North Carolina Department of Transportation
Office of Planning & Environmental
Statewide Planning Branch

THOROUGHFARE PLAN FOR THE

CITY OF ASHEBORO

MARCH 2001

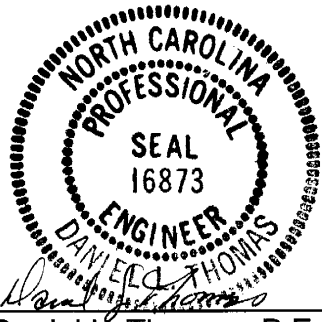
THOROUGHFARE PLAN

FOR THE

CITY OF ASHEBORO

Prepared by the:
Urban Studies Unit
Statewide Planning Branch
North Carolina Department of Transportation

In Cooperation with:
The City of Asheboro
US Department of Transportation
Federal Highway Administration



Daniel L. Thomas, P.E.
February 26, 2001

March, 2001

Acknowledgments

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Executive Summary

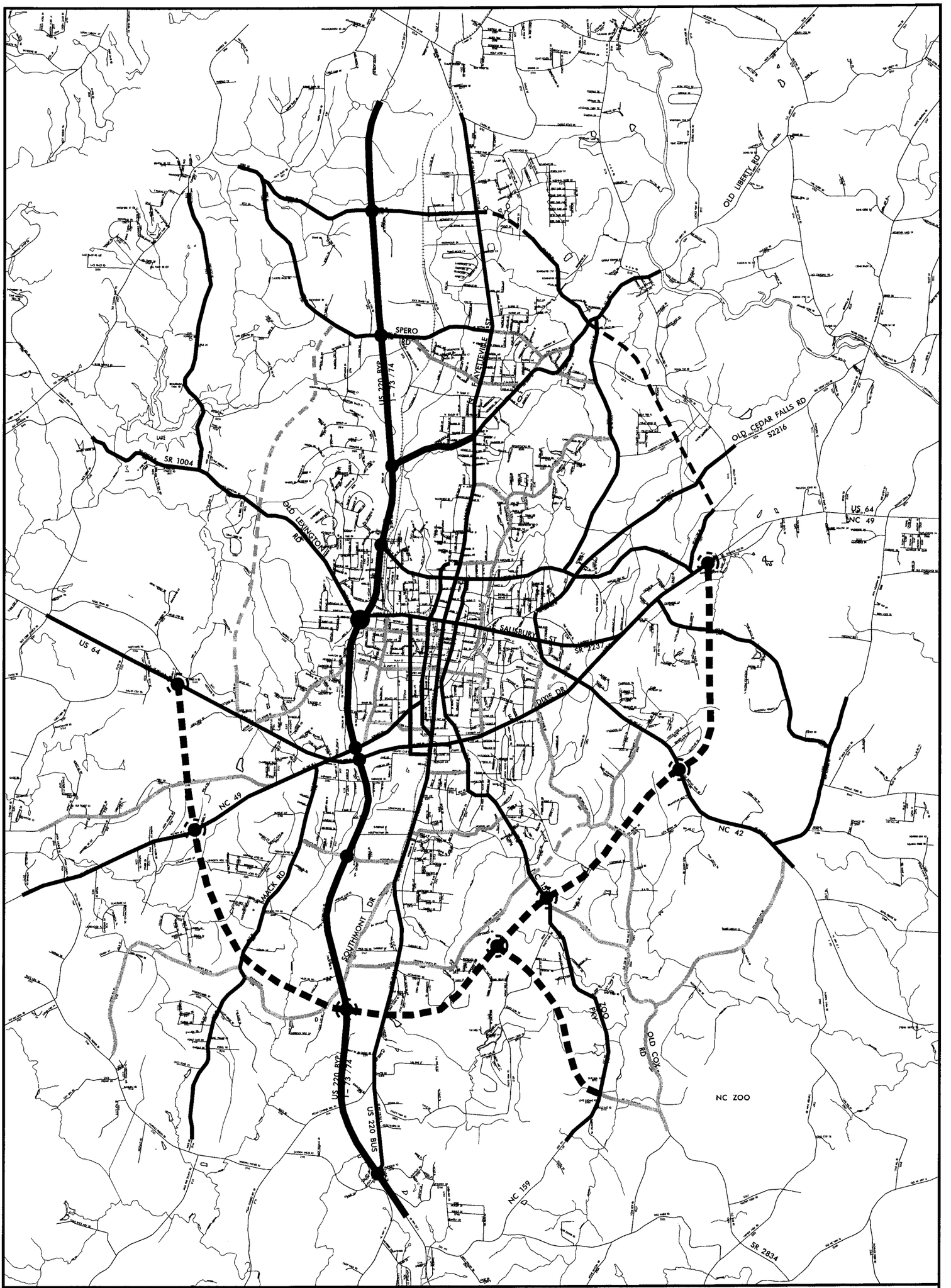
The purpose of this report is to document the 1998 Thoroughfare Plan study for the City of Asheboro. It contains information about the development of the travel demand model used to evaluate the existing roadway network and alternatives that were developed as part of the update process. This report contains a summary of the public involvement including the Goals and Objective Survey that was taken early in the planning process (Appendix D). Also included in this report are recommendations for the future roadway network. This information is located in two places in this report: *Chapter 5 – Thoroughfare Plan Development* provides the recommendations for the major and minor thoroughfares and the purpose and need for major thoroughfares. *Appendix A – Street Tabulation and Recommendations* provides existing and proposed recommendations in tabular form.

The City of Asheboro in cooperation with the North Carolina Department of Transportation developed and adopted the thoroughfare plan for the City of Asheboro (see **Figure 1A**). This planning effort updated and modified previously approved plans based on changes that are occurring in the area. The primary changes were the deletion of the Outer Loop and the addition of the Northeast Corridor.

The Outer Loop was deleted primarily because of topographic and environmental concerns west of I-73/74 (US 220 Bypass). It did not seem probable that a major facility could be constructed in this area. I-73/74 will continue to provide the major north-south movement for the western half of the planning area. Minor thoroughfares were added in place of the Outer Loop. It is the intent of these thoroughfares to provide continuity as the area develops and provide better access to the major thoroughfares by distributing traffic between US 64, Old Lexington Road, and Spero Road.

The Northeast Corridor was added to provide better access between areas in the northern portion of the planning area and commercial areas to the east. This was one of the primary concerns brought out in the Goals and Objective Survey and the public meetings. While it was desirable to have this facility on new location, environmental constraints and limited access to I-73/74 made it necessary to have part of this facility on existing location.

Questions regarding the thoroughfare plan or documentation of the thoroughfare plan should be directed to the City of Asheboro Planning Department or the North Carolina Department of Transportation Statewide Planning Branch.



LEGEND

	Existing	Proposed
Freeway	▬▬	▬ ▬
Major Thoroughfare	▬▬	▬ ▬
Minor Thoroughfare	▬▬	▬ ▬
Interchange	●	◉

THOROUGHFARE PLAN

ADOPTED BY:	
CITY OF ASHEBORO	January 7, 1999
RECOMMENDED BY STATEWIDE PLANNING	January 15, 1999
N.C. DEPARTMENT OF TRANSPORTATION	March 4, 1999
PUBLIC HEARINGS	December 10, 1998

Figure 1A

ASHEBORO

RANDOLPH COUNTY
NORTH CAROLINA

Prepared by the
North Carolina Department of Transportation
Division of Highways-Statewide Planning Branch
With assistance from the Randolph County Planning Department
and in cooperation with
U.S. Department of Transportation
Federal Highway Administration

base map date
APRIL 3, 1996

0 500 1000 2000 3000
scale in meters

0 2000 4000 6000 8000 10000
scale in feet

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I. Introduction

Purpose

The purpose of this report is to present background, principles, and procedures used in the development of the 1996 thoroughfare plan study for the Asheboro urban area. This report will explain the principles of thoroughfare planning, the relationship between growth and transportation needs, and will describe how future land use and population projections were developed. Finally, the report will explain the process followed to obtain input on the study from elected officials and the public.

Transportation Planning in Asheboro

This study represents an update of two previous studies for the Asheboro urban area. The first study took place in 1974. The first update occurred in the mid-1980s and reflected changes in growth that were not reflective of the 1974 study. The current Asheboro Thoroughfare Plan dated July 25, 1986 is the result of that update; the Thoroughfare Plan was subsequently revised in 1990 to upgrade the proposed US 64/NC 49 Bypass and modify the alignment.

There have been several changes to the transportation system in Asheboro since the previous update. Presnell Street has been extended east to US 64. The interchange at Presnell Street and I-73/74 (US 220) was upgraded to provide for all movements between these two facilities. US 64 has been upgraded to a four lane divided facility east of the City. These improvements, proposed future improvements, and the economic growth in and around Asheboro are the driving forces behind updating the current plan.

II. Thoroughfare Planning Principles

Objectives

Typically, the urban street system occupies 25 to 30 percent of the total developed land in an urban area. Since the system is permanent and expensive to build and maintain, much care and foresight are needed in its development. Thoroughfare planning is the process public officials use to assure the development of the most appropriate street system that will meet existing and future travel desires within the urban area.

The primary aim of a thoroughfare plan is to guide the development of the urban street system in a manner consistent with the changing traffic patterns. A thoroughfare plan will enable street improvements to be made as traffic demands increase, and it helps eliminate unnecessary improvements, so needless expense can be averted. By developing the urban street system to keep pace with increasing traffic demands, a maximum utilization of the system can be attained, requiring a minimum amount of land for street purposes. In addition to providing for traffic needs the thoroughfare plan should embody those details of good urban planning necessary to present a pleasing and efficient urban community. The location of present and future population, commercial, and industrial development affects major street and highway locations. Conversely, the location of major streets and highways within the urban area will influence the urban development pattern.

Other objectives of a thoroughfare plan include:

1. providing for the orderly development of an adequate major street system as land development occurs,

2. reducing travel and transportation costs,

3. reducing the cost of major street improvements to the public through the coordination of the street system with private action,

4. enabling private interests to plan their actions, improvements, and development with full knowledge of public intent,

5. minimizing disruption and displacement of people and businesses through long range advance planning for major street improvements,

6. reducing environmental impacts, such as air pollution, resulting from transportation, and

7. increasing travel safety.

Thoroughfare planning objectives are achieved through improving the operational efficiency of thoroughfares, improving the system efficiency through system coordination and layout, and by altering travel demand.

Operational Efficiency

A street's operational efficiency is improved by increasing the capability of the street to carry more vehicular traffic and people. In terms of vehicular traffic, a street's capacity is defined by the maximum number of vehicles which can pass a given point on a roadway during a given time period under prevailing roadway and traffic conditions. Capacity is affected by the physical features of the roadway, nature of traffic, and weather.

Physical ways to improve vehicular capacity include street widening, intersection improvements, improving vertical and horizontal alignment, and eliminating roadside obstacles. For example, widening of a street from two to four lanes more than doubles the capacity of the street by providing additional maneuverability for traffic. This reduces the impedance to traffic flow caused by slow moving or turning vehicles and the adverse effects of horizontal and vertical alignments.

Operational ways to improve street capacity include:

1. Control of access -- A roadway with complete access control can often carry three times the traffic handled by a non-controlled access street with identical lane width and number.

2. Parking removal -- Increases capacity by providing additional street width for traffic flow and reducing friction to flow caused by vehicles entering and exiting parking spaces.

3. One-way operation -- The capacity of a street can sometimes be increased 20-50%, depending upon turning movements and overall street width, by initiating one-way traffic operations. One-way streets can also improve traffic flow by decreasing potential traffic conflicts and simplifying traffic signal coordination.

4. Reversible lanes -- Reversible traffic lanes may be used to increase street capacity in situations where heavy directional flows occur during peak periods.

5. Signal phasing and coordination -- Uncoordinated signals and poor signal phasing restrict traffic flow by creating excessive stop-and-go operation.

System Efficiency

Another means for altering travel demand is the development of a more efficient system of streets that will better serve travel desires. A more efficient system can reduce travel distances, time, and cost to the user. Improvements in system efficiency can be achieved through the concept of functional classification of streets and development of a coordinated major street system.

Travel Demand

Altering travel demand is a third way to improve the efficiency of existing streets. Travel demand can be reduced or altered in the following ways:

1. Encourage people to form carpools and vanpools for journeys to work and other trip purposes. This reduces the number of vehicles on the roadway and raises the people carrying capability of the street system.

2. Encourage the use of transit and other modes of transportation.

3. Encourage industries, businesses, and institutions to stagger work hours or establish variable work hours for employees. This will spread peak travel over a longer time period and thus reduce peak hour demand, and

4. Plan and encourage land use development or redevelopment in a more travel efficient manner.

Functional Classification

Streets perform two primary functions -- traffic service and land service, which when combined, are basically incompatible. The conflict is not serious if both traffic and land service demands are low. However, when traffic volumes are high, conflicts created by uncontrolled and intensely used abutting property leads to intolerable traffic flow friction and congestion.

The underlying concept of the thoroughfare plan is that it provides a functional system of streets which permits travel from origins to destinations with directness, ease, and safety. Different streets in the system are designed and called on to perform specific functions, thus minimizing the traffic and land service conflict. Streets are categorized as to function as local access streets, minor thoroughfares, or major thoroughfares (See Figure 1).

Local Access Streets provide access to abutting property. They are not intended to carry heavy volumes of traffic and should be located such that only traffic with origins and destinations of the streets would be served. Local streets may be further classified as either residential, commercial, and/or industrial depending upon the type of land use which they serve.

Minor Thoroughfares are more important streets on the city system. They collect traffic from local access streets and carry it to the major thoroughfares. They may in some instances supplement the major thoroughfare system by facilitating minor through traffic movements. A third function that may be performed is that of providing access to abutting property. They should be designed to serve limited areas so that their development as major thoroughfares will be prevented.

Major Thoroughfares are the primary traffic arteries of the city. Their function is to move intra-city and inter-city traffic. The streets which comprise the major thoroughfare system may

also serve abutting property, however, their principle function is to carry traffic. They should not be bordered by uncontrolled strip development because such development significantly lowers the capacity of the thoroughfare to carry traffic and each driveway is a danger and an impediment to traffic flow. Major thoroughfares may range from a two-lane street carrying minor traffic volumes to major expressways with four or more traffic lanes. Parking normally should not be permitted on major thoroughfares.

Idealized Major Thoroughfare System

A coordinated system of major thoroughfares forms the basic framework of the urban street system. A major thoroughfare system which is most adaptable to desire lines of travel within an urban area is the radial-loop system. It permits movement between various areas of the city within maximum directness. This system consists of several functional elements--radial streets, cross- town streets, loop system streets, and bypasses (Figure 1).

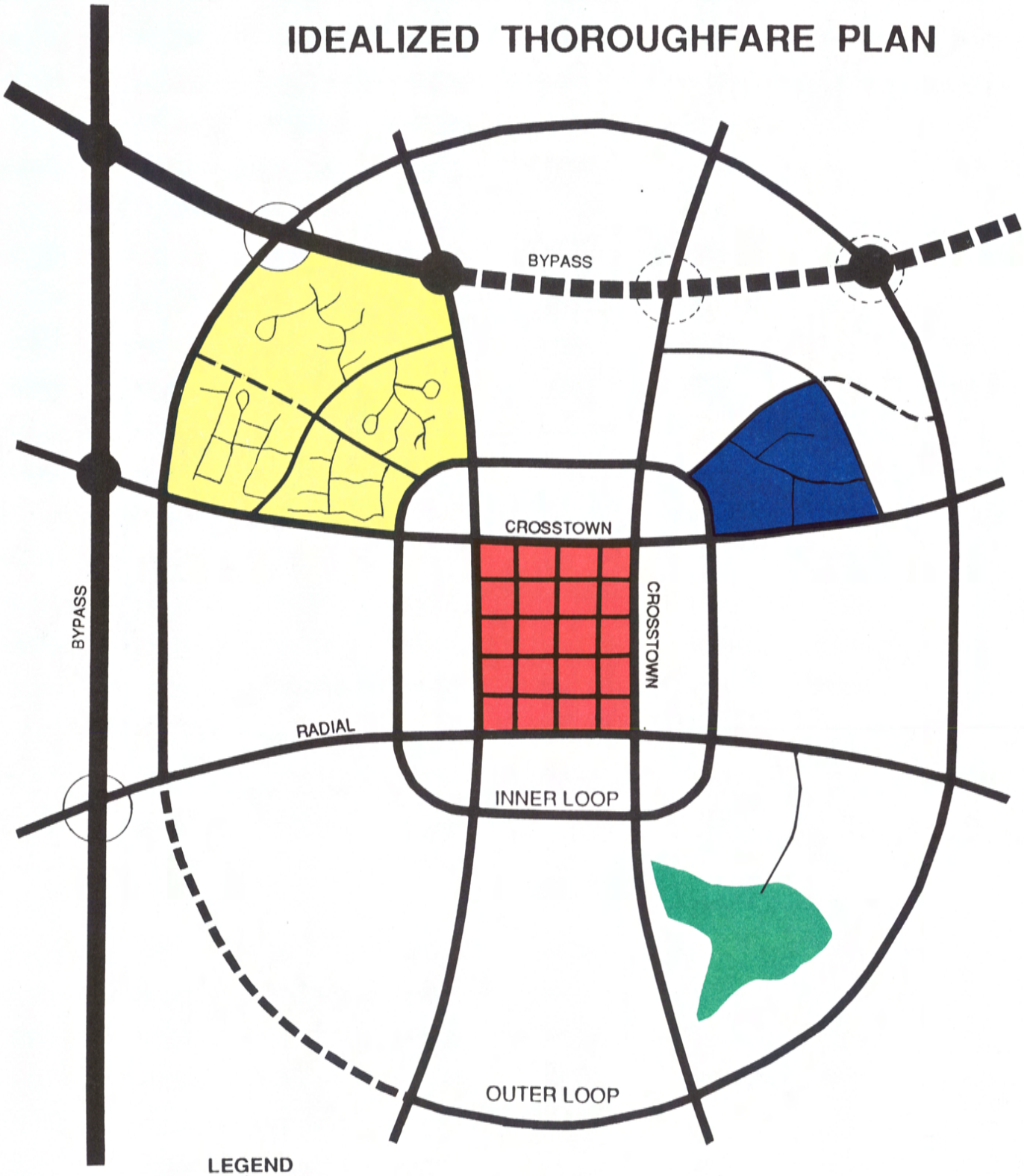
Radial streets provide for traffic movement between points located on the outskirts of the city and the central area. This is a major traffic movement in most cities, and the economic strength of the central business district depends upon the adequacy of this type of thoroughfare.

If all radial streets crossed in the central area, an intolerable congestion problem would result. To avoid this problem, it is very important to have a system of cross-town streets which form a loop around the central business district. This system allows traffic moving from origins on one side of the central area to destinations on the other side to follow the area's border. It also allows central area traffic to circle and then enter the area near a given destination. The effect of a good cross-town system is to free the central area of cross-town traffic, thus permitting the central area to function more adequately in its role as a business or pedestrian shopping area.

Loop system streets move traffic between suburban areas of the city. Although a loop may completely encircle the city, a typical trip may be from an origin near a radial thoroughfare to a destination near another radial thoroughfare. Loop streets do necessarily carry heavy volumes of traffic, but they function to help relieve central areas. There may be one or more loops,
depending on the size of the urban area. They are generally spaced one-half mile to one mile apart, depending on the intensity of land use.

A bypass is designed to carry traffic through or around the urban area, thus providing relief to the city street system by removing traffic which has no desire to be in the city. Bypasses are usually designed to through-highway standards, with control of access. Occasionally, a bypass with low traffic volume can be designed to function as a portion of an urban loop. The general effect of bypasses is to expedite the movement of through traffic and to improve traffic conditions within the city. By relocating through traffic, local streets may be used for shopping and home- to-work trips; therefore, bypasses tend to increase the economic vitality of the local area.

IDEALIZED THOROUGHFARE PLAN



LEGEND

	EXISTING	PROPOSED
MAJOR THOROUGHFARE FREEWAY		
MAJOR OTHER		
MINOR THOROUGHFARE		
LOCAL ROAD		
INTERCHANGE		
GRADE SEPERATION		

LAND USES

- COMMERCIAL/BUSINESS
- RESIDENTIAL
- INDUSTRIAL
- PUBLIC/INSTITUTIONAL

Figure 1

Application of Thoroughfare Planning Principles

The concepts presented in the discussion of operational efficiency, functional classification, and idealized major thoroughfare system are the conceptual tools available to the transportation planner in developing a thoroughfare plan. In actual practice, a thoroughfare plan is developed for established urban areas and is constrained by the existing land use and street patterns, existing public attitudes and goals, and current expectations of future land use. Compromises must be made because of these constraints and the many other factors that affect major street locations.

III. Traffic Model Development

In order to develop a Thoroughfare Plan for Asheboro area, a traffic model was developed. This model was based on the four step planning process: trip generation, trip distribution, mode choice, and trip assignment. The study involved two applications of the process. One using base year (1996) data, and one using design year (2025) projected data.

Before the four step process could be applied, the planning area had to be defined, the base year (1996) network developed, and 1996 socio-economic and traffic count data collected. The four step process was then used to simulate the area's 1996 average daily traffic patterns. Once the traffic model accurately reproduced the base year travel flows (model calibration), the socio-economic data and the external station volumes (traffic volumes at the outskirts of the planning area boundary) were projected to the design year (2025) and applied to the same four step process to forecast future traffic patterns. The future traffic patterns were then compared to existing capacities and possible solutions to the anticipated problems were tested.

The Planning Area

The planning area for the Asheboro area includes the current city limits and the outlying areas that are projected to develop by the design year (2025). After the planning area was defined, it was divided into four sections. This was done using two screenlines: (1) north-south following I-73/74 (US 220 Bypass) and (2) east-west crossing the planning area north of the downtown area. These screenlines were used in the model calibration process (the process by which various factors are adjusted in order to duplicate existing travel patterns as accurately as possible). The planning area was then divided into traffic zones for data collection and distribution of socio-economic data projections. The planning area, screenlines, and traffic zones are shown in **Figure 2**.

The Base Year Network

The purpose of the traffic model is to duplicate the conditions of the existing street system. Therefore, one of the first decisions made was which streets would be included on the base year network. These streets must be selected very carefully, because there is a fine line between having too many streets to allow for calibration and having too few streets to realistically represent current conditions.

