

## HOW WE DEVELOPED OUR PLAN

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### WHO IS RESPONSIBLE FOR THE PLAN?

The Durham-Chapel Hill-Carrboro (DCHC) Metropolitan Planning Organization (MPO) is the regional organization responsible for transportation planning for our urban area, and therefore is charged with developing and implementing this long-range transportation plan. The DCHC urbanized area, first designated by the 1980 Census, covers all of Durham County, a portion of Orange County including the Towns of Chapel Hill, Carrboro and Hillsborough, and northeast Chatham County. *Figure 5* is a map showing the MPO boundary. DCHC is also one of the seven urban areas in North Carolina designated as a Transportation Management Area (TMA) by the *Transportation Equity Act for the 21st Century (TEA 21)*. TMAs are urban areas with a population of over 200,000 people, and have additional planning requirements such as the development of a congestion management system. Much of the DCHC MPO organizational structure and processes are mandated by state and federal legislation related to transportation.

The DCHC MPO is comprised of the following two committees:

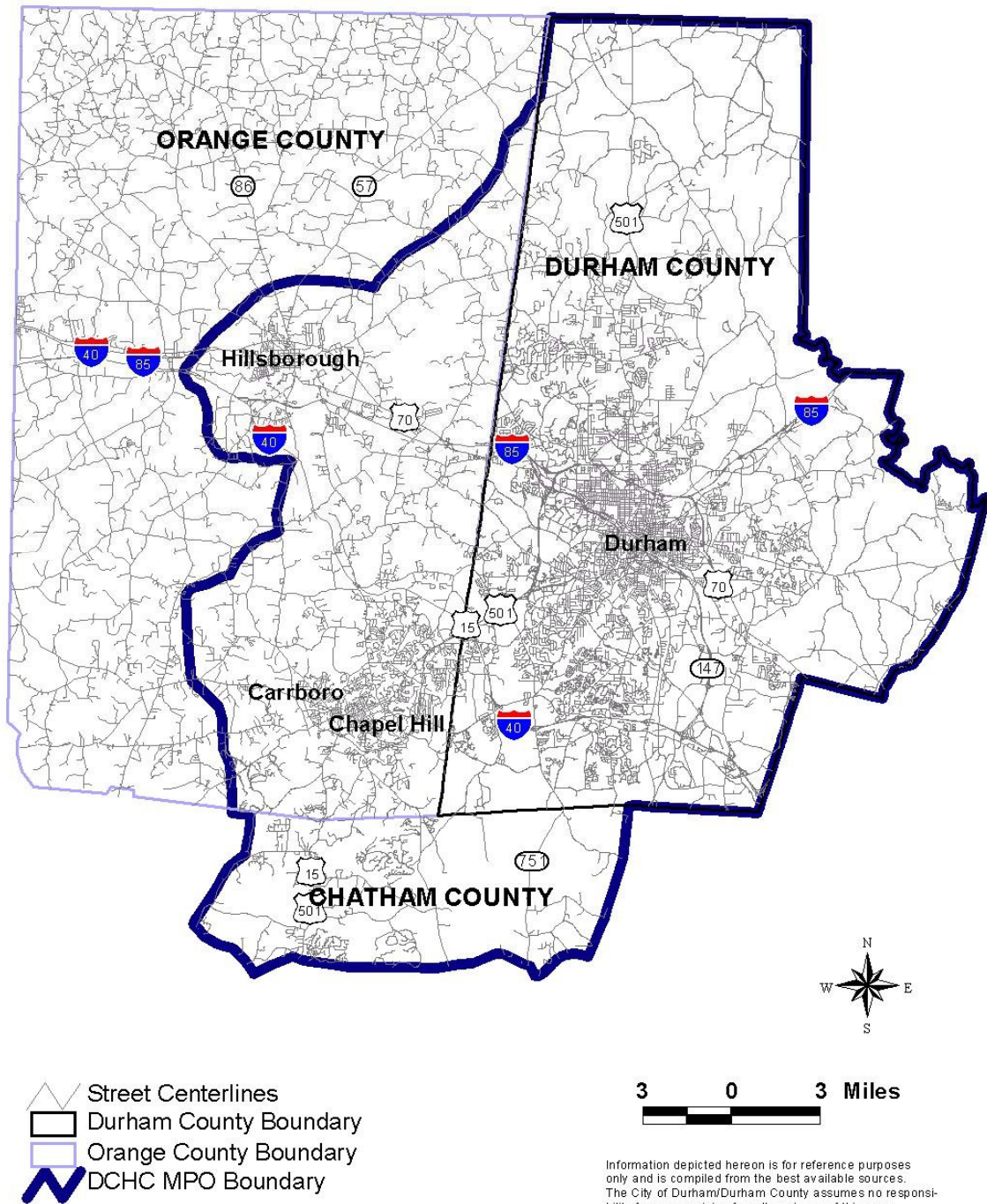
*Transportation Advisory Committee (TAC)* – The TAC is a policy body, which coordinates and makes decisions on transportation planning issues. The TAC is comprised of elected and appointed officials from the City of Durham, the Town of Chapel Hill, the Town of Carrboro, the Town of Hillsborough, Durham County, Orange County, Chatham County and the North Carolina Department of Transportation. The TAC also has advisory (non-voting) members from the Triangle Transit Authority, the Federal Highway Administration and the Research Triangle Foundation of North Carolina.

