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## Introduction



## I Introduction

Planning Raleigh 2030 is a process to update the City of Raleigh's Comprehensive Plan to address the issues and challenges the City faces today and into the future. A comprehensive plan is a long-range policy guide that outlines what a city will do, encourage, and support to achieve its vision of overall growth and development. Raleigh has a tradition of developing comprehensive plans dating back to 1913. The City's last plan, adopted in 1989 and subsequently amended, is almost 20 years old. Much has changed in that time. Since 1980, the City's population has more than doubled from approximately 150,000 to 370,000. During the same period, the City's land area has almost tripled in size from approximately 55 to 140 square miles. Clearly, the City's land area is growing even faster than its population. The City's comprehensive plan needs to be updated to better address the issues and challenges that Raleigh faces today and tomorrow, such as incorporating green and sustainable principles, addressing transit and transportation, the coordination of land use and infrastructure, the development of new communities, the conservation of existing neighborhoods, and the renaissance of downtown.

### I.1 Purpose and Scope

A comprehensive plan is a guide to what happens in physical space relative to land use, transportation, natural resources, parks, and other aspects of a community's development. It provides for the integration of all aspects of physical, economic and social development to improve a city's form and function.

A critical part of every comprehensive plan is a background analysis of existing conditions to inform the overall planning process. The purpose of this Community Inventory is to provide a factual and analytical basis for the Comprehensive Plan Update, and to focus on the issues facing the City today and through the year 2030. Each topical chapter in the Community Inventory presents an analysis of existing conditions and trends, identifies key issues and challenges, and highlights potential strategies to address the issues. Following this introductory chapter, the Community Inventory includes chapters on Demographic and Household Trends; Land Use; Economic Development; Housing and Neighborhoods; Transportation; Public Utilities; Environmental Resources; Parks, Recreation and Greenways; Community Facilities, Historic Resources, and Urban Design.

### I.2 Our City Today

Raleigh is a fast-growing city located in the second-fastest growing county in North Carolina, which in turn is part of the Research Triangle Region, the fastest-growing region in the State. By the year 2030, the City's population is projected to increase to approximately 580,000—an increase of almost 60 percent from the 2005 population. While growth is not new to Raleigh, the magnitude of the growth and its implications for the City's infrastructure and quality of life do represent new challenges. Below are some highlights of the issues and challenges facing Raleigh today. The detailed chapters of this Community Inventory report provide more information and discussion of these and other items that are components of Raleigh's existing and future growth and development.

#### Population Density

After 1950, the City's population density has decreased as the City grew outward, and it has remained low for the past four decades. While Raleigh is known for its attractive housing and developments, the overall low density nature of the newer development may not be a desirable or sustainable pattern of growth for all of Raleigh. It has consequences including the need for more resources to address roadway improvements and utility extensions, and the stresses this development places on finite natural resources such as water supply and clean air.



## **Developable Land Area**

Based on its outward growth and annexation policies, Raleigh currently contains about 90,000 acres, and may annex a maximum of 43,000 acres in the future. Since 1990, the City has annexed about 1900 acres per year. At this rate, the City has about 22 years of annexation growth potential, but “greenfield” development is only part of the story. Eighteen percent of the City’s planning jurisdiction consists of vacant land available for residential, commercial, and/or industrial development. The Comprehensive Plan will need to provide guidance on both new development at the City’s edges as well as fill-in development that can enhance and support existing residents and businesses.

## **Housing Stock and Neighborhood Development**

Single family homes make up almost 50 percent of the City’s housing units, while multifamily homes make up about 40 percent. This means that the City already has a very healthy mix of housing types that can meet the needs of Raleigh’s current and future population. However, due to conventional suburban development patterns since 1950, the majority of the City’s built environment is auto-oriented and requires a car for most daily trips.

### **Affordable Housing**

Raleigh is a growing and desirable location for new housing and jobs. However, market pressures are driving up housing costs. Low income households have great difficulty finding affordable and decent housing options and middle income households also feel these pressures. Affordable housing provides stability for families, improves opportunities for education and career advancement, and reduces the risk of homelessness for households that are dependent on low wages or fixed incomes.

## **Residential Development Market**

The City’s housing market has been strong. Since 2002, total permit activity has ranged from just under 5,000 to nearly 6,500 per year, with a five-year average of approximately 5,730 units per year. A range of housing is being built. The comprehensive plan can help guide how housing is developed in the future, and how new communities can be developed that are served by distinctive, mixed-use business districts and accessible by auto, transit, biking, and walking.

## **Employment**

In 2000, the top two employment sectors accounted for a third of the City’s jobs and provide a strong employment base. Those two sectors are education, health, and social services, which account for about 20 percent of the jobs; and, professional, scientific, management, and administrative jobs, which account for about 13 percent. The City’s diverse job base is also strong in retail trade, public administration, construction, and finance, insurance and real estate.

## **Office Development Market**

Raleigh also has a strong office market due to the region’s educated workforce and skilled technology workers. Over the last four years alone, annual office development has more than tripled in construction value from \$40 million to \$125 million. One challenge for the future will be to foster mixed-use office environments that are more accessible to where people live, reducing travel times, and saving energy.

### **Retail Development Market**

New retail development has also increased significantly over the last four years from about \$30 million in 2002 to about \$100 million in 2006. This has provided convenience for many residents. But it may also be taking its toll on some older business districts that are declining in the face of competition from this new retail development. In the future, Raleigh will need to balance the focus on new development with an equal focus on revitalizing older commercial areas so that older areas of the city are also served by high-quality and convenient retail services.

### **Industrial Development Market**

Like other regions of the country, the Triangle's overall manufacturing base is declining due to global industrial trends. Wake County's strongest manufacturing sectors include computers and electronics, electrical equipment and appliances, pharmaceuticals, fabricated metal products, printing, and food manufacturing. The challenge will be to maintain existing industries, focus on job-training and education for those who need to re-train for new industry jobs, and to continue to foster "clean" industries such as those locating on North Carolina State University's Centennial Campus.

### **Economic Equity**

Not all areas of the City have participated fully in the City's office and retail development, expansion, leaving some communities underserved. In addition, overall unemployment is low but many working residents in low paying jobs are not enjoying the fruits of the expanding economy. Public improvement strategies need to benefit all portions of the City and help to create competitive environments and opportunities for economic prosperity.

### **Education**

Raleigh has a national reputation for its highly educated workforce, as well as the region's exceptional universities. In 2006, the percentage of Raleigh residents with Bachelor's degree or higher was 45 percent—much higher than the state's rate of 25 percent and more than two and a half times greater than the national rate of 17 percent. High school achievement is also higher than either the state or nation. The challenge will be to foster job training and technical skills for those without college degrees.

### **Income**

Higher educational levels typically translate into higher salaries. In 2006, the City's median household income of \$51,000 was much higher than the state level of \$42,000 and slightly higher than the national level of \$48,000. However, the percentage of individuals below the poverty level was over 13 percent in the City, about the same as it is for the state and the nation. The City and County will need to continue to focus on quality education for youth and life-long learning opportunities to help those who need to move out of poverty. Affordable housing is also significant issue for lower income residents, especially since a car is often needed to find housing or employment

### **Transportation and Commuting**

In Raleigh, most commuters rely on the automobile to get to work: approximately 80 percent drive alone and some 13 percent carpool. A very small percentage walk, bike or use transit. The comprehensive plan will need to address how Raleigh can encourage land use patterns to support transit use and increase the supply of housing in close proximity to employment centers, so the City becomes more energy efficient, has less pollution, and provides opportunities to reduce commute times.



## **Historic Resources**

The City of Raleigh has a unique heritage. It was created in 1792 as the planned site for the capital city of North Carolina. Its cultural resources illuminate the economic eras, styles of development, and ways of life from two centuries of growth. In stark contrast to this rich history, much of Raleigh's built environment is new—almost 95 percent of the City's housing was built after 1950, and of that 65 percent was built after 1980. Therefore, promoting awareness of Raleigh's history, preserving historic resources, promoting a distinct sense of place, and ensuring compatible design within historic neighborhoods and landscapes is even more important.

## **Air Quality**

Air pollution is a regional, national, and international issue. Raleigh will need to continue to do its part to improve air quality, because it does not meet the U.S. Environmental Protection Agency's standard for ground-level ozone. One strategy is to provide alternatives to the automobile for a portion of daily trips—transit, walking, and biking—and to provide opportunities for people to combine car trips through mixing uses within communities and developments.

## **Water Supply**

When it comes to growth concerns, transportation is typically one of most cited concerns. However, water is now one of the key issues for many communities including Raleigh. At the end of 2007, Wake County was immersed in an historic drought, rated as Exceptional (the most severe rating) by the North Carolina Division of Water Resources. With its present supply constraints, Falls Lake cannot solely provide for the future water supply needs of the City and the other Wake municipalities served by the City's water. The City will need to develop alternative water supplies, as well as conservation and minimization techniques. Ultimately, the City and its residents will need to use limited water resources more wisely.

## **Water Quality**

Water quality is also a substantial issue. The City lies within a sub-basin of the Neuse River, one of the most polluted rivers in the country and the primary source of the Falls Lake Reservoir. Raleigh is uniquely positioned at the headwaters of the Neuse River to champion the recovery of this degraded resource, meet the water needs of its growing population, and act as good stewards of this vital water body.

## **Wastewater Treatment**

Many people are concerned about water supply, but wastewater treatment is also a concern. The Neuse River will not be capable of accommodating all the City's future wastewater management needs. The City will need to develop alternative management options, such as: conserving and minimizing water use, reclaiming water for irrigation purposes, and optimizing and expanding current treatment capacity as technology improves.

## **Parks and Open Space**

Raleigh has a well developed park and greenway system. Building on this success, the City will need to provide new parks and preserve additional open spaces, special landscapes, and natural resource areas for its growing population in the future.

## I.3 Conclusions

Overall, Raleigh has many positive attributes to build upon to increase its livability and improve the prosperity of its residents. Raleigh is one of North Carolina's fastest growing communities, and continues to attract new residents and businesses from other areas of the country. This growth has brought the City economic prosperity but also threatens to overwhelm the resources, quality of life, and sense of place that have been hallmarks of the community. The City has a highly educated population and many higher education institutions. As part of its new Comprehensive Plan, Raleigh will need to address the challenges ahead: managing where and how growth occurs; balancing that growth with infrastructure; protecting and enhancing natural resources; implementing green and sustainable building practices; focusing on growing successful neighborhoods; expanding affordable housing, defining a transit future by coordinating land use and transportation; and increasing cooperation within the region.

## Demographic & Household Trends

## 2 Demographic & Household Trends

Raleigh is a fast-growing city located in the second-fastest growing county in North Carolina, which in turn is part of the Research Triangle Region, the fastest-growing planning region in the State. The City's demographic and household composition is clearly a moving target. This chapter provides the most up-to-date data available for understanding the characteristics of the individuals and households which make up the population of Raleigh, the second-largest city in North Carolina.

The data presented in this chapter has been drawn from a variety of sources. The decennial census provides the baseline for household and population estimates in the intervening years. The American Community Survey of the U.S. Census Bureau provides detailed demographics for 2006. Building permit and demolition data is combined with locally derived population multipliers to estimate population and households bi-annually between the census years. Building permit data also gives an overview of recent trends in housing construction.

### 2.1 City Population & Household Trends

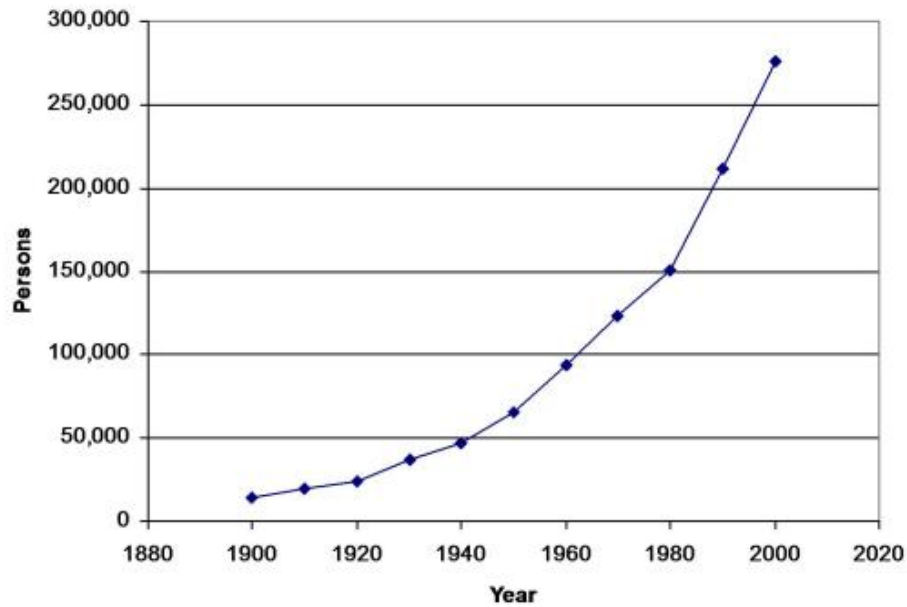
From its founding as the State Capital in 1792, the City of Raleigh has been on a growth path for over 200 years. However, the overall numbers mask complex trends. The City's growth is driven by both international immigration as well as domestic migration; and the demographic composition of the City is changing in ways that mirror and differ from State and national trends. The following section explores the past 20 to 30 years of demographics in the City and Region, as well as projections for the future.

#### Population growth over last 20 years

The 20th century saw the City of Raleigh grow from a small town of fewer than 14,000 people to a city of over 270,000. The City added population in every census year, with an annualized growth rate ranging from 2.0 to 4.3 percent. The annualized growth rate was 3.5 percent in the 80s and 2.7 percent in the 1990s. Growth is nothing new to Raleigh; however, the long-term exponential growth trend of the City means that the magnitude of growth in terms of total new population added has gotten larger each decade.

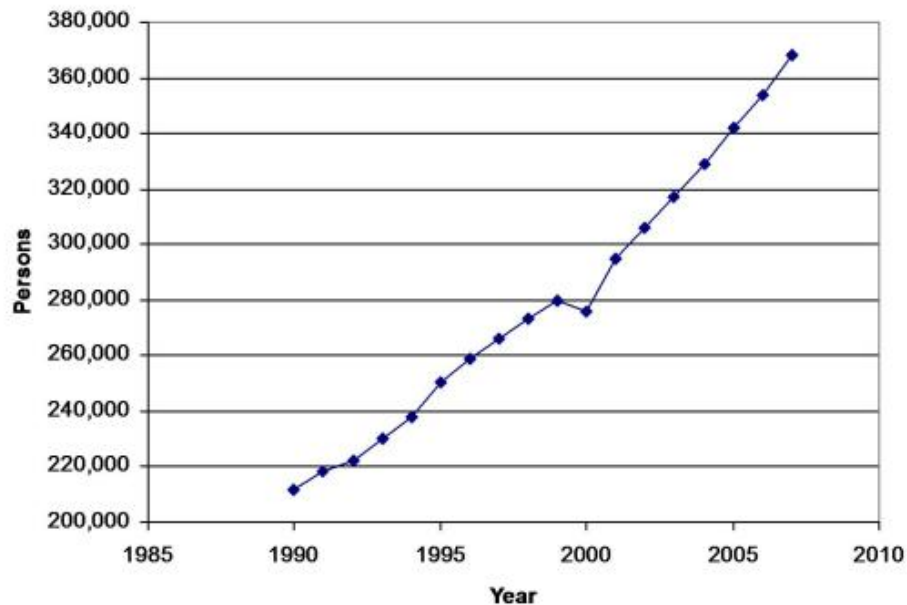


Figure 2.1 Census Population, City of Raleigh, 1900 – 2000



Source: U.S. Census Bureau, Decennial Census, 1900 - 2000

Figure 2.2 Census and Estimated Population, City of Raleigh, 1990 – 2007

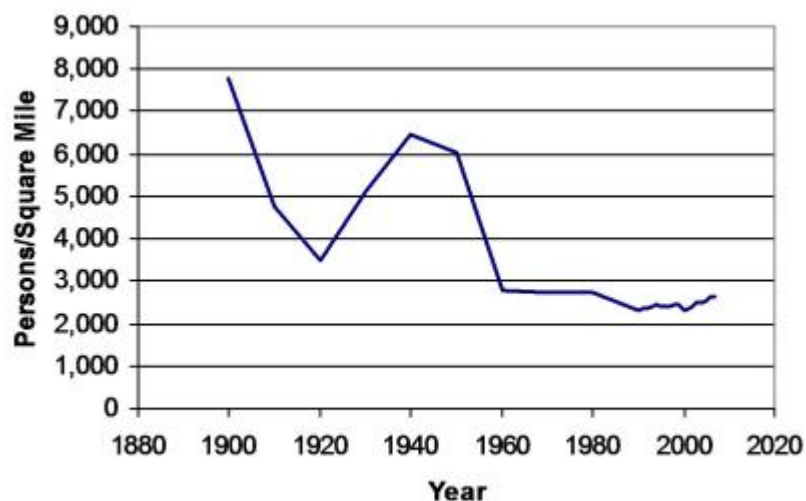


Sources: U.S. Census Bureau, Raleigh Department of City Planning Population Estimates

In 1990, the City began estimating population between Census years based on housing data, including certificates of occupancy and demolitions. These estimates show that historical growth patterns have continued unabated since the 2000 Census. In fact, growth may have been accelerating. While the City has experienced growth in every Census year since its founding, the growth rate has fluctuated from a low of 2 percent to a high of 4.3 percent. According to the City's estimates, recent growth has been close to the top of this range, at an average of 4.2 percent per annum.

The density of population is a function of the total number of people within the City divided by the land area within its corporate limits. Both variables increase when the City annexes new territory. Overall population density was about 8,000 persons per square mile in 1900 when the City was only slightly larger than its original 400 acres. Density dropped as the City expanded its limits, then increased from 1920 to 1940, topping out again at about 6,500 persons per square mile. With post-war suburbanization, overall density rapidly dropped to 2,800 by 1960, and has remained at that general level ever since. The density at which the City has developed has been remarkably stable during the post-World War II period.

**Figure 2.3 Population Density, City of Raleigh, 2000 – 2007**



**Table 2.1: Population, Growth Rate, and Density, City of Raleigh, 1900 - 2007**

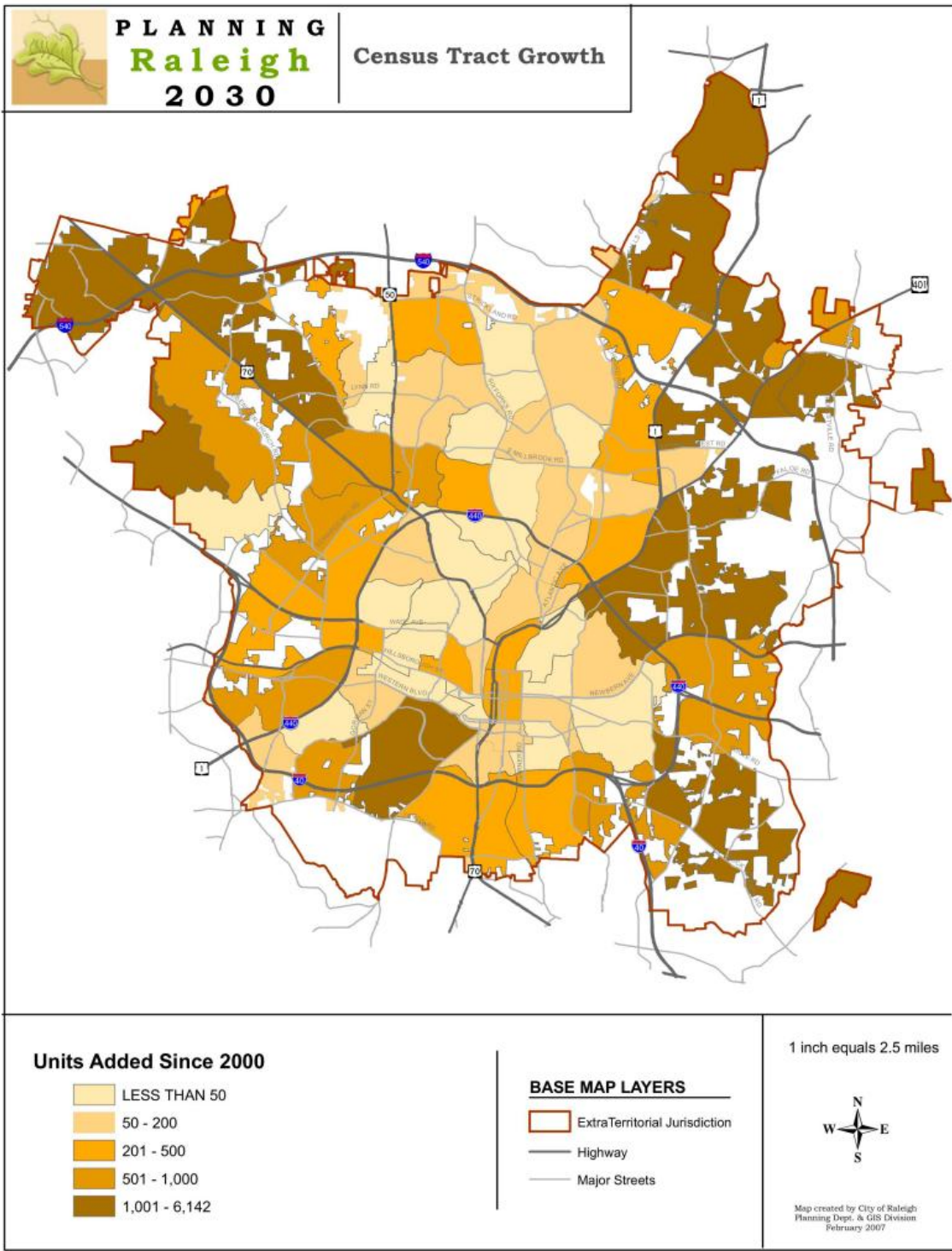
Year	Population	APGR	Land Area (Sq. Mi.)	Population Density (People/Sq. Mi.)
1900	13,643	--	1.76	7,765
1910	19,218	3.5%	4.03	4,773
1920	24,418	2.4%	6.96	3,508
1930	37,379	4.3%	7.25	5,153
1940	46,879	2.3%	7.25	6,463
1950	65,679	3.4%	10.88	6,035
1960	93,931	3.6%	33.67	2,790

Year	Population	APGR	Land Area (Sq. Mi.)	Population Density (People/Sq. Mi.)
1970	122,830	2.7%	44.93	2,734
1980	150,255	2.0%	55.17	2,724
1990	212,092	3.5%	91.40	2,321
2000	276,093	2.7%	118.71	2,326
2007	367,995	4.2%	139.92	2,630

*Source: U.S. Census Bureau, Decennial Census; City of Raleigh (2007)*

The growth described above is not evenly distributed throughout the City. As would be expected, much of the growth is occurring in fringe areas with significant amounts of vacant and developable land. **Map 2.1** shows housing unit growth by census tract since 2000. While every tract has experienced some growth over this period, indicating that no part of the City is losing population, the most significant growth areas have been in the northeast, southeast, and northwest edges of the City, as well as in the southwest quadrant around North Carolina State University's Centennial Campus.

Map 2.1 Housing Unit Growth by Census Tract



### Implications for the Comprehensive Plan

- The City's population has grown exponentially for nearly all of its history. A continuation of this trend will challenge planning and the provision of public infrastructure and services, as well as natural resources, as the number of units developed in any given year will be trending upwards.
- Raleigh has a 60-year history of low-density development. Such development patterns create certain quality of life attributes, but carry with them implications for municipal service delivery, transportation, and environmental impacts.

### Components of change

The City of Raleigh adds population in three ways: natural increase (i.e., if the birth rate of people inhabiting the City exceeds the death rate); in-migration (which can be domestic migration or international immigration); and annexation, whereby the City brings within its corporate limits already inhabited areas. This section attempts to separate out the last component from the first two, so as to better understand the dynamics of the City's growth pattern.

Table 2.2 shows the number of existing units annexed by the City since the 2000 Census, broken down by annual time periods. As the table shows, the contribution to the City's population growth from the annexation of land containing existing homes ranges from less than a percent to nearly 22 percent, depending upon the year. Overall, annexation accounted for less than 12 percent of the City's growth since April 2000. Most of the city's growth is instead driven by natural increase and in-migration, both of which must be accommodated by new development adding to the City's inventory of housing.

**Table 2.2: Components of Population Growth**

Time period	Growth from annexation		Total growth		Percent from Annexation
	Units	Population	Units	Population	
4/1/00 - 6/30/01	1,842	4,237	8,587	19,750	21.5%
7/1/01 - 6/30/02	534	1,228	5,520	12,696	9.7%
7/1/02 - 6/30/03	231	531	4,453	10,242	5.2%
7/1/03 - 6/30/04	509	1,171	5,538	12,737	9.2%
7/1/04 - 6/30/05	170	391	5,412	12,448	3.1%
7/1/05 - 6/30/06	20	46	4,838	11,127	0.4%
7/1/06 - 6/30/07	1,292	2,972	6,003	13,807	21.5%
<b>Total</b>	<b>4,598</b>	<b>10,576</b>	<b>40,351</b>	<b>92,807</b>	<b>11.4%</b>

Source: City of Raleigh, U.S. Census Bureau

### Implications for the Comprehensive Plan

- Annexation of existing development, while a contributor to the City's growth, is only a minor component. The remainder is associated with new development within the corporate limits.

- Annexation has accounted for approximately 12 percent of the City's housing and population growth since 2000,
- Annexed land at the City's edge has allowed the City to grow outward with new housing and population growth.
- How the City accommodates new population and employment through annexation and through development of land already in the City limits is a key question for the Comprehensive Plan to address and should take into account infrastructure (sewer and water), development patterns, mix of uses, land consumption, and ecological sustainability.

### Housing growth over last 20 years

Growth in the number of households in the City of Raleigh mirrors the population trends described above save for the local and national trend of declining households sizes. The table below presents housing unit growth from 1970 through the latest estimate for 2007. Like population, growth rates have ranged from about 2.5 to 4 percent per year. A spurt in 2001 corresponds to an unusual number of units coming on line during that year.

**Table 2.3: Housing Units and Unit Density, City of Raleigh, 1970 – 2007**

Year	Housing Units	APGR*	Persons/ Unit	Land Area	Density (units/acre)
1970	38,464	--	3.19	44.93	1.34
1980	57,866	4.2%	2.60	55.17	1.64
1990	92,643	4.8%	2.29	91.40	1.58
1991	95,116	2.7%	2.29	92.54	1.61
1992	97,589	2.6%	2.28	94.36	1.62
1993	100,064	2.5%	2.30	95.81	1.63
1994	103,195	3.1%	2.30	97.91	1.65
1995	106,326	3.0%	2.35	103.37	1.61
1996	109,457	2.9%	2.36	106.80	1.60
1997	112,415	2.7%	2.37	109.83	1.60
1998	115,471	2.7%	2.36	112.02	1.61
1999	118,227	2.4%	2.37	114.90	1.61
2000	120,699	2.1%	2.29	118.71	1.59
2001	129,286	7.1%	2.28	123.95	1.63
2002	134,806	4.3%	2.27	126.26	1.67
2003	139,259	3.3%	2.28	127.55	1.71
2004	144,797	4.0%	2.27	130.58	1.73
2005	150,209	3.7%	2.28	133.35	1.76

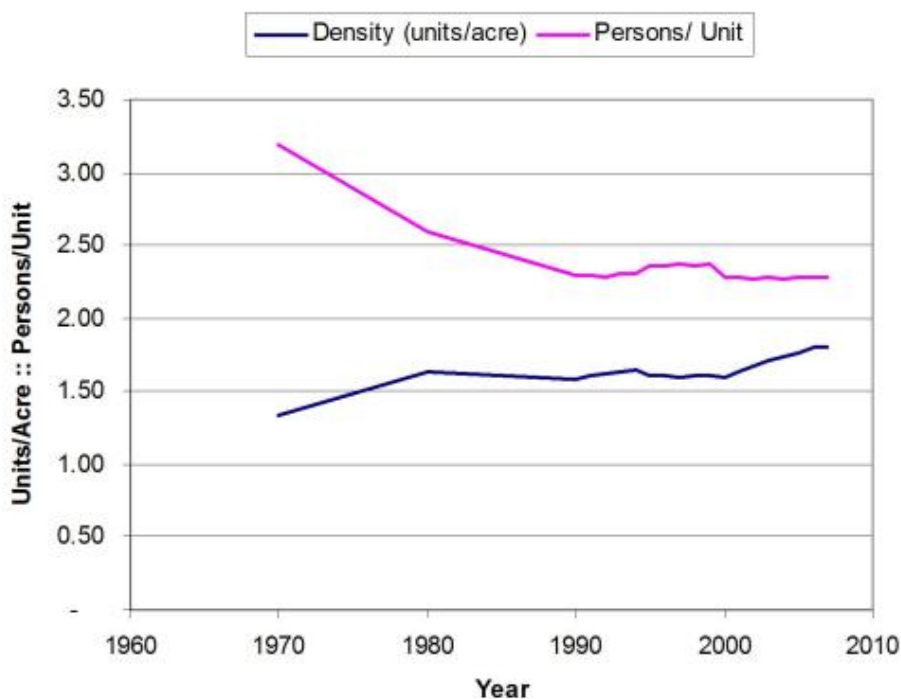
Year	Housing Units	APGR*	Persons/ Unit	Land Area	Density (units/acre)
2006	155,047	3.2%	2.28	134.27	1.80
2007	161,050	3.9%	2.28	139.92	1.80

\* Annual Percent Growth Rate

Source: U.S. Census Bureau, Decennial Census (census years in grey); City of Raleigh Department of City Planning

Declining household sizes, approximated in the table above as persons per housing unit, mean that housing densities may increase even if population density stays level. The following Figure illustrates trends in citywide housing density and person per housing unit. It shows that the number of persons per unit fell substantially between 1970 and 1990 but has remained steady ever since. Overall housing density grew somewhat between 1970 and 1980, remained flat until 2000, and has grown slightly since that time, in tandem with the population density.

Figure 2.4 Dwelling Unit Densities, City of Raleigh, 1970 – 2007



Density is not spread evenly across the City, yet pockets of density can be found throughout the City—Raleigh’s density pattern does not follow the classical model of concentric rings radiating out from a central core. **Map 2.2** shows dwelling unit densities by Census block group as of the 2000 Census. The areas of greatest density include areas surrounding the downtown core; neighborhoods around NCSU and along Capital Boulevard; and suburban multi-family concentrations such as Mini-City between U.S 1 and 401, as well as Lake Lynn. Densities comparable to older inside-the-Beltline neighborhoods are found in North



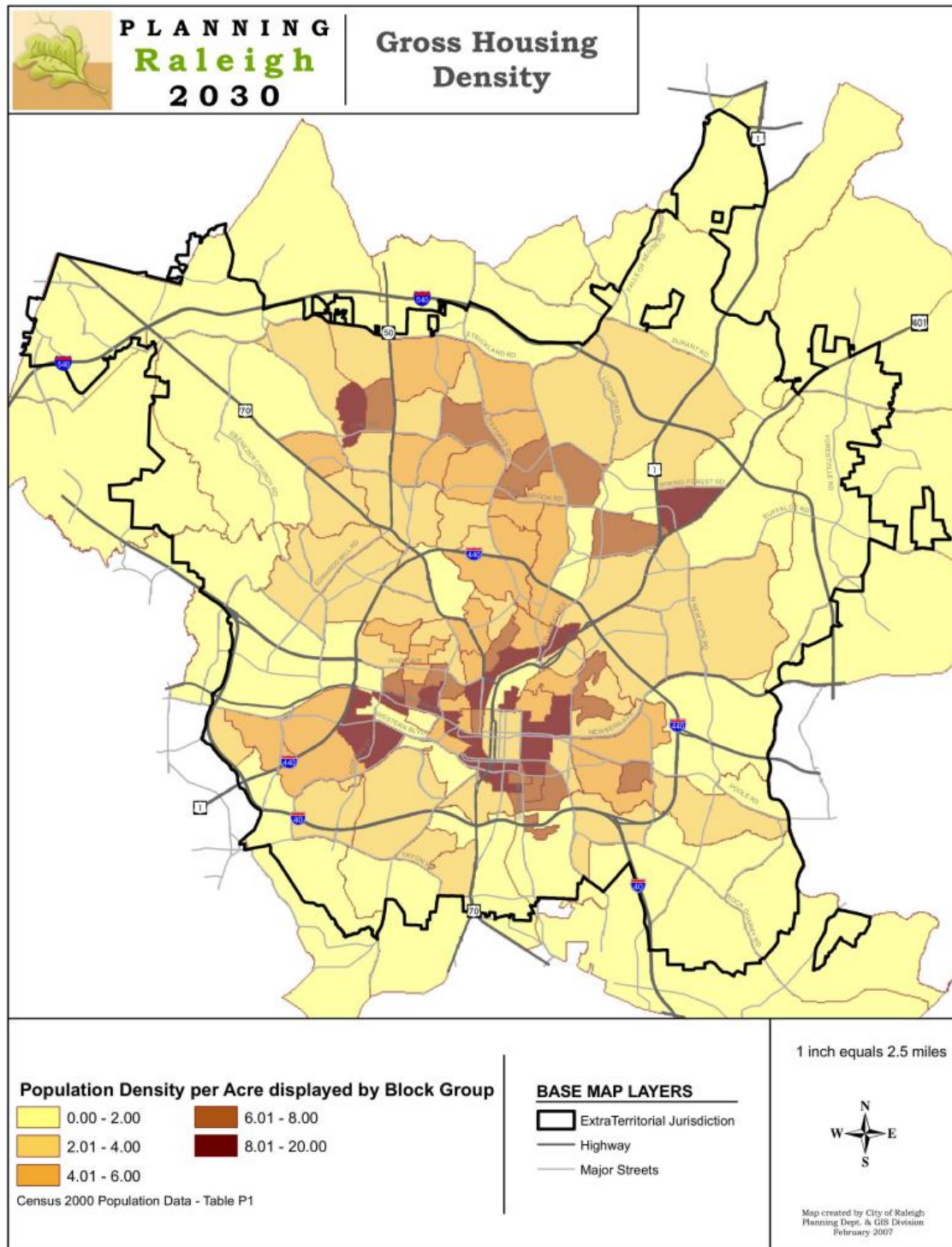
Raleigh along the Lynn and Millbrook Road corridors. Note that recent downtown developments are not reflected in these year 2000 data, and the downtown block group would likely show much higher gross densities today.

While areas like Mini-City are of comparable density to older in-town neighborhoods and are also mixed-use by virtue of adjoining commercially developed areas, they do not support pedestrian activity. The shopping areas are oriented exclusively to the major highways, and barrier fences have been installed to ensure that the residents of adjacent residential areas cannot access shopping on foot.

### **Implications for the Comprehensive Plan**

- Pockets of higher-density housing are found throughout Raleigh; density is not confined to the urban core. However, many of these areas of density are not organized in such a way as to support pedestrian-oriented amenities and transit use.

Map 2.2 Housing Unit Density by Block Group



## 2.2 Residential Development

Much of Raleigh's residential development is new. Almost 95 percent of the City's housing was built after 1950, and of that 65 percent was built after 1980. The City has a healthy mix of housing types with almost 50 percent as single-family homes and about 40 percent as multi-family homes. However, the predominant development pattern is an auto-oriented and single-use, rather than mixed-use.

### Total Units by Number in Structure

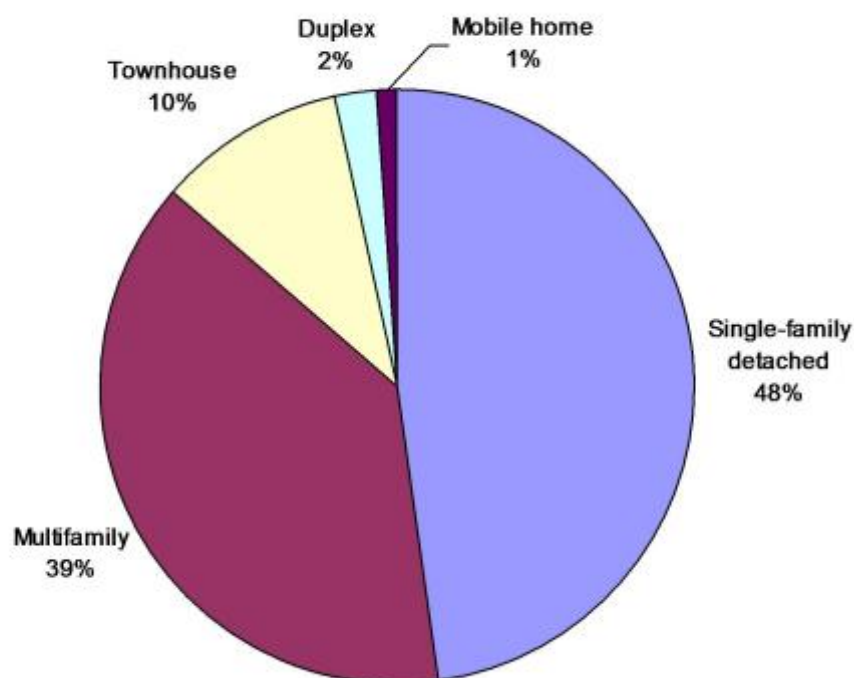
While single-family units comprise the largest single category of housing type, they also comprise a little under half of all housing units in the City. Townhouses comprise about 10 percent, with multi-family development accounting for nearly all of the remainder. The City offers a wide variety of housing types.

**Table 2.4: Housing Units by Number in Structure, City of Raleigh, 2006**

	Number	Percent
1-unit, detached	73,909	47.8%
1-unit, attached	15,657	10.1%
2 units	3,378	2.2%
3 or 4 units	10,448	6.8%
5 to 9 units	13,793	8.9%
10 to 19 units	20,090	13.0%
20 or more units	15,333	9.9%
Mobile home	1,899	1.2%
<b>Total units</b>	<b>154,507</b>	<b>100.0%</b>

*Source: U.S. Census Bureau, American Community Survey*

Picture 2.1 Housing Units by Building Size/Type, City of Raleigh, 2006



### Implications for the Comprehensive Plan

- The most prevalent type of housing within Raleigh is single-family detached housing accounting for 48 percent of the total housing stock.
- Raleigh has a diverse housing stock, with a significant share of multi-family and townhouse units.
- The Comprehensive Plan can help guide how housing is developed in the future. A mix of housing types and other uses can be developed that are served by distinctive, mixed-use business districts and accessible by car, transit, biking, and walking.

### Units by Year Built

The housing stock in Raleigh is quite young. About a fifth of the units in existence today have been developed since the turn of the 21st century. Another fifth were developed in the 1990s, and yet another fifth were developed in the 1980s. Only about 6 percent of the City's housing predates 1950. The remaining 94 percent—including a significant amount of multi-family development—has been developed in a post-WWII suburban pattern.

Table 2.5: Housing Units by Year Built, City of Raleigh, 2006

	Number	Percent
2000 or later	32,716	21.2%

	Number	Percent
1990 to 1999	32,441	21.0%
1980 to 1989	33,295	21.5%
1970 to 1979	22,629	14.6%
1960 to 1969	15,080	9.8%
1950 to 1959	9,408	6.1%
1940 to 1949	3,734	2.4%
1939 or earlier	5,204	3.4%
<b>Total</b>	<b>154,507</b>	<b>100.0%</b>

Source: US Census Bureau (2006), American Community Survey

### Implications for the Comprehensive Plan

- Less than 6 percent of the City's housing stock was build prior to 1950, yet many of these neighborhoods where this housing is located loom large in the overall image of the City. Maintaining the ongoing viability of this older stock is important to maintaining the character of the community.

## Occupancy by Tenure and Type

Raleigh has been experiencing a rising rate of homeownership. Homeownership has risen from 47 percent in 1990 to nearly 54 percent as of 2006. This mirrors national trends. However, the homeownership in the City is below the national average of 67.3 percent, likely due to the large amount of multi-family rental housing in the City, and its large student and younger population.

**Table 2.6: Housing Tenure, City of Raleigh, 1990 – 2006**

	1990		2000		2006	
	Number	Percent	Number	Percent	Number	Percent
Owner-occupied	40,235	46.9%	58,079	51.6%	72,004	53.5%
Renter-occupied	45,587	53.1%	54,529	48.4%	62,622	46.5%
<b>Total occupied units</b>	<b>85,822</b>	<b>100.0%</b>	<b>112,608</b>	<b>100.0%</b>	<b>134,626</b>	<b>100.0%</b>

Source: U.S. Census Bureau, Decennial Census, American Community Survey

Figure 2.5 Homeownership Rate, City of Raleigh, 1990 – 2006

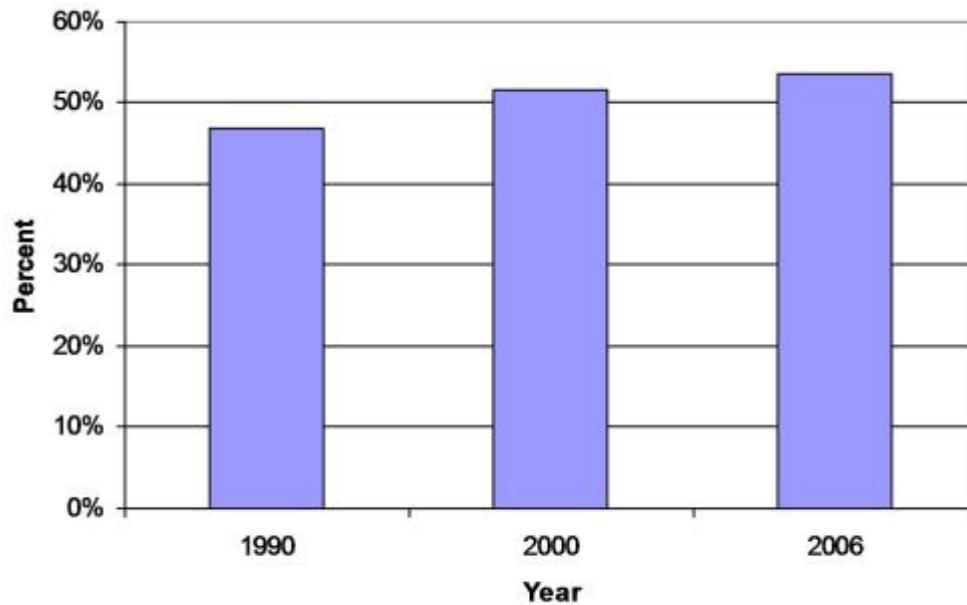


Table 2.7: Occupancy by Tenure, City of Raleigh, 2006

	2006
Total housing units	154,507
Occupied housing units	134,626
Vacant housing units	19,881
Overall vacancy rate	12.9%
Homeowner vacancy rate	3.0%
Rental vacancy rate	10.7%

Source: U.S. Census Bureau, American Community Survey

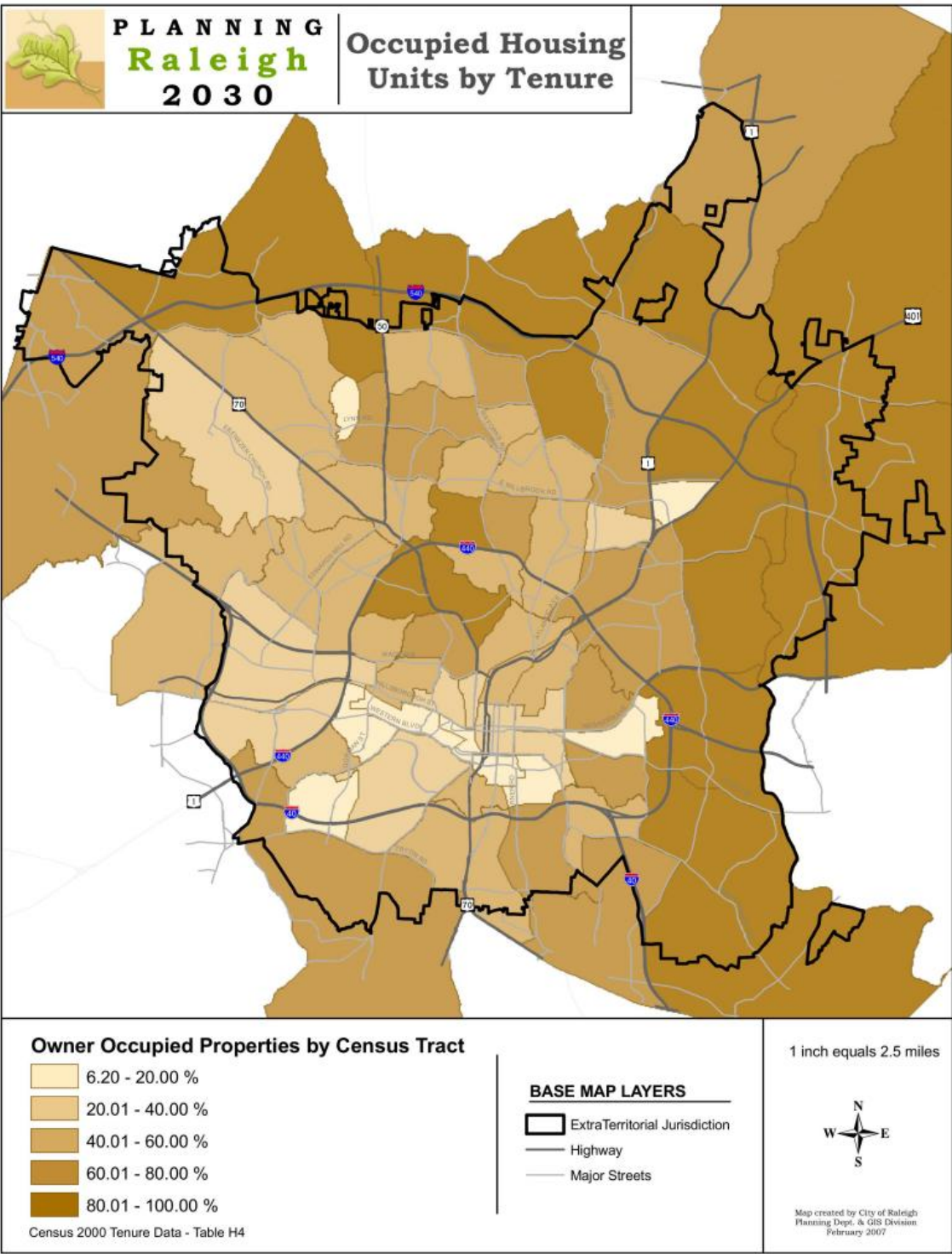
Map 2.3 shows tenure mix by Census tract. The highest concentrations of rental housing are found near NCSU, south and east of downtown, and in the Lake Lynn and Mini-City areas in North Raleigh. The highest rates of homeownership are found along Glenwood Avenue inside the Beltline, in the North Hills area, and in the northern and eastern areas of the City.

### Implications for the Comprehensive Plan

- The City has a diverse housing stock in terms of unit type and tenure. Recent development trends show a continuation of this diversity with an increased focus on for-sale product, consistent with a rising homeownership rate. In spite of decreased rental construction, rental vacancy rates remain healthy.



Map 2.3 Housing Tenure by Census Tract



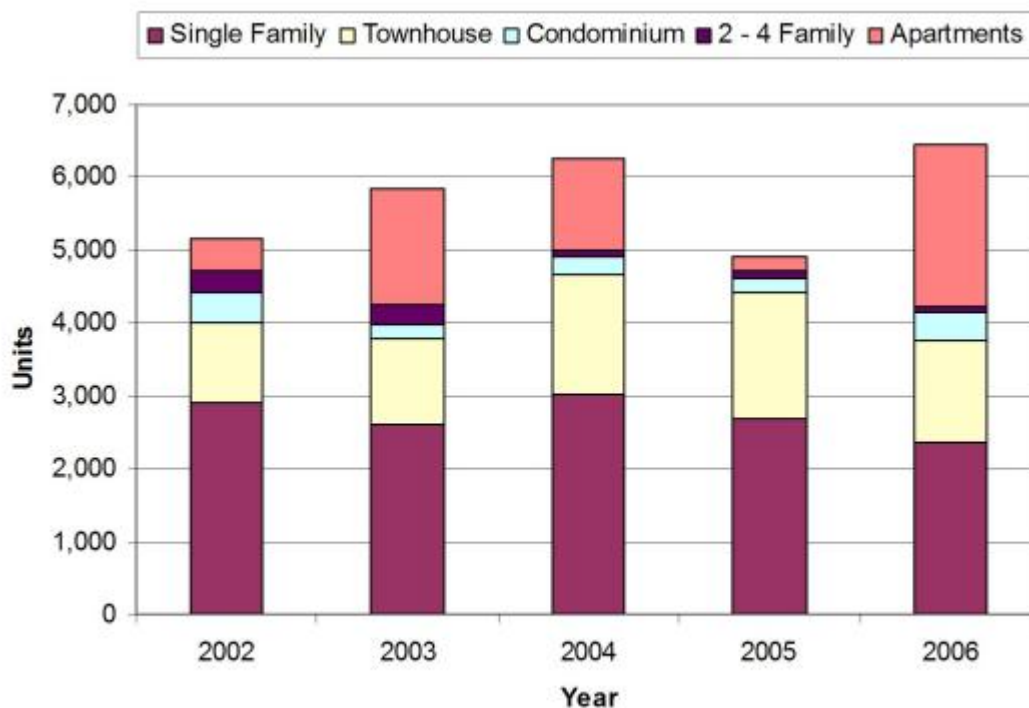


## Building permit trends by year and number of units in structure

The past five years of building permit data for residential units shows that the recent additions to City's housing stock show similar diversity as to unit mix as past development. Total permit activity has ranged from just under 5,000 to nearly 6,500 per year, with a five-year average of approximately 5,730 units per year. Single-family detached permits have fluctuated from year to year, averaging 47 percent of total permits over the time period. Townhouse construction accounts for a quarter of permits over the period, with the remainder consisting of various multi-family products. Rental apartments accounted for 20 percent of permits over the period.

Comparing these figures with the current profile of existing housing stock in the City highlights two trends: (1) a recent preference for constructing ownership housing: rental units comprise only 20 percent of recent permits, compared with about half of existing housing; and (2) recent growth in townhouse construction: townhouse units account for 25 percent of recent permits, compared with only 10 percent of existing units.

**Figure 2.6 Residential Building Permit Activity, City of Raleigh, 2002 – 2006**



**Table 2.8: Residential Building Permits, City of Raleigh, 2002 – 2006**

Year	Single Family	Townhouse	Condominium	2 - 4 Family	Apartments	Totals
2002	2,901	1,118	412	282	453	5,166
2003	2,621	1,168	181	275	1,610	5,855
2004	3,017	1,649	235	100	1,266	6,267
2005	2,683	1,727	202	107	187	4,906

Year	Single Family	Townhouse	Condominium	2 - 4 Family	Apartments	Totals
2006	2,350	1,400	408	72	2,221	6,451
5-year total	13,572	7,062	1,438	836	5,737	28,645
Percent of total	47%	25%	5%	3%	20%	100%
5-year avg.	2,714	1,412	288	167	1,147	5,729

Source: City of Raleigh

### Implications for the Comprehensive Plan

- The large number of townhouse and multifamily units being developed provide an opportunity to introduce more walkable urban forms into the City's future development pattern, as these unit types provide the density necessary to support pedestrian amenities.

### Residential Demolition Permit Trends by Year and Number

While the building permit data detail new housing construction in the City, a number of units are also lost due to demolition each year. In some cases, these demolitions correspond to the elimination of substandard housing by either the public or private sector; increasingly, they correspond to the removal of serviceable housing as a first step to developing the underlying land for a more desired use. Such redevelopment can take many forms: demolition of an aging apartment complex for new residential or mixed-use development; or the tear down of an existing single family home for replacement with a newer and larger structure.

The City does not track residential demolition permits by type, as it does for building permits. The following data presents a summary of demolition permit data from 2002 through 2006 including permits and units demolished. Over the five year period, a total of 739 residential demolition permits were issued, resulting in the removal of 1,141 units, or an average of about 228 units per year. The most units removed in any given year were in 2004, due in substantial part to the removal of 296 public housing units as part of the Chavis Heights Hope VI redevelopment.

While it is not possible to figure out how many of the demolition permits correspond to multi-family versus single-family units, it is possible to set a lower bound on the number of units that are necessarily multi-family due to the fact that units exceed permits in each year. Based on such analysis, summarized in the last column of the table below, it is likely that somewhere around 500 units or more of the total are multi-family units.

**Table 2.9: Residential Demolition Permits, City of Raleigh, 2002 – 2006**

Year	Permits	Units	Avg. Units/ Permit	Minimum Multi-Family Units
2002	97	111	1.14	18
2003	128	145	1.13	27
2004	144	462	3.21	324
2005	169	198	1.17	56
2006	201	225	1.12	53

Year	Permits	Units	Avg. Units/ Permit	Minimum Multi-Family Units
Total	739	1,141	1.54	478
5 yr avg.	148	228		96

Source: City of Raleigh

As noted above, the average number of units demolished per year between 2002 through 2006 was 228. When subtracted from the total of newly constructed units from the building permit data, average net annual absorption was 5,500 units during the time period. Net absorption in each year is shown in the table below.

**Table 2.10: Net Residential Absorption, City of Raleigh, 2002 – 2006**

Year	Permitted Units	Demolished Units	Net Absorption
2002	5,166	-111	5,055
2003	5,855	-145	5,710
2004	6,267	-462	5,805
2005	4,906	-198	4,708
2006	6,451	-225	6,226
Total	28,645	-1,141	27,504
5 yr avg.	5,729	-228	5,501

Source: City of Raleigh

### Implications for the Comprehensive Plan

- The five-year average of City's net annual absorption of housing from 2002 through 2006 was 5,500 units, based on 5,729 residential permits per year less 228 units permitted for demolition.
- Given this fast-paced growth, the Comprehensive Plan should be developed to guide this growth in patterns that are desirable, provide housing choice, and are phased with necessary infrastructure and community amenities.

## 2.3 City Population & Household Projections

The City is anticipated to continue growing over the next 30 years, as are other jurisdictions in Wake County, as well as the areas that will remain unincorporated under the municipal annexation agreements which set limits on annexation for all Wake municipalities.

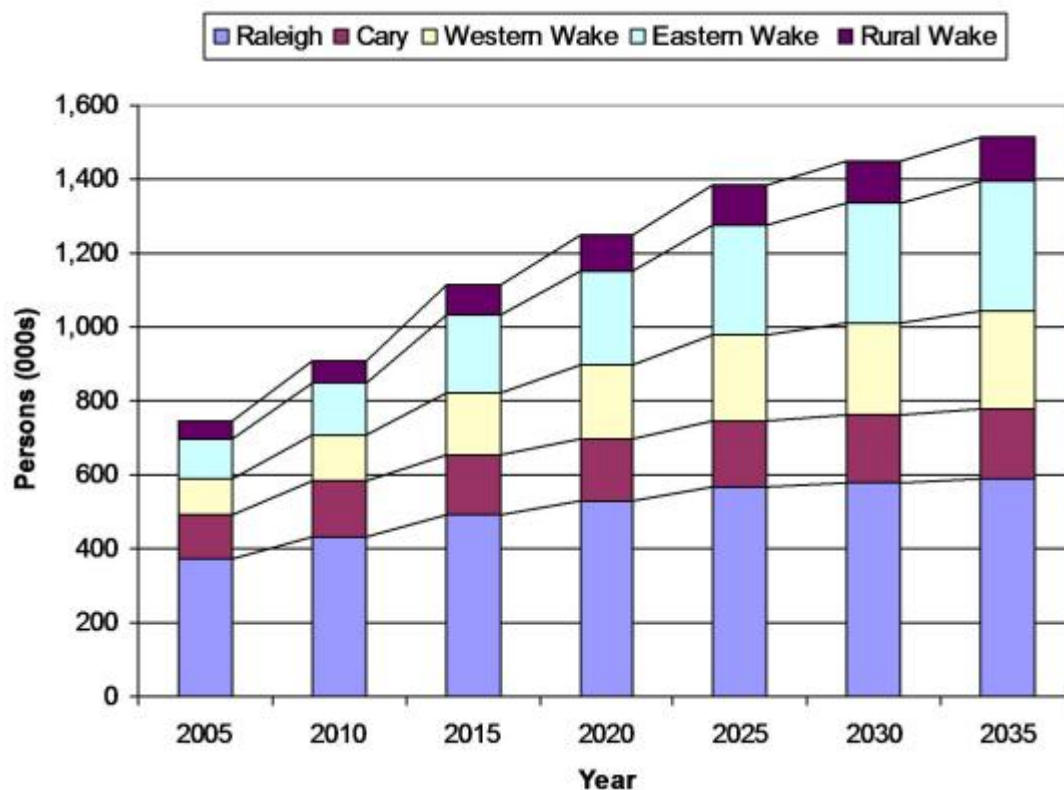
The Capital Area MPO (CAMPO) has recently updated its population and household projections for 2035. These projections take the 2005 estimates as the base year, and project forward in 10 year intervals.

## Population Projections

The following Figures and table show the projected population for Wake County and its constituent municipalities. In view of the fact that municipal corporate and ETJ limits may be substantially different in 2035 than they are today, the municipal boundaries used for these projections include the existing ETJ and both the short- and long-range Urban Services Areas (USAs) for each municipality, which collectively represent the limit for future municipal annexation. This gives a stable geographic basis for comparison across time periods. Raleigh and Cary are called out in these Figures and tables; Eastern and Western Wake represent groupings of municipalities located in the eastern and western halves of the County; and Rural Wake, consisting of watershed areas, represents those portions of the County that are proposed to never be annexed by any municipality.

As shown, Raleigh's population is projected to grow from a 2005 total of 370,000 to about 580,000 in 2030, and nearly 600,000 by 2035, an increase of about 60 percent. The entire county is expected to more than double in population over the same time period.

Figure 2.7 Population Projections, Wake County and Municipal Areas, 2005 – 2035



**Table 2.11: Population Projections, Wake County & Municipal Areas (ETJ + USA), 2005 – 2035**

	2005		2015		2025		2035	
	Number	%	Number	%	Number	%	Number	%
Raleigh	371,443	49.9%	489,762	45.5%	565,701	41.0%	590,560	39.0%
Cary	118,728	15.9%	162,564	15.1%	179,792	13.0%	184,870	12.2%
Western Wake	98,608	13.2%	134,759	12.5%	230,124	16.7%	269,146	17.8%
Eastern Wake	105,884	14.2%	207,12	19.2%	297,853	21.6%	351,861	23.2%
Rural Wake	49,980	6.7%	82,746	7.7%	107,701	7.8%	117,237	7.7%
<b>Total</b>	<b>744,643</b>	<b>100.0%</b>	<b>1,076,960</b>	<b>100.0%</b>	<b>1,381,171</b>	<b>100.0%</b>	<b>1,513,674</b>	<b>100.0%</b>

Source: Capital Area Metropolitan Planning Organization (2007)

Growth rates throughout the County are expected to remain strong for the next decade and then begin tapering off, as shown in the following table. The projected growth rate for Raleigh over 2005 – 2015 represents a significantly slower rate than has been the case in recent years.

**Table 2.12: Annualized Percent Growth Rates, Wake County & Municipal Areas, 2005 – 2035**

	2005 to 2015	2015 to 2025	2025 to 2035
Raleigh	2.8%	1.5%	0.4%
Cary	3.2%	1.0%	0.3%
Western Wake	3.2%	5.5%	1.6%
Eastern Wake	6.9%	3.7%	1.7%
Rural Wake	5.2%	2.7%	0.9%
<b>Total</b>	<b>3.8%</b>	<b>2.5%</b>	<b>0.9%</b>

Source: Capital Area Metropolitan Planning Organization (2007)

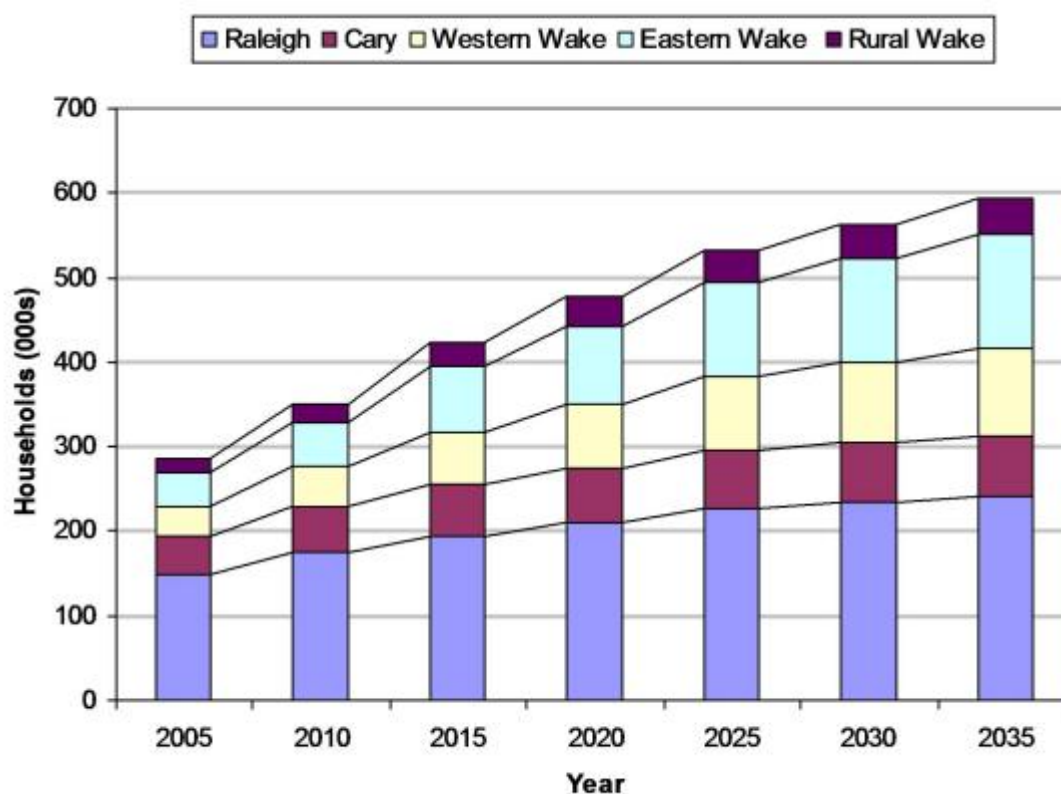
## Household Projections

The household projections for Raleigh and Wake County mirror the population projections. The source of any difference is an anticipated across-the-board decline across the County in persons per housing unit. Further, because Raleigh has fewer persons per housing than any other County jurisdiction, Raleigh will end up with a slightly greater share of the County's housing units than the population figures alone would suggest. Raleigh's total households is projected to grow from a 2005 total of 150,000 to about 240,000 by 2035, an increase of about 60 percent.

**Table 2.13: Persons per Household, Wake County Jurisdictions, 2005 & 2035**

	2005	2035
Raleigh	2.28	2.23
Cary	2.52	2.39
Western Wake	2.48	2.41
Eastern Wake	2.52	2.43
Rural Wake	2.72	2.56
Entire county	2.40	2.35

Source: Capital Area Metropolitan Planning Organization (2007)

**Figure 2.8 Household Projections, Wake County and Municipal Areas, 2005 – 2035**

**Table 2.14: Household Projections, Wake County & Municipal Areas (ETJ + USA), 2005 – 2035**

	2005		2015		2025		2035	
	Number	%	Number	%	Number	%	Number	%
Raleigh	149,881	52.2%	194,975	46.1%	227,901	42.8%	242,325	40.8%

	2005		2015		2025		2035	
	Number	%	Number	%	Number	%	Number	%
Cary	44,167	15.4%	60,279	14.2%	67,949	12.8%	71,260	12.0%
Western Wake	36,280	12.6%	62,351	14.7%	86,041	16.2%	102,605	17.3%
Eastern Wake	39,298	13.7%	76,514	18.1%	111,972	21.0%	134,932	22.7%
Rural Wake	17,410	6.1%	29,113	6.9%	38,811	7.3%	43,171	7.3%
<b>Total</b>	<b>287,036</b>	<b>100.0%</b>	<b>423,232</b>	<b>100.0%</b>	<b>532,674</b>	<b>100.0%</b>	<b>594,293</b>	<b>100.0%</b>

Source: Capital Area Metropolitan Planning Organization (2007)

### Implications for the Comprehensive Plan

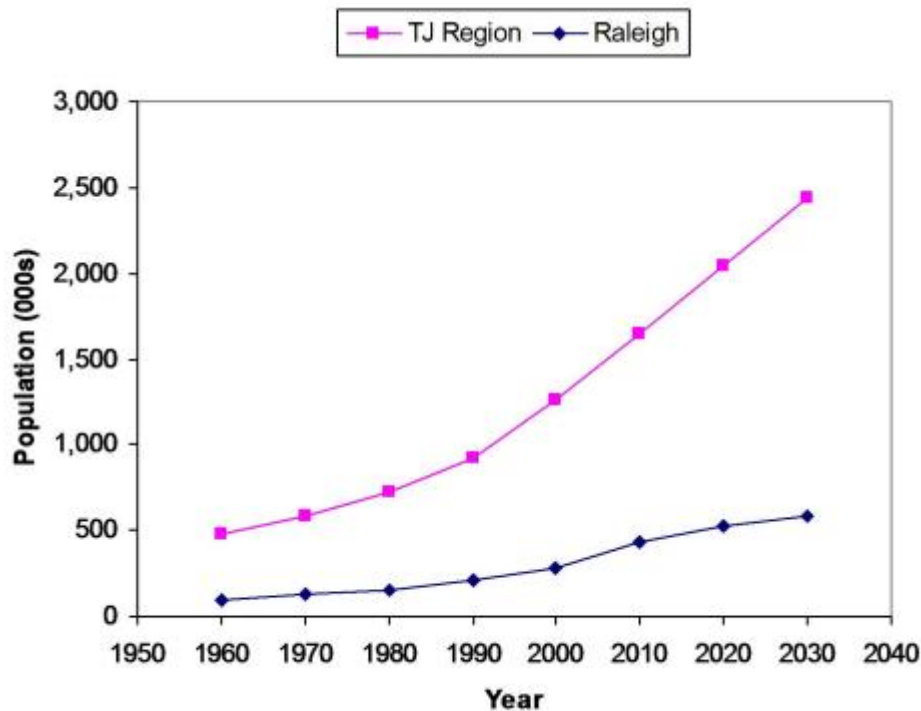
- The City continues on a growth path, and is projected to continue to grow over the time horizon of this plan. Land availability does not present an immediate constraint on future household and population growth. Thus if the City wants to manage its growth and its location, it will need to develop policies that guide future growth and associated infrastructure and other public investments.
- Balancing growth at the City's edge with infill, redevelopment and transit oriented development within already developed areas will be needed.

### Comparison of Local and Regional Projections

The population projections for the Triangle (Region J) show none of the limits on growth rate that the City projections predict, as the region is far from reaching a limit on developable land — other limits such as water supply may be more likely to impact growth than land supply. The Figure below compares projected growth for the City and region. The Figure clearly illustrates how the growth paths are anticipated to diverge past 2010, and the shrinking share of the region's population that will be contained in the City of Raleigh.



**Figure 2.9 Population Growth and Projections, City of Raleigh and Region J, 1960 – 2030**



Source: Triangle J Council of Governments; CAMPO

### Implications for the Comprehensive Plan

- The region is anticipated to grow at an even more rapid clip than the City. By 2030 Raleigh will have a smaller share of Wake County's population than it does today, and the overall region is anticipated to add about 1 million new residents over the next 20 years. No matter what local policies are adopted to manage growth, the City will feel the regional effects of growth in terms of demand for resources and infrastructure and will need to increase its regional and inter-jurisdictional planning and coordination efforts.

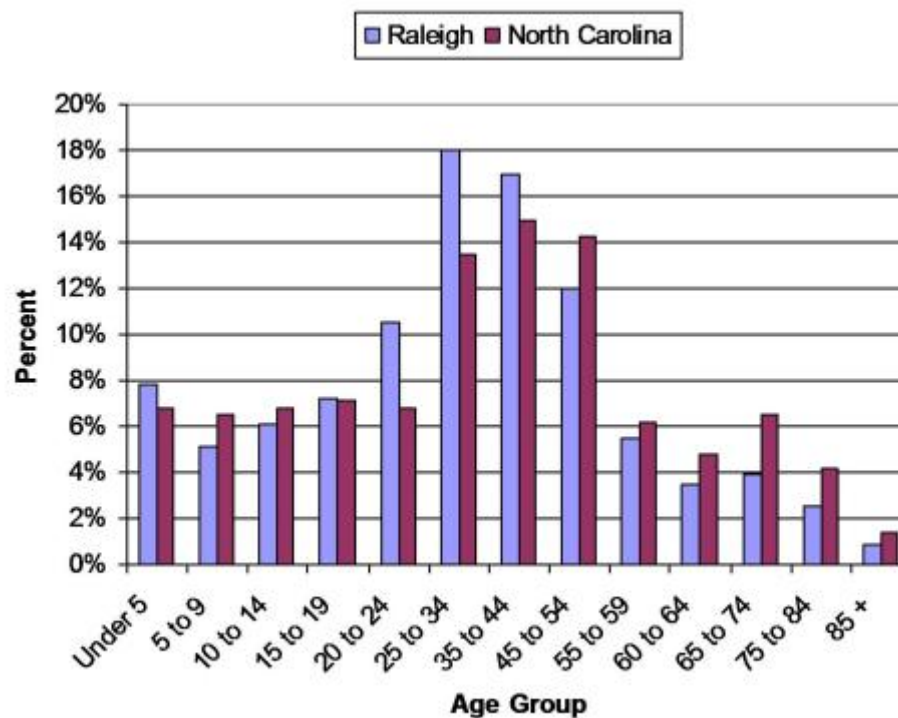
## 2.4 City Profile

The changing demographic profile of Raleigh means that the City will need to adjust its policy priorities to address new demands from an aging population, diversifying populace, and evolving housing composition. This section describes the City's age, race, education, income, employment, and household composition.

## Age Distribution

Raleigh is a relatively younger City when compared with the population of the State as a whole. The concentration of institutions of higher education is likely one reason for the concentration of persons in the 20 – 24 age group. The region's job growth and high quality of the Wake County schools likely explains much of the concentration in the 25 – 44 cohorts.

**Figure 2.10 Population Distribution by Age Group, 2005**



Source: U.S. Census Bureau, American Community Survey, 2005

Yet, although population in the City has grown in every age group, the City is less young than it has been historically. The proportion of the population in the 20 to 34 year age groups is down, while it is up in the 35 to 64 year age groups. On the other hand, retirement-age persons are a smaller proportion of the total population than they were in 1990, at odds with national trends.

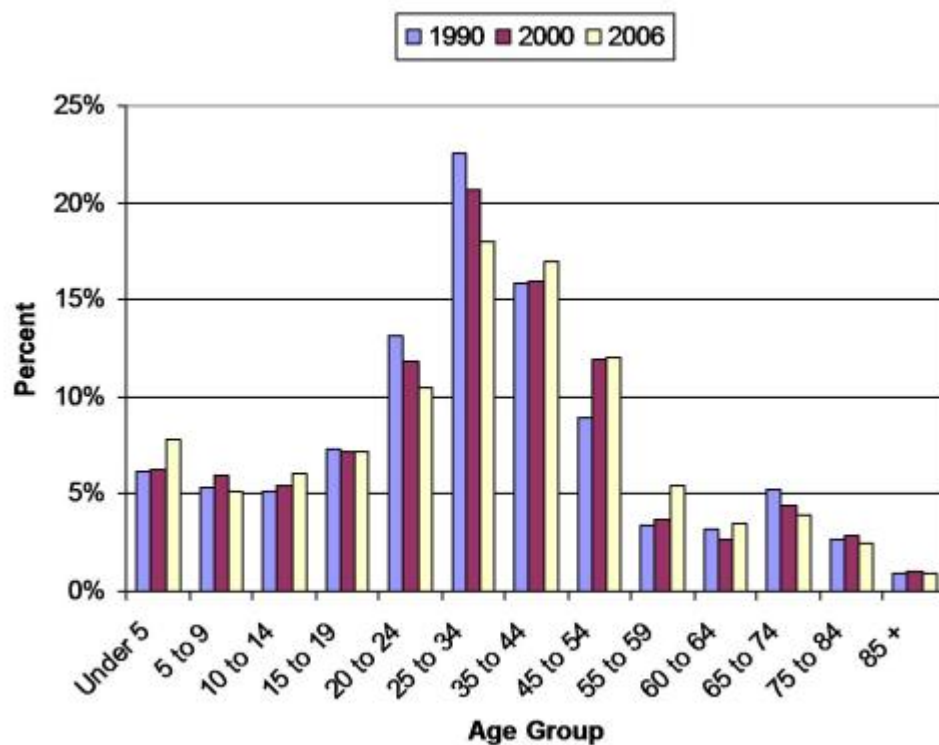
**Table 2.15: Age Groups, City of Raleigh, 1990 – 2006**

Age Groups	1990		2000		2006	
	Number	%	Number	%	Number	%
Under 5	12,976	6.2%	17,461	6.3%	26,991	7.8%
5 to 9	11,133	5.4%	16,444	6.0%	17,797	5.1%

Age Groups	1990		2000		2006	
	Number	%	Number	%	Number	%
10 to 14	10,540	5.1%	15,254	5.5%	20,962	6.1%
15 to 19	15,223	7.3%	19,864	7.2%	24,967	7.2%
20 to 24	27,427	13.2%	32,458	11.8%	36,385	10.5%
25 to 34	46,845	22.5%	57,105	20.7%	62,209	18.0%
35 to 44	32,907	15.8%	43,826	15.9%	59,047	17.0%
45 to 54	18,806	9.0%	32,984	11.9%	41,539	12.0%
55 to 59	7,015	3.4%	10,308	3.7%	19,197	5.5%
60 to 64	6,707	3.2%	7,394	2.7%	12,062	3.5%
65 to 74	10,801	5.2%	12,025	4.4%	13,489	3.9%
75 to 84	5,717	2.7%	8,143	2.9%	8,531	2.5%
85 +	1,814	0.9%	2,827	1.0%	3,182	0.9%

Source: U.S. Census Bureau, Decennial Census, American Community Survey

Figure 2.11 Age Distribution, City of Raleigh, 1990 – 2006



## Implications for the Comprehensive Plan

- While still a City with a youthful population, Raleigh is growing older and more diverse over time. The aging populations will likely influence housing type preferences.

## Race and Ethnicity

Raleigh has been growing more diverse over time. People classifying themselves as “white” have dropped from around 70 to about 60 percent of the total population, while the African American population has increased slightly and the Asian population has nearly doubled.

**Table 2.16: Population by Race/Ethnicity, City of Raleigh, 1990 - 2006**

	1990		2000		2006	
	Number	%	Number	%	Number	%
Total population	207,951	100.0%	276,093	100.0%	346,358	100.0%
White	143,862	69.2%	174,786	63.3%	209,963	60.6%
Black or African American	57,354	27.6%	76,756	27.8%	100,034	28.9%
American Indian and Alaska Native	584	0.3%	981	0.4%	2,628	0.8%
Asian or Pacific Islander	5,127	2.5%	9,445	3.4%	16,120	4.7%
Some other race	1,024	0.5%	14,125	5.1%	22,282	6.4%

Source: U.S. Census Bureau, Decennial Census, American Community Survey

**Table 2.17: Growth in Hispanic Population, City of Raleigh, 2000 - 2006**

2000 Hispanic/Latino Population	19,308
2006 Hispanic/Latino Population	36,085
Percent increase	86.9%
Annualized Percent Growth Rates	11.0%

Source: U.S. Census Bureau, Decennial Census, American Community Survey

**Table 2.18: Components of Hispanic Population, City of Raleigh, 2006**

	Number	Percent	Percent of Hispanic
Total population	346,358	100.0%	
Hispanic or Latino (of any race)	36,085	10.4%	100.0%
Mexican	24,245	7.0%	67.2%

	Number	Percent	Percent of Hispanic
Puerto Rican	2,745	0.8%	7.6%
Cuban	437	0.1%	1.2%
Other Hispanic or Latino	8,658	2.5%	24.0%
Not Hispanic or Latino	310,273	89.6%	

Source: U.S. Census Bureau, American Community Survey

The Hispanic/Latino population has grown at an average 11 percent per year since 2000. Hispanics now make up a little over 10 percent of the population.

### Educational Attainment

Raleigh has a highly educated population. As of 2006, the proportion of the City's adult residents with a Bachelor's degree or better was 45 percent, up from 42 percent in 2000, and compared with the state and national averages of 25 and 26 percent, respectively. Further, the proportion of the adult population with a high-school diploma also exceeds state and national averages, although the difference is less dramatic.

**Table 2.19: Education Attainment, City of Raleigh, 2000 & 2006**

	2000		2006	
	High School Grad or higher	Bachelor's Degree or higher	High School Grad or higher	Bachelor's Degree or higher
Raleigh	84%	42%	88%	45%
North Carolina	77%	22%	82%	25%
United States	79%	24%	84%	27%

Source: U.S. Census Bureau, Decennial Census, American Community Survey

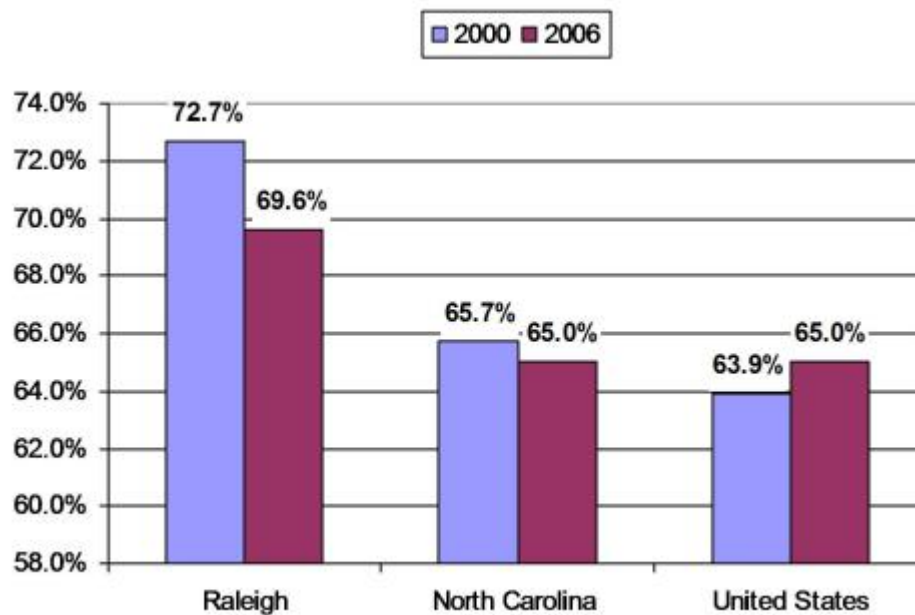
### Implications for the Comprehensive Plan

- Raleigh is extraordinary when it comes to educational attainment, with 45 percent of its populace with a Bachelor's degree or higher. One of the challenges for the future will be to foster job training and technical skills for those without college degrees.

### Labor Force Participation

The labor force participation rate is defined as the number of people in the labor force (i.e., those either employed or actively looking for employment and registered with the Employment Security Commission) divided by the number of people eligible to be in the labor force (i.e. those aged 18 – 65). With the region's strong economy, labor force participation rate in Raleigh is high and exceeds state and national averages, although it has declined somewhat since 2000 after rising in the 1990s.

**Figure 2.12 Labor Force Participation, City of Raleigh, 2000 & 2006**



Source: U.S. Census Bureau, Decennial Census, American Community Survey

The City's unemployment rate provides further insight into these trends. The local labor market was quite tight in both 1990 and 2000 with an unemployment rate of 4 percent or lower. The 1990s were a period of rapid job growth both regionally and nationally, and people flooded into the labor force to take advantage of the job opportunities and rising wages. The expansion since 2002 has been weaker, as witnessed by both the substantially higher unemployment rate and weakened labor force participation.

**Table 2.20: Economic Indicators, City of Raleigh, 2000 & 2006**

	1990	2000	2006
Percent of persons below poverty	11.80%	11.50%	13.30%
Percent of families below poverty	9.03%	7.10%	9.80%
Median Household Income (2006 dollars)	\$52,759	\$56,405	\$51,123
Per Capita Income	\$27,470	\$30,389	\$27,919
Unemployment Rate	4.0%	3.8%	5.7%
Labor Force Participation Rate	66.4%	72.7%	69.6%

Source: U.S. Census Bureau, Decennial Census, American Community Survey; U.S. Bureau of Labor Statistics

### Implications for the Comprehensive Plan

- The City and the region have a diverse economy. With the high rates of labor participation and relatively low unemployment rates, the City will need to both continue to attract new workers to the area from other parts of the state and country as well as train and educate existing residents for employment and advancement opportunities.

### Household Income

In spite of robust job growth, inflation-adjusted median household income has fallen sharply since 2000 after experiencing substantial growth from 1990 to 2000. At \$51,123, median household income is slightly lower in real terms than it was in 1990, meaning that half of the City's households are making do with less real purchasing power than they had in the past. A similar trend is shown in terms of per capita income, indicating that the income deterioration is broad-based and not due to rising inequality locally.

The combination of these socio-economic indicators—poverty rates, labor force statistics, and household income—paint a mixed picture of recent economic performance. During the 1990s, economic gains resulted in rising household income and lower levels of poverty. Since 2000, these trends have reversed in spite of continued regional job growth.

Map 2.4 shows the distribution of household income by Census Tract. Many of the higher-income tracts are located in north and west Raleigh; others are found along Glenwood Avenue inside the Beltline. The tracts with the lower household income tend to be located near downtown, particularly to the south and east. Another pocket of more modest household income is located along U.S. 1 in the Mini-City area.

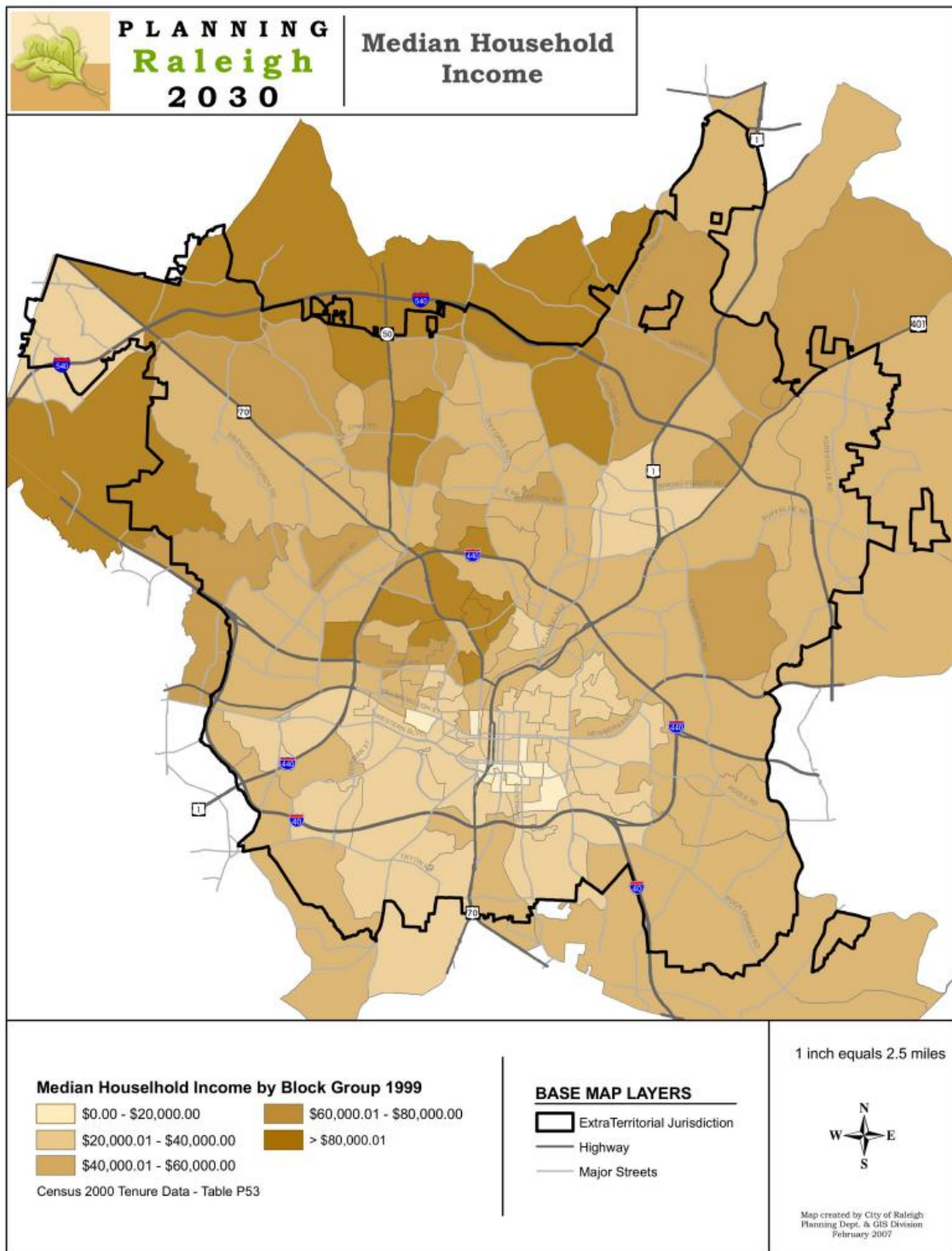
The overall poverty rate in the City, after a period of modest decline in the 1990s, has grown since 2000, rising from 11.5 percent to 13.3 percent between 2000 and 2006. The poverty rate for families is up more sharply, from 7.1 to 9.8 percent.

### Implications for the Comprehensive Plan

- While the regional economy remains strong, income and poverty data suggest that the City is not immune from the trend of stagnant or declining earnings. This also has implications for affordable housing demand, discussed in greater detail later in this report.



Map 2.4 Median Household Income by Census Block Group



## Household Characteristics

Compared with the State as a whole, Raleigh's household profile is characterized by a lesser number of family households, a lower proportion of households with children, and a larger number of childless and non-family households. These findings are consistent with population data showing that the City has a relatively young population.

**Table 2.21: Households by Type, Raleigh and North Carolina, 2006**

	Number		Percent	
	Raleigh	NC	Raleigh	NC
Total households	134,626	3,454,068	100.0%	100.0%
Family households	73,252	2,310,456	54.4%	66.9%
With own children under 18 years	37,672	1,051,848	28.0%	30.5%
Married-couple families	53,048	1,706,840	39.4%	49.4%
With own children under 18 years	25,041	702,992	18.6%	20.4%
Male householder, no wife present	4,577	148,807	3.4%	4.3%
With own children under 18 years	2,619	73,963	1.9%	2.1%
Female householder, no husband present	15,627	454,809	11.6%	13.2%
With own children under 18 years	10,012	274,893	7.4%	8.0%
Non-family households	61,374	1,143,612	45.6%	33.1%
Householder living alone	50,210	959,166	37.3%	27.8%
65 years and over	7,439	301,931	5.5%	8.7%

Source: U.S. Census Bureau, American Community Survey (2006)

The composition of the City's households has evolved since the 1990 Census. Traditional married-couple families with children declined as a total share of households during the 1990s, but this trend has reversed somewhat since 2000. Single-parent households are a larger proportion of total households. Non-family households increased share between 1990 and 2000 and have held steady since that time.

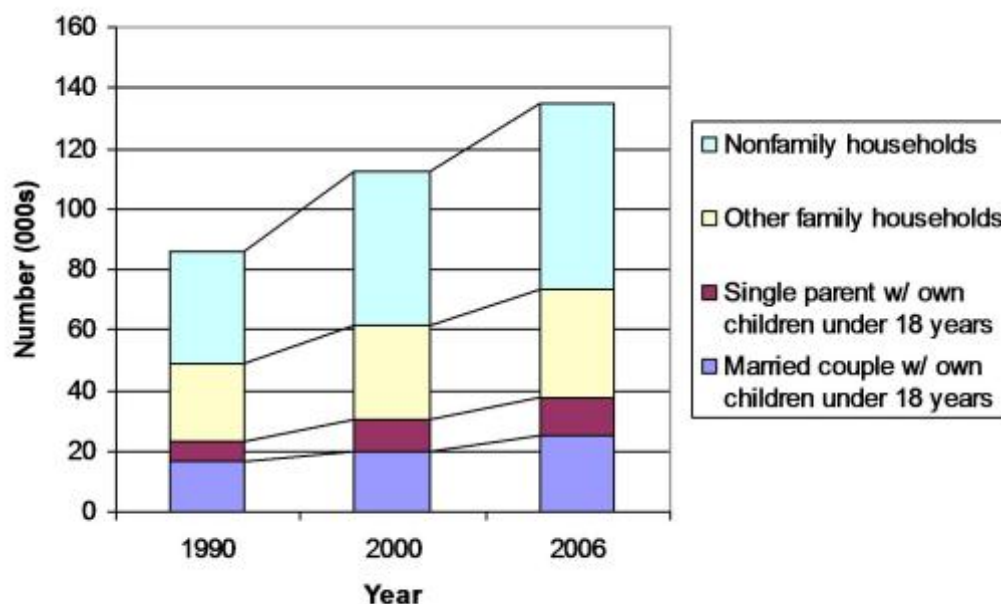
**Table 2.22: Household Trends, City of Raleigh, 1990 – 2006**

	Number			Percent		
	1990	2000	2006	1990	2000	2006
Total households	85,853	112,608	134,626	100.0%	100.0%	100.0%

	Number			Percent		
	1990	2000	2006	1990	2000	2006
Family households	48,833	61,327	73,252	56.9%	54.5%	54.4%
Married couple w/ own children under 18 years	16,738	20,139	25,041	19.5%	17.9%	18.6%
Single parent w/ own children under 18 years	6,202	9,955	12,631	7.2%	8.8%	9.4%
Other family households	25,893	31,233	35,580	30.2%	27.7%	26.4%
Non-family households	37,020	51,281	61,374	43.1%	45.5%	45.6%

Source: U.S. Census Bureau, Decennial Census, American Community Survey

**Figure 2.13 Household Growth by Type, City of Raleigh, 1990 – 2006**



Raleigh's households are highly mobile. Only a minority have lived at their current address for more than six years. Nearly 70 percent have moved into their home since 2000. About a quarter lived in a different house one year prior (as of 2006), with over half of those having moved from within Wake County.

**Table 2.23: Household Length of Stay, City of Raleigh, 2006**

	Number	Percent
Moved in 2005 or later	46,387	34.5%
Moved in 2000 to 2004	46,713	34.7%
Moved in 1990 to 1999	24,873	18.5%

	Number	Percent
Moved in 1980 to 1989	7,963	5.9%
Moved in 1970 to 1979	4,839	3.6%
Moved in 1969 or earlier	3,851	2.9%

Source: U.S. Census Bureau, American Community Survey

**Table 2.24: Residence of Households One Year Ago, City of Raleigh, 2006**

	Number	Percent	% of Domestic Movers
Population 1 year and over	340,336	100.0%	
Same house	252,777	74.3%	
Different house in the U.S.	84,690	24.9%	100.0%
Same county	49,537	14.6%	58.5%
Different county	35,153	10.3%	41.5%
Same state	16,545	4.9%	
Different state	18,608	5.5%	
Abroad	2,869	0.8%	

Source: U.S. Census Bureau, American Community Survey

### Implications for the Comprehensive Plan

- Household composition is evolving, and will influence the type of housing product the City will need in the future. Both traditional family and non-traditional and non-family households will drive future demand.
- Raleigh is increasingly a City of newcomers and recent movers. Large segments of the population have relocated from elsewhere, and even larger segments have lived in their current home only for a short time. These people may be less civically engaged than old-timers and may require additional outreach in all outreach efforts.

### Commuting Characteristics

Raleigh residents primarily commute alone in their own automobile. Single occupancy vehicles comprise over 80 percent of all commutes. Another 10 percent carpool. Alternative modes account for a minimal share—less than 2 percent for public transit, slightly more for walking. These two modes together are less than the number of people who forgo a commute by working at home.

**Table 2.25: Journey to Work, City of Raleigh, 2006**

	Number	Percent
Workers 16 years and over	179,176	100.0%

	Number	Percent
Car, truck, or van—drove alone	144,369	80.6%
Car, truck, or van—carpooled	17,370	9.7%
Public transportation (excluding taxicab)	3,227	1.8%
Walked	3,549	2.0%
Other means	1,676	0.9%
Worked at home	8,985	5.0%

Source: U.S. Census Bureau, American Community Survey

Working at home is a small but growing trend with implications for zoning as well as travel behavior. During the 1990s, both the proportion of the workforce working at home, as well as the absolute number, went into decline. Since 2006, this segment of the workforce has been growing at 10 percent per year and is now higher than it has ever been. Continued growth in this segment will have beneficial impacts on peak-hour commuting but raises potential zoning issues with regards to home occupations (although the recent increase may be a function of telecommuting, meaning to work from home via Internet access).

**Table 2.26: Work at Home, City of Raleigh, 1990 – 2006**

	1990	2000	2006
Number	6,372	4,996	8,985
Percent of all workers	5.2%	3.8%	5.0%
Change	n/a	-1,376	3,989
APGR	n/a	-2.4%	10.3%

Source: U.S. Census Bureau, Decennial Census, American Community Survey

### Implications for the Comprehensive Plan

- Commuting in Raleigh is overwhelmingly by single-occupancy automobiles. Given growth trends, a continuance of this pattern will require substantial and ongoing investment in expanding road capacity both locally and at the regional level

## 2.5 Key Issues & Potential Strategies

The data presented above present the picture of a dynamic and growing city with a diverse housing stock, and a diverse population in terms of age, household type, and race and ethnicity. Raleigh's strong real estate market is producing a wide variety of housing types. The rising homeownership rate, above-average income statistics, high labor-force participation, and a highly educated workforce speak to a city with a strong economy and bright prospects for the future. However, there are a few warning signs contained within the data as well. These key issues are highlighted below.