Several criteria were used to select the base year network. First, good engineering judgment based on general knowledge of the study area was used. Second, traffic counts were used to determine which streets carry a substantial amount of traffic. Finally, the previous thoroughfare plan was used to determine the existing major and minor thoroughfares. Although several local roads were included in the base year network, the majority of the local roads were represented by connections between traffic zone centroids and modeled streets. The resulting study area base year network is shown in **Figure 3**.

Speed and distance were input factors used in coding the base year network. These are important factors, because they define the minimum time paths from one zone to another. The minimum time paths are later used as a basis for assigning traffic to the network. Generally, speeds were input at or slightly below the posted speed limit. This was done to represent as closely as possible the actual speed of traffic traveling on the facility.

Data Requirements

Two types of data were needed to develop the traffic model. First, traffic counts on selected streets in the network were needed to provide a basis for calibration. Next, socio-economic data collected for each traffic zone was used to generate traffic.

Traffic Counts

Traffic counts for the study area were collected in September through December of 1996. These volumes, in addition to the 1996 Annual Average Daily Traffic counts (AADT's) were compared to numbers assigned to the network in the modeling process. Special counts taken for the thoroughfare plan study were not factored because they did not vary from the AADT. Traffic counts taken on the edge of the planning area, or cordon, represent the amount of traffic entering and leaving the planning area.

Socio-economic Data

The socio-economic data consists of a 100% housing inventory and an employment survey, both conducted by a consultant for the North Carolina Department of Transportation. First, the housing and employment data for each zone was divided into specific groupings as shown in **Appendix C**. The housing data was then used to generate trips: the employment data was used to attract those trips.

A windshield survey was conducted to collect housing data for each traffic zone. This data was collected based on five categories: excellent, above average, average, below average, and poor. The type and quality of housing was then used to determine the average number of trips made from a household each day.

Employment data was collected using several methods. First, the name and location of the employers were collected using the windshield survey method. Each employer was then contacted to determine the number of employees and commercial vehicles at that location. The employment data was then grouped into five categories based on Standard Industrial Codes (SIC): industrial, retail/wholesale, highway retail, service, and office. This data can be found in **Appendix C**.

Commercial vehicle data was collected along with the employment data. However, this data was analyzed in the model as a trip generator, like the housing, rather than a trip attractor, like the employment. Commercial vehicles generate trips differently from privately owned

LEGEND

- Cordon Line /Planning Area
- Screen Line
- Zone Line

PLANNING AREA-SCREENLINES, TRAFFIC ANALYSIS, AND ZONES

March 3, 1998

Figure 2

ASHEBORO

RANDOLPH COUNTY
NORTH CAROLINA

Prepared by the
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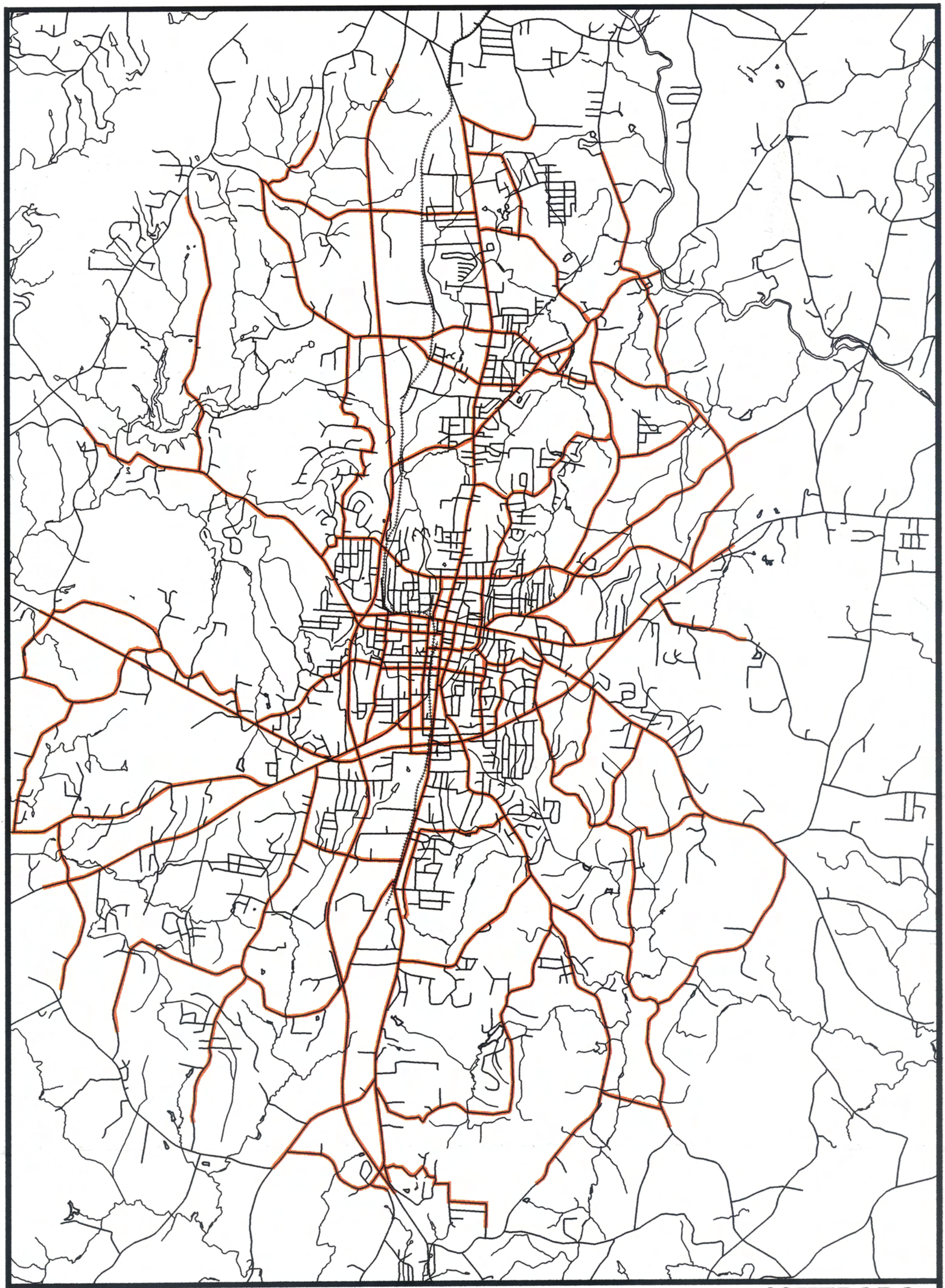
base map date
APRIL 3, 1996

0 500 1000 2000 3000
scale in meters

0 2000 4000 6000 8000 10000
scale in feet



BASE YEAR NETWORK

ASHEBORO
RANDOLPH COUNTY
NORTH CAROLINA

Prepared by the
North Carolina Department of Transportation
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base map date
APRIL 3, 1996

0 500 1000 2000 3000
scale in meters

0 2000 4000 6000 8000 10000
scale in feet

N

Figure 3

vehicles. The trip rates are based on vehicle type rather than employer type. Commercial vehicle data can also be found in **Appendix C**.

Trip Generation

Trip generation is the first step in the four step modeling process. It is defined as the relationship between trip making and household characteristics. This process uses external station volumes and the socio-economic data to generate trips that simulate the street system's actual traffic volumes. IDS[1] is used for trip generation.

During the trip generation process, one trip is generated for each origin and destination. In other words, if a person leaves home, stops at the gas station, and then continues on to work, he/she has made two trips in terms of the trip generation process. The origin for the first trip is home, and the destination is the gas station. The origin for the second trip is the gas station, and the destination is work. The trips created during the trip generation process are divided into three categories: external-external trips (commonly referred to as "through trips"), external↔internal trips, and internal trips.

Through Trips

Through trips are trips produced outside of the planning area which pass through the planning area to a destination also outside of the planning area. They are one of the two components of the external station counts.

Through trips for this study were developed using SYNTH[2] and information from previous Asheboro thoroughfare plan studies. As expected, through trip percentages at external stations on I-73/74, US 64, and NC 49 were higher than percentages on lower volume facilities. See **Table 1** for the external station count and through movement information.

External↔Internal Trips

External↔Internal (EI) trips have one trip-end inside the planning area and one trip-end outside the planning area. These trips are the second component of the external station count. The EI trips are calculated by subtracting the number of through trip-ends at an external station from the total traffic volume at that station. The results of this cordon station analysis are shown in **Table 1**.

IDS[1] - Internal Data Summary spreadsheet developed by Statewide Planning Branch

SYNTH[2] - An in-house through trip analysis program developed by Statewide Planning to be used in areas with a population under 50,000.

Table 1
1996 Cordon Station Summary

Station Description	1996 Traffic Counts	1996 Through Trips	1996 EI Trips	% Through Trips
I-73/74 (north)	26,300	12,424	13,878	47
US 220 Bus	10,400	1,532	8,868	15
SR 2123	400	0	400	0
SR 2128	1,500	112	1,388	7
SR 2261	2,900	316	2,584	11
SR 2216	3,400	420	2,980	12
US 64 (east)	16,800	10,954	5,846	65
SR 2604	700	0	700	0
SR 2605	2,200	140	2,060	6
NC 42	6,200	1,416	4,784	23
SR 2834	900	0	900	0
NC 159	1,300	68	1,232	5
SR 2962	500	0	500	0
I-73/74 (south)	11,000	6,858	4,142	62
NC 134	5,000	832	4,168	17
SR 1114	2,900	238	2,662	8
SR 1144	2,000	116	1,884	6
SR 1162	600	0	600	0
SR 1163	1,500	64	1,436	4
NC 49	8,300	5,366	2,934	65
SR 1193	3,400	424	2,976	12
SR 1326	300	0	300	0
US 64 (west)	8,100	5,056	3,044	62
SR 1004	3,200	334	2,866	10
SR 1518	600	0	600	0
SR 1504	1,800	94	1,706	5
SR 1511	200	0	200	0

Internal Trips

Internal trips have both an origin and destination inside the planning area. They are separated into three trip purposes: home based work (HBW), home based other (HBO), and non-home based (NHB). These trips were calculated using IDS. This program calculates trip productions and trip attractions for use in the gravity model (see Trip Distribution section).

Housing trips and commercial vehicle trips were produced by applying trip generation rates to the housing and commercial vehicle groupings. Each grouping was assigned a rate

representative of the number of trips made per housing unit or vehicle in that group. Table 2 shows the trip generation rates used for the base year

Table 2
Trip Generation Rates

HOUSING CLASSIFICATION	Excellent	Above Average	Average	Below Average	Poor	Truck	Commercial Auto
Generation Rate	11	9	7.5	6	5	6.5	6.5

Trip attractions were also produced using IDS. Employment data was applied to a set of regression equations to create trip attractions for each trip purpose. The equations used in the Asheboro urban area study are based on other study areas with similar characteristics and modified for Asheboro. The equations are as follows:

HBW $Y = 1.00X1 + 1.00X2 + 1.00X3 + 1.00X4 + 1.00X5$
HBO $Y = 0.20X1 + 1.83X2 + 8.36X3 + 2.55X4 + 2.60X5 + 0.50DU$
NHB $Y = 0.40X1 + 1.83X2 + 8.36X3 + 2.55X4 + 2.60X5 + 0.50DU$
E↔I $Y = 1.00X1 + 1.83X2 + 8.36X3 + 2.55X4 + 2.60X5 + 1.00DU$

Where:
Y → Attraction factor for each zone
X1 →Industrial (SIC codes 1-49)
X2 →Other retail (SIC codes 50-54, 56, 57, 59)
X3 →Highway retail (SIC codes 55, 58)
X4 →Service (SIC codes 70-76, 78-89, 99)
X5 → Office (SIC codes 60-67, 91-97)
DU → Dwelling Unit

The remaining component of internal trips is the non-home based secondary (NHBsec) trip purpose. NHBsec trips are internally generated trips made by vehicles garaged outside the planning area. An example of this type of trip would be a trip to the grocery store on the way home from work where the grocery store and work are inside of the planning area, and home is outside of the planning area. It was estimated that 50% of the EI trips made a secondary trip while in the planning area. These trips were determined using the following equation:

$$\text{NHB Secondary Trips} = [\text{Total Ext}\leftrightarrow\text{Int Trips} - \text{Int}\rightarrow\text{Ext Trips Garaged Inside Planning Area}] \cdot 0.50$$

IDS requires a percentage breakdown by trip purpose. Internal trips that remained inside the planning area boundary consisted of 85% of the total internally generated trips. This resulted in 15% internal→external trips (trips generated internally but traveling outside of the planning area). The 85% internally generated trips are broken down into the following percentages: HBW 22%, HBO 49%, and NHB29%.

Trip Distribution

Trip distribution is the second step in the four step process. After the number of trips per traffic zone was determined, the trips were distributed to other traffic zones in the network using the Gravity Model. The Gravity Model is based on the concept that the transportation demand between two zones is proportional to the size of the productions and attractions in all zones and is inversely related to the impedance (such as time or distance) between zones. The gravity model uses the following equation:

$$T_{ij} = \frac{(P_i)\,(A_j)\,(F_{ij})\,(K_{ij})}{\sum_{j=1}^{n} [(A_j)\,(F_{ij})\,(K_{ij})]}$$

Where:
- i = Origination zone
- j = Destination zone
- n = Total number of zones
- T = Number of trips produced in zone i and attracted to zone j
- P = Number of trips produced in zone i
- A = Number of trips attracted by zone j
- F = Friction factor from zone i to zone j
- K = Socio-economic adjustment factor

The friction factor (F) is critical to the gravity model distribution. It represents the effect that various impedances, such as travel time and spatial separation (HBW, OHB, NHB, and Ext↔Int), can have on the overall travel time between zones. The friction factors for the study area were developed using the 1995 Monroe urban area thoroughfare plan study and engineering judgment based on knowledge of travel times in the area. **Table 3** shows the friction factor values used with each set of productions and attractions.

Table 3
Friction Factors

Time	Home Based Work	Home Based Other	Non-Home Based	EI
1	13259	8060	11869	71518
2	14844	9234	14978	132798
3	16135	9830	16376	266258
4	16945	9808	14978	132798
5	16135	9255	13450	71518
6	14844	8334	11896	41344
7	13259	7224	10394	25505
8	11554	6082	8999	16692
9	9869	5018	7744	11521
10	8303	4093	6643	8338

Time	Home Based Work	Home Based Other	Non-Home Based	EI
11	6914	3330	5699	6289
12	5726	2726	4904	4915
13	4739	2267	4246	3958
14	3938	1930	3709	3263
15	3302	1699	3280	2739
16	2807	1559	2946	2327
17	2431	1506	2694	1989
18	2155	1543	2517	1700
19	1965	1694	2409	1446
20	1852	2008	2370	1215
21	1813	2596	2404	1003
20	1851	2500	2521	810
21	1983	2500	2743	634
22	2237	2500	2700	600
23	2200	2500	2700	600

Mode Choice

Mode choice is the third step in the four step process. This step predicts the amount of travel that will be made by each available mode of transportation. Typically, the two modes analyzed are auto and transit. However, at this time there is not a transit system operating in the Asheboro area. In addition, there are no transit projects of significant impact in the Asheboro area. The only transit in the area is rural human service and general public, which does not run the types of urban service that would warrant analysis in this study.

Trip Assignment

Trip assignment is the final step in the four step process. This step determines what route a trip will take to reach its destination.

Trips can be assigned to the street network using several different methods, including all-or-nothing, capacity restraint, or equilibrium. The all-or-nothing method is the simplest form of loading and works best in non-congested areas. This method assigns the trips based only on minimum time paths (the route with the shortest travel time). All-or-nothing loading also gives travel desires, which indicates where traffic actually **wants** to go. The capacity restraint method simulates the effect that congestion has on each route. This method allows trips to be loaded incrementally while changing the impedance on a route as the traffic increases. The equilibrium method applies the theory of capacity restraint until no trip can improve its impedance by changing routes.

For the most part, Asheboro is considered a non-congested area. While there are congested areas associated with morning and afternoon peak periods, the overall daily capacity is not being exceeded on most facilities at this time. All-or-nothing loading was initially used for calibration of the base year model. Link volumes were not significantly changed on the base year network when an iterative capacity restraint was used to load the calibrated network. Due to the number of parallel facilities in the Asheboro planning area (e.g. I-73/74 and US 220 Business, and US 64 and the proposed US 64 Bypass), an iterative capacity restraint loading is being used to evaluate the future year networks.

Model Calibration

The purpose of the traffic model is to predict future traffic in the area. To do this, trips must be assigned so that the generated traffic matches the actual traffic. This is done through calibration: an iterative process during which incremental changes can be made to the network, trip generation, or trip distribution. The purpose for each change is to more accurately reflect the travel patterns occurring on the existing street network. Once the model accurately reflects the existing traffic, it can be used to validate existing deficiencies and predict traffic in the future.

Level of Accuracy

Three steps were taken to check the level of accuracy of the Asheboro model. The first step was to follow the trips through each step involved in developing the traffic model. The purpose of this was to ensure that no trips had been accidentally added or subtracted, and that no trips had been counted twice. The second step was to check the screenlines. The model is considered to accurately reflect the overall traffic patterns of the actual street system if the screenlines are between 90% and 110% of the ground counts taken at the screenlines. **Table 4** shows the screenline comparison for the Asheboro study area.

The final check on the model was to match the generated volumes on individual links to the ground counts on the same links. This process is used to locate specific problems that might be present in the network.

Table 4
Actual vs. Generated Screenline Totals

Screenline	Ground Count	Generated Volume	Percent
A (NS-East)	63,273	65,000	103
B (EW)	68,157	62,050	91

IV. Existing and Projected Conditions

The flow of traffic within a network is based on the land use, population, economic conditions, and conditions of the travelways within the network (see **Chapter III**, Traffic Model Development). Before an accurate estimate can be made for future travel patterns, an accurate inventory and investigation of present land use, population, economy, and road condition and usage must be completed. The base year and projected socio-economic data is located in **Appendix B**.

Base Year Socio-Economic Data

Base year socio-economic data for the Asheboro Thoroughfare Plan study was based on a 100% windshield survey of the planning area. Housing was gathered in five categories: excellent, above average, average, below average, and poor. Total number of houses in 1997 was 14,052. Employment information (total number of employees) was collected by personal interview and by telephone. This information is separated by Standard Industrial Classification (SIC) codes and divided into five categories: industrial, highway retail, retail/wholesale, service, and office. The relationship between the socio-economic data and traffic is explained in Chapter III.

The 1997 employment to population (emp/pop) ratio was 0.73. This is considerably higher than the average rate of 0.40 to 0.60. The high ratio indicates a strong economy, low unemployment, and indicates that Asheboro serves as the employment center for the area.. As the population increases to the year 2025 it may not be reasonable to expect the emp/pop ratio to remain this high.

Socio-Economic Projections

Housing

The initial step for predicting housing, as well as all other socio-economic, is to project the total population in the planning area. These projections were made using trends developed by the North Carolina Data Center, Office of Budget and Management for Randolph County and the entire State (see **Appendix C**). The 2025 planning area population is estimated to be approximately 46,400. The average persons per dwelling unit for the planning area in 2025 is estimated to be 2.25 (see **Appendix C**). Therefore, the estimated number of dwelling units for 2025 is 20,600 (46,400/2.25); new dwelling units 6,500 (20,600-14,052).

New dwelling units were distributed to zones based on information provided be local staff (see **Figure 4**). One third of the dwellings were distributed to all zones (except zones 33 and 105). Another third of the new housing was distributed to the rural area of the planning area. This is based on land availability in the rural area, and lack of land in currently developed areas. The other third of new housing was distributed to zones where there is currently high growth. These zones include: 34, 40, 44, 52, 55, 63, 64, 65, 66, 73, 74, 75, 76, 82, 86, 119, 120, 121, and 122.

Employment

For 2025 the initial emp/pop ratio was assumed to be 0.63. While this is lower than 1997, it remains higher than the average. Initial design year employment categories were broken down into the same percentages of total employment as in the base year. Based on discussions with local staff, tourism will play a greater role in Asheboro in the future. Therefore, service (hotel/convention facilities), retail/wholesale, and highway retail percentages were increased; industrial percentage was decreased. See **Figure 5** for the distribution of future year employment.

Industrial employment is expected to increase by 1575 jobs. Industrial growth typically occurs in same zones that have industrial employment in the base year. Based on discussions from local staff industrial growth is also expected in zones 43, 53, and 54. The highest industrial growth is anticipated to occur in the northern zones around US 220 Bypass and Business.