*Technical Coordinating Committee (TCC)* – The TCC is composed of staff members from our local governments, Triangle Transit Authority, Research Triangle Park, Triangle J Council of Governments, Raleigh-Durham Airport Authority, North Carolina Central University, University of North Carolina, Duke University, and Carolina Trailways. The TCC staff, who provide technical recommendations to the TAC, are commonly transportation, land use, community, and facility planners and engineers.

The final key organizational element of the MPO is the Lead Planning Agency (LPA). The LPA is responsible for the administration and oversight of the planning, project implementation, grant funding, and other MPO related activities. The LPA staff work for the Transportation Division of the City of Durham. Federal transportation planning grants fund most staff activities, while approximately 20 percent of the funding is from local government matching revenue.

Figure 5

# DCHC MPO Metropolitan Area Boundary (MAB)



## **DCHC MPO Goals and Objectives**

The Transportation Goals and Objectives of the DCHC MPO inform the outcomes and decisions that have resulted from our long-range planning process. The Transportation Goals and Objectives reflect our values in relation to the overall transportation system. Most importantly, they bridge the gap between the values that are unique to the different communities in our MPO and the technical aspects of the Transportation Plan that are mandated by state and federal legislation. The Transportation Goals and Objectives comply with the seven planning factors included in the current federal legislation governing MPO and transportation policy, including the federal *Transportation Equity Act (TEA-21)*.

The Transportation Advisory Committee (TAC) adopted the Goals and Objectives on August 12, 1998. The TAC revised them on May 12, 2004 by adding lines 1.h) and 1.i). The revised Goals and Objectives follow.

### **1. Overall Transportation System**

#### *Goal:*

A safe, efficient, attractive, multi-modal transportation system that: supports local land use; accommodates trip-making choices; maintains mobility; protects the environment and neighborhoods; and improves the quality of life for urban area residents.

#### *Objectives:*

- a) Establish performance standards that will measure the effectiveness of the urban area's overall transportation system in supporting access to goods, services, activities, and destinations.
- b) Select and program transportation projects, which are consistent with community goals and are a cost-effective use of funds.
- c) Develop and maintain a multi-modal regional transportation model that reflects travel patterns and incorporates innovative techniques for evaluating the impacts of proposed transportation investments on travel and land use patterns.
- d) Promote non-automobile transportation alternatives and create efficient connections between all transportation modes.
- e) Conserve natural resources and reduce the rate of energy consumption.
- f) Develop cooperative strategies with employers to reduce congestion and increase the efficiency of the transportation system.
- g) Use transportation funds based on the priority needs of the urban area, in keeping with community values, and explore new funding options.
- h) Seek additional funding to ensure implementation of the long-range plan.
- i) Monitor the implementation of the Plan and the targets through the biannual TIP process.

### **2. Multimodal Street and Highway**

#### *Goal:*

An attractive multi-modal street and highway system that allows people and goods to be moved safely, conveniently, and efficiently.