## Key Issues

### Key Issue 2.1

Growth and growth management: Raleigh and its region are projected to continue adding population throughout the time horizon of this plan. There are few physical land constraints on the outward sprawl of the City. Thus the City must develop policies that guide the location and pattern of development and associated public investments in infrastructure and City services, if the existing outward expansion trends are to be addressed.

### Key Issue 2.2

The region's growth, coupled with the heavy reliance on single-occupancy vehicles for commuting, mean that traffic congestion and air quality can be expected to grow worse without meaningful alternatives and/or a massive investment in roadway capacity at the regional and local level.

### Key Issue 2.3

Raleigh's growth continues to require a wide variety of housing types to meet demand from a diverse set of household types. The market has historically been successful at providing this variety. The Comprehensive Plan and zoning must continue to recognize the ongoing demand for townhouse and multi-family development, but should set the framework for development patterns that better capture the potential pedestrian amenity benefits that can come with higher-density development.

## Potential Strategies to Address Issues

### Potential Strategy 2.1

While development policies should be drafted mindful of the need to ensure that the housing market is well supplied with new units so as to meet growing demand, these policies should address the location of this new development. Hard choices regarding infill and redevelopment and growth management at the city's edges will be necessary as part of any meaningful growth management strategy.

### **Potential Strategy 2.2**

Today transit is a small slice of the overall transportation pie, and will likely remain so unless more transit-supportive land use patterns emerge that could support a fixed transit system. Development strategies should look to create transit-friendly destinations (such as concentrated, mixed-use employment centers) as well as origins (denser housing within walking distance of a transit stop).

### **Potential Strategy 2.3**

A variety of affordable housing strategies should be explored as part of a plan to increase the supply of affordable sale and rental units. These may include zoning exactions (inclusionary zoning or linkage payments); increased public funding; and the removal of regulatory barriers to increased production.





## Land Use & Zoning



## 3 Land Use & Zoning

### 3.1 Introduction

Land use is fundamental to the physical form and function of the city, and the Comprehensive Plan is the primary policy guide that municipalities use to guide land use and the physical development and growth of the city. As set forth in the state enabling statute, the Comprehensive Plan is also the foundation for zoning.

While the Comprehensive Plan is a policy guide, the zoning ordinance and the site plan and subdivision regulations are law. These codes provide the regulatory framework for particular land uses and how the uses interact with each other. They address not only the use of property, but also the scale, massing and placement of buildings, site design and landscaping, and even the quantity of off-street parking provided.

The City of Raleigh currently exercises planning and zoning authority within its incorporated limits (its taxing and service area) as well as its Extra-Territorial Jurisdiction (ETJ), an area outside of the incorporated limits where the City has been granted land use authority by Wake County for the purposes of providing for the orderly development of areas programmed for future annexation in the short term. This chapter primarily addresses the land area within the ETJ boundary (i.e. incorporated limits plus ETJ), as this is the area where the City currently has the power to plan and zone. It is also the area for which detailed land use data are available. All references to the ETJ in this chapter refer to the full area within the ETJ boundary line.

The City also has annexation agreements with Wake County and adjacent municipalities delineating areas outside the current ETJ that are programmed for eventual annexation by the City. These are divided into Short- and Long-Range Urban Service Areas (USAs), depending upon the anticipated time horizon for utility extension. These areas currently consist primarily of undeveloped land, farm fields, and low-density residential, and are only addressed generally in this chapter.

### 3.2 Existing Land Use

The predominant pattern of development since 1950, representing the vast majority of the City's built environment, has been one of low density residential development with a physical separation from non-residential uses. Building upon what is today a comparatively small urban core, after 1950, a radial system of thoroughfares became the focus of commercial and industrial land uses, as illustrated in Map 3.1: Existing Land Use. Beginning in the 1950s, the zoning code reinforced this emerging pattern of auto-oriented development through the codification of key elements including minimum parking requirements, generous setbacks, and (later) buffer yards between uses. Construction of the northern portions of the Beltline (I-440) in the late 1960s helped to focus the first northern wave of suburban residential development along with several major commercial centers, such as North Hills and Crabtree Valley malls, at primary interchanges. The Outer Loop (I-540), of which the northern section is complete from US-64 in the east to State Highway 54 in Research Triangle Park to the west, is helping to drive the development of Raleigh's remaining jurisdiction along with that of the surrounding jurisdictions. Development in the southeast and southwest quadrants of the City outside the Beltline has followed at a slower pace and with fewer commercial services.

The land use pattern established inside the Beltline before the 1960s is largely single family in character with small neighborhood commercial centers outside of downtown. Interconnected curvilinear grids are a common street pattern in many of these areas. Duplex and small multifamily dwellings are often found mixed into otherwise single-family neighborhoods. Cameron Village, which opened in 1949 as one of the first shopping centers in the nation outside of a downtown central business district (CBD), remains the largest of the inside the Beltline retail centers. Medium to high density residential and office land uses concentrate around this retail center.

The land use pattern outside the Beltline is characterized by residential neighborhoods on cul-de-sac streets. Land uses tend to be separated and buffer yards utilized to mitigate impact rather than using design to transition in scale and use. Multi-family developments are plentiful but tend to be organized as self-contained pods with internal, private circulation systems mingled with parking areas.

Both the single-family and multi-family areas lack the street connectivity that helps facilitate walking. The lack of street connections also funnels all car trips to major thoroughfares even for local trips such as grocery shopping.

The Existing Land Use Map (Map 3.1) clearly illustrates how the development of commercial centers along key radial thoroughfares such as Six Forks, Falls of the Neuse, and Creedmoor Roads has focused at the intersections of thoroughfares as guided by the spacing and size policies of the adopted Urban Form structure for the city. Between the commercial activity centers, lower intensity office, institutional and higher density residential uses predominate. Creedmoor Road in particular serves as a good example of this development pattern. Other roadways such as South Saunders Street, New Bern Avenue, Capital Boulevard and Glenwood Avenue north of Crabtree have developed with highway oriented retail without a nodal focus due to zoning patterns established along the length of the corridor prior to the adoption of the Urban Form policies in the late 1970's. Single family residential and townhouse uses typically back up to the highway commercial uses with limited connectivity between the two.

**Table 3.1: Existing Land Use Allocation**

Land Use (within ETJ)	Parcels	Acres <sup>(1)</sup>	Percentage of Land Area
Residential – Single Family	82,795	33,938	34.1%
Vacant	15,228	20,064	20.1%
Parks, Greenways, Open Space, Golf Courses	1,051	11,242	11.3%
Institutional	817	8,373	8.4%
Residential - Apartment, Condominium	918	4,897	4.9%
Retail	1,912	4,104	4.1%
Industrial	900	3,630	3.7%
Residential - Townhouse, Multiplex	21,692	3,222	3.2%
Office	1,230	2,926	2.9%
Unknown <sup>(2)</sup>	1,029	2,824	2.9%
Agriculture	56	2,384	2.4%
Infrastructure & Transportation	397	1,344	1.4%
Residential - Other	406	630	0.6%
Mixed Use	52	32	0.0%
<b>TOTAL</b>	<b>128,483</b>	<b>99,608</b>	<b>100.0%</b>

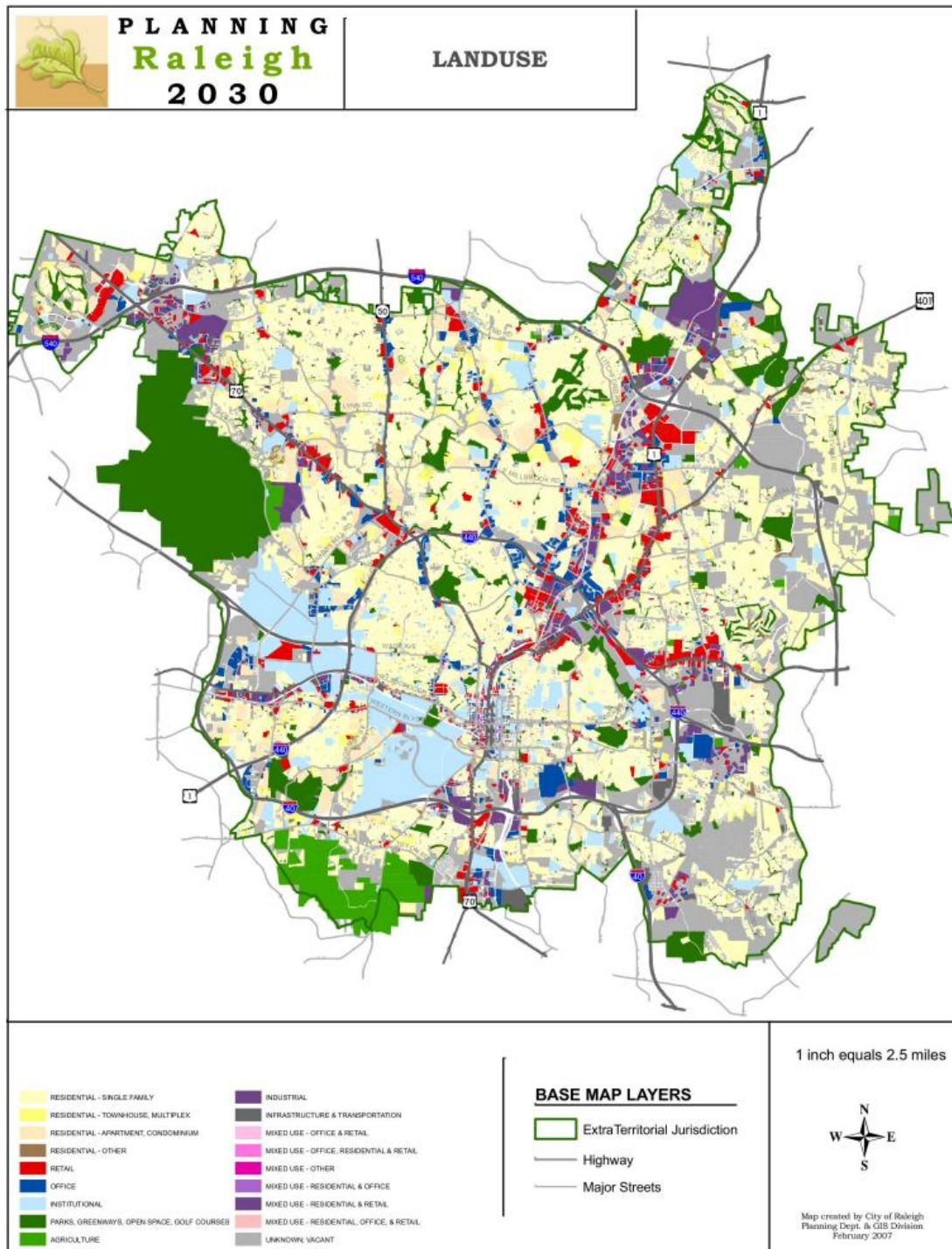
Source: City of Raleigh, Department of City Planning, 2007

1 Does not include public right-of-way.

2 Could not be determined from available information



Map 3.1 Existing Land Use



Raleigh's array of land uses includes residential, institutional, commercial, industrial, infrastructure, open space, mixed use, and other uses. Over 42 percent of land within the ETJ is developed for residential with over 34 percent being detached single-family residential (such homes account for 72 percent of residential land but 48 percent of total units).

The abundance of open space (11.3 percent) is highlighted by the 5,577 acre William B. Umstead State Park (accounting for nearly half of total open space acreage) and an extensive city park and greenway system. Greenway corridors are located along major waterways including the Neuse River, Crabtree Creek, Walnut Creek and their tributaries. Open space also includes five golf courses associated with large planned developments and a scattering of private areas used as greenway connectors.

As a capital city and government center, about eight percent of Raleigh's land area is dedicated to institutional land uses. The main state government campus is located downtown, but additional state office complexes are located throughout the city. NC State University, including the Main, Veterinary and Centennial campuses, contributes to the large percentage of institutional lands, as do Shaw University, Meredith College, St. Augustine's College, and Peace College.

Commercial land makes up seven percent of Raleigh: office space accounts for 2.9 percent, while retail establishments comprise 4.1 percent. The distribution of commercial land uses has been influenced by the thoroughfare network and urban form policies which seek to concentrate retail uses and higher intensity development within activity centers. Development along the state highway corridors (US-70, US-1, US-64 and US-401) have not followed a nodal pattern due to previously established commercial and industrial zoning.

Industrial uses occupy 3.7 percent of the City's jurisdiction. These uses are typically concentrated along rail corridors and the roads that run parallel to them, with some corresponding to warehousing and distribution areas adjacent to interstate highways, such as the area off of I-40 interchange with Jones Sausage Road in southeast Raleigh.

Currently, only 32 acres of land in the city are identified as mixed use, with most of this development located downtown. Vertically-stacked mixed-use developments are still rare in Raleigh outside of downtown and a few focus areas such as North Hills.

Vacant land accounts for 20.1 percent of the city's total jurisdictional lands and includes undeveloped land and land currently being developed or redeveloped within Raleigh's planning jurisdiction. There are over 11,000 acres of vacant land within city limits and another 9,000 acres within the extraterritorial jurisdiction.

### Implications for the Comprehensive Plan

- Undifferentiated commercial strip development along major highways (U.S. 1 and 401, U.S. 70 and U.S. 64) represents a significant land use issue. These land use patterns represent an access management challenge due to the large number of access points demanded by strip development and their impact which impedes traffic flow. New retail development has rendered many older retail uses underperforming, but redevelopment is a challenge due to the inappropriateness of many underutilized sites for other uses.
- While 11 percent of the City's land area is active or passive open space, nearly half of this inventory is a single large state park (Umstead), and other parts consist of private facilities such as public golf courses which are not protected from future development. Approximately six percent of the City's developable land area outside of Umstead is currently protected from development. (Note





that while these figures differ from similar figures in the Parks chapter, those figures contain areas such as plazas, medians, and other rights of way which are not included in the land use totals.)

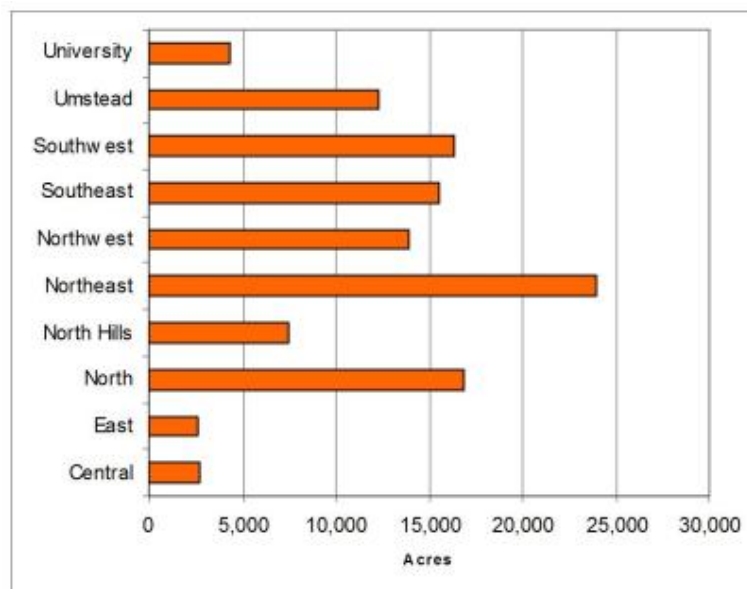
- Remaining vacant land, totaling about 20,000 acres or 20 percent of the City's ETJ, represents the remaining pool of land available. This is a significant amount of vacant land. A major challenge will be to shape the development and land conservation within this area.
- Low density single-family development is the dominant land use in Raleigh, although it represents fewer than half of all housing units. This use, more than any other, drives land consumption patterns in Raleigh. Low density urbanization requires continued investment in road capacity and further extensions of water and sewer infrastructure to continue. Such investments have fiscal and quality of life implications.
- The large amount (eight percent) of institutional land use suggests that partnerships between the City and these institutions (State and County government, universities, and hospitals) are essential to coordinate future growth and development of these institutions with surrounding land uses.

### 3.3 Land Use Allocation by Planning District

Raleigh is divided into 10 Planning Districts of varying sizes. These districts were originally delineated in 1979 as part of the Comprehensive Plan, and while some of them are unchanged, those that bordered the edges of the city have since grown greatly in size as the City's ETJ has expanded outwards. Chart 3.1 illustrates each district's total acreage and Map 3.2 shows the location of these districts.

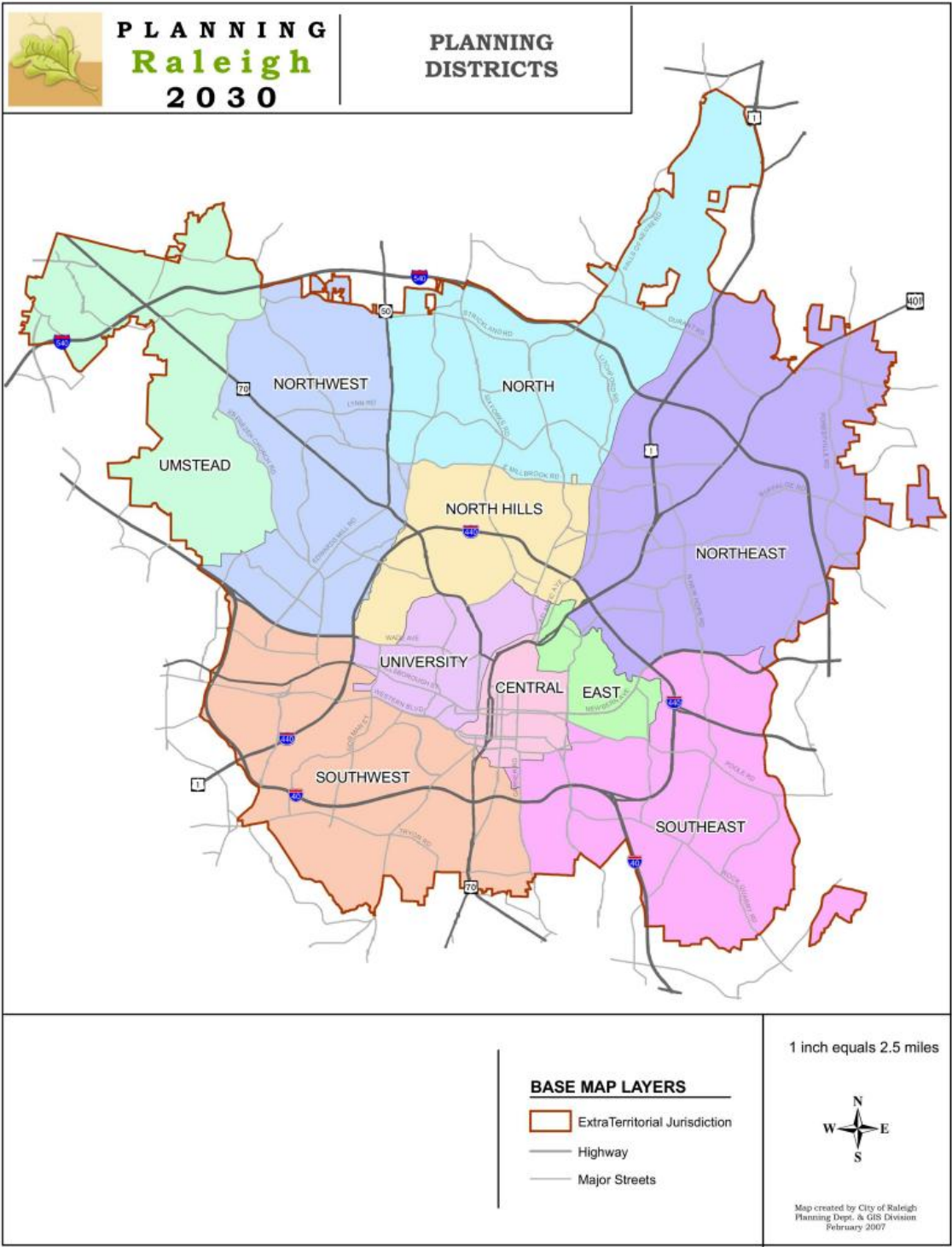
Not only do the 10 Planning Districts vary greatly by size, they also vary in terms of density, development capacity (discussed later under Land Capacity), and land use. Land use allocation by planning district is listed in Table 3.1 and illustrated in Chart 3.2.

**Figure 3.1 Planning District Land Area**



*Source: City of Raleigh*

Map 3.2 Planning Districts





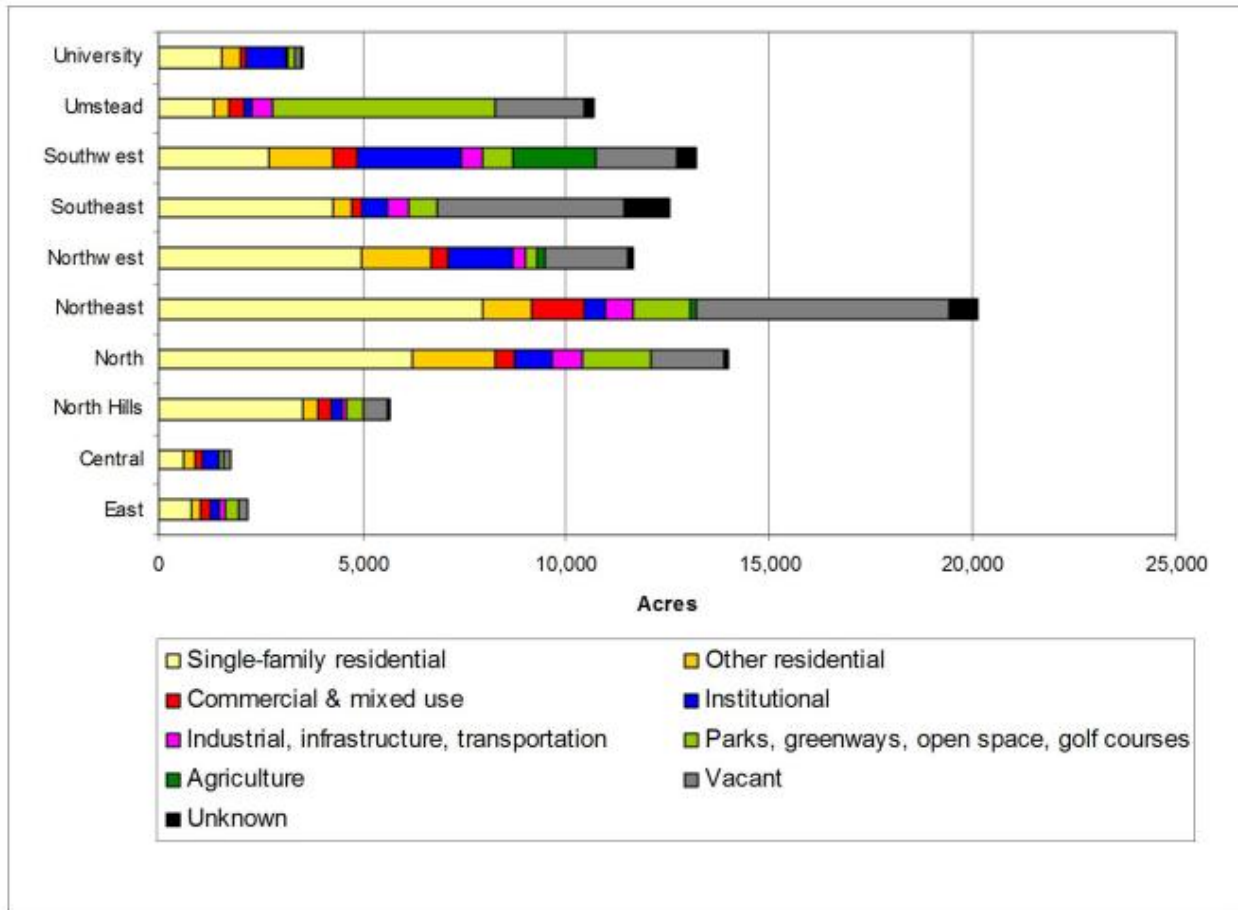


**Table 3.2: Existing Land Uses by Planning District**

	East	Central	North Hills	North	Northeast	Northwest	Southeast	Southwest	Unstead	University
Single-family residential	37%	33%	62%	44%	40%	43%	34%	20%	13%	43%
Other residential	10%	16%	7%	15%	6%	15%	4%	12%	4%	13%
Commercial & mixed use	9%	9%	6%	3%	6%	4%	2%	4%	3%	4%
Institutional	11%	23%	5%	7%	3%	14%	5%	19%	2%	28%
Industrial, infrastructure, transportation	6%	2%	2%	5%	3%	3%	4%	4%	5%	1%
Parks, greenways, open space, golf courses	16%	4%	7%	12%	7%	3%	6%	6%	51%	5%
Agriculture	0%	0%	0%	0%	1%	2%	0%	15%	0%	0%
Vacant	10%	11%	11%	13%	31%	18%	37%	15%	20%	4%
Unknown	0%	1%	1%	1%	3%	1%	9%	3%	2%	1%

*Source: Raleigh Department of City Planning, 2008*

Figure 3.2 Existing Land Uses by Planning District



Source: Raleigh Department of City Planning

The following is a brief description of the land uses and major features of each planning district.

### Central Planning District

The Central District includes downtown and the State Capitol. It is the commercial and administrative core of Raleigh. State, federal, and local government offices—as well as St. Augustine's College, Peace College, and Shaw University—comprise the district's prevalent institutional land base. The downtown area is experiencing a resurgence of commercial and residential development coinciding with the construction of the new convention center, the reopening of Fayetteville Street to vehicle traffic, notable streetscape improvements, and the creation of new public spaces.

Residential areas are primarily in the eastern half of the district, which includes the Mordecai, Oakwood, College Park/Idlewild and South Park neighborhoods. The Boylan Heights neighborhood is on the west side of the district. Historic office buildings and houses are an important feature of the district including the Mordecai Historic Park. Chavis, Roberts, and Halifax Parks are part of more than 60 acres of open space. Of the original five squares established in 1792, Capital, Moore and Nash Squares remain as public open space.



### **East Planning District**

The East District includes parts of Capital Blvd in the northwest and New Bern Ave in the south. Development along these major roads contributes most of the non-residential land uses within the district. Wake Medical Center is a major institutional use in the eastern part of the district.

Almost six percent of the East planning area's land use is industrial, the highest of any district. Pockets of industry are concentrated along Capital Blvd, where there are many retail parcels as well. Aside from Umstead, the East District has the highest percentage of open space. The Raleigh Country Club, Lions Park, and part of the greenway along Crabtree Creek are all within its borders.

### **North Planning District**

The North District runs from Creedmoor Road in the west to the vicinity of Capital Blvd in the east, from roughly Millbrook Road in the south to the ETJ limits in the north. The Falls Lake watershed straddles the district's northern border.

With almost 26,000 parcels, the North District has the most of any planning area, and is second only to the Northeast District in total area. It has a relatively high percentage of single family residential (42.4 percent), yet also contains the largest amount of industrial land (761.6 acres). The industrial uses are located between the CSX rail corridor and Capital Boulevard.

The area's proportion of vacant land has decreased from over one-third in 1998 to 12.4 percent today. As of July 1, 2007, the district had a population of 75,037, the highest total of any planning area. The population has grown by almost 30,000 in the last 16 years.

### **Northeast Planning District**

The Northeast District has been the fastest growing district in recent years, and now has a population topping 70,000. However, one-third of its land is still vacant. By far the largest planning area, Northeast has 6,000 more acres than the next-largest area (North).

Northeast has nearly 8,000 acres of single-family residential land use. However, this land takes up only 38 percent of the district due to the amount of vacant land. There are also 129 acres of agricultural land, primarily from four farms.

With Capital Blvd running diagonally through its center and both I-440 and New Bern Ave along its southern border, the district has a significant amount of retail (1,300 acres, 6.2 percent of land area), of which the Triangle Town Center Mall is a centerpiece.

The Neuse River flows north to south through Northeast, and most of the district's 1,400 acres of open space is situated alongside it.

### **Northwest Planning District**

Northwest features a significant gateway corridor in Glenwood Ave, which runs diagonally through its center. However, overall only 3.6 percent of its land is used for retail purposes. It has the highest percentage of multifamily (apartment and condominium) residential, at 8.7 percent, primarily due to a grouping of large apartment parcels near the center of the district, as well as elderly developments including congregate care.

The district's 1,580 acres of institutional land use includes the North Carolina Museum of Art and an NCSU research forest and equestrian area in its southern half. It contains the smallest percentage of open space of any district, but is adjacent to Umstead State Park.

### **North Hills Planning District**

North Hills lies north of downtown and the University District and south of the North District, bordered on each side by the Northwest and Northeast Districts. This area received the first wave of rapid growth between 1950 and 1970 and attracted Raleigh's first regional mall.

Fifty-seven percent of its land is used for single family houses, by far the most of any district. It also has twice the percentage of office space (7.7 percent) as that of the next-highest district (University, 3.8 percent). Interstate 440 runs east and west through the center of North Hills, and there are a number of office and retail parcels near the Glenwood Ave, Six Forks Rd, and Wake Forest Rd exits. These include part of Crabtree Valley Mall and North Hills Mall.

The main environmental feature of the North Hills district is Crabtree Creek, which bisects the district meandering east-northeast. A greenway for bicyclists and pedestrians follows the creek.

### **Southeast Planning District**

The Southeast District stands between downtown to the west and northwest and the Neuse River to the east, mostly outside the Beltline. The land outside the Beltline includes a significant amount of recently annexed land and future growth areas. The Southeast includes the highest percentage of vacant land (34 percent) of all districts followed closely only by the Northeast (30 percent).

Southeast features more single-family residential parcels than all but two districts (North and Northeast, which are larger in area). These homes are located in neighborhoods both inside and outside the Beltline.

The percentage of retail uses (1.4 percent) is the lowest of all districts including only 190.2 acres. Developing retail areas including Olde Towne and Battlebridge Center will improve the availability of services, but overall Southeast will remain underserved in comparison to other districts.

### **Southwest Planning District**

Farms owned by North Carolina State University comprise the prevalent amount of agricultural land use in the Southwest District. Bordered in the northeast by Western Blvd, Southwest includes the NCSU Centennial campus. This, along with the NC State Fairgrounds, Veterinary School campus and Dorothea Dix campus, gives Southwest a large percentage of institutional land uses.

Another prominent use is apartment/condominium residential, for which Southwest has the most parcels of any district. Lake Johnson Nature Park, which is over 450 acres of water and land, is the largest tract of open space in the planning area.

### **Umstead Planning District**

The Umstead District includes the 5,577 acre William B. Umstead State Park, accounting for 50 percent of total land uses. The northern portion of the district wraps around the RDU International Airport and features other land uses, but also has a significant amount of vacant land. Retail is concentrated in the Brier Creek and Alexander Square shopping centers on either side of Glenwood Ave just north of I-540. Industrial land, including a rock quarry, is located just north of the state park and along the airport approach runways



## University Planning District

NCSU, Meredith College, St. Mary's School, and the Morehead School for the Blind make up the prominent educational use in this district. The northern two-thirds of the district feature mainly single-family housing. The Hillsborough Street corridor and Cameron Village Shopping Center contribute most of the retail land use. The Glenwood South entertainment district is along the eastern boundary of the district.

University has the highest number of apartment and condominium parcels (147) of any district except Southwest. Much of the higher density housing is located to the north and east of Cameron Village. The planning area includes Pullen and Fred Fletcher Parks, but overall has a relatively small amount of open space acreage (176).

### Implications for the Comprehensive Plan

- Planning Districts have a long history in Raleigh, dating back to 1979, nearly 30 years ago. However, as the City has grown, these districts have become less useful as the ones bordering the urban fringe now dwarf the centrally located districts in land area. A new geography may be appropriate to serve as a geographic framework for planning and analysis.
- Each Planning District currently has a more detailed District Plan in the current Comprehensive Plan. Some of these plans, such as the Southwest District Plan, were recently adopted. The updated Comprehensive Plan should work to integrate the still-relevant policies and recommendations of these District Plans into the citywide elements to streamline the Comprehensive Plan, reduce conflicting policies and recommendations, and allow Plan users to find relevant policies more easily.

## 3.4 Existing Zoning Allocation

The City of Raleigh's Zoning Ordinance can be found in Volume II Part 10, Chapter 2 of the City Code. The ordinance consists of the zoning text, which sets forth the regulations and standards both for specific zones and that apply across zones; and the zoning map, which divides the entirety of the City's planning jurisdiction into zones, each with their own standards for use, bulk, and other built attributes.

### General Use and Conditional Use Zones

Property located within the Raleigh City Limits or Extra Territorial Jurisdiction (ETJ) area may be zoned as either a general use district or a conditional use district. Under general use zoning, all permitted land uses within the zoning district are required simply to meet the minimum development standards (i.e., minimum building setbacks, minimum landscaping requirements, and minimum stormwater control measures). A smaller set of uses may be categorized as conditional uses and held to additional standards as part of a conditional use permit approval process. General use zoning is the only type of zoning available in most states.

In 1984, the City Council adopted conditional use zoning. A conditional use district differs from a general use district in that no uses are permitted as-of-right; all permitted uses are converted into conditional uses, and must meet additional standards agreed-upon by the property owner(s) and adopted as part of the rezoning. These conditions are not a part of the zoning code, but are maintained as separate records tied to

the rezoning case that led to their creation. Because the conditions are customized for each petition, every CUD district is a unique zoning district. Since the inception of this practice, nearly 1,000 unique Conditional Use Districts have been mapped in Raleigh, comprising about 16 percent of the City's land area.

A conditional use case allows a petitioner for a zoning map amendment to discuss aspects of site development and use limitations on the property during the rezoning process. Although the large majority of property in Raleigh is zoned with general use district zoning, almost all rezoning petitions filed since the mid-1990s have been for conditional use district zoning. As of 2007, about 16 percent of the City's land area is located in a conditional use zoning district. Map 3.3 shows the conditional use zoning districts within the City. This number increases each year as more property is rezoned to a conditional use classification. For the five-year period ending in fiscal year 2006 – 2007, the City processed over 60 rezoning petitions per year on average, the majority of which were conditional use cases.

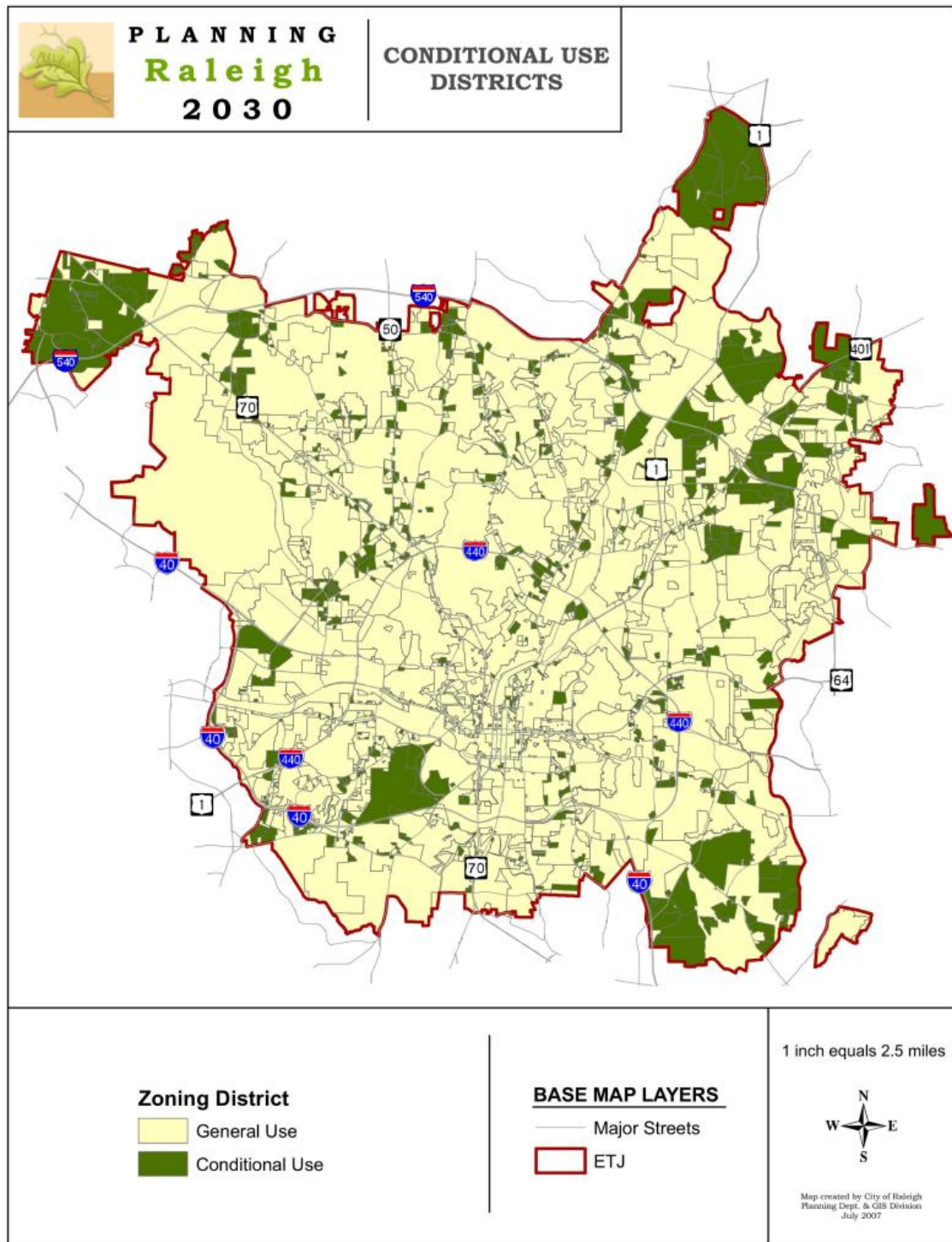
Only 100 percent of affected property owners may request a conditional use rezoning case. The owners voluntarily limit development on the site under conditional use zoning, such as the type of use or building sizes permitted. Conditions must be more restrictive than what would normally apply under the corresponding general use zoning district, and must bear some nexus to the impacts anticipated from the proposed rezoning. The Planning Commission and City Council consider each of these conditions in making a decision on the rezoning. Conditional use zoning is a more complicated procedure than general use rezoning.

All conditional use districts are identified on the City's zoning map with the original case number. The zoning of a parcel of land can be identified by using "iMAPS" on-line property mapping resource. A link to this site, the City of Raleigh Zoning Code and other information regarding zoning and land use may be accessed via the City's website at [www.raleighnc.gov/rezoning](http://www.raleighnc.gov/rezoning)





Map 3.3 Conditional Use Zoning





## Residential Zoning

Raleigh has 10 types of residential zoning district: RR, R-2, R-4, R-6, R-10, R-15, R-20, R-30, as well as Special R-6 and Special R-30. They permit densities ranging from one unit per acre (RR or Rural Residential) to 30 units per acre (R-30). All districts starting with R-6 and higher permit townhouse and multi-family development, with exception of Special R-6, which permits duplexes but not townhouses or multi-family; and Special R-30, which permits multi-family, but not townhouses. Map 3.4 shows single-family zones and Map 3.5 shows multi-family zones within the City.

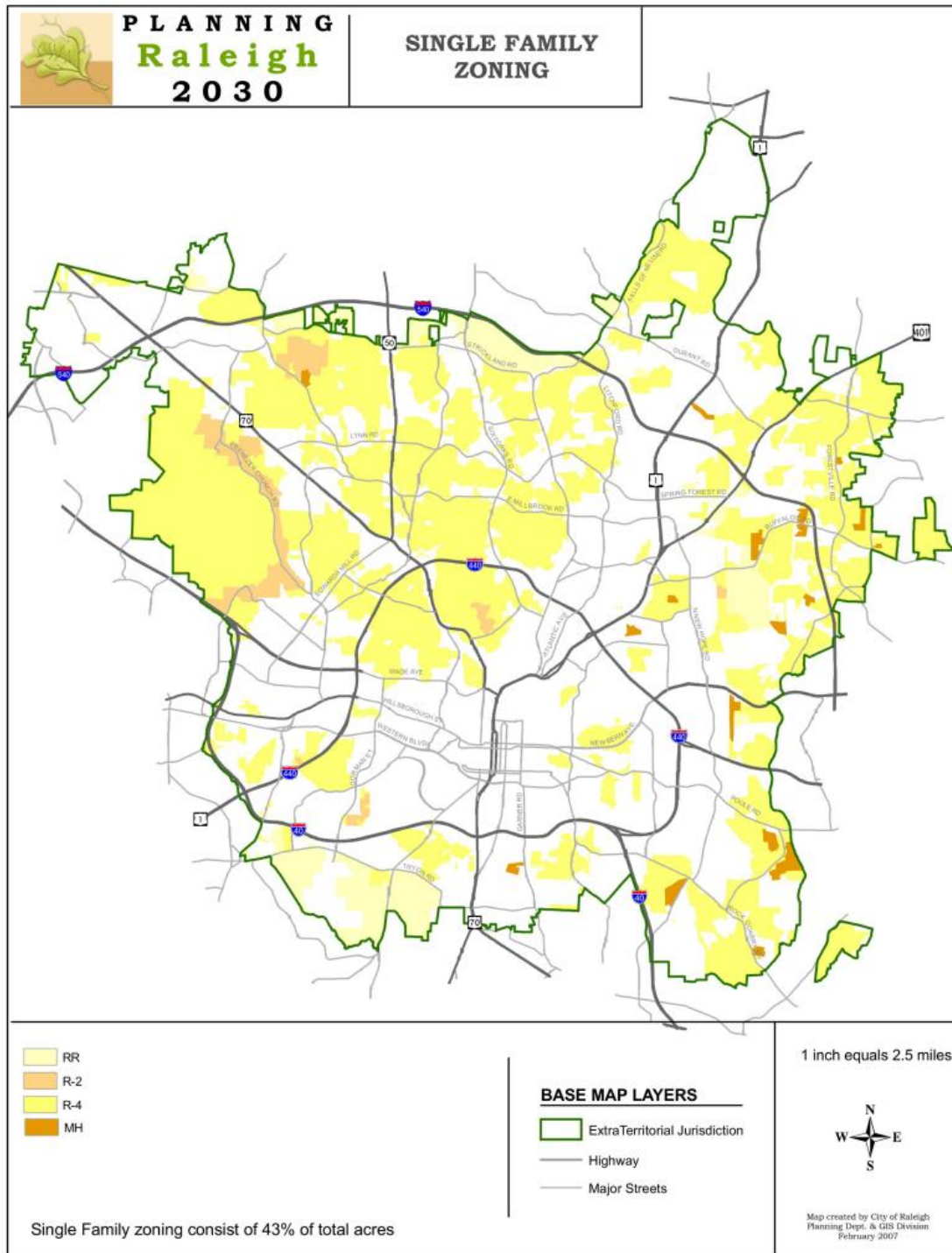
**Table 3.3: Residential Zoning Allocation**

District	Acres	Percent of:	
		R-zoning	ETJ
<u>Single-family Zones</u>			
RR	5,054	6.4%	4.4%
R-2	1,980	2.5%	1.7%
R-4	41,777	53.1%	36.0%
MH	861	1.1%	0.7%
Total Single-Family	49,672	63.2%	42.8%
<u>Multi-family Zones</u>			
R-6	16,383	20.8%	14.1%
SP R-6	611	0.8%	0.5%
R-10	9,304	11.8%	8.0%
R-15	1,288	1.6%	1.1%
R-20	1,172	1.5%	1.0%
R-30	127	0.2%	0.1%
SP R-30	77	0.1%	0.1%
Total Multi-Family	28,962	36.8%	24.9%
Grand total	78,634	100.0%	67.7%

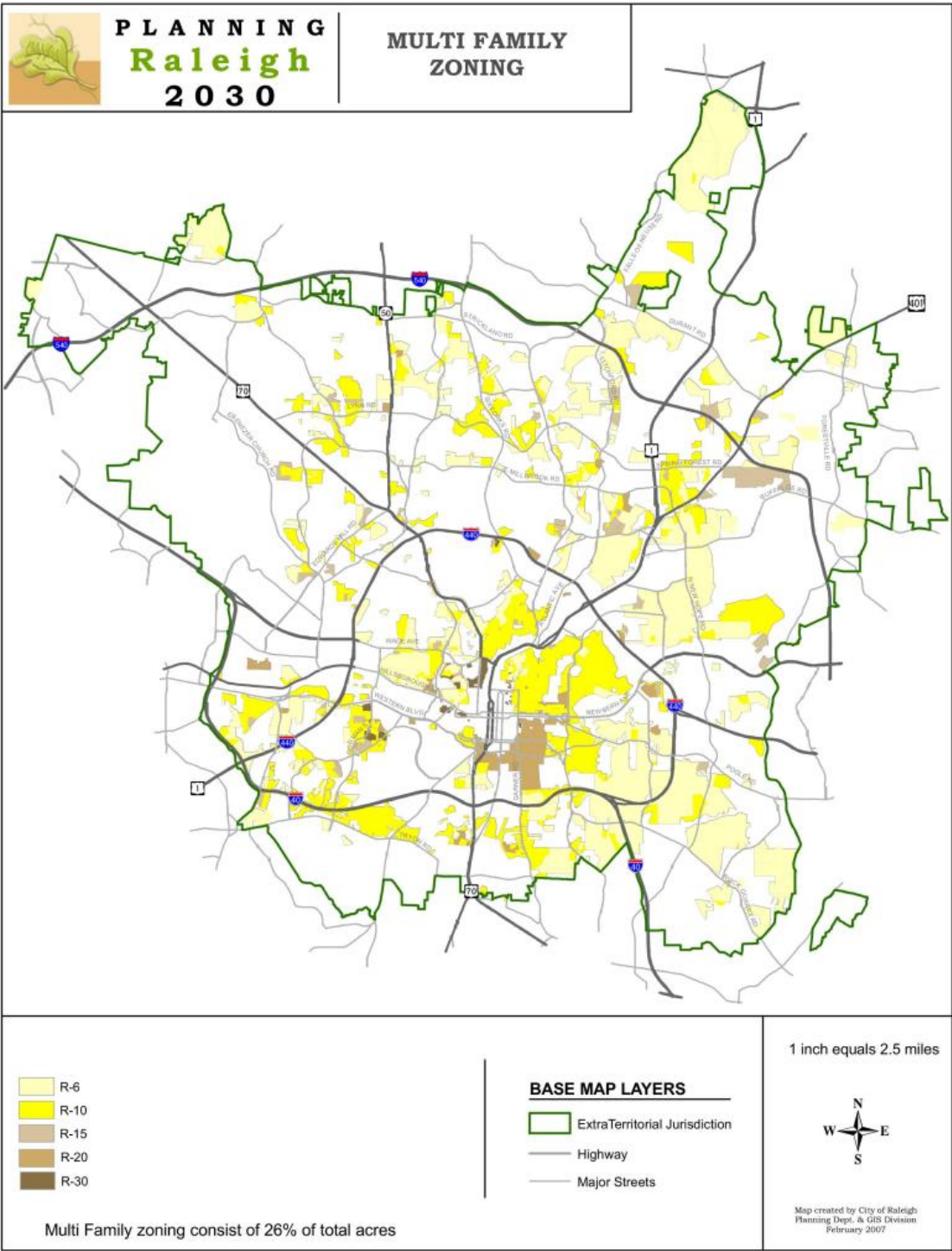
Source: Department of City Planning



Map 3.4 Single Family Zoning



Map 3.5 Multi-Family Zoning





Over two-thirds (68 percent) of the property within Raleigh’s planning and development area is residentially zoned. Of this, approximately 63 percent is zoned for single-family development only. However, this number represents more than the land that is currently developed for residential purposes because residential zoning allows other uses such as churches, schools, day cares, governmental parks, private golf courses, and other private open space. On the other hand, a significant portion of the non-residential zoning classifications allow for residential use and are commonly developed as such—for example, Office & Institution-1 and -2.

### Non-Residential Zoning

Approximately one-third (32 percent) of the property within Raleigh’s planning jurisdiction is zoned for non-residential uses, although, as noted above, nearly all of these districts except for the industrial zones also permit residential development as a matter of right. In fact, with the exception of a few zones such as the industrial zones, Raleigh’s zoning still follows a “pyramid” structure in which each more permissive zone permits the uses permitted in more restrictive zones. This structure theoretically provides for mixed use, but it also means that it is very difficult to project future development patterns based on zoning, as such a wide variety of residential and non-residential uses are permitted. Map 3.6 shows non-residential zoning.

**Table 3.4: Non-Residential Zoning Allocation**

District	Acres	Percent of:	
		Non-Res. Zoning	ETJ
<u>Industrial Zones</u>			
IND-1	9,260	24.7%	8.0%
IND-2	2,929	7.8%	2.5%
Total IND	12,188	32.5%	10.5%
<u>Office &amp; Institutional Zones</u>			
O&I-1	6,306	16.8%	5.4%
O&I-2	1,471	3.9%	1.3%
O&I-3	286	0.8%	0.2%
Total O&I	8,063	21.5%	6.9%
<u>Commercial Zones</u>			
Buffer Commercial (BC)	30	0.1%	0.0%
Business (BUS)	229	0.6%	0.2%
Neighborhood Business (NB)	1,108	3.0%	1.0%
Residential Business (RB)	72	0.2%	0.1%
Shopping Center (SC)	2,287	6.1%	2.0%

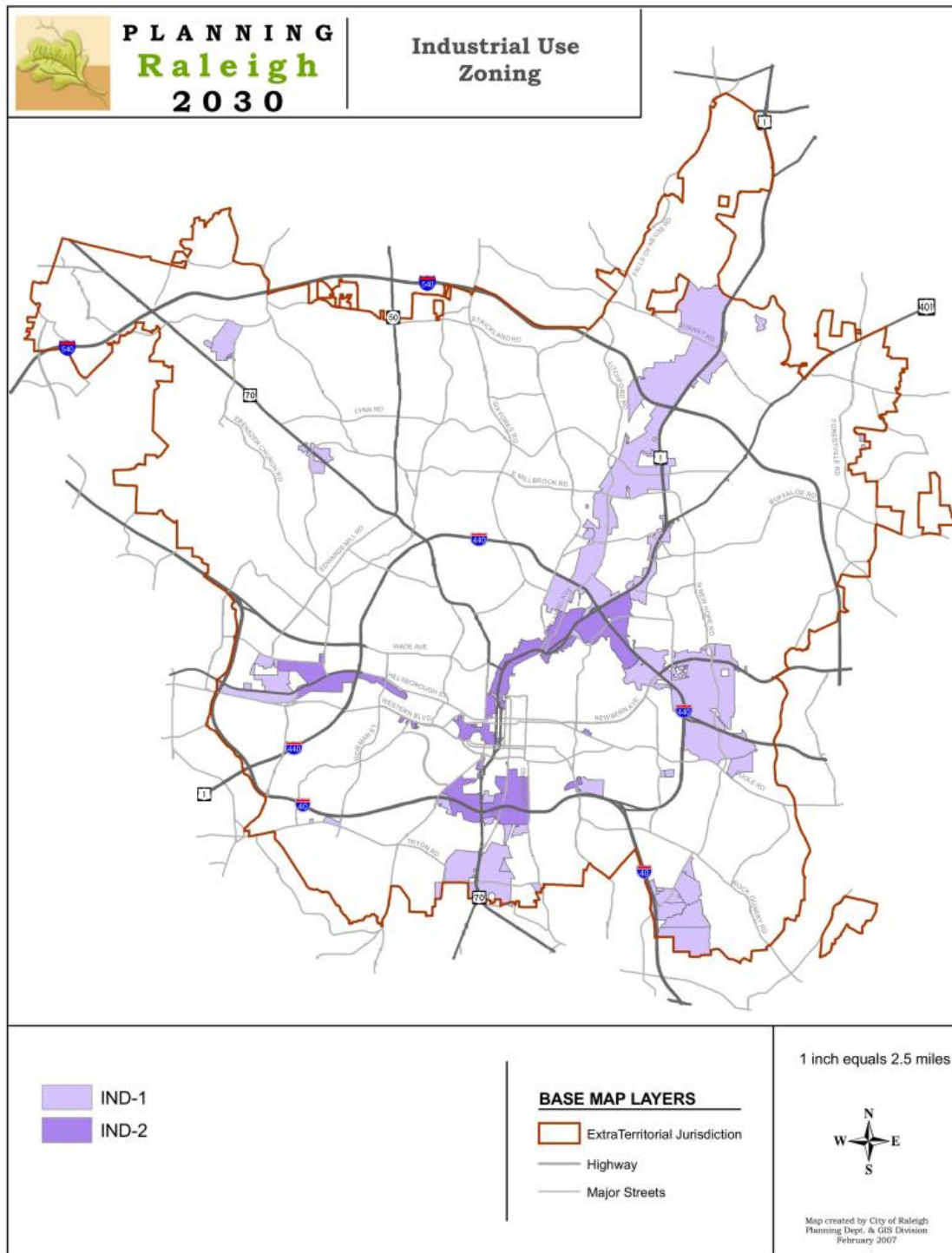
District	Acres	Percent of:	
		Non-Res. Zoning	ETJ
Thoroughfare District (TD)	9,545	25.4%	8.2%
Total Commercial	13,270	35.3%	11.4%
<u>Conservation Zones</u>			
Agricultural Productive (AP)	2,079	5.5%	1.8%
Conservation Management (CM)	1,949	5.2%	1.7%
Total conservation	4,028	10.7%	3.5%
Grand Total	37,549	100.0%	32.3%

Source: Department of City Planning

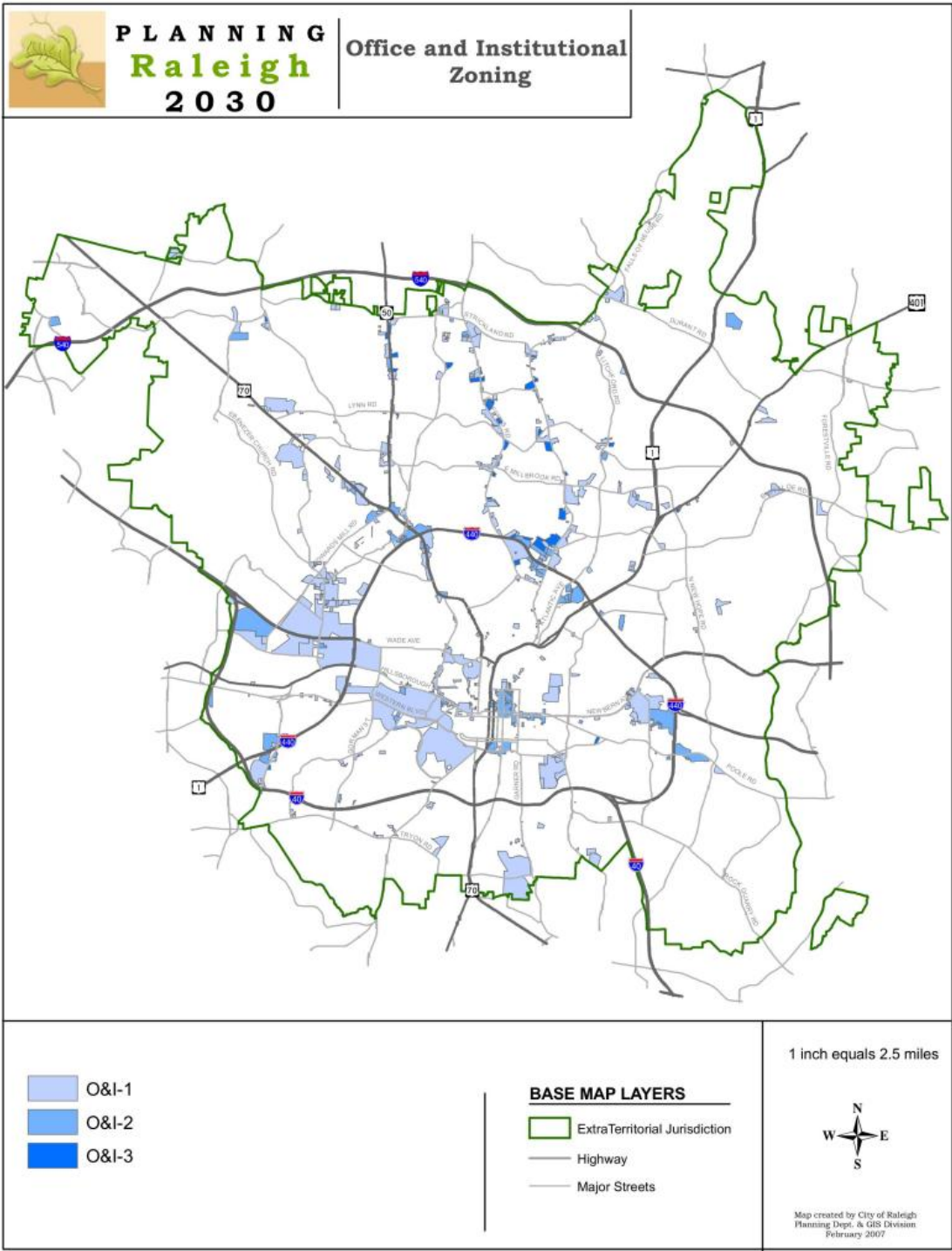




Map 3.6 Industrial Zoning



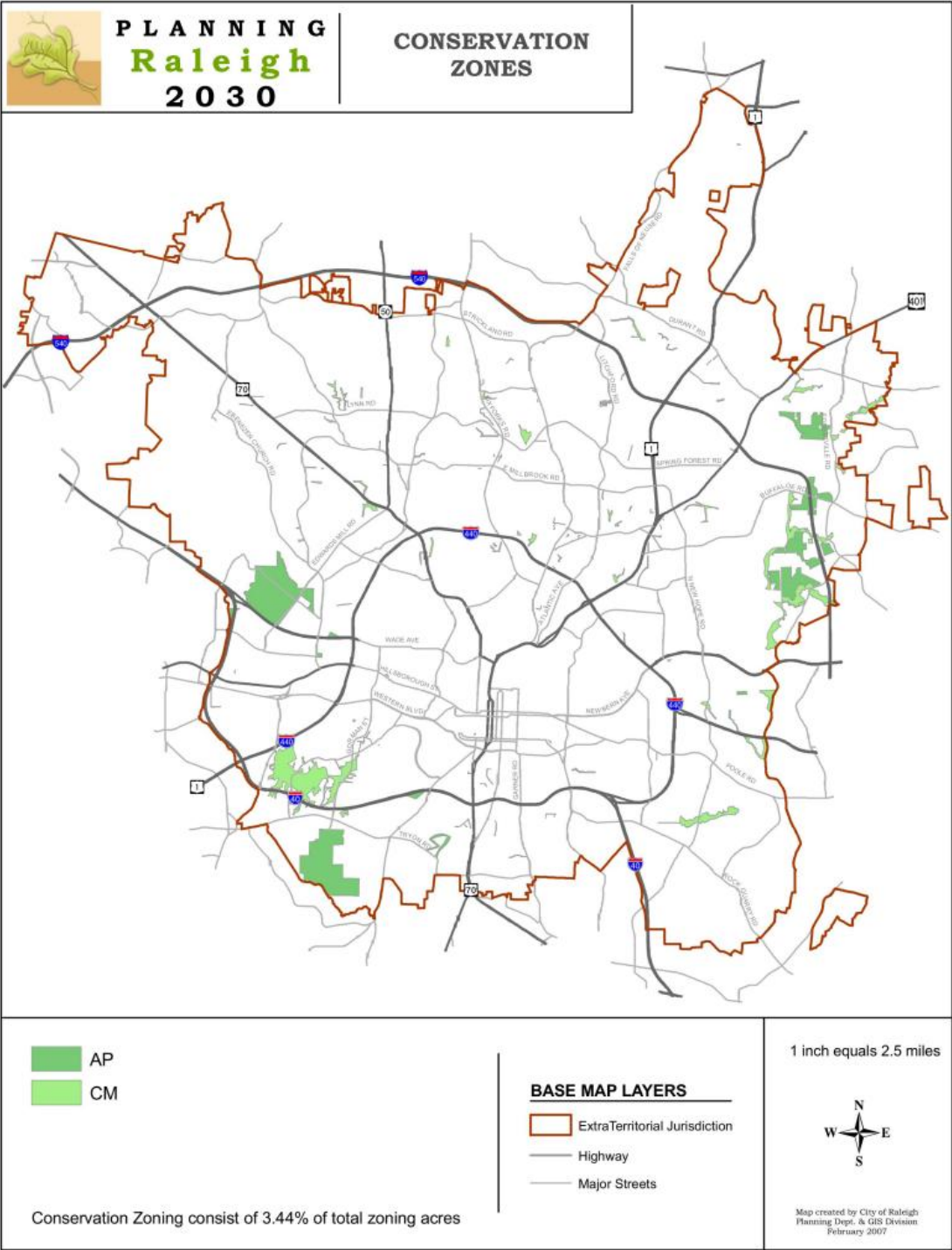
Map 3.7 Office and Institutional Zoning







Map 3.9 Conservation Zoning





Currently, 10.5 percent of Raleigh's ETJ is zoned Industrial-1 and -2 although only 4.2 percent is currently developed for industrial purposes. This is because office and retail uses are also permitted as of right within industrial zoning districts. Oftentimes when industrial zoning is located adjacent to a heavily traveled thoroughfare, as it is along Capital Boulevard, New Bern Avenue and Atlantic Avenue, it is marketed as a potential retail site. Further, the recent past has seen a reduction in the amount of land zoned industrial as property owners have been successful in rezoning their property to districts which permit residential uses. Also, in 1992, the Downtown Residential Housing Overlay District (renamed the Downtown Overlay District in 2005) was amended to permit residential within industrially-zoned parcels located within the Downtown. These three dynamics have reduced the potential for the City of Raleigh to attract traditional industry within central Wake County. Raleigh has no zoning tools to preserve land for industrial use.

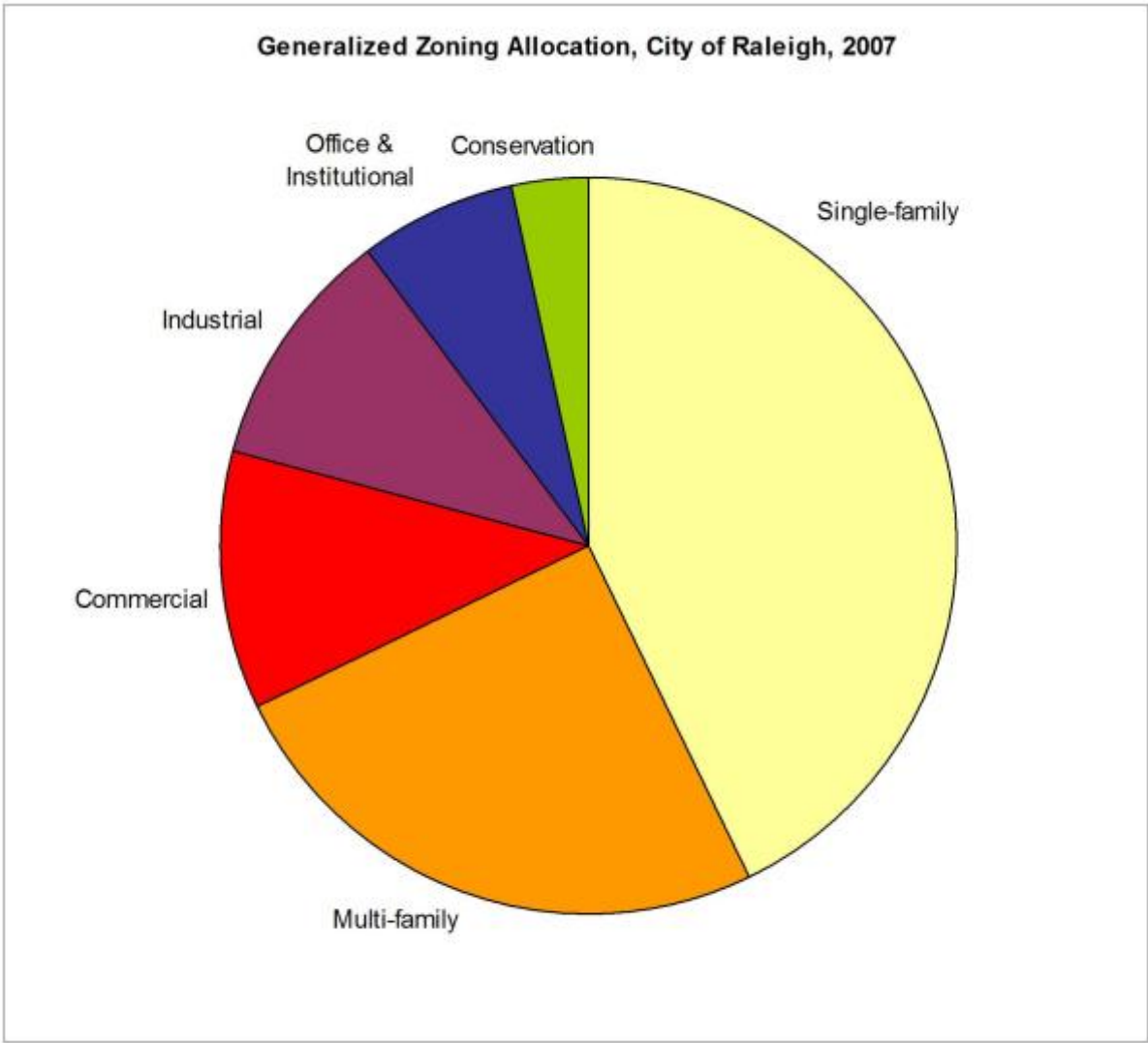
The O&I zoning districts account for about seven percent of the ETJ and 22 percent of non-residential zoning. O&I-1 and 2 permit high density residential and are commonly developed for such. Typical 3-story apartments in O&I zones have averaged 17.5 units per acre yield for the past 15 years, and many O&I-1 rezonings have taken place for the sole purpose of accommodating medium or high density residential developments. The vast majority of O&I-2 zoning is located in the downtown State Government Complex. The O&I-2 zoning allows the most intense residential and office development of the three (3) O&I zones. O&I-2 also allows hotels and permits the City Council to approve increased building height and reduced parking through the site plan process. O&I-3 zoning was designed for office parks compatible with single family residential. It prohibits residential, allows only a 0.33 Floor Area Ratio (FAR, ratio of building area to land area), maximum 25-foot building height, minimum 50-foot buffer yards on all sides and is considered functionally obsolete in regard to today's land costs.

Commercial zoning represents the largest share of non-residential zoning and over 11 percent of the ETJ. Within this category, the most prevalent zone is the Thoroughfare District, representing 8.2 percent of the City's planning jurisdiction. This district was created in 1984 as a mixed use district (high density residential, office, retail and industrial) to be placed along thoroughfares. This district requires a 50-foot vegetative buffer adjacent to any thoroughfare and was created to be utilized for ETJ extensions on outlying properties located along gateways leading into the City. Wake County's Highway District also requires the same 50-foot vegetative buffer.

Less than four percent of the City's land area is in a zone intended to protect land from development. Conservation management (CM) is primarily mapped over public lands and private lands that are undevelopable by virtue of being in a floodway or some other severe environmental constraint. The agricultural productive district, which is mapped over some research farms and horse farms, is intended to preserve these tracts for agricultural uses and to limit the encroachment of conflicting uses.

The breakdown of Raleigh's zoning by category of zoning district is shown in Chart 3.3, below:

Figure 3.3 Generalized Zoning Allocation



Overlay Districts

Overlay zoning districts are used in specific locations in Raleigh to modify the standards of the underlying zoning districts or establish additional standards to address identified needs. The 14 codified overlay districts have been an effective tool in tailoring underlying zoning standards and cover 26.6 percent of Raleigh’s ETJ. The following provides a short description of how each overlay district it typically used.

Table 3.5: Overlay Zoning District Allocation, City of Raleigh, 2008

Overlay District	Acres	Percent of ETJ Area
AOD	2,256	1.9%



Overlay District	Acres	Percent of ETJ Area
DOD	595	0.5%
HOD	294	0.3%
MPOD	1,451	1.2%
NCOD	2,827	2.4%
PBOD	200	0.2%
PDD	4,866	4.2%
RWPOD	4,905	4.2%
SHOD-1	7,941	6.8%
SHOD-2	5,214	4.5%
SHOD-3	203	0.2%
SHOD-4	107	0.1%
TODOD	0	0%
UWSWPOD	0	0%
Total	30,858	26.6%

Source: Raleigh Department of City Planning, 2008

**Airport Overlay District:** Applied to specific areas around the Raleigh-Durham International Airport in relation to airport arrival and departure paths and associated noise contours. The district addresses potential physical conflicts with aircraft as well as aesthetic issues for arriving aircraft passengers. Uses are prohibited that may be hazardous in the event of aircraft crashes such as above ground storage of combustibles or are unsightly such as the storage of wrecked vehicles. Dwelling units, unless part of a hotel, are prohibited as well as residential related uses such as day care facilities, schools, churches and hospitals.

**Downtown Overlay District:** Applied to the central business district of the city to allow for the continuity of urban design through the use of exceptions to the minimum setback standards, maximum height standards, parking requirements, floor area ratio requirements and other regulations which vary between the numerous underlying zoning districts within the downtown area. It also provides for high density residential development and ground level retail use regardless of the underlying zoning district.

**Historic Overlay District:** Used in specific residential and commercial areas that contribute to the historic fabric of the city. The district allows for the review of exterior building changes by a Historic Districts Commission through the issuance of a Certificate of Appropriateness (COA). Prohibited uses include the alteration of exterior building features, trees or signage within a Historic Overlay District or any Historic Landmark except in accordance with an approved certificate of appropriateness. The demolition of historic buildings may be delayed up to 180 days. Additional information on Historic Overlay Districts can be found in the Historic Resources chapter of the Community Inventory.

**Metro-Park Overlay District:** Applied to properties within 1,000 to 1,500 feet of a metro-park (a large, regional park) and used primarily around Umstead State Park. Intent is to protect the natural integrity and aesthetic value of the metro-park from the impacts of surrounding development. Prohibited uses include establishments that produce noxious or offensive dust, fumes, vibrations or excessive noise. Exterior parking and building lighting is limited as well as impervious surface coverage and building height. Watercourse buffers, protective yards adjacent to the park and tree conservation requirements are increased.



Neighborhood Conservation Overlay District: Applied to established neighborhoods that are at least 25 years old, at least 75 percent developed, contain at least 15 acres and possess unifying distinctive elements of either exterior features or built environmental characteristics. This district is used most often where the underlying zoning does not reflect the existing built pattern and typically has a stabilizing effect on the neighborhoods to which applied. The district standards are recommended through the preparation of a Neighborhood Plan and may address lot frontage and size, building setbacks and height, building entrances and the location of vehicular surface areas. It is described more fully in the Housing and Neighborhoods Chapter.

Pedestrian Business Overlay District: Used as a tool to establish consistent streetscape standards for urban commercial streets and to modify underlying zoning standards not supportive of a pedestrian environment. District standards are recommended through the preparation of a Streetscape and Parking Plan. Land areas placed in the district must consist primarily of retail uses, include at least one side of one block, draw pedestrian patronage from an adjoining employment center or residential neighborhood, and include one or more of the following; developed prior to off-street parking requirements, possess unifying built environmental characteristics that create a pedestrian setting, or be an expansion of an existing PBOD.

Reservoir Watershed Protection Overlay District: Applied within drinking water supply watersheds such as Falls Lake and Swift Creek to protect the quality of the water through land use and development impact regulations. Primary and secondary water supply watershed protection areas are identified based upon proximity to the water reservoir. Prohibited uses in both the primary and secondary watersheds include additional density and floor area ratio increases in specific zoning districts, paved or gravel City greenway foot and bicycle paths, and landfills. Additional uses prohibited in the primary watershed include airfields, religious buildings, day care facilities, schools, libraries, museums and industrial uses.

Planned Development Conditional Use Overlay District: Applied in association with a Master Plan that includes all necessary elements to describe a development proposal giving the applicant the ability to establish code standards unique to a specific development product. The Master Plan must include a vehicular and pedestrian circulation plan, land use allocation and location, development density and intensity, parking plan, traffic impact analysis, utility service plan, landscape and open space plan, and address phasing of construction and occupancy.

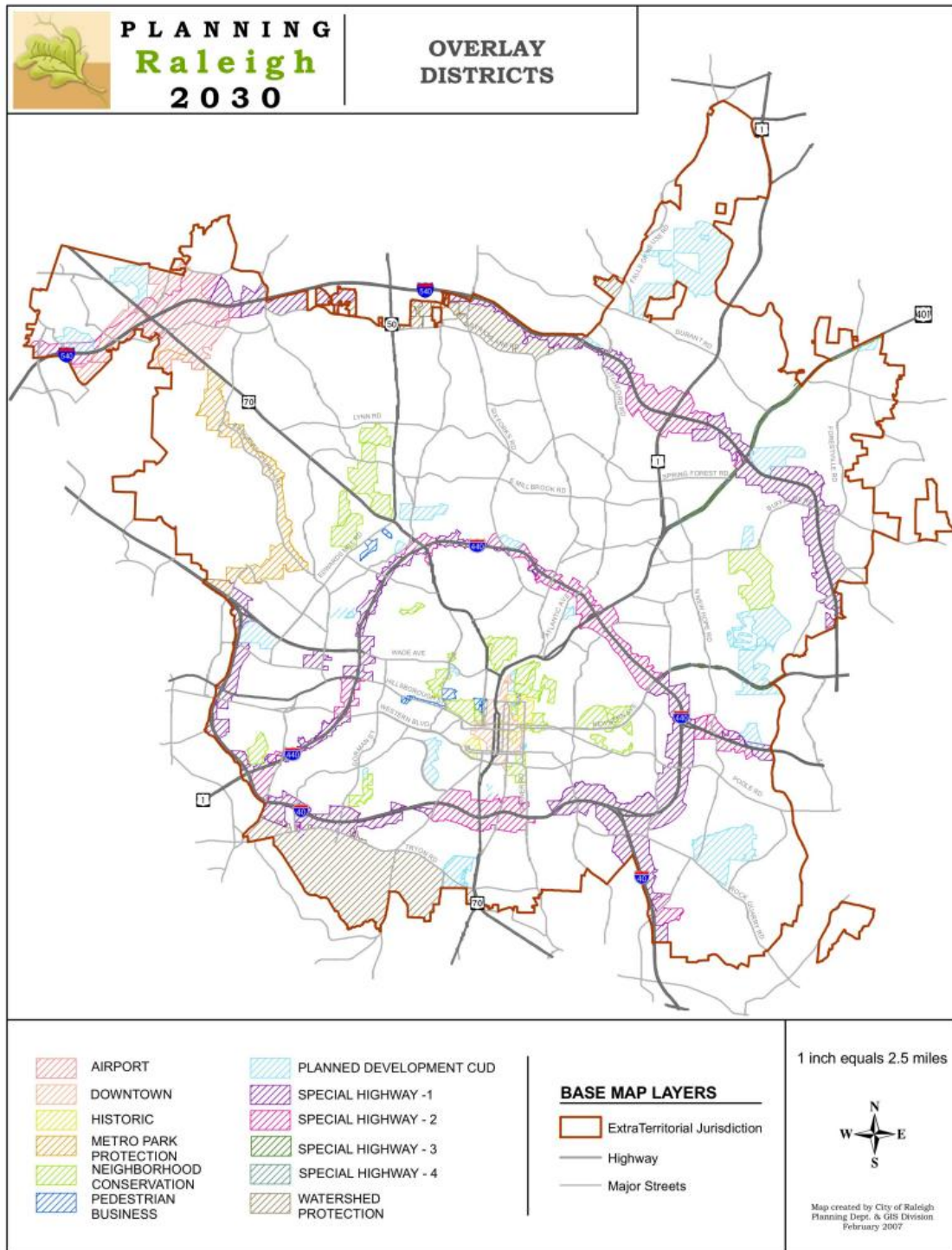
Special Highway Overlay District: Used to establish a landscaped yard area adjacent to arterials or thoroughfares and to specify minimum landscape standards. SHOD 1 and 2 are found along limited access arterial roadways such as I-40, I-440, I-540 and US -64 Bypass and require a 50 foot and 25 foot landscaped yard respectively which is used as a visual screen and noise/pollution filter. SHOD 3 and 4 are found along primary entryways leading into Raleigh such as Louisburg Road and New Bern Avenue. Both landscape yards are used to provide a design edge for the roadway with SHOD 3 known as the Buffer Yard with a continuous landscape yard averaging 50 feet and SHOD 4 known as the Connective Yard and used between buildings fronting the roadway.

Transit Oriented Development Overlay District: Created for application generally within ½ mile of a designated passenger transit station or stop and should include properties within walking distance of a station or stop that would support pedestrian oriented development and a broad mix of uses. A transit station area plan provides the design principles and policies for character and function of the zoned area.

Urban Water Supply Watershed Protection Area Overlay District: Created to comply with the State Class IV Water Supply Watershed regulations and for specific application within the Neuse River-Richland Creek watershed.



Map 3.10 Overlay Zoning





### Implications for the Comprehensive Plan

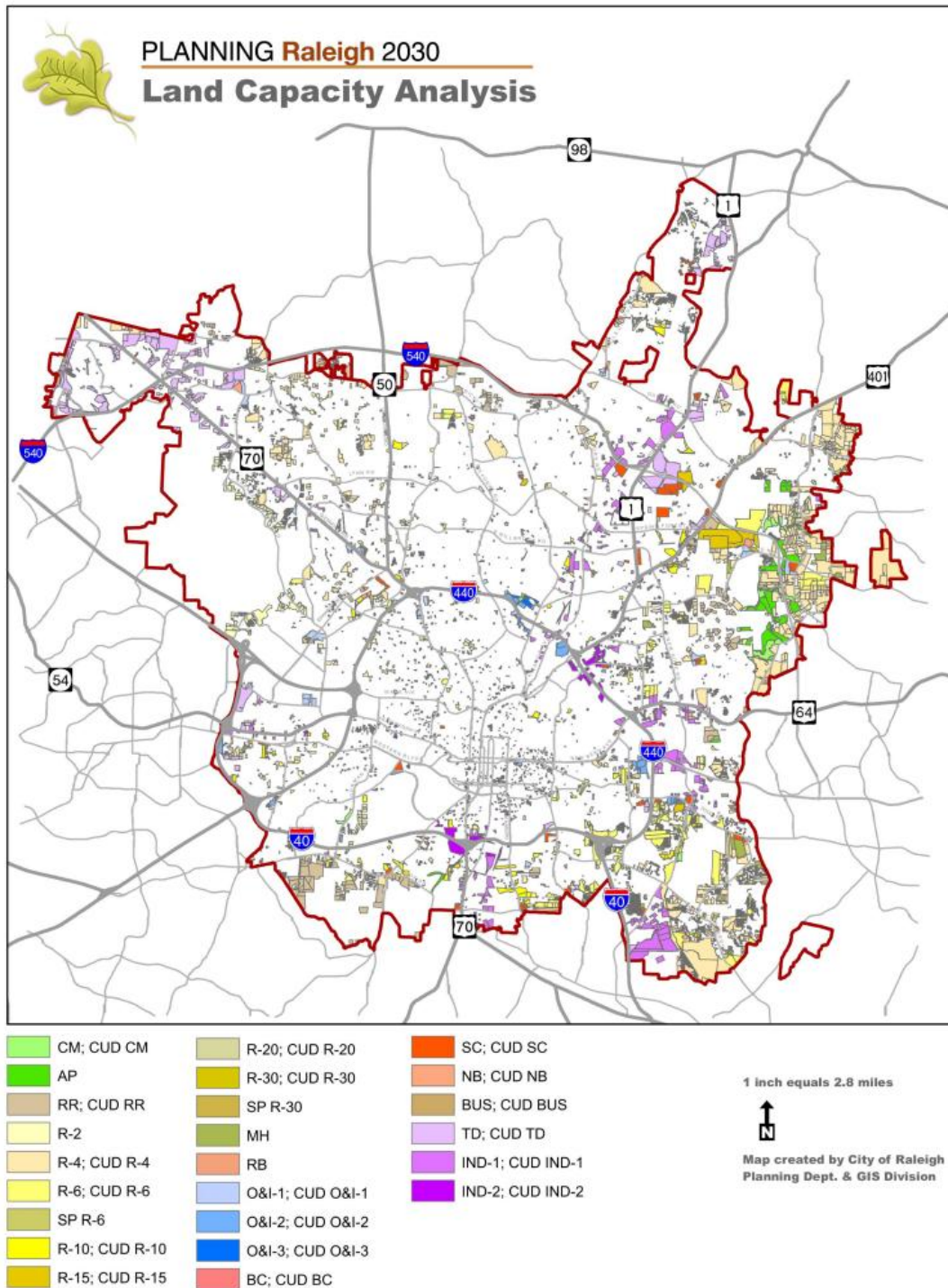
- The use of conditional use zoning means that a growing percentage of the City's land area is subject to customized zoning. The both weakens the zoning map as a statement of land use policy intent, and elevates the need for a land use plan to guide zoning.
- Industrial land can easily be developed for other non-residential uses, including retail. Comprehensive plan policies which call for preserving land for "employment uses" (i.e. industrial and office) are difficult to implement with the existing zoning classifications.
- With the exception of O&I-1 and 2, no non-residential zoning districts regulate floor area, building coverage, or other key metrics of bulk and form. The placement and massing of buildings is governed primarily by off-street parking regulations. As a result, it is difficult to estimate the future build-out of the City's supply of non-residential land, nor to predict the form that development within these district will take.
- The mixed-use districts permit a wide variety of uses to locate within the same zone. However, yard, setback and buffer requirements prevent these uses from mixing in a walkable, urban manner. Outside of Planned Development Districts (custom zones tied to master plans) and a few overlay districts, Raleigh does not have zoning districts which permit the type of urban forms called for in its current Comprehensive Plan.
- A reliance on overlay zones as an alternative to creating and mapping new general use districts has led to a complex zoning map and ordinance, as well the potential for strange juxtapositions of land use. For example, the west side of Downtown is zoned Industrial with the DOD overlay, meaning that high-rise, mixed-use condos as well as manufacturing and distribution all are permitted in the same district.

## 3.5 Existing Land Capacity

In January 2008, there were 116,183 acres of land within Raleigh's City limits and its extraterritorial jurisdiction, including rights of way. Of this, 18,697 acres were determined to be developable land. Developable land is defined as vacant non-residentially-zoned parcels and residential parcels greater than three acres in size. Lands constrained by floodplain, tax-exempt parcels and vacant parcels which have valid subdivision or site plan approvals are excluded. Developable land represents 16 percent of the total land within Raleigh's planning and development control. Approximately 68% percent (12,792 acres) of developable land lies outside of the current City limits and on the fringe of the City's jurisdictional area. Map 3.10 Land Capacity Analysis, shows the existing zoning of the vacant and developable lands within the City's jurisdiction (city limits plus ETJ)

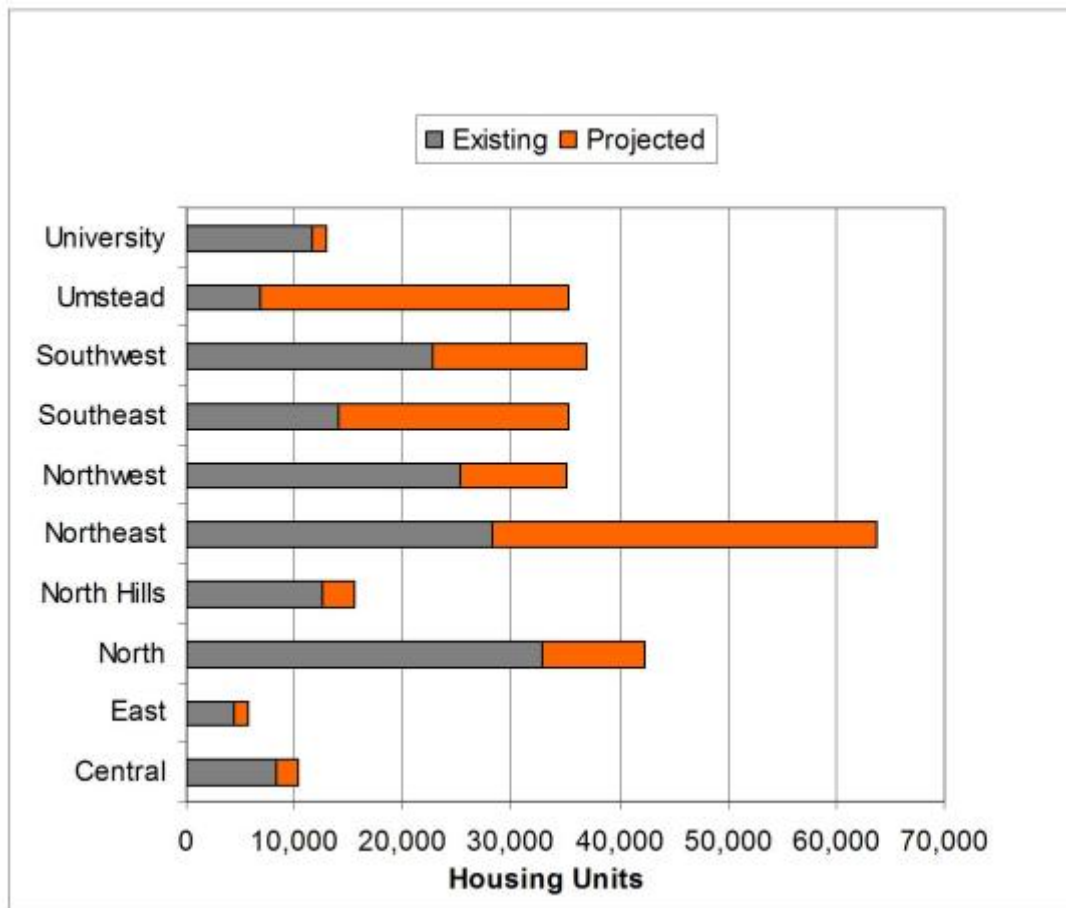


Map 3.11 Land Capacity Analysis



The majority of developable land (58 percent) is currently zoned for low density residential use (10,780 acres), 793 acres are zoned for office and institutional uses, and 4,548 acres (24 percent) could accommodate commercial uses.

**Figure 3.4 Existing and Projected Dwelling Units by Planning District**



Based on recent nonresidential intensity trends and assumptions that future densities will replicate maximum zoning allowances, these 20,700 acres of developable land could potentially yield 85 million square feet of nonresidential development (institution / office / retail / warehouse and distribution) and 100,000 dwelling units. Table 3.6 shows the acreage and development potential for vacant and developable lands within Raleigh's jurisdiction.

**Table 3.6: Land Capacity Estimates by Zoning District**

Zone*	Total Area (acres)	Projected Square Feet Non-Residential	Projected Dwelling Units
CM	410	0	0
AP	455	0	227
RR	1,382	0	1,036



Zone*	Total Area (acres)	Projected Square Feet Non-Residential	Projected Dwelling Units
R-2	529	0	794
R-4	6,907	0	20,720
SP R-6	35	0	175
R-6	2,167	0	10,834
R-10	723	0	7,234
R-15	393	0	5,889
R-20	73	0	1,465
SP R-30	2	0	54
R-30	1	0	30
MH	269	0	1,616
RB	8	53,489	41
O&I-1	482	7,872,192	4,819
O&I-2	274	5,964,332	3,765
O&I-3	38	550,092	0
BC	7	47,334	36
SC	500	3,269,269	5,629
NB	172	1,124,109	860
BUS	11	1,203,760	304
TD	1,941	12,679,549	29,108
IND-1	1,600	20,907,761	0
IND-2	317	6,400,084	605
<b>Totals:</b>	<b>18,697</b>	<b>60,071,971</b>	<b>95,243</b>

Source: Raleigh Department of City Planning, Raleigh GIS Division, 2008

(\* For purpose of this analysis, general and conditional use districts have been treated the same, and are aggregated together in this table for simplicity.)

Based on developable land and existing zoning, the new projected housing units would not be evenly distributed; rather, they would mostly end up in the Northeast, Southeast and Umstead planning districts, further exacerbating the size discrepancy between districts.

Based on an absorption rate of 1,000 acres of land for development each year, a conservative estimate, all of the developable 20,700 acres currently within the City's planning and development area will have been developed in about 20 years. Alternately, based on a straight line projection of recent absorption trends of 5,500 units and 4.4 million square feet of non-residential floor space per year, it may also take about 20 years

for this amount of residential and non-residential development to be absorbed. Either way, there appear to be about two decades worth of growth left in the City's ETJ. However, this does not account for potential changes (increases) in zoning or for infill development within the older portions of the city.

This projection of development potential in dwelling units would correspond to an increase in population of about 220,000 persons, bringing the City's population to about 590,000 in the next 20 years. This corresponds to the CAMPO long-term population estimate presented in Chapter 2, except the CAMPO estimate also includes land area within the City's urban services areas, where another 20,000 acres of developable land is located. The CAMPO estimate may therefore be conservative, as there is no land constraint on the City greatly exceeding this population figure in the future.

### Implications for the Comprehensive Plan

- There is about 20 years of development capacity left within Raleigh's planning jurisdiction, looking only at greenfield development and assuming that current absorption rates continue.
- The land capacity analysis assumes current zoning. However, land is rezoned every year, usually in a manner that increases development yield. The land capacity analysis provides a mechanism for estimating the cumulative impact of these rezonings on the development capacity of the City.
- Incorporating a future land use map into the Comprehensive Plan would provide a stronger basis for projecting future population, residential and commercial development potentials within the City's jurisdiction and out into the Urban Services Areas.
- There is sufficient land capacity within Raleigh's jurisdiction for the City's population to match by 2030 the CAMPO projections of a little less than 600,000 by 2035. If the full ETJ plus urban services area is factored in, as it is in the CAMPO forecast, Raleigh's population could greatly exceed this number, assuming continued exponential growth and no policy intervention.

## 3.6 Annexation Trends

Raleigh's 2007 city limits include 89,550 acres of land representing a dramatic expansion from the original 400 acres established with the founding of Raleigh in 1792. The majority of growth occurred over the last 56 years of Raleigh's 215 years as a city with the addition of over 82,000 acres since 1951. Table 3.7 documents the historical growth of the City through annexation, and Map 3.11 illustrates this growth.

**Table 3.7: Annexation Growth**

Year	Acres in City Limits	Acres added
1792	400	—
1857	1,124	724
1907	2,577	1,453
1920	4,455	1,878
1941	6,940	2,485
1951	6,974	34
1960	21,548	14,574
1970	28,755	7,207





Year	Acres in City Limits	Acres added
1980	35,305	6,550
1990	58,493	23,188
2000	75,972	17,479
2007	89,550	13,578

Source: City of Raleigh

Over 75 percent of Raleigh's growth in land area has occurred since 1960. In the 30 years between 1960 and 1990 Raleigh grew by 36,945 acres, which represents 41 percent of Raleigh's current acres. Much of the predominant northward growth pattern in this period was influenced by major infrastructure completions including the northern Beltline and several major water and sewer extensions. In the 17 years since 1990, Raleigh has grown by another 31,057 acres which represents 35 percent of Raleigh's current land area. Major water and sewer extensions have continued to influence pattern of growth as well as completion of southern Beltline and sections of I-540 to the northeast.

**Table 3.8: Future Raleigh City Limits Growth Potential**

	Acres
Current City Limits	89,994
Potential ETJ Annexation Growth Area	24,057
Potential USA Annexation Growth Area	18,934
Total Future Annexation Potential	42,991
Total Potential City Limits	132,985

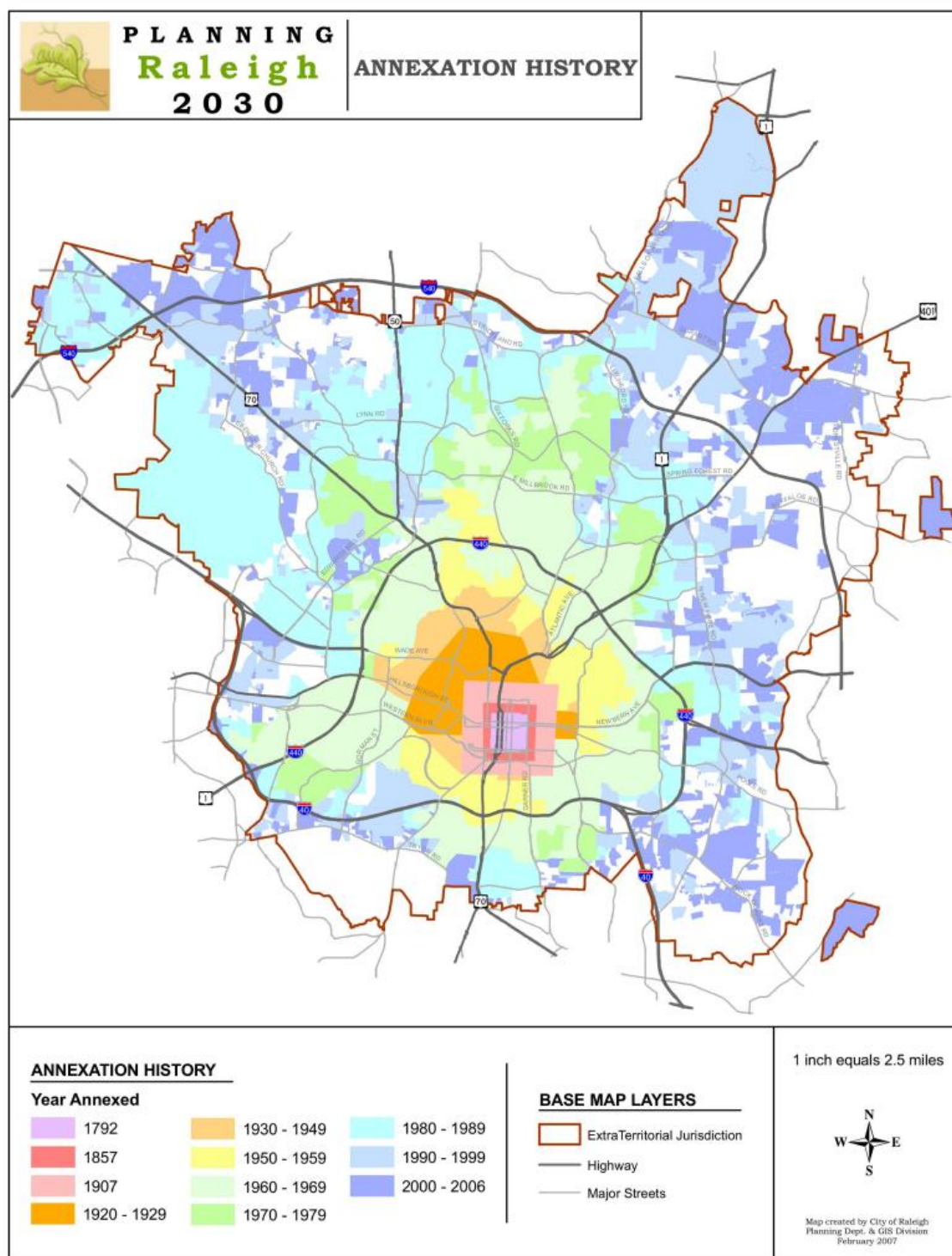
Source: City of Raleigh

Within Raleigh's ETJ and USAs, there are an additional 42,991 acres that have potential to be annexed by Raleigh as urban intensities of development occur. Since 1990 approximately 31,501 acres have been annexed, which averages over 1,900 acres per year. If this trend were to continue, then it would take approximately 22 years to absorb the remaining 42,991 acres within the City limits. If annexation continues as in past then land supply for new Raleigh growth areas will become constrained over next two decades. With these ultimate limits considered, urban growth may need to be channeled to specific areas and infill growth may need to be encouraged to preserve open spaces throughout Raleigh's existing and future jurisdictional area.