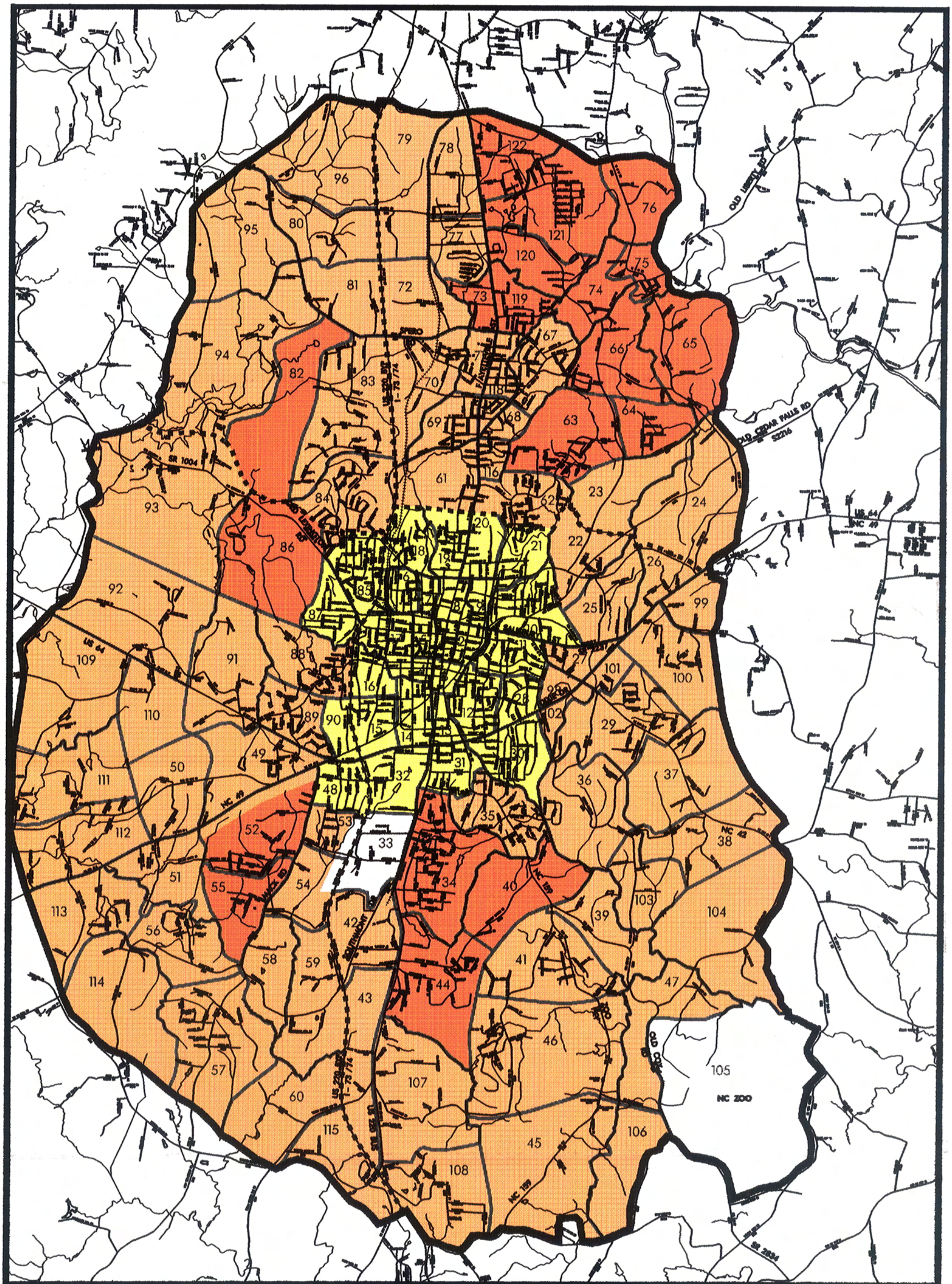
Retail/wholesale and **highway retail** employment are expected to increase by jobs 880 and 821jobs respectively. Growth will continue to occur in areas around the mall (intersection of US 64 and NC 42) and along US 64. Shopping areas will also follow new housing developments and new roadway facilities. Retail growth was expected to occur along US 220 Bus. in the northern portion of the planning area, as well as, around interchanges along US 220 Bypass. There is also a proposed US 64 Bypass south of Asheboro. Areas around proposed interchanges were also expected to have retail growth.

Service employment is expected to increase by 1650 jobs. Half of the new service employment was distributed to zones with base year service employment. A quarter of the new service employment was distributed to areas that are expected to have high housing growth. The remaining quarter of new jobs were distributed in areas around the proposed US 64 Bypass and the NC Zoo. It is anticipated that increased tourism and a potential convention center at the Zoo will promote this growth.

Office employment is expected to increase by 433 jobs. Most of the new office employment was distributed to zones with base year office employment. Additional office employment was distributed to zones 61 and 105. These are areas where local staff felt there may be new office development in the future.

Summary

The socio-economic projections were prepared by the Statewide Planning Branch with input by City staff. Asheboro City staff reviewed projections and changes were made based on their comments. The Asheboro City Council endorsed the socio-economic projections on April 9, 1998.



LEGEND

Cordon Line
Screen Line
Zone Line
None
Low
Medium
High

PROJECTED RESIDENTIAL GROWTH

March 9, 1998

Figure 4

ASHEBORO

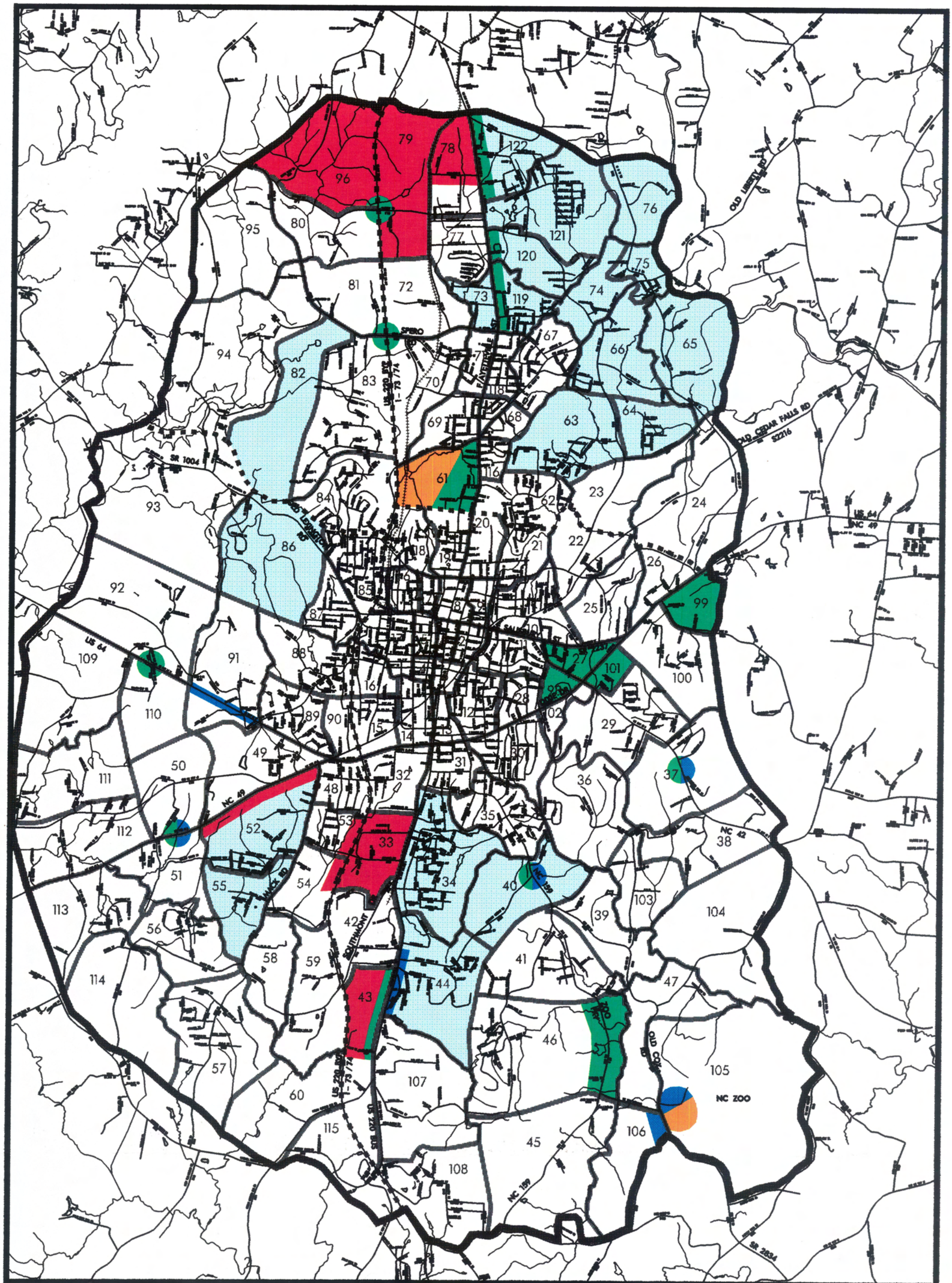
RANDOLPH COUNTY NORTH CAROLINA

Prepared by the
North Carolina Department of Transportation
Division of Highways-Statewide Planning Branch
With assistance from the Randolph County Planning Department
and in cooperation with
U.S. Department of Transportation
Federal Highway Administration

base map date
APRIL 3, 1996

scale in meters

scale in feet


LEGEND
Cordon Line
Screen Line
Zone Line
High Residential Growth /Services
Industrial Growth
Retail/Highway Retail/Wholesale
Service
Office
PROJECTED HIGH GROWTH AND EMPLOYMENT AREAS
ASHEBORO
RANDOLPH COUNTY
NORTH CAROLINA
Prepared by the
North Carolina Department of Transportation
Division of Highways-Statewide Planning Branch
With assistance from the Randolph County Planning Department
and in cooperation with
U.S. Department of Transportation
Federal Highway Administration
base map date
APRIL 3, 1996
scale in miles
scale in feet
March 9, 1998
Figure 5

V. Thoroughfare Plan Development

Public Involvement

A notable component of the long range transportation planning process is the public involvement. It is extremely important for the public to understand and buy in to the plan once it is developed and approved. There were several phases of the public involvement process used to develop the Asheboro Thoroughfare Plan. To get participation by the public, goals and objectives survey, drop-in meetings, and public hearings were used throughout the study.

Goals and Objectives Survey

The Goals and Objective Survey was the first opportunity for the public to give input into the plan update. This process took place in the initial stages of plan development when the base year housing and employment data was being collected for the area. The survey questions and results are shown in Appendix D. The results indicated a tremendous amount of concern about congestion on US 64 (Dixie Drive) and US 220 Business (N. Fayetteville Street).

Drop-in Meeting

Two drop-in meetings were held in the Asheboro City Hall during the development of the thoroughfare plan. The format for these meetings is to provide an opportunity for the public to discuss the plan one-on-one with staff from the City or State. There was not a formal presentation made at these meetings. Citizens are also provided comment sheets that may be used to make suggestions for the plan.

The first drop-in meeting was held on August 19, 1998 to provide an opportunity for the public to see where congestion was anticipated to occur in the future (2025 design year). At this time there was not a recommendation as to how to eliminate future congestion. There were two scenarios presented to the public: Existing + Committed Network (E+C) and the 1986 Thoroughfare Plan (see **Figure 6**). The E+C network included improvements to the transportation system associated with the 1998-2004 State Transportation Improvement Program (TIP) (see **Figure 7**). Only projects that were fully or partially funded were included in the analysis (i.e. did not include "identified future need," "scheduled for feasibility study," etc.). The 1986 Thoroughfare Plan showed additional improvements as recommended by the previous thoroughfare plan study. **Figures 8** and **9** show the deficiencies of the E+C network and the 1986 Thoroughfare plan respectively.

The second drop-in meeting provided the public an opportunity to comment on a preliminary recommended thoroughfare plan (see **Figure 10**). This meeting was held on November 4, 1998. The primary function of the second drop-in session was to provide an opportunity for the public to view the proposed thoroughfare plan and make comments and suggestions. General comments from the public was favorable with particular interest in the US 64 Bypass south of Asheboro and the proposed corridor between US 220 and US 64 northeast of Asheboro.

Public Hearing

The City Council for the City of Asheboro held a public hearing on December 10, 1998. The purpose of this public hearing was to allow citizens a chance to comment on the recommended thoroughfare plan dated November 16, 1998. Based on comments and questions at the public hearing, there was not opposition to the recommended plan. Figure 11 is the Asheboro Thoroughfare Plan which was adopted by the City of Asheboro on January 7, 1999 and by the Department of Transportation on March 4, 1999.

Thoroughfare Plan Recommendations

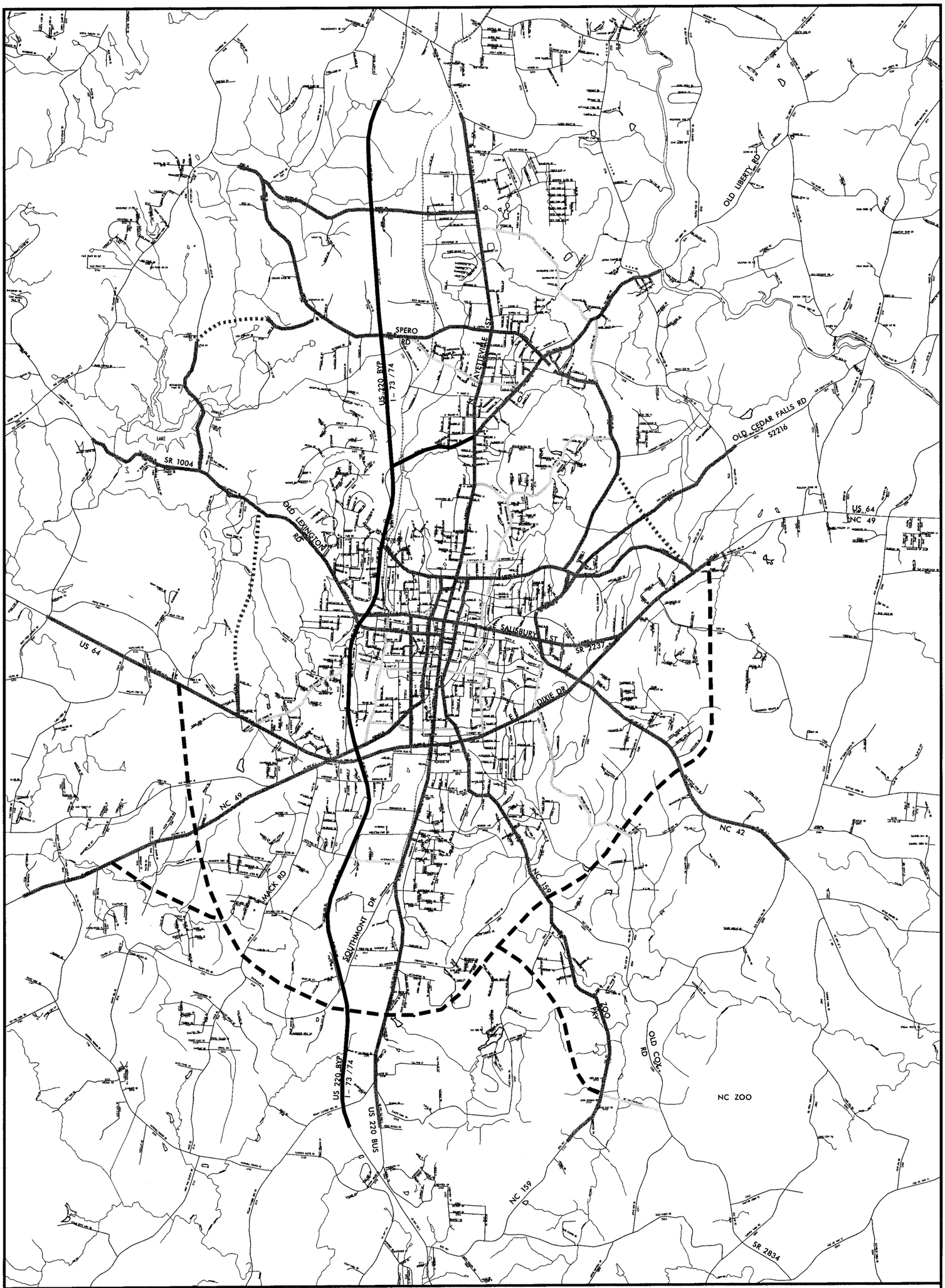
The thoroughfare plan recommendations listed below are based on adequately serving projected traffic through the year 2025. It is desirable to achieve a level of service C for new facilities and level of service D for widening projects. Detailed descriptions of the recommendations are located in the *Street Appendix* (Appendix A).

Minor Thoroughfares

NS Collector – This corridor is located to the west of I-73/74 (US 220 Bypass) and is intended to serve projected housing development in this area. Most of the new residential development in Asheboro is based on a cul-de-sac system. This usually includes a few main roads in subdivisions with a series of cul-de-sacs. This type of development is not usually conducive to connecting subdivisions. It may also result in a lot of traffic getting on the main road system at a few concentrated points especially during the morning and evenings peak periods. The NS Collector is intended to be a continuous facility that would connect developments that are anticipated to occur. This facility would provide access to major thoroughfares in the area such as: Spero Road, Old Lexington Road, and US 64. As with most minor thoroughfares it is anticipated that implementation of this facility would be the responsibility of the City of Asheboro. Similar facilities have been implemented by local jurisdictions across the State through local subdivision regulations.

Crestview Church Road / Bowers Chapel Road Connector – This connector is parallel to the proposed US 64 Bypass but serves an entirely different function. The Bypass is a control access facility that will provide for the movement of vehicles but does not provide land access. The Crestview Church Road / Bowers Chapel Road Connector provides access to land that is anticipated to develop over the next 20-25 years. Dixie Drive will continue to be a major destination for traffic in Asheboro, and will continue to be congested. The Connector provides alternative routes for getting to Dixie Drive for residents in the southern section of the planning area.

Elm Street / Meadowbrook Road Connector – This realignment of the intersections of Elm Street and Meadowbrook Road at Brower Street will facilitate the movement of north/south traffic in this residential area. Currently Elm Street and Meadowbrook Road serve as an alternative route to Fayetteville Street for residents in this area.



LEGEND

	Existing	Proposed	Long Range
Freeway			
Major Thoroughfare			
Minor Thoroughfare			

REVISIONS:		
ASHEBORO	STATEWIDE PLANNING	N.C. DEPARTMENT OF TRANSPORTATION
11-15-90	12-07-90	10-04-90

THOROUGHFARE PLAN

ADOPTED BY:	
CITY OF ASHEBORO	August 7, 1986
RECOMMENDED BY STATEWIDE PLANNING	August 21, 1986
N.C. DEPARTMENT OF TRANSPORTATION	September 12, 1986

September 12, 1986

Figure 6

ASHEBORO

RANDOLPH COUNTY NORTH CAROLINA

Prepared by the
North Carolina Department of Transportation
Division of Highways-Statewide Planning Branch
With assistance from the Randolph
County Planning Department
and in cooperation with
U.S. Department of Transportation
Federal Highway Administration

base map date
APRIL 3, 1996

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scale in meters

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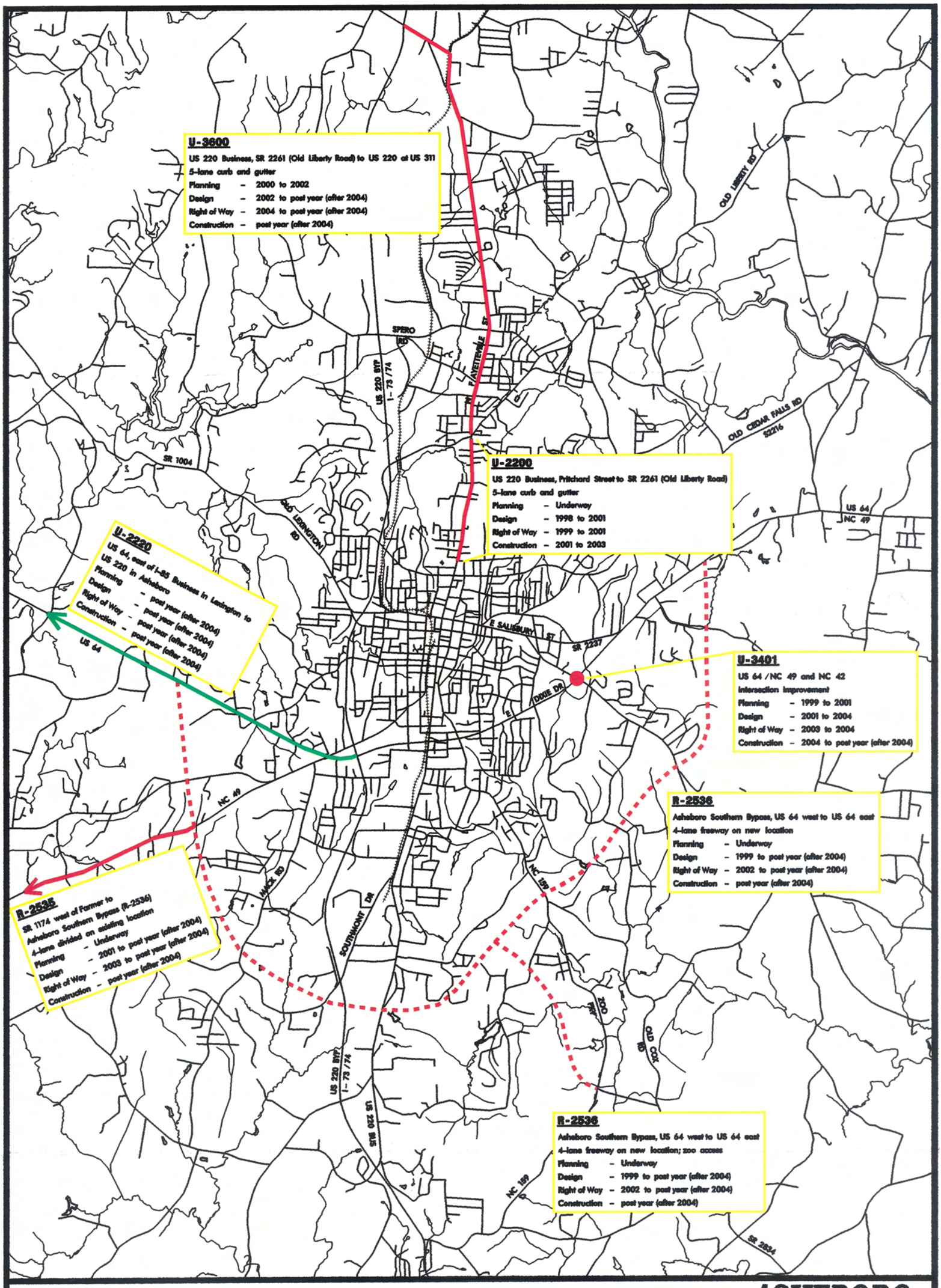
scale in feet



LEGEND

	Widening	New Facility
Existing and Committed	———	- - - -
Unfunded Project	———	- - - -

PROJECTS LISTED IN 1998 - 2004 NORTH CAROLINA TRANSPORTATION IMPROVEMENT PROGRAM

July 27, 1998

Figure 7

ASHEBORO

RANDOLPH COUNTY NORTH CAROLINA

Prepared by the North Carolina Department of Transportation Division of Highways-Statewide Planning Branch