#### *Objectives:*

- a) Establish performance standards and report on the condition and effectiveness of the multi-modal street and highway system.
- b) Create multi-modal street patterns that: encourage safe pedestrian, bicycle, and vehicular travel; provide access to public transportation; and ensure connectivity.
- c) Develop and implement level of service (LOS) standards for the urban area that are based on a cooperative agreement between state and local agencies.

- d) Preserve and enhance the traffic carrying capacity of arterial street systems, while minimizing traffic intrusion in residential neighborhoods.
- e) Identify and recommend design standards that: establish safe speeds; increase pedestrian and bicycle usage of streets; and enhance the attractiveness and appeal of the street and highway system.

### **3. Public Transportation System**

*Goal:*

A convenient, accessible, and affordable public transportation system, provided by public and private operators, that enhances mobility and economic development.

*Objectives:*

- a) Establish performance standards and report on the condition and effectiveness of the public transportation system.
- b) Increase public transit ridership by enlarging the service area and increasing the frequency of service to the urban area.
- c) Coordinate transit service within the urban area by promoting high quality, seamless, integrated, and customer-friendly service.
- d) Expand ridesharing, carpool, and vanpool services and opportunities.
- e) Develop and implement alternatives to the use of single occupant vehicles, including high occupancy vehicle (HOV) facilities and regional rail services.
- f) Develop and implement the Regional Transit Plan.
- g) Develop a regional park and ride system for cars and bicycles to support transit services and encourage ridesharing.
- h) Ensure that the transportation needs of the youth and elderly, the mobility impaired, and the economically disadvantaged are met.
- i) Identify and recommend land use patterns, parking requirements, and development regulations, which create compact, mixed use, transit-friendly, walkable development.
- j) Identify and recommend ways that the state and the urban area should work together to maintain and enhance the quality of public transportation service throughout the urban area.

### **4. Pedestrian and Bicycle System**

*Goal:*

A pedestrian and bicycle system that: provides an alternative means of transportation; allows greater access to public transit; and supports recreational opportunities.

*Objectives:*

- a) Establish performance standards and report on the condition and effectiveness of the pedestrian and bicycle system.
- b) Develop and implement a Regional Pedestrian Plan.
- c) Update and maintain the Regional Bicycle Plan.
- d) Identify and recommend ways that local governments may provide adequate staff and resources to meet the goals of their pedestrian and bicycle programs.
- e) Develop a regional bicycle and pedestrian policy that establishes linkages between activity centers and provides for access to public transit.
- f) Ensure that bicycle and pedestrian facilities are included in the planning, design, and construction of roadways where applicable.
- g) Increase education about the benefits of pedestrian and bicycle alternatives.
- h) Support the enforcement of pedestrian and bicycle regulations.
- i) Pursue strong funding commitment for building both pedestrian and bicycle facilities.

- j) Provide greater safety for pedestrians and bicyclists of all levels of ability, and safer interaction with users of other modes of transportation.
- k) Encourage the efforts and activities of citizen advocacy groups for pedestrian and bicycling by providing information and support for their programs.
- l) Promote the construction of bicycle and pedestrian facilities that will encourage greater use of these modes by the public.

## **5. Integration of Land Use and Transportation**

### *Goal:*

A Transportation Plan that is integrated with local land use plans and development policies.

### *Objectives:*

- a) Establish performance standards and report on the integration and consistency of the Transportation Plan with local land use plans and development policies.
- b) Create transportation systems that enhance the livability of all communities.
- c) Identify and recommend land use patterns that improve and support transportation efficiency.
- d) Identify the impacts of different land use patterns and site designs on travel behavior.
- e) Evaluate the changes in land use brought about by the expansion of existing transportation facilities and the construction of new facilities.
- f) Identify and recommend land use patterns and development policies that increase overall mobility and that support compact, mixed-use, transit-friendly, walkable development.

## **6. Protection of Natural Environment and Social Systems**

### *Goal:*

A multi-modal transportation system which provides access and mobility to all residents, while protecting the natural environment, cultural resources, and social systems.

### *Objectives:*

- a) Establish performance standards and report on transportation impacts on the natural environment, cultural resources, and social systems.
- b) Protect and preserve archaeological, historic, and culturally valuable areas.
- c) Identify and protect environmentally sensitive areas early in the planning process.
- d) Develop and implement modifications to the transportation system that reduce the rate of growth in vehicle miles traveled (VMT).
- e) Modify the transportation system to reduce the pollutants in highway runoff and the vehicle emissions, in accordance with federal, state and local Clean Air and Water legislation.
- f) Minimize the noise and dust generated by transportation facilities in neighborhoods and the urban area.
- g) Preserve culturally diverse areas of the region.
- h) Ensure that transportation facilities do not negatively effect disadvantaged populations disproportionately.