### Implications for the Comprehensive Plan

- The land capacity analysis shows 20 years worth of growth within the existing ETJ, yet annexation rates could spread the ETJ out to the maximum limits of the USAs over a similar time period. The City may wish to consider policies limiting annexation outside of the current ETJ until such time as land availability within the ETJ becomes an issue, so as to provide for more compact and orderly growth and to better phase land development with infrastructure, public services, and facilities.

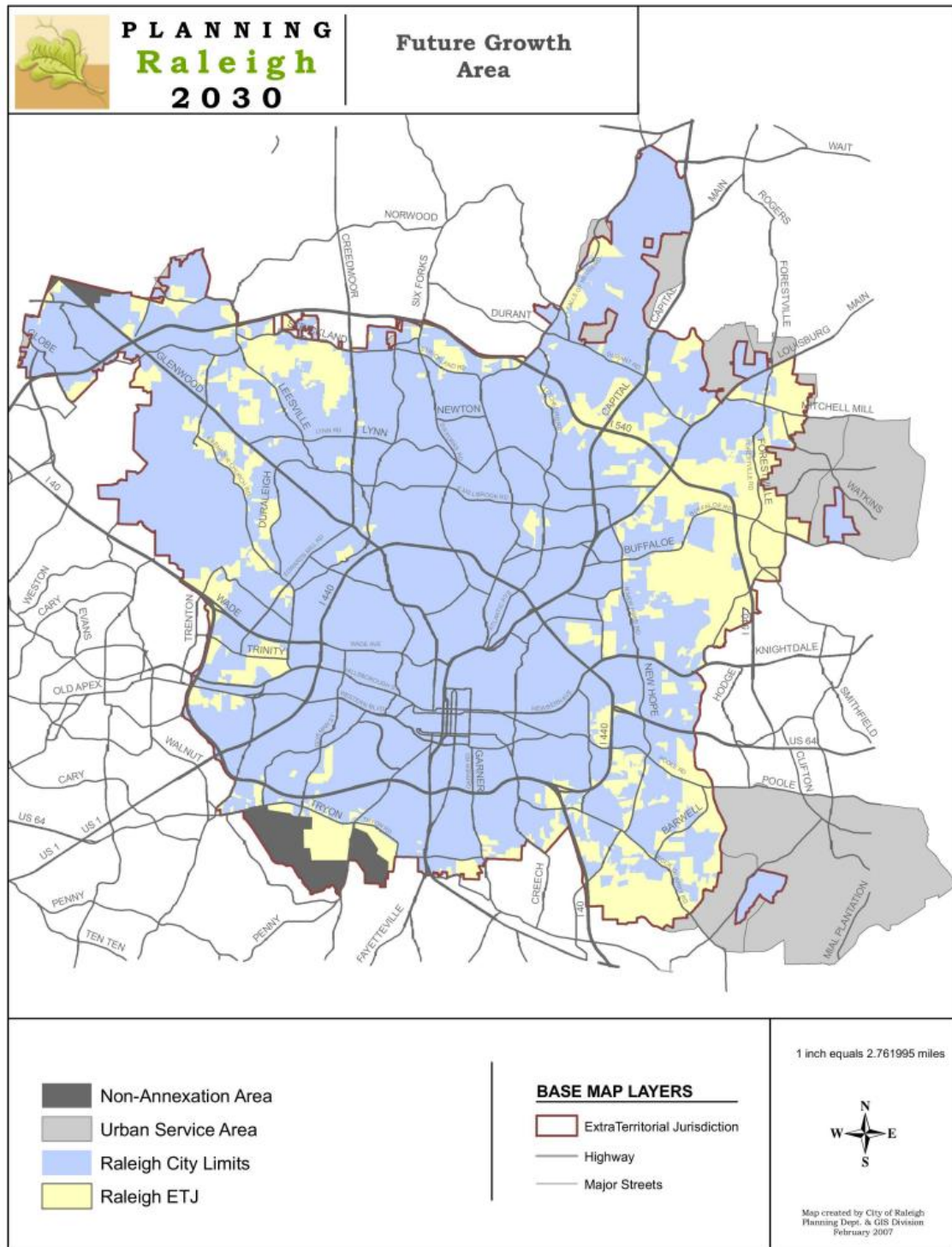
### Map 3.12 Annexation History







Map 3.13 Future Growth Areas



### 3.7 Current Planning Initiatives

#### Downtown Revitalization

Downtown Raleigh is currently in the fifth year of the implementation of the Livable Streets Plan, a strategic plan adopted in 2002 which was intended to spur the revitalization of the downtown area. While it contained over 131 recommendations, the centerpiece of the plan was five major milestones to be accomplished in five years (the “Five in Five” strategy). All five are either implemented or substantially on the way to completion. They are:

- Reopen Fayetteville Street: This was accomplished in 2006 and marked with a street-opening festival that drew 75,000 people to downtown.
- New Convention Center & hotel: The old convention center has been demolished and the new center and hotel, located one block west, will open in August of 2008. Already, bookings exceed projections by a significant margin.
- Improve the pedestrian realm: This has been fully implemented on Fayetteville Street, and improvements are underway elsewhere in the downtown. A key milestone was the conversion of Martin and Hargett Streets to two-way traffic.
- Reform regulations: A new Downtown Overlay District consolidated regulations for high-density residential and mixed-use projects throughout the downtown area. Recently adopted reforms to downtown parking regulations will facilitate new retail and entertainment uses, as well as small scale residential projects in mixed-use buildings.
- Expand downtown management: The downtown is now located in a special assessment district and managed by the Downtown Raleigh Alliance (DRA).

The legacy of the Livable Streets Plan has been to spur over \$2 billion in public and private investments, representing the largest building boom in the downtown since before the Great Depression.

Development in downtown is also governed by the Downtown Urban Design Guidelines and a Downtown Small Area Plan. Both of these are currently held to offer inadequate and out-of-date guidance for development plan review and capital project programming, and are in immediate need of replacement with new standards and policies.

#### Pending/Adopted Comprehensive Plan Amendments over Two Years

Comprehensive Plan amendments are generated through newly prepared district or small area plans (noted below as Strategic Plan) initiated by City Council and/or recommended by Planning staff. In the past the majority of amendments have occurred as a result of zoning requests that initiated a change in land use or an Urban Form designation—of the 41 adopted amendments presented in Table 3.8, 22 are connected with rezoning petitions. The potential for these changes were advertised with the public hearing associated with the zoning case and resulting action was included in the Annual Update. Since the change in state enabling legislation requiring consideration of Comprehensive Plan consistency, plan amendments must be petitioned prior to the zoning change.



**Table 3.8: Comprehensive Plan Amendment History**

Case #	Case Generation	Plan District	Amendment	Council Action
CP-1-05	Z-5-05	SE	Amend Cross Link Road SAP to extend Mixed Use designation across Garner Rd. at the intersection of Cross Link Rd & Garner Rd	<b>Denied</b> 7/5/2005
CP-2-05	Z-10-05	N	Atlantic-Litchford Corridor Plan - Change medium density residential to Commercial and Office & Institutional uses.	<b>Denied</b> 5/3/05
CP-3-05	Z-51-04	NW	CrabtreeValley SAP - Extend retail boundary to include site and change land use designation to mixed use for the site in Area 2	12/21/2004
CP-4-05	Z-20-04	NE	Wake Crossroads SAP & Neuse East SAP - Designate Village Center Core and Transition Area on east side of Forestville Road	2/15/2005
CP-5-05	Z-15-05	SE	Either reduce the size of the Employment Area adjacent to Auburn Church Rd on the Urban Form Map, or modify Employment Area policy to allow Residential Uses	<b>Denied</b> 9/6/2005
CP-6-05	Strategic	SE	Change the western alignment of Mayview Road (a minor thoroughfare) to continue as is, without the realignment to connect with Centennial Parkway.	Approved
CP-7-05	Strategic Plan	N	NeuseRiver - Richland Creek Watershed Plan	4/19/2005
CP-8-05	Streetscape Plan	U	Amend Peace Streetscape & Parking Plan regarding street tree placement between curb and sidewalk.	3/15/2005
CP-9-05	Z-31-05		Modify the Mixed Use designation to allow for retail development	
CP-10-05	Z-20-05	SW	Change to Arena SAP, from "mixed use residential" to "mixed uses"	Denied 9/6/2005
CP-11-05	Z-25-05	NH	Change to Wake Forest Road SAP moving the PBL slightly to put this property on the higher intensity side of the line.	6/7/2005
CP-12-05	Strategic	NE	Buffaloe Road collector street revision at the intersection with future Spring Forest Road extension	6/7/2005
CP-13-05	Z-2-05	Univ	PBL east of Oberlin and south of Fairview to enclose the residential retail area	3/1/2005

Case #	Case Generation	Plan District	Amendment	Council Action
CP-14-05		N	Update map of southern portion of Creedmoor Road Corridor Plan: Millbrook/Creedmoor focus, NE quadrant, move PBL to reflect O&I zoning in that quadrant	
CP-15-05			See CP-18-05	
CP-16-05	Z-51-05	SW	Change to Gorman-Burt neighborhood plan to expand retail area per this rezoning request.	1/17/2006
CP-17-05	Z-54-05, MP-2-05	SW	Forty Wade Master Plan found to be consistent with Arena SAP	5/16/2006
CP-18-05	S-11-05	N	Wellsley Way Collector Modification in Collinwood S/D	10/4/2005
CP-19-05	Strategic	NE	Southall/Perry Creek Corridor realignment	4/4/2006
CP-20-05	Z-55-05	N	Lynn-SixForkNeighborhoodCenter Plan	11/15/2005
CP-21-05	Z-56-05	N	Six Forks/Strickland Small Area Plan	<b>Denied</b> 2/7/2006
CP-22-05	Z-57-05	N	Revise Atlantic Av. Corridor Plan text and map #4 and 5 to recommend Mixed Use - residential, office & retail for site.	2/7/2006
CP-23-05	Z-58-05	NE	Case found to be consistent	11/1/2005
CP-24-05	Strategic Plan	N	Sumner Blvd realignment and collector street removal in northwest quadrant of NERC	12/6/2005
CP-26-05	Z-76-05	NE	Changes to the conditions for Sumner Blvd properties within TriangleTownCenter. Would require changes to the NERC Plan	<b>Withdrawn</b>
CP-27-05	Z-70-05	N	Allow retail to a second quadrant of a residential community focus area at the intersection of Creedmoor road	<b>Denied</b> 7/25/2006
CP-1-06	Strategic Plan	SW	Update of the Southwest District Plan	4/17/2007
CP-2-06	Petition	NE	US-64 Corridor Plan - Wilders Grove PDD, Industrial to retail	5/2/2006
CP-3-06	Z-62-05	Univ	Amendment to Wade/Oberlin SAP along Clark Avenue	8/8/2006
CP-4-06	Z-72-05	NE	Extend PBL to include site in retail area and designate res/office on adjacent properties. Revise Pinecrest Point SAP text to increase maximum focus area retail to 42 acres and 280,000 sf.	3/21/2006



Case #	Case Generation	Plan District	Amendment	Council Action
CP-5-06	Petition	NW	Add Reedy Creek Road Greenway from Blue Ridge Road to UmsteadState Park and Trenton Road.	8/8/2006
CP-6-06	Strategic Plan	N	Falls of Neuse Corridor Plan	11/21/2006
CP-7-06	Z-60-06	N	Extend PBL east along Lynn Rd adjacent to Six Forks intersection	12/5/2006
CP-8-06	Z-16-06	NH	Wake Forest Road SAP: Amend PBL and land use policies as reflected in MP-6-05 for North Hills East.	9/19/2006
CP-9-06	Systems Plan	citywide	LakePreservation Policy in Stormwater Management Plan	1/23/2007
CP-10-06	Annual Update		Residential density...	12/5/2006
CP-11-06	Strategic Plan	SE	Olde East Raleigh Small Area Plan	9/18/2007
SSP-1-06	Z-29-06, MP-1-06	C	Amendments to the Oakwood Mordecai Streetscape Plan for building height and tree planter size on SW corner of Peace/Person	9/19/2006
CP-1-07	Strategic Plan	C	SouthPark Neighborhood Plan Update	5/15/2007
CP-2-07	Strategic Plan	N	US-1 Collector Street	9/18/2007
CP-3-07	Petition	U	US-70 Collector Streets - Angus Barn area	pending

### Implications for the Comprehensive Plan

- Comprehensive Plan amendments should be reviewed annually to ensure consistency; all amendments and their potential implications should be reviewed at one time, rather than on a case by case basis in conjunction with individual petitions.

## 3.8 Regulatory Challenges

Raleigh's zoning and development regulatory codes are reflected by the predominant land use and development pattern described in the previous text. That pattern is primarily suburban in character with a separation of land uses oriented to vehicular access. There have been extensive efforts in modifying the zoning code over the last 20 years through the use of overlay zoning districts that allow the base land uses to remain unchanged while modifying the development standards relating to urban design. Modifications typically address building setbacks, building height, parking quantity and location, and streetscape design, all within an urban setting. The overlay districts also address appearance issues and transition through landscape buffers along specific thoroughfares and limit specific land uses in close proximity of airports, natural resource areas and in drinking water supply basins.



Often existing and newly adopted city and state regulations clash with the objectives established in the Comprehensive Plan to encourage mixed-use pedestrian oriented development that will support multiple modes of travel. Though these ordinances are intended to address specific issues they also create conflicts as noted below:

- Landscape ordinance transitional buffer yards support the separation of land uses and transition through landscaping rather than design. Outside of PDDs and large scale developments, they effectively lead to use separation and make it difficult to create more urban developments outside of a complex Planned Development District process.
- The tree conservation ordinance conflicts with urban development patterns. While the goal of tree preservation is worthwhile and very applicable to greenfield development, it is more problematic in urban infill situations where one or two specimen trees may significantly encumber an urban site and undermine the ability to create a streetwall.
- The Neuse River Stormwater Regulations (protection of stream corridors) discourage connectivity by disallowing stream crossings. The result is an a lower level of connectivity within subdivisions containing protected stream corridors.
- Parking standards often require more parking than typically needed with no maximum established. Minimum parking standards will be reviewed as part of a separate study in 2008, and parking maximums will be explored as a means of encouraging efficient site design and lower levels of impervious surface.
- State prohibition on “regional” stormwater facilities means that while large greenfield developments can provide shared stormwater facilities for multiple residences and uses, urban developments on small lots are expected to address stormwater on site, raising development costs, and prohibiting certain best practices.

### 3.9 Conclusion: Key Issues and Potential Strategies

#### Key Issues

##### Key Issue 3.1

Raleigh’s zoning allocation does not match actual land use patterns, as most zoning districts are very expansive in terms of permitted uses. Industrial districts permit virtually any type of non-residential use. Office districts permit high-density multi-family. The result is a lack of predictability in terms of what sort of development will be produced by the zoning pattern. The City may wish to consider modifying its zoning scheme to better match zoning district standards with the table of permitted uses.

##### Key Issue 3.2

Outside of small area plans, Raleigh’s current Comprehensive Plan has no land use plan or future land use map to guide the drawing of zoning districts. The Plan relies instead on an Urban Form map. As a result, some rezoning petitions must be evaluated without any policy guidance as to one of the key considerations of zoning, i.e., land use.





### **Key Issue 3.3**

While the current Comprehensive Plan promotes more urban, mixed-use development types built up to the property line, there are no base zoning districts that permit such development as a matter of right. Most such developments have gone through a long and complicated Planned Development District (PDD) process in order to gain approval. Overlay districts can help, but provide a limited menu of options and complicate the rezoning process. Zoning standards need to be brought into better alignment with City policies.

### **Key Issue 3.4**

The Land Capacity Analysis shows that developable land will not be a constraint on growth within the 2030 time horizon of the Comprehensive Plan, and that substantial greenfield development is possible over this period. Managing how and where development occurs at the city's edge, as well as within built up areas, should be addressed in the Comprehensive Plan with the goal of conserving and providing desirable places to live and work.

### **Key Issue 3.5**

The rise of conditional use zoning has strengthened the role of the Comprehensive Plan, as conditions are often added (addressing permitted uses, building height and bulk, and other attributes) as a way of bringing a rezoning proposal into consistency with the Plan. The future plan should continue to provide appropriate policy guidance with regards to the zoning conditions applied to conditional use cases.

### **Key Issue 3.6**

Current policies have helped avoid strip development along major thoroughfares, such as Creedmoor Road, Falls of the Neuse Road, and Six Forks road; while other highways, such as U.S. 70, Capital Boulevard, and New Bern Avenue, are fully “stripped out” with low-intensity retail and service uses. As these corridors inevitably redevelop, policy guidance is needed to create a more nodal land use pattern better adapted to access management, transit, and walkability.

## **Potential Strategies**

### **Potential Strategy 3.1**

Revising the table of permitted uses to move away from the pyramid structure of the current ordinance.

### **Potential Strategy 3.2**

More specifically, prohibiting retail uses in industrial zones, while rezoning industrial areas where retail is the primary use to a more appropriate zoning classification.

### **Potential Strategy 3.3**

Revising current standards, or creating new districts, to bring zoning standards into conformance with Comprehensive Plan policies promoting mixed-use, walkable development forms.

### **Potential Strategy 3.4**

Using zoning as a tool to promote the centered redevelopment of “stripped-out” and underperforming highway corridors such as Capital Boulevard and New Bern Avenue.

### **Potential Strategy 3.5**

Providing a greater level of land use guidance in the Comprehensive Plan, such as a land use plan and future land use map. Such will facilitate consistency determinations when reviewing rezoning petitions, inform the conditional use rezoning process, form the basis for any new zoning districts to be proposed, and provide guidance for any City-initiated rezonings which may be contemplated.

### **Potential Strategy 3.6**

Limiting annexation and infrastructure extension beyond the City’s ETJ (so-called satellite annexations) until the existing ETJ gets closer to urban build-out.

### **Potential Strategy 3.7**

Discouraging higher-density zoning at the urban fringe while significant infill opportunities still exist, unless such re-zonings promote mixed-use, walkable centers in growth areas.

### **Potential Strategy 3.8**

Being strategic with regards to conservation policies including public acquisition of environmentally important, undeveloped lands.



### **Potential Strategy 3.9**

Implementing conservation-oriented cluster development standards to preserve greater amount of open space in rapidly urbanizing areas on the urban fringe.

### **Potential Strategy 3.10**

Limiting Comprehensive Plan amendments to one a year, and eliminating the ability to amend the Plan as part of a rezoning petition.



## Economic Development & Employment Trends



## 4 Economic Development & Employment Trends

### 4.1 Regional Picture

One of the nation's most rapidly growing regions, the Research Triangle region is benefiting from its long-time investment in major educational institutions and the Research Triangle Park. The expanding base of technology industries continues to generate new jobs and to attract skilled workers to fill them. The area's highly touted quality of life provides regional employers with a competitive advantage for attracting and retaining qualified workers. Protecting that quality of life into the future is critical to the region's ability to continue flourishing.

The Triangle's component jurisdictions—Raleigh, Durham, and Chapel Hill—are increasingly connected as employees cross-commute, new businesses develop to serve companies throughout the region, and existing industry spins off new businesses. With the region as a whole, Raleigh's economy has shifted to one that is more technology-based and less reliant on government and manufacturing.

### 4.2 Employment and Industry Trends

Wake County has shared in the region's economic health with steady job growth, recovering from the 2001 dot-com recession. The county's economic base is changing, however, as technology, retail and service jobs more than replace jobs lost in manufacturing and agriculture. From 1998 to 2006, Wake County's job base grew by more than 71,000 jobs to almost 424,000 jobs in 2006. Key economic sectors include government, educational services, professional and technical services, information and health care. Within Raleigh, the state government, North Carolina State University and other educational institutions, and major health care centers provide significant job opportunities. Job growth projections point to a major expansion of jobs in the City by 2025 with even faster growth in the balance of the county. University research and technical expertise could support even greater business development in emerging technology. This section evaluates employment trends for the county and identifies key economic sectors and major employers.

#### Wake County Employment Growth

From 1998 to 2006, Wake County's total employed labor force grew approximately 2.3 percent annually. Among the fastest growing major industries—education, health and social services; arts/entertainment, accommodations/food services; and construction—experienced average annual growth rates of 4.6 percent, 3.7 percent and 3.0 percent, respectively (see Table 4.1). Growth in these sectors is attributable to the large number of hospitals and schools producing cutting-edge research in medicine and technology, the recovery of the hospitality market, and the recent boom in new housing and retail development. Major industries with the largest share of county employment include professional, scientific, management and administrative (18.6 percent), education, health and social services (18.3 percent) and trade, transportation and warehousing (18.9 percent). These percentages reflect a highly educated workforce skilled in company management and trained professions and consistent growth in retailing since 2000. These figures also show the diversity of the county's economy.

The greatest losses in employment occurred in the manufacturing and agricultural/mining industries, losing an average 2.2 percent and 1.6 percent annually, respectively. Similar to other areas, North Carolina suffered a statewide decline in the manufacturing sector throughout the 1990s due to significant technological and automation advances making some operations obsolete and companies opting for less expensive offshore manufacturing operations. Table 4.2 shows the employment by year from 1998 to 2004.

Table 4.3 shows the downward trend manufacturing subsectors for Wake County. More than half of the subsectors had declining employment or remained flat since 2000. Manufacturing jobs fell from 7.3 percent of total Wake County jobs in 1998 to only 5.1 percent in 2006 with a loss of 4,166 jobs. Not surprisingly, production related to home décor and building materials have seen the most growth since 2000, reflective of the booming residential and commercial real estate markets.

### Implications for the Comprehensive Plan

- Wake County continues to experience strong economic growth in a variety of industries. The region is recognized as an economic powerhouse for biotech innovations, medical breakthroughs, technological advancements, state-of-the-art educational institutions and advanced research – a pivotal factor in its economic longevity. Continued cultivation of growing industries, particularly information, biosciences and other technologies, will foster continued economic prosperity for Raleigh and the region.
- The dwindling number of manufacturing jobs emphasizes the importance of education and training for residents to allow them to move into the stable, well-paying jobs of the future.

**Table 4.1: Wake County Annual Average Employment by Industry, 1998 to 2006 (condensed)**

Industry	1998	Percent of Total	2006	Percent of Total	Annual Change 1998 to 2006
<b>Agricultural, Forestry, Fishing, &amp; Mining</b>	<b>1,531</b>	<b>0.4%</b>	<b>1,343</b>	<b>0.3%</b>	<b>-1.6%</b>
Agricultural, Forestry, Fishing, and Hunting	771	0.2%	795	0.2%	0.4%
Mining	760	0.2%	548	0.1%	-4.0%
<b>Utilities</b>	<b>*</b>	<b>n/a</b>	<b>1,509</b>	<b>0.4%</b>	<b>n/a</b>
<b>Construction</b>	<b>24,928</b>	<b>7.1%</b>	<b>31,559</b>	<b>7.4%</b>	<b>3.0%</b>
<b>Manufacturing</b>	<b>25,884</b>	<b>7.3%</b>	<b>21,718</b>	<b>5.1%</b>	<b>-2.2%</b>
<b>Trade, Transportation, &amp; Warehousing</b>	<b>73,611</b>	<b>17.0%</b>	<b>80,151</b>	<b>16.1%</b>	<b>1.1%</b>
Wholesale Trade	18,029	5.1%	19,050	4.5%	0.7%
Retail Trade	41,962	11.9%	49,343	11.6%	2.0%
Transportation and Warehousing	13,620	3.9%	11,758	2.8%	-1.8%
<b>Information</b>	<b>13,648</b>	<b>3.9%</b>	<b>16,630</b>	<b>3.9%</b>	<b>2.5%</b>
<b>FIRE</b>	<b>19,117</b>	<b>5.4%</b>	<b>23,362</b>	<b>5.5%</b>	<b>2.5%</b>
Finance and Insurance	13,304	3.8%	15,268	3.6%	1.7%





Industry	1998	Percent of Total	2006	Percent of Total	Annual Change 1998 to 2006
Real Estate and Rental and Leasing	5,813	1.6%	8,094	1.9%	4.2%
<b>Professional, Scientific, Management, Administration</b>	<b>68,877</b>	<b>19.5%</b>	<b>78,538</b>	<b>18.5%</b>	<b>1.7%</b>
Professional and Technical Services	24,415	6.9%	35,248	8.3%	4.7%
Management of Companies and Enterprises	5,000	1.4%	10,656	2.5%	9.9%
Administrative and Waste Services	39,462	11.2%	32,634	7.7%	-2.3%
<b>Education, Health &amp; Social Services</b>	<b>54,100</b>	<b>15.3%</b>	<b>77,733</b>	<b>18.3%</b>	<b>4.6%</b>
Educational Services	26,112	7.4%	36,251	8.6%	4.2%
Health Care and Social Services	27,988	7.9%	41,482	9.8%	5.0%
<b>Arts/Entertainment, Recreation, Accommodation/Food Services</b>	<b>29,968</b>	<b>8.5%</b>	<b>40,049</b>	<b>9.4%</b>	<b>3.7%</b>
Arts, Entertainment, and Recreation	4,565	1.3%	6,294	1.5%	4.1%
Accommodation and Food Services	25,403	7.2%	33,755	8.0%	3.6%
<b>Other Services, excluding Public Administration</b>	<b>11,182</b>	<b>3.2%</b>	<b>14,049</b>	<b>3.3%</b>	<b>2.9%</b>
<b>Public Administration</b>	<b>29,617</b>	<b>8.4%</b>	<b>37,221</b>	<b>8.8%</b>	<b>2.9%</b>
<b>Total</b>	<b>352,463</b>	<b>100.0%</b>	<b>423,862</b>	<b>100.0%</b>	<b>2.3%</b>

Source: Employment Security Commission of North Carolina, Labor Market Information Division; Bay Area Economics, 2007.

**Table 4.2: Wake County Annual Average Employment by Industry, 1998 to 2006**

Industry	1998	1999	2000	2001	2002	2003	2004	2005	2006
<b>Agricultural, Forestry, Fishing, &amp; Mining</b>	<b>1,531</b>	<b>1,658</b>	<b>1,724</b>	<b>1,722</b>	<b>2,221</b>	<b>1,909</b>	<b>1,310</b>	<b>1,011</b>	<b>1,343</b>
Agricultural, Forestry, Fishing, and Hunting	771	781	840	838	1,278	1,212	1,069	796	795
Mining	760	877	884	884	943	697	241	215	548
<b>Utilities</b>	<b>*</b>	<b>*</b>	<b>*</b>	<b>1,646</b>	<b>1,774</b>	<b>1,751</b>	<b>*</b>	<b>*</b>	<b>1,509</b>

Industry	1998	1999	2000	2001	2002	2003	2004	2005	2006
<b>Construction</b>	<b>24,928</b>	<b>27,098</b>	<b>27,780</b>	<b>29,031</b>	<b>27,702</b>	<b>26,721</b>	<b>28,298</b>	<b>29,625</b>	<b>31,559</b>
<b>Manufacturing</b>	<b>25,884</b>	<b>27,410</b>	<b>28,258</b>	<b>27,018</b>	<b>24,029</b>	<b>22,220</b>	<b>21,499</b>	<b>21,480</b>	<b>21,718</b>
<b>Trade, Transportation, &amp; Warehousing</b>	<b>73,611</b>	<b>77,621</b>	<b>79,773</b>	<b>78,388</b>	<b>74,646</b>	<b>74,493</b>	<b>76,828</b>	<b>78,564</b>	<b>80,151</b>
Wholesale Trade	18,029	18,756	18,744	18,193	18,753	18,719	18,561	18,591	19,050
Retail Trade	41,962	44,894	47,133	47,192	45,160	45,483	47,572	48,747	49,343
Transportation and Warehousing	13,620	13,971	13,896	13,003	10,733	10,291	10,695	11,226	11,758
<b>Information</b>	<b>13,648</b>	<b>14,229</b>	<b>18,111</b>	<b>17,733</b>	<b>17,448</b>	<b>17,045</b>	<b>16,595</b>	<b>16,668</b>	<b>16,630</b>
<b>FIRE</b>	<b>19,117</b>	<b>20,235</b>	<b>20,760</b>	<b>20,773</b>	<b>22,348</b>	<b>20,935</b>	<b>22,452</b>	<b>22,171</b>	<b>23,362</b>
Finance and Insurance	13,304	13,681	13,734	13,729	15,557	13,842	14,997	14,277	15,268
Real Estate and Rental and Leasing	5,813	6,554	7,026	7,044	6,791	7,093	7,455	7,894	8,094
<b>Professional, Scientific, Management, Administration</b>	<b>68,877</b>	<b>66,070</b>	<b>70,457</b>	<b>68,196</b>	<b>65,279</b>	<b>66,781</b>	<b>67,191</b>	<b>72,797</b>	<b>78,538</b>
Professional and Technical Services	24,415	28,043	28,917	31,777	30,619	29,709	30,743	32,741	35,248
Management of Companies and Enterprises	5,000	5,175	7,747	6,891	7,154	8,071	8,058	9,646	10,656
Administrative and Waste Services	39,462	32,852	33,793	29,528	27,506	29,001	28,390	30,410	32,634
<b>Education, Health &amp; Social Services</b>	<b>54,100</b>	<b>56,142</b>	<b>56,197</b>	<b>63,564</b>	<b>65,371</b>	<b>67,022</b>	<b>69,657</b>	<b>73,674</b>	<b>77,733</b>
Educational Services	26,112	26,931	26,501	30,468	30,438	31,487	32,665	34,687	36,251
Health Care and Social Services	27,988	29,211	29,696	33,096	34,933	35,535	36,992	38,987	41,482
<b>Arts/Entertainment, Recreation, Accommodation/Food Svcs</b>	<b>29,968</b>	<b>31,772</b>	<b>33,903</b>	<b>35,350</b>	<b>35,809</b>	<b>36,152</b>	<b>35,961</b>	<b>37,370</b>	<b>40,049</b>
Arts, Entertainment, and Recreation	4,565	5,163	5,823	6,187	6,581	6,131	5,766	5,283	6,294
Accommodation and Food Services	25,403	26,609	28,080	29,163	29,228	30,021	30,195	32,087	33,755



Industry	1998	1999	2000	2001	2002	2003	2004	2005	2006
Other Services, excluding Public Admin	11,182	11,299	12,298	12,606	12,226	12,320	12,960	13,094	14,049
Public Administration	29,617	31,587	32,424	32,406	32,667	33,329	35,016	36,373	37,221
Total	352,463	365,121	381,685	388,433	381,520	380,678	387,767	402,827	423,862

Source: Employment Security Commission of North Carolina, Labor Market Information Division; Bay Area Economics, 2007.

**Table 4.3: Wake County Manufacturing Employment by Subsector, 2000 to 2006**

Industry	Wake County Employees							Annual Change '00-'06
	2000	2001	2002	2003	2004	2005	2006	
Food Manufacturing	2,272	2,105	2,078	1,882	1,821	2,017	1,927	-2.7%
Beverage & Tobacco Product Manufacturing	342	317	*	*	*	*	*	n/a
Textile Mills	927	990	762	679	604	460	429	-12.1%
Textile Product Mills	169	*	32	50	52	49	58	-16.3%
Apparel Manufacturing	841	792	747	745	538	557	600	-5.5%
Leather and Allied Product Manufacturing	*	*	60	72	*	*	*	n/a
Wood Product Manufacturing	572	647	666	586	549	676	871	7.3%
Paper Manufacturing	648	611	519	577	547	512	526	-3.4%
Printing and Related Support Activities	1,712	1,580	1,210	1,193	1,465	1,605	1,932	2.0%
Petroleum & Coal Products Manufacturing	*	*	*	*	*	*	*	n/a
Chemical Manufacturing	2,019	2,063	2,072	2,026	1,683	1,593	1,845	-1.5%
Plastics & Rubber Products Manufacturing	1,062	968	1,253	1,148	1,261	1,207	1,157	1.4%
Nonmetallic Mineral Product Mfg	848	1,049	1,006	1,004	1,106	1,076	1,058	3.8%
Primary Metal Manufacturing	*	18	25	*	*	*	*	n/a
Fabricated Metal Product Manufacturing	2,580	2,397	2,177	2,058	2,011	1,824	1,512	-8.5%

Industry	Wake County Employees							Annual Change '00-'06
	2000	2001	2002	2003	2004	2005	2006	
Machinery Manufacturing	872	762	748	828	781	840	849	-0.4%
Computer and Electronic Product Mfg	8,451	7,987	6,159	5,040	4,648	4,796	4,859	-8.8%
Electrical Equipment and Appliances	3,255	3,152	2,899	2,581	2,265	1,875	1,514	-12.0%
Transportation Equipment Manufacturing	394	133	84	57	57	48	65	-25.9%
Furniture and Related Product Mfg	461	490	440	401	421	542	719	7.7%
Miscellaneous Manufacturing	731	690	671	816	1,239	1,312	1,269	9.6%

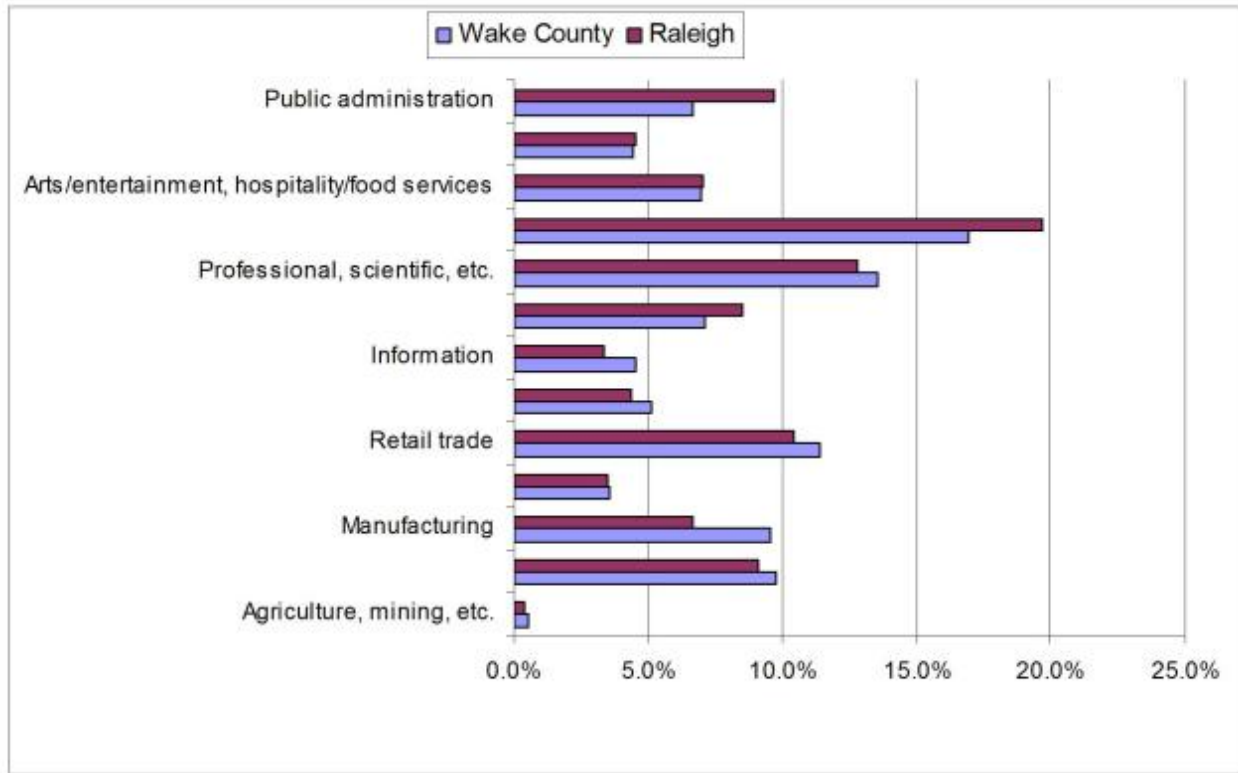
Source: Employment Security Commission of North Carolina, Labor Market Information Division; Bay Area Economics, 2007.

## Jobs within Raleigh

Differing from resident employment, employment by place of work examines the characteristics of the jobs within a specific location. Chart 3.1 compares the percentage of jobs by industry for Raleigh and Wake County. Education, health and social services account for the largest share of jobs for both jurisdictions followed by the professional, scientific, and management sector and retail trade. Raleigh specifically hosts a higher share of educational and medical jobs, government and public sector positions, and jobs in the finance, insurance, and real estate than does Wake County, with other sectors showing comparable percentages overall. These findings reflect Raleigh's clusters of educational institutions, medical facilities, and state and City government offices.



**Figure 4.1 Jobs by Industry, Raleigh and Wake County, 2000**



*Note: Raleigh jobs estimate is based on U.S. Census 2000 jobs by place of work for census tracts including in whole or part in the City of Raleigh.*

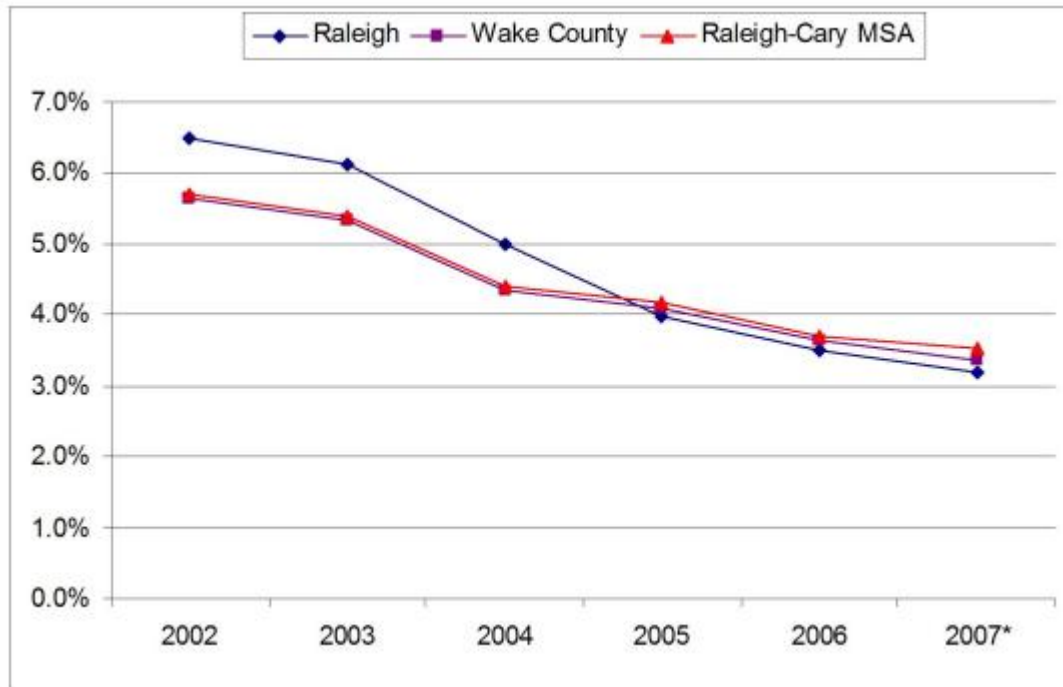
*Source: U.S. Census, 2000; Bay Area Economics, 2007.*

### Implications for the Comprehensive Plan

- Raleigh's stable job generators and status as a capital city contribute to the sustainability of its economic climate and distinguish it from neighboring communities.

### Labor Force and Employment Projections

Raleigh and the Triangle Region continue to experience impressive employment activity compared to other parts of the nation. The region's civilian labor force, which includes all working-age residents employed or looking for work, consists of not only area residents, but also students (new entrants) and in-commuters. Raleigh, Wake County and the Raleigh-Cary Metropolitan Statistical Area (MSA) all enjoyed a steady rise in their civilian labor force and resident employment from 2002 to 2007. This steady activity reflects the strength of the Triangle Region's notable educational, medical, and government employment centers. Chart 4.2 depicts average annual unemployment rates from 2002 to 2007 for Raleigh, Wake County and Raleigh-Cary MSA. Since the dot-com recession in 2001 and economic disruption from the events of September 11<sup>th</sup>, the city, county and region all have shown a gradual return to healthy unemployment rates (below 4.0 percent) by 2007.

**Figure 4.2 Average Annual Unemployment Rates, 2002-2007**

Note: 2007 numbers reflect the month of September only

Source: The Employment Security Commission of North Carolina; Bay Area Economics, 2007

The Capital Area Metropolitan Planning Organization (CAMPO) has issued employment projections through 2035 for the broader Triangle Region. Employment in Raleigh is expected to increase by 65 percent (an average of 2.2 percent annually) and nearly double in Wake County (an average of 3.2 percent annually) by 2035. These figures are consistent with population and household growth for the same time period. Table 4-4 and Chart 4.3 show that Raleigh provides the majority of the Raleigh/Cary metropolitan area's employment, though growth will continue to spread into Cary, smaller towns and unincorporated areas of Wake County as well as neighboring counties.

**Table 4.4: Employment Projections, 2005 to 2035**

Year	2005	2015	2025	2035	Average Annual Growth 2005 to 2035
Raleigh	259,835	322,365	390,244	429,436	2.2%
Cary	71,337	97,870	126,194	142,137	3.3%
Wake Co	433,361	588,429	755,285	850,302	3.2%
Franklin Co	7,242	10,333	13,637	15,604	3.7%
Granville Co	11,381	14,715	17,542	19,272	2.3%
Harnett Co	2,784	4,651	6,175	7,976	6.2%

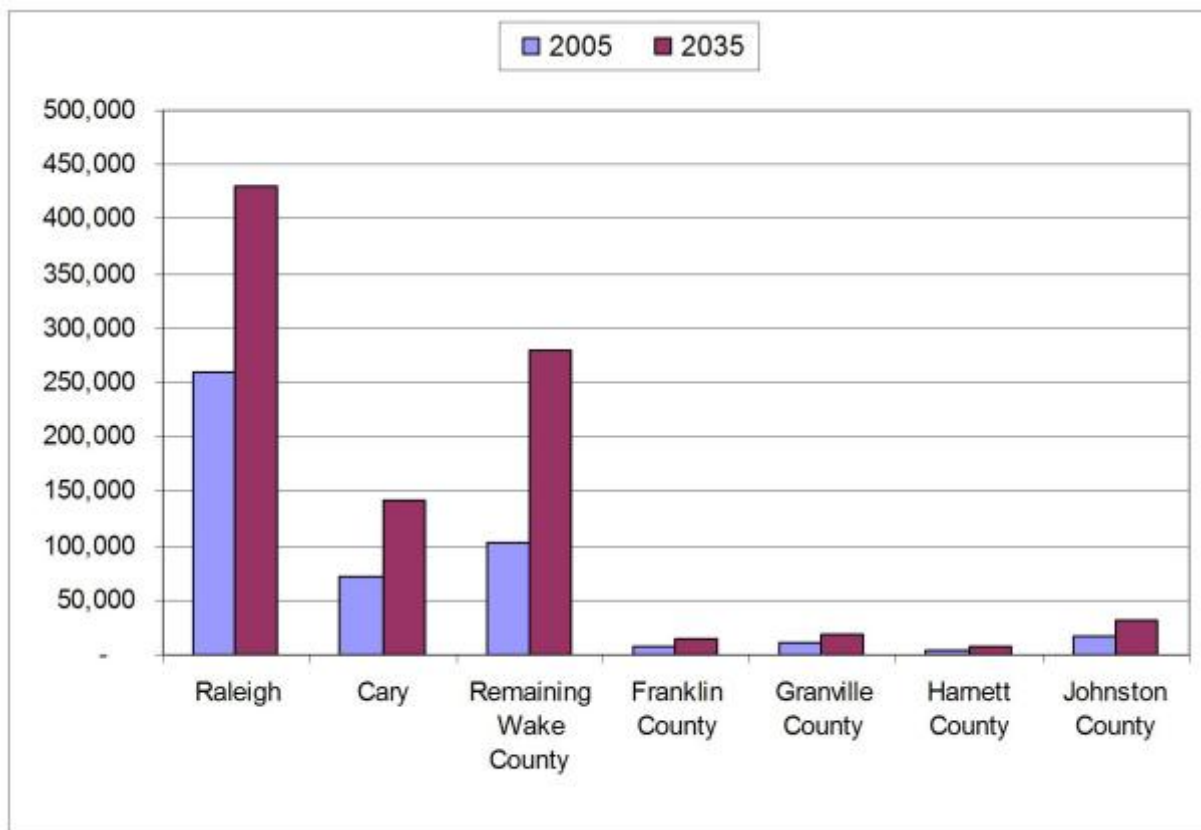




Year	2005	2015	2025	2035	Average Annual Growth 2005 to 2035
Johnston Co	15,877	22,667	27,692	31,193	3.2%
Raleigh/Cary Metropolitan Area	470,645	640,795	820,331	924,347	2.3%

Source: Capital Area Metropolitan Planning Organization; Bay Area Economics, 2007

**Figure 4.3 Raleigh/Cary Metropolitan Area Employment Projections, 2005 to 2035**



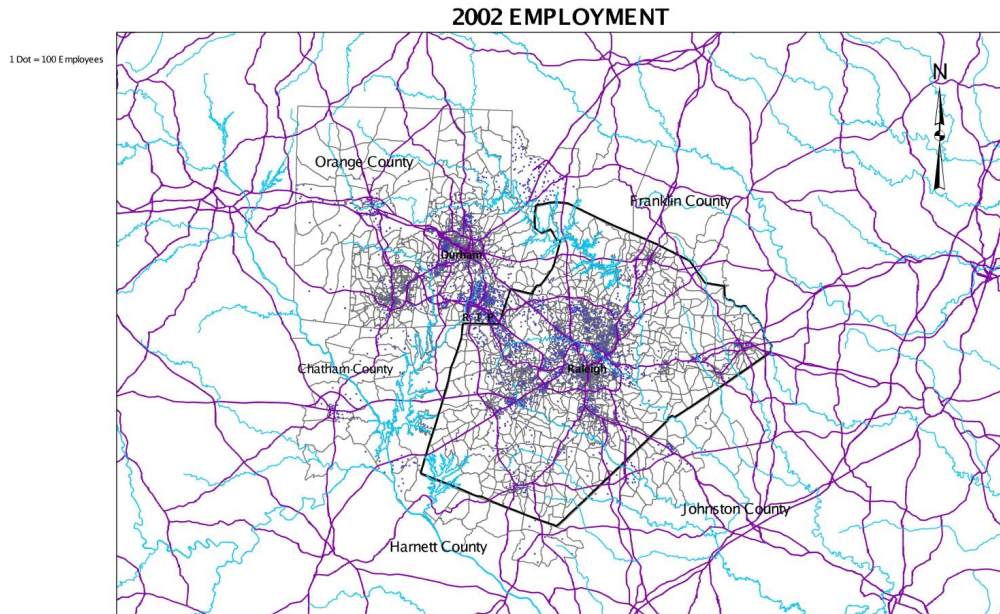
Note: Remaining Wake County excludes Raleigh and Cary.

Source: The Employment Security Commission of North Carolina; Bay Area Economics, 2007

CAMPO has prepared a series of maps that illustrate the geographic distribution of projected employment. (See maps 4.1, 4.2 and 4.3 on the following pages.) According to CAMPO's 2002 Employment Density Map, the densest employment locations are the major activity centers—Raleigh, the Research Triangle Park (RTP) and Durham. For Raleigh specifically, these concentrations stretch outward to the northwest to I-540, to the west along I-40 and to the southwest along U.S. 1. The maps also indicate that much of Raleigh's projected employment growth is to occur in its extraterritorial jurisdictions from 2002 to 2030, particularly along U.S.

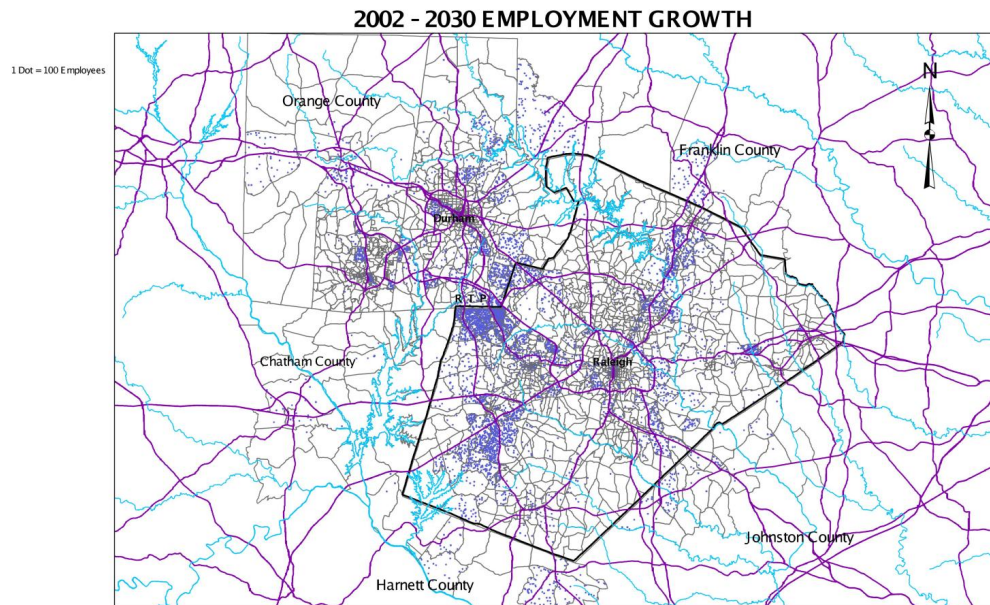
1 north toward Wake Forest and along I-40 and U.S. 70 east toward Gardner. Wake County's employment growth is projected to outpace that of the City with the greatest concentrations outside Raleigh in Morrisville, Cary, Apex, and Garner by 2030.

**Map 4.1 2002 Employment**

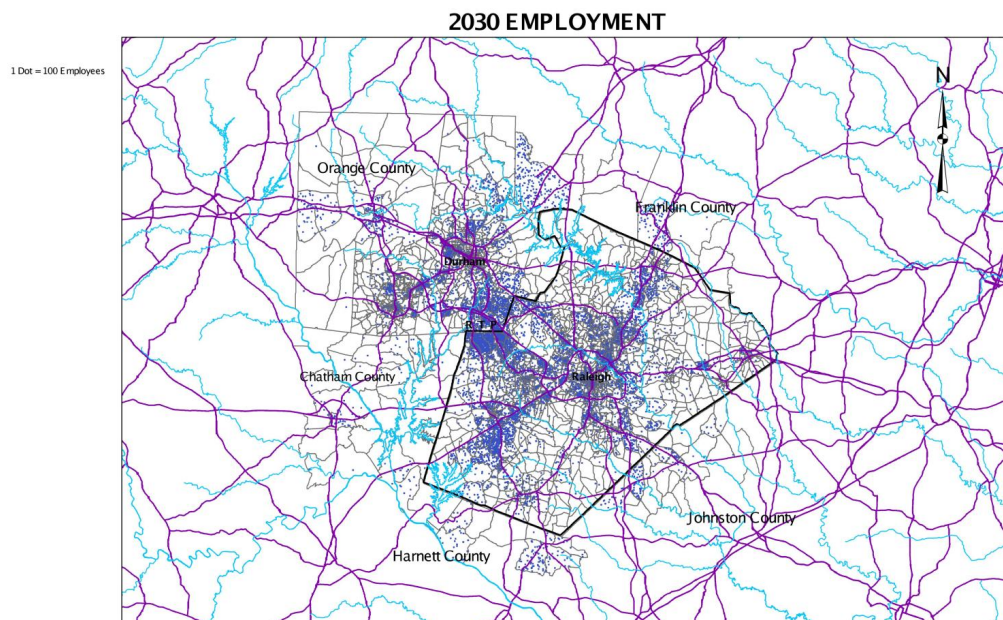




**Map 4.2 2002 - 2030 Employment Growth**



**Map 4.3 2030 Employment**





### Implications for the Comprehensive Plan

- The Comprehensive Plan needs to provide employment areas to accommodate roughly 170,000 new jobs by 2035. Existing centers will need to be intensified and new areas provided. Older, obsolescent shopping centers may create some opportunities for redevelopment as mixed-use centers.
- Competition from Raleigh's surrounding network of smaller, burgeoning communities with ample, lower cost land, along with increasing competition for remaining employment sites, may hinder the City's ability to capture a significant portion of the projected regional commercial and industrial growth over the next 30 years.
- A continuation of the pattern of suburban development dependent on vehicular access will make it difficult to increase the share of the City's trips made by transit, bike or foot.

### Large Employers

Top industry clusters in Wake County include education and health services, public administration, and trade, transportation and utilities. Raleigh hosts the majority of the employees and government facilities affiliated with the City and state. Raleigh also hosts a large share of the county's medical and educational institutions, which tend to have multiple facilities in various locations. Table 4.5 shows the county's largest employers. Nine of the county's 15 top employers are government or health care institutions.

**Table 4.5: Wake County Largest Employers (as of Sept 2006)**

Rank	Name	Employment Range	Industry	Location in Raleigh?
1	State of North Carolina	1,000+	Public Administration	Yes
2	Wake County Public Schools	1,000+	Education and Health Services	Yes
3	NC State University at Raleigh	1,000+	Education and Health Services	Yes
4	Wake Medical Center	1,000+	Education and Health Services	Yes
5	SAS Institute, Inc.	1,000+	Information	No
6	County of Wake	1,000+	Public Administration	Yes
7	City of Raleigh	1,000+	Public Administration	Yes
8	Rex Healthcare	1,000+	Education and Health Services	Yes
9	Wal-Mart Associates, Inc.*	1,000+	Trade, Transportation, and Utilities	Yes
10	NC Department of Transportation	1,000+	Public Administration	Yes
11	US Postal Service	1,000+	Trade, Transportation, and Utilities	Yes
12	Food Lion, LLC*	1,000+	Trade, Transportation, and Utilities	Yes



Rank	Name	Employment Range	Industry	Location in Raleigh?
13	Harris Teeter, Inc.*	1,000+	Trade, Transportation, and Utilities	Yes
14	Progress Energy Carolinas	1,000+	Trade, Transportation, and Utilities	Yes
15	Target Stores Division*	1,000+	Trade, Transportation, and Utilities	Yes

\*Selected employers have retail stores in Raleigh, but corporate offices may be located elsewhere.

Source: Employment Security Commission of North Carolina, Labor Market Information Division; Bay Area Economics, 2007.

### Implications for the Comprehensive Plan

- Raleigh's largest employers are concentrated in the education, health and social services, and public administration sectors. These industries provide a stable economic base for the City. Provision for growth of these economic engines will be important for the future economy.
- Where the City has influence on government office locations, it should seek to steer these investments to downtown and other existing employment centers served by transit.

## New and Expanding Industry Trends

Trends in job growth and employer makeup indicate that Raleigh's established industries in education, health and social services, and public administration will remain strong for years to come. Announcements of several company expansions in the healthcare industry in 2007 indicate steady sector growth in the fields of advanced medical care, clinical research, medical consulting, and expanded outpatient care services. Table 4.6 outlines new and expanding companies in Raleigh for the first three quarters of 2007.

**Table 4.6: 2007 New & Expanding Companies in Raleigh (as of 3rd Qtr 2007)**

Name	New Jobs	New or Expanding	Industry
Allen Tate Realtors	35	New	FIRE*
Belk*	25	Expanding	Retail Trade
Charleston Homes	n/a	Expanding	Construction
Electronic Arts	10	New	Information (Virtual Gaming)
HomeEQ	100	Expanding	FIRE
Rex Healthcare	n/a	Expanding	Education & Health Services
HorizonForest Products	n/a	Expanding	Furniture Manufacturing
Hosted Solutions	n/a	Expanding	Information
Kimley-Horn & Associates	n/a	Expanding	Professional Services

Name	New Jobs	New or Expanding	Industry
Lease-A-Sales Rep	5	New	Professional Services
Peak 10	20	Expanding	Information
Smith Advertising	15	New	Professional Services
WakeMed Health & Hospitals	75	Expanding	Education & Health Services
WinstonHotels	n/a	Expanding	Accommodations
Coval Vacuum Technology, Inc.	3	New	Services
McKim & Creed	100	Expanding	Professional Services
North State Bank	20	Expanding	FIRE
PRA International	494	New	Education and Health Services
The Select Group	25	Expanding	Professional Services

\*FIRE = Finance, Insurance, Real Estate

Source: Wake County Economic Development; Bay Area Economics, 2007.

In 2004, the release of the well-acclaimed *Staying on Top: Winning Job Wars of the Future* report—an analysis inspired by Dr. Michael Porter’s Clusters of Innovation—organized efforts for the Research Triangle Region to further develop and nurture its economic competitiveness regionally, nationally, and globally. The report highlights ten industry clusters to focus on for job growth and industry expansion, including pharmaceuticals, biological agents and infectious diseases, agricultural biotechnology, pervasive computing, advanced medical care, analytical instrumentation, nanoscale technologies, informatics, vehicle component parts, and logistics and distribution. While Raleigh does not have the capacity to cultivate all of these industry clusters, areas such as advanced medical care, pharmaceuticals, informatics, and agricultural biotechnology already have a presence within the City and/or have a support base provided by the City’s universities. To align with the region’s economic strategy and maintain its economic stability, Raleigh should capitalize on these existing strengths in the years ahead.

Raleigh shows promise in several new or emerging industries. The manufacturing of plastics is on the rise due to the ubiquitous need for new competitive medical devices and healthcare machinery. Veterinary medicine, pre-clinical trials for new drug research and innovations in technologies and research are also growing industry nodes being fostered by strong university programs and biotech clusters in the Triangle. With phenomenal advancements in video game entertainment and global trends favoring digital and distance learning, virtual gaming and advanced learning technologies and simulators have quickly become competitive industries. Raleigh’s existing and expanding network of small businesses focused on game and digital learning advancements and information technology will continue to create future jobs and employ locally-trained talent. Lastly, trends in recent years suggest noticeable growth in professional services and financiers (banks, insurance companies, venture capitalists, etc.) within the City, including the establishment of the RBC Centura headquarters in downtown Raleigh.

### Implications for the Comprehensive Plan

- Raleigh’s future economic potential is quite robust, particularly due to the stability of its core industries (education, health care and public administration) and its ability to support a diverse





group of smaller, emerging and existing industries. With the Information Age and the Triangle Region's existing high-tech industry core, Raleigh should continue to nurture the ever-growing and ever-changing information, technology and biotechnology environment as a strategic move to further diversify its economy and maintain its competitive edge. The magnitude of Raleigh's economic performance over the long-term will depend on its capacity to continue to build on its assets, nurture existing economic relationships and develop new ones, actively recruit and retain businesses, and nurture new start-up ventures.

- Most of the technology industries targeted for future growth will build on the region's educated workforce and will be accommodated in office, laboratory or hospital space. Traditional manufacturing operations and large logistics and distribution operations are likely to locate in less urban locations with lower land costs.
- Knowledge workers have multiple employment opportunities and often choose where they work and live, in part, based on the work environment and quality of life. To continue to compete effectively for these knowledge workers, the plan needs to provide for and encourage development of high-quality environments that combine office/lab space with housing and support retail and services, such as the Centennial Campus or North Hills.

### 4.3 Commercial Development Sector

This section addresses the commercial development sector including retail and office uses. Raleigh retailers sold \$7.35 billion in goods in 2006, almost one-half of all sales in Wake County, based on estimates by Claritas. Raleigh added almost 5 million square feet of commercial building space from 2002 through 2006. Much of the new development is occurring at the City's edges, often siphoning dollars from older shopping centers and districts. Office development in Raleigh also was quite active over the past five years, adding 6.2 million square feet of new space as lower vacancy rates encouraged new investment.

#### Retail Sales

Due to substantial population and household growth within the Triangle Region, regional retail sales have climbed significantly over the past 10 to 15 years. As shown in Table 4.7, Wake County continues to capture the majority of the region's retail sales. These high retail sales reflect Wake County's advantage of not only the state's capital city—a strong and stable economic nucleus—but also a network of economic activity in burgeoning, smaller communities.

**Table 4.7: Retail Sales (in millions), Fiscal Years 2001 to 2005**

County	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005
Chatham	\$379	\$384	\$337	\$408	\$448
Durham	\$3,445	\$4,057	\$4,598	\$4,647	\$5,086
Franklin	\$292	\$294	\$295	\$343	\$415
Harnett	n/a	n/a	n/a	\$674	\$820
Johnston	\$1,284	\$1,247	\$1,313	\$1,485	\$1,680
Orange	\$1,223	\$1,256	\$1,354	\$1,376	\$1,437
Wake	\$12,358	\$12,018	\$12,408	\$13,420	\$14,611

County	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005
Raleigh-Cary MSA	n/a	n/a	n/a	\$15,249	\$16,706
Raleigh-Durham-Cary CSA	\$18,981	\$19,257	\$20,338	\$22,716	\$24,879

*Note: Figures are for Fiscal Year July 1 – June 30.*

*Source: NC Department of Revenue, Sales and Use Tax Division; 2006-2007 Research Triangle Regional Data Book*

Not surprisingly, Raleigh claims almost half of Wake County's total 2006 retail sales. Table 4.8 breaks down 2006 retail sales by store type for Raleigh and Wake County, revealing that motor vehicle and parts dealers and building material/garden equipment stores represent the largest share of retail sales. Grocery stores, specialty food stores, and restaurants also account for substantial retail sales in 2006 (\$1.3 billion combined for Raleigh).

**Table 4.8: 2006 Retail Sales (in millions) by Store Type**

Selected Store Types	Raleigh	Wake County	Raleigh % of County
Motor Vehicle and Parts Dealers	\$1,829	\$3,948	46.3%
Furniture and Home Furnishings Stores	\$318	\$553	57.5%
Electronics and Appliance Stores	\$147	\$280	52.5%
Building Material, Garden Equip Stores	\$976	\$2,112	46.2%
Grocery, Convenient, Specialty Food Stores <sup>1</sup>	\$658	\$1,525	43.1%
Health and Personal Care Stores	\$213	\$470	45.3%
Clothing and Clothing Accessories Stores	\$384	\$622	61.7%
Sporting Goods, Hobby, Book, Music Stores	\$200	\$351	57.0%
Department Stores	\$486	\$1,197	40.6%
General Merchandise	\$124	\$167	74.3%
Warehouse Clubs / Super Stores	\$498	\$498	100.0%
Miscellaneous Store Retailers <sup>2</sup>	\$169	\$370	45.7%
Restaurants/Bars <sup>3</sup>	\$601	\$1,166	51.5%
<b>Total Selected Retail Sales<sup>4</sup></b>	<b>\$6,604</b>	<b>\$13,260</b>	<b>49.8%</b>
<b>Total Overall Retail Sales</b>	<b>\$7,350</b>	<b>\$15,177</b>	<b>48.4%</b>

*Note: 1 - Includes grocery stores, convenience stores, specialty food stores, beer/wine/liquor stores. 2 - Includes florists, office supply retailers, gifts/novelty, used merchandise, miscellaneous stores. 3 - Includes full-service restaurants, limited-service eating places, specialty food services, and drinking places serving alcoholic beverages. 4 - Does not include non-store retailers and gas stations.*

*Source: Claritas, Inc., 2007; Bay Area Economics, 2007.*



## Implications for the Comprehensive Plan

- Continued population and household growth over the next 10 to 20 years will drive a steady increase in retail sales in Raleigh and Wake County, though Raleigh's share of the county's retail sales may lessen over time if the majority of new retailers locate outside the City limits.

## Retail Space Trends

With retail sales strong and growing, shopping center construction within Raleigh remains active. Nearly 750,000 square feet of shopping center space is currently under construction in the City. More than 80 percent of this new shopping center space is located in North Raleigh followed by the South Raleigh/Garner area at 10 percent.

**Table 4.9: 2006 Regional Shopping Center Space Activity**

Submarket	2005-2006 Growth	2006 Supply	2006 Vacant	Percent Vacant	2005-2006 Absorbed	Percent Absorbed	Under Constr.
North Raleigh	2%	9,672,000	628,000	6%	179,000	2%	6%
West Raleigh	6%	6,854,000	290,000	4%	268,000	4%	0%
Cary	1%	7,203,000	458,000	6%	-75,000	-1%	2%
East Raleigh	22%	2,832,000	317,000	11%	504,000	18%	1%
South Raleigh/ Garner	2%	3,772,000	107,000	3%	143,000	4%	2%
Durham - RTP	0%	10,300,000	415,000	4%	99,000	1%	1%
<b>Area-Wide Totals</b>	<b>5%</b>	<b>40,583,000</b>	<b>2,215,000</b>	<b>5%</b>	<b>1,118,000</b>	<b>3%</b>	<b>2%</b>

Source: 2007 Triangle Commercial Real Estate Report, NAI Carolantic Realty; Bay Area Economics 2007

Table 4.10 shows recent commercial building activity in Raleigh. Since 2002, Raleigh's commercial building activity has fluctuated, peaking in 2003 and then rising again in 2006. This activity, however, includes not only retail goods and services establishments, but also hospitality and tourist enterprises, service stations and auto garages. Interestingly, the value of construction authorized by permits in 2006 is comparable to that seen during peak building activity in 2003, despite a lower number of permits in 2006. In addition to inflation, this may be due to the delivery of more retail and hospitality establishments in 2006, which require more extensive construction investment than do service stations and garages.

**Table 4.10: Raleigh Commercial Building Activity, 2002 to 2006**

Year	No. of Permits	Square Feet	Construction Value
2002	41	520,510	\$27,742,200
2003	94	2,025,417	\$102,862,148
2004	58	846,537	\$49,843,500

Year	No. of Permits	Square Feet	Construction Value
2005	38	412,575	\$36,320,807
2006	60	1,178,996	\$101,093,168
<b>Total</b>	<b>291</b>	<b>4,984,035</b>	<b>\$317,861,823</b>

*Note: Includes hotel, motel, and tourist cabin, service station and repair garages, store and mercantile building.*

*Source: City of Raleigh Planning and Inspections Departments Building Permit Data*

Downtown Raleigh's <sup>(1)</sup> leased retail inventory includes approximately 870,000 square feet of street-level commercial space, including a variety of independently-owned shops, restaurants and other entertainment-oriented establishments. As several residential, commercial, mixed-use and arts/cultural projects open in the near future, additional retail space downtown will be required to accommodate new demand from residents, daytime population, commuters, and tourists/conventioners. Additional retail space also could be supported by spending of existing residents, employees and visitors. Comparing expenditures by residents living within one mile of downtown, downtown employees, and arts/cultural patrons to estimate downtown sales shows a current leakage of more than \$30 million in retail dollars to other parts of Raleigh, the region and elsewhere. With new office space, residential units, and, most importantly, the new Convention Center coming on line, the retail spending available to downtown is projected to increase substantially in the near future.

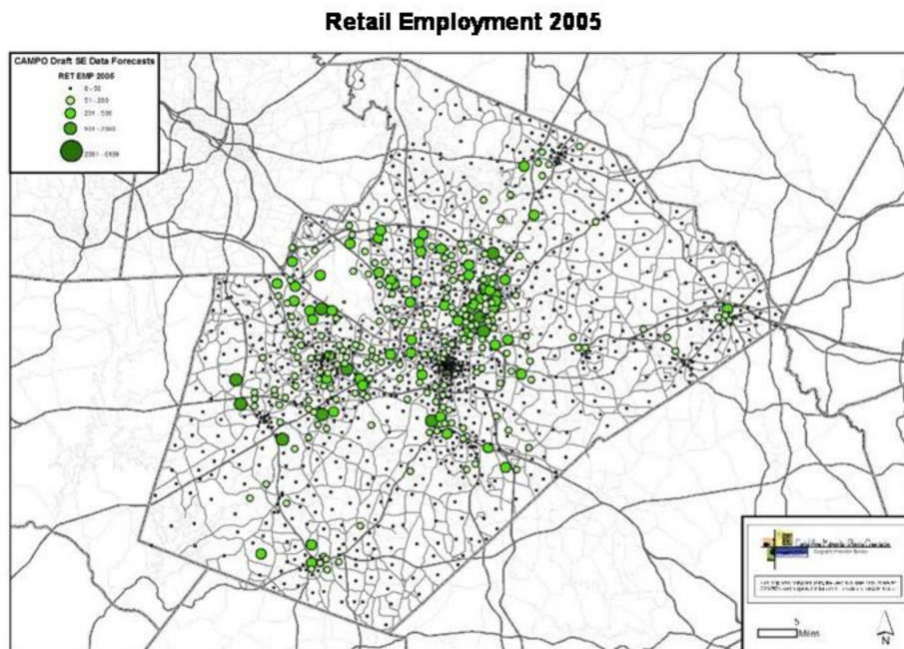
CAMPO projects employment density for retail centers for 2005 and 2035. Due to explosive growth in population and households, the region's retail market has blossomed in recent years. Valuing good road access and proximity to daytime employment as well as local neighborhood populations, much of Raleigh's existing retail employment is between I-540 and I-440, clustering along U.S. 1. As Raleigh continues to grow with the region and compete with the network of smaller communities within Wake County, the City's retail employment will gradually grow as well. However, a large share of incremental retail employment growth will occur in nearby jurisdictions to the west and southwest (Morrisville, Cary, Apex and Holly Springs). Maps 4.4 and 4.5 show retail employment density for 2005 and as projected for 2035.

1 Downtown Raleigh is defined here as the area within a one-mile radius of the intersection of Morgan and Fayetteville Streets. Information gathered from Raleigh Department of Planning and the Downtown Raleigh Alliance.

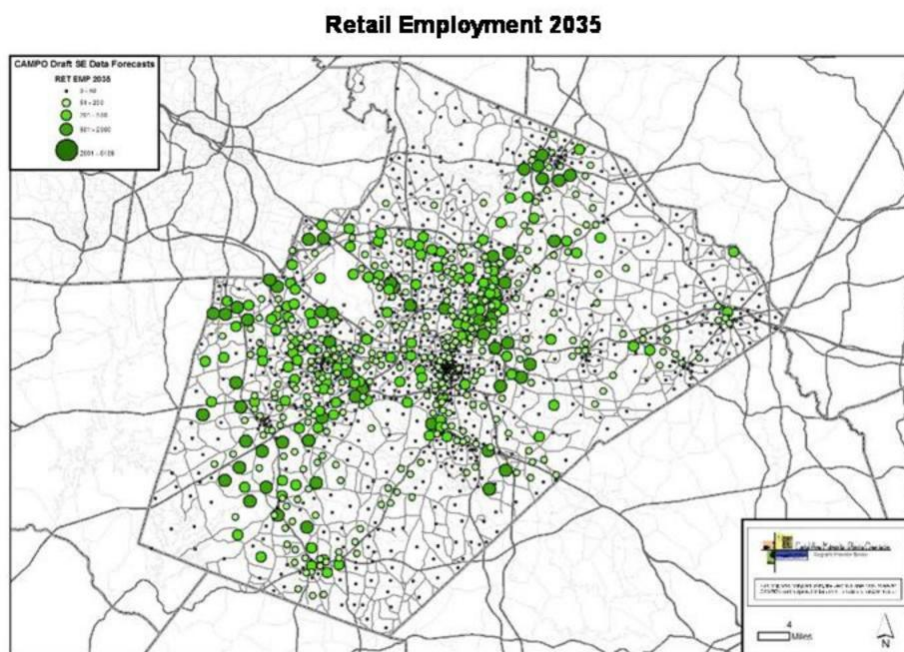




Map 4.4 Retail Employment 2005



Map 4.5 Retail Employment 2035



### Implications for the Comprehensive Plan

- Consistent growth in retail inventory evidences the strong retail demand seen in Raleigh in recent years. However, too much supply can cause the market to reach a tipping point, in which retail sales in existing stores are negatively impacted, obsolete shopping centers become vacant retail strips, and disinvestment sets in. Retail formats such as big-box (“category killer”) stores tend to aggravate the cannibalizing effects of over-retailing.
- If Raleigh’s population growth continues to be accommodated in low-density developments on the suburban edge, much of the new retail activity will gravitate to shopping centers and strip shopping along the City’s edge. That shift in purchasing power accompanied by a growing competitive inventory of new retail facilities will divert sales from older existing retail centers and districts.
- Raleigh needs to monitor the retail market’s momentum and encourage opportunities for reinvestment in and/or redevelopment of older shopping centers. Raleigh’s re-emerging retail districts such as Downtown Raleigh will need to capitalize on specific niches that make them distinctive and desirable to patronize. Focusing residential growth in downtown neighborhoods and near other established retail districts would help them maintain a healthy retail supply.

### Office Space Trends

With the addition of more than 2 million square feet of office space in 2006, the Triangle Region has experienced constant construction activity, gains in office space absorption, and a drop in vacancy rates. Table 4.11 shows that Raleigh’s office market has seen consecutive annual increases in building permits since its dip in 2003, recovering from the technology downturn and the softening national economy in 2001 and 2002. Construction authorized by building permits from 2002 to 2006 added 6.2 million square feet of new office space in the City.

**Table 4.11: Raleigh Office Building Activity, 2002 to 2006**

Year	No. of Permits	Square Feet	Construction Value
2002	43	713,249	\$39,972,509
2003	27	1,102,102	\$54,302,393
2004	59	820,422	\$103,100,464
2005	58	1,662,558	\$104,049,735
2006	88	1,861,399	\$125,401,189
<b>Total</b>	<b>275</b>	<b>6,159,730</b>	<b>\$426,826,290</b>

*Note: Includes office, bank and professional buildings*

*Source: City of Raleigh Planning and Inspections Departments Building Permit Data*

Suburban Raleigh captured the largest share of new office construction since 2000, due to land availability, lower construction costs, and access to employment centers around the region. Vacancy rates in both Downtown Raleigh and its suburbs dropped to 10 and 12 percent, respectively, by the end of 2006 (down from 12 and 15 percent, respectively, in 2003). Downtown Raleigh, however, has struggled to maintain steady





positive net absorption over the past seven years, while Suburban Raleigh's leasing activity has remained consistently high. Table 4.12 shows 2006 office space activity and Table 4.13 shows regional office vacancy rates over the last 10 years.

**Table 4.12: 2006 Office Space Activity**

Submarket	2005-2006 Growth	2006 Supply	2006 Vacant	Percent Vacant	2005-2006 Absorbed	Percent Absorbed	Under Constr.
Downtown Raleigh Class A	3%	2,917,000	278,000	10%	115,000	4%	8%
Downtown Raleigh Class B	0%	1,641,000	181,000	11%	-31,000	-2%	0%
<b>Total Downtown Raleigh</b>	<b>2%</b>	<b>4,558,000</b>	<b>459,000</b>	<b>10%</b>	<b>84,000</b>	<b>2%</b>	<b>5%</b>
Suburban Raleigh Class A	6%	13,400,000	1,833,000	14%	706,000	5%	4%
Suburban Raleigh Class B	3%	10,349,000	1,024,000	10%	832,000	8%	2%
<b>Total Suburban Raleigh</b>	<b>5%</b>	<b>23,749,000</b>	<b>2,857,000</b>	<b>12%</b>	<b>1,538,000</b>	<b>6%</b>	<b>3%</b>
Cary	1%	5,960,000	786,000	13%	248,000	4%	1%
RTP	3%	12,305,000	2,669,000	22%	540,000	4%	8%
Suburban Durham	2%	7,005,000	755,000	11%	237,000	3%	3%
Downtown Durham	2%	3,603,000	531,000	15%	22,000	4%	0%
<b>Area-Wide Totals</b>	<b>3%</b>	<b>57,180,000</b>	<b>8,057,000</b>	<b>14%</b>	<b>2,669,000</b>	<b>5%</b>	<b>4%</b>

Source: 2007 Triangle Commercial Real Estate Report, NAI Carolantic Realty

**Table 4.13: Regional Office Vacancy Trends, 1997-2006**

Submarket	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Downtown Raleigh Class A	15%	8%	10%	6%	16%	11%	14%	14%	11%	10%
Downtown Raleigh Class B	10%	8%	4%	3%	9%	6%	9%	6%	9%	11%
<b>Total Downtown Raleigh</b>	<b>13%</b>	<b>8%</b>	<b>8%</b>	<b>5%</b>	<b>13%</b>	<b>9%</b>	<b>12%</b>	<b>11%</b>	<b>10%</b>	<b>10%</b>
Suburban Raleigh Class A	5%	9%	11%	13%	17%	19%	17%	14%	14%	14%
Suburban Raleigh Class B	3%	5%	7%	10%	14%	15%	12%	14%	10%	10%

Submarket	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<b>Total Suburban Raleigh</b>	<b>4%</b>	<b>7%</b>	<b>9%</b>	<b>12%</b>	<b>16%</b>	<b>17%</b>	<b>15%</b>	<b>14%</b>	<b>12%</b>	<b>12%</b>
Cary	11%	8%	11%	8%	18%	21%	25%	21%	16%	13%
RTP	6%	11%	12%	8%	22%	25%	28%	23%	23%	22%
Suburban Durham	4%	7%	3%	5%	12%	11%	8%	11%	14%	11%
Downtown Durham	10%	8%	7%	7%	11%	15%	14%	19%	16%	15%
<b>Area-Wide Totals</b>	<b>6%</b>	<b>8%</b>	<b>9%</b>	<b>9%</b>	<b>17%</b>	<b>18%</b>	<b>18%</b>	<b>16%</b>	<b>15%</b>	<b>14%</b>

Source: 2007 Triangle Commercial Real Estate Report, NAI Carolantic Realty

Compared to other parts of the region, Raleigh's office market shows the most promise. Suburban and Downtown Raleigh combined have nearly one million square feet of new office space under construction in 2007. Estimated product deliveries in other areas are considerably smaller with the exception of RTP, which has 977,000 square feet of office space under construction in 2007. RTP remains the softest office market with a vacancy rate of 22 percent by year end 2006. This overhang of vacant space could slow future construction somewhat.

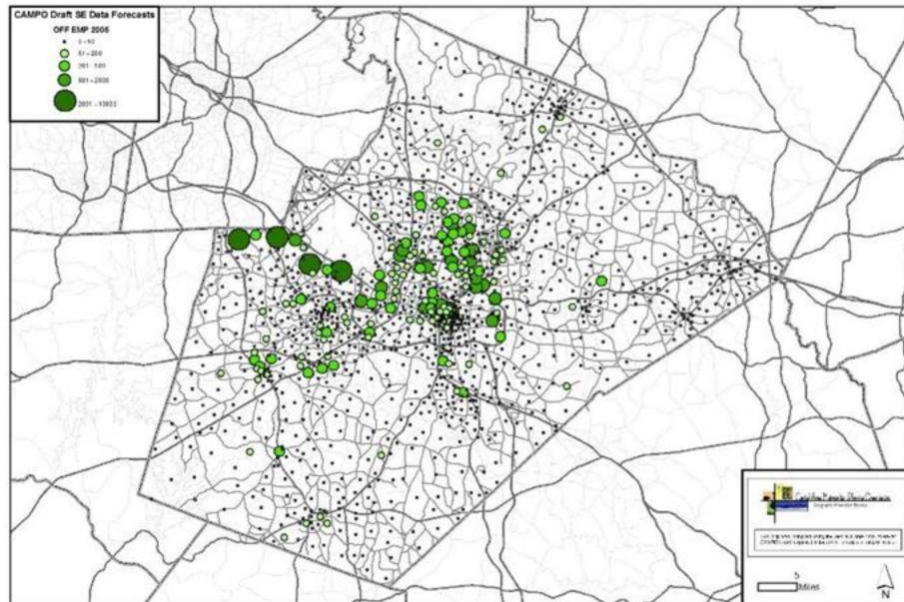
Rising rental rates, lower vacancies, fading rent concessions and increased construction activity are indicators of an office market shift in favor of landlords.

Northwest Raleigh, specifically between I-540 and I-440, has attracted the bulk of the City's office space. CAMPO projects that this concentration will intensify and extend to the west between I-40 and the I-440 loop, within Raleigh's urban core, and north of I-440 along U.S. 1 by 2035. Much of Raleigh's office inventory is dispersed along arterials and in single-use business parks, making them difficult to access by foot or by transit. Maps 4.6 and 4.7 from CAMPO show office employment density in 2005 and projected density in 2035.



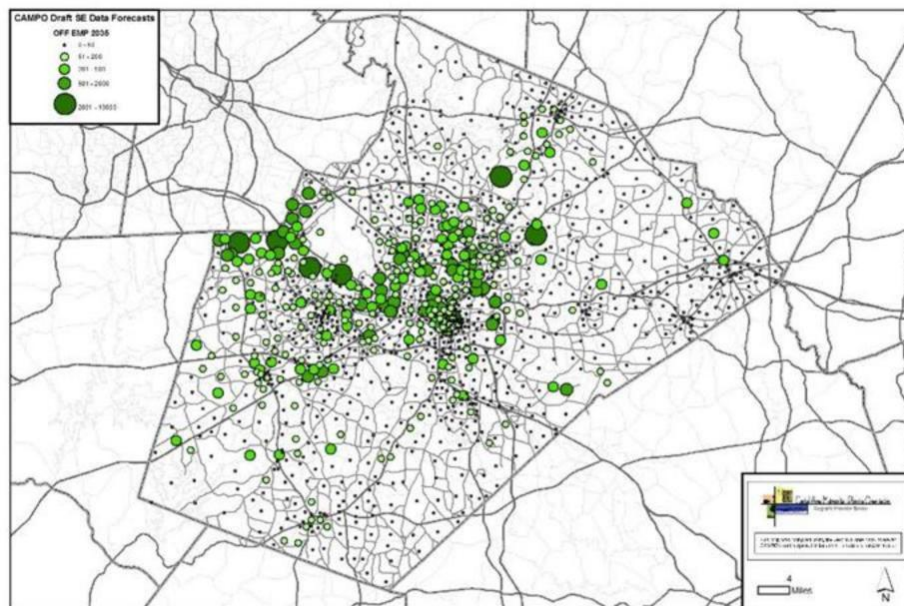
Map 4.6 Office Employment 2005

### Office Employment 2005



Map 4.7 Office Employment 2035

### Office Employment 2035



### Implications for the Comprehensive Plan

- Responding to the Livable Streets program of major civic and residential investment, the market for downtown office space is improving, yet downtown has only eight percent of the Triangle Region's total office supply.
- Expanding downtown's office tenancy beyond government and finance-related users will depend on creating a better mixed-use environment with 18-hour activity, attracting knowledge workers who want to live and work in an urban environment.
- Enhanced transit service should reinforce that activity, helping to concentrate new development near proposed transit stations in downtown and elsewhere.
- Multiple office nodes in the northern and western Raleigh suburbs benefit from good regional access to Research Triangle Park, other Triangle communities, the airport, the region's universities and executive housing.
- Patterns of development in single-purpose business parks and along major arterials work against the creation of successful mixed-use environments that allow for more walking and fewer auto trips.
- New business centers should be designed to include housing and retail facilities in a pedestrian-friendly design.
- Intensifying and retrofitting existing office nodes with new well-designed residential and retail uses easily accessed by pedestrians would help reduce the workers' dependence on auto travel while enhancing their work environment.

## 4.4 Industrial Development Sector

The industrial sector encompasses several different types of development: warehouse/distribution; manufacturing space; and flex office/warehouse space. This section discusses industrial development trends and market conditions for these segments. Research and development use is a growing factor in both Raleigh's office and industrial development, but statistics are not available to quantify its scale and trends. Much of the county's industrial development is occurring outside of Raleigh on less expensive land. Much of the City's land potentially suitable for industrial use yields a higher value when developed for other uses.

### Flex and Warehouse Construction Trends

Recent trends in flex and warehouse space vary dramatically with each submarket as shown in Tables 3.14 and 3.15. Downtown and Central Raleigh have struggled with an older building stock, vacancies, negative absorption rates, and conversions to other higher-value uses. North Raleigh and West Raleigh/US 70/Cary saw significant additions to their total inventories (nearly 500,000 square feet annually) from 2000 to 2002, while building activity in the last four years was consistent, but not as extensive (approximately 100,000 square feet annually for North Raleigh and 175,000 square feet annually for West Raleigh/US 70/Cary). Both submarkets reveal standard vacancy rates and modest absorption activity.

The East and South Raleigh submarkets have experienced a flurry of activity since 2000, with the east averaging 175,000 square feet of new construction annually and the south averaging 270,000 square feet annually. This activity has responded to improved accessibility and the lower cost and greater availability of land. Both of these submarkets include areas outside of Raleigh's City limits and the locations of these recent additions are unclear. Both submarkets show competitive vacancy rates and good absorption activity, likely attributable to new space with modern-day specifications to meet user requirements.



Building activity in Durham and the Research Triangle Park (RTP) has not been as substantial since 2002, though RTP did add 2.7 million square feet of flex and warehouse space from 2000 to 2001. Given its 16 percent vacancy rate and recent absorption figures, the RTP submarket is still recovering from an oversupply of space.

**Table 4.14: 2006 Regional Flex and Warehouse Trends**

Submarket	2005-2006 Growth	2006 Supply	2006 Vacant	Percent Vacant	2005-2006 Absorbed	Percent Absorbed	Under Constr.
Downtown & Central Raleigh	-1%	5,171,000	1,067,000	21%	-285,000	-6%	0%
North Raleigh	1%	14,124,000	1,292,000	9%	386,000	3%	0%
West Raleigh/ US 70/Cary	1%	12,361,000	1,190,000	10%	52,000	0%	1%
Research Triangle/ I-40	0%	21,333,000	3,338,000	16%	732,000	3%	1%
East Raleigh/ Wendell/Zebulon	2%	6,370,000	451,000	7%	76,000	1%	0%
South Raleigh/ Garner/ Clayton	4%	7,395,000	636,000	9%	351,000	5%	3%
Durham	0%	6,746,000	913,000	14%	-241,000	-4%	0%
<b>Area-Wide Totals</b>	<b>1%</b>	<b>73,500,000</b>	<b>8,887,000</b>	<b>12%</b>	<b>1,071,000</b>	<b>2%</b>	<b>1%</b>

Source: 2007 Triangle Commercial Real Estate Report, NAI Carolantic Realty; Bay Area Economics, 2007.

**Table 4.15: Regional Flex and Warehouse Absorption Trends, 1997-2006**

Submarket	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Downtown & Central Raleigh	-3%	2%	7%	6%	0%	-4%	2%	7%	6%	-6%
North Raleigh	7%	7%	6%	3%	-2%	3%	-4%	6%	3%	3%
West Raleigh/ US 70/Cary	7%	10%	3%	6%	2%	3%	3%	1%	3%	0%
Research Triangle/ I-40	13%	7%	9%	15%	-12%	-2%	-6%	6%	8%	3%
East Raleigh/ Wendell/Zebulon	6%	3%	-14%	17%	3%	3%	2%	-4%	10%	1%
South Raleigh/ Garner/ Clayton	2%	-8%	7%	13%	5%	6%	6%	9%	2%	5%
Durham	11%	-1%	5%	2%	-2%	0%	5%	-2%	6%	-4%

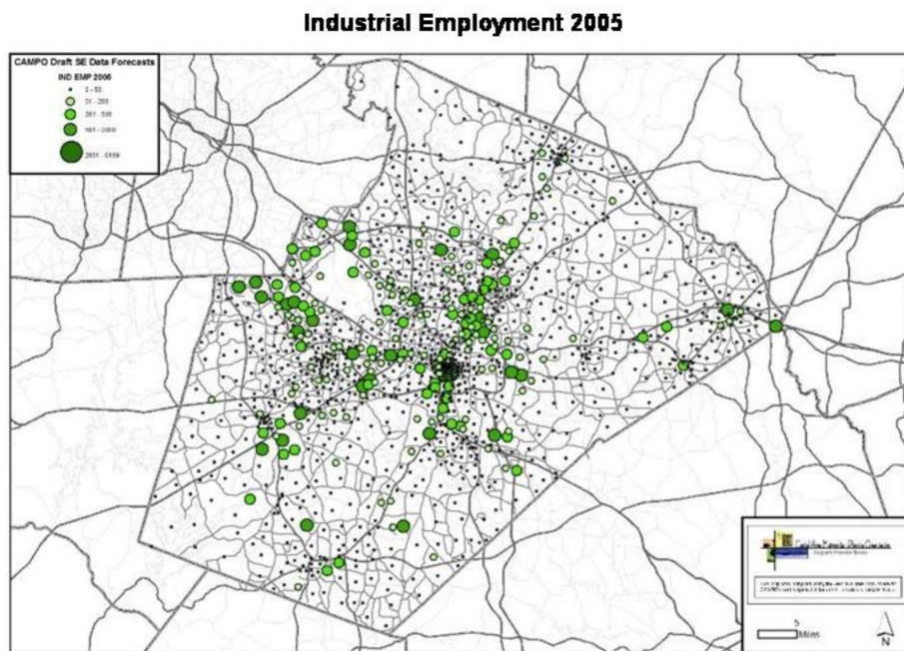


Submarket	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Area-Wide Totals	8%	5%	5%	9%	-4%	1%	-1%	3%	5%	2%

Source: 2007 Triangle Commercial Real Estate Report, NAI Carolantic Realty; Bay Area Economics, 2007.

Industrial employment typically clusters along highway corridors with interstate highways, railroad corridors or waterfronts with port access for trade. With much of its current industrial employment located along various highways and the railroad, Raleigh is no exception. Growth in this employment segment for Raleigh by 2035 will likely occur through facility expansions of existing industrial sites or in newly constructed buildings on remaining large-scale parcels along major corridors. Maps 4.8 and 4.9 show industrial employment density for 2005 and projected for 2035.

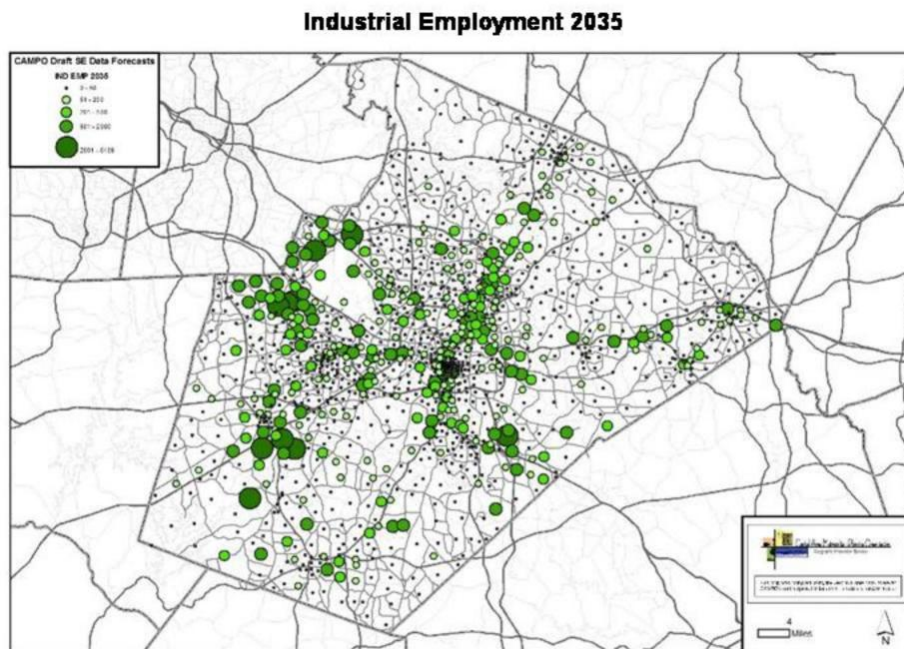
**Map 4.8 Industrial Employment 2005**







**Map 4.9 Industrial Employment 2035**



## Research and Development Sector

North Carolina State University's Centennial Campus is providing new facilities for technology and other companies working with the College of Engineering and the College of Textiles in developing new materials, processes and products. Centennial Campus offers a unique mixed-use environment that combines education, businesses and student housing. Coupled with the new physical campus are programs to attract and support businesses to work with the University in pursuing new technologies and commercializing innovations. The Centennial Biomedical Campus will encourage similar partnerships between industry and the College of Veterinary Medicine.

### Implications for the Comprehensive Plan

- Competitive opportunities for flex, warehouse and industrial users will remain focused along the City's transportation corridors and further out in the county, where land is less expensive and ample enough to accommodate large-scale users.
- Central Raleigh's industrial inventory may gradually shrink over the long-term, due to obsolete building stock, physical and economic constraints, conversions to higher-value uses, residential encroachment and access limitations.
- Centennial Campus and other new employment centers oriented to technology businesses will play an increasingly important role in the City's future economy.

## 4.5 Government and Institutional Sector

Major public and private universities and colleges, government agencies, hospitals and health care centers represent Raleigh's largest employers. Most are planning near- and long-term expansions, increasing their economic impacts. Critical to the City's economic health, these institutions need particular attention in future planning as many of them face difficult land constraints.