With assistance from the Randolph County Planning Department and in cooperation with U.S. Department of Transportation Federal Highway Administration

base map date APRIL 3, 1996

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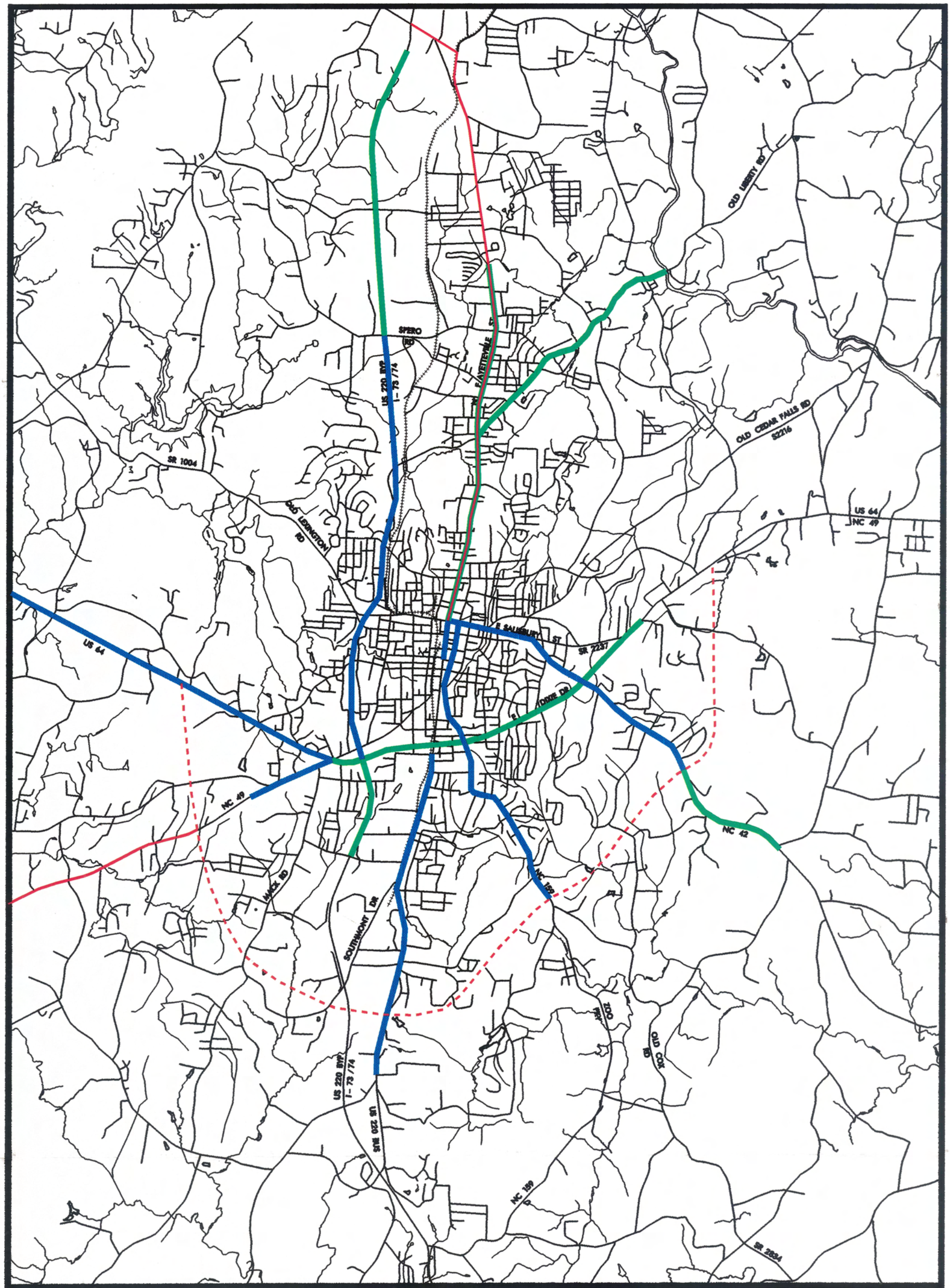

LEGEND

- Near Capacity
- Over Capacity
- New Facility
- Improved Facility

N

DEFICIENCY ANALYSIS
EXISTING AND COMMITTED NETWORK

July 27, 1998
Figure 8

ASHEBORO
RANDOLPH COUNTY
NORTH CAROLINA

Prepared by the
North Carolina Department of Transportation
Division of Highways-Statewide Planning Branch
With assistance from the Randolph
County Planning Department
and in cooperation with
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Federal Highway Administration

Base map date
APRIL 3, 1996

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miles in meters

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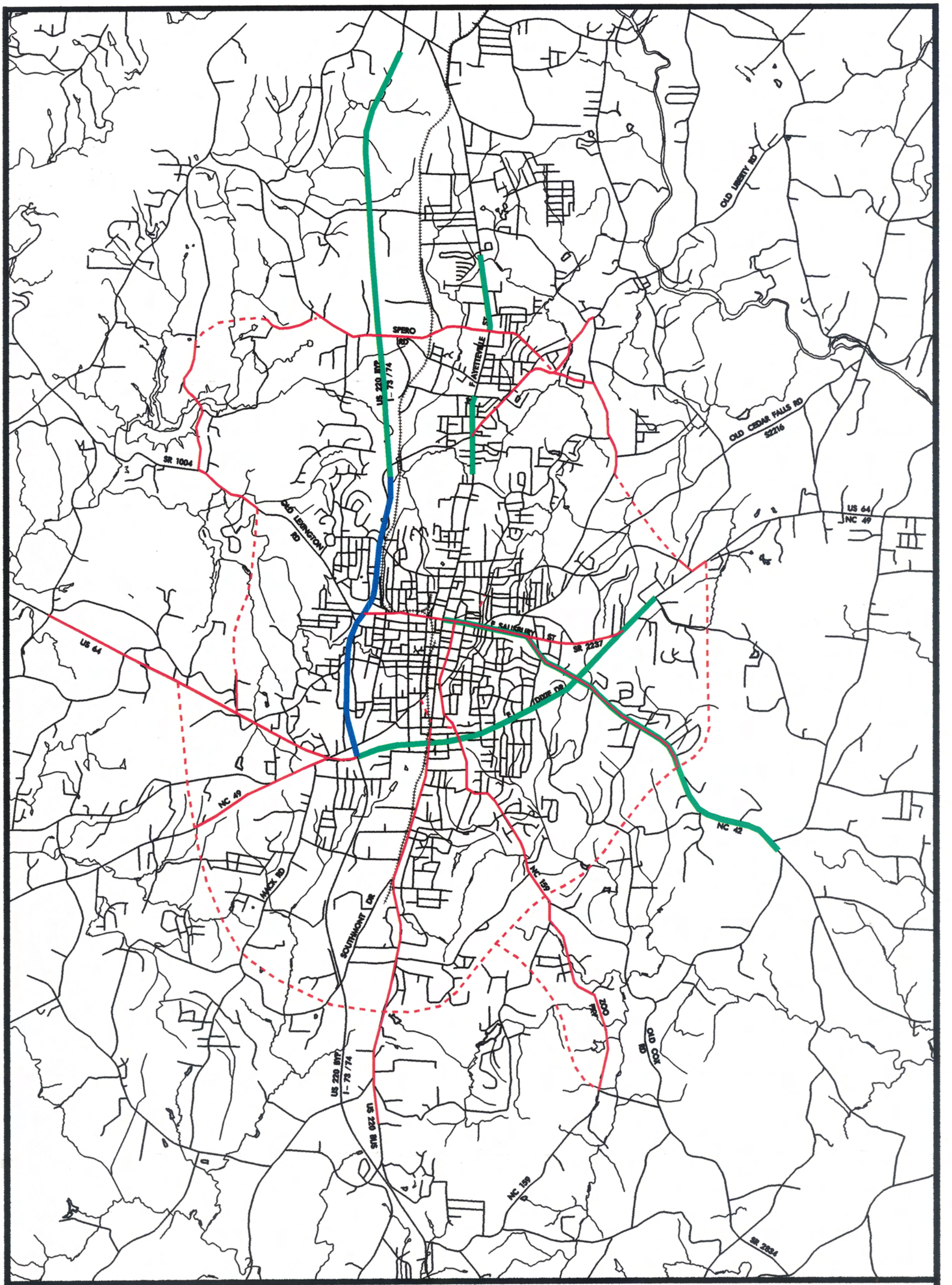
miles in feet



LEGEND

Near Capacity

Over Capacity

1986 Thoroughfare Plan Proposed Improvements — Widening — New Facility

DEFICIENCY ANALYSIS
1986 THOROUGHFARE PLAN

N

ASHEBORO
RANDOLPH COUNTY NORTH CAROLINA

Prepared by the
North Carolina Department of Transportation
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base map date
APRIL 3, 1996

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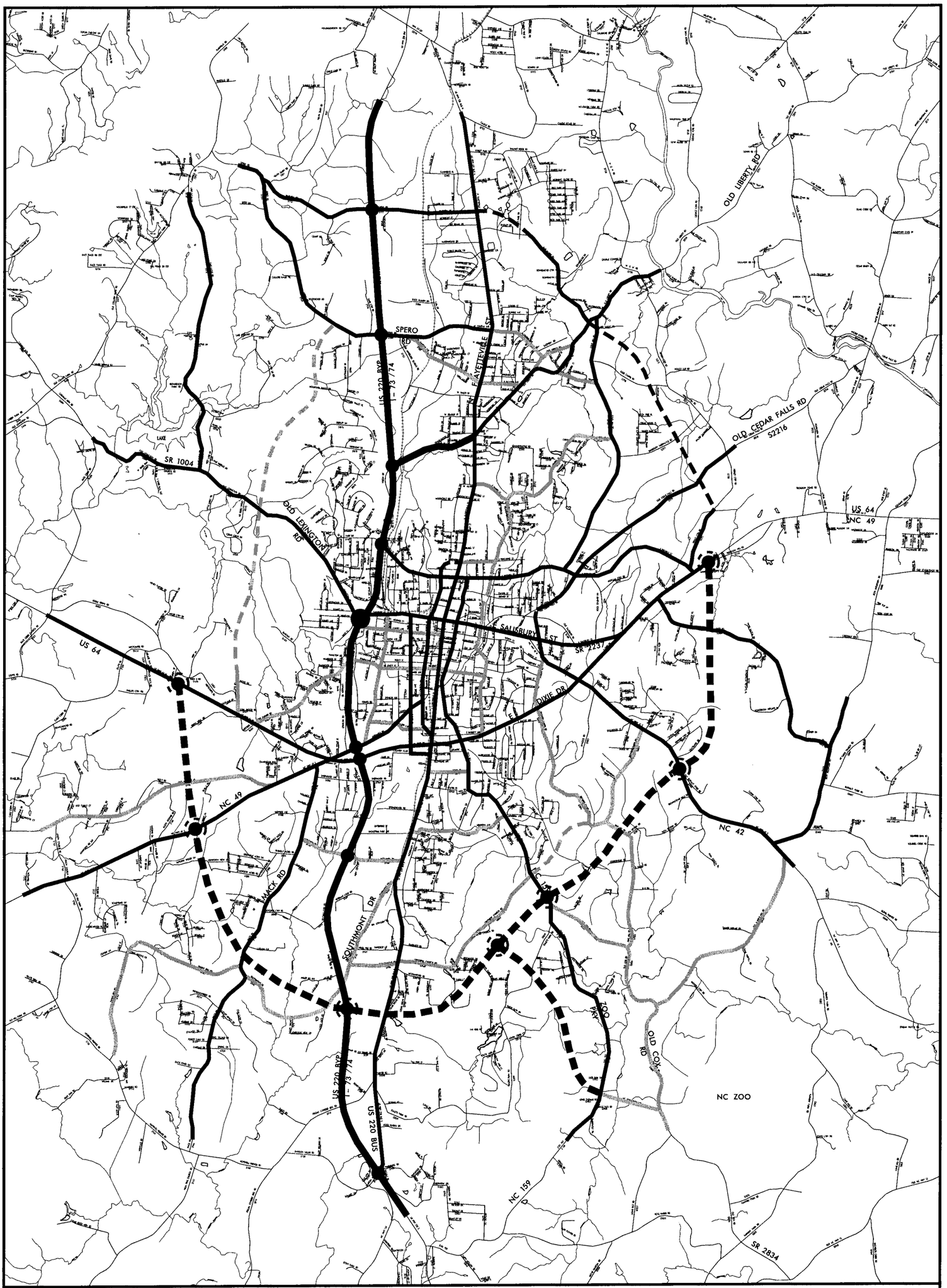
scale in feet

July 27, 1998

Figure 9



LEGEND

	Existing	Proposed
Freeway	▬▬	▬ ▬
Major Thoroughfare	▬▬	▬ ▬
Minor Thoroughfare	▬▬	▬ ▬
Interchange	●	◌

PRELIMINARY RECOMMENDED THOROUGHFARE PLAN

ADOPTED BY:	
CITY OF ASHEBORO	
RECOMMENDED BY STATEWIDE PLANNING	
N.C. DEPARTMENT OF TRANSPORTATION	
PUBLIC HEARINGS	

Figure 10

ASHEBORO

RANDOLPH COUNTY
NORTH CAROLINA

Prepared by the
North Carolina Department of Transportation
Division of Highways–Statewide Planning Branch
With assistance from the Randolph
County Planning Department
and in cooperation with
U.S. Department of Transportation
Federal Highway Administration

base map date
APRIL 3, 1996

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scale in meters

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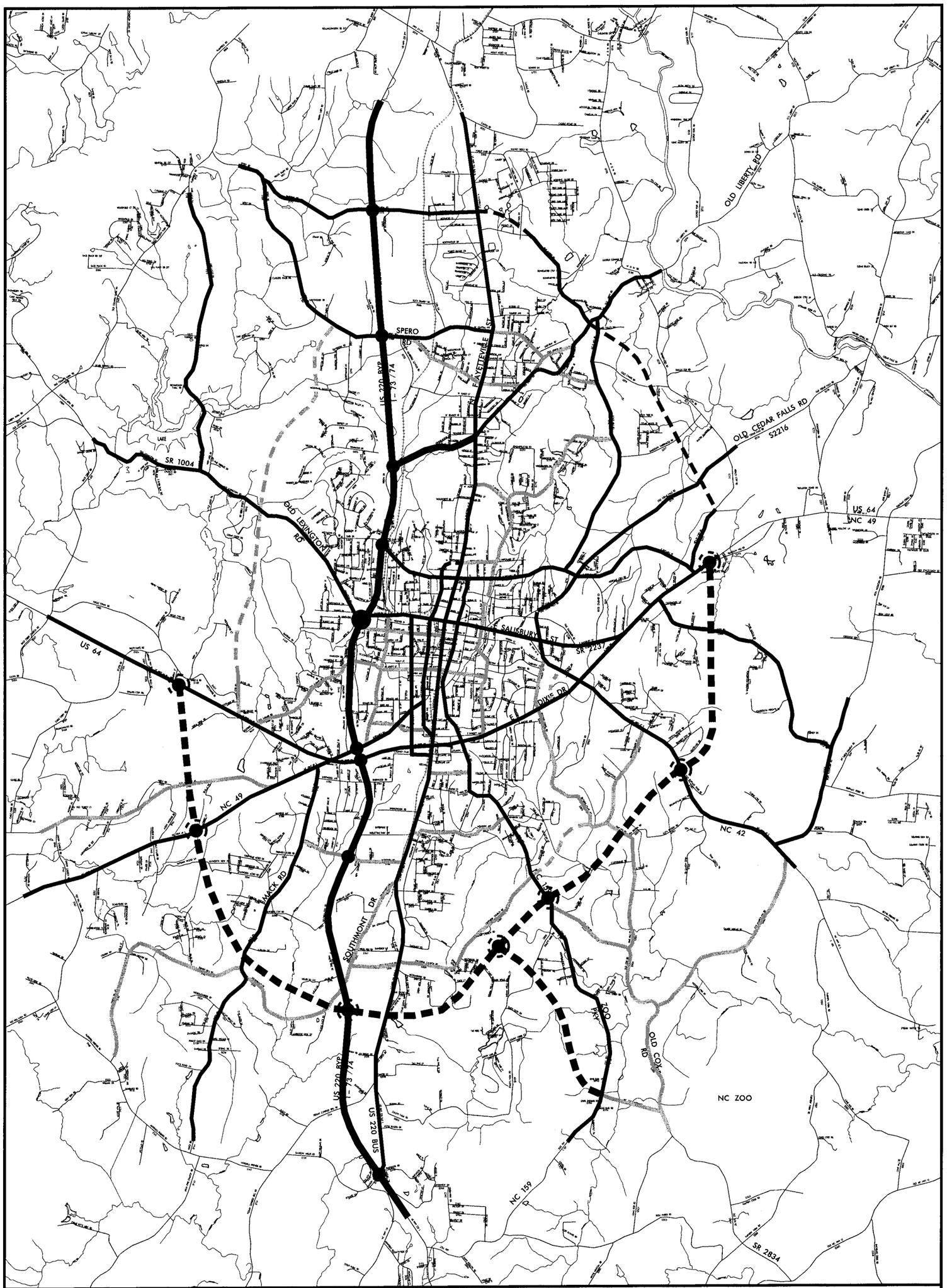
scale in feet



LEGEND

	Existing	Proposed
Freeway	▬▬	▬ ▬
Major Thoroughfare	▬▬	▬ ▬
Minor Thoroughfare	▬▬	▬ ▬
Interchange	●	◎

THOROUGHFARE PLAN

ADOPTED BY:	
CITY OF ASHEBORO	January 7, 1999
RECOMMENDED BY STATEWIDE PLANNING	January 15, 1999
N.C. DEPARTMENT OF TRANSPORTATION	March 4, 1999
PUBLIC HEARINGS	December 10, 1998

ASHEBORO

RANDOLPH COUNTY NORTH CAROLINA

Prepared by the
North Carolina Department of Transportation
Division of Highways–Statewide Planning Branch
With assistance from the Randolph County Planning Department
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U.S. Department of Transportation
Federal Highway Administration

base map date
APRIL 3, 1996

0 500 1000 2000 3000
scale in meters

0 2000 4000 6000 8000 10000
scale in feet

Figure 11

Major Thoroughfares

Northeast Corridor – A deficiency in the Asheboro transportation system exists in the northeastern section of the planning area. There is a need for a contiguous facility from I-73/74 (US 220 Bypass) to US 64, east of the City. One alternative considered was the use of existing facilities to provide for the movement of traffic in this corridor. This was similar to the "outer loop" that was on the previous Asheboro Thoroughfare Plan. The outer loop concept was discarded due to the disruption that would be necessary if these facilities were improved. With this in mind a "new location" facility was considered. Every effort was made to locate a corridor that did not use existing facilities. This would reduce the impact on existing development and would provide more design options for the recommended facility.

One of the considerations was the connection with I-73/74 (US 220 Bypass). Due to spacing of interchanges on I-73/74 it was decided to use the existing interchange at Pineview Road. It will be necessary to upgrade Pineview Road to five lanes from the I-73/74 interchange to Fayetteville Street (US 220 Business). This facility was originally intended to go from the intersection of Fayetteville Street to US 64 east of Asheboro on new location. There were, however, some problems in locating an entirely new corridor in this area. At the intersection of Hub Morris Road and Old Liberty Road there was a new subdivision. A pumping station is also located in this area. To move the facility further to the east would have impacted Deep River which is another constricting factor in this area. For these reasons a portion of the proposed Northeast Corridor will utilize an existing section of Hub Morris Road as it approaches the intersection of Old Liberty Road. The new location would terminate at Henley Country Road. Henley Country Road would need to be upgraded to five lanes to Presnell Street.

- **Project Recommendations:** It is recommended that ultimately most of this facility will be a four lane boulevard constructed on new location from the existing intersection of US 220 Business and Pineview Road to Henley Country Road (SR 2215). While most of this facility will be on new locations, areas where existing facilities are used should be widened to a five lane cross section.

- **Transportation Demand:** One of the outcomes of the public involvement process was the lack of alternatives for travel between northern and eastern Asheboro. The primary routes currently used are Fayetteville Street (for the north/south movement) and Presnell Street, Salisbury Street or Dixie Drive (for east/west movement). The northeastern portion of the planning area is one of the high growth areas in Asheboro. As this area continues to expand there will need to be alternative routes to the commercial areas around the Randolph Mall on US 64.

- **Capacity:** The area is currently served by rural two lane roads. A four lane boulevard (with limited five lane sections) will provide adequate capacity to serve existing and projected development in the area and travel between US 220 Business and US 64. Driveway access should be limited with access being provided only at roadway intersections. Intersections should be at-grade.

- **Safety Issues:** Safety problems will arise as congestion increases in the northeastern portion of the planning area. Without providing an alternate route for travel between the northern and eastern sections of Asheboro, traffic will need to use Fayetteville Street (US 220 Bus.) or existing rural facilities. Several high accident locations currently exist on Fayetteville Street. A facility in the northeast would provide an alternate route to going through these high accident locations. A facility on new location will provide the opportunity to provide higher design standards. Providing turn lanes at intersections will also reduce potential conflicts.

- **Social Demands:** One of the high residential growth areas for the City of Asheboro is in the northeast section of the planning area. The primary commercial area will continue to concentrate in the area around the Randolph Mall and other areas in the eastern portion of the planning area. This corridor will provide a more direct route for traffic between the northern and eastern areas while avoiding areas that are currently experiencing capacity problems.

- **System Linkages:** This facility will be a primary link between I-73/74 (US 220 Bypass) and US 64 east of Asheboro. I-73/74 and US 64 are primary State routes that serve statewide and regional traffic.

- **Modal Relationships:** There is not currently fixed route transit service provided in Asheboro and there are not plans at this time to provide service during the planning horizon year (2025).

US 64 Bypass – This recommendation is currently being studied as part of TIP Project R-2536. Please contact the NCDOT's Project Development and Environmental Analysis Branch for the most current information on this project.

- **Project Recommendation:** It is recommended that a controlled-access freeway be constructed on new location from the US 64 west of Asheboro to US 64 east of Asheboro. This facility will have interchanges at both connections with existing US 64, NC 49, I-73/74 (US 220 Bypass), the proposed Zoo Connector, NC 159 (Zoo Parkway), and NC 42. An interchange at SR 1144 (Mack Road) should be considered, but the close proximity with the I-73/74 (US 220 Bypass) interchange may not make this interchange at this location feasible.