## **7. Public Involvement**

### *Goal:*

An ongoing program to inform and involve citizens throughout all stages of the development, update, and implementation of the Transportation Plan.

### *Objective:*

- a) Establish performance standards and report on the effectiveness of the public involvement element of the Transportation Plan.

- b) Encourage citizens to take a proactive role in the development of the Transportation Plan.
- c) Bring a broad cross-section of members of the public into the public policy and transportation planning decision-making process.
- d) Educate the public and elected officials, in order to increase public understanding of both the options and the constraints of transportation alternatives.
- e) Determine the public's knowledge of the metropolitan transportation system, and public values and attitudes concerning transportation.
- f) Determine public concerns and/or perceived impacts of elements of the Transportation Plan.
- g) Determine which elements of the Transportation Plan would support or diminish the public's desired lifestyle.
- h) Establish a channel for an effective feedback process.

## **UPDATE TO 2025 LRTP**

The DCHC MPO decided to use the 2025 LRTP as the starting point, and to endeavor only to make limited and necessary refinements to produce the 2030 LRTP. In other words, the 2030 LRTP would be an update to the 2025 LRTP. This decision was based on the fact that the 2025 LRTP had been recently adopted, and was the result of a comprehensive and in-depth development process. In addition, the U.S. EPA designated the Triangle region as non-attainment for ozone pollutants on June 15, 2004. Federal law states that the region has one year to adopt plans to bring the area into air quality conformity. Given the fast approaching deadline (i.e., June 15, 2005) imposed by federal Air Quality regulations to adopt a conforming transportation plan, there was not ample time to develop a completely new plan.

The Transportation Advisory Committee (TAC) of the DCHC MPO adopted the 2025 LRTP on June 11, 2003. That plan was the result of a comprehensive two-year analysis and public outreach effort that included the following key processes:

- The Socio-economic forecast was based on an update to the 1995 base year, which was a total count (100 percent) inventory.
- A Baseline Deficiency Analysis for the 2025 horizon year was used for comparative purposes that illustrate the performance impacts and congested areas if we do "nothing."
- A set of weighted evaluation criteria were developed for comparing the various plan alternatives.
- The MPO developed and evaluated plan options in a very comprehensive, methodical manner. They used four steps: Tier 1 had sixty-six (66) different options as the initial set of options; Tier 2 selected the fourteen best options based on the evaluation criteria; Tier 3 contained the five (5) best options; and, the Preferred Option was selected from the Tier 3 set, and used in the financial analysis.
- The public involvement process was extensive. Each key element of the 2025 LRTP development process was accompanied by either an open house or public hearing, or both. In addition, a Citizen Advisory Committee (CAC) was involved in all the key elements, and draft documents were made available to the public through several mediums (e.g., Web site, public library)

## **QUANTITATIVE – BY THE NUMBERS**

### **Socio-Economic Forecast**

The socio-economic data is the primary building block for developing a long-range transportation plan. This data estimates the current and future volume and location of jobs and households, which ultimately determine the volume and location of transportation demand. As a practical matter, the socio-economic data is the primary input into the Triangle Regional Model (TRM) that includes the DCHC MPO, CAMPO and some adjacent areas that are in the air quality non-attainment area. (For more information on air quality

regulations and its impact on the transportation plan, see the section in this document titled "Air Quality Conformity Determination and Analysis Report") Once we estimate where people will live, work, shop and engage in other activities, the TRM can produce estimates of the level and location of future traffic volume, transit ridership, and bicycle and pedestrian trips. Then, the challenge is to determine deficiencies in the transportation network that will serve these trips, and develop transportation investment plans to correct or mitigate those deficiencies.