### Institutional Growth Trends

Raleigh is home to several private, public and charter schools, government facilities, seven colleges and universities, and ten major hospitals and/or health care buildings. Table 4.16 indicates the City's institutional building activity from 2002 to 2006, which also includes religious and recreational buildings. Though the type of institutions built within this time period is unclear, the City has experienced a rise in institutional construction in recent years, reaching its peak in 2005 with high activity levels continuing into 2006.

**Table 4.16: Institutional Building Activity, 2002 to 2006**

Year	No. of Permits	Square Feet	Construction Value
2002	43	522,542	\$42,922,577
2003	27	537,328	\$30,014,444
2004	60	765,197	\$65,783,506
2005	105	1,942,934	\$181,939,826
2006	67	1,367,979	\$164,896,863
<b>Total</b>	<b>302</b>	<b>5,135,980</b>	<b>\$485,557,216</b>

*Note: Includes lodge associations, all religious buildings, hospitals, schools, and recreational buildings.*

*Source: City of Raleigh Planning and Inspections Departments Building Permit Data*

### Government

One of Raleigh's great attributes as a capital city is its strong government presence.

The State Capitol and associated buildings dominate the northern end of downtown Raleigh, providing a substantial employee base and attracting businesses and individuals to meet and work with State government officials. Associated institutions, such as the North Carolina Museum of History and the North Carolina Museum of Natural Sciences provide valuable cultural resources and attract visitors to the downtown. The State is moving forward with redevelopment of parking lots and other lands along South Blount Street to enhance the area around the Capitol and to better utilize State resources.

The City's public sector facilities are concentrated primarily in the downtown area, providing activity and potential support for downtown retail, services and housing. The City currently plans to construct a 17-story "signature-type" tower to house police, fire, emergency communications, traffic control and information technology workers. The 305,000 square-foot building would accommodate workers from other City departments currently working in several stand-alone facilities totaling some 100,000 square feet of space. This would be the largest office expansion for City workers since One Exchange Plaza in 2004.



### Implications for the Comprehensive Plan

- Public administration will remain a stable industry sector in Raleigh due to its position as a capital city. Consolidation of City agencies to key sites could reinforce the active civic center within the heart of the City, and provide potential redevelopment opportunities for aging public buildings.
- The State Government recently completed a periodic update to the State Government Master Plan. The City should coordinate land use planning with the State's plan, and stay involved in future updates.

## Hospitals

Raleigh hosts 10 separate hospitals or health facilities within its boundaries. All are divisions or branches of Duke Health, Rex Healthcare, and WakeMed Health and Hospitals, which constantly compete for market share within the City and Wake County. Expansion of all hospital systems over the near- and long-term will be important to meet the needs of the area's growing population. In Raleigh specifically, Rex Healthcare plans to construct an outpatient surgery center in North Raleigh and cardiac catheterization laboratory at the facility's main city campus by summer 2009. WakeMed Health and Hospitals also plans to convert the ambulatory care outpost at its North Healthplex into a full-service community hospital, creating room for a women-centered inpatient unit. Expansion plans on WakeMed's main campus include a four-story inpatient cardiac facility for heart care operations, a new central cooling plant, an addition of 16 beds to its Rehab Hospital, and a replacement parking deck.

In recent years, all healthcare systems—Wake Med Health and Hospitals, Duke University Health System, and Rex Healthcare—have expanded beyond core activity centers (Raleigh, Durham and Chapel Hill) into suburban locations such as Clayton, Brier Creek, Cary, Knightdale and Apex. Satellite operations in these areas consist of smaller facilities like primary-care offices, stand-alone emergency departments and outpatient centers. The major hospital systems use master plans to plan for the expansion of existing facilities and identify locations for new facilities.

### Implications for the Comprehensive Plan

- Given the growing elderly population nation-wide, the increased number of retiring baby boomers moving south for more temperate climates and improved quality of life, and continuing growth in the Triangle Region's population and households, there is a continual need for additional medical and health facilities.
- Hospital master plans should be taken into account in the City's land use and infrastructure planning.

## Colleges and Universities

Raleigh is home to six colleges and universities (including a campus of Wake Technical and Community College) totaling about 94,000 students. Its dense network of institutions is quite diverse, ranging from smaller, religious colleges to community colleges and larger state universities. This strong institutional presence has contributed to Raleigh's and the region's recognition as top-ranked areas for quality higher education and is also a large attractor for employers interested in a young and talented workforce to sustain their companies over the long-term. Many of these institutions have created master plans for their campuses to guide future growth.

### Implications for the Comprehensive Plan

- The strength of the area's institutions contributes significantly to its economic competitiveness. Many of Raleigh's companies note access to an educated and creative workforce as a key reason for locating in the area. The stability and prosperity of the city's universities and colleges will help secure its status as an urban area of choice for residents and employers alike for many years to come.
- College and university master plans should be taken into account in the City's land use and infrastructure planning.

## 4.6 Organization for Economic Development

Raleigh's program for economic development is implemented by several loosely affiliated economic development organizations. The City allocated just over \$1.0 million for economic development in the 2007-2008 budget.

### Partner Organizations

The City invests in the following organizations and efforts:

- Raleigh Economic Development (RED) in the Greater Raleigh Chamber of Commerce, which focuses on job creation and investment, assisting companies as they evaluate Raleigh as a potential location for a new facility or expansion. Raleigh Economic Development also works on developing alliances, marketing the city, branding Raleigh as a corporate headquarters location, and promoting coordination of community resources supporting small and minority business development in Raleigh.
- Southeast Raleigh Assembly (SERA), dedicated to long-term economic development solutions for Southeast Raleigh.
- The Raleigh Area Development Authority (RADA), a 501(c)(3) community development finance organization established to provide and encourage investment capital in Raleigh's most underdeveloped areas by offering a range of financial and technical assistance products and services with the goal of creating a higher quality of life for its citizens and fostering the growth of businesses in the area.
- Raleigh Business and Technology Center (RBTC), which hosts the Southeast Raleigh Virtual Business Incubator and assists Southeast business owners.
- Downtown Raleigh Alliance (DRA), a 501(c)(6) non-profit corporation that provides business development services, coordinates clean and safe programs, advocates for downtown and markets the changes taking place downtown.
- Greater Raleigh Visitors and Convention Bureau (GRVCB), which markets tourism and conventions in Wake County and Raleigh.
- Research Triangle Region Partnership (RTRP), a regional organization comprising nearly 90 public, private and business support organizations established in 2004 to implement a five-year \$5 million action agenda to generate 100,000 new jobs and increase employment in all of the region's 13 counties.

### City Organization for Economic Development

Within the City government, several departments participate in economic development initiatives, often spearheaded from the Office of the City Manager. Assistant City Managers create development agreements and Requests for Proposals for City-owned land. The Department of City Planning (DCP) provides research,



design and advisory services, convenes Raleigh's Economic Working Group and coordinates efforts to support and track major economic development initiatives and projects. DCP manages the Brownfields program and the Urban Design Center and its program for façade improvement grants.

The Community Development Department (CD) implements adopted redevelopment plans and provides financial assistance for affordable housing, usually through partnerships with other funding sources. The Raleigh Convention Center (RCC) and performing arts programs and operates the Progress Energy Center for the Performing Arts and the new Convention Center. The Public Utilities, Public Works and Inspections departments also play an important role in supporting economic development.

### Implications for the Comprehensive Plan

- Better coordination among the many economic development entities and City departments would allow Raleigh to better capitalize on local economic development opportunities. The City lacks an entity focused on commercial revitalization that would have the mandate and resources to revitalize aging and declining commercial centers and corridors to better serve nearby residents and prevent blighting impacts.

## 4.7 Geographic Focus for Economic Development

In December on 2007, a City-wide geographic-based economic analysis was conducted that identified areas that demonstrated a need for economic development and / or areas that presented opportunities for economic development. Regarding need-based economic development, City staff examined both socio-economic distress and property disinvestment indicators. The socio-economic distress indicators included both poverty and unemployment rates by census tract. Data used to determine the rates of both poverty and unemployment by census tract were derived from the 2000 US Census. Property disinvestment is more difficult to measure without direct field surveys. In place of the field surveys, housing code violations and tax arrears were chosen as two proxy variables available from City records. With regards to areas opportune for economic development, City staff identified large clusters of parcels whereby the monetary value of the land exceeded the value the value of the improvements.

### Socio-Economic Needs Map

To create the multivariable Socio-Economic Needs Map, the two variables, poverty and unemployment, were melded together by expressing each value as a percentage of the spread between the maximum and minimum values of the variable in the city. To create the score value for each variable, the following formula was used:

$$\text{Score} = 100 * (\text{Max}-V) / (\text{Max} - \text{Min})$$

Where V = the value of the variable for the specific tract, Max = the maximum value across all tracts, and Min = the minimum value across all tracts. For reference, a score of 100 will result for the tract with the lowest unemployment rate, and 0 for the tract with the highest unemployment rate.

The composite score is the average of the two variable scores:

$$\text{Composite Score} = (\text{Score (Unemployment)} + \text{Score (Poverty)}) / 2$$



The composite scores were then ordered and separated into five grayscale quintiles. Table 4.17 provides the five quintiles and their corresponding composite score range ordered from low to high. To interpret Table 4.17, lower composite scores reflect a higher proliferation of instances of poverty and unemployment. Also included on the map are instances of property disinvestment. The locations of housing code violations and instances of tax arrears were mapped using different colored dots to distinguish between the two types of property disinvestment. The Socio-Economic Needs Map is helpful in illustrating those areas within the city that are most in need of economic development based upon the two aforementioned socio-economic distress indicators. Patterns of the dots help to demonstrate “hot spots” within the low-scoring tracts.

#### Composite Scores Separated by Quintile

Quintile	Composite Score Range
1	0.00 - 75.42
2	75.72 - 86.53
3	86.62 - 91.69
4	91.86 - 95.14
5	95.24 - 99.92

#### Economic Development Opportunities Map

Areas opportune for economic development are those parcels around the City of Raleigh where the value of the land exceeds the value of the improvements upon the land. These parcels are considered underutilized and are in many cases located contiguous to arterial roads and other thoroughfares. To avoid an overrepresentation of opportunity sites, parcels throughout the city were shaded according to their zoning. A separate shading hue was also used to differentiate undeveloped parcels. The values used in this analysis reflect the recently updated 2007 Wake County property valuations. Also included on the map area the Employment Area Designations as identified by the current Comprehensive Plan, as well as the Urban Progress Zones recently approved by the North Carolina Legislature.

#### Target Areas for Economic Development or Revitalization Map

Once the Socio-Economic Needs and the Economic Development Opportunities maps were finalized, aggregations of each variable were identified and expressed on a summary, composite map. This summary map is graphical, and highlights generalized areas that score high on both the need and opportunity maps.

Both the Socio-Economic Needs and the Economic Development Opportunities maps were visually analyzed to produce the amoebic-shaped areas shaded according to their relevance for either socio-economic need or redevelopment opportunity. For the purposes of this map, areas shaded in blue represent areas demonstrating a proliferation of housing code violations and instances of tax arrears, while the red areas represent concentrations of underutilized land. Additionally, the census tracts that ranked in the lowest two quintiles for poverty and unemployment scores are shaded in grey on the Target Areas Map, attached hereto and labeled as Map 4.10 “Target Areas for Economic Development or Revitalization.” This map provides a conceptual summary of the results of the analyses described above.

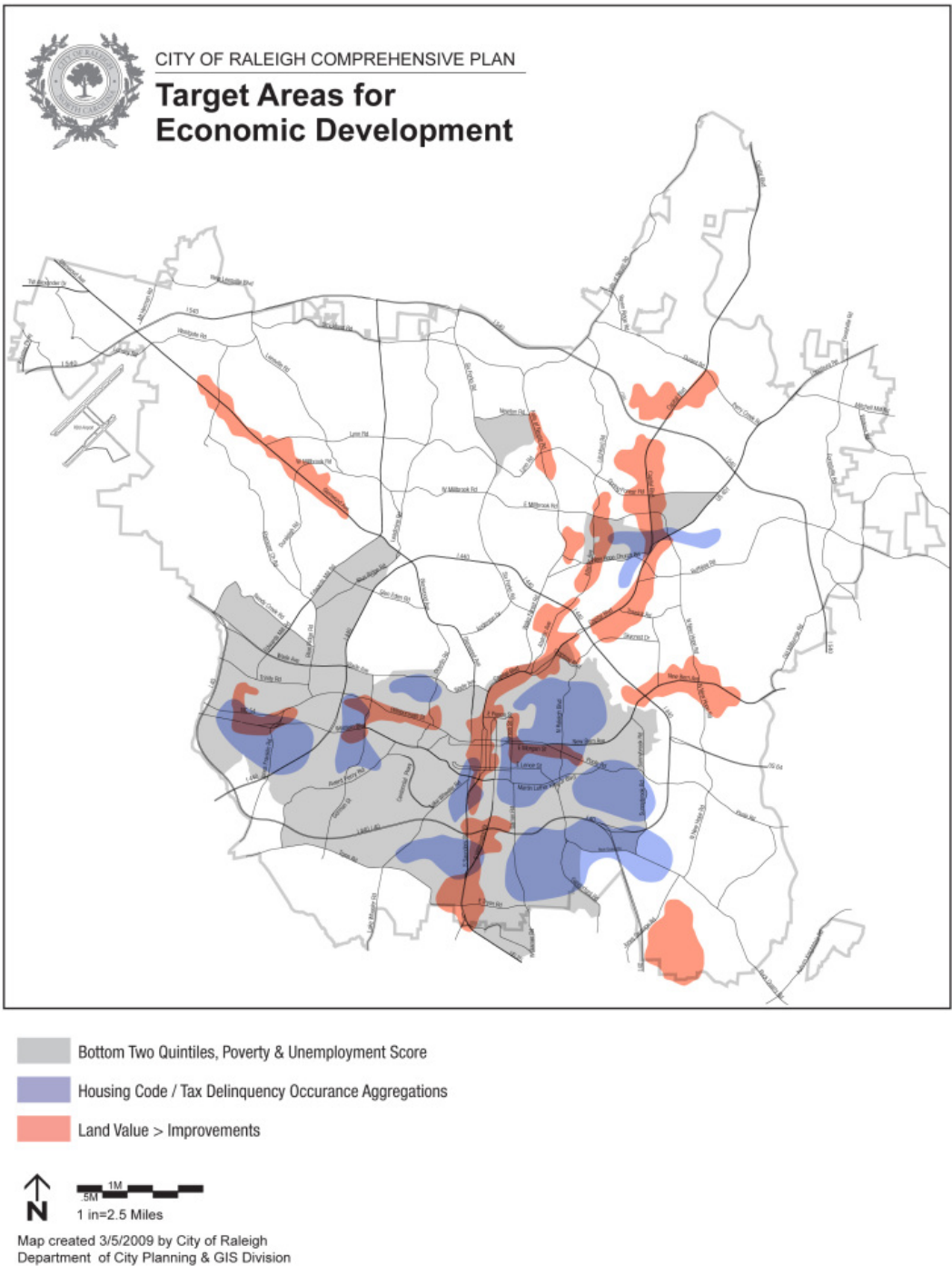
The Target Areas map should serve as a guide for identifying the highest priority areas for economic development. Areas of Raleigh that are overlaid by all three indicator hues demonstrate a confluence of underutilized property, signs of property disinvestment, and census tracts that rank in the bottom 40 percent for poverty and unemployment, and could thereby be considered the most opportune areas for economic development targeting. One example of such an area is the New Bern Avenue/ Poole road corridor east of





Downtown Raleigh. Lower priority levels can be determined by identifying areas where fewer indicators overlap. The Target Areas Map is an illustrative tool based upon quantitative analysis that is intended to provide policy makers and other stakeholders with an initial identification of underperforming areas within the City of Raleigh that can benefit most from economic development activities such as public participation in development and/or job creation projects.

Map 4.10 Target Areas for Economic Development





## 4.8 Conclusion: Key Issues and Potential Strategies

Review of economic trends and opportunities raise a number of issues that need to be addressed in the Comprehensive Plan strategies. The following pages discuss these issues and offer some policy suggestions for consideration.

### Key Issues

#### Key Issue 4.1

The increasing scale of commuting is threatening the region's competitiveness, environment and quality of life. As jobs and housing disperse, commuting times lengthen and opportunities for walking, biking and transit use decline. The Research Triangle Region has the largest cross county commuting patterns in the state. Increasing the supply of housing in close proximity to downtown and other employment centers would create a more sustainable City.

#### Key Issue 4.2

The jobs of the 21st century require increasingly high levels of literacy, math and science skills. Quality education for all the City's children and life-long opportunities to develop new skills will be the keystone of a sustainable economy. Many of the City's residents, who in the past might have found opportunities for well-paid jobs in manufacturing, need additional training to fill the new jobs created as the economy changes into the future.

#### Key Issue 4.3

The completion of I-540 across northern Wake County to U.S. 64 has created a significant residential building boom in eastern Wake. This increases the number of workers for whom Raleigh is the closest large employment market, potentially increasing Raleigh's value as location for offices and other employment generating uses that need to attract from a large labor pool.

#### Key Issue 4.4

The bulk of Raleigh's office space is located in suburban office-park style developments, which are little different from those found in Cary, Morrisville, and RTP. Creation of pedestrian-oriented mixed-use districts that accommodate retail, services and housing in close proximity to jobs could provide the City with a significant competitive advantage relative to single-use business parks by providing a product type largely absent from the regional marketplace.

#### **Key Issue 4.5**

Several of the City's older business districts are declining in the face of competition from newer shopping centers located on the outskirts of the City. With many of these located at key gateways to the City and the downtown such as Capital Boulevard and New Bern Avenue, these declining centers negatively influence the image of the city, blight the surrounding neighborhoods, and encourage crime. Restoring health to these districts is vital to the stability and long-term viability of nearby residential areas and the city as a whole.

#### **Key Issue 4.6**

Declining business districts are partly due to the generous supply of land with zoning that permits retail development (this includes industrial zoning) encourages continued sprawl and strip development along the City's major thoroughfares. The ready availability of greenfields with commercial zoning on the urban fringe discourages the more difficult process of reusing and redeveloping older existing centers, even as it siphons market support from these centers.

#### **Key Issue 4.7**

The zoning code allows land zoned for industrial uses including modern flex space to be developed for retail and other non-industrial uses, leading to a loss of land available for these employment-generating uses. Ensuring a long-term supply of well-located industrial land will be important in continuing to grow the City's economy.

#### **Key Issue 4.8**

South and East Raleigh have not participated fully in the City's office and retail development, leaving these communities underserved. Physical barriers as well as social and economic challenges have constrained its potential for change. In the older parts of Southeast Raleigh, population densities have declined, undermining market support for retail. Public improvement strategies need to benefit all portions of the City and help to create competitive environments for new employment centers in South and East Raleigh.

#### **Key Issue 4.9**

Intergovernmental coordination among agencies is essential to facilitate growth and development. Better coordination of the City's economic development programs could enhance their effectiveness and allow focus on emerging development issues, such as reinvigorating aging commercial centers and corridors.



#### **Key Issue 4.10**

Raleigh and the Research Triangle Region as a whole are attracting companies in part because of the region's success in attracting skilled technology industry workers and their families. That appeal reflects the mix of good employment and educational opportunities, the high quality of life, and the relatively low cost of living. Continued long-term success will depend on maintaining these assets.

#### **Key Issue 4.11**

The City's colleges and universities offer not only a valuable workforce, but also expertise in business, science, engineering and technology development. Given these resources, Raleigh possesses great capacity to support and sustain knowledge-based businesses, entrepreneurial activity in life sciences and biotechnology, informatics, and virtual gaming and advanced learning industries. The City's educational institutions must play a larger role in the region's and City's economic development efforts to ensure its long-term economic stability. The Centennial Campus at North Carolina State University offers distinct opportunities for attracting and supporting new knowledge-based industries, while Wake Technical Community College provides a diverse curriculum in business, the sciences, and applied technologies.

#### **Key Issue 4.12**

Entrepreneurs provide much economic vitality as they respond to market needs, grow their businesses and hire local residents. Actions that encourage, support and nurture small business activity also help to create sustainable local economies. Raleigh has a well-educated populace with many individuals possessing the required skills to become successful entrepreneurs. The presence of research universities and venture capitalists fuel entrepreneurial growth by providing the necessary capital to start or expand businesses. Organizations like the Council for Entrepreneurial Development (CED) and the Raleigh Business and Technology Center also provide a forum to discuss new ideas and trends, get advice on entrepreneurial challenges faced in the Triangle Region, find technical assistance, and evaluate factors that facilitate entrepreneurship in the region.

#### **Key Issue 4.13**

Population growth, increased births, and an aging population are all driving significant growth in the health care sector. As the largest population center with three major hospital systems present, Raleigh is well positioned to benefit from this growth.

## Potential Strategies

### Potential Strategy 4.1

Differentiate Raleigh from an office site location perspective by facilitating opportunities to develop office buildings in mixed-use urban settings. These include the downtown and older commercial corridors, as well as new development nodes. Examples of the latter include North Hills East, 40 Wade, and 5401 North.

### Potential Strategy 4.2

The City's commuting burden and the accompanying decline in quality of life could be improved by mixing residential and employment land uses. New housing, including affordable and workforce housing, should be concentrated near existing and proposed new employment centers and along transit corridors to shorten commutes and provide commuting options.

### Potential Strategy 4.3

Identify the space needs of growth and budding niche industries and pro-actively seek to provide the zoning and infrastructure necessary to meet these needs. These might include lower-cost sites with good highway access for flex and business parks; downtown and in-town sites appropriate for corporate office development; "funky" new and reuse office opportunities in vibrant settings for technology businesses; and large certified sites zoned for industry to accommodate distribution and production uses (a certified site has water, sewer, roadway access, and has undergone a Phase 1 environmental assessment).

### Potential Strategy 4.4

In partnership with the County and Wake Technical Community College, offer workforce training options for City's expanding industries (e.g., hospitality/food service, tourism, medical device manufacturing, advanced medical care/clinical research, etc.). In particular, target the needs of displaced workers, the unemployed, and the underemployed.

### Potential Strategy 4.5

Encourage a more extensive and diverse downtown residential base, including a mix of rental and ownership housing, attractive to knowledge workers seeking a more urban style of living less dependent on automobiles.





#### **Potential Strategy 4.6**

Identify and prioritize areas in need of public-sector intervention to stimulate economic development, including obsolete commercial centers. Such identification can be based on measure of disinvestment, as well as measures of need in the surrounding neighborhoods, such as lower incomes and higher unemployment.

#### **Potential Strategy 4.7**

Incentivize redevelopment of infill commercial centers through zoning, land use regulations and public investments in infrastructure. In order to plan for such investments, create a framework and the capacity to undertake strategic small-area economic development planning, linking proposed public investments with desired private investments.

#### **Potential Strategy 4.8**

Related, identify and target key sites ready for redevelopment and actively market them as potential opportunities in partnership with the Greater Raleigh Chamber of Commerce.

#### **Potential Strategy 4.9**

Identify specific areas in the City with the best potential for industrial growth. Evaluate commercially- and industrially-zoned areas city-wide to pinpoint potential areas important to preserve industrial zoning.

#### **Potential Strategy 4.10**

Consider eliminating retail as a matter-of-right use in industrial zones. This would require a significant amount of exiting industrially-zoned land to be rezoned so as to avoid widespread non-conforming uses.

#### **Potential Strategy 4.11**

Focus on specific blocks within designated redevelopment areas in South and East Raleigh for economic development planning and projects.

#### **Potential Strategy 4.12**

Continue to focus efforts on improving quality of life options, decreasing crime, and mixing incomes in South and East Raleigh.

#### **Potential Strategy 4.13**

Identify appropriate areas in South and East Raleigh for additional development density, so as to (1) improve the economics of redevelopment; (2) add to the supply of affordable housing; and (3) create a larger market base to support more and better goods and services available to local residents.

#### **Potential Strategy 4.14**

Explore ways to encourage small business development in underserved communities, such as gap financing and providing training and support for local entrepreneurs.

#### **Potential Strategy 4.15**

Develop a strategic economic development action plan for the City that identifies key actors and responsibilities.

#### **Potential Strategy 4.16**

As part of such a plan, explore the best administrative structure to increase economic development capacity at the City level and to coordinate the City's economic development activities, particularly those related to commercial district revitalization.

#### **Potential Strategy 4.17**

Recognize that the City's parks, leisure and cultural amenities are key parts of its economic development infrastructure. Accordingly, look to leverage each of these assets to support the City's economic development goals. Ideas include maximizing the capture of ancillary retail spending generated by event venues such as the Convention Center, Progress Energy Arts Center, and RBC Center; marketing the greenway system as an amenity for adjoining commercial developments; and emphasizing hotel development adjacent to major visitor generators.



#### **Potential Strategy 4.18**

Support alternate modes of transportation, including enhanced local transit; local and regional rail and bus investments; and mixed-use areas that facilitate walking trips throughout the day. Encourage employers to locate at key nodes within this system, recognizing that while residential uses benefit from a location along the line, employers need to be at the convergence of lines to maximize access to the local labor force.

#### **Potential Strategy 4.19**

Consider a new zoning district or overlay for colleges and universities, recognizing that these institutions have special needs and develop to different standards (for parking, site layout, etc.) than do commercial developments. The zoning process should also recognize the significant amount of campus master planning that these institutions do as they plan for their future growth needs decades out.

#### **Potential Strategy 4.20**

Likewise, facilitate through land use policy the continued growth and expansion of the City's health care providers.

#### **Potential Strategy 4.21**

Collaborate with university faculty and students on projects dealing with smart growth, redevelopment, zoning/land use, neighborhood/district revitalization, housing, and green design.

#### **Potential Strategy 4.22**

Investigate potential for entrepreneurs to locate in Downtown Raleigh in facilities that provide flexible leases for small users. The City currently owns many such spaces, including commercial spaces in parking facilities.

#### **Potential Strategy 4.23**

Identify industry clusters that can take advantage of the skills of the region's endangered manufacturing workforce and work with the City's business recruiters at the Greater Raleigh Chamber to attract these industries to Raleigh.

**Potential Strategy 4.24**

Foster collaborations between area public schools and local businesses to provide employment options for youth.

**Potential Strategy 4.25**

Embrace the City's expanding hospitality and tourism sector by partnering with Wake County to offer training opportunities in arts/entertainment, accommodations and food services.



## Housing and Neighborhoods

## 5 Housing and Neighborhoods

### 5.1 Introduction

The City of Raleigh carries out many programs to increase the supply of affordable housing and stabilize and improve older neighborhoods that need additional resources. Many of these programs have been successful due to the City's partnership with other governmental entities, for profit and nonprofit organizations, and local residents.

The ultimate goal of housing and neighborhood planning activities and programs is to increase housing opportunities for existing and future residents and to create diverse neighborhoods of choice in the City of Raleigh that attract new investment and which do not exclude residents due to housing costs or discriminatory practices. The coordination and funding of housing and neighborhood planning activities and programs across several City departments will be one of the principal challenges for the City during the next 20 years.

### 5.2 Housing

The City of Raleigh Community Development Department has been able to use federal, state, and local resources to produce and preserve affordable housing throughout the City. Affordable housing includes rental units as well as for sale units. Many of these efforts have been successful due to the City's collaboration with Wake County, the Raleigh Housing Authority, the North Carolina Housing Finance Agency, as well as private housing developers. The City's housing bond has been a significant resource for the development of affordable housing, including supportive housing for persons with disabilities and homeless individuals and families.

In order to insure that the existing housing stock in Raleigh is safe and decent housing, the City's Inspections Department enforces housing and building codes to eliminate unsafe and substandard housing conditions. In addition, the Community Development Department operates several different housing rehabilitation programs for low-income homeowners.

#### Housing Conditions

The City has adopted housing and building codes to help insure that all housing in the City is constructed and maintained as safe and decent housing. More than 50 percent of the housing units in Raleigh have been built after 1980. Although the City has demolished much of the substandard housing stock in the City's redevelopment areas, there are still many areas in the City where housing has deteriorated or been neglected. In these instances, deteriorated or abandoned housing acts to discourage new investment in the surrounding neighborhood. The City uses code enforcement to require property owners to improve their properties but also provides assistance in the form of grants and loans to help homeowners rehabilitate their homes.

#### Code Enforcement

The City of Raleigh Inspections Department is responsible for enforcing the City's housing, nuisance, and zoning codes, as well as unsafe building code. A continuing concern in the City relates to houses that are boarded up and/or neglected by the owner. Sometimes these properties are heir properties where the relatives of the original owner have decided to board the property to prevent vandalism. More often, the Inspections Department finds that a property owner is renting out a house which has housing, nuisance, zoning, or unsafe building code violations. The Inspections Department allows the owner to either carry out the repairs or else vacate the residence and board up the property for up to one year. If repairs are not carried out within one year, the City will proceed to demolish the property and place a lien on the parcel to cover the cost of





demolition. As shown in the Table 5.1 below, many property owners have chosen to vacate and board their properties instead of taking care of the repairs immediately. As of December, 2007, there were 112 Vacant and Closed houses according to the Inspections Department. In addition there were another 170 active housing code violation cases in the City. The greatest concentration of vacant and closed houses is in the Central Planning District where 55 out of 112, or 49 percent, of the houses are located. The second highest concentration is in the Southwest Planning District, which has 25 vacant and closed houses, or 22 percent of the total. In relation to other housing code violations, the Central Planning District currently has 78, or 46 percent, of the total housing code violation cases.

Table 5.1 also depicts the number of PROP permits. In 2005, the City adopted the Probationary Rental Occupancy Permit, or PROP, ordinance. PROP was created to improve housing conditions for renters that live in single family, duplex, and low-density housing. If a landlord has failed to bring a property into compliance with the housing, unsafe buildings, or zoning codes, or if the owner receives multiple code enforcement letters within a certain period of time, the City will require the landlord to obtain a two-year PROP permit. If the landlord fails to maintain the property during the two-year PROP permit period, the City may prohibit the owner's ability to rent the property during the permit period. As of December, 2007, the City had issued 16 PROP permits throughout the City.

The PROP ordinance was amended in 2008 to require all landlords in Raleigh to register with the City. Landlords not registered by the summer of 2009 will face still penalties for failure to register.

**Table 5.1: Active Housing Inspections Cases, by Planning District**

Planning District	Vacant/ Closed Houses	Active Housing Code Violations	PROP Permits
Central	55	78	3
East	3	6	
North	2	6	
Northeast	2	15	2
Northwest	1	3	
North Hills	1	3	
South			
Southeast	14	26	4
Southwest	25	22	5
Umstead		1	
University	9	10	2
<b>Total</b>	<b>112</b>	<b>170</b>	<b>16</b>

*Source: Community Development Department, Inspections Department, December 2007*

Table 5.1 shows the location of active housing inspection cases, including vacant/closed houses, other active housing code violation cases, as well as PROP permits.

### Overcrowding

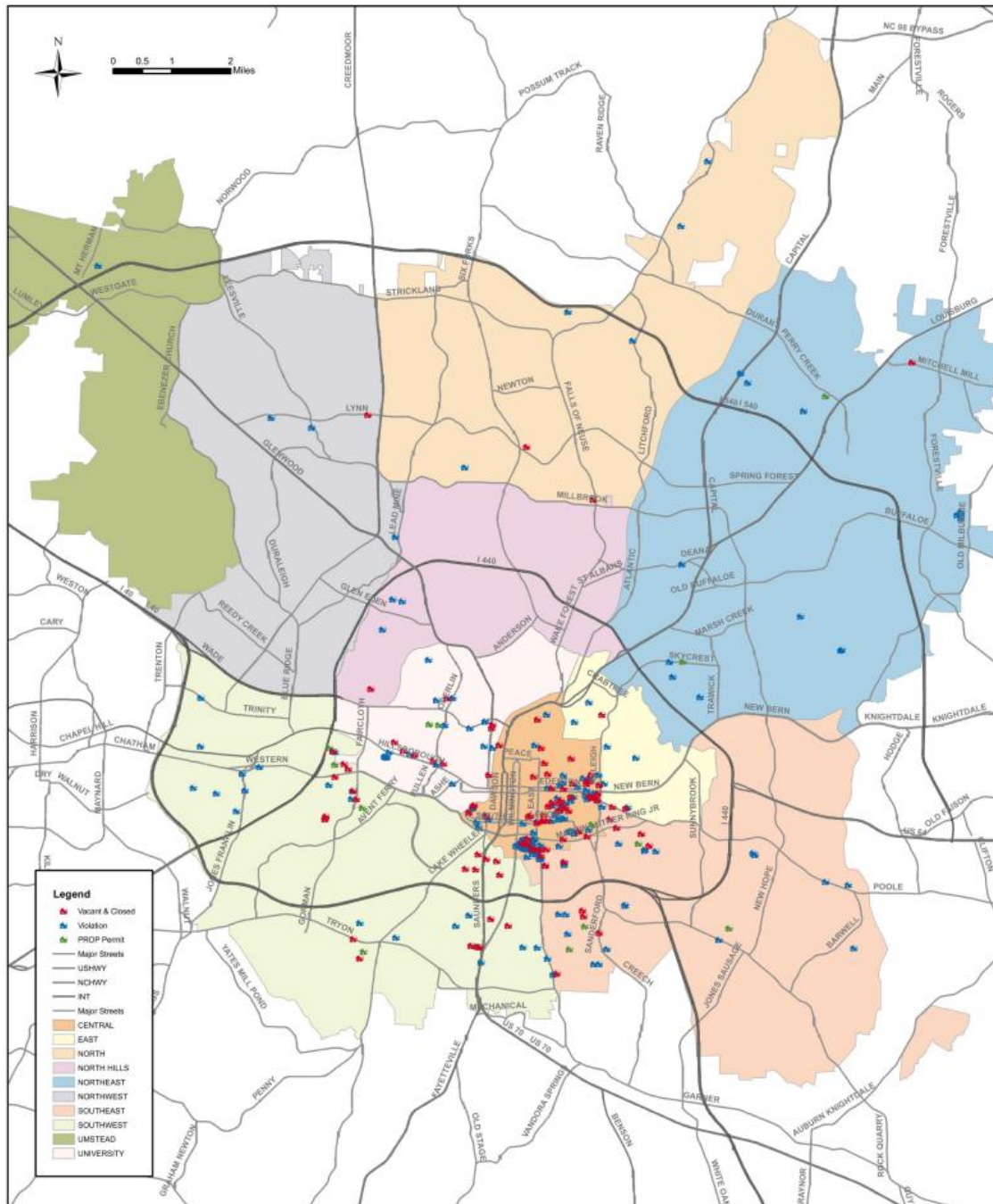
The incidence of overcrowded housing in the City of Raleigh is low. However, a comparison of 1990 and 2000 Census data shows that the number of overcrowded housing units (more than 1.0 person per room) has almost doubled. The 1990 Census reported a total of 2,248 overcrowded housing units. By 2000, the Census reported that this figure had climbed to 4,766 housing units. The percent of overcrowded units in the City increased from 2.7 percent in 1990 to 4.2 percent in 2000. The majority of overcrowded housing units are occupied by renter households. This increase in overcrowding can be an indicator of a lack of affordable housing in a community, although in Raleigh the presence of a large number of student households may affect this figure.

#### Implications for the Comprehensive Plan

- The City has a high incidence of code enforcement issues within the Central, Southwest, and Southeast Planning Districts, and should look for proactive solutions to encourage maintenance and reinvestment.



Map 5.1 Active Housing Inspection Cases



Source: City of Raleigh Community Development Department  
 Information displayed herein is for reference purposes only and is compiled from the best available resources. Work flow items are subject to change. The City of Raleigh assumes no responsibility for misstatements or omissions from the content of this map.  
 March 1, 2020

## Active Housing Inspection Cases

## Affordable Housing

Affordable housing provides stability for families, improves opportunities for education and career advancement, and reduces the risk of homelessness for households that are dependent on low-wages or fixed incomes. Vulnerable populations, including the homeless and persons with disabilities, need safe and affordable housing as well.

The standard definition of affordable housing is housing that does not cost more than 30 percent of gross household income, including rent or mortgage as well as utilities. Households spending more than this are considered to be “cost burdened.” Low-income households who are housing cost burdened must often sacrifice basic necessities, such as adequate food, clothing, health care, or child care, in order to pay for housing.

Affordable housing is a key factor to insuring community vitality and continued economic growth. Increased housing costs and the loss of market rate affordable housing stock pushes more households farther away from the city, increasing both public infrastructure and private household transportation costs. A lack of affordable housing puts more low-income households at risk of inadequate housing conditions, such as overcrowding or doubling up, or even homelessness.

As the City of Raleigh continues to grow, it is faced with two principal challenges in the next 20 years: 1) producing new affordable units; and 2) preserving existing housing units, both assisted and market rate, which provide decent affordable housing. Preservation of subsidized and non-subsidized affordable units becomes more critical as the cost of constructing new affordable units becomes more expensive (e.g. land cost and construction costs, development fees, lengthy development review process). In addition, affordable housing proposals often face neighborhood opposition.

### Affordable Housing Needs

Affordable housing includes subsidized housing that has been developed by the public, non-profit, or private sector, but it can also include privately owned housing stock that is not subsidized. Affordable housing, both rental and for sale units, are needed for households with incomes below 80 percent of the area median income for Raleigh. In 2008, this equates to \$59,900 for a family of four or \$41,950 for a one person household. While affordable homeownership programs are typically focused on households between 60 to 80 percent of median income, affordable rental housing is usually targeted to households below 60 percent of area median income (\$44,940 for a family of four, or \$31,440 for an individual). As is true nationally, the majority of low-income households do not receive any housing assistance in Raleigh with only a small portion served by the Raleigh Housing Authority and private and nonprofit agencies.

Affordable housing needs in the City can be understood by looking at several variables, including the number of households with cost burden, current housing costs for rental and for sale housing units, as well as the inventory of affordable housing and its location within the City boundaries.

As shown in Table 5.2, the number of low-income households paying more than 30 percent of their income for housing has increased from 20,141 in 1990 to 26,583 in 2000, for an increase of 32 percent. The percentage of low-income households with cost burden increased very slightly from 23.5 percent of total households in 1990 to 23.6 percent of total households in 2000. Of the 26,583 households in Raleigh with cost burden, the majority, or 19,377, are renters.



**Table 5.2: Low-Income Households with Cost Burden, City of Raleigh 1990 & 2000**

	1990	2000	% Change
Low-Income Renter Households with 30% Cost Burden	15,460	19,377	25.3
Low-Income Owner Households with 30% Cost Burden	4,681	7,206	53.9
<b>Total Households with 30% Cost Burden</b>	<b>20,141</b>	<b>26,583</b>	<b>32.0%</b>

Source: CHAS Tables for 1990 and 2000 available through HUD User ([www.huduser.org](http://www.huduser.org))

Although the American Community Survey does not include the same 1990 and 2000 Census special cross tabulations of household income and housing costs created for the U.S. Department of Housing and Urban Development (commonly referred to as the CHAS tables), the Survey does document the incidence of cost burden for households in Raleigh by looking at the cost of housing, including utilities, as a percentage of household income. According to the 2006 American Community Survey, there are 28,882 renter-occupied and 11,292 owner-occupied households with annual incomes below \$50,000 in Raleigh that are paying more than 30 percent of their income for housing costs. As shown in Table 5.3 below, cost burden is particularly acute for both renters and owners with incomes below \$20,000 per year. Moreover, many of these same households are experiencing severe cost burden since they often have to pay more than 50 percent of their income for housing costs.

**Table 5.3: Raleigh Households Below \$50,000 Annual Income with Cost Burden, 2006**

Affordable Housing Needs for Renter Households,	Renter Households		
	Total Renter Households	with 30% or more Cost Burden	% of Households with Cost Burden
<b><u>by Household Income</u></b>	-	-	-
Renter Households Less than \$10,000	9,021	7,550	84
Renter Households \$10,000 to \$19,999	11,126	10,320	93
Renter Households \$20,000 to \$34,999	15,722	10,063	64
Renter Households \$35,000 to \$49,999	9,734	949	10
<b>Subtotal</b>	<b>45,603</b>	<b>28,882</b>	<b>63%</b>
Renter Households \$50,000 or more	17,019	377	2
<b>Total Households</b>	<b>62,622</b>	<b>29,259</b>	<b>47%</b>
Affordable Housing Needs for Owner Households	Owner Households		
	Total Owner Households	with 30% or more Cost Burden	% of Households with Cost Burden
<b><u>by Household Income</u></b>			
Owner Households Less than \$20,000	3,394	2,941	87



Affordable Housing Needs for Renter Households,	Renter Households		
	Total Renter Households	with 30% or more Cost Burden	% of Households with Cost Burden
Owner Households \$20,000 to \$34,999	5,970	3,357	56
Owner Households \$35,000 to \$49,999	10,038	4,994	50
<b>Subtotal</b>	<b>19,402</b>	<b>11,292</b>	<b>58%</b>
Owner Households \$50,000 or more	51,864	5,854	11
<b>Total Households</b>	<b>71,266</b>	<b>17,146</b>	<b>24%</b>

Source: 2006 American Community Survey, Table B25074, Household Income by Gross Rent as a Percentage of Housing Income; Table B25106, Tenure by Housing Cost as Percentage of Household Income

The challenge of trying to find affordable rental housing in Raleigh is illustrated with the table below which compares different income levels with affordable housing cost levels calculated at 30 percent of household income and the FY 2008 Fair Market Rent (FMR). The FMR is published by HUD every year to determine the average cost for a modest apartment within the Raleigh-Cary MSA.

**Table 5.4: Comparison of Renter Household Income, Affordable Housing Costs, and Fair Market Rent in Raleigh**

Income Category	Total Renter Households in Raleigh*	Affordable Housing Cost at 30% of Income	FY 2008 Fair Market Rent for 1 Bedroom Apartment	Affordability Gap
Renter Households with Annual Incomes below \$10,000	9,021	\$250	\$717	(\$467)
Renter Households with Annual Incomes \$10,000-\$19,999	11,126	\$375 (based on \$15,000)	\$717	(\$342)
Renter Households with Annual Incomes \$20,000 - \$35,000	15,722	\$687 (based on \$27,500)	\$717	(\$30)

\*2006 American Community Survey, U.S. Department of Housing and Urban Development

The shortage of affordable housing for extremely low-income households (below 30 percent of Median Income) results in a significant demand for public housing units and housing choice vouchers from the Raleigh Housing Authority. According to the Housing Authority's FY 2008 Annual Plan, there are 2,042 families on the waiting list for public housing units and another 5,864 families on the waiting list for Housing Choice Vouchers. As shown in Table 5.5 below, more than 90 percent of the persons on both waiting lists are extremely low-income. Of the 7,906 families on both waiting lists, 7,613, or 96 percent, are below 30 percent of median income.





**Table 5.5: Number of Families on Raleigh Housing Authority Waiting Lists for Public Housing and Housing Choice Vouchers\***

Waiting List	Number of Families	Number of Families Below 30% of Median Income	% of Families Below 30% of Median Income
Public Housing	2,042	2004	98%
Housing Choice Vouchers	5,864	5,609	96%
Total	7,906	7,613	96%

*\*FY 2008 Annual Plan, Raleigh Housing Authority*

The cost of market rate for sale housing units in Raleigh is becoming increasingly out of reach for low-income households (\$57,300 for a family of four) and even median income households (\$69,900 for a family of four). Using a standard of 2.5 times household income to determine affordable for sale housing, this equates to a housing price of \$143,250 for a low-income household or \$174,750 for a median income household in Raleigh. As shown in the table below, the 2006 median sales price was \$225,000 for new single family home and \$193,000 for an existing single family home.

**Table 5.6: 2006 Residential Sales: Median Sales Price Values in the City of Raleigh\***

	New Units	Existing Units	All Units (New & Existing)
Single Family Detached	\$225,000	\$193,000	\$200,000
Townhouses	\$172,000	\$132,000	\$150,500
Condominiums	\$185,500	\$120,500	\$130,000
Median Sales Price for all Units	\$195,000	\$166,000	\$175,000

*Source: Wake County Revenue Department*

As the sales prices for detached housing units increase, the demand for attached housing (townhouses and condominiums) will likely increase in the near future. The table below shows the type of housing units sold by price range and housing type during 2006. Purchases of townhouse and condominium units combined exceed the number of single family homes sold for prices below \$135,000. Of the 970 units priced under \$100,000, for example, condominium and townhouses combined were 716 of the 970 units sold, or 74 percent.

**Table 5.7: Numbers of Residential Sales by Price Range and Type of Unit, Raleigh 2006**

Price Range of Sales	All Units	Single Family	Townhouse	Condo
\$25,000 to \$100,000	970	254	356	360
\$100,001 to \$125,000	1,052	386	484	182
\$125,001 to \$135,000	689	310	246	133
\$135,001 to \$150,000	1,057	545	368	144

Price Range of Sales	All Units	Single Family	Townhouse	Condo
\$150,001 to \$175,000	1,521	928	533	60
\$175,001 to \$200,000	1,212	754	265	193
\$200,001 to \$250,000	1,404	994	315	95
\$250,001 to \$300,000	842	638	163	41
\$300,001 to \$350,000	471	351	83	37
\$350,001 to \$400,000	325	248	51	26
> \$400,000	973	885	47	41
Total Sales	10,516	6,293	2,911	1,312

The increase in condominium sales at prices above \$175,000 may in part be due to new condominium development in downtown Raleigh. Most, if not all, of the condominiums that have been completed recently are being listed at prices above \$300,000 per unit. According to the Wake County Revenue Department, the 2006 median sales price for new condominiums in the 27601 and 27603 Zip Codes, which encompass downtown, was \$319,000 and \$336,000 respectively.

The City adopted a new Downtown Overlay District in 2006 which contains a density bonus for developers who include affordable for sale or rental units in their projects. To date, none of the residential developments constructed within the Downtown Overlay District have used the affordable housing density bonus.

### Affordable Housing Inventory

There are 7,564 units of affordable housing in the City of Raleigh. These units include traditional public housing units owned by the Raleigh Housing Authority as well as apartments developed by for profit and non profit housing developers with low-income housing tax credits. The inventory of affordable housing in Raleigh also includes 3,580 housing choice vouchers that are managed by the Raleigh Housing Authority (RHA). The vouchers are not project based and may be used throughout the City of Raleigh as well as Wake County by voucher holders. The Wake County Housing Authority currently has 193 housing choice vouchers which can be used throughout the County. In addition, Wake County Human Services has housing choice vouchers that are targeted for homeless persons and persons with disabilities (see discussion under Supportive Housing). Including RHA housing choice vouchers, the most current estimate of total assisted affordable housing units in the City of Raleigh is 11,144, less than 5 percent of Raleigh's total housing supply.

Table 5.8 below provides information on the assisted affordable housing inventory in Raleigh, by type of housing. The inventory includes 186 affordable rental units owned by the City of Raleigh as well as 2,137 rental units developed with financial assistance from the City's joint venture program.

**Table 5.8: Assisted Affordable Housing Inventory (July 2007)**

	Number of Units
City of Raleigh Affordable Rental Units	186
Raleigh Housing Authority Units	1,592
Rental Units with Funding from HUD (e.g. Section 8)	1,332
Low-Income Housing Tax Credit (LIHTC) Units	1,844



	Number of Units
Rental Units with Funding from City of Raleigh (Joint Venture)	2,137
Homeownership Units with Funding from City of Raleigh	473
<i>Subtotal</i>	7,564
Raleigh Housing Authority Housing Choice Vouchers	3,580
<i>Subtotal</i>	3,580
<b>TOTAL</b>	<b>11,144</b>

Source: City of Raleigh Community Development Department, July 2007

The affordable housing inventory in the City of Raleigh also includes market rate, privately owned rental and for sale units. These units include older apartment complexes as well as older single family homes. Some of the apartment complexes have been demolished in the last five years due to private infill redevelopment or have been converted to condominiums. In most instances, apartment complexes are being replaced with for sale housing units with price points starting at \$400,000 and above. Table 5.9 below provides information on the complexes that have been or will be demolished as well as complexes that have been converted to owner occupied units. To date, 594 affordable rental units have been demolished and another 348 are planned to be demolished in the near future. There have been 116 rental units converted to condominiums adjacent to Joyner Elementary School. In sum, there are over 1,000 units of affordable market rate units that will be removed from the City's housing inventory.

**Table 5.9: Affordable Market Rate Apartments Removed from Inventory (Due to Private Infill Redevelopment or Conversion to Condominiums)**

Name	Address	Number of Units	Rents (2004)	New Development
Tara East Apartments (D 2006)	3921 Tara Drive	196	N/A	Ramblewood at North Hills
North Hills Terrace (2007)	4115 Camelot Drive	204	\$525 - \$725	North Hills East
Whitaker Park (D 2007)	2127 Noble Road	194	\$450 - \$650	The Oaks at FallonPark
<i>Subtotal</i>		594		
<b>Demolition Pending</b>				
Country Club Homes	2518 Fairview Road	198	\$595 - \$650	Proposed Continuing Care Community
Lantern Square	109 Ramblewood	150	N/A	Unknown
<i>Subtotal</i>		348		
<b>Market Rate Affordable Apartments Converted to Condominiums</b>				
Northside	2110 Bernard	116	\$500	

Name	Address	Number of Units	Rents (2004)	New Development
<i>Subtotal</i>		116		
<b>Total</b>		<b>1,058</b>		

Source: Community Development Department, December 2007

### Scattered Site Policy

Since 1979, the City of Raleigh has utilized a Scattered Site Housing Policy to encourage the development of affordable rental housing throughout all areas of the City and to encourage the rehabilitation of substandard housing in older neighborhoods. This policy was requested by the U.S. Department of Housing and Urban Development and originally applied only to public housing units. The policy has since expanded to cover other assisted rental housing units. The policy divides the City into four different priority areas. Priority Area 1, which is defined as the high growth area, does not contain any low-income census tracts or census tracts with minority populations more than 23 percent. Priority Area 2 also does not contain any low-income census tracts but does have tracts with minority populations between 23 and 60 percent. Priority Area 3 includes redevelopment areas as well as special objective areas, such as HOPE VI. Priority Area IV is the area where assisted rental housing is prohibited unless the City Council approves exceptions. Priority Area IV includes low-income census tracts as well as tracts with minority populations greater than 60 percent. Table 5.10 below compares the new construction and rehabilitation limits on assisted rental housing in each of the Priority Areas.

**Table 5.10: Scattered Site Policy Criteria by Priority Area**

	Priority Area I (High Growth)	Priority Area II	Priority Area III (Redevelopment Areas/ HOPE VI)	Priority Area IV (Minority-concentrated/ low-income)
Rehabilitation Limits	<b>100 Units</b> May exceed unit cap if full time manager employed on site	<b>100 Units</b> May exceed unit cap if full time manager employed on site	<b>100 Units</b>	<b>100 Units<sup>(1)</sup></b>
Rehab Exemptions	<b>No limit for elderly or disabled</b> Existing projects which are publicly managed or have other public subsidies	<b>No limit for elderly or disabled</b> Existing projects which are publicly managed or have other public subsidies	<b>No limit for elderly or disabled</b> May exceed 100 units if goal is to preserve and upgrade older communities	<b>No limit for elderly or disabled</b> May exceed 100 units if goal is to preserve and upgrade older communities
New Construction Limits	<b>50 Units or 80 Units</b> (with on-site manager)	<b>50 Units or 80 Units</b> (with on-site manager)	<b>No limits if in conformance with plans</b>	N/A
New Construction Exemptions	<b>No limits for Elderly Projects</b>	<b>No limits for Elderly Projects</b>	<b>No limits for Elderly projects</b>	<b>No limits for Elderly Projects</b>

1 The Scattered Site Policy is not explicit about rehabilitation limits or exemptions in Priority Area IV



The Community Development Department evaluates proposed affordable rental developments using several factors, including the location of the development within each of the Priority Areas. Although the Scattered Site Policy is not a legally enforceable ordinance, the City recommends that other funders take the City's Scattered Site Policy into consideration during their own evaluation process. There is interest in looking at ways to increase the effectiveness of the Scattered Site Policy in order to encourage more affordable rental housing development in the Priority 1 areas, particularly mixed-income development. Map 5.2 displays the location of affordable assisted housing within each of the four priority areas.

Table 5.11, shown below, provides information on the location of assisted affordable housing units (not including housing choice vouchers) within each of the ten planning districts that are used by the City Planning Department. The Central Planning District contains 25.4 percent of the affordable housing stock while the Umstead Planning District contains 3.2 percent of the affordable housing units. Map 5.3 shows the location of assisted affordable rental units with each of the Planning District.

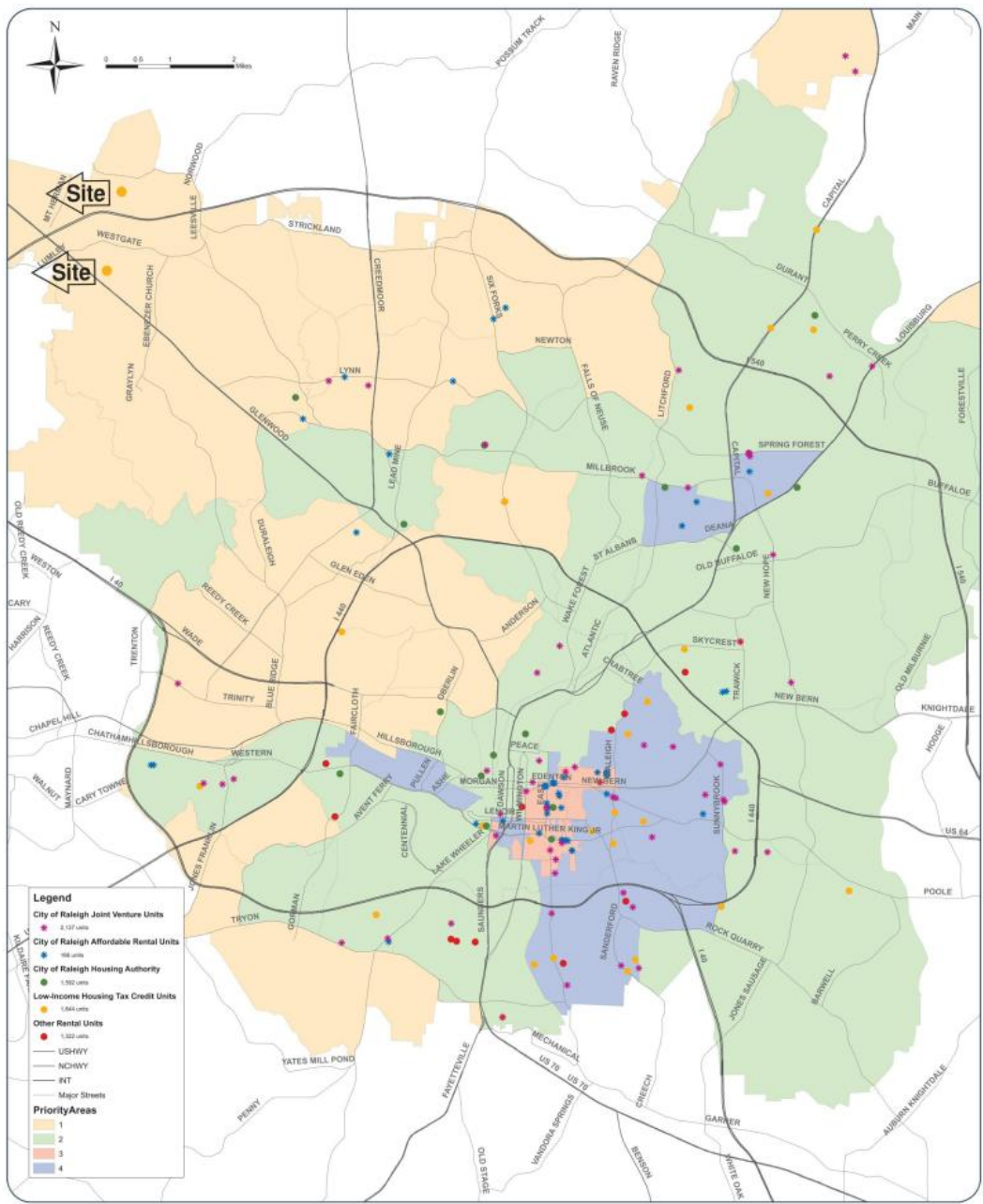
**Table 5.11: Assisted Affordable Housing Inventory by Planning District\***

City of Raleigh Planning District	Affordable Units	Percentage
Central	1,920	25.4%
East	507	6.7%
North	400	5.3%
North Hills	316	4.2%
Northeast	1,108	14.7%
Northwest	292	3.9%
Southeast	1271	16.8%
Southwest	985	13.0%
Umstead	240	3.2%
University	525	6.9%
Total	<b>7,564</b>	<b>100.0%</b>

*\*Does not include Raleigh Housing Authority Housing Choice Vouchers*



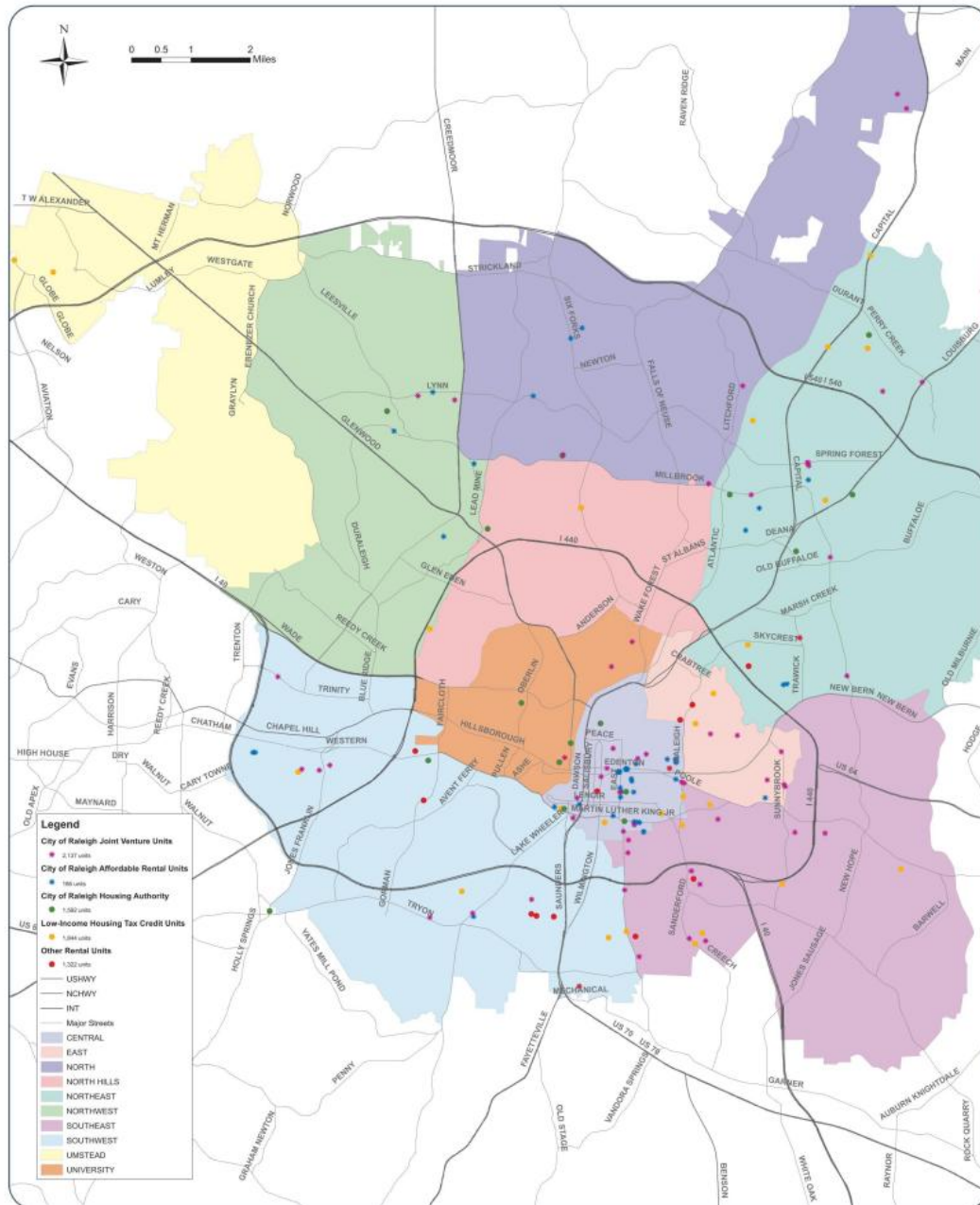
Map 5.2 Affordable Assisted Housing Units by Priority Area







Map 5.3 Affordable Assisted Housing Units by Planning District



Source: City of Raleigh Community Development Department  
Information reported herein is for informational purposes only and is compiled from the best available sources. While every effort is made to ensure the accuracy of the data, the City of Raleigh assumes no responsibility for errors or omissions from the source of the data.  
March 1, 2018

## Affordable/Assisted Rental Housing By Planning District

Table 5.11 below analyzes the number of assisted affordable units as a percentage of the total housing units in each planning district. The Central Planning District, for example, contains 8,406 housing units, including 1,920 affordable units. The District has 4.86 percent of the total housing units in Raleigh but the percentage of affordable units in the district is 22.84 percent. In new development areas, such as the Northeast, the opposite is true. The Northeast Planning District contains 17.6 percent of the total housing units in the City, including the ETJ area. Of this total, 1,108 units are affordable, or 3.63 percent. The Southeast Planning District is the only district with similar percentages. This district contains 15,226 housing units, or 8.8 percent of the total units in Raleigh. The 1,271 affordable units in the Southeast Planning district constitute 8.35 percent of the total units in the district.

Affordable homeownership and rental units total 7,564 units, or 4.37 percent of the total housing units in Raleigh. If the Raleigh Housing Authority Housing Choice Vouchers are included, the total inventory, or 11,144 units, equals 6.0 percent

**Table 5.12: Assisted Affordable Housing Units and Total Housing Units by Planning District\*, City of Raleigh, July 2007**

Planning District	Total Housing Units*	% of Total Units	Affordable Units**	Affordable Units as % of Housing Units in Planning District
Central	8,406	4.86%	1,920	22.84%
East	4,529	2.61	507	11.19
North	33,555	19.40	400	1.19
North Hills	12,655	7.31	316	2.50
Northeast	30,494	17.6	1,108	3.63
Northwest	25,964	15.00	292	1.12
Southeast	15,226	8.80	1,271	8.35
Southwest	22,886	13.22	985	4.30
Umstead	7,610	4.40	240	3.15
University	11,795	6.81	525	4.45
<b>TOTAL</b>	<b>173,120</b>		<b>7,564</b>	<b>4.37</b>

\*Total Housing Units includes units within City Limits and Extraterritorial Planning and Zoning Jurisdiction

\*\*Does not include RHA Housing Choice Vouchers or market rate affordable units.

Source: Community Development Department, Planning Raleigh 2030 District Profiles

### Affordable Housing Resources

The City of Raleigh uses federal housing and community development funds as well as local funding to produce and preserve affordable housing. Federal resources include the Community Development Block Grant (CDBG) as well as HOME Investments Partnerships Program (HOME). For Fiscal Year 2008, the City will receive \$2.39 million in CDBG funds and \$1.3 million in HOME funds. Local resources for affordable housing include the City Housing Bond revenues as well as general revenues. Raleigh citizens have approved



three housing bonds: a \$20 million bond in 1990; a \$14 million bond in 2000; and a \$20 million bond in 2005. The City is able to provide approximately \$6 million per year in local funding, including \$4.5 million in housing bonds and \$1.5 million in general revenues.

Other important resources include the Low-Income Housing Tax Credit, which is administered by the North Carolina Housing Finance Agency, as well as funding from Wake County. The City and Wake County are funding partners in many affordable housing developments, including several supportive housing developments.

### **City of Raleigh Affordable Housing Programs**

The City, through its Community Development Department, manages several different housing programs to address housing priorities established in the 2005-2010 Consolidated Plan for Housing and Community Development. The highest housing priorities are: 1) very low-income renter households; 2) first time low- and moderate-income homebuyers; 3) households needing significant rehabilitation assistance; and, 4) special populations such as homeless persons, disabled persons, and the frail elderly. There is increasing interest in insuring that new affordable housing units are built to be energy efficient. The Community Development Department now requires all new single family homes which receive funding from the City to be Energy Star certified.

**City Affordable Rental Program:** The City's affordable rental program provides affordable rental housing, often in single family homes or duplexes, for households below 50 percent of median income. The rental program included over 200 units at one time but the current inventory totals 186 units.

**First-Time Homebuyer Program:** The Community Development Department provides second mortgages to first time homebuyers in order to assist with the purchase of housing. During FY 2006-2007, the Department provided 100 second mortgages. The second mortgages averaged between \$17,000 and \$20,000 each.

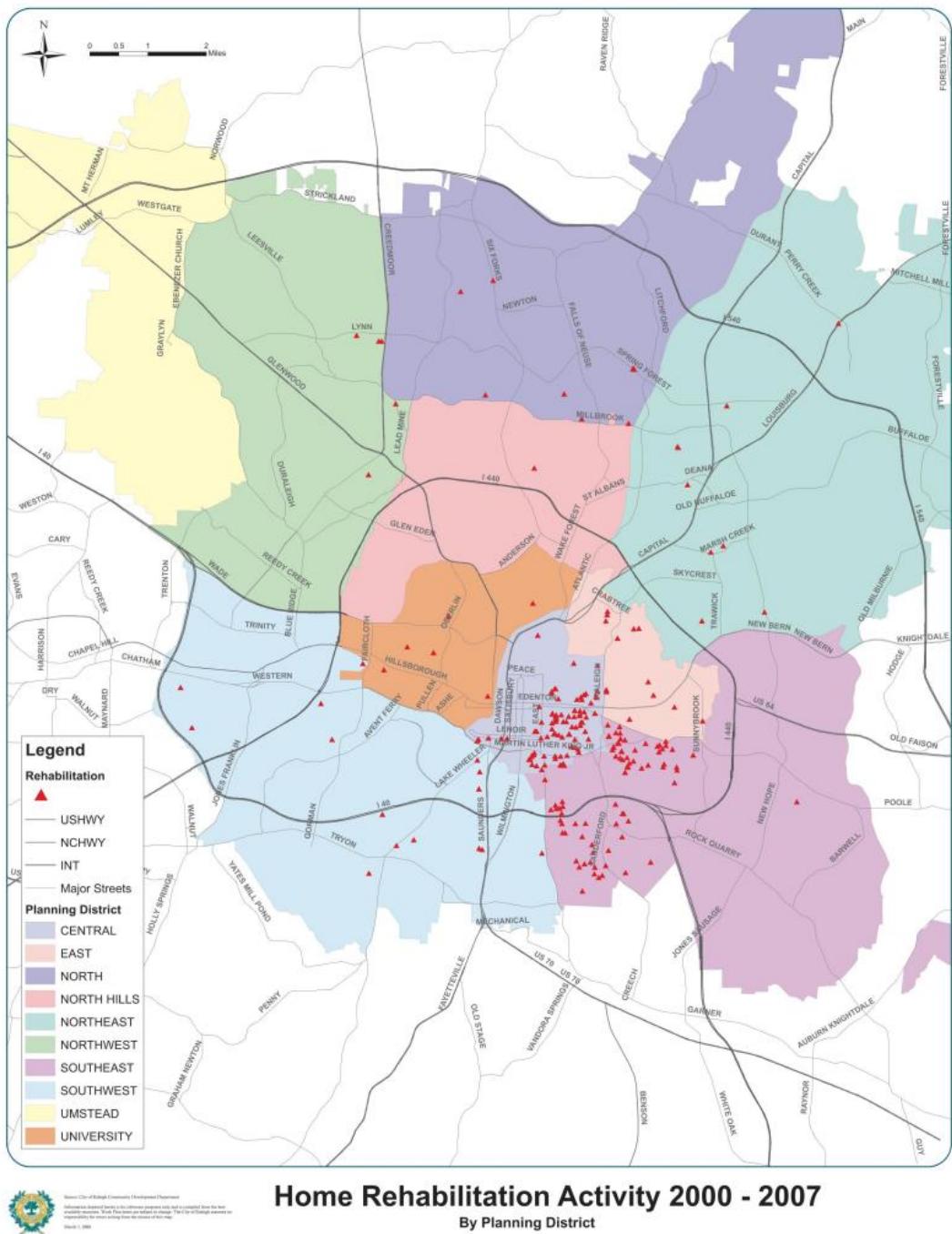
**Joint Venture Program:** The joint venture program uses HOME and Housing Bond funds to produce and preserve affordable rental housing and for sale housing, throughout the City. During the last few years, the joint venture program has provided partial financing for several supportive housing developments that serve both homeless individuals and families as well as non-homeless persons (e.g., Oak Hollow, Crest Commons, Lennox Chase).

**Housing Rehabilitation:** The Community Development Department operates several different housing rehabilitation programs to help homeowners with immediate repair needs as well as substantial rehabilitation needs. Using a combination of federal and local resources, including the housing bond, the Department is able to rehabilitate approximately 60 homes per year, including approximately 20 limited repair rehabilitation projects. Many of the rehabilitation projects involve the replacement of major systems, such as roofing, in addition to accessibility modifications. Many pre-1978 homes in the City contain lead paint which must be addressed during the rehabilitation work.

The City began a new pilot program in 2006 to allow very low-income homeowners to apply for housing rehabilitation loans (up to \$45,000) that would be deferred and forgiven after a set period of time. In 2007, the City increased funding for the pilot rehab program by an additional \$1.0 million.

Map 5.4 below shows the location of housing rehabilitation projects between 2000 and 2007.

Map 5.4 Home Rehabilitation Activity, 2000 – 2007







### Implications for the Comprehensive Plan

- The need for affordable housing in Raleigh is significant. Over 7,900 are on the Raleigh Housing Authorities waiting lists; nearly 29,000 renter households with incomes below \$50,000 are cost burdened; as are over 11,000 owner households in the same income group.
- As the City grows over the next 20 years, two key issues related to providing affordable housing for all citizens include: 1) producing new affordable units throughout all areas of the City, including downtown, transit corridors and near employment centers; and, 2) preserving existing housing units, both assisted and market rate, which provide decent affordable housing.

### Supportive Housing

Supportive housing is often the most difficult type of housing to develop due to multiple funding streams, licensing requirements for certain types of facilities, inadequate zoning definitions related to supportive housing, contradictory zoning and building code regulations (e.g., residential vs. commercial building codes), as well as neighborhood opposition to proposed supportive housing projects.

Supportive housing includes emergency housing, transitional housing that provides structured programming for up to two years, and permanent supportive housing. Permanent supportive housing can include group homes as well as apartment complexes.

#### Supportive Housing for Persons with Disabilities

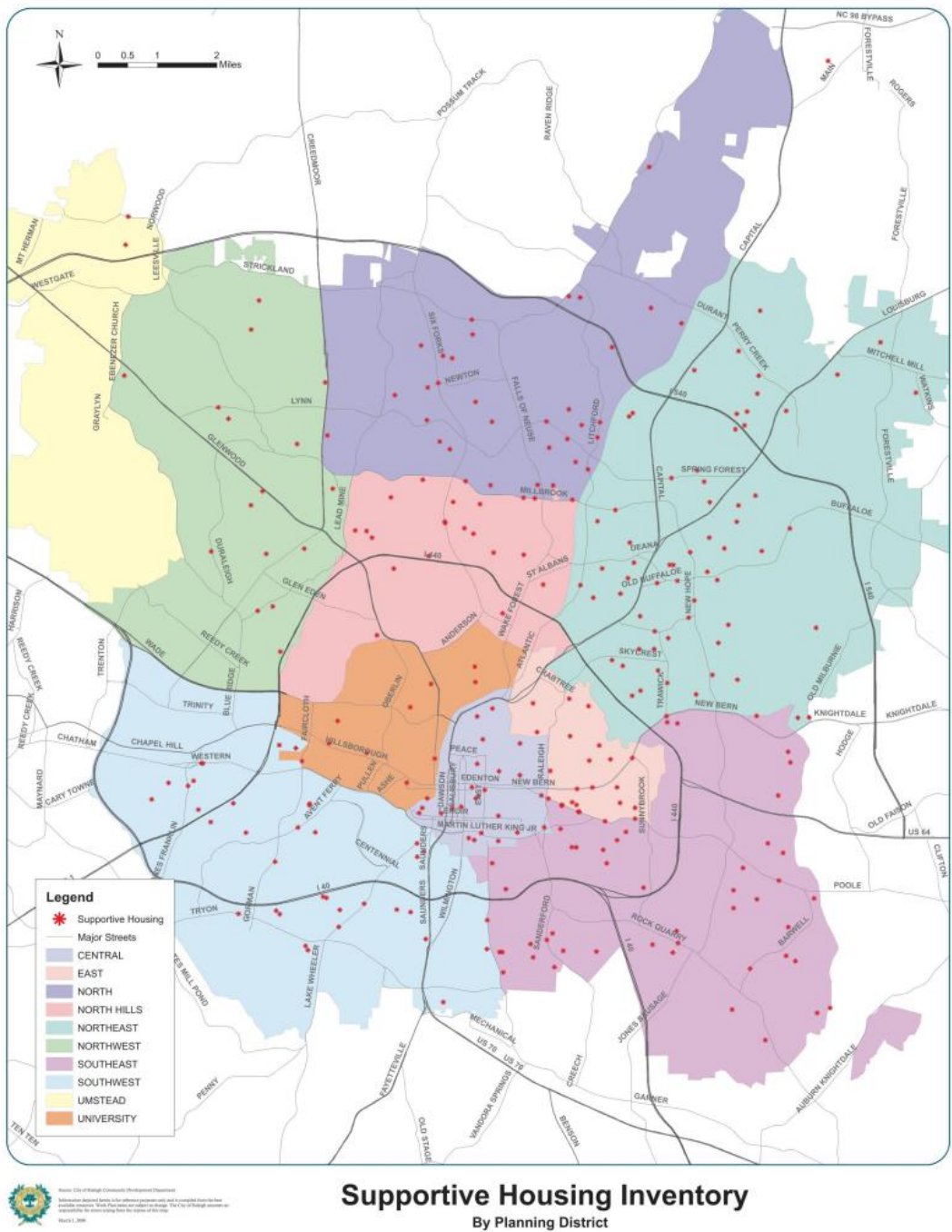
The need for community-based supportive housing for persons with disabilities will increase during the next 20 years as state institutions such as Dorothea Dix close and the need to offer a range of housing choices (from 24 hour supervision to independent living) becomes more important for persons with disabilities, including individuals with chronic mental illness, developmental disabilities, substance abuse, and HIV/AIDS. As discussed earlier, supportive housing development proposals are often controversial. Many neighborhoods object to the placement of group homes or other supportive housing facilities. Persons with disabilities are one of the protected classes under the federal Fair Housing Act (as amended in 1988) and the City is required to comply with all aspects of the Fair Housing Act, including removing any policy or regulatory barriers that impede fair housing.

For supportive housing developments with five or more persons, the City requires applicants to complete a registration permit. In addition, the supportive housing residence must be operating within six months of the permit application. The City does not permit supportive housing residences to locate within 375 feet of each other. Map 5.5 displays the location of supportive housing residences that are registered with the City, and shows that supportive housing residences are dispersed throughout all planning districts. Many of the supportive housing residences are single family homes that have been acquired by for profit and non profit organizations for supportive residences.

Since persons with disabilities are often low-income, or even extremely low-income households, the need for affordable housing for this population is always a significant need. Many disabled persons are not able to work and are dependent on Supplemental Security Income (SSI) from the federal government. For individuals, SSI monthly payments are less than \$670 per month.

In addition to federal programs such as Section 202 (for the elderly) and Section 811 (for persons with disabilities), other funding resources include the North Carolina Housing Finance Agency Supportive Housing Development Program and housing choice vouchers from Wake County Human Services. Wake County currently administers 25 county-funded vouchers for persons with mental illness.

Map 5.5 Supportive Housing Inventory







## Supportive Housing for Homeless Persons

The City of Raleigh adopted Ending Homelessness The Ten-Year Action Plan in 2005 along with Wake County, the Wake County Continuum of Care, and Triangle United Way. The Plans contains specific prevention, housing, and service strategies to address and reduce the number of homeless individuals and families in Raleigh and Wake County. As shown in Table 5.13 below, the most recent one day count of homeless people in Raleigh totaled 1,043 persons, with 591 people counted in emergency shelters, 382 in transitional housing, and 70 in unsheltered locations. The count did not include formerly homeless individuals or families living in permanent supportive housing. It should be noted that a one day point in time does not represent all of the people who become homeless over the year.

**Table 5.13: City of Raleigh/Wake County Continuum of Care Point-in-Time Count of Homeless Persons by Location, 2007**

	Number of Persons (Adults & Children)
Emergency Shelters	591
Transitional Housing	382
Unsheltered	70
Total	1,043

Table 5.14 below breaks out the number of homeless persons counted in the January 2007 by family status. The count showed a total of 338 persons, or 32 percent of the total homeless population, as persons in families with children.

**Table 5.14: Homeless Population by Family Status, City of Raleigh, 2007**

	Number of Persons
Number of Persons in Families with Children	338
Number of Individuals	705
Total	1,043

According to the housing inventory included in the 2007 Wake County/City of Raleigh Continuum of Care grant application to HUD, there are currently 1,705 units of supportive housing in Raleigh for homeless persons, including 532 units of emergency shelter (a unit referring to a bed). Table 5.15 on the subsequent page shows the City's inventory of housing units for the homeless population.

**Table 5.15: Inventory of Housing Units for Homeless Population (2007)**

Type	Number of Beds
Emergency Shelter	532
Transitional Housing	721
Permanent Supportive Housing	452
Total Units	1,705

*Source: Raleigh/Wake County Continuum of Care Application to HUD (2007)*

The City of Raleigh and its funding partners, such as Wake County and the North Carolina Housing Finance Agency, have provided funding for several transitional and permanent supportive projects for homeless individuals and families. Some of these developments include Lennox Chase, a 36 unit single room occupancy development for chronically homeless individuals developed by Downtown Housing Improvement Corporation (DHIC), and Oak Hollow, a 10-unit development for homeless families with disabilities developed by Community Alternatives for Supportive Abodes (CASA).

As discussed in the Ten-Year Plan to End Homelessness, the challenge will be to develop more permanent housing that is affordable to households with extremely low-incomes. The adopted plan calls for the following action steps as part of Strategy B, which calls for an increase in the supply of permanent affordable housing:

1. Address regulatory and policy barriers to affordable housing development, which will lead to an increase in housing units for renters at 0 – 40 percent of area median income
2. Increase local funding for permanent housing for those at 0 – 40 percent of median income through targeting Wake County Capital Improvement Plan (CIP) funds and establishing a city/county Housing Trust Fund with a minimum of \$2,000,000 annually
3. Increase number of units available for persons at or below 15 percent of median income through incentives and funding for tax credit projects (those that put aside 25 percent of units for rents at or below a percentage of area median income, in return for receiving bonus points and state credits).
4. Develop a low-interest or interest-free loan program to help bring rental properties up to code
5. Increase the annual allocation to the North Carolina Housing Trust Fund to \$50 million for housing production and rental subsidies for persons at 40 percent and below of area median income
6. Work to re-establish previous HUD policy, which allow the Raleigh Housing Authority and Wake County Housing Authority to negotiate the best value for Section 8 rental vouchers with area landlords

### Implications for the Comprehensive Plan

- During the next 10 to 20 years, the challenge will be to develop and preserve rental units that are affordable to households below 40 percent of median income, especially since older privately owned rental units are at risk of loss due to redevelopment pressures or conversion to condominiums and existing subsidized units are at risk due to expiration of subsidy contracts.

## Fair Housing

Housing discrimination still exists, despite the passage of the federal Fair Housing Act. The groups which are most impacted by housing discrimination include minorities, persons with disabilities, and families. Housing discrimination denies access to rental and for sale housing and perpetuates historical patterns of segregation and housing inequality. The Raleigh City Council adopted a new Analysis of Impediments to Fair Housing in November 2007 which identified three primary impediments to fair housing in the City of Raleigh.

### 1. Lack of Fair Housing Enforcement by a local agency or department

The City does not enforce its fair housing ordinance and instead refers complaints to the State Human Relations Commission. The Analysis recommends that the City create an agency or department that would have responsibility for fair housing testing, investigation of complaints, and enforcement of the Fair Housing Ordinance.

### 2. Disparity in Mortgage Lending



The analysis of 2005 HMDA data showed that non-white applicants had a higher rate of denial for home mortgage loans, despite similar income levels with white applicants.

### 3. Lack of Affordable Housing

The Analysis pointed out that when affordable housing becomes difficult to develop in certain areas of the City, this could in some instances constitute an impediment to fair housing.

## Housing Accessibility

To comply with several federal laws, including the Fair Housing Act and the Americans with Disabilities Act, multifamily developments must contain a specific percentage of handicapped accessible units and all common areas, including hallways and entrances, must meet accessibility standards. In order to create more accessible housing for residents and visitors, many communities around the country are starting to adopt the visitability design concept. The U.S. Department of Housing and Urban Development is recommending that communities use visitability in new residential construction or alteration projects. Visitability insures that all residential development is accessible for the occupant as well as visitors based on the following three criteria: 1) one zero step entrance into the dwelling; 2) wide hallways and doorways on the ground floor with 32 inches of clear space; and 3) an accessible bathroom on the first floor. The benefit of visitability is that it helps to lessen the need for accessibility modifications to the home at a later time and facilitates the ability of homeowners to age in place.

### Implications for the Comprehensive Plan

- The City of Raleigh's Affordable Rental Program is unique and enables the City to acquire and maintain affordable rental units for households below 50 percent of median income throughout all areas of the City. The City may want to expand this program to increase the number of units above 200 units.
- The City has been successful in revitalizing neighborhoods through the removal of substandard housing and the creation of new affordable for sale and rental housing units. The challenge will be to keep these units affordable for extended periods of time. The City may want to look at extending affordability periods for owner-occupied units beyond ten years, for example.
- The City's housing rehabilitation programs are very helpful in upgrading owner occupied housing units and removing unsafe housing conditions.
- Although multifamily housing units are required to include accessible units, single family units and other attached units, such as townhouses, are still constructed without any accessibility features.
- The significant number of vacant and closed houses, with their concentration in certain planning districts, creates disincentives for neighborhood reinvestment and may result in the demolition of housing units if the owner does not take care of the repairs within the one year time frame.
- Given the increased focus on energy efficiency and conservation of natural resources, such as water, there will be an increasing need to insure that all housing programs meet energy efficiency standards, such as Energy Star certification.
- The ability to produce new affordable rental and for sale housing units will become more difficult if the City relies on traditional public sector approaches. The need for multiple funding sources, the increase in construction costs, the lengthy development review process, as well development fees, all work to impede the development of new affordable housing. When neighborhoods become organized to oppose proposed affordable housing developments, the process becomes even more challenging.

- As shown in the analysis of affordable housing distribution, the planning districts outside of the Central Planning District are experiencing significant increases in housing stock but only have small percentages of affordable housing.
- Although a significant amount of housing is being built in and near downtown Raleigh, most of it is priced out of reach of the State of North Carolina and City of Raleigh employees who make up a significant share of the downtown workforce. Current bonus provisions for affordable housing in downtown projects have not proven attractive to developers and may need to be reconsidered.
- The density bonus for affordable housing within the Downtown Overlay District is not being utilized and the City may want to determine whether the density bonus should be changed to encourage the development of affordable housing within the Downtown Overlay District.
- Existing affordable housing stock, both assisted and market rate, is at risk due to expiring subsidy contracts and private infill redevelopment activity. The expected loss of 1,000 units of affordable market rate apartments is expected to be a growing trend as developers acquire older units in order to demolish the units for new subdivisions or else to convert the units to condominiums. In addition, there is a significant need for rehabilitation assistance for low-income homeowners.
- As land becomes more expensive, the need to coordinate affordable housing development with community facility development becomes more critical. The lack of joint planning for affordable housing adjacent to new public schools, for example, will make it increasingly difficult for the Wake County Public School System to maintain diversity throughout all of its schools. The growth of the Raleigh/Wake County region, including the strong housing market, has been driven in part by the quality of the Wake County Public Schools

### 5.3 Neighborhoods

Neighborhood planning and programming is principally managed across three City departments: Planning, Community Development, and Community Services. Neighborhood Plans and Redevelopment Plans are prepared by the Planning Department. Neighborhood revitalization activities are carried out by the Community Development Department on the basis of adopted redevelopment plans. Neighborhood services and various neighborhood improvement initiatives are carried out by the Community Services Department. There are currently 18 citizen advisory councils in the City which provide input on proposed developments and other issues. Map 5.7 depicts the boundaries for the 18 CAC's in the City of Raleigh. Each CAC includes different neighborhoods, some of which may be covered by some or all of the following types of plans:

- Neighborhood Plans and Small Area Plans
- Neighborhood Conservation Overlay Districts (requires a Neighborhood Plan)
- Redevelopment Plan
- National or Local Historic Districts





Map 5.6 Citizen Advisory Council Areas



## Neighborhood Plans

The City has adopted 21 neighborhood plans to help protect and improve older neighborhoods. Neighborhood plans are initiated at the request of neighborhood residents and may lead to the adoption of additional regulatory tools, such as a Neighborhood Conservation Overlay District. There are currently 15 neighborhoods in the City that have approved Conservation Overlay Districts.

## Neighborhood Conservation Overlay Districts

A Neighborhood Conservation Overlay District, or NCOD, is a zoning tool that was created to provide additional protections for older neighborhoods which were either ineligible for, or unwilling to pursue, local Historic District designation. An NCOD does not change the uses permitted by the underlying zoning district, but it can impose additional, more restrictive or less restrictive development standards. Specifically, the following seven items can be regulated by an NCOD; the first six being defined in City ordinances as “built environmental characteristics:”

1. Lot size and frontage
2. Building entrances
3. Building height
4. Building placement on the lot
5. Building setbacks and yards
6. The placement of parking areas
7. Street design standards

Only older, established neighborhoods are eligible to have an NCOD mapped within their boundaries. The zoning ordinance sets forth the following requirements for NCOD eligibility:

- Development must have begun in the area at least 25 years ago
- At least 75 percent of the land area of the proposed district must be developed
- The area proposed for designation must be at least 15 acres in size
- The area must possess unifying distinctive elements of exterior features or built environmental characteristics.

The last bullet is critical, as the NCOD standards are intended to provide for new development and redevelopment that is in harmony with the existing built character of the neighborhood. To ensure that this is the case—i.e. that the neighborhood has such unifying elements and that the proposed regulations are in harmony with those elements—City staff performs an in-depth analysis of the neighborhood, quantifying identified characteristics numerically.

A frequent complaint from neighborhoods about the NCOD process is the onerous nature of the requirements for the neighborhood plan, as well as the lengthy time involved from plan initiation to NCOD approval, involving two separate public hearing and approval processes for first the plan, then the zoning overlay. The NCOD process was redefined as a result of Council action in July of 2008. The revisions to the process intended to simplify and streamline the NCOD process. The changes include the following provisions:

- No adopted neighborhood plan is necessary; only the inventory of built environmental characteristics need be conducted.
- As before, the rezoning petition can only be submitted by a majority of affected property owners, or through Council action.





- The NCOD standards would be incorporated directly into the zoning code, rather than referencing a second planning document, making these standards much easier to find.
- Neighborhoods would have the option of following through with a complete neighborhood plan (Comprehensive Plan amendment), including street standards and capital improvement items, at a later date.

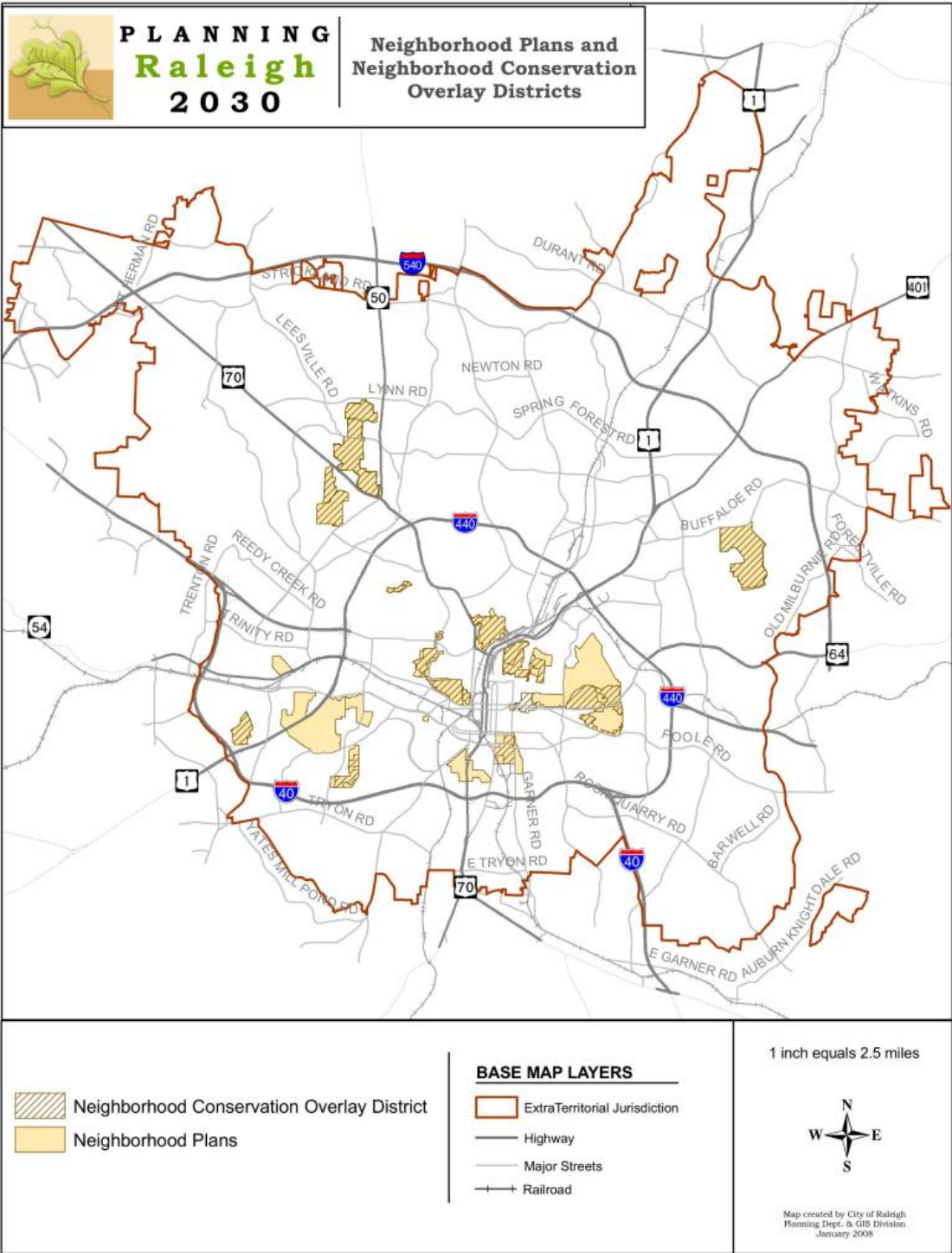
The new process begins with a petition to study an identified neighborhood. Staff performs an analysis and presents the results to the neighborhood and eventually City Council. City Council may authorize a text change to codify the study results. If the text change is adopted, the request to apply the NCOD to the designated area (which involves an official zoning map amendment) can be brought only through Council action or through a petition from the majority of the affected property owners.

Existing adopted neighborhoods plans and NCODs are illustrated on Map 5.7.

### **Infill Development in Neighborhoods**

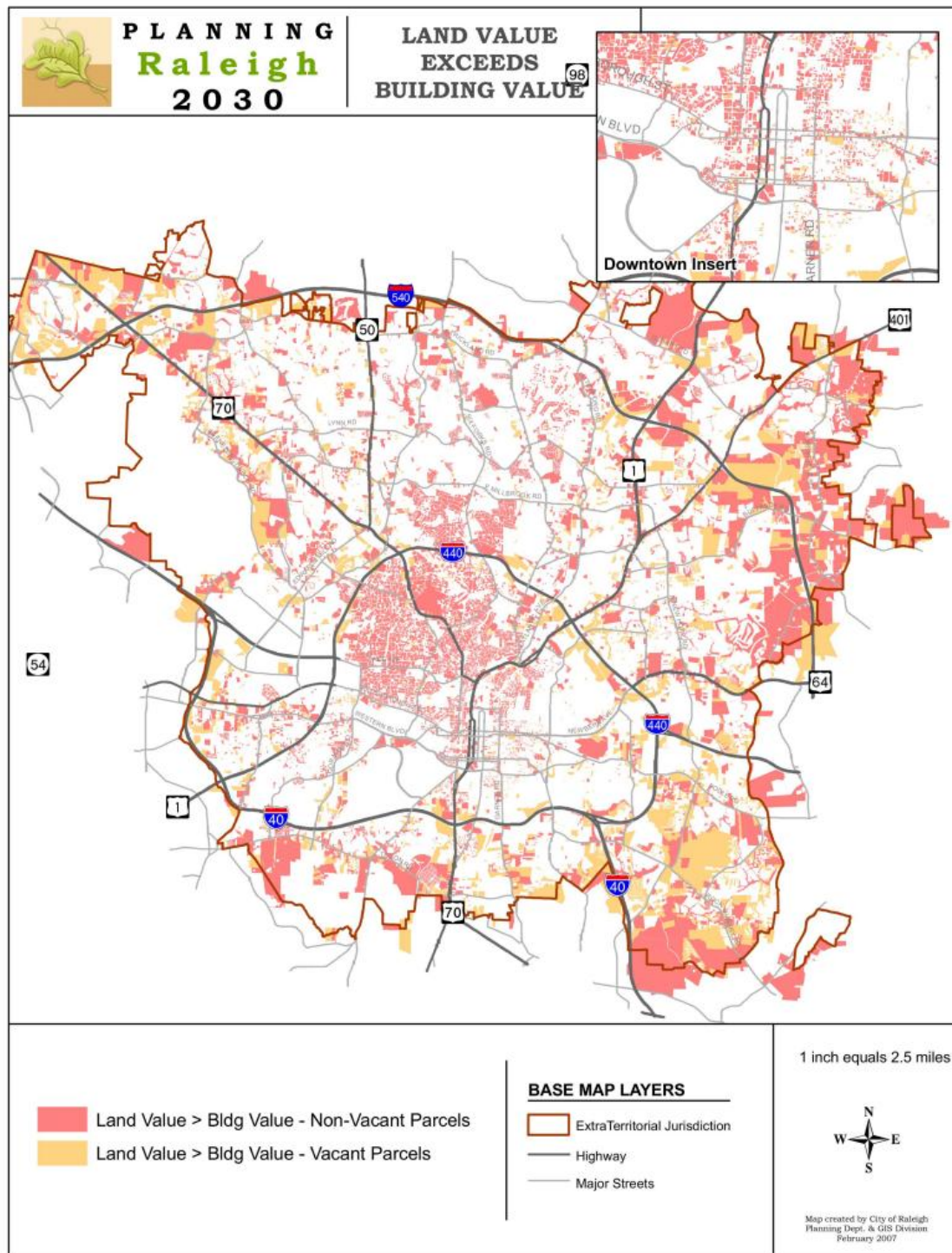
Infill redevelopment on individual lots is also affecting the existing stock of older single family homes in Raleigh. As documented by the Planning Department, a total of 656 one- and two-family homes have been demolished between 2002 and 2007 and replaced with new single-family houses. Since the land cost for these houses consists of the lot value, value of the existing structure and the demolition costs, the replacement homes are typically significantly more expensive and larger than the previous homes. The infill study report shows that 321 of the 5656 new homes, or 49 percent, that were constructed on these tear down lots were larger than 4,000 square feet. The trend is indicative of the greatly increased desirability, hence land value, of formerly undervalued in-town neighborhoods. Map 5.8 showing those properties where the 2008 County-assessed land value exceeds building value illustrates the prevalence of this condition throughout the City but especially inside the Beltline. The streamlined NCOD process described above is one potential regulatory response to the issue of managing infill development and redevelopment in established neighborhoods.