- **Transportation Demand:** US 64 serves as a major east-west route for central North Carolina and provides a parallel facility to the I-40 and I-85 corridor that connects the Research Triangle area to the Charlotte area. US 64, also, provides access to the proposed I-73/74 Corridor (US 220 Bypass) in Asheboro. This freeway has been proposed in response to both the increasing traffic in and around Asheboro and, in combination with the Zoo Connector, to provide access to the North Carolina Zoological Park. This facility will also serve as the primary access to the NC Zoo.

- **Capacity:** US 64 through Randolph County is currently non-control of access. 2025 traffic volumes along this corridor are projected to range from 25,000 vehicles per day to 70,000 vehicles per day. TIP Project R-2536 (Asheboro Bypass) will help reduce the traffic volumes

along the existing US 64 corridor in Asheboro. Due to the strip development along existing US 64, there will continue to be congestion problems in the future; the Bypass, however, will offer relief and an alternate route for travelers.

- **Safety Issues:** If the US 64 Bypass is not built, congestion and delay will continue to increase into the design year. Safety conditions will also continue to decrease due to the previously mentioned conflict between "local" and "through" travelers. In the past three years, 99 accidents have been reported along this corridor. Based on citizen input, safety is perceived as being a major problem on this facility. Alternate routes through neighborhoods that are currently used are not acceptable to the residents in these areas. Safety conditions are expected to worsen as the existing facility becomes more congested.

  Typically, a controlled-access facility route will have fewer accidents than an uncontrolled facility. Statewide statistics show an accident rate of 251.6 accidents per 100 million vehicle miles (MVM) on uncontrolled US urban highways, while a similar fully access-controlled highway has only 102.7 accidents per 100 MVM. In addition, the new facility will help to reduce congestion and the potential for accidents by providing an alternate route for through-travelers.

- **Social Demand / Economic Development:** Because of the road's lack of access control, US 64 has been heavily strip developed throughout the Asheboro urban area. These developments typically have driveway access directly onto US 64, reducing the capacity of the route and providing opportunities for an increase in number of accidents.

- **System Linkage:** US 64 is part of the North Carolina Intrastate System which was defined by the 1989 Highway Trust Fund. The Intrastate System is intended to provide high-speed, safe travel service throughout the State. This legislation also states that all segments of the Intrastate System shall have at least four travel lanes and, when warranted, shall have vertical separation or interchanges at crossings, more than four travel lanes, or bypasses (*Transportation and Highway Laws of North Carolina*, 1991, NCGS 136-178). Because of the important role US 64 plays on a statewide basis, it is imperative that the highway be kept in good operating condition. A full control-of-access bypass would fulfill this need.

- **Modal Relationships:** There is not currently fixed route transit service provided in Asheboro and there are not plans at this time to provide service during the planning horizon year (2025).

I-73/74 (US 220 Bypass) – The I-73/74 corridor was designated in the Federal transportation legislation, Transportation Equity Act for the 21st Century (TEA-21), in 1998. I-73 and I-74 enter North Carolina from Virginia in Rockingham County and Surry County respectively. The two interstates come together north of the Asheboro planning area and run as one through the Asheboro urban area along the existing US 220 Bypass. Interstate facilities are designed to facilitate long distance travel. Designation as an interstate will impact the future traffic. An additional 10,000 vehicles per day are expected to use this corridor by the 2025 design year due to the interstate designation.

The I-73/74 (US 220 Bypass) corridor is one of only two north/south facilities that run through the entire planning area (US 220 Business, Fayetteville Street, is the other). As Fayetteville Street is highly developed, contains many consecutive driveways and is highly congested, the Bypass serves local traffic as well as long distance traffic. I-73/74 (US 220 Bypass) is, therefore, an integral piece of the Asheboro transportation system.

- **Project Recommendation:** Based on anticipated traffic (see Capacity below) the section of I-73/74 (US 220 Bypass) from Vision Drive to McDowell Street will need to be widened to six lanes (three per direction). It is also recommended that the interchange at Salisbury Street (NC 42)/ Sunset Avenue be upgraded. The current configuration has left entrance and exit ramps. Current standards call for ramps to be located on the right side. This would also be consistent with typical driver expectation for interchange design.

- **Transportation Demand:** I-73/74 (US 220 Bypass) serves as a major north-south facility for central North Carolina. This facility is a primary route used to access the North Carolina Zoological Park, potteries in the Seagrove area south of Asheboro, and beaches in southern North Carolina and South Carolina. As discussed previously I-73/74 (US 220 Bypass) serves local traffic as well as long distance travel.

- **Capacity:** I-73/74 (US 220 Bypass) through the Asheboro planning area is currently a four-lane control of access facility. 2025 traffic volumes along this corridor are projected to range from 31,000 vpd to 61,000 vpd. 1997 traffic volumes on this facility ranged from 14,000 vpd to 36,500 vpd.

- **Safety Issues:** Based on the accident inventory for the area, there are currently no severe accident locations on this facility through the Asheboro planning area. As discussed earlier, a controlled-access facility route will have fewer accidents than an uncontrolled facility. As the area grows and traffic along this facility increases the accident rate will increase. The recommended improvements to I-73/74 (US 220 Bypass) will help relieve any potential accident problems in the future.

- **Social Demands / Economic Development:** Tourism is a major component of the economy in this region of North Carolina. Area potteries and the NC Zoo attract visitors from North Carolina as well as other parts of the country. Maintaining the integrity of the major facilities such as I-73/74 (US 220 Bypass) is essential to the continued success of tourism in this area. Widening portions of I-73/74 (US 220 Bypass) through Asheboro will help maintain adequate infrastructure for tourism.

- **System Linkage:** I-73/74 (US 220 Bypass) is part of the North Carolina Intrastate System which was defined by the 1989 Highway Trust Fund. The Intrastate System is intended to provide high-speed, safe travel service throughout the State. This legislation also states that all segments of the Intrastate System shall have at least four travel lanes and, when warranted, shall have vertical separation or interchanges at crossings, more than four travel lanes, or bypasses (*Transportation and Highway Laws of North Carolina*, 1991, NCGS 136-

178). Because of the important role I-73/74 (US 220 Bypass) plays on a statewide and national basis with the designation of an interstate facility, it is imperative that the highway be kept in good operating condition.

- **Modal Relationships:** There is not currently fixed route transit service provided in Asheboro and there are not plans at this time to provide service during the planning horizon year (2025).

US 220 Business (Fayetteville Street) – Fayetteville Street is a major north-south facility that traverses the entire planning area. Fayetteville Street ranges from a two-lane rural facility to a five-lane facility with strip development to one of the primary facilities in the downtown area. Fayetteville Street is mostly strip development interspersed with residential and industrial. There is no access control on Fayetteville Street; it is lined with numerous driveway and roadway access points. TIP projects U-2200 and U-3600 are currently being studied. Please contact the Project Development and Environmental Analysis Branch for the most current information on these projects.

- **Project Recommendation:** By the horizon year of this plan (2025) much of US 220 Business will be congested. U-2200 and U-3600 will provide improved traffic flow and safety for the sections of Fayetteville Street in the northern portion of the planning area (see project discussions below). For the southern most portion, the current two-lane section will provide adequate level of service through the horizon year. However, if development continues to occur along US 220 Business it will ultimately need to be improved.

  From Crestview Church Road to Country Club Road (intersection with US 64/Dixie Drive) Fayetteville Street will need to be upgraded to a five-lane facility. Much of this portion is a three-lane shoulder section.

  Fayetteville Street, from Country Club Road to Birkhead Street is a four-lane facility, then becomes a three-lane facility to Wainman Street, and then goes back to a four lane facility to Pritchard Street (beginning of U-2200). This facility is curb and gutter with continuous development. It also goes through the downtown (central business district) of Asheboro. This portion of Fayetteville Street would be very difficult to widen in the future. For this reason there are one way connectors with Church Street. The connectors are located to the north near the intersection with Pritchard Street and to the south at Dorsett Avenue (just north of Dixie Drive). While implementing the one way pair system by the horizon year of this plan may not be necessary, it will be needed if development begins to occur in the downtown area.

- **Modal Relationships:** There is not currently fixed route transit service provided in Asheboro and there are not plans at this time to provide service during the planning horizon year (2025).

U-2200 –Fayetteville Street (US 220 Business) is proposed to be widened to a five lane curb and gutter facility from Pritchard Street to Old Liberty Road (SR 2261). This facility is one of the more heavily traveled arterial routes in Asheboro. There are a high number of commercial

developments and side roads. Fayetteville Street is also a major connector between Asheboro and Greensboro. This project is needed to improve traffic flow and safety along this portion of Fayetteville Street.

U-3600 – TIP Project U-3600 is the northern most portion of US 220 Business in the Asheboro planning area and actually extends outside the planning area. This facility is mostly two lanes with turning lanes provided at a few intersecting roadways. Fayetteville Street is predominately strip development interspersed with residential; there are numerous driveway and roadway access points. SR 2270 is a two-lane facility that connects US 220 Business to US 220 Bypass at US 311. There is no access control on Fayetteville Street or SR 2270. This project is needed to improve traffic flow and safety along the studied portion of US 220 Business and SR 2270.

- **Project Recommendation:** It is recommended that Fayetteville Street be widened to a five lane facility from Vision Drive/Old Liberty Road (southern terminus) to SR 2270, and SR 2270 be widened to a five lane facility from Fayetteville Street to US 220 Bypass (northern terminus). Fayetteville Street south of U-3600 is being widened to five lanes as TIP Project U-2200.

- **Capacity:** The existing cross section throughout this project is predominately two lanes with limited turning lanes provided at intersections. 2025 traffic volumes along this corridor are projected to range from 15,400 vpd to 28,900 vpd. 1997 traffic volumes on this facility ranged from 7,400 vpd to 13,000 vpd.

- **Safety Issues:** Safety problems will arise as congestion along these facilities increase. Providing additional capacity will provide safety for the traveling public. In addition, the center turn lane will reduce the potential for turning conflicts.

- **Social Demands / Economic Development:** There is currently a substantial amount of commercial development along the US 220 Business corridor. Interspersed among the commercial development is both residential and industrial development. The area northeast of Asheboro is one of the high growth areas projected during the 1997 Asheboro thoroughfare plan study. In addition, many of the businesses in north Asheboro are located on or adjacent to Fayetteville Street, and depend on this facility for maintaining access to their business. US 220 Bypass (proposed I-73/74) is a major facility in central North Carolina. This project in combination with Vision Drive, which is a four-lane facility, provides access to US 220 Bypass.

- **System Linkages:** US 220 Bypass (proposed I-73/74) is part of the North Carolina Intrastate System which was defined by the 1989 Highway Trust Fund. The Intrastate System is intended to provide high-speed, safe travel service throughout the State. U-3600 in combination with Vision Drive to the south will provide access to the Intrastate System.

Construction Priorities, User Benefits, and Cost Estimates

The recommended improvements in this thoroughfare plan cannot be undertaken all at once, nor should they be. The need for projects is based on traffic projections for a twenty-seven year design period. Therefore, projects must be prioritized for realistic scheduling to be possible. In an effort to provide a common denominator to compare various improvement projects in the Asheboro Thoroughfare Plan, an assessment has been made of the benefits that can be expected from the thoroughfare projects. These benefits and associated project costs are then used along with local input as a guide in prioritizing projects.

Three principal measures were used to estimate the benefits that would be derived from each project: road user cost savings; the potential for increased economic development resulting from the improvement; and the environmental impacts, both positive and negative, which may result. The first measure is an actual estimate of dollar savings, while the others are estimates of the probability of the resulting change. These measures are described below.

Reduced road user costs should result from any roadway improvement, from simple widening to the construction of a new roadway to relieve congested or unsafe conditions. Comparisons of the existing and proposed facility have been made in terms of vehicle operating costs, travel time cost, and accident costs. These user benefits are computed as total dollar savings over the twenty-one year design period using data such as project length, base year and design year traffic volumes, traffic speed, type of facility, and volume/capacity ratio.

The impact of a project on economic development potential is denoted as the probability that it will stimulate the economic development of an area by providing access to land with development potential and reducing transportation costs. It is a subjective estimate based on the knowledge of the proposed project, local development characteristics, and land development potential. The probability is rated on a scale from 0 (none) to 1.00 (excellent), along with the following intermediate levels:

Table 5
Probability Estimation Guide

Subjective Evaluation	Impact Probability
Excellent (very substantial)	1.00
Very Good (substantial)	0.75
Good (considerable)	0.50
Fair (some)	0.25
Poor (none)	0.00

The environmental impact analysis considers the effect of a project on the physical, social and cultural, and economic environment. Many of these have been accounted for in the evaluation of the project with respect to user benefits, cost, and economic development potential. However, there are twelve environmental factors generally not considered in these evaluations. They are the environmental impacts of a project on: (1) air quality; (2) water resources; (3) soils and geology; (4) wildlife; (5) vegetation; (6) housing and neighborhoods; (7) noise; (8) educational facilities; (9) churches; (10) parks and recreational facilities; (11) historic sites; and (12) public health and safety. The summation of both positive and negative impact probabilities with respect to these factors provides a measure of the relative environmental impact of a project.

Table 6
Environmental Considerations

Physical Soils and Geology	Social / Cultural Environment	Economic Environment
Air Quality	Housing and Neighborhoods	Businesses
Water Resources	Noise	Employment
Soils and Geology	Educational Facilities	Economic Development
Wildlife	Churches	Public Utilities
Vegetation	Parks and Recreational Facilities	Transportation Costs
	Historic Sites and Landmarks	Capital Costs
	Public Health and Safety	Operation and Maintenance Costs
	National Defense	
	Aesthetics	

Offsetting the benefits that would be derived from any project is the cost of its construction. A new facility, despite its projected benefits, might prove to be unjustified due to the excessive costs involved in construction. The highway costs estimated in this report are based on the average statewide construction costs for similar project types. An estimate of anticipated right-of-way costs is also included. **Table 7** evaluates the proposed improvements with respect to user benefits, estimated costs, probability of economic development, and environmental impact.

Table 7
Major Thoroughfares
Cost Estimates, Benefits, and Probable Impacts

Description	Construction Cost	User Benefits	Physical Impacts	Social/Cultural Impacts	Economic Impacts
Proposed US 64 Bypass (R-2536)	Contact the North Carolina Department of Transportation's Project Development and Environmental Analysis Branch for the most up to date information.				
Fayetteville Street (U-2200 and U3600)	Contact the North Carolina Department of Transportation's Project Development and Environmental Analysis Branch for the most up to date information.				
Northeast Corridor	22,000	787,200	-0.85	-0.45	+0.75
I-73/74 Widening	77,000	36,600	-0.35	-0.65	+0.75

Notes: All costs and benefits are in $1,000.

Since the Northeast Corridor will be primarily on new location, it will have the greatest physical impacts on the environment. Also, due to the close proximity of Deep River, drainage issues will need to be addressed that may impact water quality. There will be some minor social/cultural impacts associated with this project, especially on the portion that runs along Hub Morris Road. There will also be impacts at major intersections with Old Liberty Road, Gold Hill Road, and Old Cedar Falls Road. The economic benefits of this project should be positive. As the City of Asheboro continues to grow, it will be necessary to facilitate the movement of people from the northern portion of the planning area to the southern and eastern portions, especially near the major shopping area around the mall.

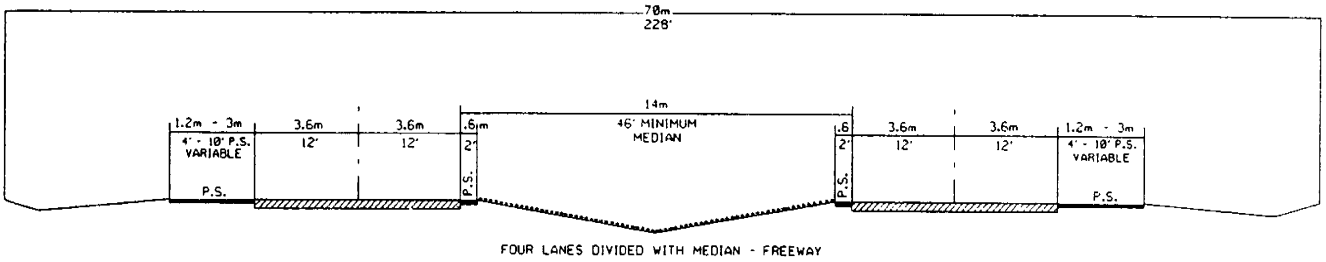
The widening of I-73/74 will take place on the existing location and should therefore create minimal physical impacts. For this project the greatest negative impacts will be social. Interchanges at NC 42/Sunset Avenue and US 64(Dixie Drive)/Albemarle Road will need to be reconstructed. This may have impacts on adjacent residential and commercial development. While this facility is important to local traffic and traffic movement to employment areas outside of the planning area, it is also very important to the movement of people and goods on the statewide and national level. Therefore, the economic impacts would be positive for widening this facility in the future. It should also be noted that the economic impacts to **NOT** widen this facility in the future would be negative to the people of Asheboro.

APPENDIX A

Street Tabulation and Recommendations

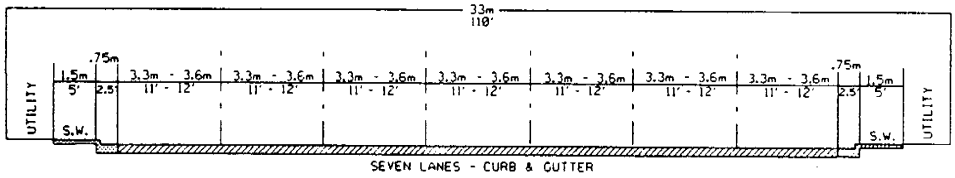
TYPICAL THOROUGHFARE CROSS SECTIONS

A.



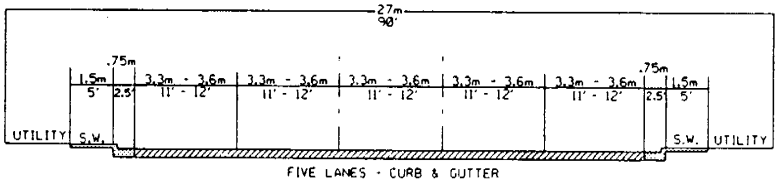
FOUR LANES DIVIDED WITH MEDIAN - FREEWAY

B.



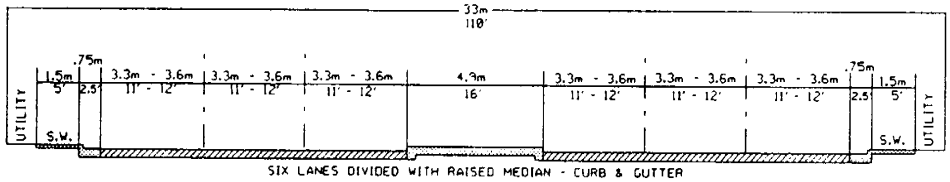
SEVEN LANES - CURB & GUTTER

C.



FIVE LANES - CURB & GUTTER

D.

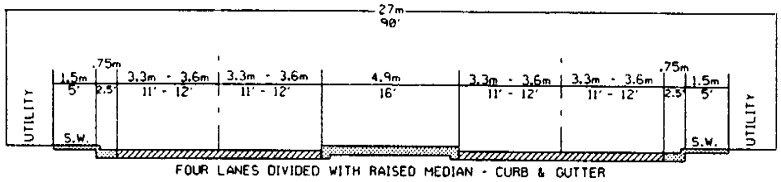


SIX LANES DIVIDED WITH RAISED MEDIAN - CURB & GUTTER

Figure 12

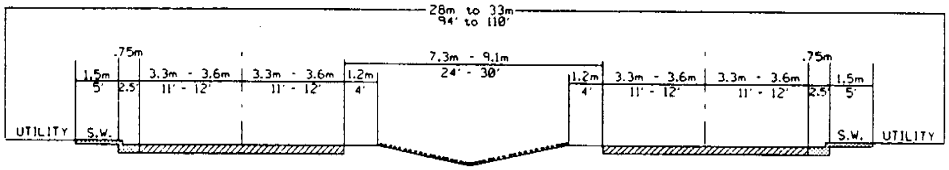
TYPICAL THOROUGHFARE CROSS SECTIONS

E.



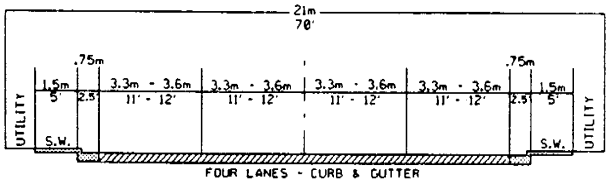
FOUR LANES DIVIDED WITH RAISED MEDIAN - CURB & GUTTER

F.



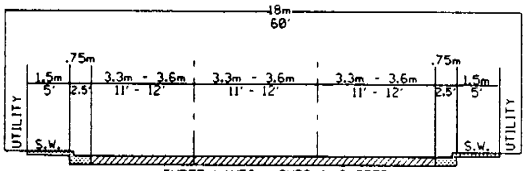
FOUR LANES DIVIDED - BOULEVARD
GRASS MEDIAN

G.



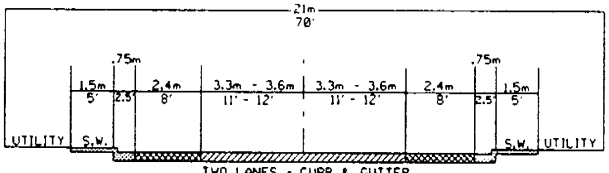
FOUR LANES - CURB & GUTTER

H.



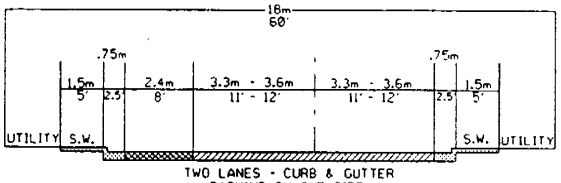
THREE LANES - CURB & GUTTER

I.



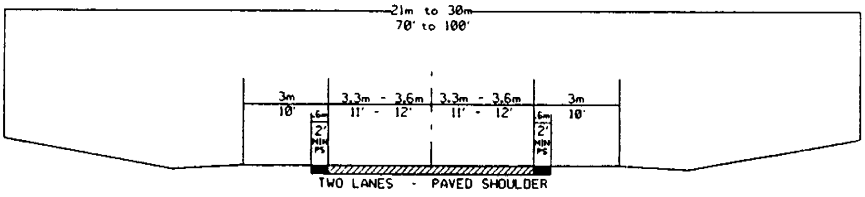
TWO LANES - CURB & GUTTER
PARKING ON EACH SIDE

J.



