>
<td>20</td>
<td>1.3%</td>
</tr>
<tr>
<td>Stanly NC</td>
<td>Davidson NC</td>
<td>19</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

A graphical representation of origin and destination locations for the drivers interviewed at the NC 49 survey site in Stanly County is shown in Figures 3-21 and 3-22. Figure 3-23 illustrates major origination / destination pairs for all trip purposes. 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.
NC 49 (Stanly) Northbound Origins

Northbound Origins

NC 49 (Stanly) Northbound Destinations

Destinations

NC 49 (Stanly) Southbound Origins

Southbound Origins

NC 49 (Stanly) Southbound Destinations

Destinations

US 64 (Davidson) Eastbound Origins

Eastbound Origins

US 64 (Davidson) Eastbound Destinations

Destinations

US 64 (Chatham) Eastbound Origins

Eastbound Origins

US 64 (Chatham) Eastbound Destinations

Destinations

US 64 (Chatham) Westbound Origins

Westbound Origins

US 64 (Chatham) Westbound Destinations

Destinations

Trip Origin and Destination Distribution for NC 49 Northbound (Stanly Co.)

US 64 - NC 49 Corridor Study

Figure 3-21
NC 49 (Stanly) Southbound Origins

NC 49 (Stanly) Southbound Destinations

NC 49 (Stanly) Northbound Origins

NC 49 (Stanly) Northbound Destinations

US 64 (Davidson) Eastbound Origins

US 64 (Davidson) Eastbound Destinations

US 64 (Chatham) Eastbound Origins

US 64 (Chatham) Eastbound Destinations

US 64 (Chatham) Westbound Origins

US 64 (Chatham) Westbound Destinations
US 64 - NC 49 Corridor Study

Major Trip Origination-Destination Pairs for NC 49 (Stanly Co.)

Figure 3-23

Inter-County Flows
- 5 - 20
- 20 - 50
- 50 - 100
- 100 - 1000
The trip frequency results for the NC 49 Stanly County site is illustrated in Figure 3-24. Approximately 22% of the surveyed drivers made the same trip 5 times per week.

![Figure 3-24. Trip Frequency - NC 49 (Stanly Co.)](image)

Other routes typically used by those interviewed at this survey included Interstate 40, Interstate 85, US 220, NC 24, and NC 27.