Map 5.7 Neighborhood Plans and Conservation Overlay Districts





Map 5.8 Assessed Land Values in Excess of Improvement Value



## Redevelopment Areas

The City of Raleigh has nine redevelopment areas that enable the City to carry out concentrated housing and neighborhood revitalization activities to improve housing conditions, improve infrastructure and community services, and remove blight. The most recent redevelopment plans adopted by the City Council include Saunders North (2004) and Garner Road (2002). The Community Development Department is responsible for implementing adopted redevelopment plans and is currently focusing on East College Park, New Bern/Edenton, Thompson Hunter I and II, and Garner Road Redevelopment Areas. Map 5.9 depicts the location of the redevelopment areas within the City of Raleigh. A summary of recent activities in some of the redevelopment areas is provided below.

**East College Park Redevelopment Area (adopted 1998).** The Community Development has acquired and demolished several substandard houses on Maple, Fisher, Jones, and Pender Streets during the last two years.

**New Bern/Edenton Redevelopment Area (adopted 1991).** The Community Development Department is now proceeding with Cooke Street Phase II, which includes the construction of 17 single family homes on Jones Street and Seawell Avenue.

**Downtown East Redevelopment Area (adopted 1981).** The Community Development Department provided partial funding for the redevelopment of Block A-21, which is now the Carlton Place Apartments, a residential development of 80 units of affordable and market rate rental units developed by Downtown Housing Improvement Corporation (DHIC).

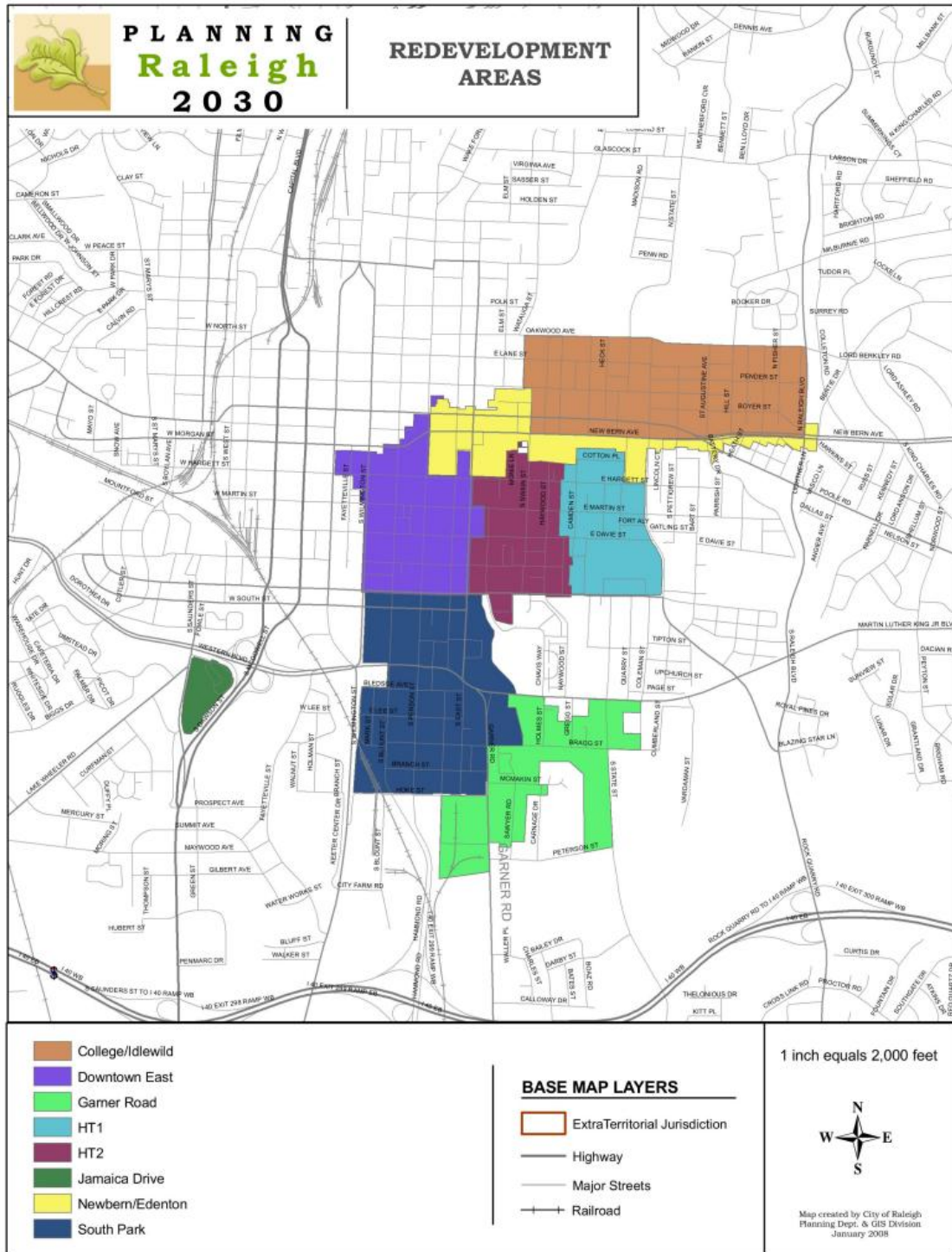
**Garner Road Redevelopment Area (Adopted 2002).** The Community Development Department has cleared properties located on South State Street in order to proceed with the construction of new single family homes.

As older redevelopment plans such as South Park (adopted in 1980) and Thompson Hunter I and II (adopted in 1977 and 1979) become outdated and replaced by new development strategies or small area plans and neighborhood plans, the City will need to determine if existing redevelopment plans should expire or be amended.





Map 5.9 Redevelopment Areas



## **Neighborhood Services Initiatives**

Neighborhood services initiatives are developed and administered by the City of Raleigh Community Services Department and include the Citizen's Advisory Councils as well as several other initiatives that are intended to increase citizen participation as well as improve the conditions in specific neighborhoods.

### **Citizens Advisory Council (CAC)**

There are 18 geographically located CACs that are Council approved mechanisms for citizens to discuss any issue that impacts their quality of life. CACs have been in existence for more than 30 years and provide an opportunity for citizens to hear and comment on proposed developments and to hear status reports from City departments on different topics. Most CACs meet monthly to discuss their topics of importance.

The City Council recently held a retreat on the topic of reforming the CAC structure and process with a view towards better defining the role of CACs, improving CAC governance, and enhancing the resources available to support CACs. Recommendations are pending.

### **Raleigh Neighborhood College (RNC)**

The Raleigh Neighborhood College is a program offered by the City of Raleigh in partnership with Wake County. Students in the Neighborhood College will have a chance to meet and engage with city staff, county staff, and other Raleigh residents to learn new and enhanced ways of increasing citizen participation and involvement in their community.

### **Citizens Participation Leadership Institute (CPLI)**

The Citizens Participation Leadership Institute (CPLI) is a program designed to give Raleigh citizens the opportunity to build on and develop civic leadership skills. CPLI offers an educational program designed to enhance the leadership potential and talents of individuals who wish to grow stronger in their civic engagement with Raleigh's municipal government. This educational series is offered in the evenings during the Spring and Fall.

### **Citizen Area Liaison (CAL)**

Citizen Area Liaisons act as a liaison between neighborhood residents and any organization, agency, and resource, including but not limited to the City of Raleigh. Duties include arranging neighborhood meetings (on an as – needed basis), leading neighborhood discussions on issues facing the area, reporting necessary information to appropriate resources and sharing information and ideas with other area leaders.

### **Neighborhood Association Registry (NAR)**

The City of Raleigh has established a program to register neighborhood groups. This program will enhance citizen involvement by providing communication and partnering between various neighborhood organizations in the City of Raleigh, its extraterritorial jurisdiction and City government. The City desires to identify and support existing neighborhoods, organizations, while encouraging and assisting new neighborhood groups. The ultimate objective is empowerment of all neighborhoods.





### **Neighborhood Improvement Grants**

The Neighborhood Improvement Grants program makes available grants of up to \$2500 for the purpose of neighborhood improvement. There is no match requirement. Grants are only available to registered neighborhood associations within the defined redevelopment areas and low to moderate income census tract areas. The program seeks to empower and strengthen neighborhoods while fostering an enhanced sense of community within Raleigh neighborhoods.

### **Raleigh Neighborhood Exchange**

Since 2004 visionary leaders, supportive sponsors, and participating citizens witnessed the birth of a new movement in Raleigh which is called the Neighborhood Exchange. September has been designated as Neighborhoods Month by the Raleigh City Council. In conjunction with this event, the Neighborhood Exchange Citizens Committee in partnership with the City of Raleigh's Community Services Department will host the Raleigh Neighborhood Exchange annually on the third Friday and Saturday in September.

### **Neighborhood Month Committee**

The quality of life in Raleigh depends upon the quality of our neighborhoods. The City of Raleigh has been on the cutting edge of encouraging neighborhood involvement in the governance process. A citizens committee is currently planning weekend outdoor activities to celebrate individual neighborhoods. These activities may consist of a parade, tours of neighborhoods with a closing picnic and others. The importance of our neighborhoods and participation of our citizenry has been further underscored by celebrating our neighborhoods during the month of September.

### **We Are Neighbors**

The We Are Neighbors initiative provides the fundamentals for relationship building among neighbors. The first step in building a relationship is respecting those next door, down the street and around the corner. This program connects residents with information and resources necessary to maintain or improve conditions in neighborhoods, ranging from common courtesies to basic code and zoning laws.

### **Latino Initiatives**

The City of Raleigh exists to serve all of its citizens. To this end, every effort will be made to be inclusive of Latin American citizens. The City will seek to partner with all local government entities, state and county, and if need be Federal Agencies, to ensure that all services available are accessible.

### **Implications for the Comprehensive Plan**

- Neighborhood revitalization efforts may need to look to the new LEED certification program for neighborhoods as a possible new strategy to reduce energy. Greater emphasis on reducing energy costs will benefit the occupants of affordable housing. As a signatory of the U.S. Conference of Mayors Climate Protection Agreement (2005), the City has committed to creating and redeveloping neighborhoods that have less impact on the environment.
- There is a need to better coordinate and prioritize neighborhood planning and neighborhood initiatives across departments. Neighborhood planning efforts are hampered by inconsistent or overlapping boundaries that create confusion among residents and confusion as to which plans take priority in guiding new development proposals. The use of Neighborhood Quality Teams

in College Park and South Park has helped to increase coordination among the different City Departments.

- Older redevelopment plans have been replaced by newer neighborhood plans and development strategies and it is not clear whether older plans such as South Park and Thompson Hunter I and II need to be continued.
- Infill development in older established neighborhood is an increasingly contested and controversial topic. The NCOD tool addresses this issue in a targeted way, but is labor- and time-intensive to implement. Modifications to the NCOD, or other responses, may be appropriate for consideration.
- Reforms to improve the effectiveness of CACs are currently under consideration.

## 5.4 Conclusions: Key Issues and Potential Strategies

### Key Issues

#### Key Issue 5.1

Raleigh's significant need for affordable housing is underlined by the Raleigh Housing Authority's long waiting list, nearly 8,000 people strong; and the presence of 40,000 cost-burdened households with incomes of less than \$50,000, comprising over 60 percent of all households in this income range.

#### Key Issue 5.2

The abundance of vacant and closed houses, particularly within the Central Planning District, discourages investment in neighborhoods. The City may want to explore strategies to reduce the number of vacant and closed houses.

#### Key Issue 5.3

The status of existing redevelopment plans in relation to the Comprehensive Plan may need to be re-examined, particularly when there are separate planning efforts within the redevelopment areas. The City needs to determine how private sector development proposals within existing redevelopment areas are to be evaluated by City staff as well as stakeholders in the affected redevelopment area.

#### Key Issue 5.4

The City does not have a policy regarding the inclusion of affordable housing units in projects involving City-owned or other publicly-owned properties. For example, the redevelopment of the State-owned property in the Blount/Peace Street historic area, which will include a mix of housing styles, will not include any affordable units.



### **Key Issue 5.5**

Additional strategies, voluntary and/or mandatory, will be needed to encourage private developers to include affordable rental and for sale units in new housing developments. The existing density bonus for affordable housing in the Downtown Overlay District has not been utilized by any developers to date. Any such voluntary bonus provision must provide a sufficient inducement that developers find it in their financial interest to take advantage of the bonus by producing affordable housing.

## **Potential Strategies**

### **Potential Strategy 5.1**

Viewing affordable housing as community infrastructure, Raleigh could look at establishing a minimum “level of service” for affordable housing in each planning district or other geographic division, with a particular focus on transit corridors and areas close to employment centers. This level of service could be based on a goal of insuring that a specified percentage (say, six to 10 percent) of the total housing units in each planning district are affordable.

### **Potential Strategy 5.2**

A policy should be considered to require the inclusion of affordable housing, or a payment in lieu, for any development occurring on publicly owned land.

### **Potential Strategy 5.3**

Determine if the Scattered Site Policy for affordable rental housing, which encourages affordable rental housing development outside of low-income areas of the City, needs to be retained or replaced with another affordable housing strategy that increases the supply of affordable rental housing in all planning districts

### **Potential Strategy 5.4**

Explore whether creating a voluntary or mandatory inclusionary housing program that applies to all market rate residential development proposals within the City is the right approach to fostering mixed-income developments in Raleigh. If a voluntary approach is preferred, a meaningful incentive system will have to be created.

### **Potential Strategy 5.5**

Developers could be required to include affordable housing on any City-owned parcels that are developed for residential or mixed-used developments within the Downtown Overlay District.

### **Potential Strategy 5.6**

Determine what preservation strategies may be needed to protect and stabilize existing affordable market rate rental and/or for sale units

### **Potential Strategy 5.7**

The City may consider incorporating the visitability concept for City funded affordable housing developments at the very least, and perhaps incorporating it into the standards for private market residential development

### **Potential Strategy 5.8**

A Community Land Trust is one common tool to insure long term housing affordability for City funded affordable housing developments

### **Potential Strategy 5.9**

The City should investigate whether to develop a permanent funding source in lieu of additional housing bonds to support a sustained investment in the production and preservation of affordable housing within the City.

### **Potential Strategy 5.10**

Working with Wake County, the City could explore jointly planning affordable housing sites with future school site purchases.

### **Potential Strategy 5.11**

The City may want to create an employer assisted housing program, particularly for City fire and police employees, to encourage more employees to live within city corporate limits.



### **Potential Strategy 5.12**

The City may want to work with Wake County as well as the State of North Carolina to create employer assisted housing programs to encourage employees to live in or near downtown Raleigh.



## Transportation





## 6 Transportation

This section of the Community Inventory provides an overview of existing and planned transportation investments and identifies the primary challenges facing the City of Raleigh's transportation system within a regional context.

### 6.1 Regional Context

The performance of a community's transportation system is a major factor for a community's economic prosperity and quality of life. Not only does the transportation system provide for the mobility of people and goods, but over the long term it influences patterns of growth and the level of economic activity through the accessibility it provides to adjacent land uses. The Comprehensive Plan can help Raleigh guide future development of its roads and highways, public transportation systems, and bicycle and pedestrian networks. Together, all of these modes of transportation will provide mobility and accessibility in support of the desired land use patterns and community form.

The City of Raleigh depends on several organizations for transportation planning and implementation. Table 6.1 displays the organizations involved with transportation in the City of Raleigh.

**Table 6.1: Transportation Planning and Implementation Authorities**

Organization	Long Range Planning	Capital Improvement Planning	Construction/ Implementation
Capital Area Metropolitan Planning Organization (CAMPO)	X	X	
North Carolina Department of Transportation (NCDOT)	X	X	X
City of Raleigh	X	X	X
Triangle Transit	X	X	X

*Source: HNTB Corporation*

### 6.2 Raleigh's Multi-modal Transportation System

This section provides an overview of the existing transportation system and the currently proposed improvements and studies. Based on the multi-modal transportation conditions inventory, an assessment was conducted for the following elements:

- Interstates, arterials, and thoroughfares
- Public transportation;
- Bicycle and pedestrian circulation;
- Raleigh-Durham International Airport;
- Railroad and freight;
- Bridges; and,
- Commuter characteristics.

For a transportation system to function efficiently, each mode of the transportation system must be connected to and mutually supportive of the other. It is important that each part of the system provides accessibility and mobility to meet the travel requirements of residents and other travelers, or to transport various type of freight.

## **Interstates, Arterials, and Thoroughfares**

### **Functional Classification**

Roadways are grouped into functional classes according to the character of traffic they are intended to serve. Raleigh has over 52 miles of expressway/freeway, including I-40, I-440 and I-540. There are also approximately 130 miles of arterial / thoroughfare facilities in the study area and 1,631 miles of collectors and local streets. Map 6.1 displays the functional class of roadways in Raleigh.

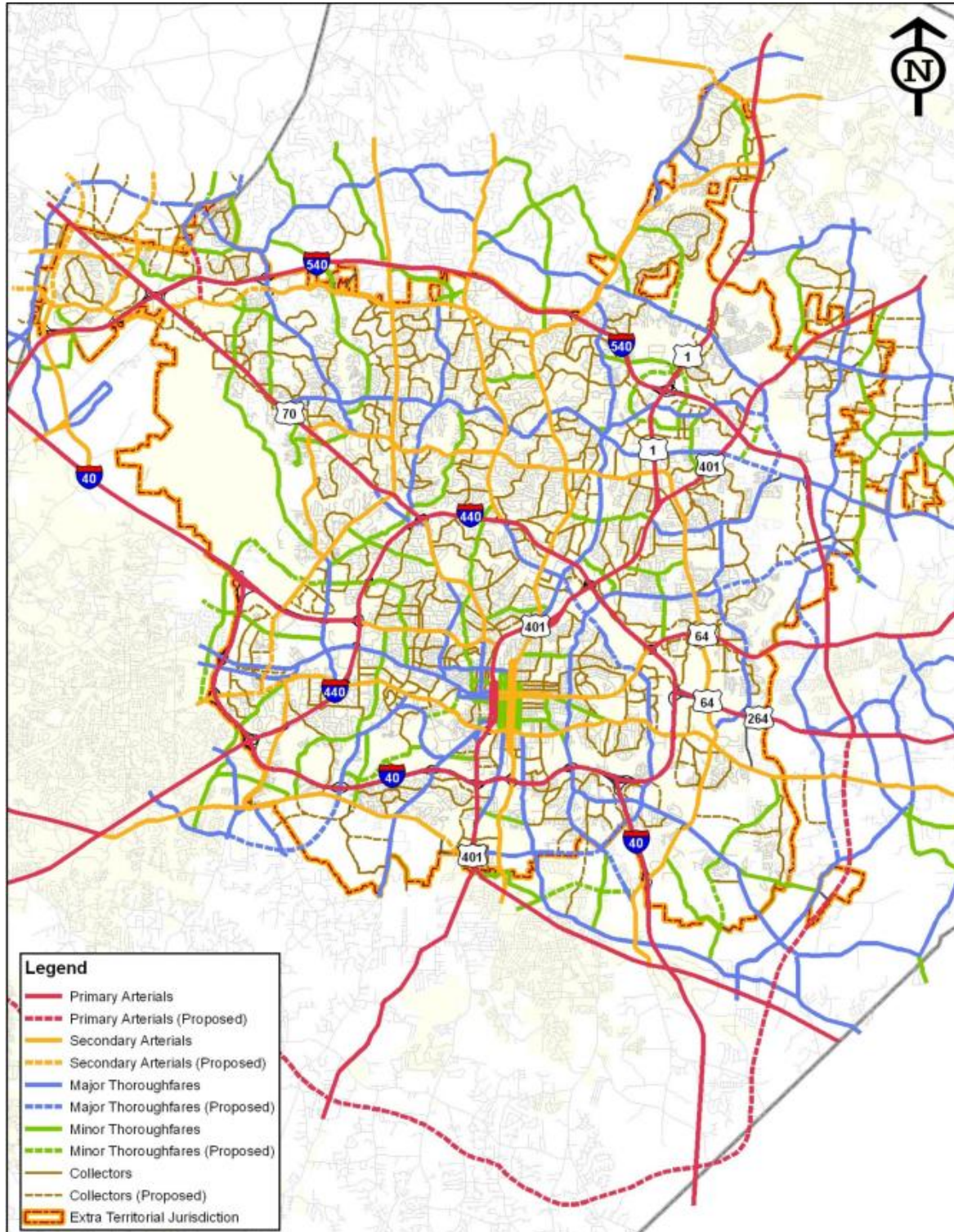
### **Level of Service**

The Capital Area Metropolitan Planning Organization's (CAMPO) regional travel demand model was used to estimate the existing (2005) and future (2035) transportation conditions on Raleigh's roadways. The future year model (2035) reflects travel conditions under the fiscally constrained Regional Transportation Plan. Level of Service (LOS) was used as an operational measure to determine roadway performance. Six levels of service are defined by the Federal Highway Administration (FHWA) in the Highway Capacity Manual for use in evaluating roadway operating conditions. They are given letter designations from A to F, with LOS A representing the best operating conditions and F the worst. A facility may operate at a range of levels of service depending upon time of day, day of week or period of the year. A minimum acceptable level of service for urban roadways systems is LOS D. A qualitative description of the different levels of service is provided below.

- LOS A – Drivers perceive little or no delay and easily progress along a corridor.
- LOS B – Drivers experience some delay but generally driving conditions are favorable.
- LOS C – Travel speeds are slightly lower than the posted speed with noticeable delay in intersection areas.
- LOS D – Travel speeds are well below the posted speed with few opportunities to pass and considerable intersection delay.
- LOS E – The facility is operating at capacity and there are virtually no useable gaps in the traffic.
- LOS F – More traffic desires to use a particular facility than it is designed to handle resulting in extreme delays.



Map 6.1 Functional Classification of Roadways



A majority of the roadway network (approximately 90 percent) currently operates at or above LOS D under PM peak conditions. There are several roadways in the northeast section of the study area that are operating below the minimum acceptable LOS D. Roadway segments failing to meet the minimum acceptable LOS include:

- US 70 – Several segments from TW Alexander Drive to Lynn Road
- Blue Ridge Road– Western Boulevard/I-440 to Edwards Mill Road
- Capital Boulevard – Westgate Road(S of I-540) to Lynn Road
- Creedmoor Road– Glenwood Avenue/US 70 to Strickland Road
- Glenwood Avenue– Primarily in section from Creedmoor Road to I-440
- Hillsborough Street– Faircloth Street to N Salisbury Street
- New Bern Avenue– Several segments from Sunnybrook Road to Old Milburne Road
- Old Wake Forest Road– E Six Forks Road(S of I-440) to E Millbrook Road
- Six Forks Road– Sawmill Road/Mourning Dove Road to I-440
- Tyron Road– Lake Wheeler Road to western city line
- Wake Forest Road– Atlantic Avenue to Delway Street

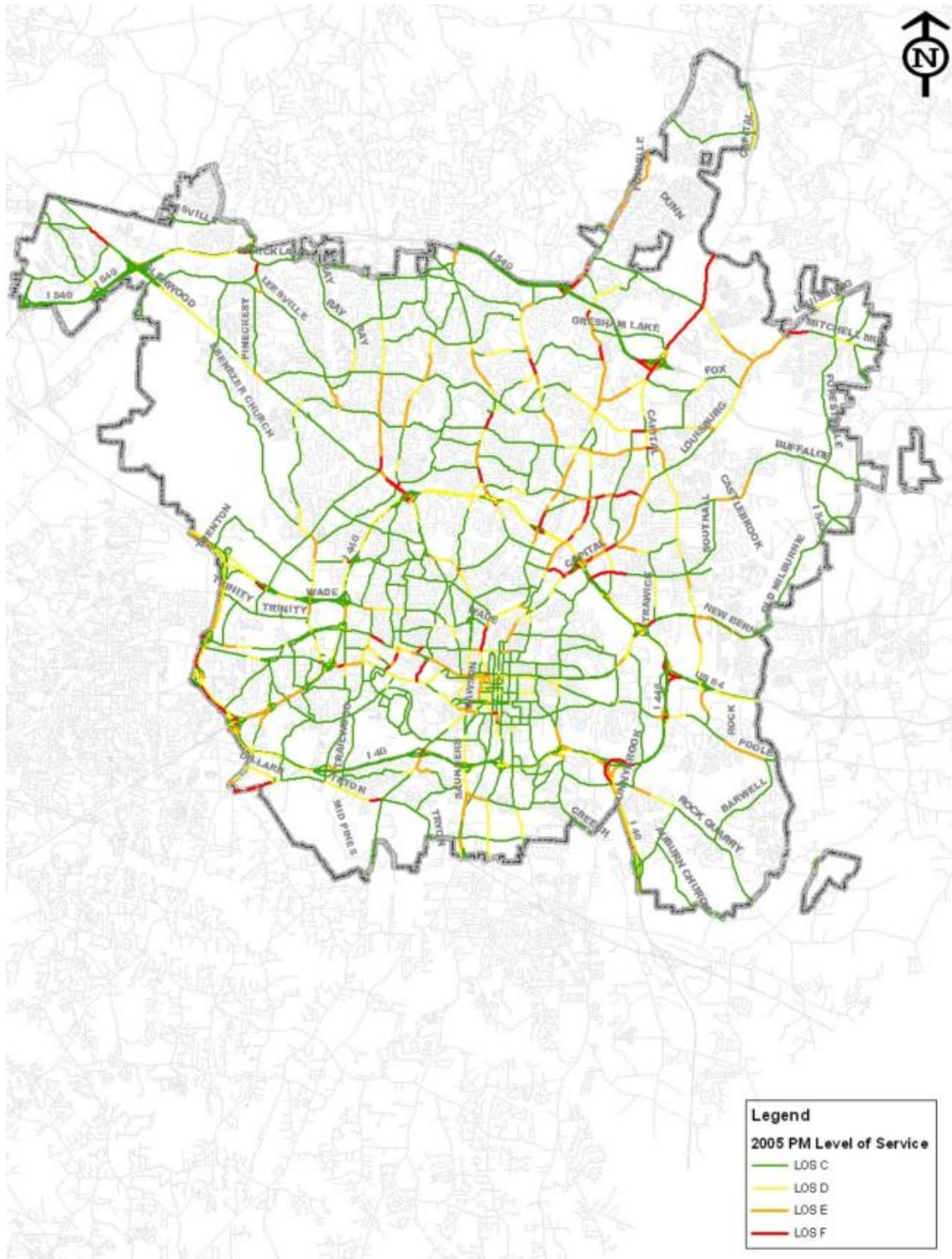
Map 6.2 displays the existing PM Peak LOS for Raleigh. Additionally, the CAMPO's 2035 travel demand model was reviewed to analyze Raleigh's forecasted roadway conditions, taking into account identified roadway projects. By 2035, approximately 32 percent of the roadway network will operate under congested conditions during the PM peak period, which indicates a 20 percent increase in congested roads over 2005 conditions. It should be noted that the future year model was developed based on a fiscally constrained 2030 LRTP. Map 6.3 displays the forecasted 2035 PM Peak LOS for Raleigh.

The projected conditions shown on Map 6.3 are striking. The downtown street grid, which is currently free flowing, will experience significant congestion. I-540, major segments of which only recently opened, is expected to experience high levels of congestion during the peak periods. Likewise, a significant share of the arterial network in North Raleigh is expected to experience unacceptable levels of service during peak periods.

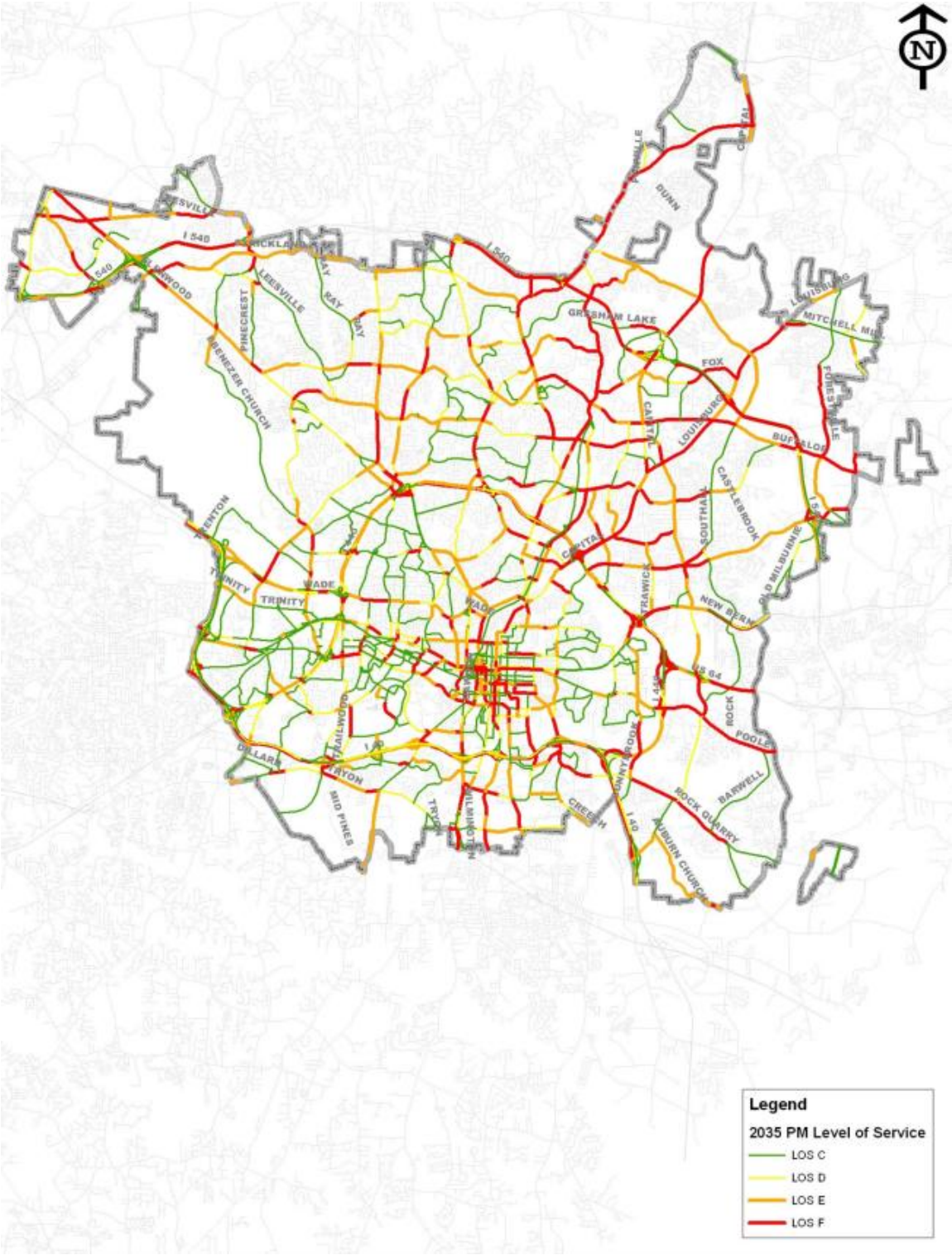




Map 6.2 Existing (2005) Roadway Network Level of Service



Map 6.3 Future (2035) Roadway Network Level of Service







## Safety

The latest three years of available vehicular crash data for Wake County (2004, 2005, and 2006) was collected and analyzed for Raleigh. The crash data were used to determine roadway locations with potential safety deficiencies throughout the study area. Raleigh experienced a total of 86,779 crashes with 15,190 injuries and 27 fatalities during the three-year period. The crash data shows a reduction in number of crashes from 2004 to 2006, with a 14 percent reduction from 2004 to 2005 and a two percent reduction from 2005 to 2006.

Two hundred or more crashes over the three-year period (averaging over 67 crashes per year) at any one location was used as the threshold to identify “high crash” locations for planning purposes. This provided the ability to pinpoint locations that may potentially have safety issues. Table 6.2 displays the locations with the highest amount of crashes in the City. For the purpose of this analysis, interstate crashes were omitted.

**Table 6.2: High Crash Locations, Years 2004-2006**

Roadway	Intersection	Crashes
Triangle Town Blvd	Triangle Town Center Mall Driveway	379
Capital Blvd	Spring Forest Rd	251
Glenwood Ave	Brier Creek Pkwy	249
Capital Blvd	Brentwood Rd	242
4431 New Bern Ave (Wal-Mart Driveway)	New Hope Rd	236
Capital Blvd	Durant Rd	219
1725 New Hope Church Rd (Wal-Mart Driveway)	East of Wake Forest Rd	214
New Bern Ave	N New Hope Rd	209

*Source: Wake County*

In addition to the high crash locations, an area of focus and concern was the location of fatal crashes. The locations listed below experienced one fatal crash during the three-year analysis period:

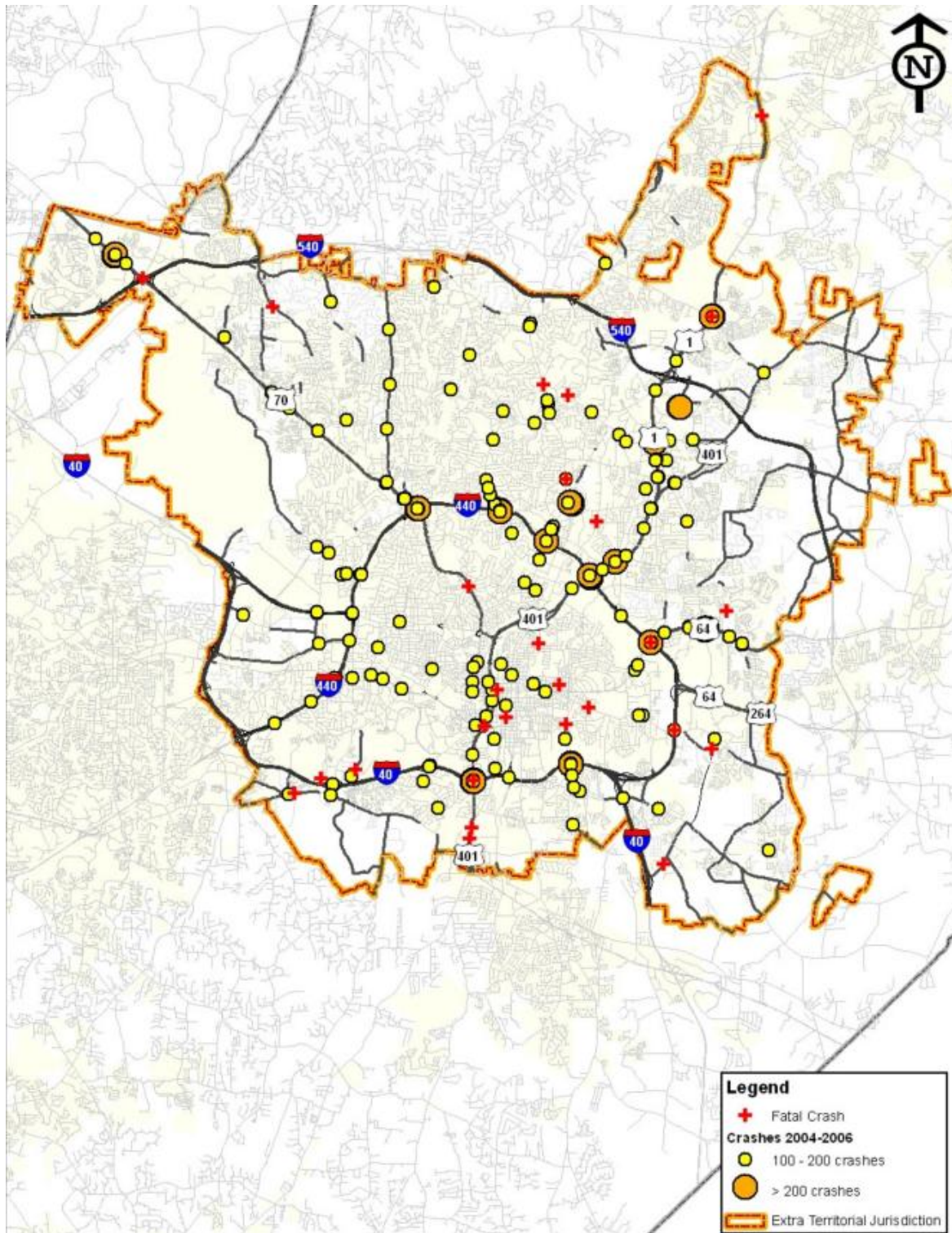
- 1221 Brookside Dr
- 1721 Trailwood Dr
- 203 Maple St
- 3920 Jones Sausage Rd
- 9101 Leesville Rd
- Atlantic Ave and Ingram Dr
- Capital Blvd and Common Oaks Dr
- Durant Rd and Capital Blvd
- E South St and S Blount St
- Falls of Neuse Rd and Pacific Dr
- Falls of Neuse Rd and Sandy Forks
- Glenwood Ave and Byrd St
- Hedingham Blvd and Southall Rd
- Hillsborough St and N Salisbury

- Lake Dam and Eyrie Ct
- Old Poole Rd and New Hope Rd
- Poole Rd and Peyton St
- S Dawson St and Western Blvd
- S Raleigh Blvd and MLK Jr. Blvd
- S Saunders St and S Wilmington St
- S Wilmington St and Chapanoke Rd
- Spring Forest Rd and Jade Tree Ln
- Tyron Rd and Crescentview Pkwy

Map 6.4 shows intersections with more than 100 crashes over the three year analysis period as well as fatality crash locations. As seen in Map 6.4, there are several locations along US 401 and Capital Boulevard with a high number of crashes. There is also a concentration of locations in downtown Raleigh with a large amount of crashes. Map 6.5 shows that there are a large number of pedestrian related crashes (716) in Raleigh; however, these represent less than one percent of the total crashes between 2004 and 2006.

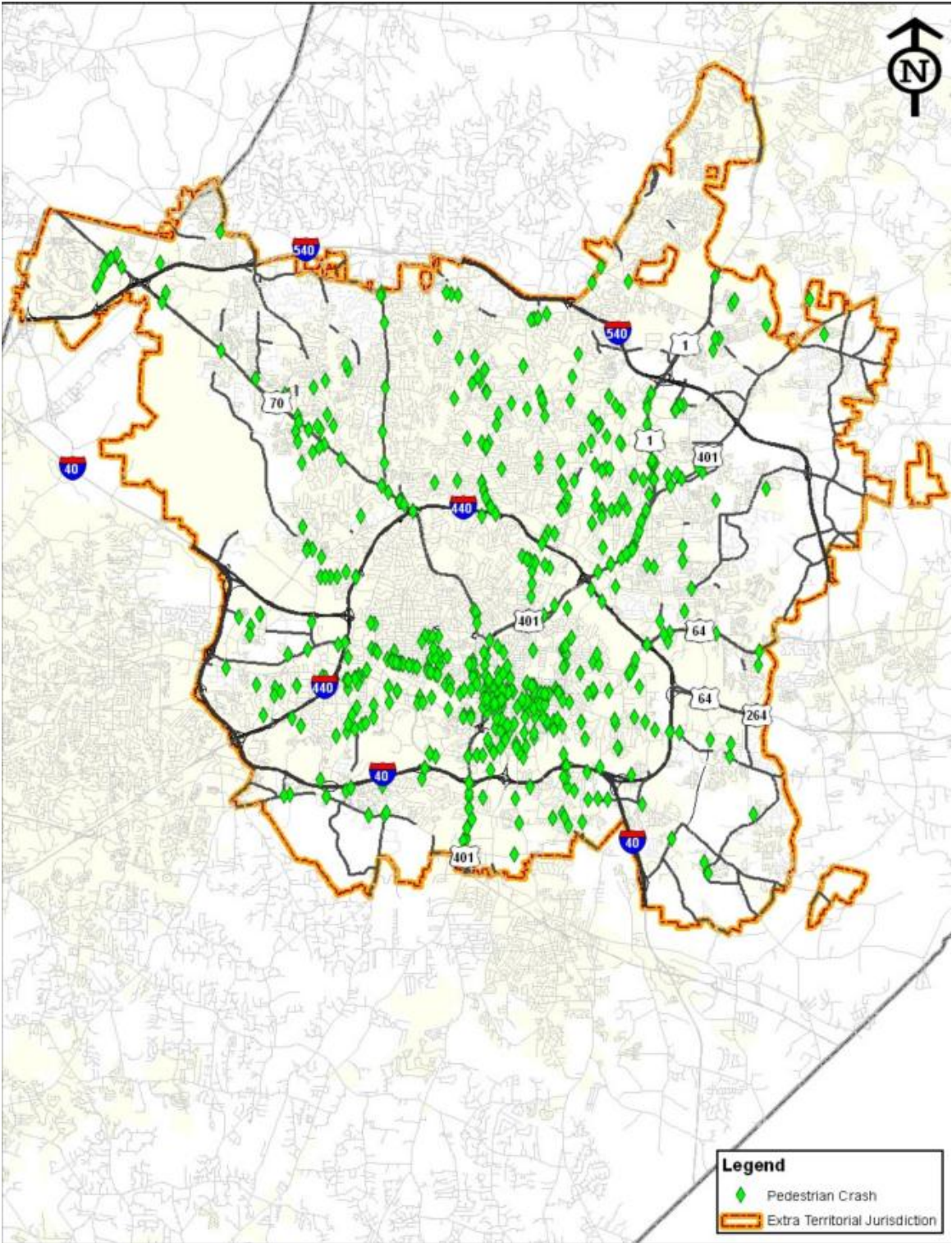


Map 6.4 Vehicle Crash Locations





Map 6.5 Pedestrian Crash Locations





## CAMPO 2030 Long Range Transportation Plan (LRTP)

As the long-range guide for major transportation investments, CAMPO's 2030 Long Range Transportation Plan (LRTP) identifies roadway projects and ranks their priorities based on forecasted congestion conditions, local knowledge and available funds. These proposed road projects are separated into three categories based on completion date and are displayed in Map 6.6.

- 2010 (\$605.7 million)
- 2020 (\$1.758 billion)
- 2030 (\$2.223 billion)

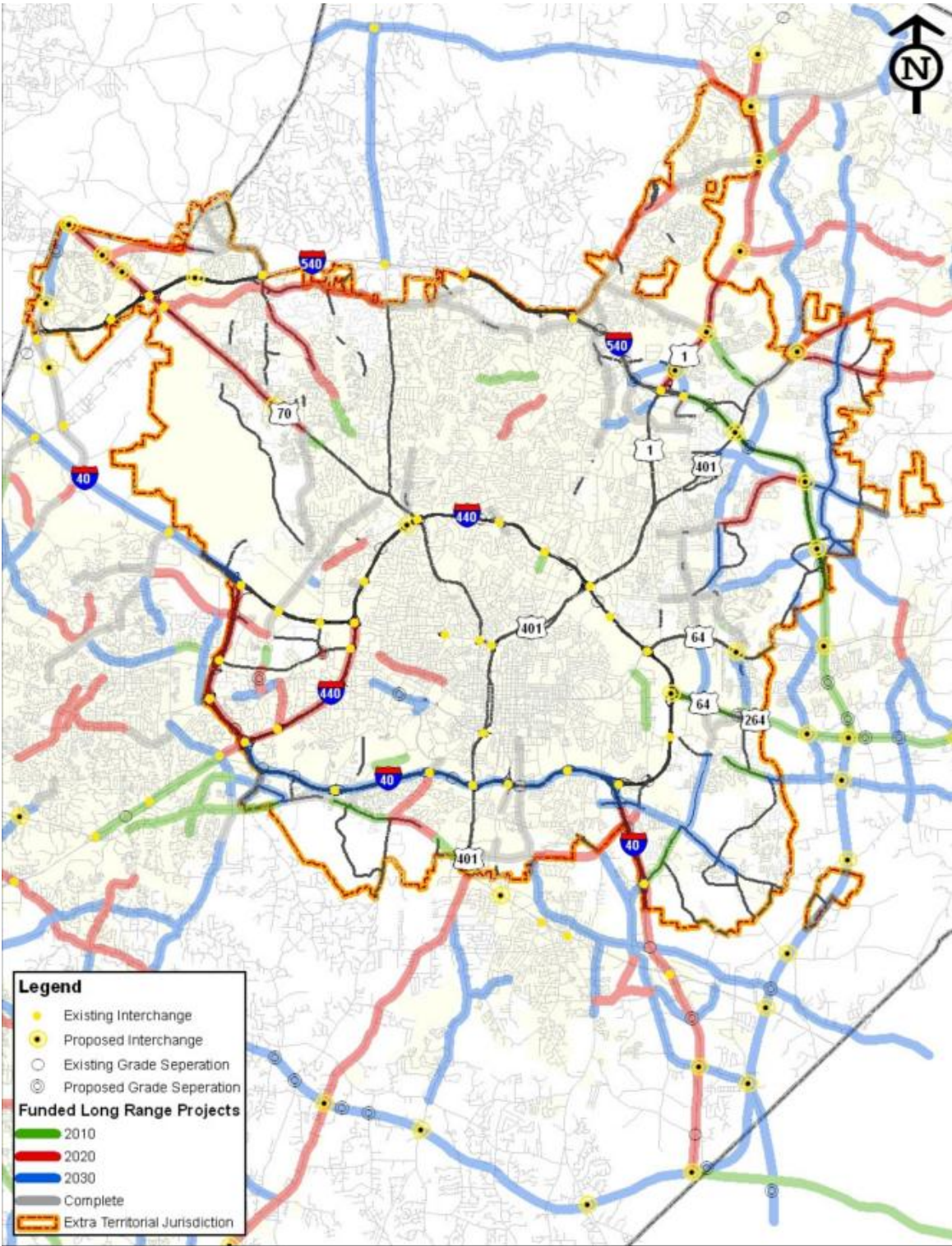
The 2010 projects have some phase of construction or design underway with full funding and an expected completion date by 2010. The 2020 and 2030 projects have little or no activity beyond the planning phase. The majority of the proposed projects are outside of the study area; however, there are some projects which are at the fringes of Raleigh's ETJ. The following roadway projects are programmed for 2010:

- Newton Road- 3 Lane, between Six Forks Road and Falls of Neuse Road
- Pleasant Valley Road- 4-5 Lane, between Duraleigh Road and US 70
- Perry Creek Road- 4-5 Lane, between US 1 and US 401
- Jones Sausage Road- 4-5 Lane, between I-40 and Rock Quarry Road
- Poole Road- 4-5 Lane, between Old Poole Road and Barwell Road
- Sunnybrook Road- 4-5 Lane, between New Bern Avenue and Poole Road
- Southall Road- 4-5 Lane, between Hedingham Boulevard and Lazy River Drive
- Centennial Campus Connector & Interchange - 4-5 Lane, north of I-40
- Leesville Road- 4-5 Lane, between Lynn Road and Millbrook Road
- Wake Forest Road- 6 Lane, between I-440 and E Six Forks Road
- Edwards Mill Road Extension - 4-5 Lane, between Chapel Hill Road and Raleigh School Drive
- Rogers Lane- 4-5 Lane, between Anderson Point Drive and Gilman Lane
- Tryon Road- 4-5 Lane, between Dillard Drive and Jones Franklin
- Tryon Road- 4-5 Lane, between Gorman Street and Lake Wheeler Road
- Tryon Road- 4-5 Lane, between US 401 and Junction Boulevard

The 2030 LRTP recommends various strategies to relieve corridors which will experience unacceptable congestions in following decades, such as adding physical capacity, constructing bypasses, utilizing HOV/HOT, providing additional interchanges or grade separations, and studying transit options, etc. Overall, 197 miles of new roadways and 528 miles of widenings are proposed by the 2030 LRTP and most of these projects are expected to be completed by 2030.



Map 6.6 Planned and Proposed Roadway Improvements





## City of Raleigh Capital Improvement Program

The Capital Improvement Program (CIP), a strategy for accomplishing various city goals and a plan for maintaining facilities and infrastructure investments in Raleigh, reviews and translates the long range objectives into a more specific multi-year program. The Phase I of the CIP, covering fiscal years 2007-08 through 2011-12, includes projects approved by the City Council in previous editions of the CIP and additional projects recommended through the planning process. The Phase II of the CIP, covering fiscal years 2012-13 through 2016-17, includes new projects and capital maintenance projects.

The projected cost for all Phase I transportation improvements, including thoroughfare projects, major street maintenance, sidewalk construction, bicycle facilities and transit capital needs is \$117,751,160. According to the City of Raleigh Capital Improvement Program (Fiscal Years 2007-08 through 2016-17), the major streets projects in Phase I are listed below:

- Hillsborough Street/Morgan Street Roundabout
- Perry Creek Road Widening
- Falls of Neuse Road Realignment and Widening
- Tryon Road Widening, Part D
- Hillsborough Street Roundabouts
- Six Forks Road/ Millbrook Road Intersection Improvements
- Rock Quarry Road Widening, Part B
- Leesville Road Widening, Part A
- Lake Wheeler Road Improvements
- Jones Sausage Road Widening

The projected cost for all Phase II transportation improvements is \$540,573,740. According to City of Raleigh Capital Improvement Program (Fiscal Years 2007-08 through 2016-17), the major streets projects in Phase II are listed below:

- Barwell Road/ Rock Quarry Road/ Pearl Road Intersection Improvements
- Blue Ridge Road Pedestrian Improvements
- Blue Ridge Road/Lake Boone Trail
- Blue Ridge Road Widening
- Buck Jones Road Widening
- Capital Boulevard Median Replacement
- Carolina Pines Drive Widening
- Chapel Hill Road Widening
- Coxindale Road Extension
- Hillsborough Street Improvements
- Jones Franklin Road Widening, Part A
- Jones Franklin Road Widening, Part B
- Jones Franklin Road Widening, Part C
- Lake Wheeler Road Widening, North
- Lake Wheeler Road Widening, South
- Leesville Road Widening
- Millbrook Road/Creedmoor Road
- Mitchell Mill Road Widening
- New Hope Church Road/Atlantic Avenue
- New Hope Road Widening

- New Leesville Boulevard Extension
- Old Lead Mine Road Widening
- Old Wake Forest Road Widening, Part A
- Old Wake Forest Road Widening, Part B
- Pleasant Valley Road Widening
- Poole Road Widening
- Ray Road Widening
- Rock Quarry Road Widening, Part A
- Rock Quarry Road Widening, Part C
- Sandy Forks Road Widening
- Skycrest Drive Extension
- Southall Road Extension, Part A
- Southall Road Extension and Widening, Part B
- Spring Forest Road Extension
- Spring Forest Road Widening
- Strickland Road Widening
- Tryon Road Extension, Part A
- Tryon Road Widening, Part C
- Wade Avenue Improvements
- Wade Avenue at Jaycee Park Entrance
- Western Boulevard Extension

Both Phase I and Phase II collectively budget \$520.5 million for major streets projects and \$111.3 million for other street improvements. The streets improvements funds include the city's share of funding for traffic calming improvements which is about \$600,000 per year. Additionally, the CIP includes a parking improvements section that provides funds for the maintenance and repair needs of the City's off-street facilities as well as on-street parking meter upgrades to meter stationing. The budget for parking improvements is \$2.7 million. Also the CIP allocates \$12 million to pedestrian projects.

### **Downtown Raleigh Wayfinding**

This recent study was conducted to develop a creative, flexible and functional solution to resolve downtown Raleigh's current and future wayfinding challenges. Some of the study's primary recommendations that could be addressed in the Comprehensive Plan are listed below.

- Calm traffic in downtown Raleigh and create a more pedestrian friendly environment. Strategies identified include creating a strong system of bike routes and trail and greenway access points, and expanding existing pedestrian and trail facilities.
- Recommendations for various signage options to assist visitors in identifying significant destinations, whether by identifying the appropriate exit along I-40 and I-440 or locating the interstates in the downtown area.

Traffic calming measures were also recommended for downtown Raleigh. These measures should be evaluated through traffic operations studies so that both livability and traffic movement goals are balanced.





## Implications for the Comprehensive Plan

### Functional Classification

- Raleigh is well served by an appropriate mixture of classified roadways.
- The Comprehensive Plan should ensure adequate movement, both north-south and east-west, within and around Raleigh.
- The Comprehensive Plan should ensure that adequate access management strategies are applied based on a roadway's functional classification.

### Level of Service

- Consider integrated land use and transportation measures that would reduce the need for trip-making, provide choices for shorter trips, and encourage walking, biking, and transit use to address roadway congestion.
- Additional low density, suburban growth and dispersed employment and population centers will increase the pressure on the City's arterial road system. Strategies for efficient use of existing infrastructure and greater integration of land uses should be considered.
- By 2035, Raleigh's roadway network will be extremely congested. A significant share of this congestion will occur on road segments unlikely to be widened given adjacent land use patterns. The Comprehensive Plan will need to address multi-modal strategies for reducing this projected congestion.

### Safety

- The Comprehensive Plan should include strategies for access management to address potential safety concerns along corridors.
- The Comprehensive Plan should consider bicycle and pedestrian safety along corridors in activity centers and densely developed areas.
- Intersections with the highest number of crashes should be reviewed by a registered engineer to correct possible safety deficiencies.

### Planned and Proposed Roadway Investments

- Roadway improvement strategies should include improving connectivity by extending roads and filling in gaps in the arterial network, improving capacity by widening existing roads or managing access on existing roads, and other system improvements.
- Roadway investments should take into account the needs of pedestrians, cyclists and transit users in addition to motorists, an approach currently referred to as "complete streets."

## Public Transportation

The Raleigh area is served primarily by two transit services—Triangle Transit and Capital Area Transit (CAT). Another locally oriented transit system is the North Carolina State University's Wolfline, which primarily serves the University but is also open to the general public. Map 6.7 displays the Triangle Transit (formerly TTA) and CAT routes in Raleigh.

Triangle Transit has 12 bus routes, six of which serve Wake County. Triangle Transit also has two outbound and two inbound express bus routes. Along with providing regional bus service, Triangle Transit also provides rideshare service through vanpools and carpools that are coordinated through an online rideshare matching tool. Triangle Transit also provides park and ride lots in the Triangle area. Five of these are located in Raleigh at Exchange Park, Pleasant Valley Shopping Center, Shelley Lake, District Road, and State Fairgrounds.

CAT has 18 bus routes, seven connector bus routes and one express bus route. CAT operates 14 additional park and ride lots in Raleigh. These are located at:

- Carolina Pines Park;
- Carter-Finley;
- District Drive;
- Millbrook Exchange Park;
- Grace Lutheran Church;
- Highland United Methodist Church;
- Lowe's Hardware;
- Optimist Park;
- Pleasant Valley;
- Pleasant Valley Shopping Center;
- Shelley Lake;
- State Fairgrounds;
- Super K-Mart; and,
- Westgrove.

Triangle Transit, CAT, and Wolfline demonstrate fairly healthy ridership numbers. In October 2007, Triangle Transit transported 87,700 riders, an increase of over six percent from the same time frame in the previous year. During this same time period, CAT transported over 401,000 riders, an increase of over nine percent from the same time frame in the previous year. Wolfline recorded just under 1.8 million passenger trips in 2006, or 150,000 a month, on average.

### **City of Raleigh Capital Improvement Program**

There is \$11.8 million for transit improvements in Raleigh's Capital Improvement Program. These funds will provide for replacement buses and feeder vans as well as maintenance and upgrades of transit facilities. They represent only the local share of anticipated Federal and State matching funds. However, Capital Area Transit has capital funding needs beyond those currently budgeted just to continue to provide existing levels of transit service, and still larger needs if the system is to expand to accommodate a growing ridership and recent public policy initiatives intended to increase the role of transit in the overall transportation picture. Moreover, the ability to receive Federal and State matching funds for capital projects and acquisitions is increasingly uncertain.

Existing needs include replacing significant portions of the system's aging bus fleet. There are currently 28 transit buses in operation which are beyond the federally defined useful life; the replacement costs of these totals about \$9.8 million. Moreover, the system's current Transit Operations and Maintenance Facility is over 30 years old and was designed for a fleet of 50 buses. Currently, 85 buses are stored at this facility, and proposed expansions of the CAT fleet cannot be accommodated at this facility. The cost estimate for a replacement facility currently stands at close to \$19 million.





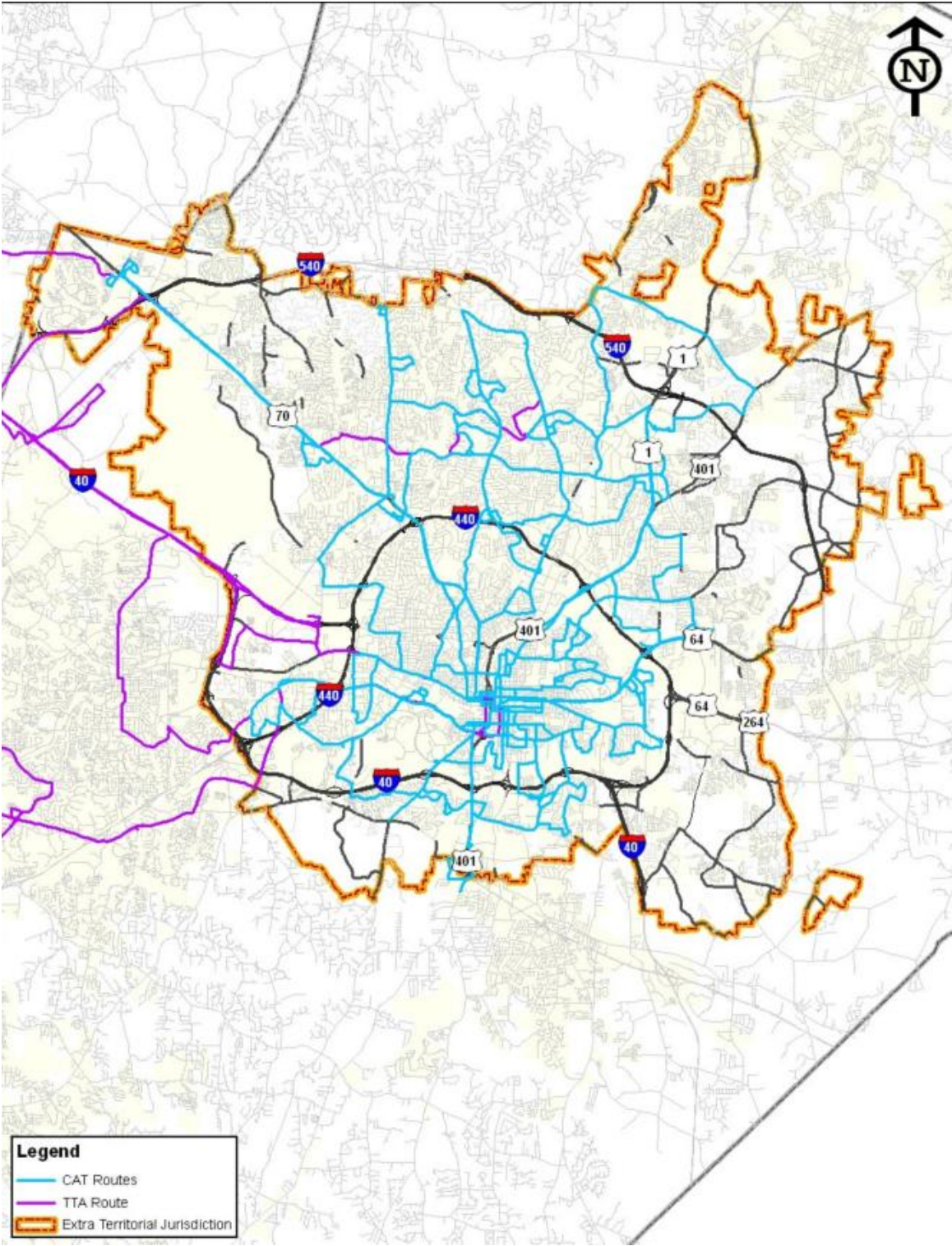
Capital Area Transit is currently entering Year 3 Implementation of the Five Year Transit Plan. This plan called for reducing headways (the time between arrivals) on a number of routes; extending other routes; and creating an entirely new route to serve Southeast Raleigh, all of which will require expansions to the bus fleet. Fifteen expansion buses were recently acquired, and \$250,000 has been allocated for new benches and shelters. The Moore Square transit center, which serves as the transfer hub for nearly all routes, is at capacity and will not meet the projected future demand and planned bus expansion. Expansion of the facility is estimated at \$2.7 million. The 28 replacement buses discussed above, the Moore Square expansion, and the new maintenance facility are all not fully funded. Collectively, these expenditures come to nearly \$32 million to accommodate planned expansion and to bring the vehicle fleet up to federal standards.

Transit ridership is positively correlated with gasoline prices, and retail gas prices are pushing record levels, with continued increases anticipated at the time of writing. Accordingly, CAT system ridership levels are rising. The number of riders on CAT increased by nine percent in January and eighteen percent in February of 2008 compared to January and February of 2007. Revenue collected by bus fares increased by almost 11 percent January. At his 2008 State of the City address, an expansion of Raleigh bus service was among the policy initiatives unveiled by Mayor Charles Meeker. Enhancements to local bus service will also be necessary to feed riders into any local or regional rail system which may be built in the future. Accommodating these future needs and public policy goals will require a significant infusion of capital dollars into Capital Area Transit.

### **Triangle Transit Regional Rail Plan**

After years of planning, Triangle Transit and the region's two MPO's adopted the Regional Rail Plan in the mid-1990s. The goal of the Regional Rail Plan was to guide regional transit planning efforts in the Triangle region. The specific goals of the plan include providing quality travel choices, encouraging more compact development in the Triangle Region and providing an alternative transportation mode in congested regional travel corridors. The plan includes regional rail service, expanded bus service, shuttles, park-and-ride facilities and enhanced transit access for pedestrians and bicycles. Twelve stations were proposed for the regional rail system and five of the stations are in Raleigh. There are four additional future stations, three of which have been planned for areas north of the Government Center station.

Map 6.7 Public Transportation





A Draft Environmental Impact Statement (DEIS) was prepared by Triangle Transit and NCDOT for Phase I of the Regional Rail System Project. The project corridor is approximately 35 miles long and extends from western Durham through downtown Durham to Research Triangle Park (RTP), Morrisville, Cary, Raleigh, and terminates in North Raleigh. Triangle Transit was seeking New Starts funding for this project; however, the project was unable to obtain funding from New Starts because the project failed to meet FTA guidelines.

### **The Special Transit Advisory Commission (STAC) Report**

The Special Transit Advisory Commission (STAC) was appointed by the Capital Area MPO and the Durham-Chapel Hill-Carrboro MPO to reevaluate regional transit options and develop a regional transit vision plan. The Commission's final report, presented May 2008, covers three major categories of investment – enhanced region-wide bus service, circulators, and rail.

#### Enhanced region-wide bus service

This would expand bus service throughout the region to connect communities and bring communities not presently served by transit into a regional transit network. Specific elements of this service include:

- High frequency, express service between the Raleigh-Durham International Airport (RDU) and downtown Durham, downtown Raleigh including the Convention Center, and the Cary train station park and ride
- Rush Hour Only service to outlying communities
- Enhanced bus service in core areas to support the rail and circulator investments
- A system of park and ride lots to be served by the regional network and the express service
- Enhanced transit access for pedestrians and bicycles around park and ride lots and bus stops

#### Circulators

New circulator service would provide increased and flexible travel options within major activity centers. The report recommends circulator “zones,” leaving the specific designation of routes to individual jurisdictions and the MPOs. All circulators are anticipated to be buses initially, with the potential to transition to modern street cars or trolleys in the future, depending on conditions and cost. Specific elements of this service include:

- RDU/RTP circulator connecting RDU to the Triangle Metro Center and other major activities areas in RTP
- Circulators in the downtowns of Raleigh, Durham, Chapel Hill/Carrboro and Cary

#### Rail

Recommended rail service and investments would connect the region's major activity centers, serve congested corridors, and provide opportunities to influence land use and development patterns. The North Carolina Railroad Shared Corridor Track Expansion Study is examining the feasibility of rush hour rail service on the Burlington to Goldsboro and Hillsborough to Chapel Hill/Carrboro corridors; STAC-recommended investments should be coordinated with the results of this study. Specific aspects of the recommended rail service include:

- The segments connecting Durham, RTP, Cary, downtown Raleigh and north Raleigh will use diesel multiple unit (DMU) rail cars operating within existing railroad rights-of-way.
- The segment connecting Chapel Hill to Durham will use Light Rail Transit (LRT), electrically-driven rail cars on a new alignment.



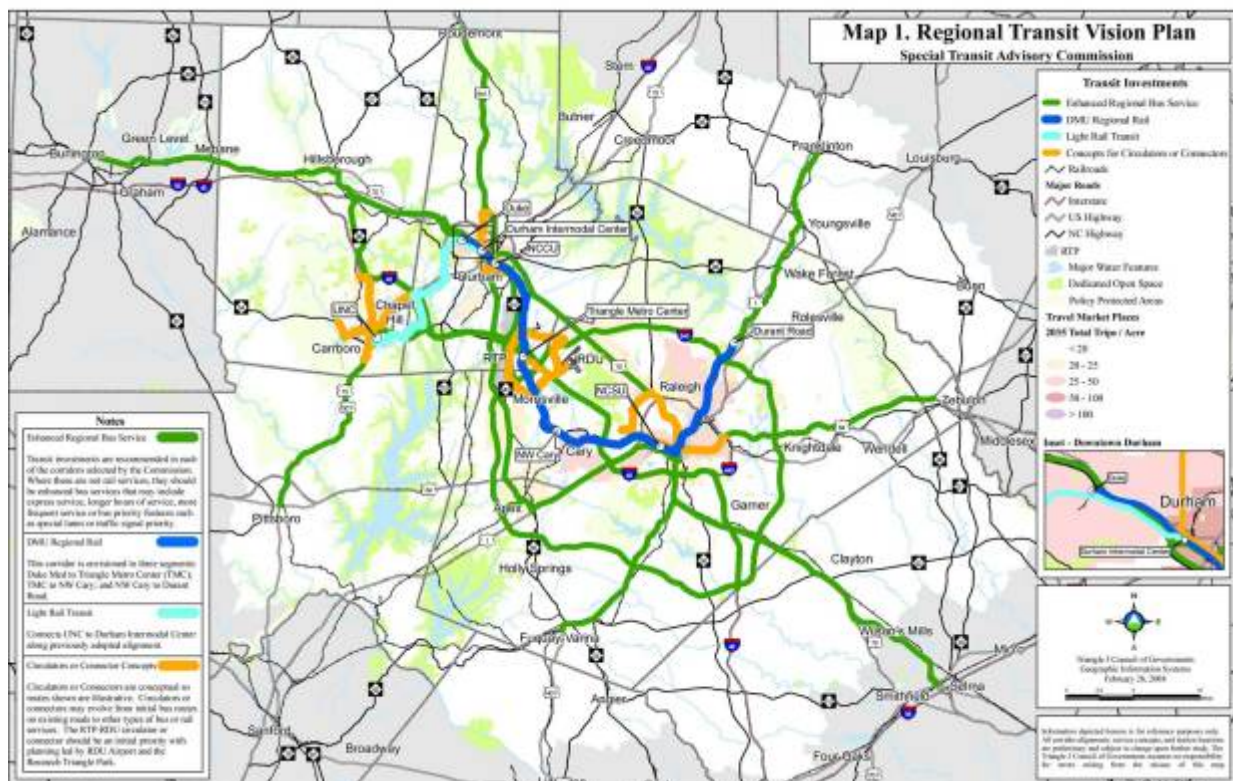
## Implementation Challenges

Three central implementation challenges for this Vision Plan are funding, land use, and leadership and governance. STAC recommends a half-cent sales tax (5¢ per \$10 in purchases) and a \$10 increase in vehicle registration fee as two ways to increase local funding available for transit investments. These new funds, when combined with existing local, state and federal funding, and debt financing, would be adequate to make the recommended transit improvements.

Pairing transit service and investment with local government investment in transit-supportive development policies and applying existing transit-supportive policies consistently are two specific strategies STAC recommends be used to encourage development patterns suited to transit investments and provide opportunities for increased transit usage.

Leadership and governance recommendations center on increased local and regional coordination. Specific STAC recommendations include: a greater accountability to voters by ensuring that elected officials serve in decision-making capacities for regional transit investments; encouraging continued cooperation between the MPOs; and establishing a regional staff committee from the working group that supported the work of the STAC to consult, study and coordinate the completion of the Regional Transit Vision Plan.

**Figure 6.1 Strategic Transit Advisory Commission Vision Plan**





## Downtown Raleigh Multi-Modal Transportation Center Study

A final transit study being conducted in Raleigh is for a multi-modal transit station in downtown Raleigh. This station could potentially serve several modes such as buses, regional rail, high speed rail, and commuter rail. The location under study is known as the “Wye”, where CSX, Norfolk Southern and North Carolina Railroad meet within Downtown Raleigh’s Warehouse District. The study addresses both a footprint and conceptual design for the transit facility(ies) itself, as well as a development framework for the surrounding area that takes into account current and future transit infrastructure requirements.

## Southeast High Speed Rail

Another transit project under study is the Southeast High Speed Rail. High speed rail is intended to provide users with a mobility alternative to medium- and long-distance auto and air trips. The proposed service would extend Acela-style rail service south from DC into Raleigh in a first phase, and eventually onto Charlotte and Atlanta. Between Raleigh and Petersburg, the service would run along a corridor known as the Seaboard “S” line which is partially abandoned, and which corresponds to the Phase II Triangle Transit regional rail project North Raleigh service. The proposed SEHSR station is located on the north side of the Boylan Wye. There is currently a Tier II EIS for the portion between Richmond, VA to Raleigh, NC. This project is expected to begin operations between 2013 and 2015.

## Eastrans

The Eastrans study, completed in 2004, explored the feasibility of commuter rail service to downtown Raleigh from points east utilizing two potential corridors: the North Carolina Railroad (NCRR) corridor to Goldsboro, and-or the Norfolk Southern corridor to Wilson. At this time, no further significant planning effort has been advanced. If implemented, such service would need to be accommodated as part of the multi-modal transportation center.

### Implications for the Comprehensive Plan

- The Comprehensive Plan should promote additional transit services that will enhance the mobility options and reduce vehicle miles traveled and encourage transit-oriented development around planned transit station areas, setting the stage for revising the zoning code and Streets, Sidewalks and Driveways Access Handbook to implement these policies.
- Expanded local transit service will require a significant commitment of capital dollars beyond what is currently programmed, and may also benefit from funding mechanisms, such as the use of bonds to finance large fixed investments such as a new Operations and Maintenance Facility.
- Pedestrian networks should be integrated in Transit Oriented Development areas and along transit corridors so as to allow greater access to bus stops.
- The Comprehensive Plan should promote transit connections to major trip generators in the Raleigh area.
- Since waiting time and transfer time are the two greatest impediments to transit ridership from a passenger’s perspective, the Comprehensive Plan should consider measures for improving transit efficiency wherever applicable. Coordinating development with transit allows for more efficient transit routing.
- Planning for future services and expansion needs to consider the projected growth and location of elderly citizens as well as citizens without access to vehicles.
- With several transit agencies in the area, it will be important to coordinate and integrate several activities such as schedules, routes, and fare collections.



## Bicycle and Pedestrian Circulation

Bicycle and pedestrian facilities are an important part of a multi-modal transportation system designed to efficiently move people. Raleigh has many activity centers and recreational attractions that inspire the need for alternative forms of transportation to enable residents and tourists to enjoy all the City has to offer. Several examples of these attractions are the Art Museum, Umstead State Park, Pullen Park, Shelly Lake, Lake Raleigh and Lake Johnson.

Raleigh is also home to many colleges and universities such as North Carolina State University, Shaw University, Meredith College, St. Augustine's College, Peace College, and Wake Technical Community College which create a need for well connected systems to accommodate pedestrian and bicycle traffic. Map 6.8 shows the existing bicycle and pedestrian facilities as well as key public facilities that call for bicycle and pedestrian access.

The City has also initiated a bicycle master plan that will provide recommendations for improving the bicycle element of the transportation system. This plan will be completed in 2008.

### CAMPO 2030 Long Range Transportation Plan

The CAMPO maintains a stakeholders group to execute pedestrian and trail improvements by calling for the incorporation of sidewalks and bicycle facilities where appropriate.

The bicycle element of the 2030 LRTP outlines support for bicycle accommodations by calling for the completion of incidental bicycle projects on 325 miles of roadway. These projects were included to maintain conformity with TEA-21 requirements and the CAMPO Bicycle and Pedestrian Plan.

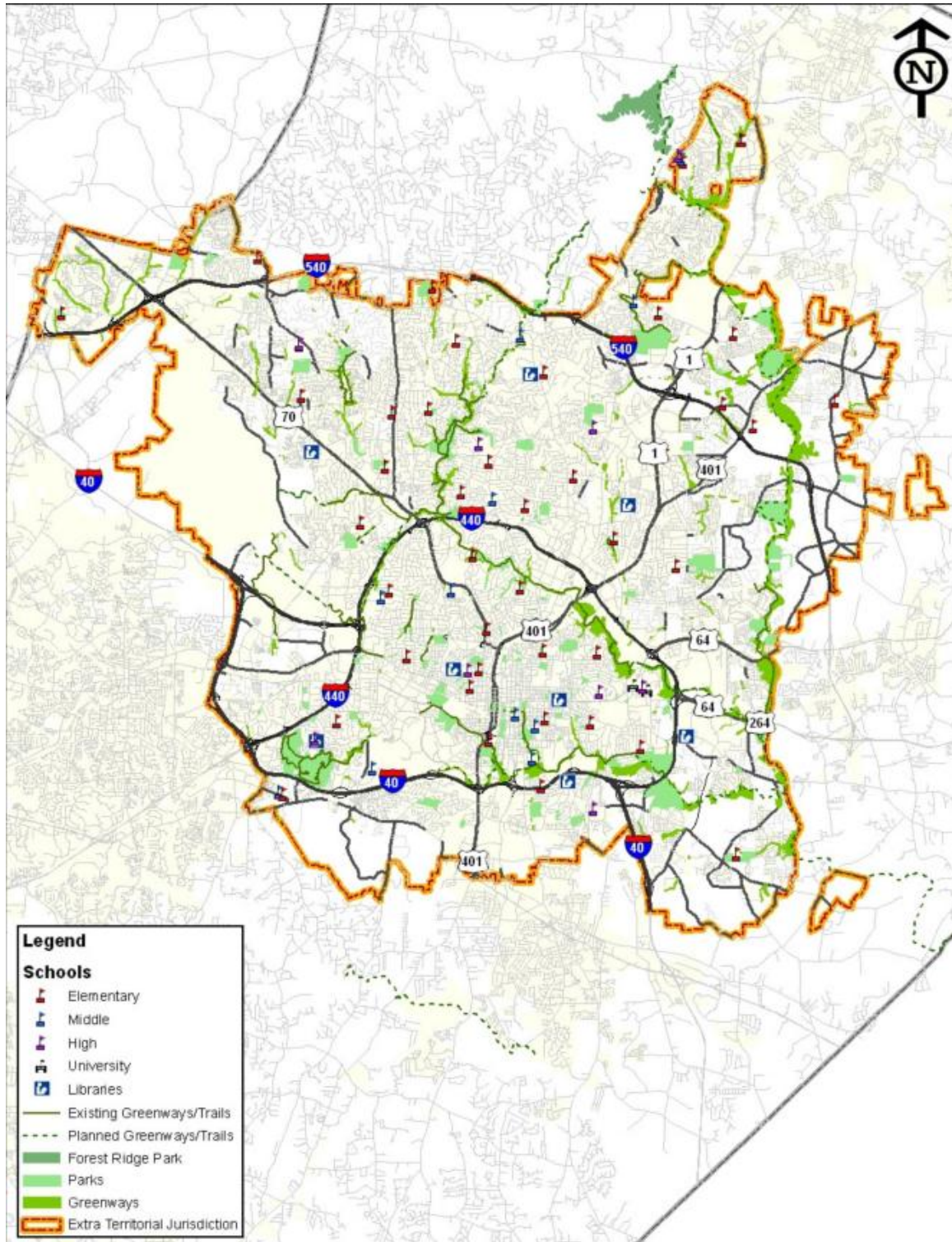
Additionally, there is \$5.4 million for pedestrian improvements allocated in Phase I and \$6.6 million in Phase II of Raleigh's Capital Improvement Program. Improvements include the addition of ADA compliant curb ramps, and sidewalk construction, maintenance and repair.

### Implications for the Comprehensive Plan

- The Comprehensive Plan should address bicyclists' and pedestrians' needs in community and neighborhood planning and site design processes, including crosswalks and bicycle racks and facilities.
- The Comprehensive Plan should recommend ways to improve pedestrian and bicycle mobility and connectivity in the City.
- Bicycle and pedestrian facilities should be a priority in the vicinity of key locations such as retail and mixed used centers, schools, libraries and parks.
- Roadway reconstruction should consider a typical section with an accompanying set of bicycle and pedestrian facilities.
- Sidewalk standards should be sized for existing and projected pedestrian demand, with more generous widths allotted in downtown and in pedestrian business areas.
- The Comprehensive Plan should incorporate policy recommendations from the Bicycle Plan Update currently being developed.



Map 6.8 Existing Bicycle and Pedestrian Facilities



## Raleigh-Durham International Airport

The Raleigh-Durham International Airport (RDU) is located ten miles northwest of Raleigh along I-40 and I-540. The Raleigh-Durham Airport Authority oversees the operation, maintenance, and development of the facility. Approximately 9.4 million passengers (25,000 passengers per day) traveled through RDU in 2006. RDU has about 4,500 employees. The economic impact of the airport on the Raleigh-Durham region is more than \$2 billion annually.

RDU is served by Triangle Transit through bus routes 747, 570 and 670. Currently, the airport has garage parking with over 11,000 public parking spaces and park and ride parking with over 9,100 public parking spaces.

The following expansion and improvement projects are in progress or planned for RDA:

- Construction of a new terminal which is estimated to be complete in 2010. This \$570 million project will be 990,000 square feet and provide 32 gates.
- Redevelopment of Terminal A will begin in 2008 with the goal of reconfiguring the existing layout to enhance operations.
- Development of six acres of airport-owned land for commercial uses at the intersection of National Guard Drive and Aviation Parkway. Named as Aviation Station, this commercial area located near I-40 will serve not only airport travelers but also motorists on I-40.

Additionally, the Raleigh-Durham Airport Authority has adopted a Noise Abatement Policy with the goal of reducing aircraft noise and promoting compatible land uses. This is implemented locally in Raleigh through a special zoning overlay for this noise abatement area.

### Implications for the Comprehensive Plan

- Raleigh and the surrounding areas are well served by the presence of the international airport.
- The Comprehensive Plan should consider enhancing transit options to and from the airport.

## Railroad and Freight

The identification of freight corridors and preservation of freight mobility is another component of Raleigh's transportation and economic system. There are currently three active rail lines—CSX, Norfolk Southern and North Carolina Railroad Company. In 2002, North Carolina had 3,345 miles of freight railroad. In the same year, 300 million tons of shipment was moved within the state while 275 million tons was moved to or from the state to other areas.

Wake County has 387 railroad crossings. Eighty two percent (318 crossings) are at-grade, 10 percent (38 crossings) are underpasses, and 8 percent (31 crossings) are overpasses. Highway-rail crossings which are "at grade" pose risks because the train always has the right of way. The Federal Railroad Administration (FRA), Office of Safety Analysis, reports 13 accidents at rail crossings in Wake County for the period 2002 to 2006.

Although some business are located along railroads and utilize trains for the movement of freight, a majority of freight operations involve trucks. Census Bureau's 1997 Vehicle Inventory and Use Survey (the latest version available) estimated that there were nearly two million registered private and commercial trucks in North Carolina. In the Raleigh area the Tom Bradshaw freeway, which is composed of I-40, carries the largest volume of truck traffic followed by US 264 / US 64.



Many economists predict the growth in freight traffic to be greater than the growth in auto traffic. This may make freight considerations an increasing issue for Raleigh. Map 6.9 displays the major corridors and rail facilities in Raleigh.

## **Implications for the Comprehensive Plan**

### **Rail**

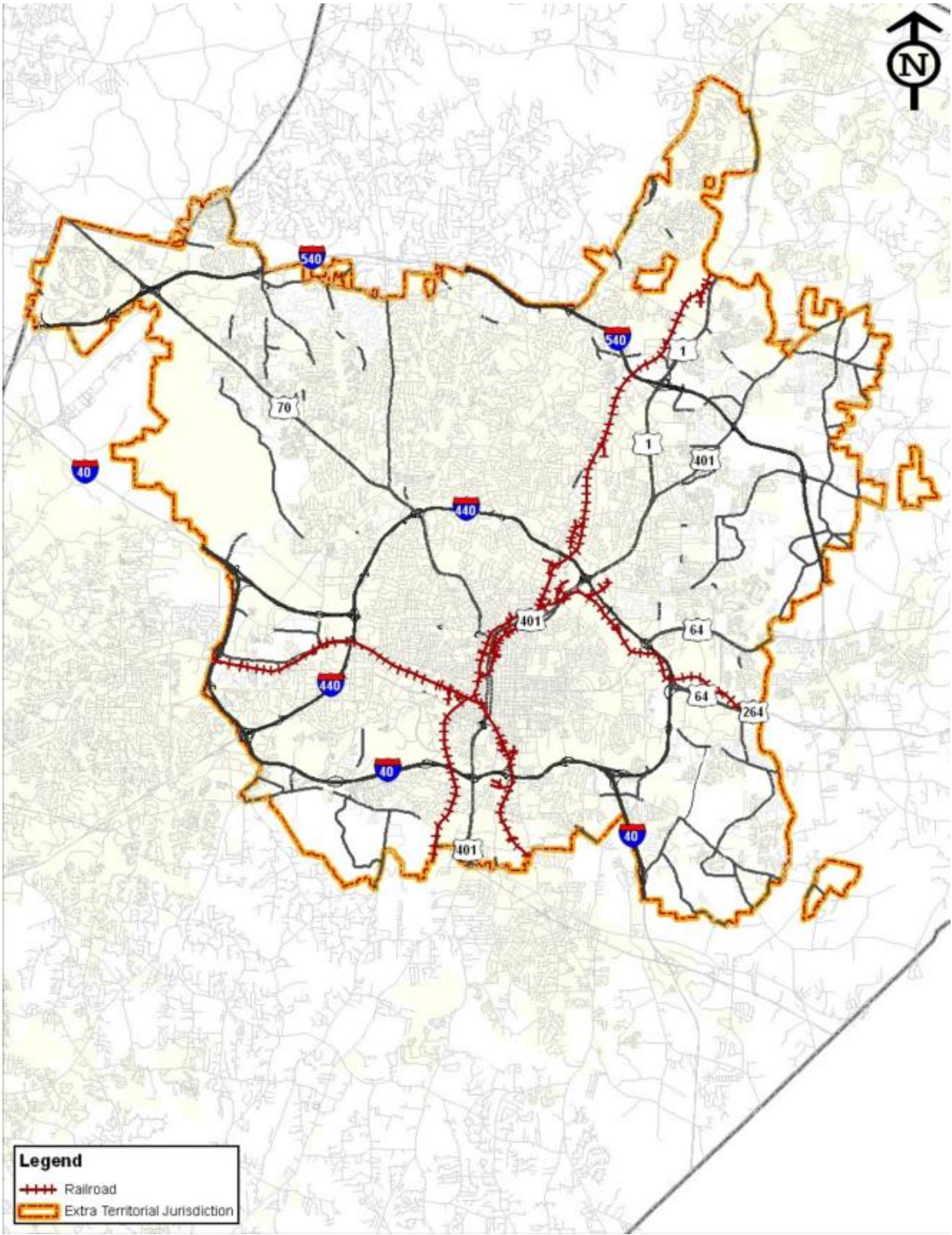
- There are numerous at-grade crossings that could pose potential traffic and safety concerns as traffic increases. The Comprehensive Plan should address whether grade separation is recommended at key locations to enhance mobility and safety.

### **Freight**

- The Comprehensive Plan should address the safe and efficient movement of truck traffic in and around the City and should highlight and address mobility issues on designated truck and freight routes.



Map 6.9 Railroad & Freight Facilities







## Bridges

Another important element of a transportation system is bridges. Deficient bridges pose a major obstacle to a fully functional road network due to load limits or other deficiencies. By the study horizon of 2030, several bridges will reach their intended life cycle and may require maintenance and rehabilitation. There are currently 34 bridges in Raleigh.

NCDOT has three bridges programmed in their Transportation Improvement Plan for Raleigh. These bridges include Old Milburnie Road over Beaver Dam Creek, Watkins Road over Powell Creek, and Wake Forest Road over Crabtree Creek. The City has two bridges programmed for replacement – Western/Hillsborough flyover replacement and the Falls of Neuse Road bridge replacement over the Neuse River. Additionally, there is \$80,000 for maintenance and repair of city owned bridges in Phase I of Raleigh’s Capital Improvement Program.

### Implications for the Comprehensive Plan

- The Comprehensive Plan should articulate the City’s coordination with NCDOT for bridge monitoring, maintenance and rehabilitation.
- The Comprehensive Plan should include recommendations for the coordination of bridge replacement with roadway improvements to coincide with regular roadway maintenance and/or bridge maintenance timeframes.

## Commuter Characteristics

This section summarizes the commuting characteristics in the City of Raleigh. According to the 2000 US Census, Raleigh had 1.8 vehicles per household, a similar rate to the national average of 1.9 vehicles per household. Table 6.3 illustrates the breakdown in commuting modes for Raleigh.

**Table 6.3: Existing Work Commute Patterns**

Work Commute	Raleigh		North Carolina Percentage
	Population	Percentage	
Total Workers (Age 16+)	617,475	100%	100%
Drove Alone	484,900	78.5%	79.4%
Carpooled	79,709	12.9%	14.0%
Transit/Taxi	10,497	1.7%	0.9%
Biked or Walked	16,054	2.6%	1.9%
Motorcycle or Other Means	4,940	0.8%	1.1%
Worked at Home	21,375	3.5%	2.7%
Mean Travel Time to Work (minutes)	24.9		24.0

*Source: 2000 US Census*

The City's journey to work data corresponds closely to the statewide averages for the various modes of travel. According to the 2000 US Census, Raleigh experienced the fourth highest percent change in the country in travel time between 1990 and 2000. The travel time in 1990 was 20.2 minutes and increased by 4.7 percent in 2000 to 24.9 minutes. In addition, approximately 35 percent of the commuters have a travel time greater than 30 minutes. This compares closely to the US average of 33.7 percent workers with a commute greater than 30 minutes.

Most workers (93.9 percent) in Raleigh rely on highway-based transportation for commute trips, either by driving alone or carpooling. Fewer than three percent (2.6 percent) of workers in Raleigh walk or bike to work and almost two percent (1.7 percent) use some form of transit.

### **Implications for the Comprehensive Plan**

- The Comprehensive Plan should address the need to diversify the mode choice for work trips by providing alternative transportation modes between major origins and destinations.
- The Comprehensive Plan should address the connection between land use and transportation.
- The Comprehensive Plan should review the location and mix of jobs to households with the aim of decreasing commute trips.

## **6.3 Conclusion: Key Issues and Potential Strategies**

It is important to identify and understand the key issues and potential strategies for Raleigh and its multi-modal transportation system. It is not only important for the plan to address transportation on major facilities, but to enhance the quality of life for its residents through all modes of the transportation system.

### **Land Use and Transportation Connection**

#### **Key Issues**

#### **Key Issue 6.1**

Like many growing cities, Raleigh is experiencing sprawling suburban growth. Large amounts of low density growth can have a negative impact on the transportation system. However, there may be resistance by some business, community members and established neighborhoods to shift to more urban patterns.

#### **Key Issue 6.2**

There is a need for better coordination of land use and transportation project review procedures in order to enable coordination between these two critical elements.



### **Key Issue 6.3**

Road widenings and new facilities to address automobile congestion is not by itself a feasible solution to the region's mounting congestion and long commutes. Roadway investments must be balanced with investments in other transportation modes. In addition, land use patterns have a significant effect on trip generation.

### **Potential Strategies**

#### **Potential Strategy 6.1**

Create a balance between land use patterns and transportation systems to provide more viable transportation options for transit, bicycling, and walking

#### **Potential Strategy 6.2**

Link land uses with a multi-modal transportation system that fosters strong economic opportunities and creates a high quality of life.

#### **Potential Strategy 6.3**

Provide a higher roadway grid density that will increase mobility options and promote the accessibility of nearby land uses.

#### **Potential Strategy 6.4**

Promote developments and densities that can support high quality transit in desired corridors and centers.

### **Transportation System Management**

#### **Key Issues**

### **Key Issue 6.4**

Even with programmed investments, the future transportation system (existing system plus committed projects) is projected to be severely strained by the year 2035.

**Potential Strategies****Potential Strategy 6.5**

Promote and enhance ridesharing options such as carpools and vanpools.

**Potential Strategy 6.6**

Determine critical transit corridors in the region and implement measures to enhance transit service. Strategies to consider include: bus only lanes, HOV arterial lanes, signal preemption, and queue jumping. A combination of these strategies can enhance transit services and provide more reliable travel times and schedules. It is important to provide high quality transit services to remain an attractive mobility option for residents and tourists.

**Potential Strategy 6.7**

Provide access management standards that are flexible, giving the City more options based on a corridor's characteristics and demand profile.

**Potential Strategy 6.8**

The use of the typical 5-lane section for thoroughfare should be re-examined. Using a 4-lane divided typical section may enhance mobility and safety.

**Potential Strategy 6.9**

Grade separation of high volume, highly congested roadways with other facilities (i.e., other major roadways, rail lines, etc.) should be explored.

**Potential Strategy 6.10**

Lane management policies may provide solutions for the future transportation network. These could include bus only lanes, HOV lanes, truck lanes, express lanes, and toll lanes. Current legislation only allows NCDOT to build tolled facilities.



## Other Key Transportation Issues

### Key Issues

#### Key Issue 6.5

The movement of freight through Raleigh is not currently an issue; however, as freight increases it will become a more critical element of the transportation system.

#### Key Issue 6.6

There are two MPO's that represent the Triangle Region – Capital Area MPO and Durham-Chapel Hill MPO. The enormous growth experienced and planned in Raleigh will transform Raleigh as the center of the region. This has a potential of changing the dynamics of transportation in the area.

#### Key Issue 6.7

Traffic calming will continue to be an issue for many neighborhoods and communities. As traffic levels increase on major thoroughfares, drivers will use alternative routes to make their trips. This additional through traffic, which is typically generalized as traveling above posted speeds, is undesirable in residential areas.

### Potential Strategies

#### Potential Strategy 6.11

Provide adequate routes for trucks and monitor major truck generators.

#### Potential Strategy 6.12

Provide traffic calming in strategic locations including neighborhoods and communities with large amounts of pedestrian activities.





## Public Utilities



## 7 Public Utilities

This section of the Community Inventory provides an overview of existing and planned public utilities for water, sewer, and stormwater infrastructure, and the key issues and strategies to address the City's projected growth.

### 7.1 Existing Utility Infrastructure

The City's public utilities are regional in nature. The City has merged utilities with all the municipalities in eastern Wake County including Garner, Rolesville, Wake Forest, Knightdale, Wendell, and Zebulon. Further, the Towns of Fuquay-Varina and Holly Springs periodically rely on the City for potable water supply. The City also has or is planning water interconnects with the Town of Cary, the City of Durham, and Johnston County. From a wastewater standpoint, during extreme low flow events, the City's Neuse River Wastewater Treatment Plant (WWTP) discharge can be up to 40 percent of the river flow at the downstream water supply intake for Johnston County. It is obvious that planning the infrastructure of the entire water regime must be with the perspective of the entire region in mind. There are opportunities to make additional water system connections with neighboring systems for assistance during drought and other emergency situations. Interbasin transfer regulations constrain the ability to pursue new water supplies outside the immediate area. Current reuse regulations also make it difficult to utilize reuse water to the fullest extent. The Public Utilities Department will face the challenge to work with state regulators to implement changes to the current regulations.

#### Drinking Water Supply

The vast majority of the drinking water supply for the City of Raleigh (and surrounding municipalities connected to the regional system) is from Falls Lake on the Neuse River, with a small amount coming from Wake Forest Lake on Smith Creek. The location of these sources is illustrated in Map 7.1: Water & Wastewater System.