The process for acquiring, checking and organizing the socio-economic data involves a substantial, coordinated effort by all the transportation and planning departments in the Triangle Region. This effort culminated in the production of the *2030 Long Range Transportation Plan: Socioeconomic Data*, which the TAC of the DCHC MPO adopted on February 11, 2004. This socioeconomic report documents the following process:

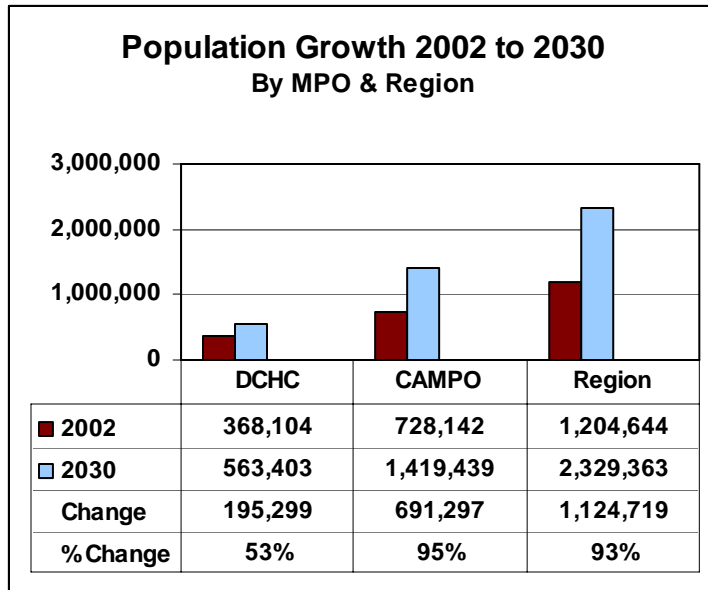
- Estimate the location of employment and households (e.g., population) for the year 2002 (i.e., base year) in the DCHC MPO and a few adjacent areas that are in the air quality conformity area;
- Obtain estimates of future employment and household growth for the years 2010, 2020 and 2030;
- Distribute future employment and household growth into 907 Traffic Analysis Zones (TAZs) based on the current long-range land use plans and policies of the local municipalities and counties – these land use plans are described in the upcoming section called "Land Use Plan and Policies" in this report;

As previously indicated, the detailed output of the socioeconomic report (i.e., employment and household growth estimates for each TAZ by the years 2002, 2010, 2020, and 2030) became the primary input into the TRM. Although the details of the socioeconomic data are beyond the scope of this 2030 LRTP report, a summary is important to establish the forecast employment and population factors that are driving the steady increase in transportation demand.

Our region will continue to experience fast growth. As indicated in *Figure 6*, the population in the DCHC MPO, CAMPO and the entire region are expected to increase by 53 percent, 95 percent and 93 percent, respectively. These increases represent annual growth rates of 1.5 percent to 2.4 percent, thus continuing the fast population growth rates experienced from 1990 to 2000. *Figure 7* indicates that employment growth in the MPOs and region will outpace the fast-paced population increases by approximately ten percent to 20 percent, indicating that the urban area remains the employment center and will continue to experience a high level of cross-county commuter and shopping traffic.

As the reader reviews the statistics presented in this report, it should be noted that the regional total will be greater than the sum of the MPOs because the model area extends beyond the MPO boundaries.