TWO LANES - CURB & GUTTER
PARKING ON ONE SIDE

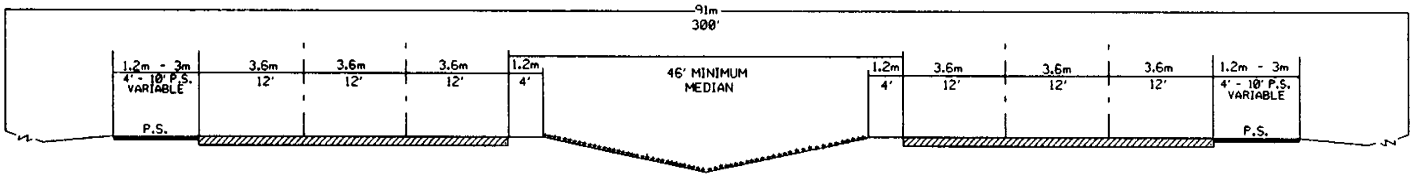
K.



TWO LANES - PAVED SHOULDER

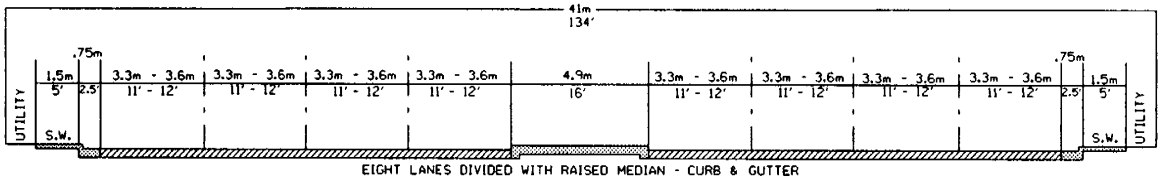
TYPICAL THOROUGHFARE CROSS SECTIONS

L.



SIX LANES DIVIDED WITH GRASS MEDIAN - FREEWAY

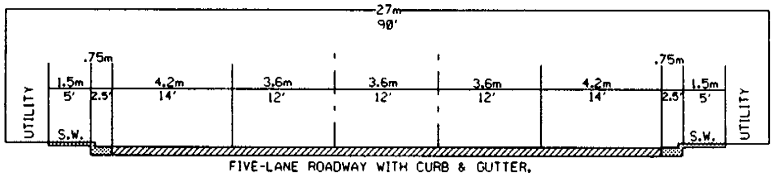
M.



EIGHT LANES DIVIDED WITH RAISED MEDIAN - CURB & GUTTER

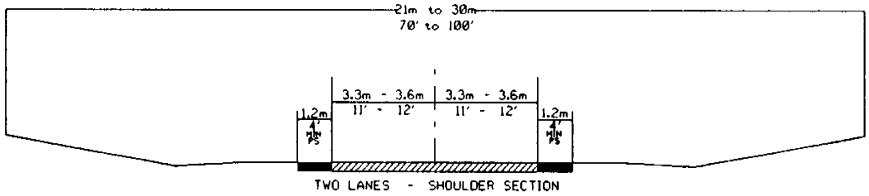
TYPICAL THOROUGHFARE CROSS SECTIONS FOR ACCOMMODATING BICYCLES

N.



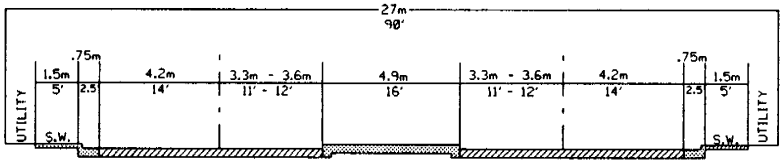
FIVE-LANE ROADWAY WITH CURB & GUTTER,
STANDARD INSIDE LANES & WIDENED CURB LANES

O.



TWO LANES - SHOULDER SECTION

P.



FOUR LANES DIVIDED WITH RAISED MEDIAN - CURB & GUTTER,
STANDARD INSIDE LANES & WIDENED CURB LANES

Street Appendix for Asheboro Thoroughfare Plan Study Report

Facility & Segment			Existing Road System (1997)					Future (2025)			
			Dist	Roadway		ROW	Capacity	AADT	Capacity	AADT	X-section	ROW
	from	to	(miles)	(feet)	lanes	(feet)	(vpd)	(vpd)	(vpd)	(vpd)		(feet)
Albemarle Road (SR 1713)												
	NC 49	Uwharrie St	0.43	48	3	60	18,000	13,400	35,600	20,300	C	90
	Uwharrie St	Park St	0.63	24	2	60	12,300	7,600	18,000	13,200	H	60
Allred Street (SR 2182)												
	US 220 Bus	Meadowbrook Rd	0.4	24	2	60	12,300	3,100	12,300	6,000	ADQ	ADQ
	Meadowbrook Rd	Gold Hill Rd	1.57	18	2	60	9,500	800	12,300	2,000	K	70
Balfour Avenue (SR 1502 & 2167)												
	Spero Rd	Fayetteville St	1.24	24	2	60	12,300	2,200	12,300	3,300	ADQ	ADQ
	US 220 Bus	Old Liberty Rd	0.46	18	2	60	9,500	1,000	12,300	1,600	O	70
Bell Simmons Road (SR 1146)												
	Fayetteville St	Southmont Dr	0.54	18	2	60	9,500	300	12,300	1,700	K	70
Bowers Chapel Road (SR 2826)												
	NC 42	Pine Hill Rd	1.33	18	2	60	9,500	700	12,300	2,800	K	70
	Pine Hill Rd	Inwood Rd	0.77	30	2	60	14,500	900	14,500	4,400	ADQ	ADQ
	Inwood Rd	Dixie Dr	0.8	20	2	60	10,300	1,400	12,300	4,300	K	70
Central Avenue (SR 1504)												
	Spero Rd	Fayetteville St	0.69	24	2	60	12,300	3,300	12,300	7,500	ADQ	ADQ
	Fayetteville St	Old Liberty Rd	0.67	24	2	60	12,300	3,300	12,300	8,100	ADQ	ADQ
Charles Avenue (SR 2812)												
	Fayetteville St	El Dorado Rd	0.08	20	2	60	10,300	1,300	12,300	3,000	K	70
Cherry Street (SR 1443)												
	Salisbury St	Sunset Ave	0.16	30	2	60	14,500	1,300	14,500	2,600	ADQ	ADQ
	Sunset Ave	Dixon Ave	0.12	30	2	60	14,500	1,300	14,500	2,600	ADQ	ADQ

Facility & Segment			Existing Road System (1997)						Future (2025)			
	from	to	Dist (miles)	Roadway (feet)	lanes	ROW (feet)	Capacity (vpd)	AADT (vpd)	Capacity (vpd)	AADT (vpd)	X-section	ROW (feet)
Church Street (SR 1707)												
	Fayetteville St	Taft St	0.2	--	--	--	--	--	12,300	5,100	I	70
	Taft St	Wainman Ave	0.69	40	4	60	20,000	3,700	20,000	5,500	ADQ	ADQ
	Wainman Ave	Salisbury St	0.41	40	2	60	14,500	4,000	14,500	7,000	ADQ	ADQ
	Salisbury St	Presnell St	0.46	36	3	60	18,000	3,100	18,000	5,300	ADQ	ADQ
	Presnell St	Fayetteville St	0.32	--	--	--	--	--	12,300	5,600	I	70
Cliff Road (SR 2203)												
	Dixie Dr	Kivett St	0.64	38	2	60	13,000	2,400	13,000	4,800	ADQ	ADQ
	Kivett St	Elm St	0.42	38	2	60	13,000	1,500	13,000	3,000	ADQ	ADQ
Coleridge Road (SR 2194)												
	NC 42	Salisbury St	0.15	18	2	50	9,500	2,000	12,300	4,000	K	70
	Salisbury St	Old Salisbury St	0.25	18	2	50	9,500	2,000	12,300	4,000	K	70
	Old Salisbury St	Old Cedar Falls Rd	0.09	--	--	--	--	--	12,300	4,100	K	70
County Club Drive (SR 1154)												
	Park St	Fayetteville St	0.2	36	3	60	18,000	4,000	18,000	8,000	ADQ	ADQ
Cox Street (SR 2327)												
	Dixie Dr	Kivett St	0.73	30	2	50	13,000	11,800	18,000	17,900	H	70
	Kivett St	Ward St	0.62	30	2	50	13,000	8,600	18,000	17,500	H	70
Crestview Chruch Road (SR 2820)												
	Fayetteville St	Zoo Pkwy	1.94	20	2	60	10,300	1,600	12,300	4,800	K	70
	Zoo Pkwy	Browers Chapel Rd	0.87	--	--	--	--	--	12,300	2,800	K	70
Danny Bell Road (SR 1162)												
	Planning Bndry	Mack Rd	2.51	20	2	60	10,300	1,400	12,300	2,800	K	70
Dixie Drive (US 64/NC49)												
	See US 64/NC 49											

Facility & Segment			Existing Road System (1997)						Future (2025)			
	from	to	Dist (miles)	Roadway (feet)	lanes	ROW (feet)	Capacity (vpd)	AADT (vpd)	Capacity (vpd)	AADT (vpd)	X-section	ROW (feet)
Dixon Avenue (SR 1443)												
	Uwharrie St	Cherry St	0.01	20	2	60	10,300	1,300	12,300	2,600	K	70
Draper Street (SR 2159)												
	Gold Hill Rd	Central Falls Rd	0.45	20	2	60	10,300	1,400	12,300	2,800	K	70
Dublin Road (SR 2197)												
	NC 42	Dixie Dr	0.56	18	2	50	9,500	2,400	12,300	6,100	K	70
El Dorado Street (SR 2919)												
	New Bern Ave	Charles Ave	0.4	18	2	60	9,500	1,300	12,300	3,000	K	70
Elm Street												
	Cliff Rd	Salisbury St	0.25	26	2	NA	12,300	1,500	12,300	2,100	ADQ	ADQ
	Salisbury St	Brookside Dr	0.14	26	2	NA	12,300	2,000	12,300	4,000	ADQ	ADQ
Fayetteville Street												
	See US 220 Business											
Gold Hill Road (SR 2183)												
	Presnell St	SR 2217	1.36	18	2	60	9,500	1,700	12,300	5,100	K	70
	SR 2217	Draper St	0.85	16	2	60	9,000	2,400	12,300	5,500	K	70
	Draper St	Old Liberty Rd	0.75	22	2	60	11,300	2,700	12,300	6,200	K	70
Greensboro Street												
	Ward St	Presnell St	0.38	30	2	60	14,500	2,500	14,500	6,200	ADQ	ADQ
Henley Country Road (SR 2215)												
	See Northeast Boulevard											
Hub Morris Road (SR 2149)												
	See Northeast Boulevard											

Facility & Segment		Existing Road System (1997)						Future (2025)			
		Dist	Roadway		ROW	Capacity	AADT	Capacity	AADT	X-section	ROW
from	to	(miles)	(feet)	lanes	(feet)	(vpd)	(vpd)	(vpd)	(vpd)		(feet)
I-73/74											
See US 220 and US 220 Bypass											
Iron Mountain Road (SR 2605 & SR 2606)											
NC 42	Planning Bndry	1.73	20	2	60	10,300	2,100	12,300	4,800	K	70
Kivett Street											
Uwharrie St	Park St	0.32	40	2	NA	14,500	1,500	14,500	3,000	ADQ	ADQ
Park St	Church St	0.16	20	2	NA	10,300	1,700	12,300	3,400	I	70
Church St	Fayetteville St	0.16	20	2	NA	10,300	1,300	12,300	2,600	I	70
Fayetteville St	Cox St	0.07	36	2	NA	13,000	3,100	13,000	4,900	ADQ	ADQ
Cox St	Cliff Rd	0.51	36	2	NA	13,000	1,600	13,000	3,700	ADQ	ADQ
Lake Lucus Road (SR 1518)											
Planning Bndry	Old Lexington Rd	2.18	18	2	60	9,500	600	12,300	2,400	O	70
Luck Road (SR 2604)											
Dixie Dr	Iron Mountain Rd	2.85	18	2	60	9,500	1,000	12,300	2,600	K	70
Mack Road (SR 1144)											
NC 49	McDowell Rd	0.84	24	2	60	12,300	5,200	12,300	9,700	ADQ	ADQ
McDowell Rd	Southmont Rd	1.65	24	2	60	12,300	3,900	12,300	7,800	ADQ	ADQ
Southmont Rd	Planning Bndry	2.01	24	2	60	12,300	2,000	12,300	4,600	ADQ	ADQ
McDowell Street (SR 1150)											
Mack Rd	US 220 Byp	0.59	18	2	60	9,500	3,800	12,300	8,700	O	70
US 220 Byp	Fayetteville St	0.55	20	2	60	10,300	5,600	37,500	12,800	N	ADQ
Meadowbrook Road (SR 2184)											
Elm St	Brewer St	0.19	--	--	--	--	--	12,300	7,800	I	70
Brewer St	Presnell St	0.21	20	2	NA	10,300	3,100	12,300	5,400	I	70
Presnell St	Allred St	0.73	20	2	60	10,300	2,700	12,300	4,700	I	70

Facility & Segment			Existing Road System (1997)						Future (2025)			
	from	to	Dist (miles)	Roadway (feet)	lanes	ROW (feet)	Capacity (vpd)	AADT (vpd)	Capacity (vpd)	AADT (vpd)	X-section	ROW (feet)
New Bern Avenue (SR 2922)												
	El Dorado Rd	Zoo Pkwy	0.4	20	2	60	10,300	1,400	12,300	2,800	K	70
NC 42 (Salisbury Street)												
	US 220 Byp	Park St	0.49	30	2	60	14,500	7,400	14,500	11,800	ADQ	ADQ
	Park St	Church St	0.22	30	2	60	14,500	8,700	14,500	13,200	ADQ	ADQ
	Church St	Fayetteville St	0.17	52	4	60	40,000	10,100	40,000	15,300	ADQ	ADQ
	Fayetteville St	Cox St	0.12	30	3	60	17,000	12,100	17,000	18,400	ADQ	ADQ
	Cox St	SR 2237	0.8	24	2	60	12,300	17,300	37,500	20,500	C	90
NC 42												
	SR 2237	Dublin Rd	0.56	20	2	60	10,300	7,100	37,500	17,800	C	90
	Dublin Rd	Dixie Dr	0.19	24	2	60	12,300	12,000	37,500	17,300	C	90
	Dixie Dr	US 64 Byp	1.48	20	2	60	10,300	9,500	37,500	16,400	C	90
	US 64 Byp	Planning Bndry	1.71	20	2	60	10,300	6,200	18,000	14,500	H	60
NC 49												
	Planning Bndry	US 64 Byp	1.81	24	2	190	12,300	8,300	45,300	15,700	A*	220
	US 64 Byp	SR 1193	0.71	24	2	190	12,300	12,700	37,500	20,500	C	90
	SR 1193	SR 1323	0.63	48	4	190	50,000	15,500	37,500	26,700	C	90
	SR 1323	US 64 Bus	0.45	20	3	150	10,300	17,000	37,500	34,500	C	90
	Common US 64 Bus/US 64											
									*non-access control 4 lane facility			
NC 159 (Zoo Parkway)												
	Planning Bndry	NC 159 Spur	0.67	24	2	60	12,300	1,300	12,300	3,000	ADQ	ADQ
	NC 159 Spur	US 64 Byp	2.20	24	2	60	12,300	2,000	12,300	5,000	ADQ	ADQ
	US 64 Byp	New Bern Ave	1.22	20	2	60	10,300	5,200	37,500	13,200	N	90
	New Bern Ave	Ridge Rd	0.75	24	2	60	12,300	9,500	37,500	16,100	N	90
	Ridge Rd	Dixie Dr	0.35	20	2	60	10,300	9,500	37,500	14,600	N	90

Facility & Segment		Existing Road System (1997)						Future (2025)			
		Dist	Roadway		ROW	Capacity	AADT	Capacity	AADT	X-section	ROW
from	to	(miles)	(feet)	lanes	(feet)	(vpd)	(vpd)	(vpd)	(vpd)		(feet)
Northeast Boulevard											
Fayetteville St	Hub Morris Rd	0.70	--	--	--	--	--	35,600	17,300	F	100
Hub Morris Rd	Old Liberty Rd	1.14	18	2	60	9,500	3,800	35,600	18,200	C	90
Old Liberty Rd	Gold Hill Rd	0.15	--	--	--	--	--	35,600	17,800	F	100
Gold Hill Rd	Old Cedar Falls Rd	2.05	--	--	--	--	--	35,600	17,400	F	100
Old Cedar Falls Rd	Henley Country Rd	0.36	--	--	--	--	--	35,600	19,500	F	100
Henley Cntry Rd	Presnell St	0.65	20	2	50	10,300	1,250	35,600	22,700	F	100
Old Cedar Falls Road (SR 2216)											
Coleridge Rd	Presnell St	0.61	20	2	60	10,300	1,400	12,300	5,800	K	70
Presnell St	NE Loop	1.7	20	2	60	10,300	1,400	12,300	3,200	K	70
NE Loop	Henley Country Rd	0.44	20	2	60	10,300	1,300	12,300	2,200	K	70
Henley Country R	Planning Bndry	0.15	24	2	60	12,300	5,400	12,300	7,800	ADQ	ADQ
Old Cox Road (SR 2834)											
Zoo Pkwy	Old Humble Mill R	1.87	20	2	60	10,300	1,700	12,300	5,000	K	70
Old Humble Mill	SR 2837	1.6	20	2	60	10,300	1,000	12,300	2,200	K	70
Old Farmer Road (SR 1424)											
US 64	Lewallen Rd	1.14	20	2	60	10,300	1,300	12,300	3,000	K	70
Lewallen Rd	Farmer Rd	0.16	20	2	60	10,300	3,500	12,300	7,000	K	70
Old Humble Mill Road (SR 2830)											
NC 42	Old Cox Rd	2.46	20	2	60	10,300	1,200	12,300	1,900	K	70
Old Lexington Road (SR 1004)											
Planning Bndry	Lake Lucas Rd	1.31	22	2	60	11,300	3,200	12,300	7,300	K	70
Lake Lucas Rd	Westmont Dr	1.73	22	2	60	11,300	4,000	12,300	8,500	K	70
Westmont Dr	Sunset Ave	0.7	26	2	60	12,300	1,900	12,300	8,400	ADQ	ADQ
Sunset Ave	US 220 Byp	0.16	50	4	100	40,000	4,700				

Facility & Segment			Existing Road System (1997)						Future (2025)			
	from	to	Dist (miles)	Roadway (feet)	lanes	ROW (feet)	Capacity (vpd)	AADT (vpd)	Capacity (vpd)	AADT (vpd)	X-section	ROW (feet)
Old Liberty Road (SR 2261)												
	Fayetteville St	Central Falls Rd	0.99	22	2	60	11,300	6,800	12,300	9,900	K	70
	Central Falls Rd	Central Falls Rd	0.59	22	2	60	11,300	3,100	12,300	5,400	K	70
	Central Falls Rd	Gold Hill Rd	0.4	22	2	60	11,300	4,200	12,300	8,400	K	70
	Gold Hill Rd	Planning Bndry	0.89	18	2	60	9,500	2,900	12,300	6,600	K	70
Old NC 49 (SR 1193)												
	NC 49	Planning Bndry	2.64	20	2	60	10,300	3,700	12,300	8,500	K	70
Park Street (SR 1156 & 1451)												
	Country Club Rd	Dixie Dr	0.08	36	3	60	18,000	4,000	18,000	8,800	ADQ	ADQ
	Dixie Dr	Albemarle Rd	0.38	60	5	100	35,600	9,800	35,600	17,000	ADQ	ADQ
	Albemarle Rd	Sunset Ave	0.84	28	2	60	12,300	6,300	12,300	11,600	ADQ	ADQ
	Sunset Ave	Salisbury St	0.18	28	2	60	12,300	1,100	12,300	7,800	ADQ	ADQ
Pineview Street (SR 1712)												
	Spero Rd	US 220 Byp	1.4	20	2	60	10,300	1,100	12,300	2,500	K	70
	US 220 Byp	SR 1508	0.18	24	2	60	12,300	5,500	35,600	26,800	C	90
	SR 1508	US 220 Bus	0.88	20	2	60	10,300	5,300	35,600	23,200	C	90
PineHill Road (SR 2824)												
	Old Cox Rd	Browers Chapel Rd	1.57	20	2	60	10,300	500	12,300	2,500	K	70
Powhatan Avenue (SR 1444)												
	Farmer Rd	Uwharrie St	0.28	36	2	50	14,500	1,800	14,500	4,100	ADQ	ADQ
Presnell Street (SR 1462)												
	US 220 Byp	Fayetteville St	0.93	24	2	60	12,300	7,700	12,300	13,400	H	70
	Fayetteville St	Meadowbrook St	0.37	22	2	NA	11,300	4,300	11,300	11,300	ADQ	ADQ
	Meadowbrook St	Farr St	0.35	24	2	NA	12,300	4,300	12,300	11,300	ADQ	ADQ
	Farr St	Old Cedar Falls Rd	0.62	36	3	150	18,000	3,600	18,000	10,800	ADQ	ADQ
	Old Cedar Falls Rd	US 64/NC 49	1.5	24	2	200	12,300	2,300	12,300	6,900	ADQ	ADQ