The allowable withdrawal allocated at Falls Lake, based upon a 20-year safe yield, is 82 millions of gallons per day (MGD). Withdrawals at this source averaged 48.9 MGD in 2006, or about 60 percent of the allowable withdrawal. Raw water is treated at the E.M. Johnson WTP, which is rated at 86 MGD in terms of peak (as opposed to average) daily capacity, and delivered to the distribution system. This system serves the city of Raleigh, as well as the surrounding municipalities of Garner, Knightdale, Rolesville, Wake Forest, Wendell, and Zebulon as a result of utilities system mergers over the past several years. The historical system demand and WTP output is illustrated in Table 7.1: Historical System Demand and Supply, E.M. Johnson WTP.

**Table 7.1 Historical System Demand and Supply, EM Johnson WTP**

Year	Average Daily Demand (MGD)
2000	44.38
2001	47.44
2002	45.23
2003	43.37
2004	46.75
2005	48.60

Year	Average Daily Demand (MGD)
2006	48.20
2007	50.70

*Source: City of Raleigh*

The 20-year safe yield at Wake Forest Lake is 1.2 MGD. Withdrawals at this source averaged 0.86 MGD in 2006. Raw water is treated at the G.G. Hill WTP, which is rated at 2 MGD, and delivered to the distribution system. The average daily output from the G.G. Hill WTP was 0.78 MGD for 2006, and 1.284 MGD for 2007.

In addition to these two sources, the City furnishes water to independent systems in the towns of Fuquay-Varina and Holly Springs, and the system has interconnects with the water systems in Cary and Johnston County, which are used in emergency situations. The City is currently pursuing more such interconnects as an essential tool for managing water regionally during times of shortage.

The City is responsible for operating and maintaining over 1,800 miles of water transmission and distribution system piping and appurtenances throughout the City and the associated 'merger' municipalities. The long range system service area is illustrated in Map 7.1: Water & Wastewater System.

### **Drought**

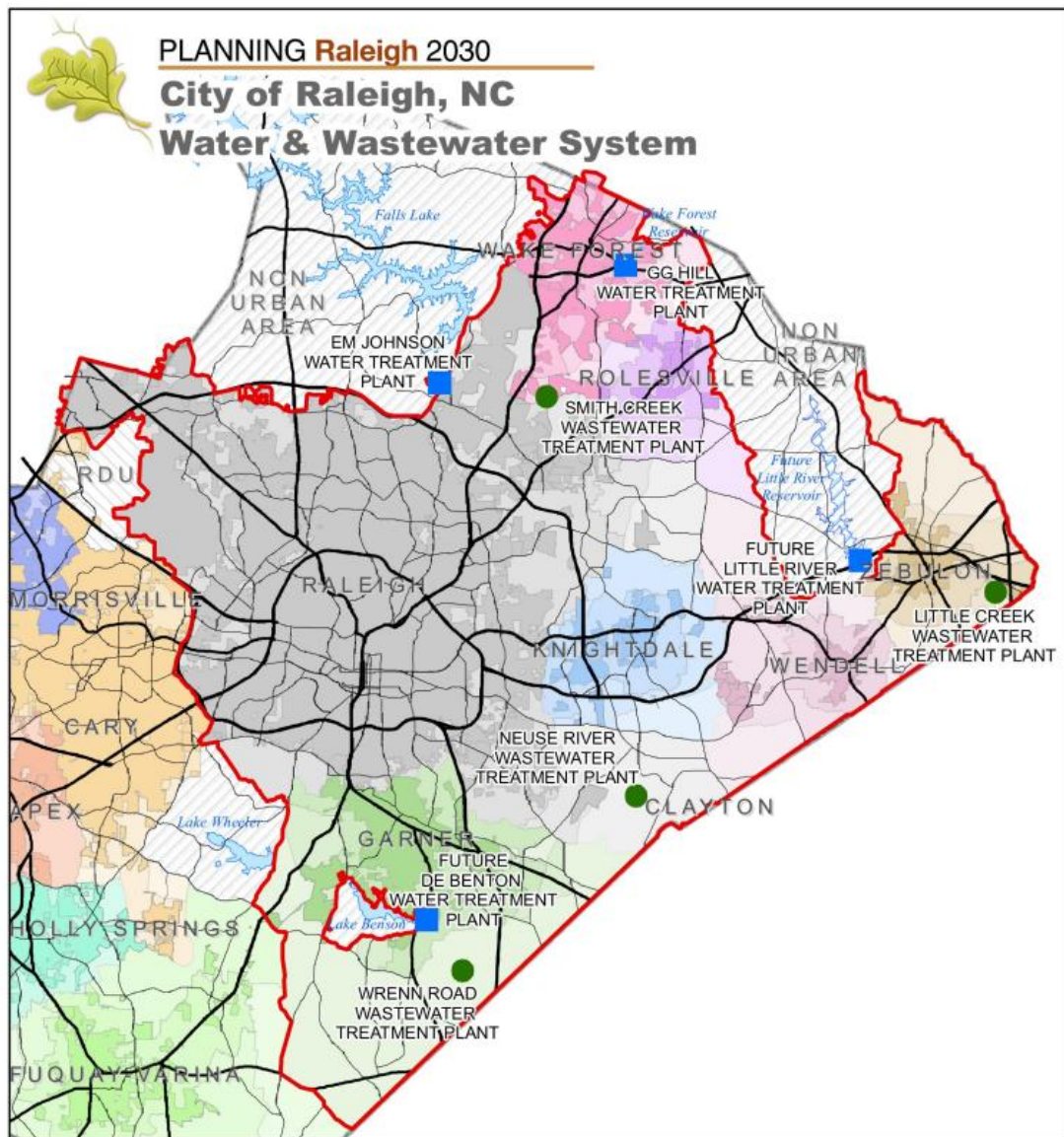
At the end of 2007, Wake County was immersed in an historic drought, rated as Exceptional (the most severe rating) by the North Carolina Division of Water Resources. This is consistent with recent and emerging weather patterns, predicted to be evidenced by longer and more frequent droughts, coupled with shorter and more intense rainy seasons.

Managing water, wastewater and stormwater systems in the face of this new climate pattern, and in the face of uncertainty, will be essential. The implications are threefold. First, more frequent droughts will require the City to be able to move quickly to cut demand during periods of shortage through conservation measures. Second, more frequent and/or longer droughts may require a reassessment of the safe yield withdrawal level, as this figure is based on historical rainfall and drought data. Lastly, shorter and more intense rainy seasons will stress stormwater infrastructure, and will increase the importance of the flood control functions that Falls Lake provides.

With regards to the first point, in 2007, the Raleigh City Council adopted the Water Conservation Ordinance. The purpose and intent of the ordinance is to: "assure that available water resources are put to reasonable beneficial uses to avoid depletion of the city water supply during a water shortage and to ensure that demand does not exceed the City's capacity for water treatment and distribution." The ordinance addresses landscape water conservation; the development of conservation programs for all major water uses; additional requirements for car washing facilities; water monitoring responsibilities and thresholds for water restrictions; the development of water conservation education programs; rate setting to provide incentives for water conservation; and mandatory and voluntary water restrictions.



Map 7.1 Water & Wastewater System



## LEGEND

<b>PUBLIC UTILITIES FACILITY TYPE</b>	<b>LONG RANGE SERVICE AREA</b>
● WASTEWATER TREATMENT	■ WATER BODIES
■ WATER TREATMENT	■ FUTURE LITTLE R. RES.
	— HIGHWAYS
	— MAJOR ROADS
	■ COUNTY LINE

1 inch equals 4.5 miles



Map created by City of Raleigh  
Public Utilities Dept.,  
Planning Dept. & GIS Division  
01/17/08

## Wastewater

Historically for the City of Raleigh and now for several of the merged utilities, wastewater is collected and conveyed to a single treatment facility—the Neuse River Wastewater Treatment Plant (WWTP)—and discharged to the Neuse River. This plant is rated at 60 MGD.

Additionally, treatment facilities are maintained in Garner (Wrenn Road WWTP), Zebulon (Little Creek WWTP) and Wake Forest (Smith Creek WWTP). These are rated at 1.0 MGD, 1.85 MGD, and 2.6 MGD, respectively. The historical throughput of all four wastewater treatment plans is illustrated in Table 7.2: Historical Wastewater Treatment Throughput.

**Table 7.2: Historical Wastewater Treatment Throughput**

Year/Facility	Neuse River WWTP (MGD)	Wrenn Rd WWTP (MGD)	Little Creek WWTP (MGD)	Smith Creek WWTP (MGD)
2000	36.16	-	0.853	1.330
2001	35.61	0.814	0.757	1.331
2002	37.39	0.911	0.816	1.399
2003	44.30	0.999	0.930	1.4419
2004	45.50	0.846	0.715	0.691
2005	46.20	0.904	0.580	0.713
2006	44.80	0.978	0.591	1.026
2007	42.00	0.960	0.552	1.040

*Source: City of Raleigh*

The locations of these facilities are illustrated in Map 7.1: Water & Wastewater System. The system service area is generally coincident with that of the water system.

## Reclaimed Water

The City encourages the use of reclaimed water when economically and technically feasible for any approved purpose to offset potable water demand and minimize waste discharged to surface waters.

The current system supplies irrigation water to agricultural fields adjacent to the Neuse River WWTP and to industrial and recreational uses near the Zebulon WWTP. Reuse water is also available for bulk loading at the Neuse River WWTP, E.M. Johnson Water Treatment Plant, Smith Creek WWTP, and the Little Creek WWTP.

While reclaimed water is an important management tool, the use of reclaimed water for irrigation is not a panacea during times of drought. Such reclaimed water would otherwise be treated at the Neuse River Wastewater Treatment Plant and added to the Neuse River to maintain adequate flows downstream. If this water is diverted, the resulting shortfall would have to be made up for by increasing releases at the Fall Lake Dam, thereby decreasing the amount of water available to the water system.





## Stormwater Conditions

To date the three primary objectives of the stormwater program have been managing the effects of new development, managing stream water quality, and correcting existing infrastructure deficiencies. The City currently has policy statements that basically cover each of the areas and include Stormwater Discharge Control, Drainage on Private Property, Water Quality, Existing Stormwater Problems, and Financing. Since the stormwater utility came into effect, many of the policies though are under review and being updated to represent the legal requirements of a stormwater utility.

### Watershed Studies

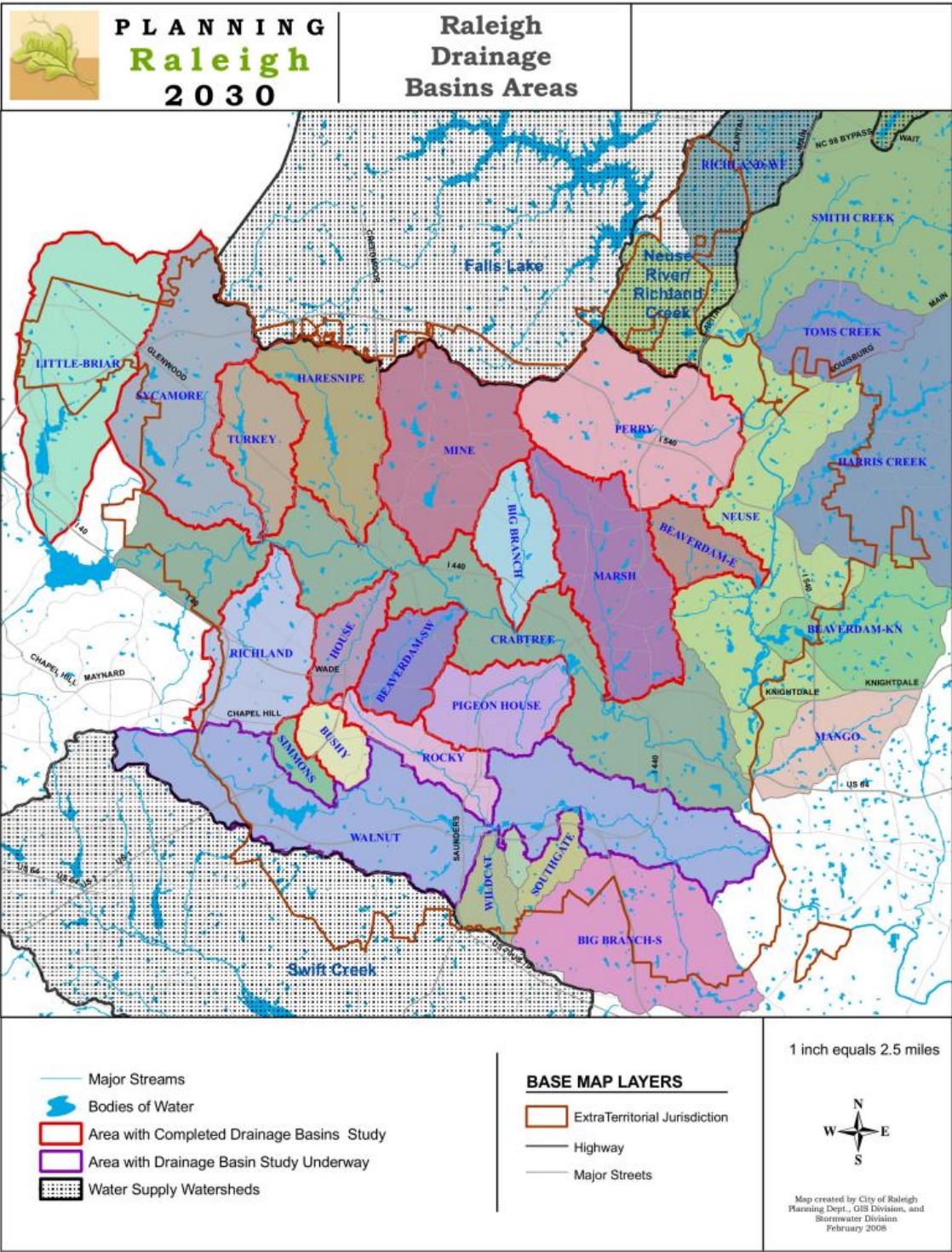
Currently 15 Drainage Basin studies have been completed and 1 other drainage basin study is underway within the City's jurisdiction. The location of these drainage basin study areas are illustrated on Map 7.2: Raleigh Drainage Basin Areas. These studies identify feasible stormwater management opportunities, existing flood prone areas, stormwater infrastructure deficiencies that warrant the City's action and most importantly the potential future flood prone areas based upon future development. The last issue is one of the more challenging issues facing the City as it defines needed work on private property particularly since the inception of the stormwater utility.

The drainage basin studies to date have identified over \$140,000,000 of needed improvements to alleviate existing stormwater problems. The capital fund needs include the preservation of nine existing lakes. It is anticipated that as more watershed studies are completed, more problems will be identified in addition to the above. For example, Walnut Creek, Beaverdam, and the Crabtree Creek Watersheds are not included and could represent as much as \$100,000,000 in additional capital improvement needs. Flood damage is currently the primary concern but water quality improvements will have to be increased in the future in order to meet Federal and State regulations.

### Stormwater Quality

A stormwater quality plan exists to support the National Pollution Discharge Elimination System Permit (NPDES), the Neuse River Nutrient Sensitive Waters (NSW) Strategy, and other locally perceived water quality needs. In general the city's position on water quality is to preserve natural corridors and incorporate water quality considerations into various aspects of stormwater management. The City is also a delegated authority as defined by the statutory requirements of the State of North Carolina for Sediment and Erosion Control in that it reviews and approves new construction plans for improvements within the City's jurisdiction.

Map 7.2 Raleigh Drainage Basin Areas





## 7.2 Future Utility Infrastructure

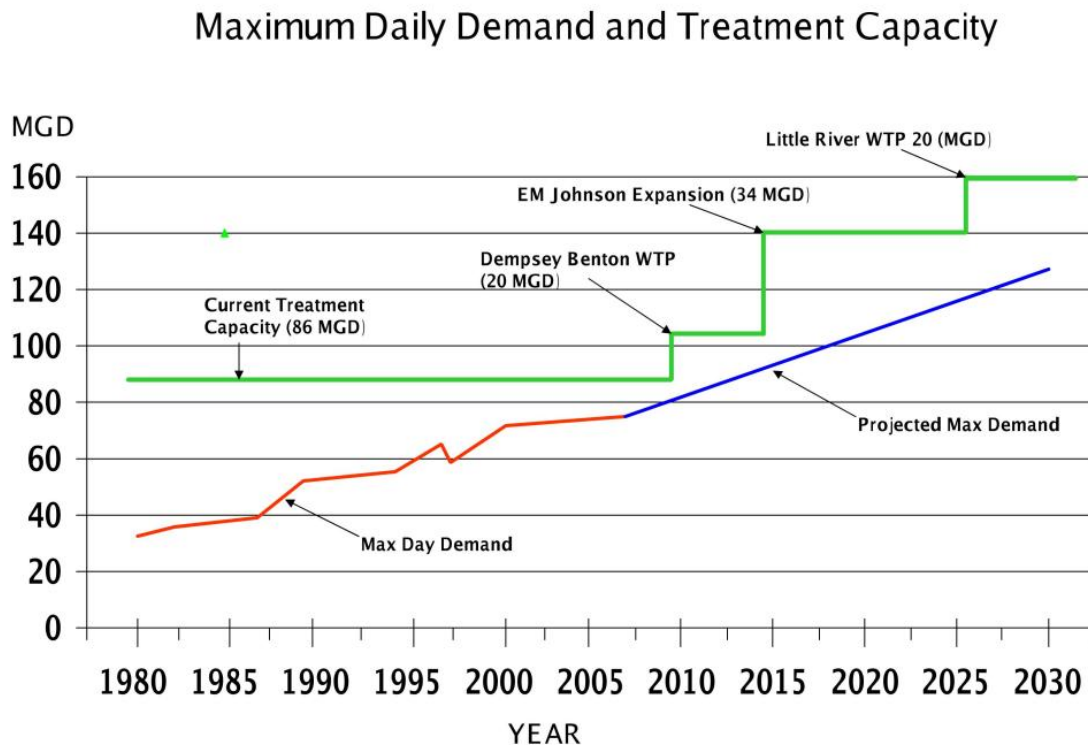
Water and wastewater treatment demand are project to increase substantially over the next two decades due to increased population and employment growth. Expanded City water and wastewater treatment capacity is planned including new facilities and expansions of existing systems.

### Drinking Water Supply

Future water demands as forecast in the City's Local Water Supply Plan are illustrated in Figure 7.1: Maximum Daily Demand and Treatment Capacity. Peak daily water demand is projected to increase from less than 80 MGD in 2006 to almost 130 MGD by 2030. These demand projections are based on existing water consumption records and population projections. The City expects to satisfy these demands through multiple new and expansion projects. Figure 7.1: Maximum Daily Demand & Treatment Capacity shows the amounts of timing of the following treatment facilities:

- DE Benton WTP (20 MGD) – scheduled for service in May 2010
- EM Johnson WTP expansion (34 MGD) – scheduled for service 2015
- Little River WTP (20 MGD) – scheduled for service 2025

**Figure 7.1 Maximum Daily Demand and Treatment Capacity**



Source: City of Raleigh Public Utilities Department



### Implications for the Comprehensive Plan

- The current drought brings to the fore the importance of developing additional strategies to manage water use.
- Water infrastructure planning must take into account any changes in rainfall patterns due to climate factors, even in the face of uncertainty.
- Water supply issues should be a factor in planning for the City's growth, including assessing the impacts from the rezoning process, as well as incorporating demand management considerations into the City's development standards.
- The Comprehensive Plan should consider additional water conservation measures and minimization techniques.

## Wastewater Treatment

Capacities are scheduled to be expanded at all three surface discharging plants. Expansions of 15 MGD at the Neuse River WWTP, 4.4 MGD at Smith Creek WWTP, and 0.35 MGD at Little Creek WWTP are planned from 2008 to 2012. This will result in a combined system capacity of 84.2 MGD (note that a system with this capacity can typically accommodate peak flows of three times this level). Further expansions to each of these three facilities are planned as growth dictates.

## Reclaimed Water

The City's 2007 Reuse Master Plan Update identified 233 potential existing users of reclaimed water stratified among eight classes of users, with an estimated annual average daily demand of almost 4 MGD. Due to the seasonal nature of much of this use, the maximum daily demand was projected much higher, at almost 10 MGD. The largest demand was identified within golf course and residential user classes. These higher demands will occur during the hotter, drier months - beneficially at precisely the time when the potable water supply is most highly stressed. Other classes identified included commercial, industrial, institutional, educational, recreational, and silvicultural/horticultural. Many of those demand classes will exhibit more stable and uniform usage patterns throughout the year.

A phased implementation plan projects serving approximately 80 percent of this demand over a 30 to 60 year build-out period. The Raleigh area reuse distribution system is scheduled to be constructed from the Neuse River WWTP to the Centennial Campus area by the end of 2009. The reuse distribution pump station at the Neuse River WWTP is also scheduled to be completed and placed in service by the end of 2009. The Zebulon area reuse system served by the Little Creek WWTP will be expanded as new customers are identified and funding is made available.

### Implications for the Comprehensive Plan

- During extreme low flow events, the City's Neuse River WWTP discharge can be up to 40 percent of the river flow at the downstream water supply intake for Johnston County.
- The Comprehensive Plan should explore ways to increase the number of customers who use reclaimed water to relieve the pressures on the potable water treatment supply.



## **Stormwater Management**

Stormwater management must address the quantity of runoff as well as the quality of the runoff. These issues and the City's Lake Preservation program and the financing of stormwater facilities are discussed below.

### **Stormwater Discharge Control**

Relative to future development, a priority should be to minimize nuisance and negative impacts due to new development as well as prevent significant increases in the potential for property damage. Desirably, discharge control methods could be applied that are economical as well as aesthetically and environmentally acceptable.

The City's current preference for stormwater management is to consider regional facilities where feasible. Since stormwater facilities will not be feasible in perennial streams due to the federal and State permitting environment requirements, the City will utilize smaller stormwater facilities in intermittent and ephemeral streams. The watershed study program in the Capital Improvement Program and focused water quality studies will be used to identify these opportunities, when feasible. Whereas the Federal and State mandated programs encourage on-site controls, the City recognizes the challenges of local geology and therefore considers regional facilities as a viable stormwater management opportunity. The City continues to negotiate with the state and federal authorities on this matter as the EPA's Non-Point Discharge Elimination System (NPDES) program continues to develop and encourage ways to reduce non-point stormwater discharges.

### **Drainage on Private Property**

Two of the main issues relative to drainage on private property include a reduction in the number of structures that flood and minimizing the impacts to water quality by protecting the natural stream/drainage corridor. Particular attention should be directed to reducing the number of structures in the 100 year flood plain subject to flooding by flood mitigation such as buyouts and elevation of existing structures. Control of downstream impacts (flooding, erosion, and water quality) caused by new development should also be a priority.

More specifically, improved stormwater discharge control should be developed to minimize significant increases in the potential for property damage, nuisances or other negative impacts of stormwater by controlling stormwater discharge from new development. Discharge control methods should be economically, aesthetically and environmentally acceptable. Particular attention could be directed toward allocating the cost of controlling increases in stormwater discharge to properties which are the sources of the increase.

Green infrastructure techniques can include site-specific stormwater management practices such as rain gardens, porous pavements, rain barrels, cisterns, and green roofs that are designed to maintain natural hydrologic functions by capturing and infiltrating precipitation where it falls rather than channelizing or piping it and removing it from the site.

### **Stormwater Quality**

In the future, both onsite and offsite facilities should continue to be considered. Additional studies are needed to evaluate small regional facilities that may be paid for by fee in-lieu of onsite facilities. Strategically located lakes and drainage systems should be a priority. Design criteria should continue to be evaluated as more specific issues are identified. Total Maximum Daily Loads (TMDL's), Neuse River Rules, and more restrictive sediment and erosion control regulations will lead to improved water quality of the City's surface water runoff.



Other key elements of the City's future water quality program may include sustainable design initiatives through the use of low impact development strategies, as well as credits to reward good behavior that ultimately result in less cost to the City's Stormwater Utility. Also, watershed studies in smaller areas could result in more focused water quality improvements using priority watersheds.

### **Financing**

The stormwater utility will not be able to fund the entire stormwater program in a satisfactory time frame. As such, other considerations for funding should be considered that include drainage districts specific to basins that may be better managed by regional facilities. The plan review and inspection fees should continue to be evaluated in order to support the recovery cost related to department review and inspections. And finally, bonds that may be retired by the stormwater utility could likely be utilized to fund the capital stormwater projects program. Also, leveraging capital dollars with grant dollars from State and federal sources should be pursued.

### **Lake Preservation**

The Lake Preservation Policy is one of the most important parts of the future stormwater management considerations as the City's jurisdictional boundaries expand. The City's existing lakes and wetlands provide for more pollutant reduction at a lower cost than new facilities, capture a greater volume of pollutants than on-site control facilities, have a greater impact on the overall water quality within a basin, and ultimately require less frequent maintenance than local onsite facilities. The decision to preserve lakes is generally based upon water quality benefits, flood control benefits, dam safety issues, benefit/cost analysis, and available City funding.

### **Wake County Stormwater Management Task Force**

Wake County and all twelve municipalities within Wake County had members of each community appointed to a Stormwater Management Task Force in August 2005. The task force members developed a list of recommendations over 24 months to be developed as collaborative efforts between the 13 government units over the coming years. The recommendations are as follows:

- Create models of the stormwater system that focuses on the most critical watersheds.
- Develop a risk based approach to soil erosion control for construction sites to prevent damage to streams and rivers and enhance the erosion control programs within the County.
- Develop partnerships using interlocal agreements for common stormwater goals as appropriate.
- Collaborate on design standards for post construction stormwater controls as appropriate.
- Develop a risk based approach to stormwater system maintenance.
- Collaborate on NPDES Municipal stormwater permit requirements
- Combine and collaborate on environmental monitoring programs across the County to obtain the most effective water quality data in the most efficient manner.
- Develop and enhance the public education program for stormwater by using a collaborative effort with all the local governmental units involved in the process.
- Develop a program to require inspections and maintenance of all on-site wastewater systems within the County.

There are significant constraints on the implementation of these recommendations, including available manpower and dollars. Collaboration between 13 units of government in Wake County will also be a challenge. The different units of government already address stormwater issues using very different means and many of the recommendations have already been implemented in a few municipalities. It may be difficult



for existing governments with strong stormwater programs already in place to collaborate because of the desire to retain local control over some programs. The needs of the 13 local governments are very different in some instances and this will drive the need or want to collaborate on certain recommendations.

### Implications for the Comprehensive Plan

- The Comprehensive Plan should consider tools and techniques to reduce run-off and improve water quality from existing and new development including green infrastructure techniques that use soils and vegetation to capture, cleanse and reuse stormwater runoff.
- The Comprehensive Plan should consider and determine the most appropriate additional stormwater facilities as developed from additional watershed focused studies.

## 7.3 Conclusion: Key Issues and Potential Strategies

It is important to identify and understand the key issues and potential strategies for Raleigh and its public utilities infrastructure. It is important for the Comprehensive Plan to address human-made infrastructure and also to recommend ways to enhance the natural environment that sustains water systems and quality.

### Key Issues: Water

#### Water Use Efficiency

#### Key Issue 7.1

As one of the cornerstones of EPA's Sustainable Water Infrastructure initiative, increased efficiency in the use of water is a key ingredient in any utility's long-term planning. Certainly, conservation measures are extremely important, but conservation and minimization is not all that can be done. We can make fundamental changes in how we view all forms of water—impaired or pristine—and realistically assess and match the characteristics of each water source with the specific quality and quantity demands of each of our intended uses. In this way we can be most efficient by always putting each form of water to its highest and best use.

#### Climate

#### Key Issue 7.2

The current drought is unusual both in its severity and closeness to the prior drought in 2002. If this represents an emerging climate pattern, there could be revisions to the safe yield calibration for water supply bodies both in Wake County and throughout the Southeast. This would have major implications for water system planning everywhere, including Raleigh.

## Energy

### Key Issue 7.3

The City has subscribed to the US Mayors Climate Protection Agreement. Largely modeled after the Kyoto Protocol, this agreement issues several challenges to the participants to affect dramatic initiatives to try to limit climate disruption. The City will be conducting a greenhouse gas inventory for municipal operations and setting targets for reducing emissions going forward. As a significant user of energy, this will be a major challenge to the City's utilities in the face of dramatically expanding demand.

## Regulatory

### Key Issue 7.4

Regulatory issues are large drivers in the utility business, as the protection of public and environmental health is of great concern at the local, state and federal level. New laws, regulations, and initiatives can be expected as new water issues emerge around the country.

## Finance

### Key Issue 7.5

Expanding both quantity and quality of service of public utilities comes at a cost. The City's capital improvement plan forecasts capital expenditures of almost \$1 billion. Coupled with upward pressure on operating costs—largely from ever-increasing energy costs and greater competition for a shrinking workforce there will be considerable pressure on utility rates. This challenge must be met while providing overall sufficiency of revenue, providing fair and equitable distribution of cost to the ratepayers, and providing a structure with incentives to conserve water resources.

## Public Education and Acceptance

### Key Issue 7.6

When water is abundant and rates low, few people pay attention the City's water systems and planning. During times of drought or rising rates, hard questions are asked and incomplete or incorrect information abounds. As the City and its constituents are called on to the challenges identified in this chapter, and difficult decisions on various actions must be made, it will become increasingly important for the City to engage the public to promote understanding of the issues and consequences of alternative courses of action related to water protection and use.



## Utility Extensions

### Key Issue 7.7

Unplanned extensions of utility infrastructure, whether in response to health hazards posed by failing private systems, or through satellite annexations, undermines the City's current growth management policies, as represented by the designation of short- and long-range urban service areas. Policies are needed to discourage urbanization in areas not programmed for such development in the near term.

## Potential Strategies to Address Water Issues

Perhaps all the foregoing individual issues and challenges can be addressed under an umbrella of Total Water Management. This is defined most basically (and broadly) as the exercise of stewardship of water resources for the greatest good of society and the environment. The recognition of water in any form as a finite and limited resource has occurred only slowly to laymen and professionals alike. Continued and accelerated pressure brought by the demands of growth and exacerbated by climate issues has refocused attention on City's water supply needs and of the aquatic environment's ability to accommodate and assimilate its waste.

Einstein said "We can't solve problems by using the same kind of thinking we used when we created them." To mitigate these vulnerabilities and assure the sustainability of our water resources for future generations, we must think and act in unprecedented ways. In alignment with the Four Pillars of Sustainability incorporated in EPA's Sustainable Water Infrastructure initiative, these actions should be consistent with:

### Potential Strategy 7.1

Management strategies that shift the focus from compliance to sustainability and improved performance

### Potential Strategy 7.2

Full-cost pricing, to recognize the real long-term cost of service and promote environmentally sound decisions and acceptance by customers

### Potential Strategy 7.3

Water efficiency, to reduce strain on overtaxed systems, and better match actual water use requirements with available alternative sources

### Potential Strategy 7.4

Watershed-based approaches, to promote evaluation and decisions based on holistic view of the entire water regime and environment.

## Key Issues: Stormwater

### Stormwater Discharge Control

#### Key Issue 7.8

One of the biggest challenges relative to new development will be to equitably allocate the cost of controlling stormwater discharge increases to the properties that are the source of the increase. Regional facilities are clearly an alternative where immediate downstream stream bank degradation, flooding issues, and Neuse River rules are not impediments. New regional facilities are currently not acceptable alternatives under state and federal permits. Smaller stormwater facilities in intermittent and ephemeral streams will continue to be identified in the watershed study program as well as watershed focused water quality studies. Using the watershed study data and additional studies for new developments, downstream impact analyses can be used to determine the most appropriate facilities.

### Drainage on Private Property

#### Key Issue 7.9

The City's role for drainage system repairs and maintenance on private property is not well defined. As the City's jurisdictional boundaries expand, more attention will need to be placed upon carefully defining the responsibility of the City and private property owners for portions of the drainage system. The City recognizes the validity of private property drainage concerns. Consideration of the appropriate City role for drainage systems on private property should be developed. One of the biggest challenges is providing communication to the private property owners that is consistent, understandable and supportive.

### Existing Stormwater Problems

#### Key Issue 7.10

As previously noted, there are significant existing stormwater improvement needs within the City of Raleigh. The biggest challenges include the development of funding options (in addition to the stormwater utility) and the development of an information base and decision matrix to support the assumption for work on private property.





## Drainage System Maintenance

### Key Issue 7.11

Drainage system maintenance should be improved from a reactive Level of Service D to a Proactive Level of Service A on City property. Additional resources would be needed to accomplish this goal as well as to carry out the routine maintenance. Drainage system maintenance should be a higher priority when public safety issues are a concern. Additional study and policy developments are needed to define the desired Level of Service for drainage system maintenance on private property.

## Stormwater Management Financing

### Key Issue 7.12

The biggest challenge relative to stormwater financing is to develop sufficient funds in a timely manner to address the stormwater concerns. Similarly, there is need to develop an equitable system of stormwater financing based on relative contributions to the stormwater problem.

## Lake Preservation

### Key Issue 7.13

The preservation and restoration of natural landscape features such as lakes, forest, floodplains, and wetlands are critical components of green infrastructure. By protection these ecologically sensitive areas, Raleigh can improve water quality while providing wildlife habitat and opportunities for outdoor recreation.

### Key Issue 7.14

For lake and wetland preservation there is a need to accurately define the benefits of the lake or wetland within a watershed against the immediate capital cost for property acquisition, spillway, embankment or other improvement cost and long term maintenance cost. Another need is to have available City funding in a timely manner to pay for the opportunity for lake and wetland preservation when it becomes available.

## Potential Strategies to Address Stormwater Issues

### Water Quality

#### Potential Strategy 7.5

Water quality enhancement is one of the most significant opportunities for the future of the City of Raleigh. Key opportunities for water quality enhancement include preservation of the natural character of drainage ways by greenway acquisition, flood prone area regulation, and purchase of properties in the Neuse River Buffer and flood prone areas. Indirectly, the City can improve water quality through the development and administration of regulations that require preservation during private development and design.

### Lake Preservation

#### Potential Strategy 7.6

Specific opportunities related to lake preservation that the City may consider for the future include performance based strategies to manage water quality and incentive approaches through development density transfers or open space tradeoff requirements. Similarly, City Stormwater could monitor proposed rezoning cases more closely by possibly developing new ordinances to require study of downstream impacts from new developments. Maintenance of lakes that the City improves should also be carefully studied to define the level of need and cost. Private lake maintenance should also be considered as well as the possibility of City participation to provide specific upgrades to facilities that provide significant regional improvement to water quality and/or flood mitigation.

### New Development—Stormwater Discharge Control

#### Potential Strategy 7.7

To prevent significant increases of stormwater impacts by reducing and controlling stormwater discharge from new development;

#### Potential Strategy 7.8

To apply discharge control methods which are economically, aesthetically and environmentally acceptable as well as effective; and,



### **Potential Strategy 7.9**

To equitably allocate the cost of controlling stormwater discharge increases to the properties that are the point sources for impacts.

#### **New Development—Stormwater Water Quality Control**

### **Potential Strategy 7.10**

Provide opportunities for optional methods of water quality control including LID and green methods

### **Potential Strategy 7.11**

Consider a tiered approach to water quality requirements related to the amount of degradation or impairment in a watershed based on mandates from State and federal entities.

### **Potential Strategy 7.12**

Pursue methods to encourage higher density development where appropriate such as in the downtown area by looking at water quality facilities that can be located elsewhere to provide greater water quality benefits

### **Potential Strategy 7.13**

Consider a program that fairly allocates the costs of water quality improvements to those having the most significant impacts. This might include the development of additional and more defined policies in the future for maintenance such as a tiered system, short and long term funding options, and consideration of the long term benefit (or cost savings) to the City.

#### **New Development—Soil Erosion Control**

### **Potential Strategy 7.14**

Develop a risk based approach to identifying the appropriate amount of resources allocated to plan review and inspection for individual sites based on the likelihood of environmental damage from the land disturbing activities

### **Potential Strategy 7.15**

For large developments, consider limiting the amount of disturbed area at any one point in the development process or requiring higher standards based on the amount of disturbed area



## Environmental Resources



## 8 Environmental Resources

This chapter addresses Raleigh’s natural and environmental resources and the challenges that need to be addressed to protect these resources. It begins with a discussion of watersheds and their component environmental features and then addresses conservation and sustainability efforts.

### 8.1 Existing Watershed Conditions

A ‘watershed’ is an area of land that drains into a river, stream or lake, and is sometimes referred to as a ‘drainage basin’. Development anywhere within a watershed can have an impact on the water that flows through it, and consequently, the body of water into which it flows. Wake County completed a Watershed Management Plan in 2003 in which 53 subwatersheds were analyzed for overall environmental health. Thirteen subwatersheds were defined as healthy, located in the mostly rural portions of the County. Thirty-one watersheds were described as impacted, located in the suburbanizing portions of municipalities, including Raleigh. Nine subwatersheds were defined as degraded, and most of these are located within the City of Raleigh jurisdiction. Map 8.1 illustrates these watersheds.

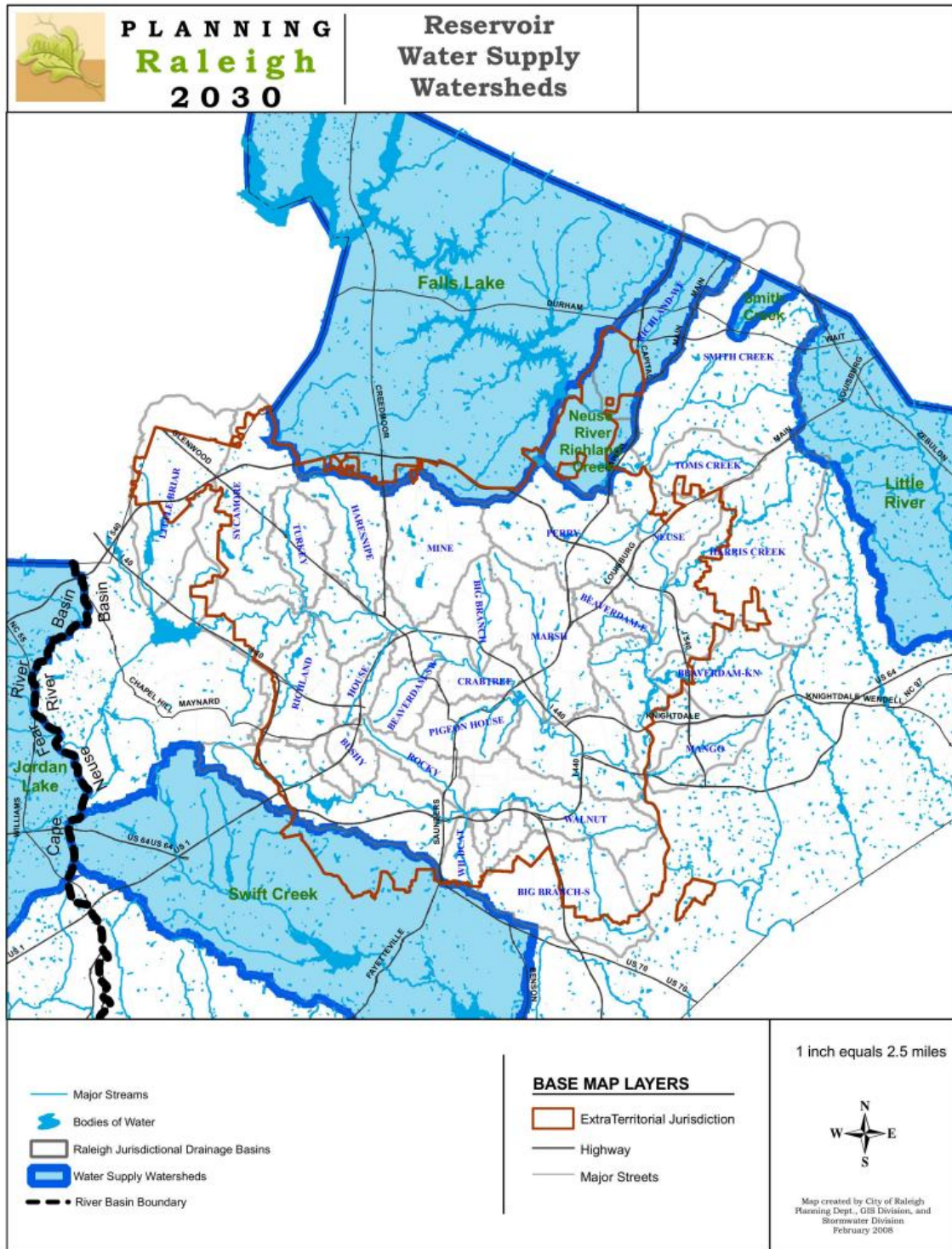
Water that falls and flows through the City of Raleigh drains into the Neuse River. Specifically, the city lies within a large subbasin known as Neuse River Subbasin 03-04-02. According to the Neuse River Basinwide Water Quality Plan (NCDENR, 2002), most of the streams in this subbasin that are not already impaired from urban stormwater runoff are threatened by development pressure throughout the subbasin.

The majority of Wake County residents obtain their drinking water from surface water reservoirs, with the largest reservoir being Falls Lake. Within the City of Raleigh, the Swift Creek and Falls Lake Watersheds are significant because the water collected in these areas is used for drinking water. Also of importance is the Neuse River–Richland Creek Watershed, another possible source for drinking water. These three watersheds each have their own adopted plans, which establish watershed protection areas and policies for future development within those areas. For a map of all drainage basins, see the stormwater section of the Utilities Chapter.

Key factors for the current conditions of Raleigh’s watersheds include the functionality and integrity of local rivers, streams, floodplains, and wetlands. Additionally, impervious surface cover, topography, tree cover, and soils and hydrology also influence watershed conditions. These factors are described in the following subsections.



Map 8.1 Reservoir Supply Watersheds



## Rivers, Streams, Floodplains, and Wetlands

### Rivers and Streams

On a weekly basis, the City of Raleigh Stormwater Management staff monitors typical stream flow within Raleigh's streams and the Neuse River, providing immediate feedback on water quantity and quality conditions. Parameters sampled include temperature, dissolved oxygen, pH, nitrate, conductivity, and turbidity. This data is used to establish a baseline for water quality.

Table 8.1 provides a summary of the findings from the 2002 Neuse River Basinwide Water Quality Plan, outlining the bioclassification of water bodies in, and adjacent to, the City of Raleigh. Bioclassification is a rating of water quality based on the abundance and variety of pollution sensitive aquatic organisms. Up-to-date data for 2007 will be available upon completion of the 2008 Neuse River Basinwide Water Quality Plan.

**Table 8.1 Bioclassification for Rivers and Streams in Wake County's Portion of the Neuse River Subbasin**

Waterbody	Monitoring Location	1995	2000	2007*
Black Cr	Weston Parkway	---	Fair	
Crabtree Cr2	NC 54	Poor	Poor	
Crabtree Cr2	UmsteadPark	Good-Fair	Good-Fair	
Crabtree Cr2	US 1	Fair	Fair	
Haresnipe Cr	US 70	---	Poor	
Marsh Cr2	US 1	Fair	Poor	
Mine Cr	Off N Hills Dr	---	Poor	
Mine Cr	1 Mile Lake	---	Fair	
Neuse R2	US 401	Good-Fair	Good-Fair	
Neuse R2	US 64	Good-Fair	Good-Fair	
Perry Cr	SR 2006	Fair	Fair	
PigeonHouse Cr	Fenton St	---	Poor	
Richland Cr	US 1	---	Good-Fair	
Richland Cr	SR 1931	---	Good-Fair	
Richlands Cr	SR 1649	---	Fair	
RichlandsCr	Reedy Creek Rd;	---	Fair	
Smith Cr2	SR 2045	Good-Fair	Fair	
Swift CR	US 1	---	Poor	
Swift CR	SR 1152	---	Fair	
Swift CR	SR 1300	---	Poor	
Swift Cr2	SR 1152	Fair	Fair	
Toms Cr2	SR 2044	Fair	Fair	



Waterbody	Monitoring Location	1995	2000	2007*
UT SwiftCr	Developed Area	---	Poor	
UT SwiftCr	Control Site	---	Good	
Walnut Cr2	SR 2551	Fair	Good-Fair	

Source: NCDENR, DWQ. (2002) *Neuse River Basinwide Water Quality Plan*. \*Data for 2007 will be available upon completion of the 2008 *Neuse River Basinwide Water Quality Plan*.

## Floodplains

The City of Raleigh and the Federal Emergency Management Agency (FEMA) updated and improved the quality of the City's floodplain mapping in 2006. The floodplain maps can be viewed at [www.ncfloodmaps.com](http://www.ncfloodmaps.com). Currently, 23 percent of the land area within Raleigh's city limits and the City's extraterritorial jurisdiction is within a floodplain. In the past, development has been permitted in the floodplain, sometimes including entire shopping centers. Many private residences were flooded by Hurricane Fran in 1996, prompting a FEMA buyout to prevent reoccurrences. Under ordinance adopted by City Council, new construction in floodplain areas is limited to no more than 50 percent of the designated floodway fringe. The floodway fringe is the outermost portion of a floodplain or the area outside of a floodway. The City of Raleigh also restricts new development in innermost areas of the floodplain or floodway. Map 8.2 shows the floodplains in and around Raleigh.

For the past 30 years the City of Raleigh Capital Area Greenway corridor program has protected substantial stream buffers by mandatory dedication of greenway easements and a program of fee simple acquisition. This has resulted in over 3,300 acres left in a natural condition, almost all in the floodplain.

## Lakes and Wetlands

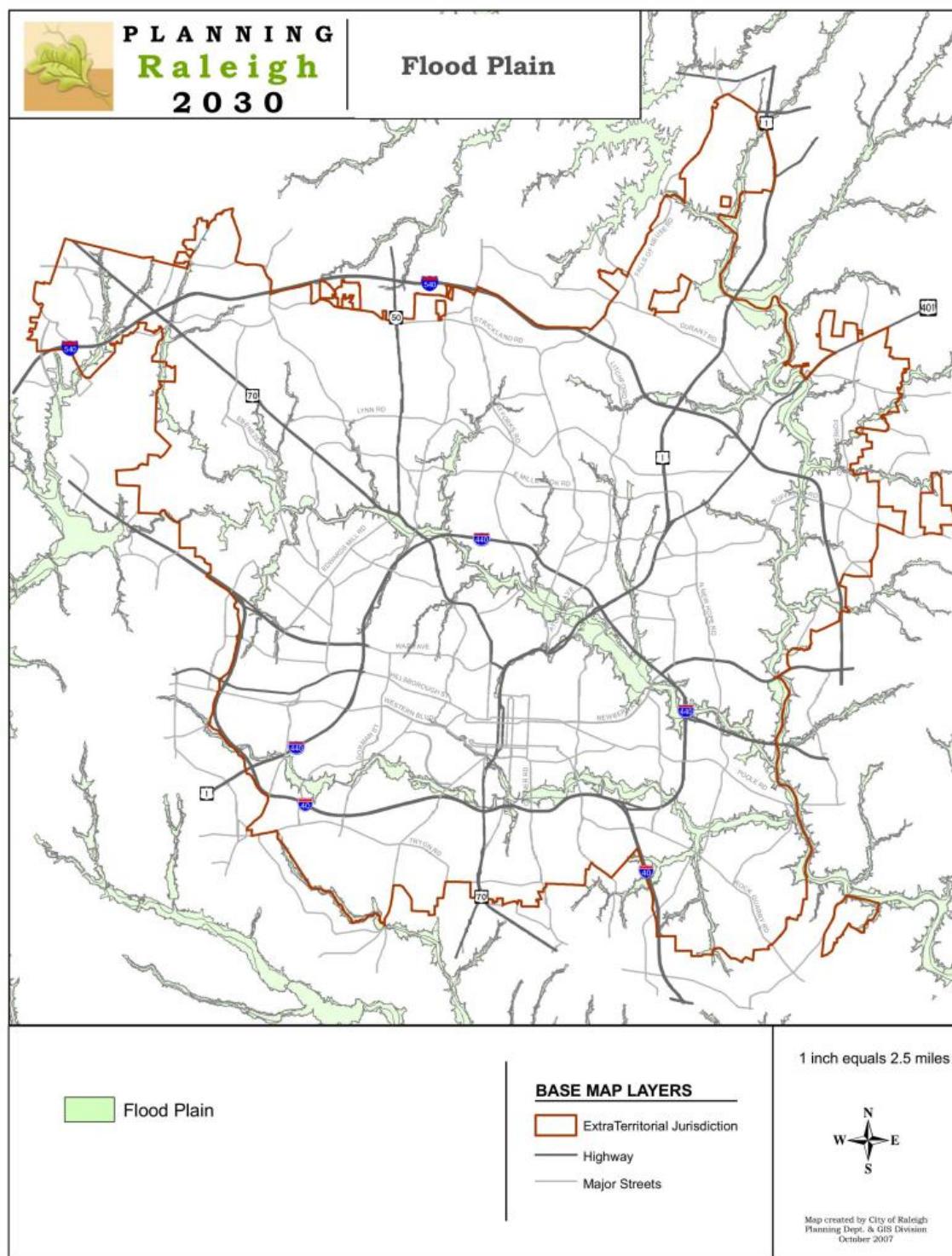
Also in 2006, the City of Raleigh adopted the Lake Preservation and Development Policy (Resolution 976), which strengthened protection for Raleigh's lakes and wetlands. Under this policy, if existing lakes or wetlands are present in a drainage basin, the first priority is to pursue the possibility of preserving them. Furthermore, the resolution calls for a 'drainage basin by drainage basin' approach to focus on performance based strategies to enhance water quality, rather than a rigid city-wide standard. The City of Raleigh has prepared sixteen drainage basin studies for watersheds in the City's planning jurisdiction that can be used to determine the best approach for each basin. These studies identify existing and future flooding, erosion, and water quality concerns and potential solutions or preventative measures.

### Implications for the Comprehensive Plan

- While some of the aforementioned studies are recent and relevant, others are outdated and in need of revision. The Comprehensive Plan should identify and prioritize watershed and drainage basin plans that are in need of revision.
- In regard to water quality threats identified in the Neuse River Basinwide Water Quality Plan, the Comprehensive Plan should strengthen urban stream water quality measures to prevent further and/or potential aquatic habitat degradation and impairment of biological communities.
- Consideration should be given to further protecting the floodplain and natural communities by limiting any new development in the entire 100 year floodplain, including the flood fringe.



### Map 8.2 Flood Plains







## Impervious Surface Cover

Impervious surface is any hard surface that does not readily absorb water and impedes the natural infiltration of water into the soil. According to the Environmental Protection Agency (EPA), the construction of impervious surfaces such as roads and rooftops leads to the degradation of water quality by increasing runoff volume, altering regular stream flow and watershed hydrology, reducing groundwater recharge, increasing stream sedimentation, and increasing levels of nutrients, metals, hydrocarbons, bacteria, and other constituents. Currently, Raleigh has nearly 21,000 acres of impervious surface area within its jurisdiction, for an overall imperviousness ratio of 18 percent. Map 8.3 shows impervious surface cover in Raleigh.

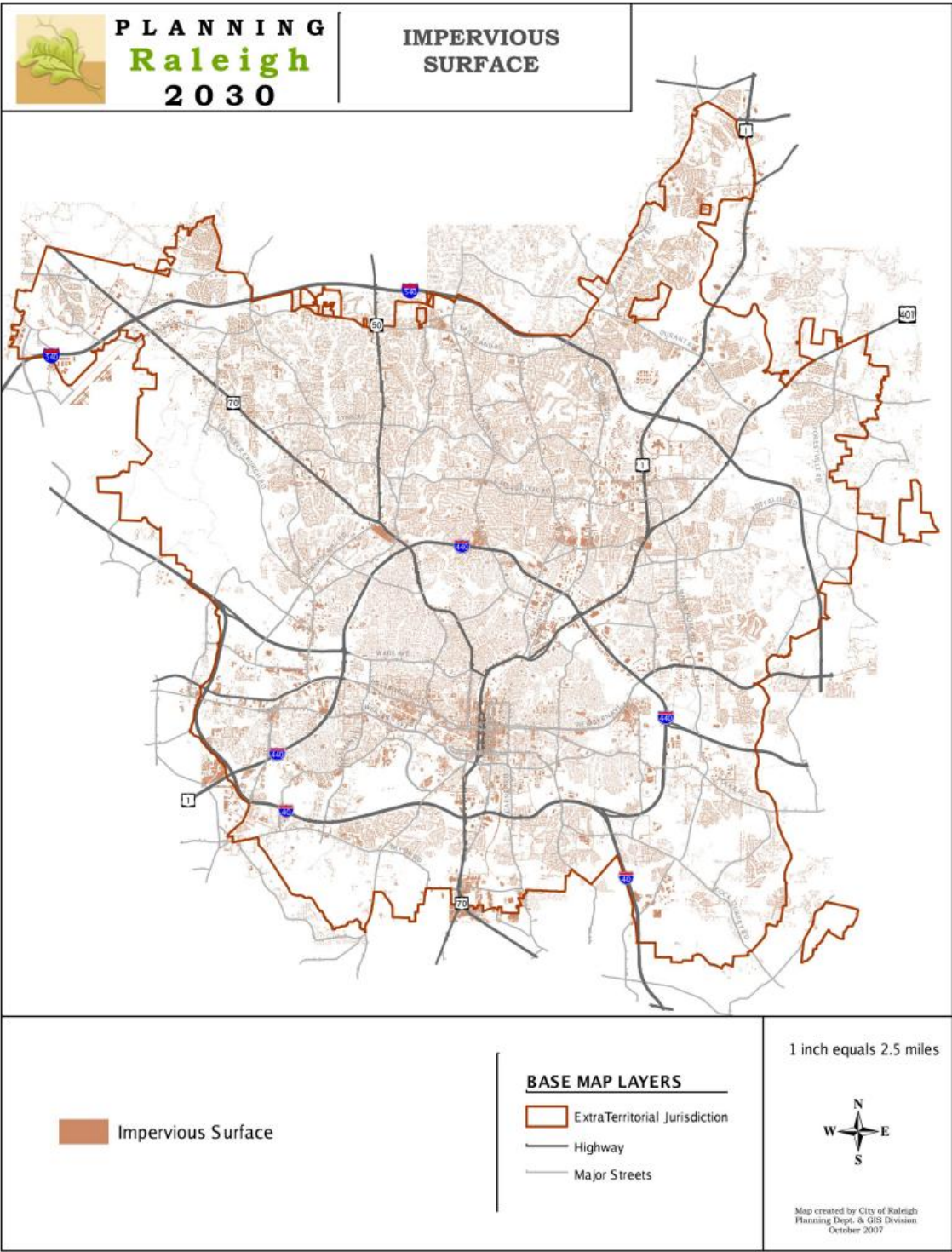
In Raleigh, impervious surface regulations exist in several portions of the City's zoning ordinance, found in sections on overlay districts, subdivision regulations, open space requirements, etc. The restrictions vary depending on where the development is located, and whether or not the development lies within certain portions of a watershed overlay district. For example, the most restrictive regulations are in water supply protection areas, allowing only six percent or less impervious surface area (Raleigh Zoning Ordinance, Sec. 10-3052).

The City of Raleigh also has a stormwater utility fee that is based on impervious surface for developed parcels. Raleigh's average monthly fee for a single-family home is \$4.00 (other North Carolina communities charge average monthly single-family home fees as high as \$6.50 in Chapel Hill and \$7.06 in Charlotte).

### Implications for the Comprehensive Plan

- Although the City of Raleigh already has some tools for addressing the water quality issues associated with impervious surface cover, the Comprehensive Plan should expand upon these measures.
- Pilot projects and programs should be recommended in phases to demonstrate other ways in which the negative impacts of impervious surface cover can be offset. Such techniques could include green roofs, bioretention cells, permeable pavers, large-scale rainwater harvesting, and other stormwater best management practices (BMPs).

Map 8.3 Impervious Surface Cover in Raleigh, 2007





## Topography—Steep Slopes and Stream Valleys

Preserving steep slopes, wooded hillsides, and stream valleys not only provides beauty and visual relief, but also helps to protect waterways and provide corridors for wildlife and recreation. Additionally, the topography of a watershed influences the amount and rate of surface and ground water flow. Therefore, topography plays a role in the necessary width of riparian buffers to fulfill their purpose of removing pollutants from stormwater, before entering local waterways.

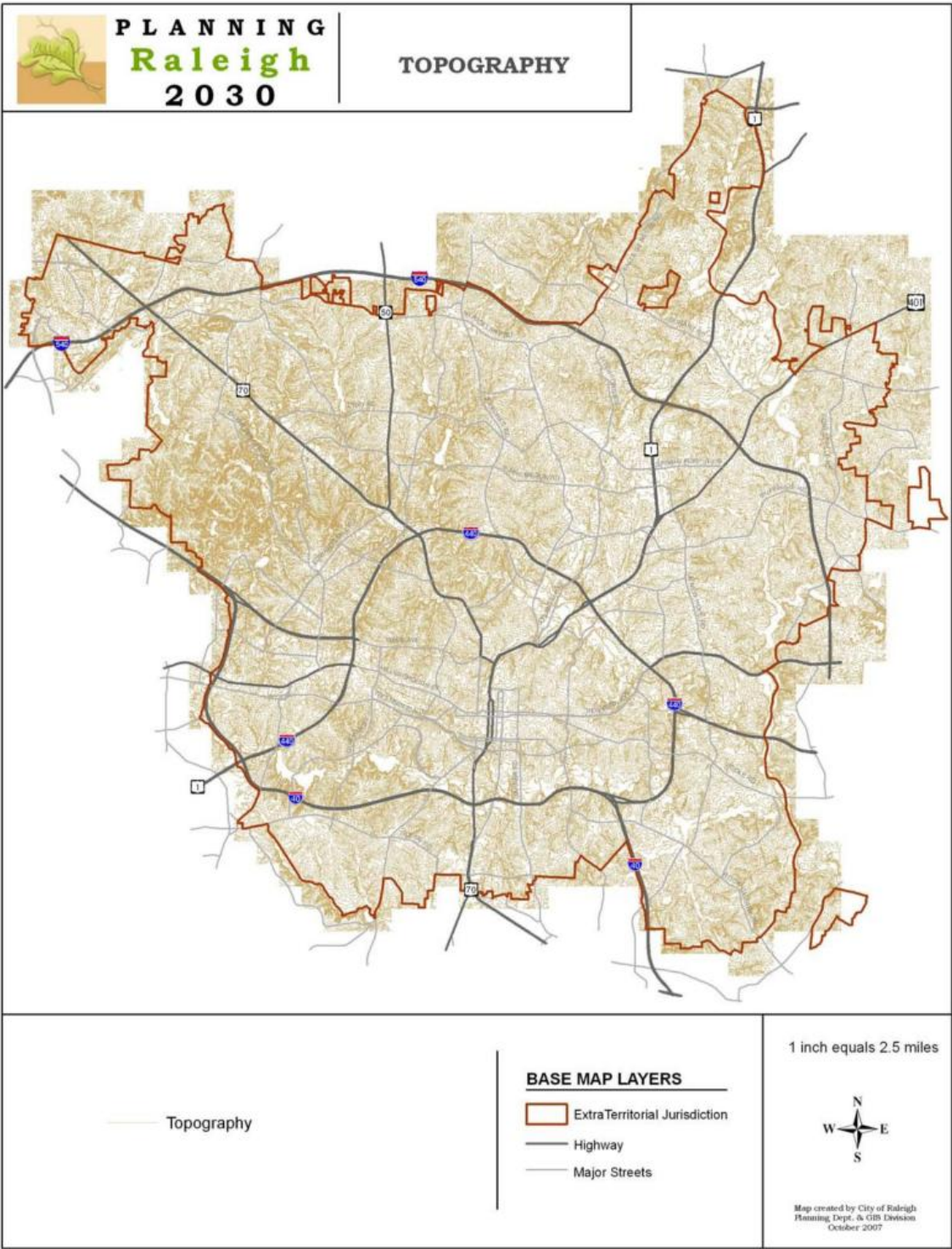
Raleigh's natural terrain is influenced by its location in the northeast central region of the state, where the Piedmont and the coastal plain regions meet. As a result, most of Raleigh features gently rolling hills that slope eastward towards North Carolina's flat coastal plain. Key surface features include small lakes and ponds, such as Lake Johnson and Lake Raleigh, many creeks and streams, such as Crabtree Creek and Walnut Creek, and large natural areas, such as Umstead State Park. In Map 8.4, the general area of Umstead State Park is visible in the western portion of the City, where the elevation change is highest (visible as a darker shade of brown, south of US 70 and west of Interstate 440).

### Implications for the Comprehensive Plan

- The protection of steep slopes is mentioned only briefly in the City zoning ordinance, in sections related to open space protection. There are no regulations prohibiting the regrading and development of steep slopes areas, and no adopted policies discouraging such activities except for select small area plans such as the one for the Crabtree Valley area. The protection of stream valleys is covered in much greater detail, in areas such as floodplain management and stream buffer regulation (see section A.1, above). This includes protection through the Capital Area Greenway program, which is limited to specific distances from the top of the stream bank.



Picture 8.1 Map 8.4: Topography in Raleigh (10' Contours) 2007





## Tree Cover

The United States Forest Service, Southern Region, summarizes the critical role that trees play as an environmental resource for cities: “Beyond aesthetics and emotional well-being, trees perform important functions that protect and enhance city dwellers’ health and property. Trees literally clean the air by absorbing air pollutants and releasing oxygen. They reduce stormwater runoff and erosion; they temper climate; they can save energy; they create wildlife habitat; they can improve health, serve as screens, and strengthen community. They can even help contribute to a community’s economy and way of life.” (US Forest Service, 2003)

According to the Environment North Carolina Research and Policy Center, the Triangle Region has transformed twenty-four percent of its cropland and forest land (283,000 acres and 123,000 acres, respectively) in the last twenty years <sup>(1)</sup>. Conservative predictions based on such development trends forecast a further thirty-seven percent loss of natural areas in the triangle Region, with cropland disappearing altogether.

The City of Raleigh, also known as the City of Oaks, is already making significant strides to offset the loss of natural areas in the region. The City showed its commitment to preserving and expanding its tree cover with a new comprehensive tree conservation ordinance. The ordinance took effect in 2005 to establish standards for preserving trees on undeveloped lots that are two acres or larger, occupied or vacant. Key provisions of the tree conservation ordinance are:

- Tree removal on each regulated lot is limited to 15 trees in any 12-month period;
- The removal or clearing of more than 15 trees, including timber harvests, requires submitting a tree conservation plan with the City and obtaining a City tree conservation permit;
- Tree conservation areas must be established on regulated properties that are being subdivided, developed or built on; and,
- All properties less than two acres are exempt from the ordinance.

In 2003, the City launched a substantial program expansion for planting street trees. The Raleigh NeighborWoods program is a cooperative effort between the City and its residents. City funds and contributions from citizens are used to pay for the new trees. As of September 2007, the NeighborWoods program had planted more than 5,000 residential street trees and 2,918 trees on thoroughfares. In another tree preservation effort, the City of Raleigh has worked with Trees Across Raleigh, a volunteer group, to plant approximately 7,114 trees in City parks since the inception of the partnership. Additional plantings are being planned. These efforts are coordinated by the Urban Forestry section of the Parks and Recreation Department. Map 8.5 shows tree cover in Raleigh.

Many of Raleigh’s older neighborhoods are well known for their tree-lined streets. To continue this tradition, the City Council voted in 2002 to amend the City Code to require tree plantings along the streets of new single-family developments in the Capital City. The idea is to encourage these new developments to have tree-lined streets similar to those in many of Raleigh’s older neighborhoods. The City has similar tree planting requirements for multi-family and non-residential developments

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1 Environment North Carolina Research and Policy Center, 2007. Losing Our Heritage: Development and Open Space Loss in North Carolina



### Implications for the Comprehensive Plan

- The Comprehensive Plan should define benchmarks for sustained and/or expanded tree cover over the course of the next 20 years.
- Existing programs should be evaluated for their ability to reach benchmark goals. If existing programs are found to be inadequate, the Comprehensive Plan should recommend new programs or expansions to existing programs with appropriate budgetary support.

## Soils and Hydrology

Soils play an important role in the health and productivity of land: they sustain plant and animal life, filter potential pollutants, cycle nutrients, and affect the overall suitability of land for buildings, roads, infrastructure, farming, gardening, and tree planting. In urban environments such as Raleigh, one of the most critical aspects of soils is how they interact with hydrology in the form of erosion and sedimentation.

In this context, erosion refers the wearing away of the earth's surface by the movement and distribution of water (e.g. storms and stormwater runoff). This natural process accelerates dramatically when natural land surfaces are disturbed. As stormwater flows over impervious surfaces and disturbed land, it collects soil, debris, and other materials, which accumulate in the form of sedimentation. Sedimentation is a leading cause of water pollution in North Carolina. Sedimentation and erosion control are therefore of particular concern to the City of Raleigh as it grows and develops land.

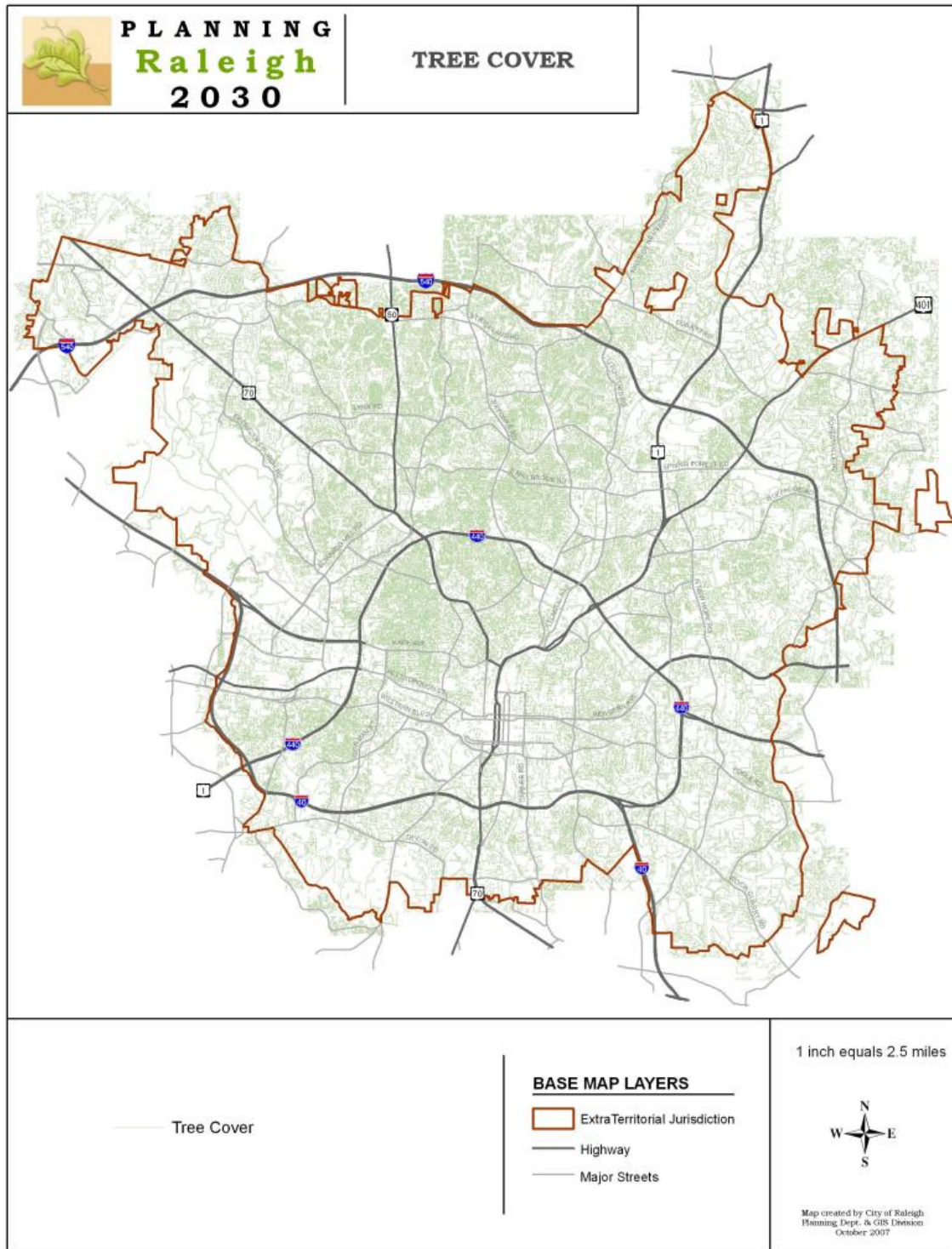
According to the North Carolina Erosion and Sedimentation Pollution Control Program (from the North Carolina Department of Environment, Health, and Natural Resources), basic standards for erosion and sedimentation control include: 1) submission and approval of an erosion control plan before a land-disturbing activity begins; 2) a buffer zone along any natural watercourse or lake; 3) all disturbed areas must be able to be stabilized by vegetation or other suitable erosion control methods within 30 working days after completing any phase of land grading; and, 4) Off-site sedimentation must be prevented.

The City of Raleigh is in the process of upgrading its sedimentation and erosion control enforcement program to improve its effectiveness and consistency. Currently, the City has nine inspectors and a supervisor who inspect construction sites for compliance with the City's soil erosion control ordinance. The staff attempts to inspect all permitted land-disturbing activity in Raleigh. Additionally, seven stormwater engineers review erosion-control plans.

Although Raleigh's sedimentation and erosion control programs generally exceed the state's standards, there is still room for improvement. Land-disturbing permits generally are not required for sites of less than 12,000 square feet. However, the City has experienced an increase in violations associated with these smaller sites. As a first step, according to Raleigh's Stormwater Management Division, a letter recommending installation of sediment control practices will accompany City permits for single-family home construction. In addition, City staff will increase inspections of residential developments.



Map 8.4 Tree Cover in Raleigh, 2007



In regards to hydrology and riparian buffer protection, the 2000 General Assembly put into effect the Neuse Riparian Buffer Protection Rules. These rules were established to protect and preserve existing riparian buffers in the Neuse River Basin to maintain their nutrient removal functions. The rules apply to 50-foot wide riparian buffers directly adjacent to surface waters in the Neuse River Basin (intermittent streams, perennial streams, lakes, ponds, and estuaries), excluding wetlands. The rules contain a listing of uses that are exempt, allowable, allowable with mitigation, or prohibited within the buffer.

### Implications for the Comprehensive Plan

- The Comprehensive Plan should identify potential incentives or consider a mandate for sediment control devices to be used on all sites.
- The Comprehensive Plan should identify and promote best practices for sediment control on all construction sites.

## 8.2 Planned Preservation and Conservation

### Water Quality

The City of Raleigh's water system currently serves the needs of approximately 175,200 metered residential and business customers in Raleigh, Garner, Rolesville, Wake Forest, Knightdale, Wendell and Zebulon. The City of Raleigh maintains roughly 2000 miles of water distribution and transmission mains. In 2006, the E.M. Johnson Water Treatment Facility pumped an average of nearly 50 million gallons of water a day and an average of 800,000 gallons per day at the G.G. Hill Water Treatment Plant located in Wake Forest. According to test results, each drop of this water far exceeded all federal and state standards for drinking water. (For more on the City's utilities, see Chapter 6.0).

Two of the major water quality impurities that are monitored in drinking water are trihalomethanes (THMs) and arsenic. THMs are produced when chlorine reacts with organic material in the water. The City of Raleigh uses ammonia to lower THMs levels in the drinking water. THMs levels in the City of Raleigh's drinking water consistently are far below the federal and state limits of 80 parts per billion. Raleigh's drinking water tests found less than 45 parts per billion of total THMs in 2006. The federal and state limits on arsenic in drinking water currently are 10 parts per billion. Tests performed on City drinking water samples showed no detection of arsenic in the drinking water in 2006.

The City uses ozone as the primary disinfectant in the treatment process. Ozone, a form of oxygen, is generated by sending electricity through a column of liquid oxygen. The resulting ozone is then bubbled through columns of water. As the ozone reacts, it oxidizes in the water. This breaks down organic materials and kills pathogens.

The City of Raleigh vigilantly and proactively protects water quality in Falls Lake, the primary source of drinking water for over 410,000 people. The City has pledged \$1.5 million over a three-year period to begin a land conservation initiative to protect water quality in Falls Lake. This initiative is the Upper Neuse Clean Water Initiative (UNCWI). UNCWI's objective is to preserve source water quality within the Falls Lake watershed by identifying, prioritizing, and placing undeveloped lands under conservation protection. Through a Memorandum of Agreement (MOA) with the Conservation Trust of North Carolina (CTNC), a substantial portion of the City's first year's funding produced a comprehensive land preservation plan. The Upper Neuse Clean Water Initiative Conservation Plan has identified land parcels in the Falls Lake watershed to be acquired for water quality protection by fee-simple purchase or through the acquisition of conservation



easements. This program, along with the continued support and possible expansion of the Capital Area Greenway program, should be coordinated on a City-wide and regional basis to insure the best use of resources.

The City of Raleigh strongly encourages conservation of its finished water. The Water Conservation Task Force (WCTF) reviewed the City's water conservation plan and developed recommendations to improve the plan based on experiences gained from the 2002 and 2005 droughts. The task force produced a water conservation recommendation that requires alternate-day irrigation throughout the year, and Stages 1 and 2 water conservation rules to be implemented by the City as needed during a drought or other water supply shortages. The WCTF presented its final report and recommendations to the City Council in May 2006. Some recommendations were approved and adopted as a City ordinance (see section C.1 below).

The City of Raleigh, as part of National Drinking Water Week, hosts WaterFest annually in May at either the Neuse River Wastewater Treatment Plant or the E.M. Johnson Water Treatment Plant. The 2008 WaterFest will be held the first week of May at the water treatment plant on Falls of Neuse Road in north Raleigh. WaterFest is an annual celebration of water as a precious resource through hands-on educational activities, water games, exhibits and demonstrations. All Wake County schoolteachers and students in kindergarten through eighth grade are invited to attend. Students learn about the water cycle, drinking water treatment, wastewater treatment, reuse water, laboratory practices, water conservation, and watershed protection. The general public is also invited to participate in WaterFest. The Parks and Recreation Department logs thousands of contact-hours with primarily elementary schools throughout the year with pond and stream studies.

### Implications for the Comprehensive Plan

- The Comprehensive Plan should make recommendations that facilitate, enhance, and/or expand the City's current and ongoing efforts to address water quality.
- Interviews with city staff responsible for implementation of water quality initiatives should help identify ways in which to improve current programs.
- Efforts to protect the Falls Lake watershed through the Upper Neuse Clean Water Initiative (UNCWI) should receive a high level of coordination with the conservation and land trust groups so City resources can be carefully planned with other land acquisition programs.

## Air Quality

Alternative fuel vehicles help reduce automobile emissions and improve air quality. The City of Raleigh is one of the founding members of the Triangle Clean Cities Coalition. The coalition is a group of more than 40 stakeholders in six counties: Wake, Durham, Orange, Johnston, Chatham and Franklin. The group's mission is to encourage and accelerate the use of alternative fuel vehicles in the Triangle by creating partnerships to develop a market and supporting infrastructure for alternative fuel vehicles.

The City of Raleigh has used alternative fuel vehicles in its fleet of automobiles for the past eight years. In the last fiscal year, the City acquired 67 alternative fuel vehicles, giving the City a total of 295 alternative fuel vehicles among its fleet. The majority of these are flex fuel vehicles that use both regular unleaded fuels and alternative fuels, such as ethanol (E85 blend). The City also has automobiles that are powered by compressed natural gas (CNG) or electricity. The City has been operating at least 75 percent of its diesel fleet -- or 186 trash collection trucks, recycling trucks and street dump trucks -- on biodiesel fuel (B20) since January 2002. B20 is a domestically produced renewable fuel derived from vegetable oil that significantly reduces harmful elements of diesel exhaust, such as carbon monoxide.



The City of Raleigh, along with NC State Government and NC State University, supplements both Capital Area Transit (CAT) and the Triangle Transit Authority (TTA) so that employees and students can ride for free. The City has actively participated in TTA and Triangle J Region Council of Government's programs highlighting ridesharing, transit opportunities, walking and cycling to work, and air awareness networking to reduce emissions.

For three years in a row, the City has received Mobile Source Emissions Reduction Grants, administered by the Division of Air Quality of the North Carolina Department of Environment and Natural Resources (DENR). The City also continues to explore resources that will enable it to support existing alternative fuel programs and initiatives, and develop new projects.

In September 2007, the local chapter of the Sierra Club granted Raleigh its 'Cool Cities' designation for efforts to fight global warming. The Cool Cities Program recognizes local governments that commit to reducing greenhouse gas emissions seven percent below 1990 levels within five years.

On April 17, 2007 the Environmental Advisory Board recommended the City Council adopt a goal of reducing the City's use of fossil fuels by 20 percent over five years. The council accepted the recommendation with a unanimous vote. City staff currently is compiling the City's baseline fuel report for FY 2007-2008 and reviewing various initiatives and projects for implementation in its effort to achieve the stated goal.

Additionally, the City Council on August 7, 2007 accepted a recommendation from the Environmental Board to join an international organization that is committed to reducing greenhouse gas emissions worldwide and to endorse the U.S. Mayors Climate Protection Agreement.

The City of Raleigh has joined the International Council for Local Environmental Initiatives (ICLEI)-Local Governments for Sustainability, an international association of local governments and national and regional local government organizations that has made a commitment to sustainable development. The \$2,800 annual membership fee in ICLEI provides the City with access to software that will help the City conduct an emissions inventory. Once this inventory is complete, the City will establish goals and strategies for reducing greenhouse gas emissions. The City recently created and filled a Sustainability Coordinator position within Administrative Services. An early task of this person will be to take the lead in completing a greenhouse gas inventory of municipal operations, using the ICLEI software.

### Implications for the Comprehensive Plan

- The City is working to promote alternative fuel vehicles and alternative forms of transportation.
- The City has also made significant commitments to air quality through the Cool Cities program and others initiatives. The Comprehensive Plan Update should prioritize steps the City can take to fulfill those commitments.
- Recommendations from Raleigh's Environmental Task Force should also be taken into account throughout the update of the Comprehensive Plan.

### Critical Habitats and Protected Species

In North Carolina there are 41 federally-endangered and threatened animal species protected by the US Fish & Wildlife Service under the Federal Endangered Species Act (16 U.S.C. 1531 to 1543). Twenty-nine of those species have recovery plans. In addition, there are 67 state endangered and threatened species, and 115 state species of Special Concern protected by the Commission under the State Endangered Species Act (General Statute 113-331 to 113-337). There are 27 federally endangered and threatened plant species in North Carolina, protected under General Statute by the US Fish & Wildlife Service. The NC Plant Conservation Program, a





unit of the Department of Agriculture and Consumer Services, is responsible for the protection of the 134 state endangered and threatened plant species and the 19 plant species of Special Concern in the state (General Statute Article 19B, 106:202.12–22).

The City of Raleigh's park and greenway system is nationally recognized for its efforts to conserve critical habitats, especially through the Capital Area Greenway, the 1996 Neuse River Regional Park Master Plan, and its reputation as the City of Oaks. Although it is an urban park system, substantial acreage is preserved as stream and perimeter buffers, large expanses of wetlands and stream courses, and numerous lakes. Additional park units with an emphasis on conservation and preservation have been added in recent years, including a substantial private donation in the Falls Lake watershed and the planned Forest Ridge Park on the Lake's shore. Continued stewardship of these park units and others whose individual Master Plans call for a nature orientation, as well as support of the City's environmental education program, will continue to keep Raleigh in the forefront of interpretation and conservation of habitats for its citizens and visitors.

### Implications for the Comprehensive Plan

- The Comprehensive Plan Update should: encourage interagency efforts to restore and recreate native habitat within the City; protect endangered and threatened species; encourage environmentally sensitive landscaping and gardening techniques; recommend the development of a wildlife conservation plan; and recommend ways to improve the collection and monitoring of data on Raleigh's plant and animal life.

## 8.3 Sustainability Efforts

Increasingly, local governments are promoting methods for development and conservation that improve the long-term health of human and ecological systems. Such sustainability efforts include water conservation, energy conservation, recycling and solid waste management, and environmentally sensitive building and development practices, such as green building and low-impact development.

### Water Conservation

According to the U.S. Drought Monitor, Raleigh is currently in an exceptional drought, the highest designation for drought intensity. Furthermore, the NWS Climate Prediction Center shows the drought persisting or intensifying. In May 2007, the Raleigh City Council unanimously approved mandatory year-round lawn irrigation water conservation measures for City of Raleigh water customers. Currently, Raleigh has modified Stage 1 water restrictions in effect, with Stage 2 ready to go, should the water supply dip below 90 days. As of early February 2008, the City had roughly 110 days of water remaining, assuming a worst case scenario of no rain and no reduction in demand.

In April 2006, Raleigh's Water Conservation Task Force delivered its recommendations to City Council. Listed below are some of the actions the City has taken to conserve water, based on those recommendations:

- The City hired a water conservation specialist to administer water conservation programs and create good water stewardship and water efficiency within the public and business community.
- The City is in the process of redesigning its billing system to make the bills easier for customers to track their water use and easier for the city to monitor water use.

- Contractors and other major water users can pick up reuse water at the E.M. Johnson Water Treatment Plant and the Neuse River Wastewater Treatment Plant. The reuse program has been running for about six months.
- The City has a long-term program for installing dual water system infrastructure, but it will be expensive. In the short-term, the city is identifying industrial sites and locations such as golf courses that irrigate heavily where it can run reuse water lines.
- The City has had a certification program for the professional vehicle wash industry in operation for a month. To achieve certification, car washes must reduce their water consumption and recycle a certain amount of their water. About 20 car washes have been certified so far

### Implications for the Comprehensive Plan

- The Comprehensive Plan should incorporate policy recommendations from both the Triangle J Council of Governments' Water Conservation Task Force, and the City of Raleigh's Water Conservation Task Force.

## Energy Conservation

The City of Raleigh's Environmental Advisory Board advises City Council on environmental matters, including energy conservation (see section B.2, above). Also section C.4, below, discusses energy conservation in terms of green building innovations.

In January 2007, the City of Raleigh and Cree Inc. completed an energy conservation pilot project. They turned on 141 fixtures in a municipal parking garage, using a new energy-efficient lighting technology called light-emitting diodes (LEDs). The City is realizing savings in energy and maintenance costs from the pilot project. According to a "LED City" report by the City of Raleigh and Cree Inc., the LED Fixtures are projected to produce electricity savings of 46,720 kilowatt-hours per year, or about 40 percent of the lighting energy load. This equates to \$2,803 of savings per year based on current energy rates. Progress Energy, Raleigh's primary electric utility provider, worked with the City and Cree to validate the energy savings. Additional LED fixtures have been installed to light Exchange Plaza downtown, and are planned to light the new underground parking deck that will serve the new Convention Center and associated hotel.

The City of Raleigh has established a goal, adopted by the City Council on April 17, 2007, of reducing fossil fuel consumption by 20 percent from 2006 levels by 2011. The goal assumes that a 20 percent reduction is made from a baseline year and does not include a growth variable. For example, if the City consumes 100 gallons of fossil fuels in 2006, the goal is to have fossil fuel consumption at 80 gallons by 2011 regardless of growth. This will require even higher reduction rates when normalized on a per capita basis. To achieve this goal, the City is targeting three initiatives:

- Establishing a City-wide fossil fuel budget.
- Investing in the transformation of the City's vehicle fleet.
- Broad changes in protocol and policy, ranging from encouraging telecommuting to shared service calls.

### Implications for the Comprehensive Plan

- The Comprehensive Plan Update should encourage future partnerships and pilot projects to conserve energy. The Plan should also outline ways in which 'pilot projects' could become adopted policies for energy conservation.



## Recycling and Solid Waste Management

Recycling helps preserve natural resources, protects the air, soil, and groundwater, and keeps disposal costs down. Raleigh recycling programs recover over 19,000 tons every year. Raleigh's main programs are focused on a combination of both curbside collection and drop-off stations. Additionally, the city encourages backyard composting, recycles yard waste collected from residents, and operates a methane gas recovery system. Other recycling and solid waste management programs are described below.

One challenge for the City's curbside recycling program is the fact that older multi-family complexes and developments with centralized waste collection areas were not designed with recycling in mind, and therefore do not provide adequate space. New developments should build accommodations for recycling into their site plans, and the City needs a program to address the retrofitting older multi-family developments.

The City of Raleigh, in partnership with Wake County, offers residents a way to recycle computers and related peripheral equipment. Residents can call the City's Solid Waste Services at 831-6890 to have computers, copiers, fax machines and telephone equipment picked up at the curbside to be recycled. City crews take the equipment to a 40-cubic-yard collection container at the Solid Waste Services Department's main location. Wake County contracts with a private company to recycle computers and other electronic equipment.

In the fall of 2002, Raleigh initiated the Recycling in the Parks program as a pilot using a State grant. Recycling containers made from 95-percent post consumer recycled plastic were purchased and placed in picnic areas and along jogging trails in five parks located in Raleigh. The program has since expanded to 31 parks throughout the Capital City. Residents using these parks have easy access for recycling aluminum cans, plastic drink bottles and glass drink bottles while away from home.

The City of Raleigh joined the Rechargeable Battery Recycling Cooperation in February 2003. The Charge Up To Recycle program allows residents to drop off rechargeable batteries for recycling at any of the City's 27 fire stations and at several City administrative offices.

Spent ink jet and toner cartridge recycling was added to the City's recycling drop-off program in December 2004. Each drop-off center has receptacles to collect and recycle these cartridges from residents and small businesses. A total of 2,312 cartridges weighing 1,295 pounds was collected in Fiscal Year 2006-07.

In an effort to keep usable items out of landfills, the City's Solid Waste Services Department operates a Swap Shop for residents at the Yard Waste Center at 900 N. New Hope Road. The purpose of the Swap Shop is to encourage waste reduction through reuse. The goal is to divert good, useable items away from the waste stream and conserve valuable landfill space. Residents looking to discard items in working, useable condition can donate them to the Swap Shop, which accepts items such as small appliances, garden tools and cookware. Residents in need of such items can visit the Swap Shop and, if the items are available, take them.

In 2006, Solid Waste Services implemented Downtown Raleigh Recycles!, a recycling collection program for establishments in the Central Business District. Curbside recycling service is available every Monday, Wednesday and Friday to approximately 138 customers. Recycling containers are provided to businesses for free through a grant from the N.C. Division of Pollution Prevention and Environmental Assistance. Participating businesses are recognized via window decals and newspaper advertising. In September, the one-year anniversary of the initiative, the City of Raleigh facilitated focus groups with current recyclers to use their input to increase participation and tonnage.

Whenever possible—according to a management policy—the City of Raleigh purchases recycled products, including recycled paper. City employees participate in in-house programs to recycle products, including office paper, newspapers, magazines, aluminum cans, plastic bottles, rechargeable batteries, and ink jet and

toner cartridges. Furthermore, the City's Vehicle Fleet Services recycles motor oil, antifreeze, scrap metal, hydraulic fluids, solvents and batteries for use in City vehicles. Retread tires also are placed on many City vehicles.

### Implications for the Comprehensive Plan

- The City has a strong set of programs in place for recycling, addressing a wide range of materials and potential users and as of Fiscal Year 2006-2007, approximately 62 percent of Raleigh households participated in recycling.
- The Comprehensive Plan should include recommendations to raise the percentage of residents and businesses that recycle on a regular basis.

## Green Building and Low Impact Development

'Green' building standards are rapidly gaining acceptance in both the public and private sectors as a means of growing more sustainably. Green building is the practice of increasing the efficiency with which buildings and their sites use and harvest energy, water, and materials. Green building also reduces building impacts on human health and the environment, through better siting, design, construction, operation, maintenance, and removal — the complete building life cycle.

One example of green building efforts in Raleigh is the construction of the new convention center. In an effort to be environmentally sensitive and to keep usable materials out of the landfill, contractors for Raleigh's new downtown convention center are recycling debris generated by construction of the facility. Demolition of the four buildings produced 239 tons of debris. Of that, 198 tons, or 83 percent, were recycled. Also, the construction manager has implemented a construction waste management program at the new convention center site. The program collects and separates discarded construction materials for recycling purposes. As of July, the program had recycled more than 2,200 tons of debris. More than 80 percent of the debris generated at the convention center construction site has been recycled and kept out of the landfill, further protecting the environment.

The recycling of building materials is part of the City of Raleigh's application for registration and certification of the new convention center building as a Leadership in Energy and Environmental Design (LEED) project with the United States Green Building Council. LEED certification distinguishes projects that have demonstrated a commitment to sustainability by meeting the highest performance standards in making the structures environmentally friendly. The process includes promoting an energy efficient building design and designating the convention center as being smoke-free for visitors and employees, in addition to recycling building materials.

### Statement 1

#### LEED Certification for New and Existing Municipal Buildings

On May 20, 2008 the City Council adopted as policy the Environmental Advisory Board's recommendations on LEED certification for municipal buildings, as follows:

#### New Construction



(1) All new City of Raleigh construction and additions encompassing 10,000 gross square feet or more of building area should achieve a Silver level certification of the US Green Building Council's LEED Green Building Rating System for New Construction (LEED—NC). A higher equivalent rating (Gold or Platinum) should be sought where practical and as funding is available.

(2) All City of Raleigh construction and additions encompassing less than 10,000 square feet of building area would not seek LEED Silver level certification but would be designed and built to be eligible for Silver certification, plus meet requirements for energy and water efficiency as follows:

- i. **Energy**  
Achieve minimum energy efficiency of 30% better than code required by ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers) 90.1-2004 (ASHRAE 90.1 version required in the 2006 NC Building Code).
- ii. **Water**  
Achieve a 30% water use reduction as quantified by LEED water efficiency standards.

#### Existing Buildings

(3) All existing City of Raleigh buildings and facilities should use the US Green Building Council's LEED Green Building Rating System for Existing Buildings (LEED—EB) as a guide. The application of these standards is intended to maximize sustainability benefits within existing resources and provide a means of benchmarking environmental and financial performance improvements in City practices.

Certification of existing buildings under LEED—EB should be evaluated for technical and economic feasibility and pursued at the highest feasible level of certification on a case by case basis as funding and resources are available.

Private developers in the region are also increasingly looking favorably at green building practices. A notable private project is the recently completed renovation of the Helig Levine building downtown by Empire Properties for the headquarters of Cherokee Investment Partners. It is the only LEED platinum building in Raleigh, and the only rehabilitation project to attain this rating in North Carolina.

Another emerging field in sustainable development is Low Impact Development (LID). LID is a comprehensive land planning, engineering design, and construction approach with a goal of maintaining and enhancing the pre-development hydrologic regime of urban and developing watersheds. LID includes small-scale practices that allow water to infiltrate, evaporate, or transpire on-site rather than flowing off and entering local storm drains and waterways. Typical LID measures include green roofs, porous pavement, limits on impervious surface cover, rain barrels (cisterns), and rain gardens. Larger projects could include artificial wetlands, stormwater detention ponds, and drainage swales in place of curb and gutter.

#### **Implications for the Comprehensive Plan**

- The Comprehensive Plan should identify and incorporate the appropriate policy recommendations and updates from the local chapter of the U.S. Green Building Council and other local stakeholders in the fields of green building and low-impact development.



- The Comprehensive Plan should recommend a system for rewarding and encouraging local projects that incorporate LID and green building practices.
- The Comprehensive Plan should investigate methods for incorporating the U.S. Green Building Council's pilot version of LEED for Neighborhood Development, which provides guidance on site location, development pattern, and green technology.

## 8.4 Conclusion: Key Issues and Potential Strategies

The following are key observations, issues and recommendations.

### Key Issues

#### Key Issue 8.1

The City of Raleigh has some existing programs and policies that are designed to protect and enhance environmental resources.

#### Key Issue 8.2

The Comprehensive Plan Update presents the City of Raleigh with an opportunity to become a leader in environmental policy, not only on the regional- and state-level, but also as a capital city in the southeastern United States.

#### Key Issue 8.3

The City of Raleigh lies within a subbasin of the Neuse River, one of the most polluted rivers in the country. Raleigh is uniquely positioned---as a capital city and as a community at the headwaters of the River---to champion the recovery of this degraded state resource.

#### Key Issue 8.4

Both water quality and water quantity will play significant roles in the City's ability to meet the needs of its growing population.

#### Key Issue 8.5

The ability of the City to expand tree cover and conserve land will influence quality of life and quality of the environment.



## Key Issue 8.6

Regional air quality has shown some improvement in recent years, but significant effort will be needed to sustain and expand upon recent improvements.

## Potential Strategies to Address Issues

### Potential Strategy 8.1

The policies and programs identified within this community inventory should be used as a starting point for a comprehensive set of sustainability policies for the City of Raleigh. To inform the process of establishing such policies, best practices and appropriate benchmarks for environmental quality should be researched for comparable cities and adjusted for the City of Raleigh. This set of policies will form a 'Greenprint' for Raleigh, addressing issues of water, land conservation, solid waste and recycling, energy and emissions, green building and low impact development, and urban design, etc.

### Potential Strategy 8.2

Many sustainability policies identified will be applicable to other elements of the Comprehensive Plan, requiring a coordinated approach to policy development throughout the Comprehensive Plan Update.

### Potential Strategy 8.3

To become a leader in urban sustainability, the City of Raleigh must lead by example. Therefore, the city leaders and department staff who are expected to implement programs and enforce policies must have the resources available to them to do so. The Comprehensive Plan can help to identify potential funding opportunities and partnerships to strengthen the City's programs and support their policies.

### Potential Strategy 8.4

To improve water quality in the Neuse River basin, the City of Raleigh will need to start by addressing the degraded quality of its own watersheds and subbasins. The Comprehensive Plan can begin to address these issues by strengthening existing policies for impervious surface cover, stream buffers, and sediment control.



## Parks & Recreation



## 9 Parks & Recreation

### 9.1 Existing Park and Recreation System and Planning Framework

The City of Raleigh has an extensive parks and recreation system that encompasses approximately 8,800 acres of land, or roughly 11 percent of the total land area within the City's municipal boundaries. In 2004, Raleigh's Parks and Recreation Department completed an update of the Parks and Open Space element of the Raleigh Comprehensive Plan, known as the Raleigh Parks Plan. The Raleigh Parks Plan offers the City a very complete and thorough understanding of facility and programmed recreation needs. It also offers policy and programming direction to meet the future needs of the city during the next 20 years.