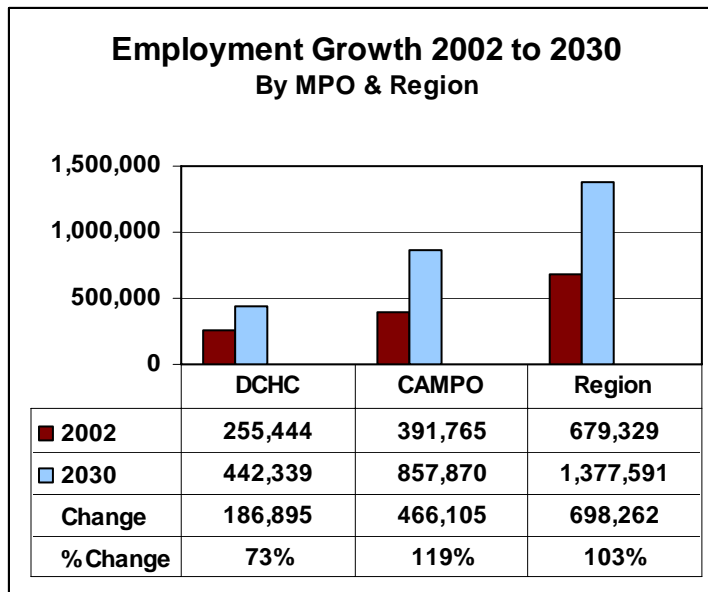
Figure 6



### Land Use Plans and Policies

The current long-range land use plans and policies of the municipalities and counties in the DCHC MPO area are a very important component for developing the long-range transportation plan. As indicated in the previous section on socioeconomic data, the aggregate forecasts of population and employment in the DCHC MPO area are distributed to 907 TAZs based on long-range land use plans and policies. The socioeconomic data for each TAZ produces an assumed travel demand (e.g., number of vehicle or transit trips), and then the highway and other parts of the transportation network are checked to see if their capacity can handle the indicated trips, and subsequently deficiency maps are produced. The long-range land use plans indicate what type of employment and housing growth is to occur in the future, where it is to occur, and at what density.

Figure 7



Various long-range land use plans within the DCHC MPO area guide the development of the socioeconomic data and TRM input data. The interrelationship between land use and transportation planning must be very well coordinated, as it is a "two-way street." Land use plans, or future employment and housing growth, will direct the need for transportation investments such as road widening, new roads, transit expansion, and fixed-guideway systems. On the other hand, the transportation system can affect land use patterns. For example, new roads will provide increased access and likely produce new residential,

commercial, retail, office, or other employment development. In fact, the *Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991* directs local and regional decision-makers to consider the land use impacts of transportation plans and requires government agencies to consider land use alternatives to transportation solutions.

Each local member government of the DCHC MPO has adopted a long-range, comprehensive plan to help guide the future growth of their community, and aid in the coordination of land use and transportation planning goals. These comprehensive plans reflect local and regional transportation plans, and all envision communities of character that instill a sense of place envisioned by the residents of that community. The remainder of this section summarizes each of these plans to enable the reader to understand the residential and employment growth assumptions that underpin the 2030 LRTP.



### Town of Carrboro

Carrboro's Vision 2020 Plan, adopted on December 5, 2000, encourages mixed-use development, and shopping is to be concentrated into four existing developments that are to be strongly tied to residential use through increased pedestrian access. An important ancillary document is the Facilitated Small Area Plan for Carrboro's Northern Study Area (adopted in 1998), which covers a very large section of developed and undeveloped rural area that is under Carrboro's planning jurisdiction, and lies to the north of the Town's center. This small area plan features neighborhood mixed-use and mixed-use village scenarios with up to five dwelling units per acre. The exact location of these development types is not designated on a map, but rather will be addressed on a case-by-case scenario. The overall residential density of the planning area for the Northern Study Area is to be 2.1 dwelling units per acre (the current average for Carrboro).

There are also transportation plan features in the Vision 2020 plan. The town will continue a "connector roads policy" to maintain an accessible grid street network, and sets bike and pedestrian improvements as a high priority for existing uses, as well as a requirement for new development. The Plan promotes the "safe and adequate flow of bus, auto, bicycle and pedestrian traffic within and around" the town. The plan encourages regional cooperation on transit planning, including rail, and calls for changes in zoning ordinance to promote transit oriented development along future rail and transit corridors.

The net effect of the Vision 2020 Plan will be the continued concentration of population and employment within the Town of Carrboro. Figure 8, Town of Carrboro Development Patterns, is a map from the Northern Study Area plan that depicts undeveloped areas of Carrboro (shown in green) that are likely to experience considerable growth within the timeframe of the 2030 LRTP. According to this map, the great majority of the land that is available for development lies north of the Town's center. The area of Chapel Hill Township that is outside this planning area is likely to grow at a much slower pace, especially those areas to the west and south of the town center. These areas tend to have development restrictions based on watershed protection policies.

### Town of Chapel Hill

Chapel Hill's Planning for Chapel Hill's Future: the Comprehensive Plan, adopted May 8, 2000, encourages the preservation of the current urban services area and rural buffer boundary, thereby concentrating development inside the service area. It plans for increased mixed-use and infill development to meet housing and commercial space demands. Figure 9 displays the land use categories for this land use plan. Most of the opportunities for residential development growth appear to be in the northern part of the urban service boundary, and the principal development opportunity area for employment growth is most likely the Horace Williams Airport property that the University of North Carolina intends to develop. As a result, most residential and employment growth will occur within the Town of Chapel Hill.