Facility & Segment			Existing Road System (1997)						Future (2025)			
	from	to	Dist (miles)	Roadway (feet)	lanes	ROW (feet)	Capacity (vpd)	AADT (vpd)	Capacity (vpd)	AADT (vpd)	X-section	ROW (feet)
Pritchard Street												
	Fayetteville St	Meadowbrook St	0.39	36	3	60	18,000	4,700	18,000	9,400	ADQ	ADQ
Ridge Street (SR 2915)												
	Zoo Pkwy	Fayetteville St	0.22	20	2	60	10,300	3,300	12,300	6,600	K	70
Salisbury Street (SR 2237)												
	See NC 42											
	NC 42	Old Salisbury Rd	0.52	24	2	60	12,300	2,300	12,300	4,600	ADQ	ADQ
	Old Salisbury Rd	US 64/NC 49	0.49	24	2	100	12,300	3,200	12,300	5,200	ADQ	ADQ
Spero Road (SR 1504)												
	Planning Bndry	US 220 Byp	3.11	22	2	60	11,300	2,400	12,300	8,900	K	70
	US 220 Byp	Central Ave	0.55	22	2	60	11,300	5,200	12,300	7,500	K	70
Southmont Drive (SR 1145)												
	Fayetteville St	Bell Simmons Rd	1.05	18	2	60	9,500	1,300	12,300	2,500	K	70
	Bell Simmons Rd	Mack Rd	1.75	20	2	60	10,300	900	12,300	2,200	K	70
Sunset Avenue (SR 1442)												
	Old Lexington Rd	Farmer Rd	0.19	60	4	100	28,000	2,800	28,000	5,600	ADQ	ADQ
	Farmer Rd	Park St	0.5	32	2	60	15,000	7,000	15,000	10,500	ADQ	ADQ
	Park St	Church St	0.19	36	3	60	18,000	7,600	18,000	10,200	ADQ	ADQ
	Church St	Fayetteville St	0.16	40	3	40	18,000	5,800	18,000	6,400	ADQ	ADQ
US 64												
	Planning Bndry	US 64 Byp	1.63	32	2	150	13,000	8,100	45,300	20,900	A*	220
	US 64 Byp	NC 49	1.01	24	2	100	12,300	12,300	37,500	17,200	C	ADQ
US 64/NC 49 (Dixie Drive)												
	NC 49	US 220 Byp	0.34	64	5	150	37,500	18,500	37,500	32,200	ADQ	ADQ
	US 220 Byp	Park St	0.6	78	5	150	37,500	20,000	37,500	28,300	ADQ	ADQ
	Park St	Zoo Pkwy	0.54	64	5	150	37,500	21,100	37,500	36,000	ADQ	ADQ

Facility & Segment			Existing Road System (1997)						Future (2025)			
	from	to	Dist (miles)	Roadway (feet)	lanes	ROW (feet)	Capacity (vpd)	AADT (vpd)	Capacity (vpd)	AADT (vpd)	X-section	ROW (feet)
US 64/NC 49 (Continued)												
	Zoo Pkwy	NC 42	1.44	64	5	150	37,500	22,000	37,500	35,100	ADQ	ADQ
	NC 42	Salisbury St	0.63	64	5	150	37,500	14,900	37,500	23,500	ADQ	ADQ
	Salisbury St	Presnell St	0.98	68	5	150	37,500	13,700	37,500	22,700	ADQ	ADQ
	Presnell St	US 64 Byp	0.31	48	4	200	40,000	13,400	40,000	22,300	ADQ	ADQ
US 64/NC 49												
	US 64 Byp	Planning Bndry	0.11	48	4	200	40,000	17,800	40,000	33,500	ADQ	ADQ
US 64 Bypass												
	US 64	NC 49	1.6	--	--	--	--	--	54,000	7,300	A	220
	NC 49	US 220 Byp	2.95	--	--	--	--	--	54,000	14,400	A	220
	US 220 Byp	Zoo Connector	2.08	--	--	--	--	--	54,000	20,000	A	220
	Zoo Connector	Zoo Pkwy	0.75	--	--	--	--	--	54,000	18,000	A	220
	Zoo Pkwy	NC 42	2	--	--	--	--	--	54,000	20,600	A	220
	NC 42	US 64/NC 49	2.45	--	--	--	--	--	54,000	18,200	A	220
									*non-access control 4 lane facility			
US 220												
	Planning Bndry	US 220 Bus	0.5	2 X 24	4	310	54,000	1,100	54,000	30,100	ADQ	ADQ
US 220 Bypass												
	US 220 Bus	US 64 Byp	1.98	2 X 24	4	310	54,000	15,000	54,000	36,300	ADQ	ADQ
	US 64 Byp	McDowell Rd	1.62	2 X 24	4	310	54,000	15,000	54,000	31,200	ADQ	ADQ
	McDowell Rd	Dixie Dr	1.12	2 X 24	4	260	54,000	18,500	54,000	40,800	ADQ	ADQ
	Dixie Dr	Salisbury St	1.73	2 X 24	4	250	54,000	31,000	91,600	60,200	L	300
	Salisbury St	Presnell St	1.25	2 X 24	4	200	54,000	31,300	91,600	57,100	L	300
	Presnell St	Vision Dr	0.86	2 X 24	4	260	54,000	32,700	91,600	61,600	L	300
	Vision Dr	Spero Rd	1.44	2 X 32	4	130	54,000	12,300	54,000	52,500	ADQ	ADQ
	Spero Rd	Pineview Rd	1.4	2 X 32	4	130	54,000	24,000	54,000	51,500	ADQ	ADQ
	Pineview Rd	Planning Bndry	1.2	2 X 32	4	130	54,000	26,300	54,000	51,000	ADQ	ADQ
US 220 Business (Fayetteville St)												
	US 220 Byp	Crestview Ch Rd	2.47	24	2	100	12,300	4,200	18,000	16,600	H	60
	Crestview Ch Rd	Southmont Rd	0.85	24	2	100	12,300	8,500	18,000	14,500	H	60
	Southmont Rd	McDowell Rd	0.25	33	2	100	13,000	8,500	37,500	17,000	C	90

Facility & Segment			Existing Road System (1997)						Future (2025)			
	from	to	Dist (miles)	Roadway (feet)	lanes	ROW (feet)	Capacity (vpd)	AADT (vpd)	Capacity (vpd)	AADT (vpd)	X-section	ROW (feet)
US 220 Business (Continued)												
	McDowell Rd	Boyd Ave	0.66	24	2	100	12,300	10,000	37,500	19,700	C	90
	Boyd Ave	Country Club Rd	0.44	41	2	100	13,000	12,000	37,500	17,400	C	90
	Country Club Rd	SR 2912	0.17	46	4	60	36,000	10,900	36,000	19,600	ADQ	ADQ
	SR 2912	Birkhead St	0.53	50	4	60	36,000	10,900	36,000	14,800	ADQ	ADQ
	Birkhead St	Kivett St	0.24	36	2	60	13,000	11,400	18,000	14,500	H	ADQ
	Kivett St	Salisbury St	0.51	40	4	60	36,000	12,800	36,000	13,200	ADQ	ADQ
	Salisbury St	Hampton Rd	0.76	50	4	60	36,000	17,000	36,000	25,500	ADQ	ADQ
	Hampton Rd	Old Liberty Rd	1.24	33	2	100	12,300	24,300	37,500	37,600	C	ADQ
	Old Liberty Rd	Beasley St	0.26	48	4	100	36,000	14,400	37,500	30,300	C	ADQ
	Beasley St	Central Ave	1.02	22	2	100	11,300	13,300	37,500	30,000	C	ADQ
	Central Ave	Pineview Rd	1.37	22	2	100	11,300	11,100	37,500	30,400	C	ADQ
	Pineview Rd	Planning Bndry	1.12	26	2	100	11,000	11,000	37,500	25,000	C	ADQ
Uwharrie Street (SR 1443)												
	Dixon Ave	Kivett St	0.3	20	2	60	10,300	2,500	12,300	5,000	I	70
	Kivett St	Albemarle Rd	0.86	20	2	60	10,300	2,300	12,300	4,600	I	70
Vision Drive (SR 2269)												
	US 220 Byp	Fayetteville St	0.96	2 X 24	4	130	54,000	6,800	54,000	14,300	ADQ	ADQ
Walker Avenue (SR 1453)												
	Albemarle Rd	Church St	0.42	40	2	60	14,500	5,700	14,500	13,000	ADQ	ADQ
	Chruch St	Fayetteville St	0.25	40	2	60	14,500	5,700	14,500	13,000	ADQ	ADQ
Zoo Connector & NC 159 Spur												
	US 64 Bypass	Zoo Parkway		--	--	--	--	--	12,300	4,400	K	100
	Zoo Parkway	Zoo Entrance	0.7	24	2	500	12,300	1,300	12,300	6,800	ADQ	ADQ
Zoo Parkway (NC 159)												
	See NC 159											

APPENDIX B

Socio-economic Data

Appendix B
Housing and Employment Data

1997 EMPLOYMENT								
ZONE	INDUSTRY	RETAIL/ WHOLE-SALE	HIGHWAY RETAIL	SERVICE	OFFICE	TOTAL EMPLOYMENT	Cars	Trucks
1	384	84	21	268	451	1208	41	16
2	7	2	0	135	47	191	31	2
3	64	40	45	72	45	266	10	20
4	0	3	0	79	17	99	2	4
5	452	69	10	178	58	767	51	43
6	92	2	0	5	0	99	0	2
7	2	28	0	152	1	183	2	13
8	30	149	66	813	186	1244	11	62
9	6	2	0	56	0	64	8	0
10	1	15	0	73	4	93	12	6
11	0	0	0	50	0	50	1	0
12	0	9	39	25	4	77	0	0
13	295	20	109	58	48	530	6	12
14	66	4	7	77	32	186	9	7
15	448	9	3	36	0	496	2	15
16	5	0	0	13	0	18	7	1
17	427	34	3	70	0	534	4	8
18	0	0	0	2	0	2	3	0
19	64	45	39	136	16	300	22	8
20	160	81	49	135	4	429	9	20
21	287	0	0	42	0	329	7	6
22	1	0	0	5	0	6	1	0
23	0	0	0	0	0	0	0	0
24	10	0	0	0	0	10	0	4
25	0	1	0	6	0	7	0	0
26	0	3	0	1	0	4	1	1
27	70	405	115	43	41	674	0	42
28	0	94	76	9	14	193	1	3
29	0	2	0	21	1	24	2	4
30	0	17	89	55	11	172	1	4
31	532	34	29	32	0	627	2	42
32	1829	0	0	31	25	1885	11	37
33	897	11	0	403	302	1613	44	114
34	74	50	32	119	0	275	4	33
35	0	0	0	2	0	2	0	1
36	10	0	0	3	0	13	0	0
37	0	0	0	0	0	0	0	0
38	0	0	0	14	0	14	1	0
39	0	0	0	5	103	108	6	0
40	0	0	0	1	0	1	0	0

1997 EMPLOYMENT								
ZONE	INDUSTRY	RETAIL/ WHOLE-SALE	HIGHWAY RETAIL	SERVICE	OFFICE	TOTAL EMPLOYMENT	Cars	Trucks
41	0	2	0	0	0	2	0	0
42	0	0	0	3	0	3	0	0
43	0	16	0	0	1	17	0	3
44	91	2	9	67	0	169	2	9
45	0	0	0	6	0	6	0	1
46	0	0	0	2	0	2	0	0
47	0	0	0	7	0	7	0	2
48	31	3	4	13	0	51	0	23
49	186	17	0	38	0	241	1	12
50	5	0	0	2	0	7	3	2
51	0	6	0	0	0	6	0	3
52	375	0	0	11	0	386	2	1
53	0	0	0	6	0	6	0	0
54	0	0	0	1	0	1	0	0
55	3	0	0	2	0	5	0	1
56	0	0	2	2	0	4	0	0
57	0	1	0	3	0	4	0	0
58	0	0	0	1	0	1	0	0
59	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0
61	35	34	16	32	20	137	2	10
62	0	15	33	1	0	49	0	5
63	0	0	0	3	0	3	0	0
64	0	0	0	1	0	1	0	0
65	19	0	0	2	0	21	0	2
66	41	1	0	13	0	55	0	12
67	5	14	0	10	0	29	2	6
68	0	0	0	9	0	9	1	0
69	248	9	16	159	1	433	1	3
70	468	40	0	138	0	646	0	24
71	274	11	1	0	0	286	3	9
72	390	0	0	0	0	390	0	13
73	386	0	47	98	4	535	61	16
74	0	0	0	0	0	0	0	0
75	175	0	5	1	0	181	5	8
76	0	0	0	3	0	3	0	0
77	754	10	11	9	10	794	9	18
78	1317	8	0	8	0	1333	4	13
79	791	29	0	0	0	820	5	66
80	11	1	0	2	0	14	1	1
81	12	0	0	0	0	12	0	10
82	0	0	0	0	0	0	0	0
83	0	0	0	2	0	2	0	0
84	0	0	0	0	0	0	0	0

1997 EMPLOYMENT								
ZONE	INDUSTRY	RETAIL/ WHOLE-SALE	HIGHWAY RETAIL	SERVICE	OFFICE	TOTAL EMPLOYMENT	Cars	Trucks
85	2	0	0	7	0	9	0	2
86	0	0	0	0	0	0	0	0
87	7	0	0	0	0	7	1	1
88	31	2	4	25	0	62	0	5
89	0	30	0	5	0	35	0	3
90	1856	1	0	12	0	1869	0	2
91	6	8	0	17	1	32	1	10
92	8	0	5	11	0	24	4	8
93	0	0	0	1	0	1	0	0
94	0	0	0	2	0	2	2	1
95	0	0	0	5	0	5	1	0
96	3	0	0	0	0	3	0	1
97	10	0	0	0	0	10	0	1
98	0	84	28	119	23	254	6	0
99	3	7	26	1	0	37	0	2
100	0	8	33	3	0	44	0	3
101	39	234	48	29	15	365	1	12
102	6	140	28	6	0	180	0	7
103	0	0	0	0	0	0	0	0
104	0	0	0	2	2	4	0	0
105	4	0	0	200	0	204	15	56
106	0	0	0	0	0	0	0	0
107	72	3	0	5	2	82	0	4
108	50	0	0	0	0	50	0	1
109	0	0	1	5	0	6	0	2
110	0	0	0	0	0	0	0	0
111	0	0	0	3	0	3	0	0
112	1	1	0	4	0	6	0	0
113	0	0	0	0	0	0	0	0
114	0	0	0	0	0	0	0	0
115	0	1	0	0	0	1	0	0
116	21	16	39	15	122	213	7	4
117	38	12	0	17	8	75	4	0
118	25	11	3	57	4	100	4	15
119	13	0	31	10	0	54	0	2
120	0	10	0	4	24	38	1	14
121	0	5	2	4	0	11	0	0
122	72	28	7	29	3	139	0	20
123	0	110	194	18	4	326	0	0
124	0	0	0	157	0	157	0	0
Total	14097	2143	1325	4653	1654	23872		

2025 EMPLOYMENT								
ZONE	INDUSTRY	RETAIL/ WHOLE-SALE	HIGHWAY RETAIL	SERVICE	OFFICE	TOTAL EMPLOYMENT	Cars	Trucks
1	384	84	21	314	558	1362	46	18
2	7	2	0	158	58	225	37	2
3	64	40	45	84	56	289	11	22
4	0	3	0	93	21	117	2	5
5	452	69	10	209	72	812	54	46
6	92	2	0	6	0	100	0	2
7	2	28	0	178	1	209	2	15
8	30	149	66	953	230	1428	13	71
9	6	2	0	66	0	74	9	0
10	1	45	0	86	5	137	18	9
11	0	0	0	59	0	59	1	0
12	0	9	39	29	5	82	0	0
13	295	20	109	68	59	551	6	12
14	66	34	7	90	40	237	11	9
15	448	9	3	42	0	502	2	15
16	5	0	0	15	0	20	8	1
17	427	34	3	82	0	546	4	8
18	0	0	0	2	0	2	3	0
19	64	45	39	159	20	327	24	9
20	160	81	49	158	5	453	10	21
21	287	0	0	49	0	336	7	6
22	1	0	0	6	0	7	1	0
23	0	0	0	0	0	0	0	0
24	10	0	0	0	0	10	0	4
25	0	31	0	7	0	38	0	0
26	0	3	0	1	0	4	1	1
27	70	455	138	50	51	764	0	48
28	0	94	76	11	17	198	1	3
29	0	2	0	25	1	28	2	5
30	0	17	112	64	14	207	1	5
31	532	34	29	38	0	633	2	42
32	1829	0	0	36	31	1896	11	37
33	1097	11	0	472	374	1954	53	138
34	74	50	32	159	0	315	5	38
35	0	0	23	2	0	25	0	13
36	10	0	0	4	0	14	0	0
37	0	60	59	25	0	144	0	0
38	0	0	0	16	0	16	1	0
39	0	0	0	31	127	158	9	0
40	0	30	59	46	0	135	0	0
41	0	2	0	25	0	27	0	0
42	0	0	0	4	0	4	0	0
43	50	36	33	25	1	145	0	26
44	191	2	9	124	0	326	4	17

2025 EMPLOYMENT								
ZONE	INDUSTRY	RETAIL/ WHOLE-SALE	HIGHWAY RETAIL	SERVICE	OFFICE	TOTAL EMPLOYMENT	Cars	Trucks
45	0	0	0	7	0	7	0	1
46	0	0	59	27	0	86	0	0
47	0	0	0	33	0	33	0	9
48	31	3	4	15	0	53	0	24
49	186	17	0	70	0	273	1	14
50	5	50	33	27	0	115	49	33
51	0	26	33	25	0	84	0	42
52	475	20	0	33	0	528	3	1
53	50	0	0	7	0	57	0	0
54	75	0	0	1	0	76	0	0
55	3	0	0	22	0	25	0	5
56	0	0	2	2	0	4	0	0
57	0	1	0	4	0	5	0	0
58	0	0	0	1	0	1	0	0
59	0	40	0	0	0	40	0	0
60	0	0	0	0	0	0	0	0
61	35	104	16	38	45	238	3	17
62	0	15	33	1	0	49	0	5
63	0	0	0	24	0	24	0	0
64	0	0	0	21	0	21	0	0
65	19	0	0	22	0	41	0	4
66	41	1	0	35	0	77	0	17
67	5	14	0	12	0	31	2	6
68	0	0	0	11	0	11	1	0
69	248	9	16	186	1	460	1	3
70	468	40	23	162	0	693	0	26
71	274	11	1	0	0	286	3	9
72	390	0	23	0	0	413	0	14
73	386	0	47	135	5	573	65	17
74	0	0	0	20	0	20	0	0
75	175	0	5	21	0	201	6	9
76	0	0	0	24	0	24	0	0
77	754	10	11	11	12	798	9	18
78	1517	8	0	9	0	1534	5	15
79	1191	29	33	0	0	1253	8	101
80	111	1	23	2	0	137	10	10
81	12	0	33	0	0	45	0	38
82	0	0	0	20	0	20	0	0
83	0	0	23	2	0	25	0	0
84	0	0	0	0	0	0	0	0
85	2	0	0	8	0	10	0	2
86	0	0	0	20	0	20	0	0
87	7	0	0	0	0	7	1	1
88	31	2	4	29	0	66	0	5

2025 EMPLOYMENT								
ZONE	INDUSTRY	RETAIL/ WHOLE-SALE	HIGHWAY RETAIL	SERVICE	OFFICE	TOTAL EMPLOYMENT	Cars	Trucks
89	0	30	0	6	0	36	0	3
90	1856	1	0	14	0	1871	0	2
91	6	8	0	45	1	60	2	19
92	8	0	38	13	0	59	10	20
93	0	0	0	1	0	1	0	0
94	0	0	0	2	0	2	2	1
95	0	0	0	6	0	6	1	0
96	303	0	33	0	0	336	0	112
97	10	0	0	0	0	10	0	1
98	0	149	51	139	28	367	9	0
99	3	7	85	26	0	121	0	7
100	0	8	56	29	0	93	0	6
101	39	264	71	34	19	427	1	14
102	6	190	28	7	0	231	0	9
103	0	0	0	0	0	0	0	0
104	0	0	0	2	2	4	0	0
105	4	60	0	284	20	368	27	101
106	0	60	0	50	0	110	0	0
107	72	3	0	6	2	83	0	4
108	50	0	0	0	0	50	0	1
109	0	0	1	6	0	7	0	2
110	0	0	33	0	0	33	0	0
111	0	0	0	4	0	4	0	0
112	1	1	0	5	0	7	0	0
113	0	0	0	20	0	20	0	0
114	0	0	0	0	0	0	0	0
115	0	1	0	0	0	1	0	0
116	21	16	39	18	151	245	8	5
117	38	12	0	20	10	80	4	0
118	25	11	3	67	5	111	4	17
119	13	50	54	32	0	149	0	6
120	0	45	23	25	30	123	3	45
121	0	35	2	25	0	62	0	0
122	72	78	30	54	4	238	0	34
123	0	110	217	21	6	354	0	0
124	0	0	0	184	0	184	0	0
Total	15672	3023	2147	6303	2087	29233	599	1502

1997 HOUSING						
Zone	Excellent	Above Average	Average	Below Average	Poor	Total
1	0	0	12	11	103	126
2	1	5	149	12	4	171
3	0	0	98	8	3	109
4	0	0	90	17	0	107
5	0	0	120	3	0	123
6	0	0	162	42	9	213
7	0	0	73	0	1	74
8	0	0	30	3	10	43
9	0	0	123	17	3	143
10	0	0	375	83	44	502
11	4	7	304	1	0	316
12	0	2	416	8	1	427
13	0	0	95	6	1	102
14	0	2	266	1	1	270
15	0	0	273	2	0	275
16	0	0	199	2	0	201
17	0	2	312	53	6	373
18	0	3	153	19	5	180
19	0	0	158	29	6	193
20	0	2	89	6	4	101
21	0	1	226	6	1	234
22	0	0	55	12	12	79
23	0	0	3	2	1	6
24	0	0	28	6	1	35
25	0	0	24	3	1	28
26	0	0	47	3	2	52
27	0	0	81	10	0	91
28	0	2	158	0	0	160
29	2	10	125	3	1	141
30	0	1	300	0	0	301
31	0	0	116	9	0	125
32	0	1	129	4	0	134
33	0	0	0	0	0	0
34	0	2	380	14	0	396
35	3	20	225	0	0	248
36	5	5	40	2	0	52
37	0	1	57	5	2	65
38	0	1	60	27	4	92
39	0	0	86	8	1	95
40	1	0	50	5	3	59
41	2	1	88	19	2	112
42	0	0	49	54	8	111
43	0	0	15	15	5	35
44	0	0	83	165	3	251
45	0	0	26	11	1	38
46	0	0	45	125	1	171
47	0	0	15	15	3	33
48	0	0	131	5	0	136