#### Parks and Recreation Facilities

Raleigh has one of the most well developed park systems in the Southeastern United States. The City's park system primarily consists of 42 neighborhood parks, 22 community parks, and eight metro parks, encompassing approximately 4,100 acres of land. These primary park types are shown on Map 9.1. The City's park system is supplemented by an additional 101 special parks that range in size, theme and scale, and include small parcels of land along city streets, in neighborhoods, and linked to public buildings. The park classification system is defined in the Raleigh Parks Plan as follows:

**Neighborhood Park:** Ranges in size from five to 25 acres and serves residents within a half-mile radius. The level of service guideline (LOS) is 2.6 acres per 1000 population.

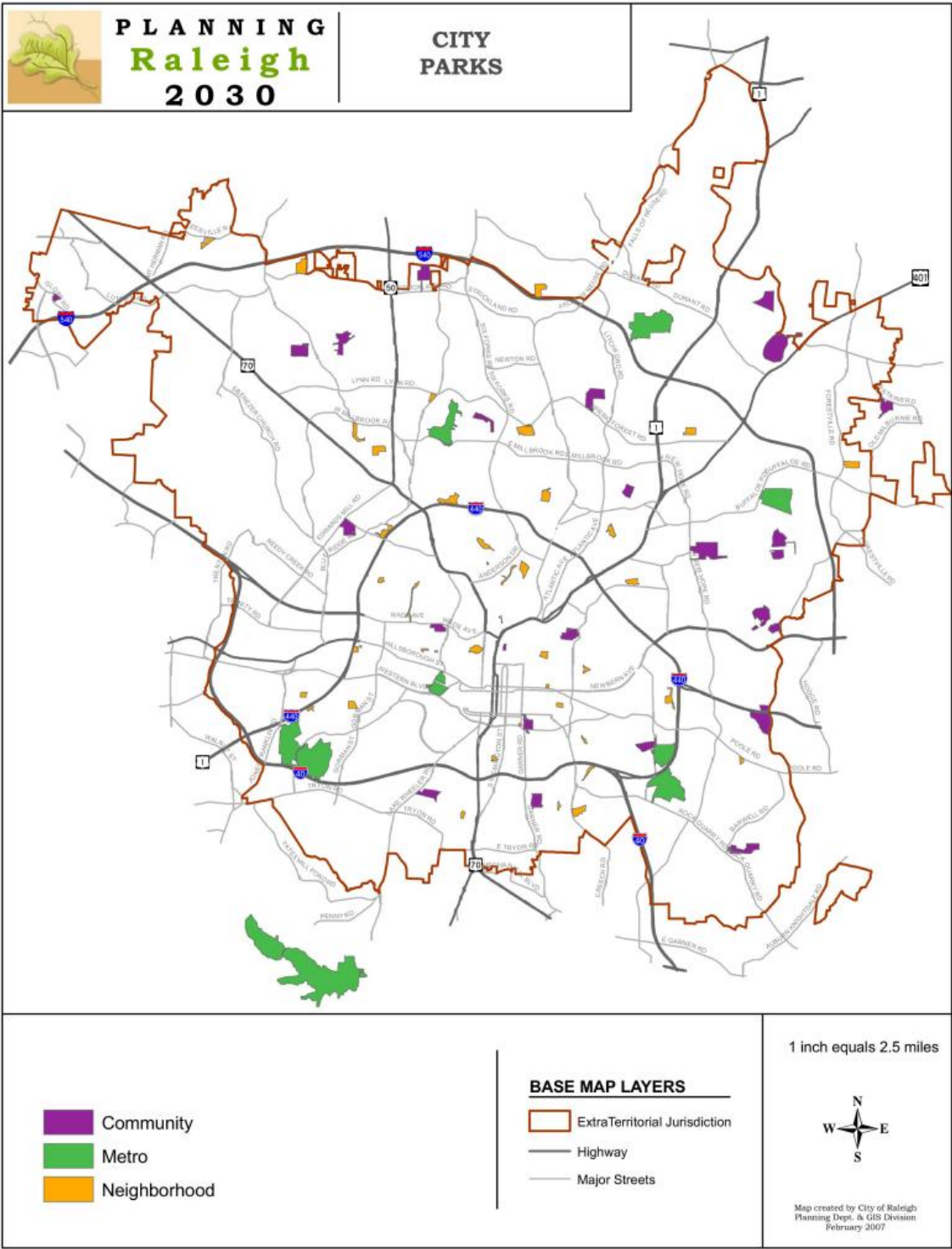
**Community Parks:** Range in size from 30 to 75 acres and serves residents within a two mile radius. The LOS is 3.1 acres per 1000 population.

**Metro Parks:** Defined as providing a leisure or recreational opportunity, which, either by size, scale or theme, appeals to a majority of citizens. LOS is 4.2 acres per 1000 population.

**Special Parks:** Includes a wide range of facilities, such as cultural, civic and unique park and recreation offerings. No LOS defined.

The City's parks are invaluable resources for active and passive recreation and leisure. The Department of Parks and Recreation publishes the "Leisure Ledger" on a regular basis to provide a listing of the park and recreational program offerings and facilities available to the general public. Table 9.1 shows the recreational facilities within the City's primary park types.

Map 9.1 City Parks







**Table 9.1: City Parks with Recreational Facilities**

NAME	PARK TYPE	ACRES	RECREATIONAL FACILITIES
Biltmore Hills	Community	39.02	Gym; lighted ballfield(s); tennis courts; pool; play equipment; outdoor basketball; picnic shelter; handicap accessible
Worthdale	Community	36.14	Gymnasium; community center; ballfields; tennis courts; play equipment; handicap accessible
Lake Lynn	Community	51.99	Gymnasium; lighted ballfield and tennis courts; greenway trail access; playground;; handicap accessible
Anderson Point	Community	89.10	Informal open space/fields, trails, play equipment; picnic shelter; conference and meeting facility; handicap accessible
Leesville	Community	55.15	Under development; Wake County branch library
Green Road	Community	26.67	Gymnasium; community center; lighted ballfield; outdoor basketball; sand volleyball; tennis courts; Wake County branch library; handicap accessible
Sydnor M White	Community	64.45	Undeveloped
Alvis Farm	Community	81.61	Undeveloped
Halifax	Community	4.62	Gymnasium; ballfield, multipurpose field; play equipment; outdoor basketball
Chavis	Community	28.87	Gymnasium and community center; lighted ballfield; tennis courts; pool; play equipment; picnic shelters; greenway trail; walking track; multipurpose field; historic carousel; handicap accessible
Millbrook-Exchange	Community	69.35	Gymnasium and community center; lighted ballfields; tennis courts and pro center; pool; play equipment; outdoor basketball; exercise trail; picnic shelter; off-leash dog area; handicap accessible
Jaycee	Community	24.87	Gymnasium and community center; lighted ballfield; tennis courts; play equipment; exercise trail; picnic shelter; sand volleyball; gardens; handicap accessible
Laurel Hills	Community	48.30	Gymnasiums and community center; lighted ballfields; play equipment; outdoor basketball; multipurpose field; pond; handicap accessible
Lions	Community	41.41	Gymnasium and community center; lighted ballfields; tennis courts; play equipment; outdoor basketball; picnic shelter; BMX track; handicap accessible
Marsh Creek	Community	110.61	Lighted ballfield; picnic shelter; inline skating

NAME	PARK TYPE	ACRES	RECREATIONAL FACILITIES
Optimist	Community	30.72	Gymnasium and community center; lighted ballfields; tennis courts; pool; play equipment; greenway trail; handicap accessible
Barwell Road	Community	54.47	Gymnasium and community center; handicap accessible
Baileywick	Community	50.74	Lighted ballfields; multipurpose field; informal open space; play equipment; trails; picnic shelter; handicap accessible
Brier Creek	Community	10.01	Gymnasium and community center; play equipment; picnic shelter; walking track; handicap accessible
Watkins Road	Community	38.28	Undeveloped
Carolina Pines	Community	38.71	Gymnasium and community center; play equipment; tennis courts; sand volleyball; lighted ballfields; off-leash dog area; picnic shelter; play equipment; handicap accessible
Milburnie Park	Community	88.38	Undeveloped; Neuse River canoe launch
Pullen	Metro	68.50	Arts Center; Community Theater; Year round Aquatic Center; Amusement area with train, boat rides, historic carousel; Community Center; picnic shelters; tennis; trails; greenway access; Handicap accessible
Lake Wheeler	Metro	868.78	Play equipment; exercise trail; picnic shelters; lake; boat rental; fishing; waterfront conference and concession center
Lake Johnson	Metro	471.97	Picnic shelter; greenway trail; lake; boat rental; fishing; waterfront conference and concession center; handicap accessible
Shelley Lake - Sertoma	Metro	144.81	Arts Center; Play equipment; outdoor basketball; exercise trail; greenway trail; lake; boat rental; fishing
Durant Nature	Metro	241.15	Play equipment; nature study; picnic shelter; trails; lake; fishing; overnight lodge; meeting and rental lodge; handicap accessible
Walnut Creek North	Metro	104.84	Nine field softball complex
Walnut Creek South	Metro	204.71	Outdoor amphitheater concert venue
Buffaloe Road Athletic	Metro	165.58	Lighted ballfields; play equipment; running track; football field; wetland trail;
Apollo Heights	Neighborhood	4.26	Neighborhood center; playground; greenway access



NAME	PARK TYPE	ACRES	RECREATIONAL FACILITIES
Kiwanis	Neighborhood	24.14	Lighted ballfield; play equipment; outdoor basketball; picnic shelter; handicap accessible; multipurpose fields
Glen Eden	Neighborhood	20.41	Tennis courts; picnic shelter; neighborhood center; playground; handicap accessible
Method	Neighborhood	8.32	Gymnasium; community center; play equipment; outdoor basketball; multipurpose field; handicap accessible
North Hills	Neighborhood	31.50	Lighted ballfields; tennis courts; play equipment; picnic shelter; greenway trail
Oakwood	Neighborhood	12.72	Lighted ballfield; picnic shelter; outdoor basketball; off-leash dog area
Powell	Neighborhood	8.61	Tennis courts; play equipment; outdoor basketball; neighborhood center; handicap accessible
Roberts	Neighborhood	7.20	Gymnasium; community center; lighted ballfields; tennis courts; play equipment; outdoor basketball; picnic shelter; handicap accessible
Windemere Beaver Dam	Neighborhood	14.25	Open space; trails, picnic tables
Longview	Neighborhood	6.91	Pool; handicap accessible
Brookhaven	Neighborhood	25.91	Nature study; trails; handicap accessible
John P Top Green	Neighborhood	1.32	Neighborhood center; Handicap accessible
Eliza Pool	Neighborhood	6.23	Walking trail; greenway access; picnic shelter; playground; multipurpose field.
Strickland	Neighborhood	36.89	Undeveloped
Chamberlain	Neighborhood	1.44	Play equipment; basketball court
Isabella Cannon	Neighborhood	3.46	Play equipment; picnic tables; multipurpose court; multipurpose field
Kingwood Forest	Neighborhood	4.18	Playground; picnic shelter
Roanoke	Neighborhood	1.62	Playground; picnic shelter; informal open space
Wooten Meadow	Neighborhood	20.50	Multipurpose fields
Cedar Hills	Neighborhood	38.49	Lighted ballfield; tennis courts; play equipment; trails; outdoor basketball; disc golf; picnic shelter; handicap accessible
Drewry Hills #2	Neighborhood	18.52	Open space

NAME	PARK TYPE	ACRES	RECREATIONAL FACILITIES
Eastgate	Neighborhood	25.27	Tennis courts; play equipment; neighborhood center; ballfield; handicap accessible
Fallon	Neighborhood	10.33	Open space
Ridge	Neighborhood	6.80	Pool; handicap accessible
Kentwood	Neighborhood	14.63	Lighted ballfield; tennis courts; disc golf; playground
Brentwood	Neighborhood	16.07	Ballfield; neighborhood center
Williams	Neighborhood	8.74	Tennis courts; play equipment; picnic shelter; sand volleyball; ballfield/multipurpose field
Fred Fletcher	Neighborhood	21.36	Historic building/meeting space; ballfield; trails; tennis; play equipment; informal open space; multipurpose field; gardens
Peach	Neighborhood	6.96	Play equipment; outdoor basketball; neighborhood center; handicap accessible
Tarboro	Neighborhood	3.18	Gymnasium; community center; tennis courts; play equipment; picnic shelter
Kaplan	Neighborhood	5.19	Trails; informal open space
Spring Forest	Neighborhood	21.81	Lighted ballfield; tennis courts; play equipment; outdoor basketball; picnic shelter; walking trail; informal open space
NPS-38	Neighborhood	19.94	Undeveloped
NPS-28	Neighborhood	16.79	undeveloped
Sanderford	Neighborhood	25.39	Lighted ballfield; tennis courts; play equipment; outdoor basketball; handicap accessible
Southgate	Neighborhood	8.84	Play equipment; outdoor basketball; picnic shelter; neighborhood center; handicap accessible
Timberlake	Neighborhood	16.54	Undeveloped; in design
NPS-16	Neighborhood	26.29	Undeveloped
NPS-33	Neighborhood	5.99	Undeveloped
Charlotte H Green	Neighborhood	1.02	Open space
Honeycutt	Neighborhood	29.99	Ballfield, tennis, basketball, shelter, trail, greenway access in design stage
Horseshoe Farm	Special	146.27	Under development; nature and environmental center planned; informal open space available



NAME	PARK TYPE	ACRES	RECREATIONAL FACILITIES
<b>Total Acres</b>		<b>4,088.10</b>	

### Implications for the Comprehensive Plan

- The 2004 Raleigh Parks Plan provides a strong base for parks and recreation planning and will provide a solid foundation for this aspect of the Comprehensive Plan.
- In addition to the City's programmed and active park facilities, the City should look for opportunities to increase public awareness and facilitate access to the natural resources within the Raleigh park system and the links provided by the Capital Area Greenway to nearby municipal, county and state resources.

## Greenways

The City of Raleigh currently provides approximately 3,300 acres of greenway land through its community wide, Capital Area Greenway System. The City has a total of 34 separate greenway trails that span more than 56 miles. The Raleigh Parks Plan goes into substantial detail regarding the Capital Area Greenway program, which is the oldest program in North Carolina and one of the oldest in the nation. Map 9.2 highlights the City's greenway system, as it relates to the City's parks system. As stated within the Raleigh Parks Plan, the goals for the greenway system are to:

1. Preserve natural characteristics of the land;
2. Preserve wildlife corridors;
3. Preserve riparian buffers as a means of protecting water quality;
4. Preserve stream corridors to manage storm water runoff;
5. Provide buffers for multiple land uses;
6. Provide opportunities for passive recreation; and
7. Provide multi-use trails for recreation and alternative transportation.

Although it is not part of the City's parks system, the 5,577-acre William B. Umstead State Park is a local and regional park resource that is managed by the North Carolina Division of Parks and Recreation. Residents from all of the Triangle Region's communities use Umstead Park for hiking, viewing wildlife, off-road biking, and other recreational pursuits. Direct greenway trail access from Raleigh to Umstead State Park also connects with the Town of Cary's greenway system and Lake Crabtree County Park. This park includes a 500 acre lake and 215 upland acres with an extensive trail system.

The Honeycutt Greenway Trail, when completed in 2010, will connect North Raleigh to existing trails at Falls Lake, another regional recreational facility easily accessible to Raleigh citizens. The headwaters of the Neuse River, it is also the beginning of the Neuse River Greenway Trail.

The Neuse River Master Recreation Plan was adopted by the City of Raleigh in 1996 and outlines a regional linear park plan that represents a 28 miles corridor. This trail, when completed, is designated as part of the cross-state Mountains to Sea Trail and includes upland park nodes planned on a 2-3 mile basis along the corridor. Major connections to residential developments and other park units are featured.

Green infrastructure and the role that this can play with respect to integrated elements of stormwater management, clean water, clean air, habitat conservation and alternative transportation are included in the definition and description of the greenway system. However, the mandatory land dedication requirements



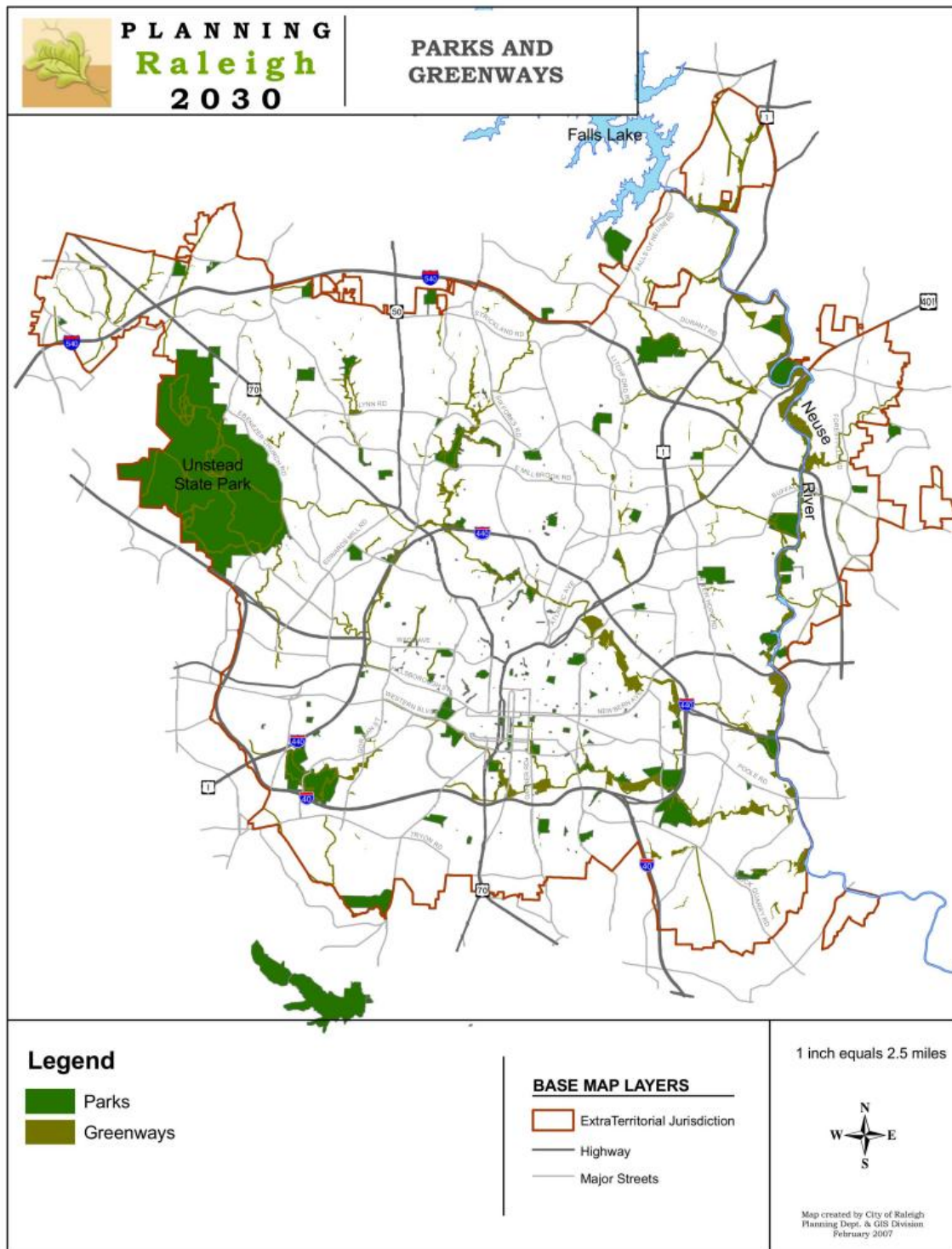
for these functions are confined to the designated greenway corridors along the Neuse River, Crabtree and Walnut Creeks and their tributaries. The dimensions range from 50 feet to 100 feet on either side of stream corridors and up to 150 feet on either side of the Neuse River (or the 100 year floodplain of the Neuse, whichever is greater). The Park Plan adopted in 2004 recommends the greenway corridor dedication requirement be expanded to include the 100 year floodplain on all designated greenway corridors.

### **Implications for the Comprehensive Plan**

- Open space, specifically non-programmed, undeveloped land and the importance that such lands can have on the quality of life and overall sustainability of a city, is not separately defined in the Raleigh Parks Plan.
- The Comprehensive Plan should examine the potential expansion of the greenway corridor system beyond the current 50 - 100 feet on either side of stream corridors to include the floodplain
- The Comprehensive Plan should build on the achievements of the Capital Area Greenway and emphasize the importance of undeveloped and non-programmed open space in the context of all municipal departments and activities including the health benefits of walking and cycling, water supply, floodplain management, wildlife habitat and viewing, native plant habitat, clean air and ground water recharge.
- The Comprehensive Plan should also define and discuss “green infrastructure” and its importance to community systems and quality of life.



Map 9.2 Parks and Greenways



## Conservation Areas

The City's greenways include many conservation lands along stream corridors. In addition, many stream courses in existing park lands that are not part of the greenway corridors are protected through Neuse River buffer requirements as are jurisdictional wetlands. Other lands that could be preserved include those with other natural and sensitive ecological areas that should be conserved and protected.

### Implications for the Comprehensive Plan

- The Comprehensive Plan should build on the foundation of the greenway program and identify lands that can be conserved and protected for their outstanding natural features, assets and values – as unprogrammed open space and green infrastructure.

## 9.2 Future Park and Open Space Needs

The Raleigh Parks Plan includes a detailed assessment of future park and greenway needs for Raleigh. The future need for park land as outlined in the Raleigh Parks Plan is highlighted below.

### Future City Parks

As documented in the Raleigh Parks Plan, the Raleigh Parks and Recreation Department used national standards, extensive surveying of the population, input from public meetings and conducted a facility needs analysis by activity type to determine future park needs. A Level of Service (LOS) evaluation of the park system defined future park needs to the year 2025 and ensures that future residents of the community will have adequate park and recreation facilities. The LOS analysis described needs in all areas of park and greenway development and concluded that the City must acquire an additional 2,192 acres of land to meet future park demand <sup>(1)</sup>. Of this total, 46 percent or 1,018 acres of parkland is needed to accommodate 51 additional neighborhood parks and fourteen additional community parks. The City has also determined the need for 3,450 acres to fulfill greenways needs.

Table 9.2 on the subsequent page highlights the key statistics for selected park type, level of service (LOS) standards used to measure primary park needs, and the additional acreage needed by 2025 to fulfill LOS guidelines.

**Table 9.2: City-Wide Current and Proposed LOS Goals and Needs**

Park Classification	Existing Acres	Existing Number of Parks	LOS Standard (Acres/1000 Population)	Additional Needed Acres by 2025	Projected Park Size (acres)	New Parks Needed to Meet 2025 LOS	Total Parks Needed by 2025
Neighborhood Parks	652	48(5)	2.6	833	15	56	104
Community Parks	1,097	22	3.1	673	60	11	33

1 This figure is obtained by multiplying the future population of the city by the LOS standard and subtracting existing acreage in each park classification.



Park Classification	Existing Acres	Existing Number of Parks	LOS Standard (Acres/1000 Population)	Additional Needed Acres by 2025	Projected Park Size (acres)	New Parks Needed to Meet 2025 LOS	Total Parks Needed by 2025
Metro Parks	2,271	9	4.2	127	300	1	10
Special Parks	1,518	126	N/A	N/A	N/A	N/A	N/A
Greenway Corridors	3,452	N/A	N/A	2,351	N/A	N/A	N/A
<b>Total</b>	<b>8,990</b>	<b>205(5)</b>	<b>9.9</b>	<b>3,984</b>	<b>N/A</b>	<b>68</b>	<b>147</b>

### Implications for the Comprehensive Plan

- The Comprehensive Plan should pay close attention to the land area needs expressed in the Raleigh Parks Plan to ensure that the City is able to meet its goal for future park facilities. It will be critically important for the City to be able to acquire the land necessary to achieve the goals expressed by the Raleigh Parks Plan.
- The City Planning Department has completed a preliminary buildout of vacant lands within the city and its Extraterritorial Jurisdiction to assess the amount of additional development potential these lands could absorb. As the city refines this analysis during the Comprehensive Plan development process, it should include the needs for parks and open space.

## Future Greenways

At the outset of the Capital Area Greenway Program in the 1970's, a goal of 200 miles by the year 2000 was a stated objective. While the City has not met that ambitious goal, Raleigh does have 56 miles of trail on the ground and significant acreage has been afforded protection through fee simple acquisition and greenway easements. The Raleigh Parks Plan proposes five major greenway trail projects: Middle Crabtree Creek Trail, Walnut Creek Eliza Pool Trail, Crabtree-Oak Park Trail, Walnut Creek-City Farm Road Trail, and Crabtree-Duraleigh Trail. Portions of all these trail projects have been or are in design and/or construction at this time. Significant funding has been designated in the 2007 Park Bond for greenway completion.

### Implications for the Comprehensive Plan

- The City should establish a metric for how many miles of greenway trail will be added to the greenway system by 2025. The goal should be realistic based on a review of what has been achieved in the past five years and resources available to build new greenway trails in the future. The acquisition of additional parcels in the greenway corridor should continue to be a focus so that the greenways system can be expanded. For example, Raleigh has fewer miles of trails than Greensboro, which has 80 miles of completed greenway trails. The Comprehensive Plan should consider how the City can create looped networks of trails to provide greater efficiency in transportation and recreational use. This can and should also be addressed by the Bicycle Master Plan for the City, which is scheduled to be completed in 2008. The results of the Bicycle Plan should be incorporated into the Comprehensive Plan.

- The City has stated the need in the 2004 Park Plan to acquire 3,450 acres of land for the greenway system by the year 2025. This would result in the complete protection of the greenway corridors designated in the current Comprehensive Plan. The methods to achieve this goal should be addressed and the goals confirmed as part of the Comprehensive Plan process.
- Future greenway additions and enhancements should include improvements in connectivity among greenway segments and better wayfinding and directional signage for greenway users.

### **Park Search Areas**

The Raleigh Parks Plan contains a well thought out approach to locating new park facilities in the ten planning districts of the city. To meet future needs, the City has established park search areas to proactively assess potential park locations. The current park search areas are highlighted on Map 9.3.

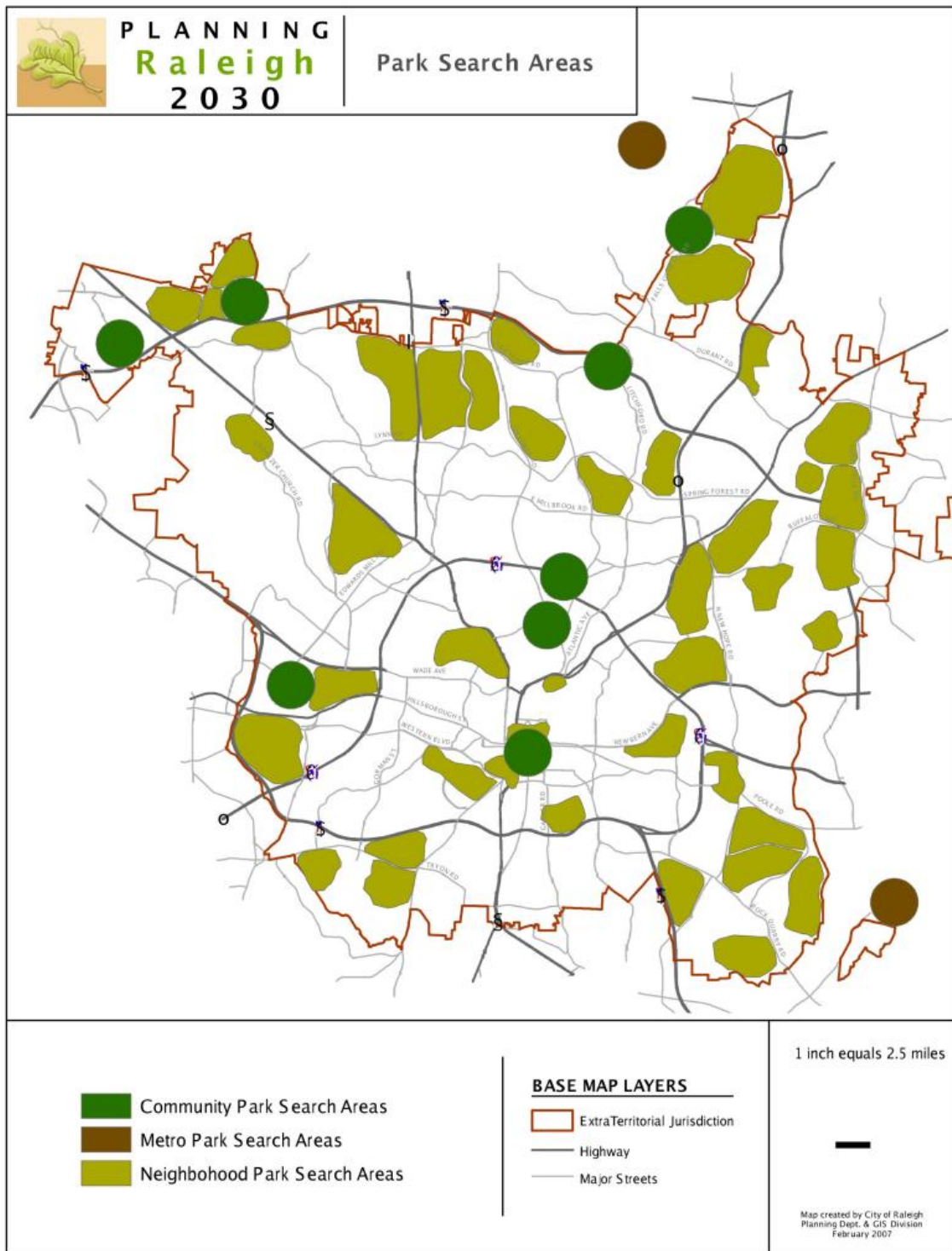
#### **Implications for the Comprehensive Plan**

- The Comprehensive Plan must account for and include the Park search areas defined to ensure that the City is able to meet its long-range goals for park and recreation development. Of specific importance is the ability to satisfy the need for parks in Raleigh's northern planning areas, where land is scarce.
- The Comprehensive Plan update is an opportunity to refine the methodology to predict and prioritize search areas for park land acquisition, and should extend into areas of future annexations.





Map 9.3 Park Search Areas



### 9.3 Conclusion: Key Issues and Potential Strategies

The following are key observations, issues and recommendations related to the City's parks, recreational facilities, and greenway system.

#### Key Issues

##### Key Issue 9.1

The Raleigh Parks Plan is a well-defined, thoroughly articulated and up-to-date document that offers the city excellent guidance on meeting future park and recreation needs.

##### Key Issue 9.2

The Raleigh Parks Plan used a process of public involvement and participation to articulate needs of city residents to 2025.

##### Key Issue 9.3

Since the Raleigh Parks Plan was developed, the issue of non-programmed open space and green infrastructure has gained greater importance, both within the City and throughout the United States.

##### Key Issue 9.4

Acquiring land for parks and greenways is one of the most important goals of the Raleigh Parks Plan. Continuing a program of building new park and greenway facilities and renovating existing facilities is another important goal.

#### Potential Strategies to Address Issues

##### Potential Strategy 9.1

The City needs to ensure that necessary land is available to accommodate new park and greenway resources. To accomplish this, the City needs a strategy for acquiring land that meets the park and greenway needs defined in the Raleigh Parks Plan. This strategy should be tied to the Capital Improvements Program and should be vigorously support by the municipal leadership and City Council.



### **Potential Strategy 9.2**

Land acquisition for parks and greenways should be a high priority for the City in the next five to 10 years.

### **Potential Strategy 9.3**

The number of park and greenway facilities will double in size by 2025. The City needs to ensure that operating budget support of the park system keeps pace with capital facility growth to maintain quality programming and management in the future.

### **Potential Strategy 9.4**

The City needs to expand its view and definition of non-programmed open space and green infrastructure to address needs that maximize ecosystem conservation.

### **Potential Strategy 9.5**

Including park and greenway planning and implementation within a broader discussion of green infrastructure can highlight opportunities for the park and greenway system to continue to address community needs in water quality protection, floodplain management, air quality improvements, protection of habitat, energy efficiency, and sustainable growth and development.



## Community Facilities



## I0 Community Facilities

A community facility is established primarily for the benefit and service of the population of the community in which it is located. Uses include but are not limited to schools, community centers, libraries, police protection, fire stations, or government buildings. The information contained here is based upon municipal records, interviews, previously published reports, and a recent needs assessment of the Wake County Public School System.

### I0.1 Schools

The City of Raleigh is served by the Wake County Public School System (WCPSS) which is made up of more than a hundred schools, some 13,000 teachers and staff, and thousands of volunteers working together to educate the children of Wake County. The system was formed in 1976 with the merger of the former City of Raleigh and WakeCounty school systems. Table 10.1 documents each school and its current capacity, and the subsequent Map 9.1 shows each school location.

**Table 10.1: Wake County Schools Located in the City of Raleigh**

	Name	Type	Address	Capacity
1	Athens Drive High	High School	1420 Athens Dr	106%
2	Baileywick Elementary	Elementary	9425 Baileywick Rd	117%
3	Brentwood Elementary	Elementary	3426 Ingram Dr	99%
4	Brooks Elementary	Elementary	700 Northbrook Dr	119%
5	Broughton High	High School	723 St Marys St	104%
6	Bugg Elementary	Elementary	825 Cooper Rd	117%
7	Cardinal Gibbons Elem Site	Elementary	2401 Western Blvd	Data Unavailable
8	Carnage Middle	Middle School	1425 Carnage Dr	101%
9	Carroll Middle	Middle School	4520 Six Forks Rd	90%
10	Centennial Middle Campus	Middle School	1900 Main Campus Dr	105%
11	Combs Elementary	Elementary	2001 Lorimer Rd	117%
12	Conn Elementary	Elementary	1221 Brookside Dr	143%
13	Daniels Middle	Middle School	2816 Oberlin Rd	92%
14	Dillard Elementary	Elementary	5018 Dillard Dr	119%
15	Dillard Middle	Middle School	5200 Dillard Dr	126%
16	Douglas Elementary	Elementary	600 Ortega Rd	98%
17	Durant Road Elementary	Elementary	9901 Durant Rd	117%
18	Durant Road Middle	Middle School	10401 Durant Rd	79%
19	East Millbrook Middle	Middle School	3801 Spring Forest Rd	87%

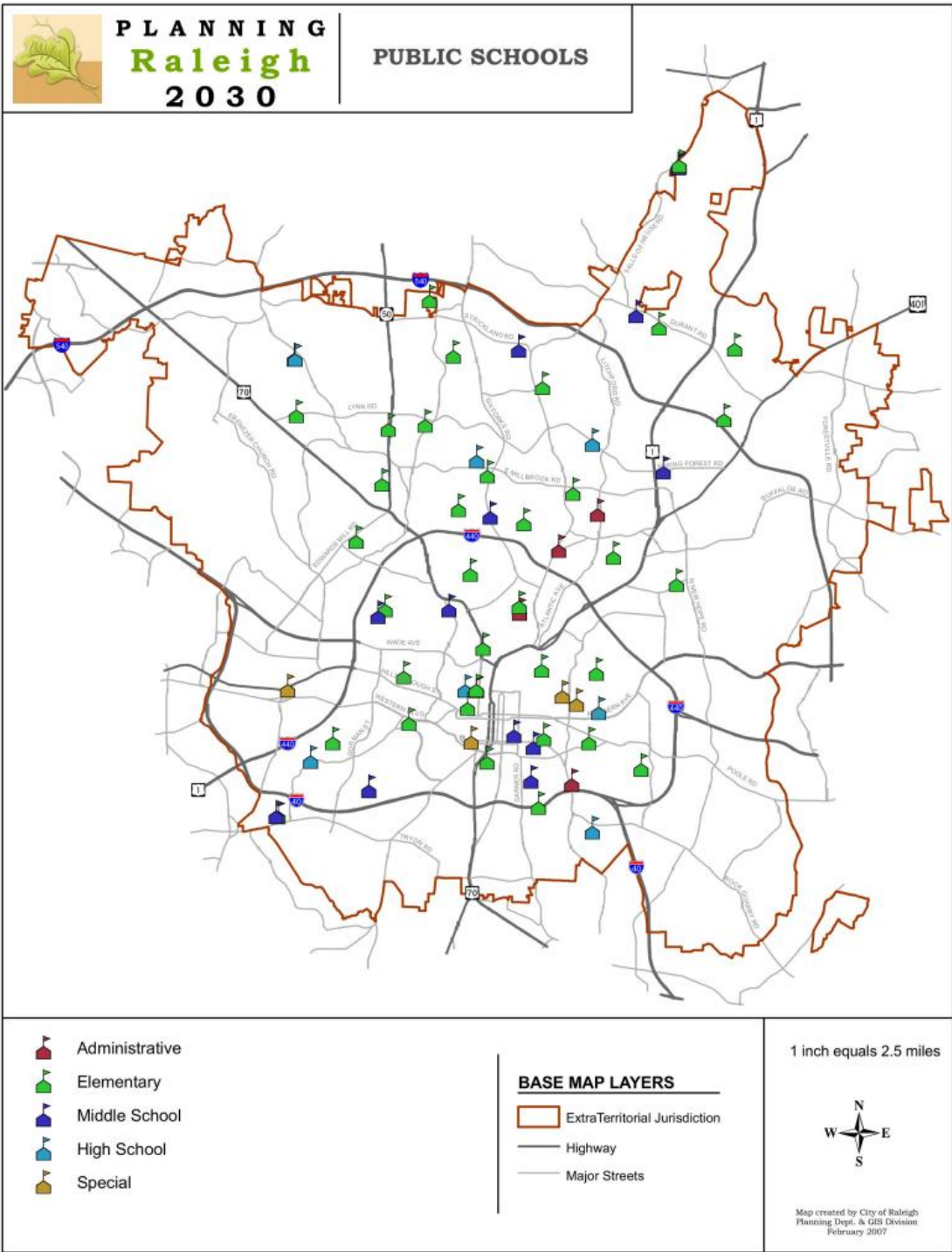


	Name	Type	Address	Capacity
20	East Wake Middle	Middle School	2700 Old Milburnie Rd	120%
21	Enloe High	High School	128 Clarendon Crescent	113%
22	ForestPines Drive Elementary	Elementary	11455 Forest Pines Dr	Data Unavailable
23	Fox Road Elementary	Elementary	7101 Fox Rd	87%
24	Fuller Elementary	Elementary	806 Calloway Dr	105%
25	Green Elementary	Elementary	5307 Six Forks Rd	89%
26	Harris Creek Elementary	Elementary	3829 Forestville Rd	103%
27	Hilburn Elementary	Elementary	7100 Hilburn Dr	115%
28	Hunter Elementary	Elementary	1018 E Davie St	126%
29	Jeffreys Grove Elementary	Elementary	6119 Creedmoor Rd	103%
30	Joyner Elementary	Elementary	2300 Noble Rd	121%
31	Lacy Elementary	Elementary	1820 Ridge Rd	106%
32	Lead Mine Elementary	Elementary	8301 Old Lead Mine Rd	96%
33	Leesville Elementary	Elementary	8401 Leesville Rd	85%
34	Leesville High	High School	8409 Leesville Rd	114%
35	Leesville Middle	Middle School	8405 Leesville Rd	109%
36	Ligon Middle	Middle School	706 E Lenoir St	79%
37	LongviewSchool	Special/Optional	318 N King Charles Rd	21%
38	Lynn Road Elementary	Elementary	1601 Lynn Rd	83%
39	Martin Middle	Middle School	1701 Ridge Rd	106%
40	Mary E Phillips High	Special/Optional	1923 Milburnie Rd	109%
41	Millbrook Elementary	Elementary	1520 E Millbrook Rd	107%
42	Millbrook High	High School	2201 Spring Forest Rd	97%
43	Moore Square Museums Middle	Middle School	301 S Person St	89%
44	Mt Vernon Redirection	Special/Optional	5418 Chapel Hill Rd	32%
45	NorthForest Pines	Elementary	11501 ForestPines Dr	Data Unavailable
46	North Ridge Elementary	Elementary	7120 Harps Mill Rd	117%
47	Oak Grove	Elementary	10401 Penny Rd	110%
48	Olds Elementary	Elementary	204 Dixie Trl	155%



	Name	Type	Address	Capacity
49	Partnership	Elementary	601 Devereux St	122%
50	Pleasant Union	Elementary	1900 Pleasant Union Chrch	116%
51	Poe Elementary	Elementary	400 Peyton St	101%
52	Powell Elementary	Elementary	1130 Marlborough Rd	112%
53	Project Enlightenment	Special/Optional	501 S Boylan Ave	Data Unavailable
54	Richard Milburn School	Middle School	2431 Crabtree Blvd	Data Unavailable
55	River Bend	Elementary	3851 Spring Forest Rd	Data Unavailable
56	River Oaks	Middle School	4700 New Bern Ave	Data Unavailable
57	Root Elementary	Elementary	3202 Northampton St	108%
58	Sanderson High	High School	5500 Dixon Dr	99%
59	Smith Elementary	Elementary	1101 Maxwell Dr	86%
60	Se Raleigh High	High School	2600 Rock Quarry Rd	89%
61	Stough Elementary	Elementary	4210 Edwards Mill Rd	92%
62	Swift Creek Elementary	Elementary	5601 Tryon Rd	108%
63	Sycamore Elementary	Elementary	10921 Leesville Rd	Data Unavailable
64	Underwood Elementary	Elementary	1614 Glenwood Ave	140%
65	Vance Elementary	Elementary	8808 Old Stage Rd	86%
66	Wakefield Elementary	Elementary	2400 Wakefield Pines Dr	88%
67	Wakefield High	High School	2200 Wakefield Pines Dr	113%
68	Wakefield Middle	Middle School	2300 Wakefield Pines Dr	104%
69	Washington Elementary	Elementary	1000 Fayetteville St	103%
70	West Millbrook Middle	Middle School	8115 Strickland Rd	93%
71	Wilburn Elementary	Elementary	3707 Marsh Creek Rd	84%
72	Wildwood Forest Elementary	Elementary	8401 Wild Wood Forest Dr	106%
73	Wiley Elementary	Elementary	301 St Marys St	113%
74	Yates Mill Elementary	Elementary	5993 Yates Mill Pond Rd	99%
75	York Elementary	Elementary	5201 Brookhaven Dr	106%

Map 10.1 Wake County Public Schools in the City of Raleigh





In a November 2007 report, the WCPSS's Growth and Planning Department worked jointly with the Wake County Planning Department to determine new enrollment projections for the next three years. The new projections predict a steady increase of students. The WCPSS student population growth rates are based on a combination of methodologies including: resident population projections, student enrollment numbers, and the five year average number of students in grades 1 through 12 (figures derived from aging students forward). Staff also looks at birth rates, building permits and housing vacancies, and resident migration. Student enrollment projections are used to determine the school system's operating budget, teachers, teacher salaries, new school construction, and transportation. Table 10.2 shows student enrollment projections for 2008 thru 2011.

**Table 10.2: Student Enrollment Projections**

School Year	Projections	New Student Increase	Growth Rate
2008 - 2009	140,443	6,441	4.8%
2009 - 2010	147,039	6,596	4.7%
2010 - 2011	154,244	7,205	4.9%

The WCPSS is the largest system in the state, and the 19th largest in the nation. Currently it is using eight percent of all its available seats and still has half of its schools operating over capacity. The school system is expected to enroll over 20,200 more new students over the next three years increasing total enrollment for the 2010-2011 school year to a projected level of over 154,000 students. As new schools are constructed to accommodate the ever increasing student populations, Wake County reassigns thousands of students annually to fill new schools, ease crowding at existing schools, and promote diversity.

According to the Blue Ribbon Committee Report on the Future of Wake County, in 2030, the projected numbers of students in Wake County schools (282,000) will more than double current enrollment levels. Anywhere from 6,000 to 8,000 new students arrive for classes each fall. This growth has created a significant backlog in construction and funding. The system was at 102 percent of capacity of as of 2006. To ease crowding while new construction, the system is relying on mobile and modular classrooms, which account for 17 percent of classrooms system-wide. Under recent assumptions, 10-year capital needs are \$4.2 billion, all of which will be financed by local property taxes.

### Implications for the Comprehensive Plan

- The demand for new schools based on the rapid growth in school-aged population is outpacing the County's ability to plan for and build schools to meet this growing demand.
- Developer's fees do not contribute to the budget for constructing new schools, as only individual municipalities in the County assess fees, while the County does not. County property tax collections remain the only available means at present to finance new school construction.

## 10.2 Libraries

The first public library in Wake County, the Olivia Raney Library, was chartered in 1899 in downtown Raleigh and opened its doors to the public on January 24, 1901. The library was erected in tribute to the late wife of Richard B. Raney, across from the family home on the corner of Salisbury and Hillsborough streets. By the 1960s, libraries had been established through the grassroots efforts of volunteers and civic clubs in

the towns of Wendell, Zebulon, Fuquay-Varina, Cary and Wake Forest. In 1965 the Olivia Raney Library and the Richard B. Harrison Library merged, and local discussions began with town libraries/library boards to develop a system of service for all residents of the county. The existing Wake County Public Library System consists of six regional libraries and 12 community branch libraries. It also includes a genealogy and local history library, an Electronic Information Center library, and two bookmobiles. Map 10.2 shows the location of all public libraries within the City's boundaries, and corresponding Table 10.3 shows the location and construction and renovation dates for these facilities.

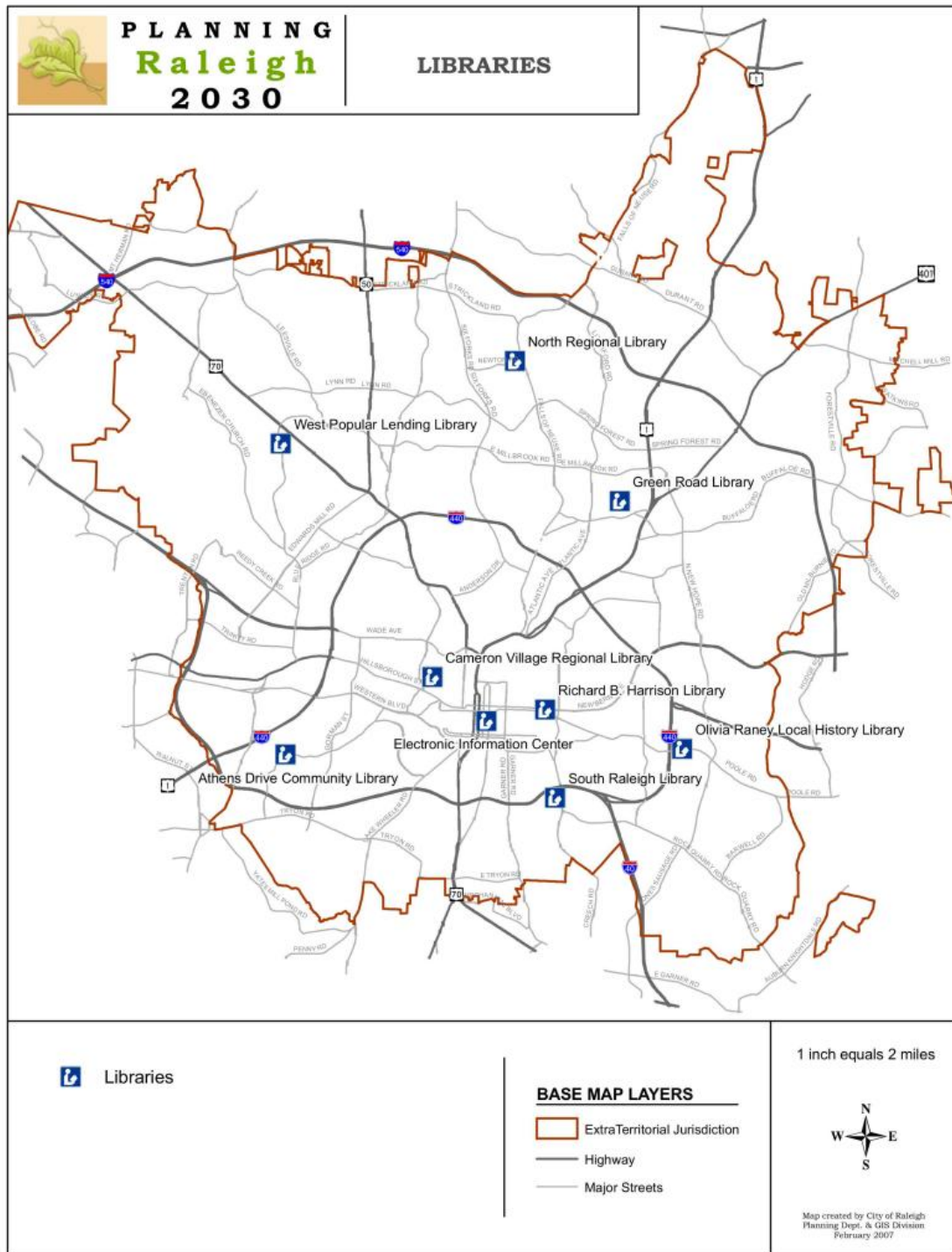
**Table 10.3: Wake County Libraries in the City of Raleigh**

	Library Name	Opened	Renovated	Floor Area (Sq. Ft.)	Address	Zip Code
1	Athens Drive Community Library	1978	2002	10,640	1420 Athens Dr	27606
2	Cameron Village Library	1974	2006	37,000	1930 Clark Ave	27605
3	Duraleigh Road Library	1991	2004	5,800	5800 Duraleigh Rd	27612
4	Electronic InformationCenter	1997	n/a	4,532	334 Fayetteville St	27601
5	Green Road Library	1997	n/a	8,100	4104 Green Rd	27604
6	North Regional Library	1971	2007	30,900	7009 Harps Mill Rd	27615
7	Olivia Raney Local Historic Library	1996	n/a	7,845	4016 Carya Dr	27610
8	Richard B. Harrison Library	1967	1999	9,400	1313 New Bern Ave	27610
9	Southgate Branch Library	1985	2007	5,700	1601-14 Cross Link Rd	27610





Map 10.2 Wake County Public Libraries in the City of Raleigh



### Implications for the Comprehensive Plan

- There is no central, downtown library in the Wake County library system. Such a facility could be an important anchor for downtown and a centerpiece for the library system.

## 10.3 Police Services

The Raleigh Police Department has 728 sworn positions, 123 civilian positions, and has an annual operating budget of \$76.7 million. The department is internationally accredited by the Commission on Accreditation for Law Enforcement Agencies and is doing its part to make Raleigh an even better place to be. The Police Department is dedicated to working in partnership with the community to identify and address conditions that give rise to crime. The City uses CPTED as a crime prevention tool and set of strategies to make the city safe. The Police Department crime prevention specialists outreach to schools, businesses, churches, homeowner association meetings, neighborhood crime watch committees and individual residences to raise awareness and teach people to pay attention to the subtle and usually low-cost changes needed to be safe. The Department conducts security assessments and cost-benefit discussions to help people understand the benefits of environmental analysis. Key actions often include encouraging people to know their neighbors and watch out for them; altering home and street lighting; creating tree canopies; trimming shrubbery; reshaping walk ways; closing garage doors; and locking car doors. Residents have become the eyes and ears of the Police Department. When residents or neighborhood and business organizations identify issues, action is taken. Community improvements are often made through increased police surveillance and community beautification efforts working with other City departments that include Parks and Recreation, Public Works, Solid Waste Services, Community Services, and Inspections.

As the Police department continues its work on strategies to make communities safer, residents are leading the effort to share information about CPTED. The Public Safety Issue team of the City funded Southeast Raleigh Alliance (SERA) will produce a CPTED workbook, *A Tool for Improving Safety*, as follow up to facilitated sessions that identified environmental issues hindering safety efforts. The CPTED workbook will be available to all residents, homeowner associations, community advisory committees, neighborhood groups, and churches.

In recent years, the department has adopted strategies and practices that make its work more effective and more accountable. Administrative Division personnel provide a host of services and functions that support police headquarters, the six police districts and the public. Map 9.3 shows the location of all police stations within the City's boundaries, and corresponding Table 9.4 provides the address, staffing, and building size of these facilities.

Officers assigned to this division are responsible for specific geographic "beats" of the city. These beat areas are the foundation for the department's district policing system. These officers patrol the same area every workday. This allows them to identify problem areas and citizen concerns so that proactive strategies can be developed to resolve them. They know any trouble spots and can often identify repeat offenders who live or visit within their district.

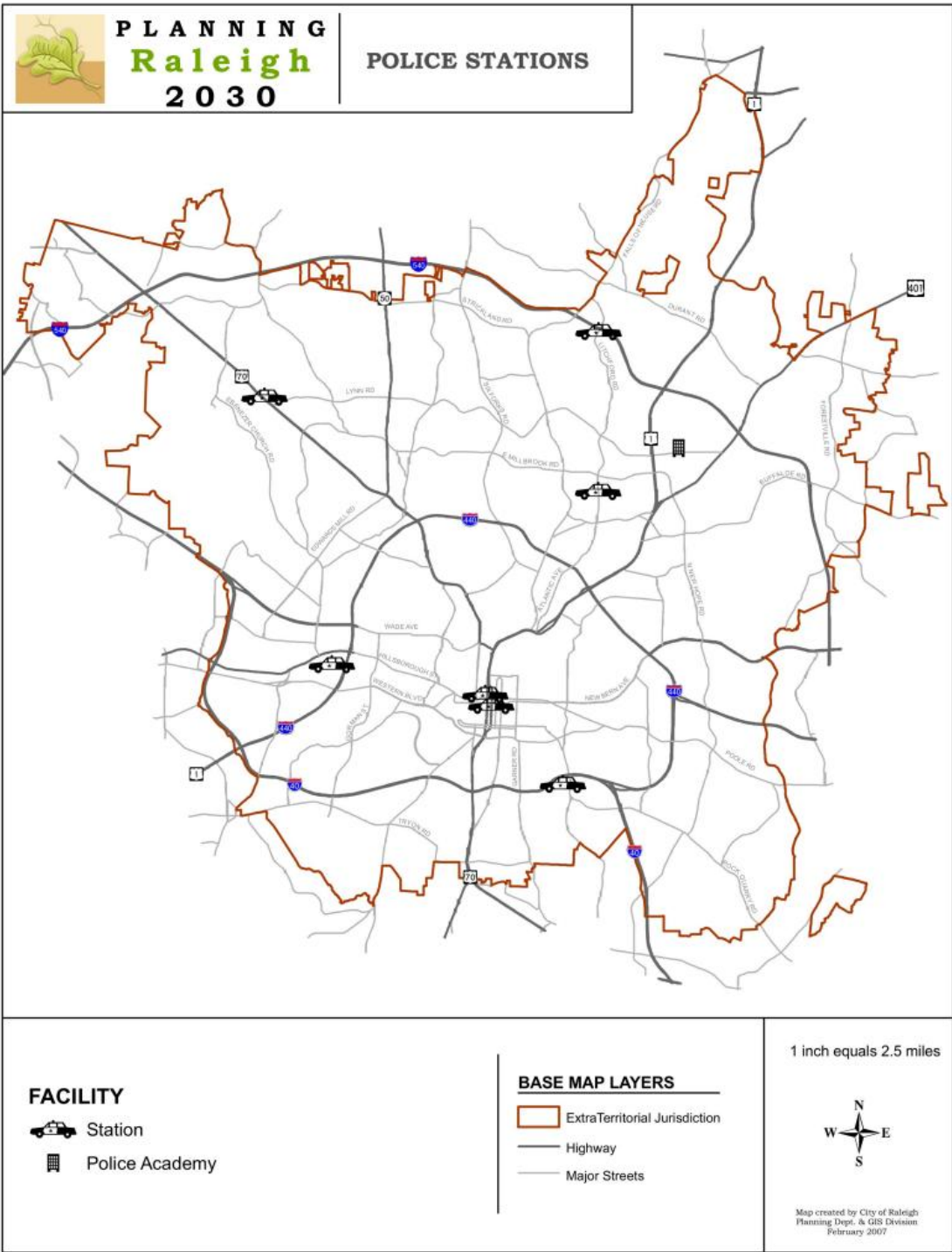
**Table 10.4: Police Stations**

Police District	Station	Number of Staff	Number of Vehicles	Floor Area (SF)	Address	Zip Code
21	21	77	67	11,000	8016 Glenwood Ave	27612



Police District	Station	Number of Staff	Number of Vehicles	Floor Area (SF)	Address	Zip Code
22	22	75	60	11,100	8320-120 Litchford Rd	27615
23	23	80	59	16,165	4501 Atlantic Ave	27604
24	24	108	86	10,594	1601-30 Cross Link Rd	27610
Downtown	Downtown	76	54	2,880	314 W. Jones St.	27603
26	26	104	84	14,400	601-104 Hutton St.	27606

Map 10.3 City of Raleigh Police Stations





### Implications for the Comprehensive Plan

- As the population within the City and within various police districts continues to increase, the city will need to evaluate what additional facilities and stations are needed and how these sites will be acquired. In addition, the Police Department would like to eventually move out of some of the facilities it currently rents into more permanent and appropriate facilities.

## 10.4 Fire Services

The City of Raleigh's Fire Department is ready to respond to emergency calls 24 hours per day, 365 days per year. In addition to fire suppression, the Department also provides first responder EMT-Defibrillator services and child safety seat inspections. The Raleigh Fire Department is part of a regional Urban Search and Rescue Team (USAR) that is trained to respond to technical rescue situations involving structural collapse, confined space, trench and high angle rescue, vehicle extrication, land and water search and rescue. Map 10.4 shows the location of all fire stations within the City's boundaries, and corresponding Table 10.5 shows the street address, staffing and facility size of these facilities.

**Table 10.5: Fire Stations**

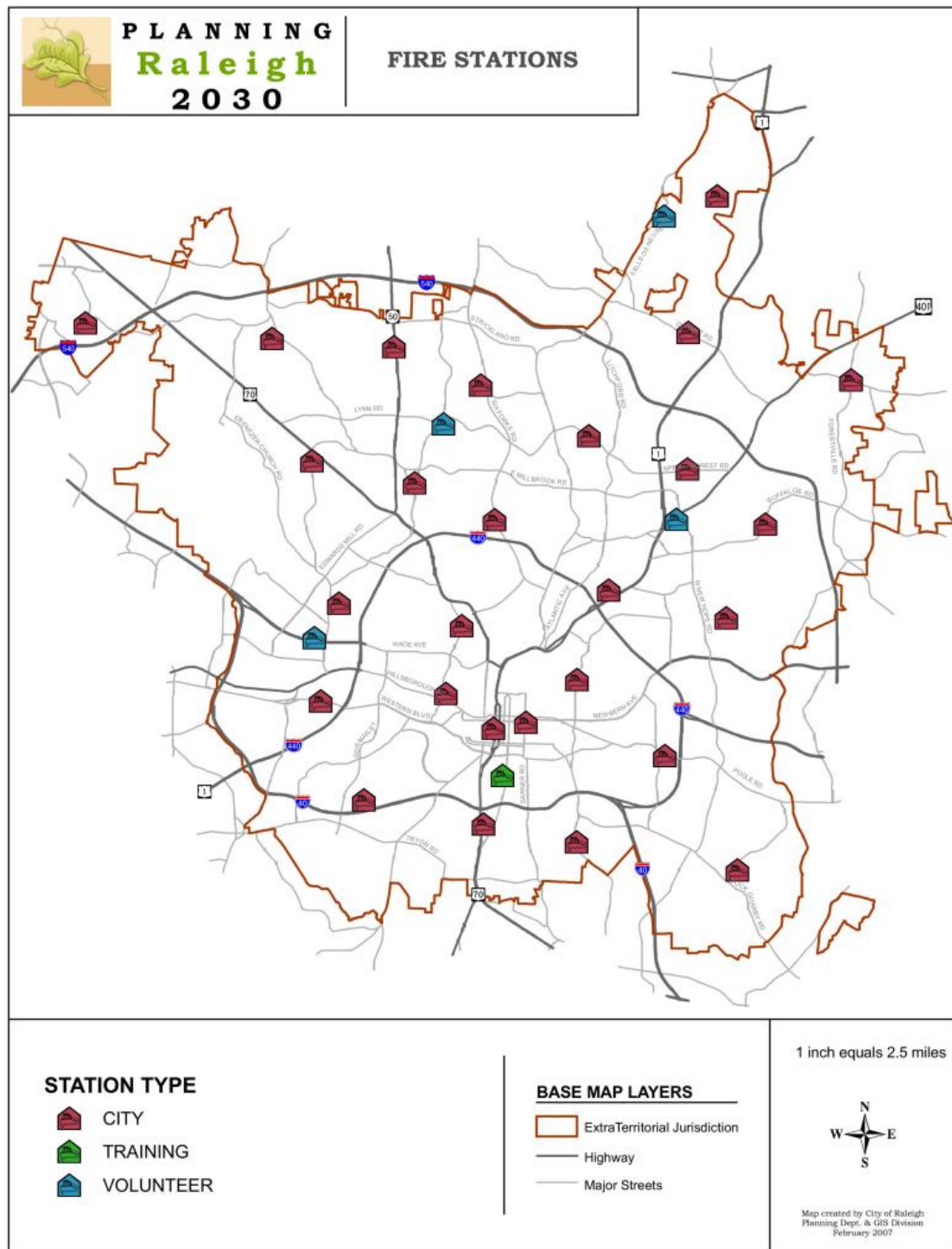
Station #	Number of Staff	Number of Vehicles	Floor Area (SF)	Address	Zip Code
1	46	6	11,220	220 S. Dawson St	27601
2	12	2	5,667	263 Pecan St	27603
3	14	1	3,180	13 S. East St	27601
4	13	1	5,241	121 Northway Court	27615
5	14	1	4,261	300 Oberlin Rd	27605
6	13	1	3,100	2601 Fairview Rd	27608
7	19	2	4,261	2100 Glasscock St	27610
8	21	4	7,224	5001 Western Blvd	27609
9	15	2	3,261	4465 Six Forks Rd	27610
10	13	1	3,261	2711 Sanderford Rd	27604
11	24	2	5,241	2925 Glenridge Rd	27610
12	15	2	3,261	3409 Poole Rd	27610
13	N/A	N/A		N/A	N/A
14	19	2	3,261	4220 LakeBoone Trl	27607
15	15	2	5,241	1815 Spring Forest Rd	27615
16	25	2	5,241	5225 Lead Mine Rd	27612
17	18	2	5,241	4601 Pleasant Valley Rd	27612



Station #	Number of Staff	Number of Vehicles	Floor Area (SF)	Address	Zip Code
18	13	1	5,241	8200 Morgans Way	27615
19	20	2	5,241	4209 Spring Forest Rd	27616
20	25	2	5,241	1721 Trailwood Dr	27606
21	13	1	5,280	2651 Southhall Rd	27604
22	25	2	5,280	9350 Durant Rd	27616
23	24	2	6,852	8312 Pinecrest Rd	27613
24	12	1	5,280	10440 Fossil Creek Ct	27560
25	13	1	5,280	2740 Wakefield Crossing	27614
26	24	2	6,785	929 Barwell Rd	27610
27	13	1	6,785	5916 Buffaloe Rd	27616
28	15	1	9,825	3500 Forestville Rd	27616



Map 10.4



## 10.5 Municipal Buildings

Raleigh's core governmental buildings and operations are listed in Table 10.6. These core municipal buildings and other municipal facilities are shown on Map 10.5 on the subsequent page.

**Table 10.6: Municipal Buildings**

Building	Department(s)	Address
Raleigh Municipal Building	Administration & Multiple Departments	222 W. Hargett Street
Martin Street Office	Community Services, Community Development, and Fire	310 W. Martin Street
One Exchange	City Planning, City Attorney, Inspections, and Public Works	One Exchange Plaza
Convention & Conference Center	Convention & Conference Center	500 Fayetteville Street
Raleigh Parks & Recreation	Parks & Recreation	2401 Wade Avenue
Raleigh Police Headquarters	Police	110 S. McDowell Street
Solid Waste Services	Solid Waste Services	400 W. Peace St.



## Capital Improvement Program

The Capital Improvements Program (CIP) covers a ten year projection of capital improvement needs. Phase 1 encompasses the first five years and addresses both project needs and a financial strategy for this period. Phase 2 covers the second five years with a more general review of anticipated project needs. The CIP is divided into six programmatic categories including Transportation, Public Utilities, Parks & Recreation, Stormwater, Housing and General Public Improvements.

The CIP process is managed by the Administrative Services Department. City departments associated with each program area formulate projects and costs and submit the proposals to the Budget Division of Administrative Services. A GIS map is prepared by each department to identify the location of Phase 1 projects. The Budget Division reviews the submittals and forwards recommendations to the City Manager who reviews the proposals with each department in preparation of making a CIP Program recommendation to City Council. A Public Hearing and City Council deliberation of the proposals precede the adoption of the final CIP Program. A GIS map of authorized Phase 1 projects is included in each programmatic category within the adopted CIP manual.

### Implications for the Comprehensive Plan

- A stronger link between the Capital Improvement Program and the Comprehensive Plan is needed to ensure that public investment in municipal facilities and infrastructure is coordinated with the City's projected future growth and development.

## 10.6 Solid Waste Services

Municipal solid waste (MSW) is defined in North Carolina as any solid waste resulting from the operation of residential, commercial, industrial, governmental or institutional establishments that would normally be collected, processed, and disposed of through a public or private solid waste management service. Municipal solid waste does not include hazardous waste, sludge, industrial waste managed in a solid waste management facility owned and operated by the generator of the waste, or solid waste from mining or agricultural operations.

Raleigh's solid waste stream consists of household refuse destined for landfills; recyclables collected and sorted separately; and yard waste such as leaves and trimmings that are prohibited from landfills. All three are collected curbside within the City limits. Debris generated through construction and demolition is also a significant part of the waste stream, representing nearly 23 percent of waste Countywide. The City serves residential customers, businesses in the central business district, some small businesses located inside residential communities, and City of Raleigh government locations. Private haulers collect commercial and industrial waste. State and private haulers serve North Carolina State University and various State government locations.

In 2005, the City of Raleigh generated over 130,000 tons of solid waste, of which only 11 percent, or about 16,000 tons, was recycled. The City also collected and processed over 32,000 tons of yard waste, which was ground for mulch at the City's yard waste processing facility. Municipal solid waste generated in Wake County, which totaled about 20,000 tons in 2004, is collected at five transfer stations. About 60 percent is disposed at the County's only municipal waste landfill, with the remainder destined for out-of-County and





even out-of-state landfills. The Southwest/Holly Springs (Southern Wake) landfill opened in January, 2008 and the Northern Wake Landfill closed in May of the same year. Trends indicate that in the future the County may eventually rely on privately-owned and operated landfills for municipal waste disposal.

Raleigh and ten other jurisdictions follow the Wake County Solid Waste Management Plan updated and adopted in July 2006. The Plan presents a vision for managing solid waste in Wake County that emphasizes waste diversion and recycling, assesses existing programs, and presents goals and intended actions for achieving this vision over the next ten years (July 1, 2006 to July 1, 2016). One key action item is a goal of 40 percent waste reduction by 2016.

The Plan's priorities include the following focus areas:

- Collection
- Transfer
- Incineration
- Disposal
- Waste reduction
- Recycling and reuse
- Composting and mulching
- Education with the community and through the schools
- Management of special waste
- Prevention of illegal disposal and litter management
- Purchase of recycled materials and products
- Disaster response

### Solid Waste Services

The City of Raleigh Solid Waste Services Department collects waste, recyclables and yard waste. Collections take place within city limits. Table 10.7 explains the City's waste management program.

**Table 10.7 Waste Management Service Program**

Residential Waste Collection	Commercial Waste Collection	Recyclables Collection	Yard Waste Collection	Bulky Waste Collection	Other
Weekly, Curbside	Open market	Weekly, curbside	Leaves vac'd in season, weekly curbside for YW. Drop off for a fee	By appt.; no charge for 4 cy. Bulky 4x/yr.; fee for large amounts of bulky and for appliances	Seven drop-offs for residential small business recyclables. Multi-family complexes have centrally located contrainers for their own use

### Solid Waste Management Facilities

The City works with Wake County to provide convenient opportunities and necessary services and facilities to properly manage waste requiring special handling, including Municipal Solid Waste (MSW), Construction and Demolition debris (C&D), and Landfill Clearing and Inert Debris (LCID), waste tires, and industrial waste, and Household Hazardous Waste (HHW). Table 10.8 describes the landfill type, facility, and location.

**Table 10.8 Solid Waste Management Facilities**

Landfill Type	Facility Operator/Name	Location
MSW	North Wake Sanitary Landfill (closed 5/08)	SR2006, Raleigh
C&D Debris	WakeCountyC&D Landfill (closed)	
C&D Debris	Material Recovery/Brownfield Landfill	SR2553/Brownfield Road
LCID	Buffaloe Landfill	5600 Fayetteville Road
LCID	Colonial Building Co.	Norwood Road/SR 1834
LCID	Neuse Demo Landfill	Wayne Adams Thornton
LCID	Rowland Demo Landfill	3000 Gresham Lake Road
MSW Transfer Station	MMR Wake Transfer Station LLC	9220 Durant Road
MSW Transfer Station	NCSU Transfer Station	630 Motor Pool Road
MSW Transfer Station	City of Raleigh East Wake Transfer Station	820 Corporation Pkwy
C&D Transfer Station	PCM North Raleigh C&D Transfer Station	5509 Thornton Road
Compost	City of Raleigh YW Facility	900 N. New Hope Road
Compost	NCSU Compost Facility	Inwood Road
C&D Processing	D.H.GriffinReclamationCenter	421 Raleigh View Road
HHW Collection Facility	WakeCounty HHW Facility	9004 Deponie Drive
Wood Processing (LCID)	Buffalo Wood Recycling Facility	5525 Wake Academy Drive
Materials Recovery Facility	Sonoco, Recycling, inc. MRF	111 S. Rogers Lane
Materials Recovery/Processing Complex	WM Recycle America	1815 Capital Boulevard

Sources: Wake County Solid Waste Management Plan and Raleigh Solid Waste Services

### New Operational Facilities

The City has outgrown its current operational facilities and all departments, including Solid Waste Services, experience excessive drive times to work sites due to centralization of facilities. Prior studies documented the need to provide state-of-the-art facilities for a network of Remote Operations Facilities. City offices in the Network include Streets, Vehicle Fleet Services, Traffic Engineering, Parks and Recreation Building Maintenance and Solid Waste Services. The City Council approved Network consists of new facilities in northeast of Downtown, North West (Mt. Herman), Wilders Grove, Marsh Creek (Renovation and New



Construction) and a new North East Facility. The facilities will be de-centralized from their current locations to remote nodes located in high growth areas of the city, which will allow for shorter drive times to most work locations. Shorter drive times will result in reduced fossil fuel consumption, reduce green house gases, and allow the City to vacate high-value real estate in downtown Raleigh for other uses.

On February 3, 2009, City Council authorized design development efforts for the new Wilder's Grove Solid Waste Service Center facility. The 20,000 square-foot facility will accommodate over 240 staff and operations personnel, and house Administration, Collection Crews, and Collection Equipment. It will encompass approximately 14 acres, and provide over 300 parking spaces. The facility will provide for new solid waste vehicle wash and fuel facilities and parking for for the solid waste vehicle fleet of over 150 vehicles. The facility is projected to be LEED Silver. Other facilities in the network are included in the Capital Improvement Program and are on hold and dependent on sufficient funding.

Solid Waste Services also is working with the City's IT department to purchase routing software and work order management system. The software will build the Department's capacity to optimize routes, which will reduce the number of trucks needed daily to perform tasks, reduce the number of miles driven daily, and cut fossil fuel consumption and carbon emissions.

### Solid Waste Services Equipment

As the City land mass grows to accommodate a quickly expanding population, Solid Waste Services strives to build its capacity to serve the City. In addition to evaluating the location of its operational facilities, it is regularly evaluating its current equipment inventory and future needs. Table 10.9 provides an inventory of Solid Waste Services' current equipment levels.

**Table 10.9 Solid Waste Services Equipment**

115	Large vehicles
33	Automated refuse collectors
43	Rear loader garbage and yard waste collectors
35	Recycling trucks (compartmentalized for separation)
2	Rollout trucks (for recycling drop offs)
2	Knuckle Boom trucks (for bulky item and appliance pickup)

For more information see the [Wake County Solid Waste Plan, 2006 - 2016](#).

### Implications for the Comprehensive Plan

- Build departmental capacity to be sustainable as it accommodates a growing population and as it implements solid waste reduction goals and management cost-reduction objectives.
- Expand recycling, land reclamation and reuse of waste materials.
- Explore design changes to existing residential developments to facilitate recycling programs.
- Reduce, reuse, and recycle and recover beneficial end products of municipal solid waste stream.
- Expand e-waste reuse and recycling.
- Develop more convenient access to household hazardous waste facilities.
- Monitor technology improvements.

- Develop and implement green building initiatives.
- Locate remote operational facilities to reduce drive times.

## 10.7 Arts and Culture

### Museums

Raleigh is home to North Carolina's museums of art, history and natural sciences. It offers an interactive and thought provoking children's museum, along with the region's largest natural history museum and art museum with the most comprehensive European art collection in the South. Map 10.6 shows all museum locations.

**African American Cultural Complex:** The African American Heritage Preservation Cultural Complex (AACC) originated in 1984, as a hobby, by Dr. and Mrs. E.B. Palmer. It then opened in 1989 as the Black Heritage Park. The park occupies approximately three acres of the wooded land to the rear of the Palmer House at 119 Sunnybrook Road. The AACC currently has three Exhibit Houses located along a natural trail beside a creek, a Mini-Amphitheater, a Bird Sanctuary, Nature Preserve and a Picnic Area, and Botanical Gardens.

The African American Cultural Complex brings awareness to its visitors about the contributions made by African Americans to North Carolina and America through structured educational programs. The complex provides exhibits that display innovations in science, business, politics, medicine, sports and the arts that have been made by members of the African American Community. Exhibits include "Afro American Hall of Fame" and "Women of Note." An outdoor drama, "Amistad Saga: Reflections," is produced annually during the last two weekends of July.

**Art Space:** A non-profit visual art center providing exhibitions and educational programs within an open studio environment. The Artspace building, located at 201 East Davie Street, has always been a center of activity and a community focal point. The 30,000 square foot building was built in 1911 as Raleigh's city livery. At that time Raleigh businesses were located around Capitol Square. Fayetteville Street was the main street of commerce and the City Market area focused on bringing county residents into town to sell produce and goods for markets around the city. The historic building houses 28 artist studios, three exhibition galleries, one education room and a three-story lobby with a winding staircase.

Artspace officially opened its doors and invited the public to experience the art making process in November of 1986. At that time, the City Market area suffered from problems relating to urban decay and was in need of revitalization. In many ways Artspace and its founders were pioneers in downtown Raleigh, convincing arts organizations and artists to join them in creating this new visual art center and bringing visitors to a then blighted area.

**Contemporary Art Museum (CAM):** CAM was established in 1983 in Raleigh, N.C. as the City Gallery of Contemporary Art, changing its name to CAM in 1996. A non-collecting museum serving the Triangle area and beyond, CAM has presented important exhibitions including both national and international artists. CAM merged with the NC State University College of Design in 2006 to provide unique opportunities for study and the development of groundbreaking interpretative tools. The vision for CAM has broadened to include the exploration of the intersections of art and science, technology and design, illustrating the relevance of contemporary art and design to daily life.



The offices of CAM are currently housed within the College of Design and CAM's programs continue, utilizing spaces throughout the triangle community. CAM will eventually move to a new facility at 409 West Martin Street in Raleigh's newly-developing warehouse district. The new facility will provide CAM with the exhibition, education and administrative spaces necessary to fulfill its programmatic mission. The Contemporary Art Foundation, created in early 2006, is now the sole owner of the West Martin Street property with responsibility for raising the additional capital required to transform the site and create and maintain a museum home for CAM.

**Marbles Kids Museum:** A hands-on interactive museum that inspires children to pretend, use their imagination, be curious, try out their creativity and simply have fun. Marbles is also home to a 3D IMAX Theatre.

**NC Museum of Art:** The North Carolina Museum of Art houses the art collections of the State of North Carolina, which includes a permanent collection of works spanning 5,000 years of artistic heritage from ancient Egyptian artifacts to the latest in contemporary art. In 1947 when the North Carolina General Assembly appropriated one million dollars in state funds for the purchase of works of art it made North Carolina the first state in the nation to use public funds to buy a collection of art.

The Museum opened in April 1956 in a renovated state office building in downtown Raleigh. On April 5, 1983, the Museum opened in its present facility, located at 2110 Blue Ridge Road. The facility includes the innovative Museum Park, which includes 164 acres of woodlands, open areas and streams filled with trails and monumental works of environmental art. Raleigh's Capital Area Greenway traverses the site and connects inside-the-beltline residents via an award winning pedestrian bridge.

**NC Museum of History:** This museum focuses on presenting the history of North Carolina through exhibits of North Carolina history, regional history, and educational programs. It is a museum filled with objects that represent and tell the stories of the people of North Carolina.

In the early 1880s Samuel A'Court Ashe, publisher of the Raleigh News and Observer, began a campaign to encourage saving North Carolina's history so that others, natives and visitors, could learn about the ancestry of North Carolina. Advocates of his campaign began traveling throughout North Carolina collecting pieces of the state's history and listening to stories associated with each item. In 1998 a gallery of history was set up in the state museum, which is now called the Museum of Natural Sciences. As the collection of historic material grew, so did the need for space to display it. In 1939, what was now known as the Hall of History moved to the newly constructed Education Building on the corner of Edenton and Salisbury streets. On July 1, 1965 the Hall of History became known as the North Carolina Museum of History. The Museum of History, after several additional relocations, finally settled into its *own* building at Five East Edenton Street in August 1992. The new museum has a research library, a variety of classroom spaces, and a large and well-equipped, 315-seat auditorium. Large gallery spaces total 55,000 square feet, nearly four times the exhibit area available in the old building. Design shops, storage areas for over 250,000 items, and conservation labs are now all under one roof.

**NC Museum of Natural Sciences:** The North Carolina State Museum of Natural Sciences was founded in 1879 by the N.C. General Assembly to illustrate the agricultural and other resources, as well as the natural history of the State. Today as it was in 1879, the Museum's mission is to educate the people of North Carolina. The museum was transferred from the N.C. Department of Agriculture to the N.C. Department of Environment and Natural Resources (DENR) in 1993. DENR also oversees operation of the N.C. Zoo, the three state aquaria, the state parks system, and other divisions involved with natural resources and the focus shifted during from a multipurpose institution displaying agricultural and natural resources to a natural sciences museum concentrating on collecting and preserving the state's biological diversity, promoting environmental awareness, and relating the natural sciences to everyday life.



With the support of top DENR officials, the Museum staff and the Friends of the Museum successfully appealed to the North Carolina General Assembly in 1994 to appropriate construction funds for a new museum building. Still located in downtown Raleigh between the State Capitol and the Legislative Building at 11 W. Jones St., the new Museum opened in April 2000, allowing visitors to experience for the first time in one place the richness and beauty of North Carolina's natural heritage. It houses four floors of exhibits, live animals, and science explorations. Other features of the museum include a two story waterfall, the world's only *Acrocanthosaurus* dinosaur, and an Arthropod Zoo.

**Raleigh City Museum:** In 1991 advocates held a public forum in the City Council Chambers to hear what the citizens of Raleigh had to say about creating a city museum. All wanted Raleigh's heritage as a municipality and as a hometown preserved. Thus the advocates for a Raleigh City Museum set into motion the steps for creating a local history museum. One of the greatest aspects of the Raleigh City Museum is its efforts to preserve the artifacts of the city. The museum collects, preserves and researches artifacts that provide clues to the city's development and daily life.

The Raleigh City Museum is the only home for artifacts of the city and its people. It is an educational center using exhibits, lectures and programs to help residents and visitors learn about the diverse aspects of the city's people, places and events.

The museum is a private, non-profit organization that opened in 1993. It is located in the Historic 1874 Brigs Hardware Building in the heart of Downtown Raleigh. The building that houses the Raleigh City Museum is an exhibit in and of itself. The Brigs Hardware Building was home to Thomas H. Briggs and James Dodd's hardware business, which experienced great success and led to their desire to increase the size of their building. By 1874, the new building had been completed and was noted as the tallest building in east Carolina and Raleigh's first skyscraper.

**Other Museums:** Raleigh is home to a variety of smaller and special-interest museums, including the Joel Lane Museum House, NC Sports Hall of Fame, Pope House Museum, and the Ray Price Harley-Davidson Motorcycle Drag Racing Museum. It is also home to two historic parks: Mordecai Historic Park (House Museum, City of Raleigh operated); and Oak View Historic Park (House Museum, Agricultural displays and interpretation, Wake County operated).

## Arts Centers

**Pullen Arts Center:** Pullen Arts Center, located within Pullen Park, offers specialty studio programs in pottery, jewelry-making, painting, printmaking, weaving, and glass arts. The extensive studios and equipment, and the well-trained core of instructors make these studios some of the most desired in the area. Special events and gallery exhibits throughout the year give participants the opportunity to learn more about a particular artist, instructor, or arts studio area.

**Sertoma Arts Center:** Sertoma Arts Center, located overlooking popular Shelley Lake in north Raleigh, offers a well-equipped black and white darkroom studio, making it possible for adults to experience the art of photography. Programs in music, dance, and fitness allow participants to improve their health and vitality while engaged in the arts. Programs such as these are in addition to offerings in painting, drawing, and pottery.



## Theaters

**Theater in the Park:** Originally chartered in 1947, Theater in the Park started out as The Children's Theatre of Raleigh, Inc. During the early 70s, its name was changed to Theatre in the Park in order to reflect its expanded programming, location and new "home" in The National Guard Armory building located in Pullen Park. In 2004, the building was renamed as "The Ira David Wood III Pullen Park Theatre," to reflect the decades of work done by Executive and Artistic Director, Ira David Wood III.

Theatre in the Park (TIP) is located at the northern end of Pullen Park in Raleigh. It is internationally acclaimed for its outstanding theatrical achievements, and is second only to the celebrated Louisville Actor's Theatre in original works premiered, producing over 40 original plays during the last two decades (two of which moved to off-Broadway). The theatre is in-door, air conditioned and has a seating capacity of approximately 250. Year-round programming includes no less than four mainstage productions, classes, workshops and independent productions.

**Raleigh Little Theater:** Started in 1936, Raleigh Little Theater (RLT) is now one of the oldest continuously operating community theatres in the country. The theater offers entertainment, education and community programs year-round. RTL showcases 11 productions each year, with more than 150 performances. No other theater in North Carolina produces as many shows. RLT serves more than 40,000 people with shows each season.

The historic Raleigh Little Theatre facility includes three on-site venues: the 298-seat Cante V. Sutton Theatre built in 1939; the 1,700-seat outdoor Louise "Scottie" Stephenson Amphitheatre, also built in 1939; and the 150-seat Gaddy-Goodwin Teaching Theatre built in 1990.

**Burning Coal Theater:** A relative newcomer on the Raleigh theater scene, the Burning Coal Theater moved into its new home in the renovated Murphy School Auditorium on Polk Street in January, 2008. Burning Coal emphasizes works that are felt and experienced, unlike more traditional plays where audiences are most often asked to observe without participating. Using the best local, national and international artists available, the Burning Coal Theater produces re-examinations of classic, modern and contemporary plays that address issues and themes affecting the community.

## Entertainment Facilities

Raleigh has much to offer when it comes to entertainment, from the Carolina Ballet and North Carolina Symphony at the Progress Energy Center for the Performing Arts to Professional Hockey at the RBC Sports and Entertainment Arena. Map 9.6 shows the locations of the City's primary entertainment facilities.

**Raleigh Convention Center:** The new Raleigh Convention Center, set to open in the summer of 2008, is under construction as of the writing of this report. The Convention Center offers inviting, high-quality gathering places for Raleigh's citizens and visitors with the appropriate amenities and services to handle a variety of meeting types. The 500,000-square-foot facility can accommodate groups of 50 to 5,000, and has the capacity to host a number of different trade shows, conventions and conferences.

**RBC Center:** The RBC Center, opened in 1999, and is home to the NHL's Carolina Hurricanes and the N.C. State men's basketball team. The 19,700-seat venue, is a multi-purpose facility with meeting rooms, training rooms, permanent novelty stands, club seating with private lounges, 69 luxury suites and three party suites. There are a number of events hosted at the Center ranging from concerts, motorsports, and sporting events, to circuses, ice shows, conventions, meetings, and more. It has been designed to accommodate functions ranging from small gatherings to large-scale trade shows and concerts, it is well suited for accommodating a variety of events ranging in size and scope.

**Alltel Pavilion @ Walnut Creek:** An Amphitheatre often used for open air concerts. Indoor reception seating for 500 is offered. The pavilion is located on 212 acres, and can accommodate 20,000 guests. It offers theatre-style seating for 7,000 in an open-air pavilion and relaxed festival-style accommodations for 13,000 on a gently sloping lawn.

**Dorton Arena:** Hosts a wide array of amateur and professional sporting events. Year-round amateur sporting events at Dorton Arena range from Special Olympics Opening Ceremonies, boxing, youth wrestling, cheerleading, colorguard band, and karate/martial arts competitions to collegiate basketball. It has also been the hub for events such as the 1997 World Figure Skating Champions Tour. The building itself is a pioneering work of modernist architecture featuring a radical parabolic roof design. Completed in 1952, it was designed by Matthew Nowicki, a Polish architect who served as the head of NCSU's School of Design.

**NC State Fairgrounds:** From the State Fair that comes once a year to the flea market held each weekend, the North Carolina State Fairgrounds provides a home to various events, some of which attract more than 10,000 people. The North Carolina State Fairgrounds consists of 344 acres of land, and multi-purpose building space. The State of North Carolina is currently updating the Master Plan for the Fairgrounds.



## 10.8 Colleges and Universities

Raleigh is home to eight North Carolina universities and colleges, which makes it rich in educational opportunities. Among these educational institutions are North Carolina State University, a major research institution, as well as two private women's North Carolina colleges, two historically significant schools that were originally founded as institutions of higher learning for African Americans. With a combined student population approaching 40,000, these institutions have a major impact on the demographic makeup of the City. In addition to the standard four year institutions, Raleigh is the primary home to Wake Technical Community College, which provides two year associate degrees, continuing education classes, coursework that can be transferred for college credit, and an array of diplomas and certificates. Map 10.7 shows the locations of the colleges and universities within the City and corresponding Table 10.10 shows the enrollment, number of degree programs, and address of these institutions. The important role these institutions play in the local economy is discussed in greater detail in Chapter 4.

In 2007, Campbell University announced the purchase of the Hillsborough Place office building at the corner of Hillsborough and Dawson Streets in downtown Raleigh, which following renovation will serve as the new home for the university's Norman Adrian Wiggins School of Law.

**Table 10.10 Colleges and Universities**

Name	Founded	Number of Students	Number of Degree Programs	Address
North Carolina State University	1887	30,000	300	2205 Hillsborough Street
Meredith College	1891	2,100	50	3800 Hillsborough Street
Peace College	1857	700	15	15 East Peace Street
Saint Augustine College	1867	1,600	32	1315 Oakwood Avenue
Shaw University	1865	2,700	47	118 East South Street
Wake Technical Community College	1958	57,000	multiple	9101 Fayetteville Road

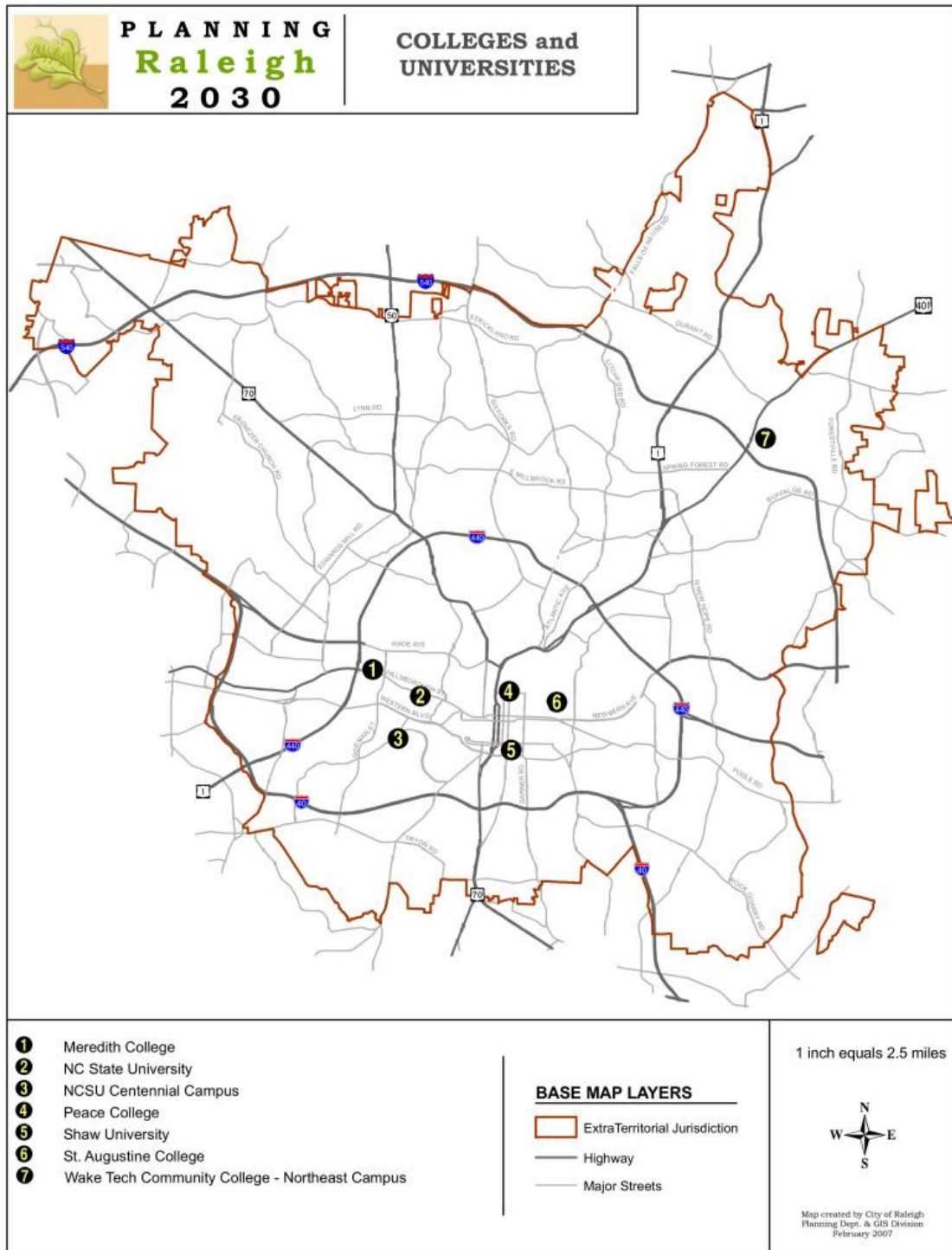
### Implications for the Comprehensive Plan

- Colleges and universities are major employers and contributors to the local economy.
- The large student population in Raleigh is a major source of the City's youth and dynamism, but also creates significant demand for off-campus housing that specifically addresses the particular needs of college and university students.





Map 10.7 Colleges and Universities located in the City of Raleigh



## 10.9 Hospitals

Wake County EMS is a County-operated, third service provider of emergency medical services. Wake County EMS is the largest of seven agencies comprising the Wake County EMS System, and the sole public-sector provider. Wake County EMS operates 15 Type III advanced life support ambulances 24 hours a day, 7 days a week, and one Type III advanced life support ambulance 12 hours a day, 7 days a week, from 10 discrete stations and 4 stations shared with local fire departments. Map 9.8 shows the locations of all hospitals within the City.

Three other facilities provide medical services to the City of Raleigh:

**WakeMed:** In 1955, the Wake County Board of Commissioners asked voters to authorize a bond to supply funds for construction of a general hospital system that would provide health care services for all Wake County citizens. Today, WakeMed is a private, not-for-profit, multi-facility health system with its headquarters located in Raleigh. WakeMed currently operates two full-service acute care hospitals, one of which is a regional highly specialized extended care center in Raleigh and the other a community hospital in Cary, NC; the two hospitals provide skilled nursing care and outpatient services; and three facilities provide outpatient rehab services. More than 1,000 physicians form the Medical Staff at the 752-bed hospital system. Over the years and through all the growth and expansion, WakeMed has continued to maintain its mission of treating everyone, regardless of their ability to pay.