The transportation element of the plan envisions a "balanced" transportation system with a strong emphasis on transit and sets bicycle and pedestrian improvements as high priorities.

Figure 8

MAP #A-1:  
Development Patterns

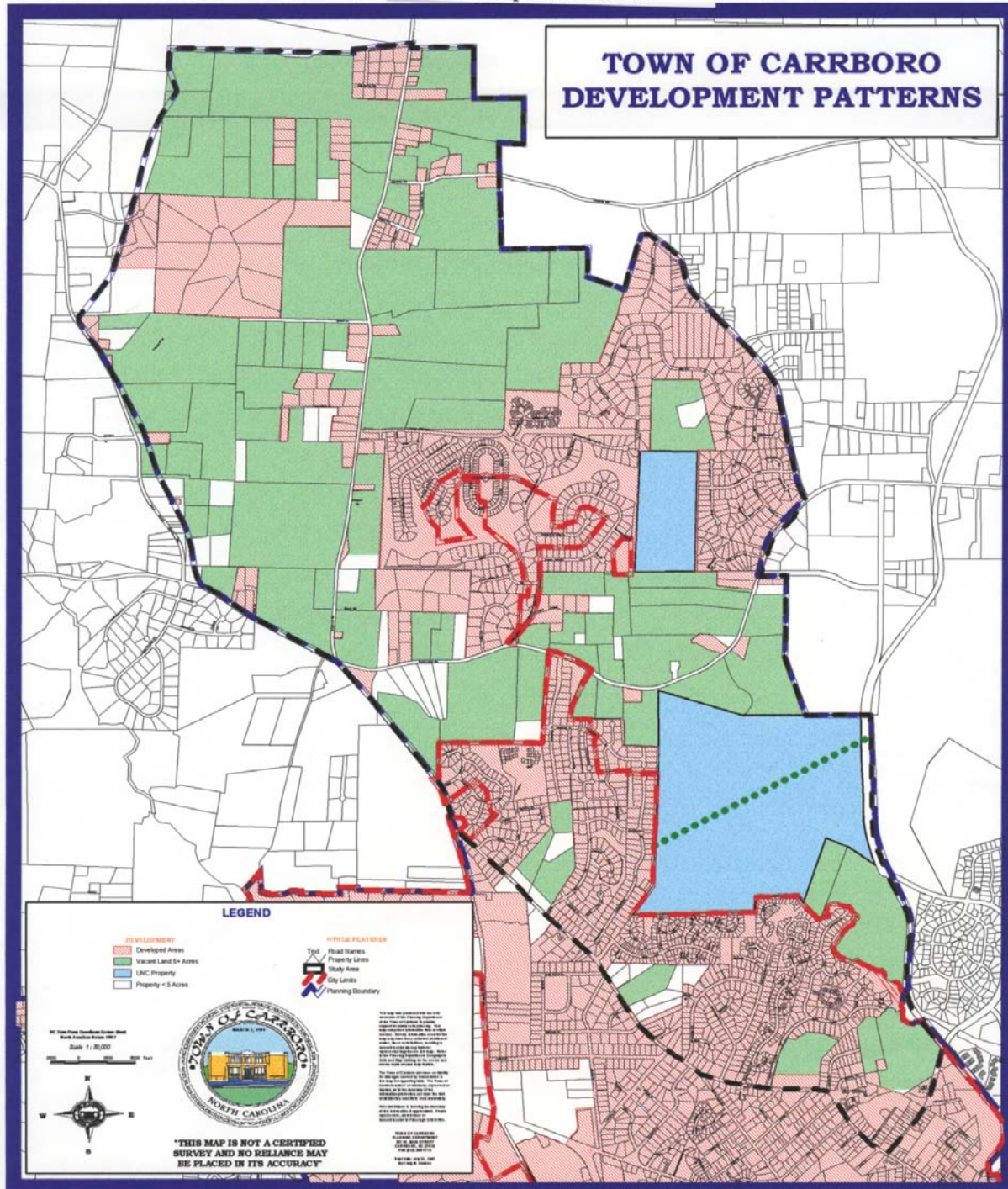


Figure 9