1997 HOUSING						
Zone	Excellent	Above Average	Average	Below Average	Poor	Total
49	0	1	89	36	0	126
50	0	0	24	9	1	34
51	0	0	28	2	0	30
52	0	2	138	3	2	145
53	0	0	77	1	3	81
54	0	0	37	6	0	43
55	0	0	49	8	0	57
56	0	0	75	14	0	89
57	0	0	87	49	4	140
58	0	1	8	5	2	16
59	0	0	16	47	5	68
60	0	0	17	12	6	35
61	0	0	24	4	4	32
62	0	0	205	19	1	225
63	0	2	104	0	1	107
64	0	0	53	7	0	60
65	0	0	38	16	0	54
66	0	0	128	29	4	161
67	0	0	327	185	4	516
68	0	0	43	9	9	61
69	0	0	130	8	2	140
70	0	0	17	17	0	34
71	0	0	39	34	2	75
72	0	0	9	5	0	14
73	0	0	60	0	0	60
74	0	0	58	5	3	66
75	0	0	43	31	6	80
76	0	0	7	27	3	37
77	0	0	103	263	0	366
78	0	0	28	15	4	47
79	0	0	0	1	0	1
80	0	0	32	10	1	43
81	0	0	33	6	1	40
82	0	0	1	3	0	4
83	17	46	61	4	0	128
84	10	25	127	2	0	164
85	0	4	180	28	10	222
86	7	8	39	1	0	55
87	0	0	169	21	3	193
88	0	1	91	37	13	142
89	0	0	88	6	3	97
90	0	0	7	4	1	12
91	0	4	62	28	6	100
92	0	0	60	46	7	113
93	1	3	68	0	1	73
94	1	10	84	19	1	115
95	0	0	30	0	0	30
96	0	0	8	3	1	12

1997 HOUSING						
Zone	Excellent	Above Average	Average	Below Average	Poor	Total
97	0	0	7	5	4	16
98	0	0	0	0	0	0
99	0	0	24	10	0	34
100	0	0	62	4	1	67
101	0	0	14	0	0	14
102	0	0	5	0	0	5
103	0	0	11	16	4	31
104	0	0	37	101	1	139
105	0	0	2	3	1	6
106	0	0	3	0	4	7
107	0	0	64	160	9	233
108	0	10	128	0	0	138
109	0	1	60	10	1	72
110	0	0	7	11	0	18
111	0	0	99	3	0	102
112	0	1	81	13	4	99
113	0	0	71	5	1	77
114	0	0	42	27	1	70
115	0	0	29	14	0	43
116	0	0	34	24	4	62
117	0	0	60	21	3	84
118	0	0	103	63	2	168
119	0	0	228	9	1	238
120	0	0	231	15	3	249
121	0	0	17	78	5	100
122	0	0	77	26	5	108
123	0	0	0	0	0	0
124	0	0	0	0	0	0
Total	54	187	10836	2554	421	14052

2025 HOUSING						
Zone	Excellent	Above Average	Average	Below Average	Poor	Total
1	0	0	20	18	103	141
2	4	12	154	12	4	186
3	0	3	100	8	3	114
4	0	2	93	17	0	112
5	0	5	125	3	0	133
6	0	2	170	42	9	223
7	0	3	75	0	1	79
8	0	2	33	3	10	48
9	0	8	133	17	3	161
10	0	10	383	83	44	520
11	9	12	312	1	0	334
12	8	7	426	8	1	450
13	0	8	105	6	1	120
14	2	8	306	1	1	318
15	0	5	286	2	0	293
16	0	5	232	2	0	239
17	0	7	400	58	6	471
18	0	10	160	23	5	198
19	0	5	166	34	6	211
20	0	10	99	6	4	119
21	0	11	234	6	1	252
22	10	20	66	12	12	120
23	12	18	14	2	1	47
24	15	15	39	6	1	76
25	12	18	35	3	1	69
26	0	30	58	3	2	93
27	0	0	91	10	0	101
28	0	10	168	0	0	178
29	17	25	136	3	1	182
30	0	19	300	0	0	319
31	0	10	124	9	0	143
32	0	11	137	4	0	152
33	0	0	0	0	0	0
34	20	107	410	14	0	551
35	24	40	225	0	0	289
36	23	23	70	2	0	118
37	0	21	78	5	2	106
38	0	40	81	27	4	152
39	0	40	127	8	1	176
40	31	160	80	5	3	279
41	15	21	96	19	2	153
42	0	20	70	54	8	152
43	0	0	50	15	5	70
44	20	80	103	165	3	371
45	20	40	42	11	1	114
46	0	26	60	125	1	212
47	0	26	30	15	3	74
48	0	5	136	5	0	146

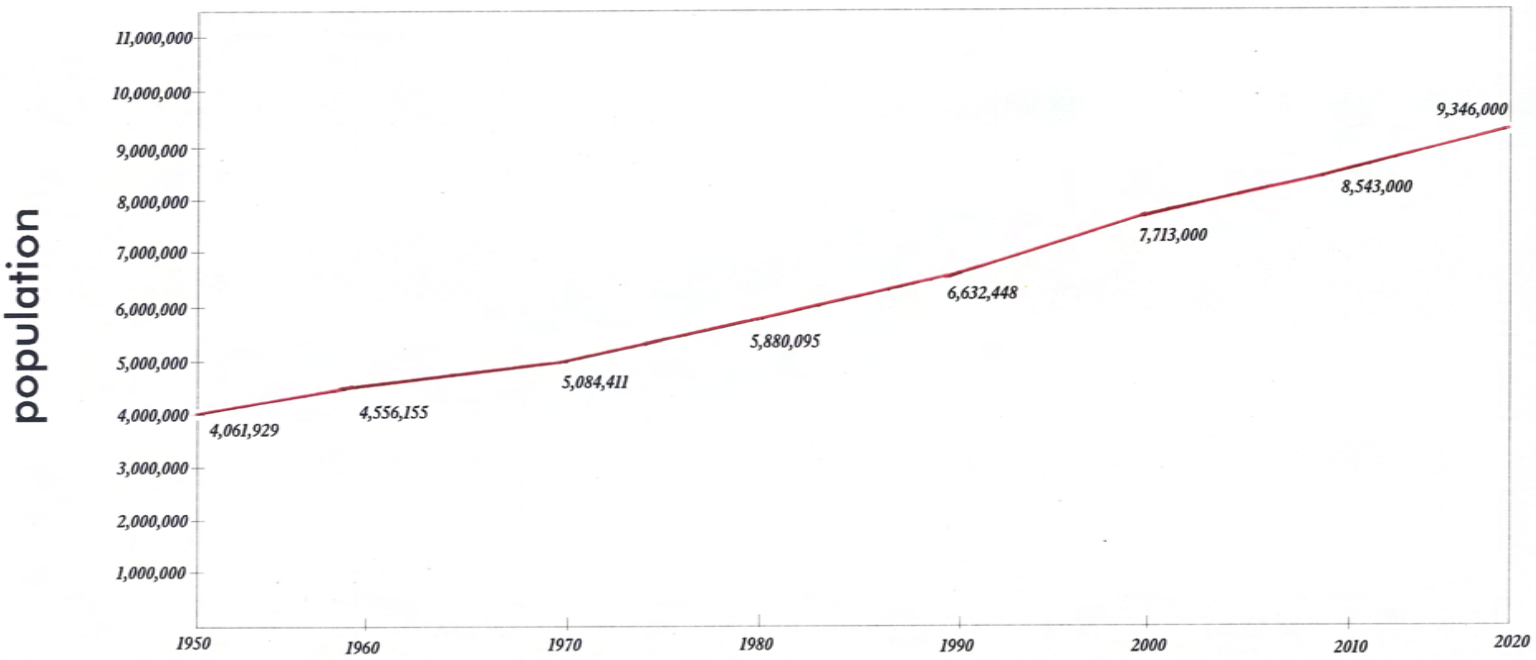
2025 HOUSING						
Zone	Excellent	Above Average	Average	Below Average	Poor	Total
49	0	21	110	36	0	167
50	0	20	45	9	1	75
51	0	10	48	2	0	60
52	10	62	198	3	2	275
53	0	15	92	1	3	111
54	0	20	69	6	0	95
55	10	70	94	8	0	182
56	0	16	100	14	0	130
57	0	16	112	49	4	181
58	0	22	28	5	2	57
59	0	21	36	47	5	109
60	10	15	33	12	6	76
61	0	10	75	4	4	93
62	0	0	235	19	1	255
63	20	40	199	0	1	260
64	0	40	113	7	0	160
65	30	60	103	16	0	209
66	20	70	193	29	4	316
67	0	20	348	185	4	557
68	0	0	63	9	9	81
69	0	10	161	8	2	181
70	0	5	74	17	0	96
71	0	0	60	34	2	96
72	0	11	59	5	0	75
73	0	70	130	0	0	200
74	30	75	108	5	3	221
75	10	30	133	31	6	210
76	40	65	57	27	3	192
77	0	0	144	263	0	407
78	0	11	58	15	4	88
79	0	0	41	1	0	42
80	10	20	43	10	1	84
81	15	20	39	6	1	81
82	50	110	51	3	0	214
83	37	67	61	4	0	169
84	30	46	127	2	0	205
85	0	4	198	28	10	240
86	134	158	39	1	0	332
87	0	0	187	21	3	211
88	0	32	101	37	13	183
89	0	31	98	6	3	138
90	0	0	25	4	1	30
91	0	25	82	28	6	141
92	0	21	80	46	7	154
93	11	23	79	0	1	114
94	13	40	96	19	1	169
95	0	10	61	0	0	71
96	0	0	38	3	1	42

2025 HOUSING						
Zone	Excellent	Above Average	Average	Below Average	Poor	Total
97	0	0	25	5	4	34
98	0	0	0	0	0	0
99	0	0	65	10	0	75
100	0	0	103	4	1	108
101	0	0	24	0	0	24
102	0	0	51	0	0	51
103	0	40	32	16	4	92
104	0	40	58	101	1	200
105	0	0	2	3	1	6
106	0	30	14	0	4	48
107	0	30	75	160	9	274
108	10	30	139	0	0	179
109	0	16	86	10	1	113
110	0	15	33	11	0	59
111	0	10	130	3	0	143
112	0	16	107	13	4	140
113	0	20	92	5	1	118
114	0	20	70	27	1	118
115	0	10	60	14	0	84
116	0	0	54	24	4	82
117	0	0	80	21	3	104
118	0	0	123	63	2	188
119	0	70	313	9	1	393
120	0	60	326	15	3	404
121	0	20	152	78	5	255
122	0	50	227	26	5	308
123	0	0	0	0	0	0
124	0	0	0	0	0	0
Total	732	2869	14003	2575	421	20600

APPENDIX C

Population Projections

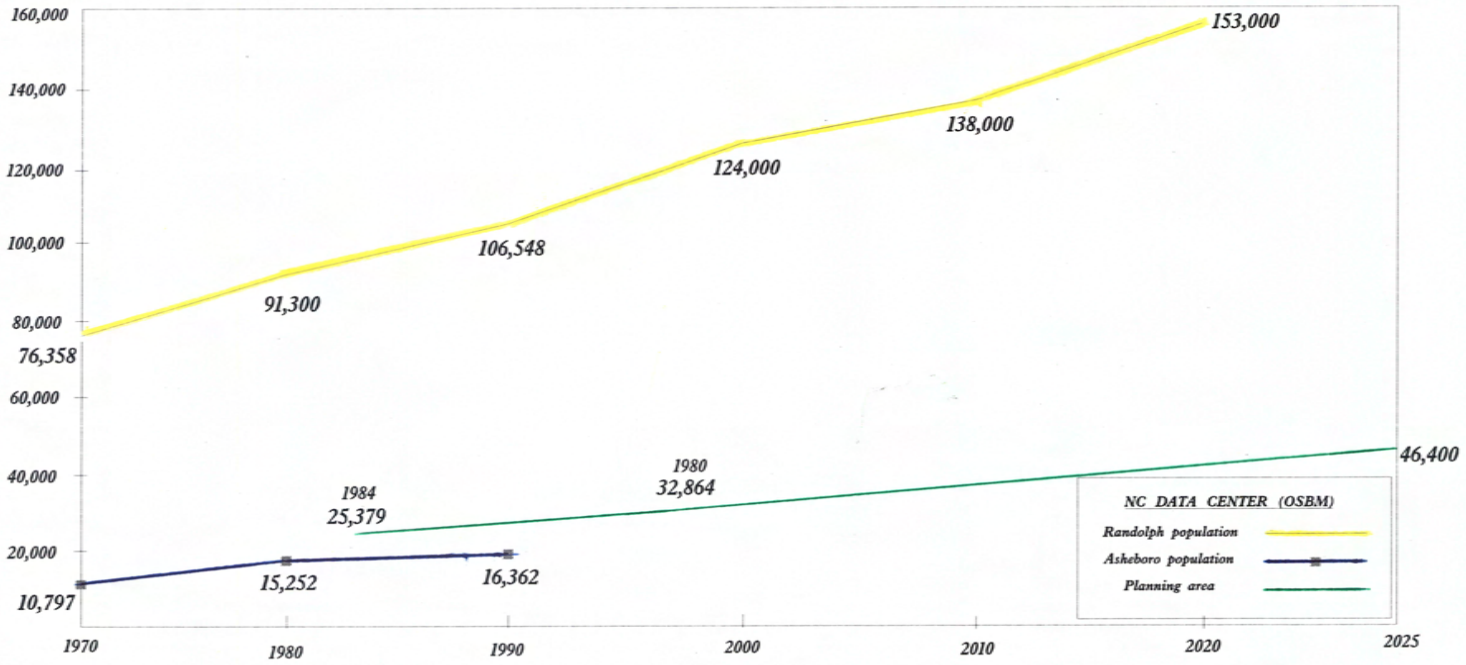
NORTH CAROLINA POPULATION



North Carolina population projection from NC Data Center (OSBM) August, 1997

C–1

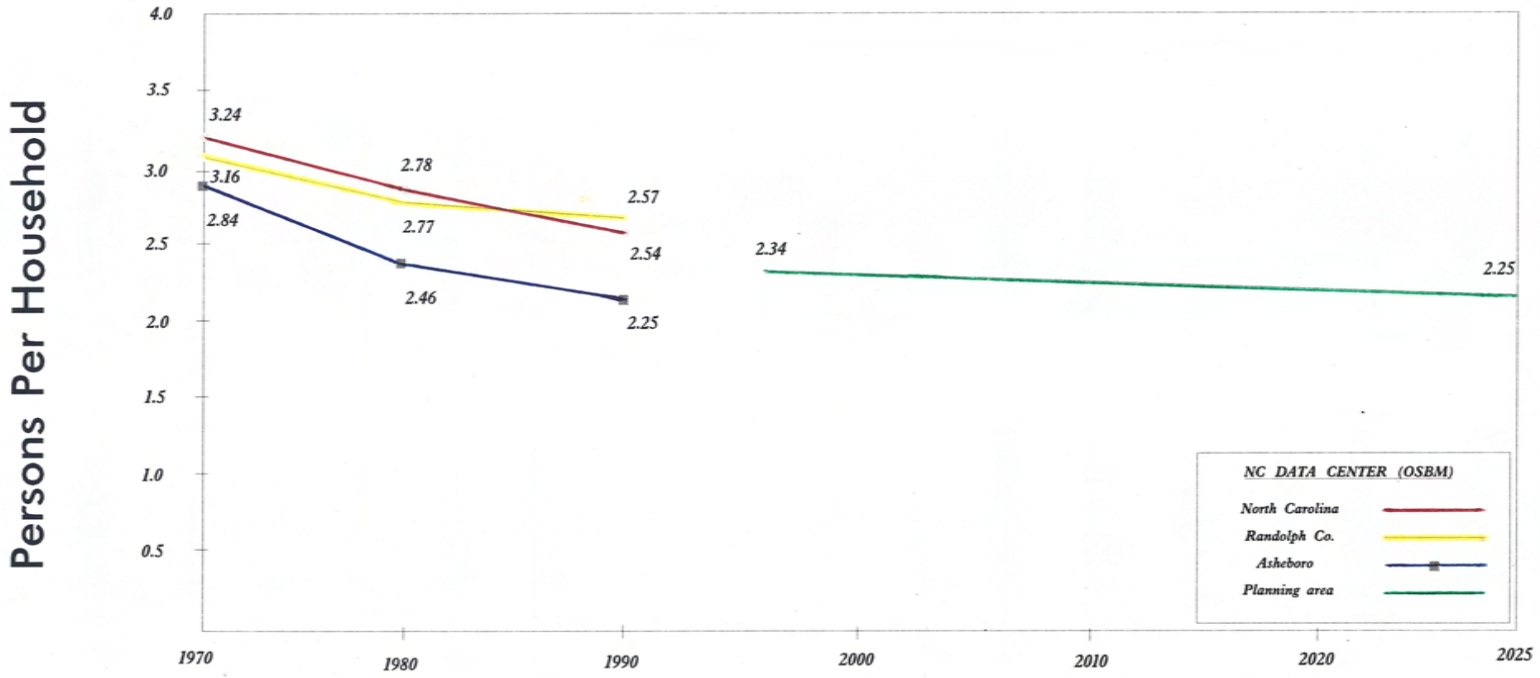
LOCAL POPULATION



year

Randolph County population projection from NC Data Center (OSBM) August, 1997

PERSONS PER HOUSEHOLDS



Randolph County population projection from NC Data Center (OSBM) August, 1997

APPENDIX D

Goals and Objectives Survey

Appendix D
Goals and Objectives Survey

The Goals and Objectives Survey is the first step of getting input from the public. The survey attempts to identify how a community perceives transportation related issues. Some of the questions require the participant to make trade-offs to solve transportation problems. This approach helps develop a framework which outlines the types of trade-offs the community is willing to accept.

The survey can also be viewed as an educational tool not only for the community, but also for the transportation engineer and public officials. Taking the survey is educational because it provides a parallel to transportation related issues such as economics, neighborhoods, and the environment. Survey results are used to guide the development of a thoroughfare plan that will best serve the community's needs and values. The survey was conducted in the spring and early summer of 1997. The City of Asheboro distributed and collected the surveys.

The first part of the survey consisted of two categories in which the participant ranked related issues in order of priority. There were a range of issues covered including environmental, economic, neighborhood, and transportation. The purpose of this section was to introduce to the public the concept of making trade-offs between conflicting issues, many of which they may view as important.

The second part of the survey was designed to solicit responses to various transportation concerns in the Asheboro area. Five questions were included in an open-ended format to encourage participants to respond freely.

The following is a summary of the survey. Average response ratings for the first part are given; the lower the number the greater the importance to the respondents (responses are listed from most important to least important). A summary of the responses to the open-ended questions are listed following each question. The results were used in the development of the recommendations for the Asheboro Thoroughfare Plan.

Part I

1. Rank the issues that should be considered when developing a thoroughfare plan.
   1 is most important, 5 is least important

2.66	Community enhancements (e.g., better roads, quiet neighborhoods, pedestrian trails, bike trails, etc.)
2.71	Community preservation
2.72	Individual home or business preservation
3.21	New economic development growth
3.58	Natural environmental preservation (e.g., wetlands, historic sites, endangered species, etc.)

2. Rank how a road's ability to carry traffic should be increased.
1 is most important, 7 is least important

2.24	By building additional travel lanes on existing facilities
2.32	By making improvements to the intersections
3.29	By building new facilities
3.80	By controlling strip development
4.59	By implementing one-way pairs
5.75	By encouraging people to ride together or to use public transportation
5.44	By providing facility enhancements such as pedestrian paths or bicycle facilities

Part II

Responses are listed in order of number of responses received. Similar responses have been combined.

1. What do you feel are the key transportation issues in Asheboro area?

- Congestion on US 64/NC 49 and the need for a Southern Bypass (including the need for better access to the North Carolina Zoological Park),
- Congestion on US 220 Business (Fayetteville Street),
- Systemwide improvements and maintenance,
- Transportation System not keeping up with growth,
- Control of strip development on major corridors,
- Better bicycle and pedestrian facilities,
- Need for improvements to NC 42 and NC42/US64 intersection,
- Need for north-south facility on east side of City,
- Need for improvements on Presnell Street, and
- Lack of public transportation.

2. Are there any areas in your community where truck traffic is a problem? If so, where?

- US 64 (Dixie Drive),
- US 220 Business (Fayetteville Street),
- Church Street,
- NC 42,
- Sunset Avenue,
- Salisbury Street,
- Intersection of US 220 Bypass - US 220 Business south of Asheboro,
- Lindley Avenue (City trucks), and
- Academy Street.

3. Are you concerned with safety or accident problems at specific locations or intersections in the Asheboro area? If so, please give a detailed location and problem description.

   - US 64 (Dixie Drive) with particular concerns at the following intersections and areas:
     - NC 42,
     - Randolph Mall area (including Wal-Mart, K-Mart shopping centers),
     - Lowes Food shopping center,
     - Salisbury Street, and
     - Zoo Parkway.

   - US 220 Business (Fayetteville Street) with particular concerns at the following intersections and areas:
     - Presnell Street, and
     - Pritchard Street.

   - Church Street / Wainman Avenue intersection,
   - Central Avenue,
   - Mack Road / NC 42 / connector to US 64 intersections,
   - Dublin Road / NC 42,
   - Salisbury Street,
   - Zoo Parkway / New Bern Avenue,
   - NC 49 Ramp / Post Office, and
   - Kivett Street / Cliff Road intersection.

4. When traveling around the Asheboro area, do you find it necessary to go out of your way to reach your destination because there is not a direct route?[1] If so, please give examples.

   - Need east-west route through Asheboro (alternative to US 64),
   - North-south route to provide access between US 64 east and areas north of the planning area,
   - Access from south to US 64 east and NC 49 west of Asheboro, and
   - One way portion of Randolph Street should be two way.

[1]The most common reason for going out of your way was not due to the lack of a direct route but due to congestion on US 64 and US 220 Bypass.

5. Do you think public transportation could be an effective means of addressing traffic congestion in Asheboro? Is this something the City of Asheboro should pursue?

   - The most common response (more than 59%) was that public transportation should not be considered for addressing congestion.
   - A fewer number of respondents felt public transportation should be pursued by the City of Asheboro.
   - The remaining respondents were unsure, felt it may be something to look at in the future, or did not believe enough people would use public transportation to justify the expense.