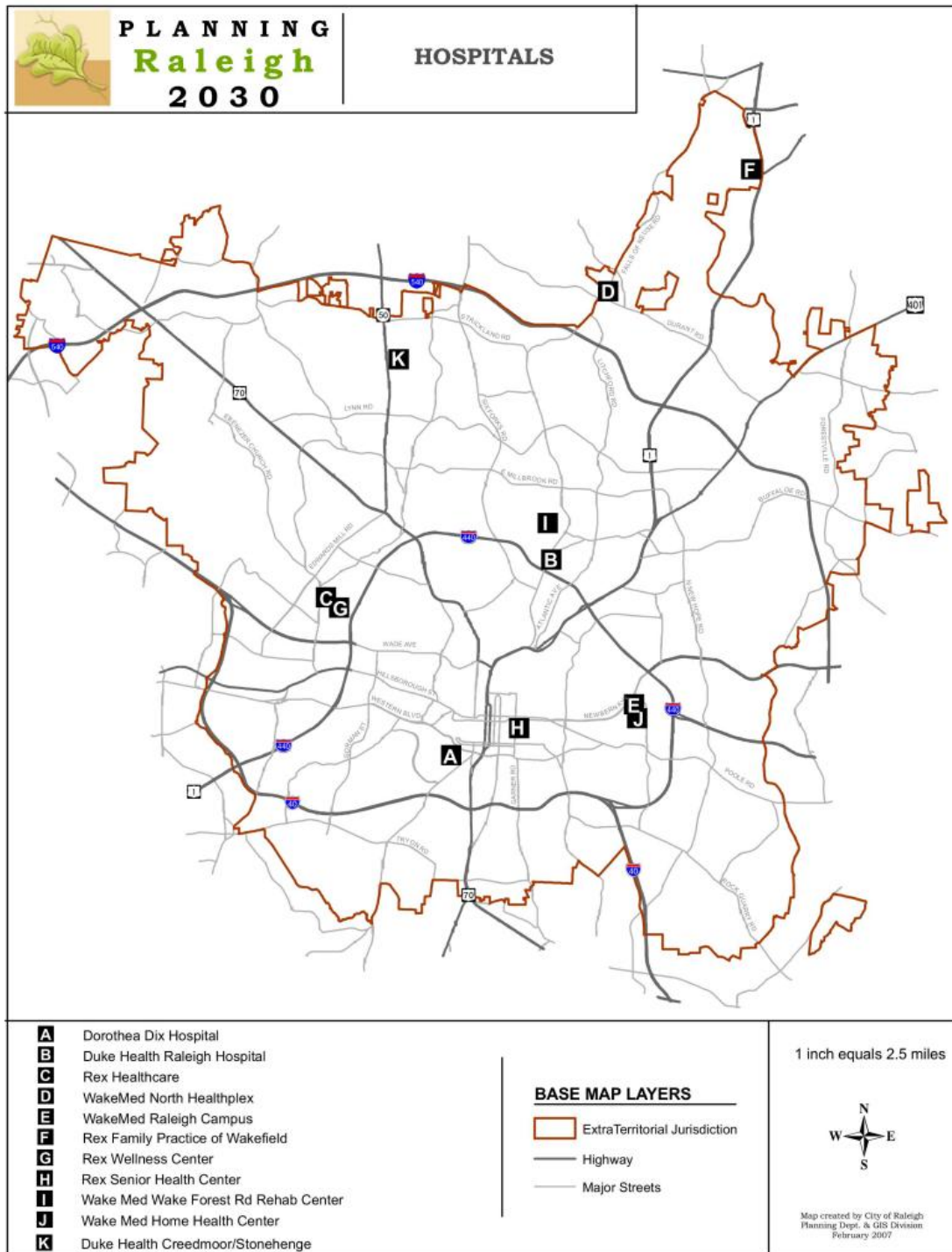
The WakeMed Raleigh Campus is Wake County's only certified Primary Stroke Center, Neuro Intensive Care Unit, Pediatric Inpatient Unit, Pediatric Intensive Care Unit, Level IV Intensive Care Unit, and Level I Trauma Center. The multi-service facility has 515 acute beds and a 24-hour adult emergency department that treats more than 142,000 patients each year, WakeMed Raleigh Campus is also home to North Carolina's only 24-hour freestanding Children's Emergency Department, which serves over 40,000 children each year.

**Rex Healthcare:** Rex Healthcare is a member of the UNC Health Care System, and is a not-for-profit integrated health care system that provides a wide range of healthcare services. It is based in Raleigh, and was founded in 1894. The main campus encompasses a 665-bed acute care hospital, three wellness centers, two skilled nursing facilities focusing on rehabilitation and long-term nursing care, freestanding outpatient diagnostic, urgent care centers and a state of the art surgery center. They also have a mobile fleet including blood, mammography, heart, and vascular services used to provide access to healthcare throughout Wake County and beyond.

**Duke Health Regional Hospital:** Duke Raleigh Hospital is part of the area's largest health care system. Their affiliation with Duke University Health System provides its patients with access to the most advanced technology and leading edge medicine available. Previously known as Raleigh Community Hospital, the hospital served Wake County residents as a trusted health care resource for nearly 30 years. The hospital opened its doors as the Duke Raleigh Hospital in 1998. It contains 186 private and semi-private beds, and is part of the Duke University Health System. Services include a Cancer Center, a Cardiovascular Center that delivers a full range of services, from prevention, diagnosis and treatment to rehab and support. They have an Orthopaedic Center offering comprehensive orthopedic and rehabilitation services. A Pain Clinic that offers a variety of pain management options to help patients function more comfortably and enjoy their lives more fully, and a Diabetes Center that provides self-management education and assistance to diabetics, regardless of type or stage in the disease process.



Map 10.8 Hospitals in the City of Raleigh



## 10.10 Community Centers

The community centers in the Raleigh Parks and Recreation Department offer diverse leisure and educational opportunities to serve the needs of citizens of all ages and abilities. In an effort to maximize participation, a full complement of leisure services are available with a goal of maximizing all available time and space. Program categories offered within each facility include arts, athletics, nature, educational, teens, adult and youth. All staffed sites host youth camps, community events and festivals and collaborate with other agencies to offer specialized programs. Facilities are also available for public rentals such as reunions, parties, retreats, meetings and picnics. Map 10.9 shows the locations of the City's community centers, and corresponding Table 10.11 provides the address of these facilities.

**Table 10.11 Community and Neighborhood Centers**

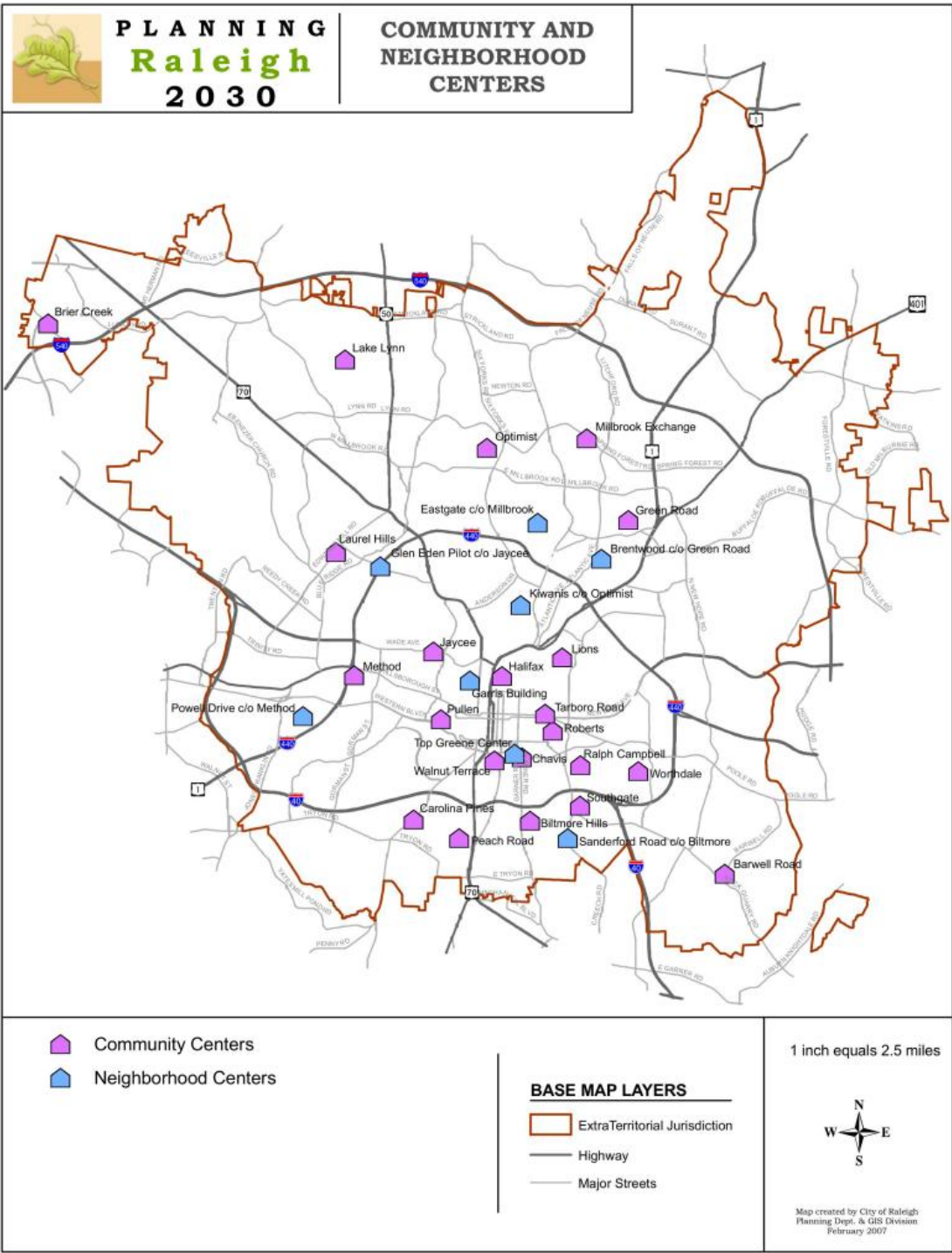
	Community Center	Staffed	Number of Multi-Purpose Rooms	Gym	Address	Zip Code
1	Barwell Road	Y	1	2	3935 Barwell Road	27610
2	Biltmore Hills	Y	2	1	2615 Fitzgerald Drive	27610
3	Brier Creek	Y	3	1	10810 Globe Road	27617
4	Carolina Pines	Y	2	1	2305 Lake Wheeler Rd	27603
5	Chavis	Y	3	1	505 Martin Luther King Jr.	27601
6	Green Road	Y	3	1	4201 Green Road	27604
7	Halifax	Y	2	1	1015 Halifax Street	27604
8	Jaycee	Y	2	1	2404 Wade Avenue	27607
9	LakeLynn	Y	1	1	7921 Ray Road	27613
10	LaurelHills	Y	1	2	3808 Edwards Mill Rd	27612
11	Lions	Y	2	1	516 Dennis Avenue	27604
12	Method	Y	2	1	514 Method Road	27607
13	Millbrook Exchange	Y	2	1	1905 Spring Forest Rd	27615
14	Optimist	Y	1	1	5900 Whitter Drive	27609
15	Peach Road	Y	3	0	911 Ileagnes Road	27603
16	Pullen	Y	5	0	408 Ashe Avenue	27606
17	Ralph Campbell	Y	2	0	756 Lunar Drive	27610
18	Roberts	Y	3	1	1300 E. Martin Street	27610
18	Southgate	Y	2	0	1801 Proctor Street	27610
20	Tarboro Road	Y	2	1	121 N. Tarboro Road	27610
21	Walnut Terrace	Y	3	0	111 W. Lee Street	27601



	Community Center	Staffed	Number of Multi-Purpose Rooms	Gym	Address	Zip Code
22	Worthdale	Y	3	1	1001 Cooper Road	27610
23	Brentwood c/o Green Road	N	Seats 50 - 60	N	3315 Vinson Court	27604
24	Eastgate c/o Millbrook	N	Seats 50 - 60	N	4200 Quail Hollow Drive	27609
25	Garris Building c/o Jaycee	N	Seats 50 - 60	N	820 Clay Street	27605
26	Glen Eden Pilot c/o Jaycee	N	Seats 50 - 60	N	1500 Glen Eden Drive	27612
27	"Top" Greene Center c/o Chavis	N	Seats 50 - 60	N	401 Martin Luther King	27601
28	Kiwanis c/o Optimist	N	Seats 50 - 60	N	2525 Noble Road	27608
29	Powell Drive c/o Method	N	Seats 50 - 60	N	740 Powell Drive	27606
30	Sanderford Road c/o Biltmore	N	Seats 50 - 60	N	2623 Sanderford Road	27610



Map 10.9 Community and Neighborhood Centers





## 10.11 Conclusion: Key Issues and Potential Strategies

The information provided above presents a synopsis of the resources and services available to the citizens and visitors of the City of Raleigh, and as the city's population continues to increase, so does the need to expand these resources and services. The City of Raleigh will need to increase its efforts to maintain a quality government services including police protection, fire stations, and community centers. In addition to Raleigh determining a strategy for supplying for the growing needs of the city's citizens, steps must be taken by Wake County as well. Much of the information presented above shows that the City of Raleigh and Wake County share in the responsibility of providing for the citizens of Raleigh, which means that there needs to be a partnership in determining how to maintain high quality schools, libraries, and health care services.

Sustaining and in some cases improving the services provided to Raleigh citizens will require recognizing the key issues that exist with the current level of service offered.

### Key Issues

#### Key Issue 10.1

The demand for new schools based on the rapid growth in school-aged population is outpacing the County's ability to plan for and build schools to meet this growing demand.

#### Key Issue 10.2

Developer's fees do not contribute to the budget for constructing new schools and libraries, as only individual municipalities in the County assess fees, while the County does not.

#### Key Issue 10.3

As the population within the City and within various police districts continues to increase, the city will need to evaluate what additional facilities and stations are needed and how these sites will be acquired.

#### Key Issue 10.4

There is no mechanism in place to measure levels of service to determine the capacity of police, fire protection, and emergency services to meet community needs.

**Key Issue 10.5**

As the population continues to increase the quantity and quality of entertainment and leisure resources will need to be continuously evaluated to ensure that demand is being met, an issue compounded by the fact that some City resources are currently dedicated to providing missing resources for Wake County schools.

**Key Issue 10.6**

There is no clear link between the Comprehensive Plan and the City's Capital Improvement Program.

**Potential Strategies****Potential Strategy 10.1**

All municipalities served by the Wake County School System should have updated Future Land Use projections that can be used to project growth in the school-aged population.

**Potential Strategy 10.2**

All municipalities including the County should explore alternatives to the property tax to fund the capital costs of school construction and new infrastructure to accommodate growth.

**Potential Strategy 10.3**

Standards should be set for evaluating service needs in relation to population.

**Potential Strategy 10.4**

As determinations are made on the resources needed to meet the service needs of the citizenry, steps should be taken to move forward with acquiring the needed land and monetary resources.

**Potential Strategy 10.5**

Citizens should be surveyed regularly to determine if entertainment and leisure desires are being met.



### **Potential Strategy 10.6**

The Comprehensive Plan should be used to identify and prioritize capital projects and coordinate these with the City's growth projections.



## Historic Resources





## II Historic Resources

### II.1 Introduction

The City of Raleigh has a unique heritage. It was created in 1792 as the planned site for the capital city of North Carolina. Through more than two centuries of growth, Raleigh's capital city status has shaped its evolution. As a seat of biennial legislative government, growth was slow during the city's first one hundred fifty years. Raleigh's only business for decades was state government and the services needed to support it. Raleigh came late to industrial development, and then only on a small scale. Having escaped destruction by General William Sherman during the closing days of the Civil War, the city still enjoys the visual aspect of its original plan, parks, and built environment. It is therefore remarkably blessed with cultural resources that illuminate the economic eras, styles of fashion, and ways of life that characterize the path traveled from Joel Lane's fields of 1792 to today's Research Triangle.

### II.2 The City's Development History

#### Prologue

Raleigh possesses a continuous sense of its evolving character that is visually documented in its monuments and squares, streets and buildings, and hills and streams. It has representative architectural resources from virtually every era of its development, beginning with Joel Lane's 1767 residence. In the overview of the city's development that follows, every development trend discussed can be illustrated by extant historic resources.

The overview has been adapted from Helen P. Ross's Raleigh Comprehensive Architectural Survey Final Report, 1992, and M. Ruth Little's 1945-65 Raleigh Comprehensive Architectural Survey Update report, August 2006. Footnote references have been removed for readability, but the original manuscripts are available for inspection.

After the City of Raleigh was surveyed and planned by William Christmas in 1792, it remained the size of one square mile until 1857 when the city limits were extended approximately three blocks on all sides. Two railroad lines complemented each other by 1855, the Raleigh and Gaston Railroad and the North Carolina Railroad. The 1872 Birdseye View of the City of Raleigh shows the arrangement of the community shortly after the Civil War. The commercial section emerged along Fayetteville Street, just south of the State Capitol. Foundries, factories, and warehouses were located near the tracks on the north and west sides of town. The remaining spaces inside the city limits were occupied with private residences, boarding houses, and three hotels.

#### The Early Infrastructure Era: 1875 – 1900

In the final quarter of the nineteenth century, Raleigh's public and private sector leaders became determined to improve the cityscape to their advantage. Proximity to surface transportation spelled success for merchants in the form of shops and warehouses, stables and hotels. Entrepreneurs developed an electrical generation plant. City alderman established streetcar lines and community leaders enlarged churches. Educational institutions were established. Growth occurred in all directions as employment opportunities appeared. Businessmen endeavored to make Raleigh a prosperous city before the turn of the twentieth century.

A critical element to Raleigh's future growth was the provision of a stable, potable water supply. From its founding until the municipal water works went into operation in 1887, Raleigh depended on springs, wells and cisterns for its water supply. The water works complex (1810 Fayetteville Street) fed filtered water to a

2,500,000 gallon holding reservoir. A fourteen-inch main carried water to the city and elevated storage was provided by a water tower at 115 West Morgan Street. By the early 1900s, the water supply system had spread to cover the entire city, the N.C. College of Agriculture and Mechanic Arts, and the State Fair Grounds, then located at the present Raleigh Little Theatre and Rose Garden site.

Another amenity that was lauded by Raleigh's public and private sectors was transportation. The electrified streetcar in the capital city did not materialize until 1891, but for five years before this, mule-drawn vehicles ran short routes in the square mile. By 1910, the Raleigh routes consisted of a downtown, a ten block circulator and three radial routes to the north, east, and west. Within the city limits main arteries such as North Blount, East and West Hargett, Fayetteville, and Hillsborough streets had tracks embedded in them. The longest distance trips were west, along Hillsborough to the N.C. College of Agriculture and Mechanic Arts campus and north, along Glenwood Avenue to Bloomsbury Park. Other prime beneficiaries of the cheap electric power were the six textile mills that settled in the city during the 1890s.

In addition to being North Carolina's capital, Raleigh in the late nineteenth century had emerged as an educational center. In 1877, the N.C. Agriculture Experiment Station was founded. The Experiment Station was joined with the North Carolina College of Agriculture and Mechanic Arts when the college was established March 7, 1887 by the General Assembly. In the southeast and southwest sections of the city, African-American neighborhoods such as Idlewild, College Park, Third and Fourth wards were experiencing tremendous expansion. The educational institutions begun following the Civil War such as Shaw University, St. Augustine's College, and the Deaf and Dumb Asylum for Negroes attracted increasing numbers of students, staff, and faculty to the area.

### **The Town to City Era: 1900 – 1920**

Between 1900 and the advent of World War I, the composition of Raleigh's urban and suburban sections fluctuated as city leaders sought to mold the image of the capital city of North Carolina. The construction of hospitals, schools, churches, and residences added diversity to the urban fabric. Textile production and railroad traffic were expanding in Raleigh. In 1903 alone 65 buildings were under construction. Professionals such as educators, attorneys, physicians, entrepreneurs were enticed to the city as growth in commerce, health care and education increased. New tall office buildings of seven and ten stories began to tower above the nineteenth century two- and three-story stores downtown. Raleigh's residential growth was rapid as the population rose in 1920 to 24,418 persons, an increase of 68 percent from 13,643 in 1900. This rise in Raleigh's population was accompanied by the development of a new industry, the distribution and storage of raw materials and finished products.

The maturation of a storage and distribution section occurred within close proximity to the Norfolk-Southern and Raleigh and Gaston railroad tracks in southwest Raleigh. Along Davie, Martin, West and Harrington streets, sand, gravel, and lumber lots intermingled with factories, warehouses and boarding houses. Another railroad-related area grew up northwest of the city center also on the Norfolk-Southern Railway line. The area of West Jones Street between Glenwood Avenue and North Harrington Street grew to become a transportation and electrical convergence point.

The downtown business section also experienced growth, which was most dramatic in the form of tall office buildings. From 1874 to 1907 the tallest structures besides the 85-foot-high water tower had been the Briggs Hardware Building and church spires. Although tall office buildings were highly visible in a city where two and three story structures were the norm, they were also very costly. Only large and ambitious companies – often banks – could afford to erect structures of seven or more stories. The skyscraper epitomized the business community's pursuit of a powerful corporate symbol that led ultimately to the conquest of the capital city's skyline.



People moved to the city to find employment and housing facilities. During the first decade of the twentieth century, the apartment house did not exist in Raleigh as a building type. Raleigh's first true apartment building is the 1917 Capital Apartments at 127 New Bern Avenue. Residential growth outward intensified to the west, as the Hillsborough Street streetcar line combined with the growth of the North Carolina College of Agriculture and Mechanic Arts to encourage residential development in "West Raleigh," which was until 1929 considered outside Raleigh proper. A major chapter in Raleigh's early years of the twentieth century was the creation of four planned suburban neighborhoods, Boylan Heights, Cameron Park, Glenwood, and South Park. All four of these suburbs were platted between 1906 and 1910 on lands situated to the north, west, southwest, and southeast of the 1907 expanded city limits. From the outset, these neighborhoods had water and sewer services, electric power, and access to street car transportation, which were vital amenities to the new city dwellers. Farther to the north and east, around St. Augustine's College, two other black suburbs in addition to South Park were created in the early 1910s. Battery Heights and College Park attracted skilled workers and a rising middle class sector.

### **The Roaring 20s Boom Era: 1920 – 1929**

Soon after the end of World War I, Raleigh experienced increased residential and commercial development in almost boom proportions. Building upon city leaders' pre-World War I successes to attract commerce and industry, growth was unabated in the 1920s. Expansion of Raleigh's distribution functions continued in the warehouse district, the CP&L Company Electric Plant and Norfolk-Southern Freight Depot along West Jones Street and northward on Wake Forest Road. Government and educational institutions also expanded. State College erected several new buildings, and in 1925 Meredith College moved to a rural site three miles west of the Capitol where the college developed a campus. By 1925, there were 57 manufacturing enterprises, thirteen public schools, six buildings with more than four stories, and 5,210 registered automobiles. In addition, a massive civic improvements campaign was undertaken to upgrade amenities such as 25 miles of paved roads, an expanded water system, and continued electrification of outlying areas.

The majority of new homeowners were employed in Raleigh's mushrooming central business district where downtown office space doubled between 1920 and 1930. Besides numerous smaller structures, three eight-to-ten-story tall commercial buildings were erected between 1923 and 1924. The new auto-related commercial building types now began to develop near the central business district and at outlying intersections. The final grouping of commercial buildings erected during the 1920s construction boom is distribution and storage structures. In an effort to lure new and diversified manufacturing establishments, the city fathers continued to advance the idea of becoming a distribution center. The Chamber of Commerce, among other interested parties, successfully encouraged enterprises to locate their storage and distribution facilities in the capital.

One of the most dramatic manifestations of 1920s growth in Raleigh was residential development. Inside the new (1920) city boundaries, previously established suburbs were intensely built up, while expansion took place on vacant lands that were targeted for a second wave of subdivisions. An example of the infill pattern is especially noticeable in Raleigh's south and east black-occupied neighborhoods. The old boundaries remained unchanged in this part of the city, yet many of the streets were paved and water and sewer lines were installed. Subdivisions illustrating the expansive type of residential development are situated along the streetcar routes in north and west Raleigh: multiple subdivisions including Hayes Barton, Roanoke Park, and Georgetown flourishing in the north around the Five Points intersection, while College Crest, Wilmont, and Fairmont were established in the west. During the most prolific stage of development, between 1922 and 1924, nearly 700 houses were erected.

Another form of residential growth came with an increase in the number of apartment buildings during the 1920s. By 1925 there were eleven such structures strategically located near busy intersections and in outlying suburban areas. The apartment houses varied in size and height, ranging from the 1923 Bailey Apartments on East Edenton Street to the Wilmont Apartments at 3200 Hillsborough Street.

## **The Depression and Recovery Era: 1930 – 1941**

In January 1929 the nation seemed to be prosperous, but before the year ended economic disaster had begun with the stock market crash in October, followed by the Great Depression. In the decade between 1930 and 1941, the building economy plummeted, then gradually improved from extremely low levels of construction to an upward swing at the decade's end. Nationally, between 1928 and 1933, the construction of residential property declined by 95 percent and expenditures on home repairs fell by 90 percent. In Raleigh, between 1930 and 1936, the worst years of the Depression, an average of 125 permits were issued each year. Recovery came between 1937 through 1941, when an average of 241 permits per year were issued. The Recovery Era buildings represent a tremendous proliferation of construction, and this resulted in rapid filling-in of suburban neighborhoods and inner-city areas as well as continued outward expansion of the city's suburbs. During the preceding twenty years the capital city had grown both in size (reflected in city limit extensions in 1920, 1929, and 1941) and population (almost doubling from 24,418 people in 1920 to 46,897 citizens in 1940). Raleigh was now the fifth largest city in North Carolina.

The dominant residential form of the Recovery Era are houses that reflect economical use of materials and labor, recently termed "minimal traditional" dwellings. These houses are characterized by their reduced architectural detailing, smaller scale and mass, and the facade treatment of modestly projecting entryways, gables and chimneys. They appear with regularity all over the Raleigh of this period. New apartment houses were also erected. Six were built between 1934 and 1939, on or near Hillsborough Street as the owners of the large Boylan and Cameron estates sold off parcels of land.

Near the end of the decade, the city's first federally-funded public housing projects, Chavis Heights – for blacks – and Halifax Court Apartments – for whites – were under construction. Both complexes have recently been replaced by the Raleigh Housing Authority through the federal HOPE VI program. Besides the public housing units, other federally-funded building projects of the Recovery Era are located downtown. Adjacent to Capitol Square, the 1938 Education Building and the 1940 Justice Building are the most elaborate Works Progress Administration-assisted structures. The largest cluster of Recovery Era government buildings is located on Caswell Square.

There was also a resurgence in construction in the commercial sector. The importance of Raleigh as a distributing center was verified when, in 1939, the heads of 30 percent of newly relocated families were engaged in retail and wholesale distribution. Only 20 percent were employed in government agencies. The established distribution- and storage sites, the warehouse district and the West Jones Street area, slowly lost their monopoly to Hillsborough Street, in particular the area between N.C. State College and Meredith College. By locating both inside and beyond the old city limits, the manufacturing and service industries had begun in the 1930s to take advantage of congestion-free downtown areas and the absence of zoning and building restrictions.

During this time the water supply was hard pressed to meet the demands of increased suburban and industrial development. After the Depression, plans were prepared for new facilities at the old Walnut Creek treatment plant site. The federal Public Works Administration-sponsored E. B. Bain Water Treatment Plant was completed in 1940 and had the capacity to treat eight million gallons of water a day.





## The post-WWII Suburban Era: 1945 – 1965

After World War II, the city's dominant image as a governmental and educational center began to diversify with the migration of industry to North Carolina and development of technological research facilities by state government. As the state capital, it exemplified the state's progressive spirit of the time, expressed in the creation of the premier industrial park in North Carolina, Research Triangle Park (RTP) in 1959, the presidency of Dr. William Friday at the University of North Carolina, and the educational reforms of Governor Terry Sanford. During this postwar era Raleigh was totally transformed. Population doubled, the city limit area nearly tripled, miles of paved streets increased by 250 percent, the number of industries tripled, the number of wholesale distributors increased by 224 percent, and more than 7,500 houses were built in the city limits. By far the majority of the approximately 18,000 buildings constructed during this twenty year period were in the unannexed suburbs. Table 11.1 documents the City's growth and development between 1945 and 1965.

**Table 11.1: City of Raleigh Growth and Development, 1945 – 1965**

	Population	Sq. Miles	Paved Streets	Industry
1945	53,661 (est.)	12.5	70 mi.	46 industries 98 wholesale distributorships
1950	65,679	12.5	100 mi. 15,000 homes	113 industries 160 wholesale distributorships
1955		12.5	150 mi. 20,000 homes	159 industries
1960	93,931	33.646	178 mi. 22,500 homes	144 industries 220 wholesale distributors
1965	103,000 (est.)	34.1	346.09	217 industries

*Source: Raleigh City Directories and Chamber of Commerce brochures*

But the primary story told by construction in Raleigh from the mid 1940s to the mid 1960s is that of suburban housing. After the end of World War II in 1945, one of the most pressing problems of peacetime was to meet the housing shortage. The federal government responded by underwriting a sweeping residential construction campaign through the creation of the FHA and VA mortgage programs. The building of homes in Raleigh in the immediate postwar years occurred in neighborhoods inside and beyond the city limits. Pockets of FHA and VA housing that varied in size, form and materials were constructed in neighborhoods such as Oakdale, Mordecai, Georgetown, Anderson Heights, and Budleigh.

From 1945 – 1965, there were 75 postwar subdivisions, 27 of them in North Raleigh, where developers found land with pleasant hilly topography, access to city water and sewer, and good transportation along the major thoroughfares of Glenwood Avenue, Six Forks Road, Wake Forest Road, and Capital Boulevard (US 1). Raleigh native Willie York's major development of the era, Cameron Village, contained both housing, retail and office buildings. The 1955 – 1965 decade saw North Raleigh surge far ahead of East Raleigh due to topography, which made it easier to run water and sewer lines, and proximity to Research Triangle Park. Construction of the northern Beltline reflects this growth.



The earliest upper middle class subdivisions, where buyers purchased a lot and contracted with a builder to construct a custom dwelling, are Longview Gardens along New Bern Avenue in East Raleigh, platted before the war but not very active until the late 1940s; Country Club Hills along Glenwood Avenue (1947); and Budleigh, platted before the war. The elegant plan of Longview Gardens, with traffic circles, a shopping center, a school, and eventually a golf course, was drawn by Richmond landscape architect Charles Gillette and has no equal in Raleigh subdivisions of the era. Tract subdivisions, where builders constructed speculative houses, outnumber custom subdivisions in Raleigh. Some of the single family dwellings in Cameron Village are tract houses, while others were constructed for the lot owners by builders using sets of stock plans that were modified by the buyers. The largest pre-1965 subdivision in Raleigh is North Hills Estates, begun in 1960 by Ed Richards, who also built the adjacent North Hills Shopping Center (now demolished). When completed in the 1960s it included 325 homes, a clubhouse, a park, a school, and a shopping center. Postwar suburban housing was strictly segregated. Prior to the late 1950s there were no postwar subdivisions planned for Raleigh's African American families. The first planned postwar African American subdivision was Rochester Heights, laid out in 1957 near Garner Road adjacent to the planned Beltline.

Paralleling thriving residential development in the suburban ring during the 1950s and 1960s was an intense focus on commercial building. In postwar Raleigh, the largest embodiment of changing civic and social life – from urban to suburban – is Cameron Village, the first planned mixed-use development in Raleigh and the largest shopping center in the Southeast U.S. for many years. Beyond Cameron Village, modern commercial architecture first appeared in Raleigh's suburbs in insurance firm offices such as the 1956 Occidental Life Insurance Company building at 1001 Wade Avenue. These low and mid-rise International Style offices sat on well-landscaped campuses along the main thoroughfares of north and west Raleigh. Banks introduced modern architecture to the Central Business District. The earliest International Style steel and glass downtown office towers are a group of four banks. The first is the 1960 First Federal Bank Building on South Salisbury Street. Three distinguished Modernist banks, Wachovia, North Carolina National Bank, and BB&T, opened their doors in 1965 along Fayetteville Street. Raleigh's hotel and restaurant scene largely remained confined downtown. Only two pre-1965 motels survive in Raleigh—the Velvet Cloak Inn, 1505 Hillsborough Street and Johnny's Motor Lodge, 1625 Capital Boulevard.

In 1951 Raleigh's first post-war industrial park, the York Industrial Center (now Stonybrook Center), was established on a 641-acre tract flanking both sides of U.S. 1 just outside the north city limits. Initial tenant Westinghouse Corporation purchased 100 acres and built a meter plant in 1954 at 2728 Yonkers Road that provided 2,500 jobs. In 1955 the Raleigh Farmers Market was built in the park at Hodges Street. The number of new wholesale distributorships built in Raleigh during the postwar era is even greater than the number of new plants. A group of well-preserved distributorships stand along Capital Boulevard and adjacent streets, including Noland Plumbing, 1117 Capital Boulevard.

## **Raleigh's Legacy of Progressive Mid-century Architecture**

Raleigh's legacy of progressive mid-century architecture was created by two groups of architects—those who set up practice at the end of World War II, and those who came to Raleigh to teach at the new School of Design established in 1948 at North Carolina State University. Practicing professionals such as William H. Deitrick, F. Carter Williams, John Holloway, Albert Haskins, and Leif Valand were already designing modern buildings in Raleigh by the time Henry Kamphoefner and his innovative and influential group of designers, including George Matsumoto, Edward W. Waugh, James W. Fitzgibbon, and Eduardo Catalano, made their mark on Raleigh's architecture. These architectural professors manifested their concepts in a series of residences designed for themselves, for other faculty members, or for a small group of clients interested in new ideas in architecture. Several of these architects were influenced by the patriarch of modern American architecture, Frank Lloyd Wright, while a few, including George Matsumoto, as well as non-faculty architects G. Milton Small and to a lesser degree, William H. Deitrick, were affected by the International Style, whose advocates were Europeans Walter Gropius and Ludwig Mies van der Rohe.



While Dean Kamphoefner is generally credited with introducing modern architecture to Raleigh, it is worth remembering that the city's first Modernist school, the Crosby-Garfield School of 1940, was designed by W. H. Deitrick. The first Modernist house was designed by Leif Valand for developer Willie York at 1904 Craig Street in 1946. Postwar Modernist architecture is found throughout Raleigh in single and multi-family housing, schools, religious buildings, offices, industrial plants, and civic buildings. Because single family houses form the bulk of the era's buildings, there are more Modernist houses than any other building type. The internationally famous Dorton Arena and internationally known architects such as G. Milton Small and George Matsumoto inspired prominent families in Raleigh to try out modern residential design.

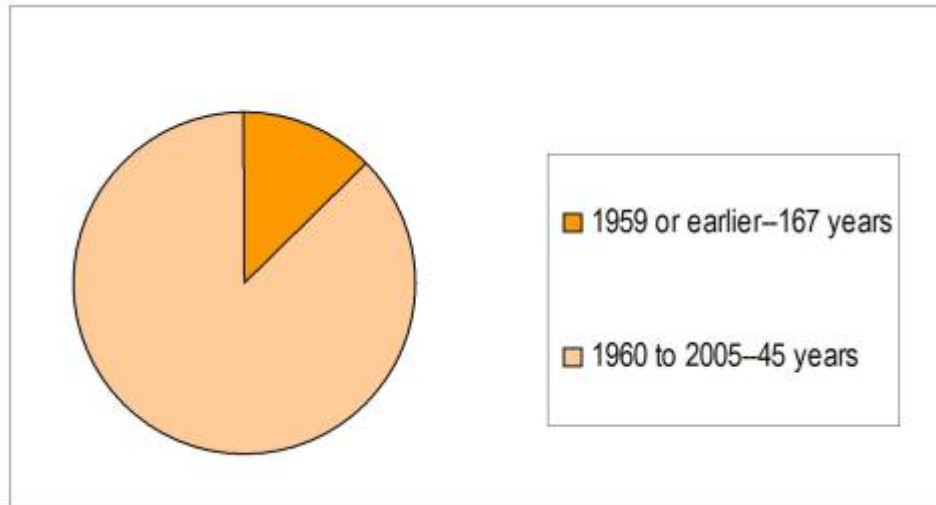
During the first five years of the postwar era in Raleigh, Modernist houses followed Frank Lloyd Wright's Usonian houses of the 1930s and 1940s, featuring a private street side, extensive glass opening up to a terrace with a rear view, carports, and natural materials including brick, stone, and wood. Beginning in 1951 the more formal European Modernism of Mies van der Rohe came to Raleigh in the house design of G. Milton Small for his own residence at 310 Lake Boone Trail. Matsumoto's own house in 1954 at 821 Runnymede Road is Miesian design as well. Matsumoto moved to California in 1961, and no known Contemporary houses in the Miesian mode were recorded during the 1955-1965 decade. Raleigh taste preferred the softer modernism of the Wright Usonian mode, but in larger and more luxurious versions.

## Contemporary Development

The biggest event in Raleigh in 1965 was the April announcement by IBM Corporation, makers of communication systems, to locate in downtown Raleigh. By the summer, 200,000 square feet of temporary plant and lab space were leased at nine sites in the area. By 1966 their permanent plant in RTP was completed. Employment grew from 75 in June 1965 to 8,500 in 1982. With quality schools, good City services and low property taxes, Raleigh became a residential destination for many of the newcomers taking jobs in RTP. During the remainder of the twentieth century, North Raleigh and its neighboring smaller city of Cary absorbed some three-quarters of the families of RTP employees. The desirability of the southern suburban lifestyle, which was particularly attractive to Baby Boomers relocated from the old, cold, and crowded metropolitan areas of the Northeast, was the main driver of residential development in Raleigh and the region. With about two-thirds of all housing units in Raleigh having been built since 1980, this post-IBM building boom has created the bulk of the urban form that the City exhibits today.

## Epilogue

Raleigh was a small town for much of its period of historic significance; its tremendous growth occurred during the last 50 years, and predominantly during the last 25. As illustrated in Figure 11.1, only 12 percent of housing dates from before 1960, primarily inside the beltline. Some are located on the north side of the Beltline, but those mostly date from 1945-1965. It is likely the ratio of 12 percent (or even less) applies to commercial and institutional property as well. It is important to recognize scarcity of our city's historic resources, and their finite nature.

**Figure 11.1 Age of Occupied Dwelling Units 1792-2005**

Source: US Census 2005 American Community Survey

### Implications for the Comprehensive Plan

- The suburban residential pattern of the city's urban form is deeply ingrained in its historical development pattern and Raleigh's urban core is immediately surrounded by single-family homes. Raleigh's core is only marginally more densely developed than its surrounding suburban neighborhoods. Infill densification in the downtown and elsewhere must be addressed by the Comprehensive Plan related to conserving neighborhood character while still allowing compatible growth and development to occur.
- Expansion of the commercial core of the downtown essentially ceased by 1941, when the City's population was about 47,000. In subsequent decades, a significant amount of this building stock was demolished to make way for parking lots and structures, with only modest additions to the supply occurring on redevelopment sites. With a current population in excess of 370,000, Raleigh still has the downtown form of a much smaller town, albeit now with taller buildings.
- Unlike many older cities, Raleigh does not have a stock of mill buildings or other commercial structures that lend themselves to residential reuse. Such buildings that exist, like the Raleigh Cotton Mill, Caraleigh Mills, and Falls River Manufacturing Company, have already been converted to multi-family residential or adapted for office, commercial or other uses, such as Pilot Mill and Pine State Creamery.
- Raleigh's industrial building stock consists more predominately of low-rise warehousing and distribution buildings, such as are found in the National Register-listed Depot District. In an urban setting, such buildings are typically considered woefully underbuilt from a density perspective, yet their unique character helps create some of Raleigh's more interesting streetscapes. As the downtown expands and redevelops, there will be increasing tension between the forces of preservation and redevelopment in areas such as the Depot District.
- Raleigh's collection of mid-century modern structures is unique in the region and a physical remnant of the progressive legacy of the NCSU School of Design. However, many prime examples have been lost and still others have little or no protection from neglect and/or demolition.



## 11.3 The City's Historic Preservation Program

### Preservation Role Players

Table 11.2 offers an introductory context for the place of the city's historic preservation program among the many role players in the historic preservation arena.

**Table 11.2: Geographic and Sector Hierarchy for Historic Preservation**

	National	State (NC)	Local (Raleigh)
<b>Public Sector</b>	<ul style="list-style-type: none"> <li>• National Park Service (National Register of Historic Places)</li> <li>• Advisory Council for Hist. Pres.</li> </ul>	<ul style="list-style-type: none"> <li>• State Historic Preservation Office</li> </ul>	<ul style="list-style-type: none"> <li>• City of Raleigh departments and Raleigh Historic Districts Commission (Landmarks and Overlay Districts);</li> <li>• Raleigh Heritage Trail</li> <li>• Wake County Historic Preservation Commission</li> </ul>
<b>Non-profit Sector</b>	<ul style="list-style-type: none"> <li>• National Trust for Historic Preservation</li> </ul>	<ul style="list-style-type: none"> <li>• Preservation North Carolina</li> </ul>	<ul style="list-style-type: none"> <li>• Capital Area Preservation;</li> <li>• Society for Preservation of Historic Oakwood;</li> <li>• Boylan Heights Association;</li> <li>• Wake County Historical Society;</li> <li>• Many others that focus on a single site or more narrow mission</li> </ul>
<b>Private Sector</b>			<ul style="list-style-type: none"> <li>• Local developers; Property owners</li> </ul>

*Source: City of Raleigh*

### Development of the City's Historic Preservation Program

The Raleigh City Council has supported historic preservation activities in the city through an appointed citizen commission since 1961—five years before the passage of the National Historic Preservation Act. By 1967, the City obtained local legislation from the North Carolina General Assembly that allowed it broader historic preservation powers. Among these powers was the right “to hold, manage, preserve, restore, improve, and operate [historic properties].” This legislation was central to the success of the commission's first major preservation initiative: securing the future of the threatened Mordecai House. At the commission's recommendation it was acquired by the city in June 1967 and turned over to the commission to develop and supervise as a historic park. In April 1972 it was opened to the public.

In order to manage volunteer docents and acquire the original Mordecai family furnishings and artifacts for the restored house, the commission formed Mordecai Square Historical Society, Inc. [now Capital Area Preservation, Inc. (CAP)] in March 1972. Management of the park was eventually transferred from the commission to CAP, and CAP began playing a broader historic preservation advocacy role. Mordecai Historic Park is now managed by the City of Raleigh Parks and Recreation Department. CAP is contracted by Wake County to provide staff support services to the Wake County Historic Preservation Commission. Since taking on this broader Wake County program focus, CAP has been minimally active in Raleigh preservation advocacy.

The city's first historic sites were designated by City Council in 1969. State government reorganization in 1973 brought about a reorganization of the Historic Sites Commission into the Raleigh Historic Properties and Districts Commission. At about this time a dedicated planning department staff position evolved to

support the historic preservation program, complementing the administrative staff position employed by the commission. Later organizational changes have led to the current commission identity of the Raleigh Historic Districts Commission (RHDC).

Survey, identification, and designation have been hallmarks of the program. The initial local historic site designations in 1969 were recognitions of the obvious. Nascent preservation planning began with the first local historic overlay districts. Oakwood was the first local district in Raleigh, established in 1975. Two more districts, Blount Street and Capital Square, were added the next year. These designations were quickly followed by the first comprehensive architectural survey of the city, published in 1978, which evaluated areas of the city through its 1929 development. National Register listings began to be pursued based upon the availability of this information.

In January 1988, the city of Raleigh was designated a Certified Local Government, allowing the city to participate directly in the federal preservation program. This designation provided greater access to federal funding to assist survey and National Register of Historic Places listing activities. Listings in the city accelerated as the RHDC focused on National Register nominations that would bring state and federal rehabilitation tax credit eligibility to more residential and commercial property owners in the city.

The initial comprehensive survey has seen two major updates in roughly 15 year intervals. It was greatly expanded between 1988 and 1992. This effort included the pioneering African American Studies Project that combined oral history and architectural survey to more fully identify and document Raleigh's eight traditionally black communities. The survey also took note of the city's national role in the Modern architectural movement through the NC State School of Design. In 2007, the city's comprehensive architectural survey was further updated with a study that evaluated the city's post-war growth period between 1945-1965.

The first historic preservation element of Raleigh's Comprehensive Plan was completed in 1991 under the guidance of the RHDC, when its mission statement was adopted: "To serve as City Council's official historic preservation advisory body to identify, preserve, protect, and promote Raleigh's historic resources."

### Implications for the Comprehensive Plan

- While there are a number of non-profits in the city and county that have support for a particular historic site as their mission (e.g., Joel Lane House, Yates Mill), CAP is the only non-profit with preservation advocacy as its primary mission. CAP now has a contract with Wake County to provide staff support services to the Wake County Historic Preservation Commission. Since taking on the Wake County contract, CAP's focus has been countywide and it has been minimally active in Raleigh preservation advocacy. While the RHDC has a long history and its early efforts were advocacy-oriented, in today's environment its advocacy role as a city appointed commission is limited.

## 11.4 Identification of Historic Resources

Different programs for identification and designation of historic resources are administered by the State Historic Preservation Office in partnership with the National Park Service, and by the City of Raleigh.

The *National Register of Historic Places* is the nation's official list of buildings, structures, objects, sites, and districts worthy of preservation for their significance in American history, architecture, archaeology, and culture. Though the National Register is a federal program, nominations are submitted by the states through state historic preservation offices. The listing of a property in the National Register places no obligation or





restriction on a private owner using private resources to maintain or alter the property. Over the years, various federal incentives have been introduced to assist private preservation initiatives. A private owner of a National Register property becomes obligated to follow federal preservation standards only if federal funding or licensing is used in work on the property, or if the owner seeks and receives a special benefit that derives from National Register designation, such as a rehabilitation tax credit.

**National Historic Landmarks** are nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage of the United States. Today, fewer than 2,500 historic places bear this national distinction.

The **Raleigh Historic Landmark and Historic Overlay District** designations should not be confused with National Register listing. These designations are made by a local governing board (in Raleigh's case, the City Council) on the recommendation of a local historic preservation commission. This program of local designations is an option available to local governments under North Carolina enabling legislation (G.S. 160A-400). Table 11.3 shows which local or state/federal programs may be used to designate historic resources.

**Table 11.3: Historic Designation Programs**

Federal/State		Local (Raleigh)	
<b>Buildings, structures, objects, sites (individual)</b>	<ul style="list-style-type: none"> <li>• National Historic Landmarks</li> <li>• National Register of Historic Places</li> </ul>	•	Raleigh Historic Landmark
<b>Districts</b>	<ul style="list-style-type: none"> <li>• National Historic Landmarks</li> <li>• National Register of Historic Places</li> </ul>	<ul style="list-style-type: none"> <li>• Historic Overlay District</li> <li>• Neighborhood Conservation Overlay District</li> </ul>	

## Existing National Designated Resources

### *National Historic Landmarks*

There are three National Historic Landmarks in Raleigh, as shown on Map 11.1:

- State Capitol (1840, Union Square): one of the Nation's most intact examples of a Greek Revival public building.
- Christ Episcopal Church (1854, 120 E. Edenton St; Union Square): the oldest example of the early Gothic Revival style in the South, and a major commission for Richard Upjohn, architect of Trinity Church in New York and founder of the American Institute of Architects.
- Josephus Daniels House (1920, 1520 Caswell St.): Residence of nationally prominent journalist and statesman Daniels from 1920 until his death in 1948; his service as Secretary of the Navy from 1913 to 1921 embraced the years of World War I, and he was also Ambassador to Mexico from 1933 to 1941.

### *National Register-listed Buildings, Objects, Structures, Sites*

There are approximately 81 buildings, objects, structures, or sites presently listed in the National Register in Raleigh. All are buildings. Included in this number are the three National Historic Landmarks listed above. Map 11.1 shows the locations of the National Register-listed buildings.

### *National Register-listed Historic Districts*

There are presently 24 National Register Historic Districts in Raleigh. The largest in terms of acreage is the Crabtree Creek Recreational Demonstration Area Historic District (Umstead Park). The largest in terms of number of resources is the West Raleigh Historic District. Map 11.2 shows the locations of the National Register-listed historic districts.

Map 11.3 illustrates how teardowns of residential properties are affecting designated National Register historic districts relative to the entire city. This erodes the architectural heritage of the city and affects the integrity of these neighborhoods. Impacts will also be felt in eligible historic districts, with the potential that they might lose their eligibility.

## Existing Locally-Designated Resources

### *Raleigh Historic Landmarks*

The city has a remarkable roster of 130 locally-designated historic landmarks that provide representative examples of virtually every economic era, building type, and architectural style that has characterized the city's development. Prominent examples include residential buildings like Mordecai House, Montfort Hall, John T. and Mary Turner House, Capital Apartments, and Matsumoto House; commercial/industrial structures such as Yates Mill, Seaboard Coast Line Railroad Building, Briggs Hardware Building, and Raleigh Little Theatre/Amphitheater/Rose Garden; institutional buildings include Peace College Main Building, Estey Hall, Needham B. Broughton High School, and J. S. Dorton Arena. Map 11.4 shows the locations of locally-designated historic landmarks.

### *Historic Overlay Districts*

Historic Overlay Districts establish a design review process to preserve the special character of historically significant areas. There are presently five historic overlay districts in Raleigh: Oakwood was designated first in 1975. Blount Street and Capitol Square quickly followed in 1976. Boylan Heights was added in 1984. Moore Square is the most recent district, designated in 1992, more than 15 years ago. Map 11.5 shows the City's historic overlay districts.

Boylan Heights and Oakwood are primarily residential in character and in use. Blount Street is residential in character, but its use has been primarily institutional since the early 1970s when the area was acquired for the State Government Center and the buildings adaptively used for state offices. Capitol Square is institutional in character, and Moore Square is predominantly commercial.

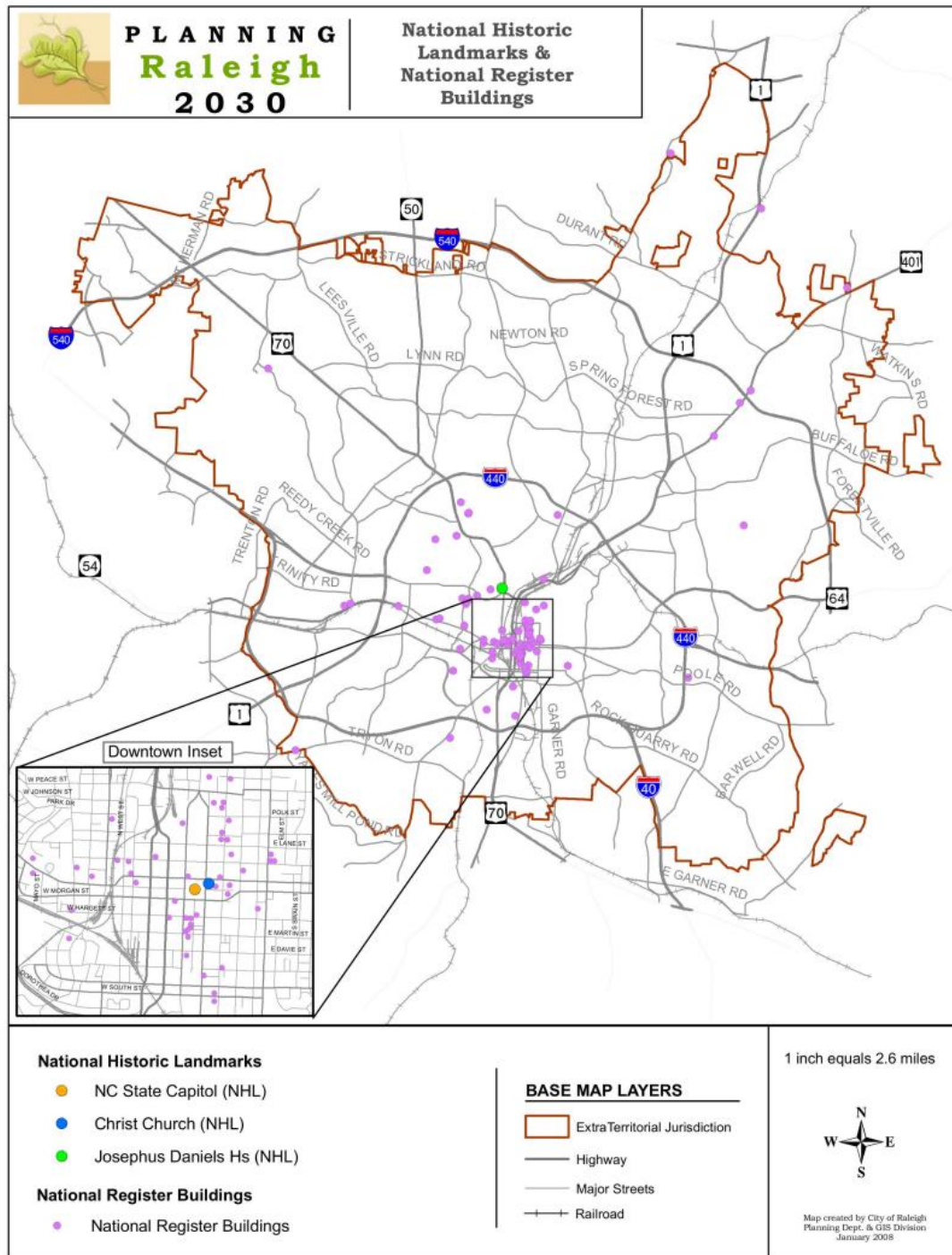
The Blount Street Historic District is also one of only two local historic districts in the State of North Carolina that is certified by the National Park Service as essentially meeting National Register criteria. This certification makes contributing properties within the district eligible for the federal and state rehabilitation tax credits.

### *Neighborhood Conservation Overlay Districts*

Neighborhood conservation overlay districts (NCOD) provide a means to preserve and enhance the general quality and appearance of older neighborhoods that have cohesive built environmental characteristics. They do not address architectural style and details, but ensure that new construction in a neighborhood is compatible with nearby well-related buildings in terms of height, distance from the street and side lot lines, street design, greenways, and rights-of-way. By respecting the context of existing built environmental characteristics, the NCOD reduces conflicts between new construction and existing development, and it encourages compatible infill development. The NCOD process is described in more detail in Chapter 5: Housing and Neighborhoods. Map 5.7 in that chapter shows the City's neighborhood conservation overlay districts.



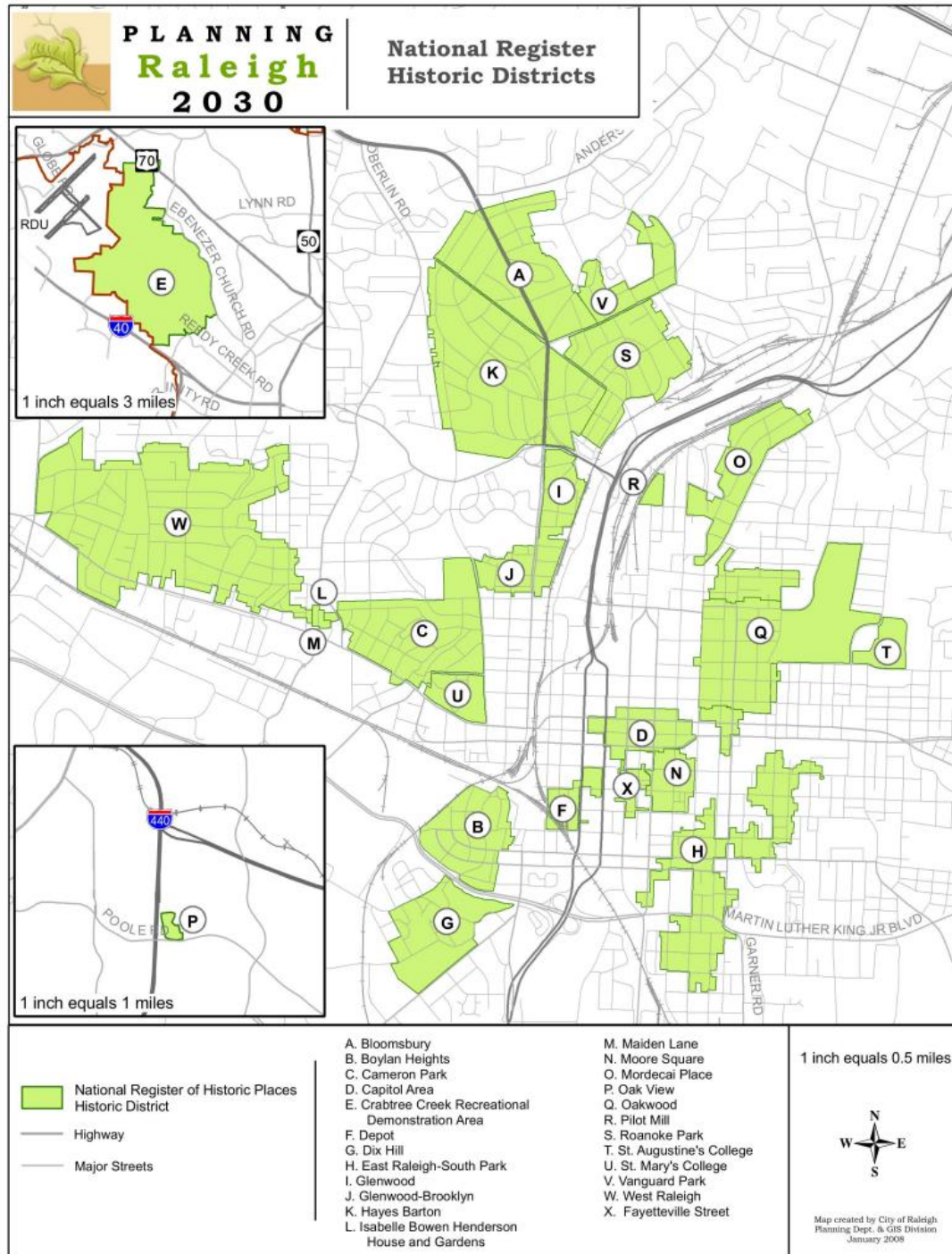
Map 11.1 National Historic Landmarks & National Register Buildings



Sources: State Historic Preservation Office; City of Raleigh



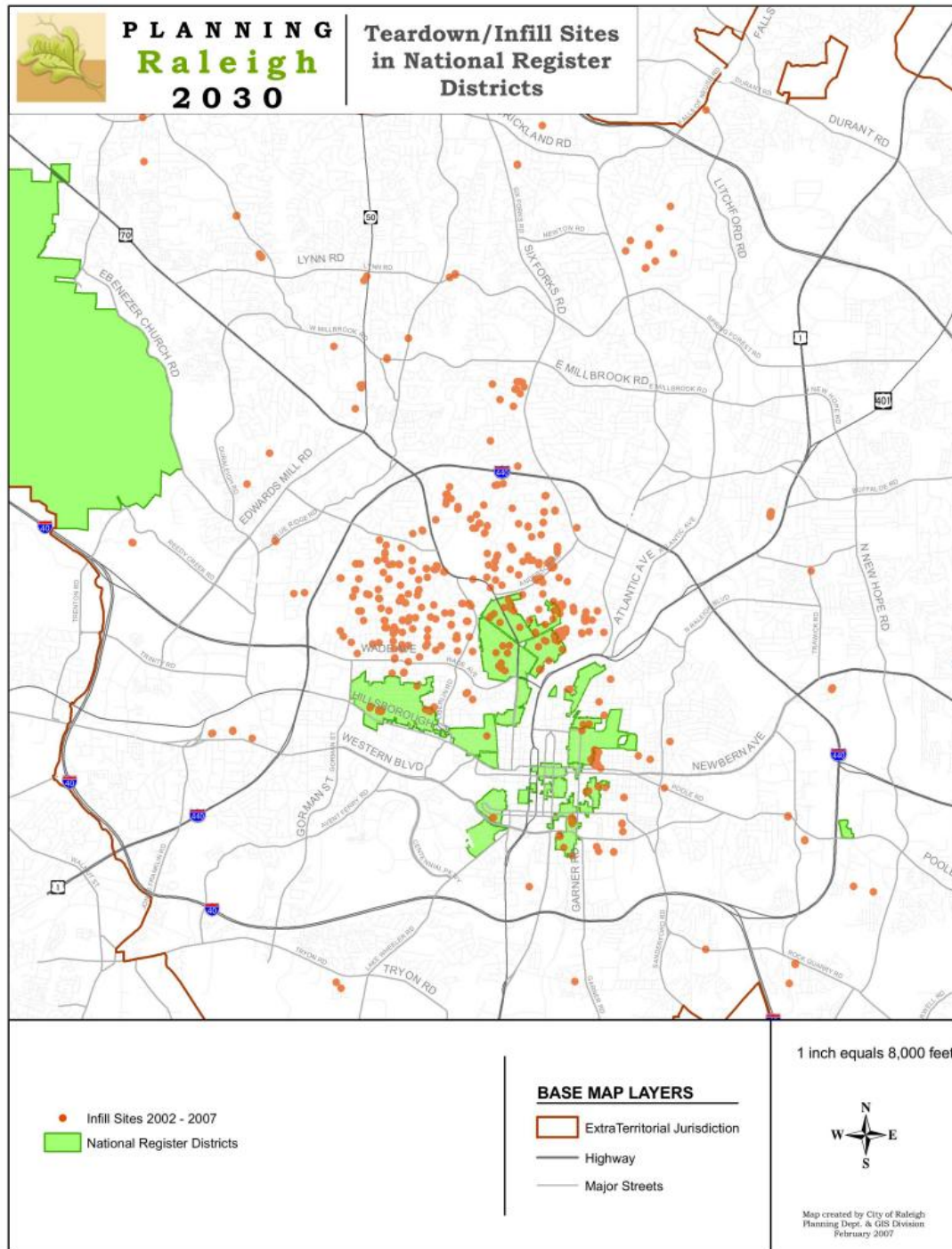
Map 11.2 National Register Historic Districts



Sources: State Historic Preservation Office; City of Raleigh



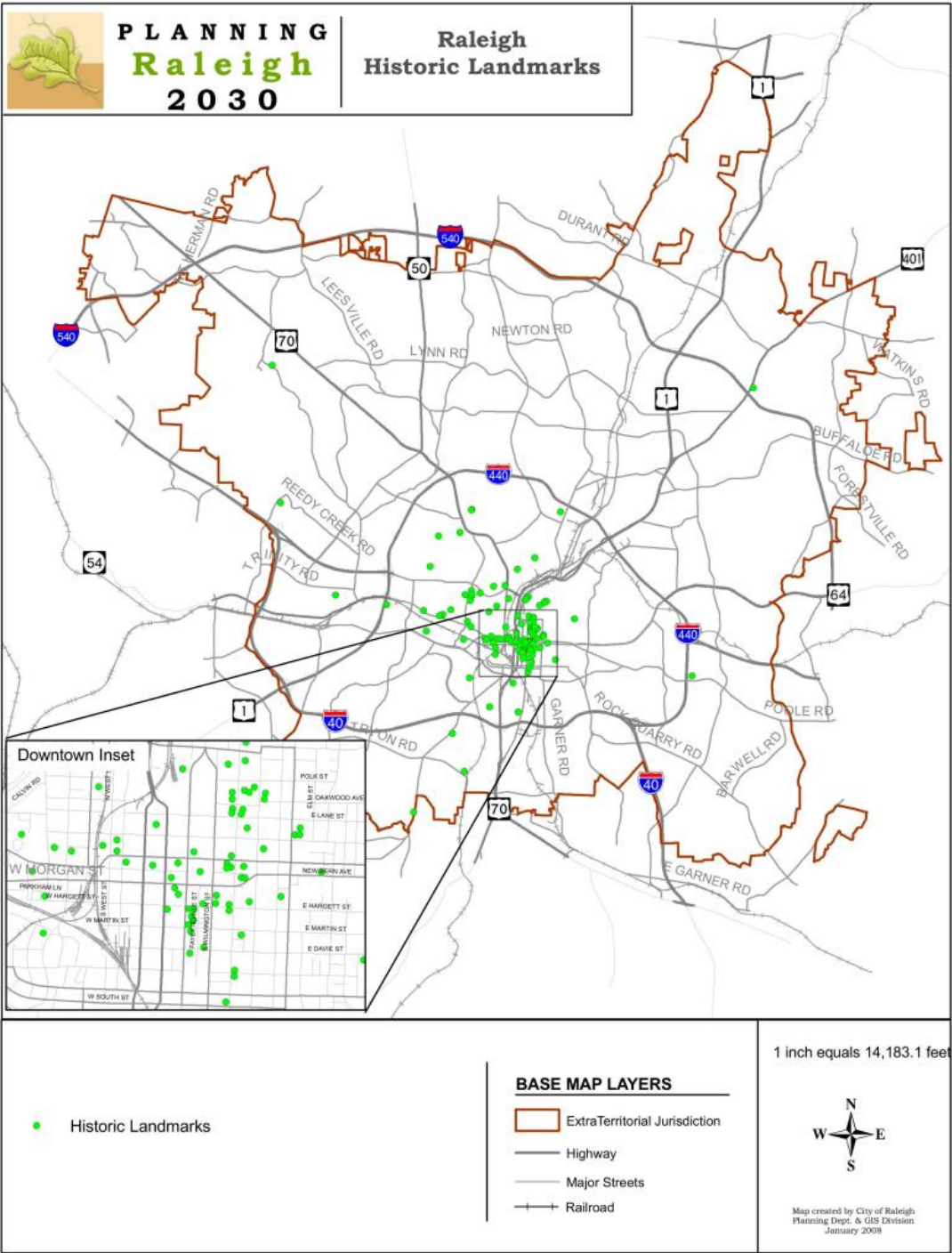
Map 11.3 Teardown/Infill Sites in National Register Districts



Source: State Historic Preservation Office; City of Raleigh



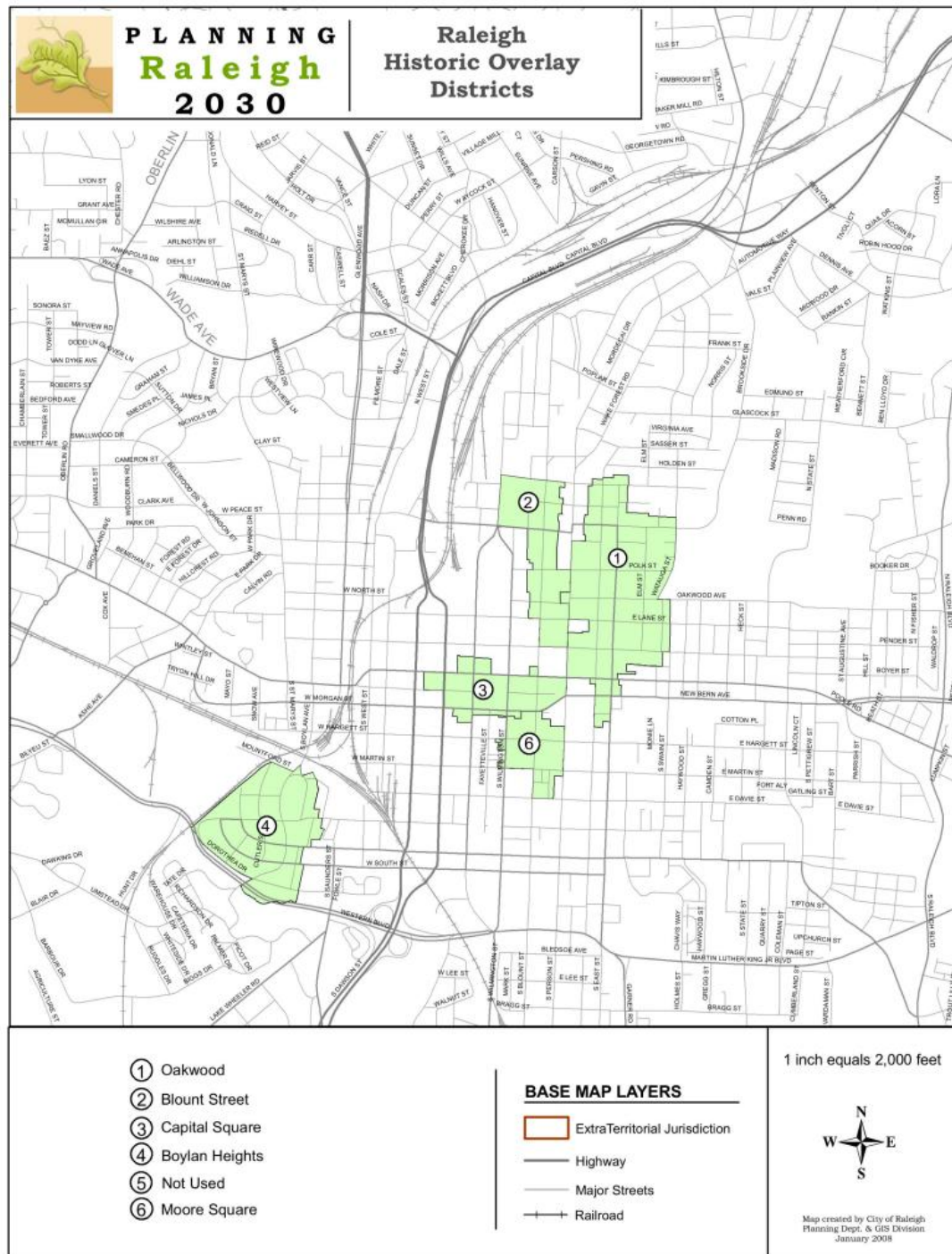
Map 11.4 Raleigh Historic Landmarks



Source: City of Raleigh



Map 11.5 Raleigh Historic Overlay Districts



Source: City of Raleigh

## Planned and Potential Listings

Additions to the various designation rosters can be sponsored by property owners, non-profit groups, and governmental bodies. Therefore, it is not always possible to determine in advance which specific properties may be listed; however, there are tools that are used to identify potentially eligible properties.

### *National Register listings*

The primary vehicle for tracking potential National Register listings is the State “Study List.” This is a tool used by the State Historic Preservation Office (SHPO) to identify properties and districts that are likely to be eligible for the National Register. Each comprehensive survey update provides a broad perspective on principal themes in local history and identifies properties and districts that appear to be eligible for the National Register. At the conclusion of each study, a slate of Study List entries acknowledges the potential significance of properties and districts long before they can be formally nominated to the National Register. While over time properties may require reevaluation due to changes or deterioration, Study Listing provides reasonable assurance that the property can be successfully nominated. There are presently 100 Study List entries for Raleigh, which includes both properties and districts, which are shown on Map 11.6.

### *Raleigh Historic Landmarks*

The State Study List serves as a guide for potential local historic landmark designations as well. The RHDC uses the Study List as a foundational document for its own priority list for local landmark designation, and supplements it with other known properties of interest. The RHDC is presently updating its priority list following the completion of the 1945-65 survey update. Map 11.7 shows the location of properties on the RHDC’s designation priority list.

### *Historic Overlay Districts*

The State Study list also is used by the City and RHDC to identify areas for potential historic overlay designation. The RHDC is currently implementing the Livable Streets Plan recommendations for downtown historic districts by preparing with the assistance of consultant services historic overlay district reports for two areas: the National Register-listed Depot and Fayetteville Street historic districts. The commission is also preparing a report following implementation recommendations for the South Person-South Blount Streets Redevelopment Plan area. Map 11.8 shows the locations of potential historic overlay districts.

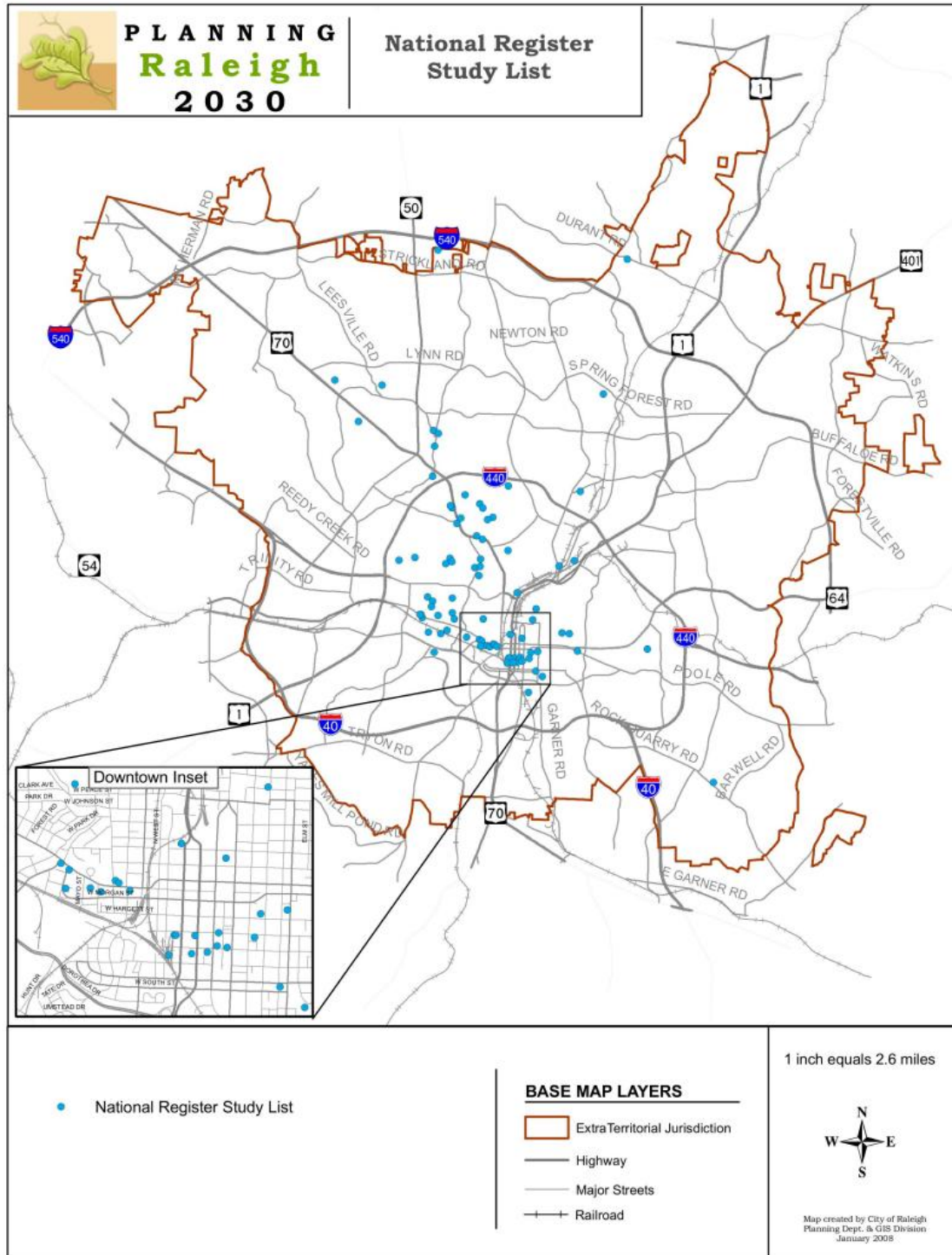
### *Neighborhood Conservation Overlay Districts*

Interest has been expressed by several areas for NCOD consideration, including the Fallon Park neighborhood and an update of the Five Points East NCOD. A text change intended to simplify and expedite the NCOD process is being brought forward to City Council in April 2008. This is described in greater detail in the Chapter 5: Housing and Neighborhoods.



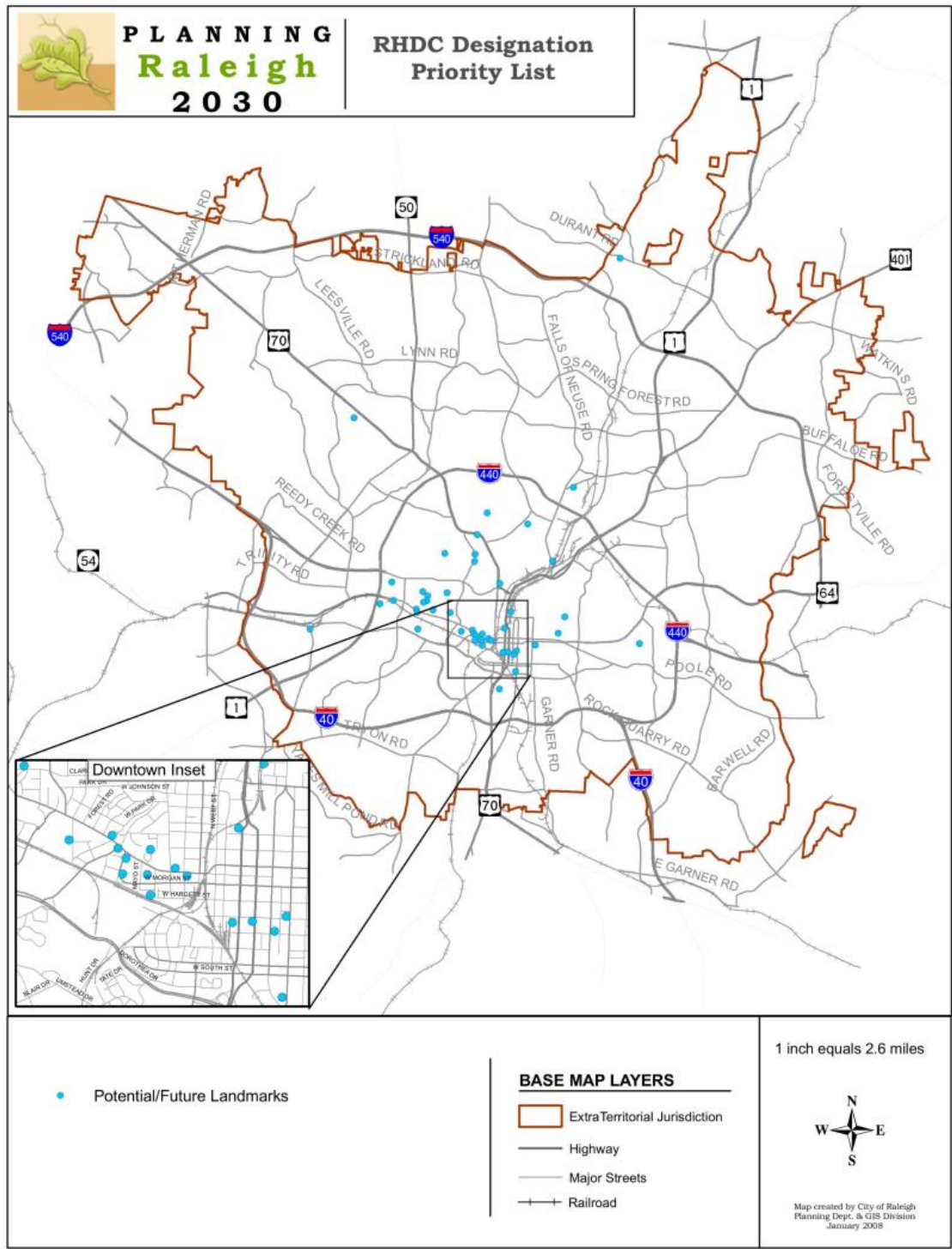


Map 11.6 National Register Study List



Sources: State Historic Preservation Office; City of Raleigh

Map 11.7 RHDC Designation Priority List

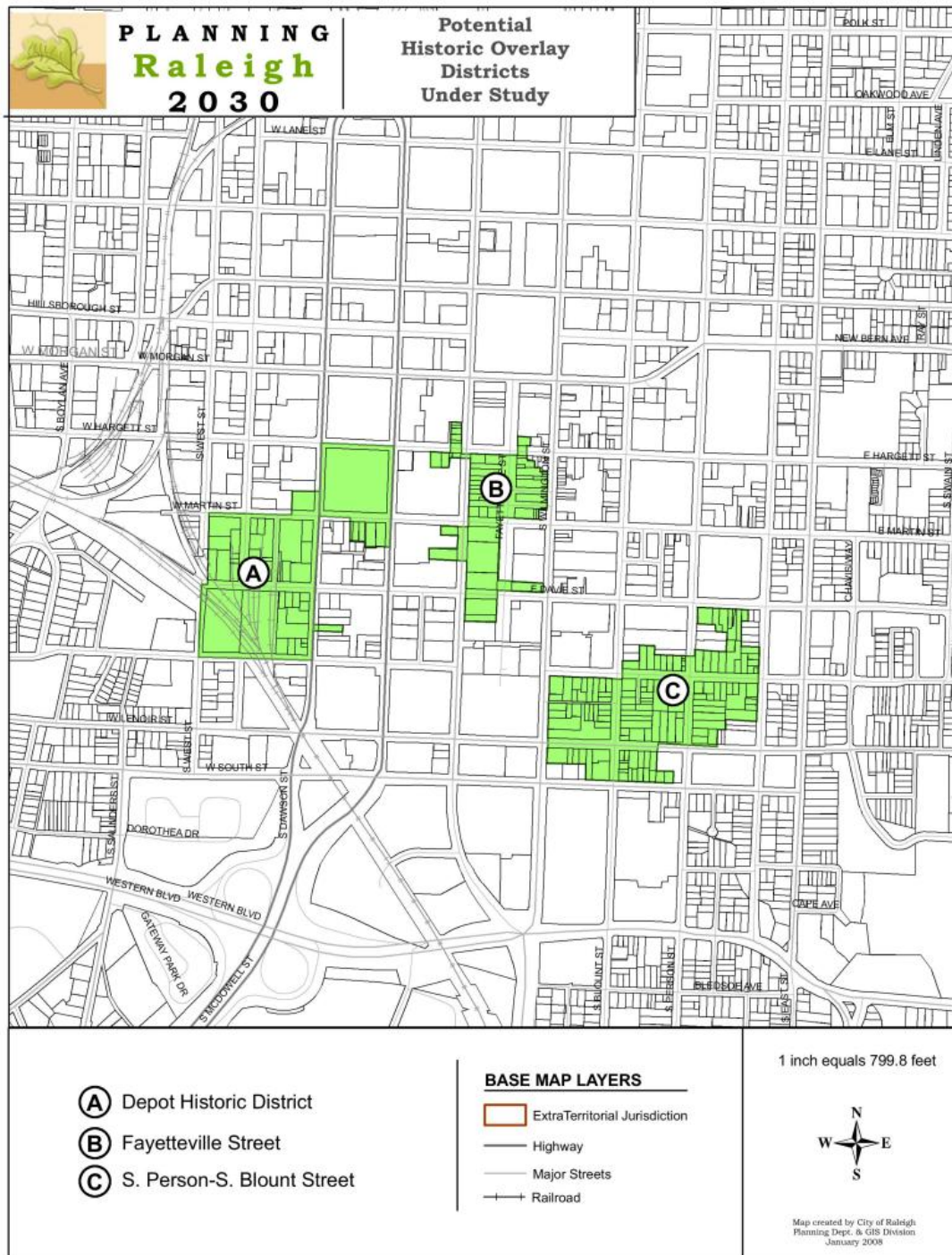


Source: City of Raleigh





Map 11.8 Potential Historic Overlay Districts Under Study



Source: City of Raleigh

### Implications for the Comprehensive Plan

- There is a lack of policy guidance for National Register-listed and -eligible properties. The purpose section of the City code establishing the city's preservation program [10-1051] states:

*The historical heritage of Raleigh ... is among [its] most valued and important assets. The City is authorized by the North Carolina General Statutes... to safeguard the heritage of the City by preserving any property or district that embodies important elements of its culture, history, architectural history, or prehistory, and to promote the use of and conservation of historic districts for the education, pleasure and enrichment of the residents of the City and state as a whole....*

In recognition of the preservation program purposes, the city should provide leadership in its own capital project planning for protection of National Register resources.

- The last residential historic overlay district was designated more than 23 years ago. Current city staffing levels for the program compared to 1984 have remained static while approximately 60 landmarks and two historic districts have been designated. Consequently, the program lacks staff resources to go beyond day-to-day administration of the design review program, and does not market the benefits to eligible neighborhoods, many of which are uncertain about the added layer of regulation. As a result, multiple neighborhoods worthy of protection currently have none.

## 11.5 Incentives and Regulatory Tools

Raleigh has a number of incentives and regulatory tools to promote and enhance the preservation of historic resources.

### Current Regulatory Tools:

- Historic Landmark and Historic Overlay District designation: design review & 365-day demolition delay [City Code 10-1051 through 1055 and 10-2052].
- Permanent demolition delay for Historic Landmarks determined by SHPO through application process to be of "statewide significance." [NCGS 160A-400.14(c) & City Code 10-2052(a)(2)c.5.iii]
- Neighborhood Plan and Neighborhood Conservation Overlay District: see description above [10-2054].
- Pedestrian Business Overlay District: design standards that encourage pedestrian activity and improve the pedestrian environment [10-2055].
- [Prevention of] Demolition by Neglect: minimum maintenance standards for historic landmarks and properties within historic overlay districts [10-6180 through 6186].
- Section 106 of the National Historic Preservation Act of 1966: Planning review by state and federal agencies of federally licensed or funded projects having an effect on National Register listed or eligible properties.
- Section 4(f) of the U. S. Department of Transportation Act of 1966: Planning review by state and federal agencies of federally licensed or funded transportation projects having an effect on National Register listed or eligible properties.
- Chapter 121A-12(a) of the North Carolina General Statutes: Planning review by state agencies of state licensed or funded projects having an effect on National Register-listed properties.

### Current Incentives:



- Local Historic Landmark: 50 percent property tax deferral.
- City Preservation Revolving Loan Fund: Reserve fund of \$250,000 available to preservation non-profits for short-term project gap financing. Current balance in reserve is approximately \$191,000.
- Tax credits for rehabilitation of income-producing National Register properties: 20 percent federal, 20 percent state (up to 40 percent for qualifying industrial properties being rehabilitated).
- Tax credit for rehabilitation of non-income-producing (most frequently homeowner-occupied dwellings) National Register properties: 30 percent state.
- Existing Building Tax Credit: 10 percent federal tax credit for rehabilitation of any building constructed before 1936.
- State Existing Buildings [Rehab] Building Code: Establishes optional code requirements for existing buildings using a fundamental principle that no building will be made less safe during rehabilitation than it was under the codes in force at the time of its construction, while incorporating the minimum level of life safety maintained by fire prevention code. Allows greater flexibility and predictability in project design and review.

## 11.6 Historic Resources and Tourism

Raleigh is a capital city. People who visit have expectations that they will see historic architecture that conveys the dignity of state government. Preservation feeds peoples' expectations and helps provide a unique sense of place. With its niche identity as a state capital, heritage and cultural tourism is a major economic development opportunity for the city as the new convention center comes on-line. Tourism is the ninth largest private industry sector in North Carolina, the eighth largest private employer, and the Triangle economic development region is second to the Carolinas (Charlotte area) at 18 percent of total state spending on tourism [NC Dept. of Commerce (<http://www.nccommerce.com>): "Tourism Satellite Account Perspective for 2005, Global Insight, December 2006"]. Further, heritage tourists are the gold standard of tourism in that they spend 31 percent more on trips, take longer trips, participate in more activities, and stay in more hotels and motels [Small Business and Technology Center (<http://www.sbtcd.org/pdf/travel.pdf>): "Travel and Tourism Industry Study, Updated by Jeffrey DeBellis, June 2001"]. In addition to the traditional historic resources for which Raleigh as a state capital is recognized, Raleigh also has significant mid-century modern architecture. The NCSU School of Design was in the international vanguard of modernism. Raleigh's mid-century modern resources in the aggregate are second to none, and properly promoted can yield dividends. Raleigh's historic assets are under marketed and simplistically presented.

## 11.7 Conclusion: Key Issues and Potential Strategies

### Key Issues

#### Key Issue 11.1

Leveraging the human scale of Raleigh's downtown as an asset rather than a liability: Because the bulk of the city's historic resources are compactly located in the core, there is a place within our city of nearly 400,000 persons that speaks to a historic human scale that is increasingly rare in cities of Raleigh's population. Particularly among state capitals east of the Mississippi, the city is perhaps unique in the fine grain of its historic downtown and surrounding neighborhoods. This asset can be sustained and enhanced by careful planning and urban design as the downtown continues to revitalize. Raleigh has the opportunity to distinguish itself from other large American cities through the careful preservation and development of its historic core.

### **Key Issue 11.2**

Lack of attention paid to unique and/or historic properties that do not have a formal designation: The fact that many eligible properties are not listed is a result of resource limitations. Cultural resource considerations in Raleigh have not always been taken into account in overall policy decisions or viewed as integral to the decision-making process as the city evolves. The list of properties eligible for designation is long, and just because they have not yet been listed does not mean that they need not be given consideration during project planning.

### **Key Issue 11.3**

Lack of policy guidance for National Register-listed and -eligible properties: there is confusion between National Register listing programs and local listing programs.

### **Key Issue 11.4**

Fragility of the city's historic identity: Historic resources as a percentage of Raleigh's built environment are becoming exceedingly rare. Approximately 12 percent of the City's housing dates from before 1960, primarily inside the beltline, so it is important to recognize the scarcity of historic resources.

### **Key Issue 11.5**

Teardowns/Infill: Teardowns of residential properties in designated National Register historic districts is eroding the architectural heritage of the city and affects the integrity of these neighborhoods. Impacts will also be felt in eligible historic districts, with the potential that they might lose their eligibility.

### **Key Issue 11.6**

Mid-Century Modern: Raleigh's treasure of mid-century modern architecture is at risk from lack of recognition and appreciation. Residential properties, often smaller buildings located on large lots, are increasingly threatened by demolition.

### **Key Issue 11.7**

Disparity between building size and zoning envelope: the size of existing buildings are frequently substantially smaller than the current zoning classifications' permitted building envelope, which puts economic pressure on historic resources. For acknowledged historic resources, the building volume of the permitted zoning envelope should be adjusted to more closely match the size of the historic resource.





### **Key Issue 11.8**

Lack of transitions around historic resources: Presently there are no special controls addressing transitions between historic properties and districts and adjacent properties. This can sometimes lead to jarring juxtapositions of scale and proximity that detract from the character of the historic resource's setting. Issues of scale, daylight rights, nighttime light patterns, and views of the resource from the right-of-way are generally unaddressed in the City's regulations.

### **Key Issue 11.9**

Heritage tourism/city identity: Raleigh's historic assets are under marketed and simplistically presented.

### **Key Issue 11.10**

Environmental sustainability: the greenest building is sometimes the one already standing. It takes 60 years to pay back the energy investment costs of building a building with current energy efficiency savings. Remodeling/adaptive use of an older, existing structure has a fraction of the carbon footprint that tearing it down and replacing it with a "green" building does. Not only is there a huge amount of energy embodied in an existing structure, that energy is held by not sending it to a landfill where it would just take up space, decay, and release more carbon.

### **Key Issue 11.11**

Landscapes and archaeology: The city's program is heavily weighted to buildings and architectural significance, as evidenced by its roster of designated historic landmarks. It needs to be broadened to recognize the broader sphere of cultural resources, including but not limited to designed and natural landscapes, cemeteries, view corridors, archaeological resources, and other forms of cultural heritage.

## **Potential Strategies to Address Issues**

### **Potential Strategy 11.1**

Incorporate preservation tools throughout the comprehensive plan to advance other policies such as housing diversity and market affordability, economic development, environmental sustainability, parks and recreation, and urban design.



### **Potential Strategy 11.2**

The Cameron Village neighborhood plan suggests exploring the creation of an 'Historic Overlay District-2' that would limit design review to the front yard site features, front and side façades, and would only review rear additions if they are taller or wider than the existing structure. These alternative regulations might ease the way to the designation of more residential Historic Overlay Districts.

### **Potential Strategy 11.3**

The historic overlay district is an underutilized tool that should be given greater consideration if the city desires to protect the architectural heritage qualities of listed and eligible residential National Register Historic Districts.

### **Potential Strategy 11.4**

Consider developing site plan review criteria that would be applied to development proposals located adjacent to acknowledged historic resources.

### **Potential Strategy 11.5**

Policies should be explored for city projects to take National Register-listed and -eligible historic resources into account during project planning.

### **Potential Strategy 11.6**

A transfer of development rights program (TDR) for historic resources would permit owners of such resources to sell unused development right in lieu of redeveloping the property. Present stumbling blocks are the lack of a market into which the rights could be sold, and no floor area ratio (FAR) requirements for all but one zoning classification. Such a program would have to be part of a larger policy and regulatory framework.

### **Potential Strategy 11.7**

State enabling legislation could be sought authorizing Raleigh to grant a limited property tax deferral for properties in historic overlay districts, similar to the program for historic landmarks. The historic landmark tax deferral serves as an incentive and recognition of stewardship responsibilities that are attendant to landmark ownership and maintenance. These stewardship responsibilities are also present in historic overlay district properties, but there is presently no incentive tool in place.



## Urban Design and Urban Form

## 12 Urban Design and Urban Form

### 12.1 Introduction

This chapter examines the city's current physical form and urban design policies. Specifically, the document focuses on: the historical and current condition of Raleigh's urban form, the planning and regulatory framework, and the current initiatives addressing urban form and design in the City of Raleigh.

#### Urban Design Overview

Urban design has to do with the physical form of the city and how the community interacts with and experiences a specific place. In city planning that place is typically a public area such as a street or plaza defined by buildings and/or vegetation. Urban design is defined by the actions taken by government and private developers in creating a supportive physical and social environment. Many design elements contribute to the organization of a space including architectural design, building placement, height, scale and open space. While individual buildings may be attractive in themselves, the cumulative effect of adjacent buildings and design elements in organizing space is paramount and difficult to achieve site by site without guiding design principles. Land use and urban design strategies can work hand in hand especially when used to promote a development. For example, the opening of Fayetteville Street was an urban design decision to promote retail downtown.

#### Historical Roots of Raleigh's Urban Form

The development and evolution of Raleigh's urban form can be divided into three distinct periods based upon the predominant form of mobility used at the time. Each of these periods has a different design focus that changes the orientation of development and the resulting experience of place.

##### Hoof and Foot Period

The General Assembly purchased 1,000 acres in 1792 to establish a capital city for North Carolina. The decision, Raleigh's first regarding urban design, was to place the city on high ground, "a beautiful eminence which commands a view of the town and a fine prospect of the surrounding country" with "groves of young oak and hickory" surrounding it.

William Christmas was commissioned to survey the new town, which was established on 400 of the original 1,000 acre purchase. Christmas laid out a traditional Roman camp-style grid of streets with five squares. The center square, containing six acres and reserved for the capitol building, dominates the others, of only four acres each. Only two of the smaller squares survive as open green spaces. The layout is reminiscent of that of Philadelphia and Savannah, albeit smaller in scale and without a clear vision of how the grid might grow over time. The original street layout, bounded by North, East, South and West Streets, remains mostly intact today. The streets radiating from the Capital Square, Fayetteville, Halifax, New Bern and Hillsborough, became Raleigh's formal ceremonial streets. These four axial streets are 99 feet wide with the remaining grid streets being 66 feet wide. Fayetteville Street became a commercial street while the other three became prestigious residential streets with state government buildings fronting the Capital Square. Urban design elements include generous streetside planting areas and wide sidewalks on the axial streets. Buildings and their entrances orient onto the sidewalk and formal architectural elements organize the public street spaces.



As development pushed beyond the formal core of Raleigh a pattern occurred that was similar to that of most small non-industrialized places in the south. Land was plentiful and inexpensive, and many households had vegetable gardens and livestock. Consequently the single family detached house became the norm. Up until the beginning of the 20th century the city remained small enough to walk from one side to the other with supportive street and building design.

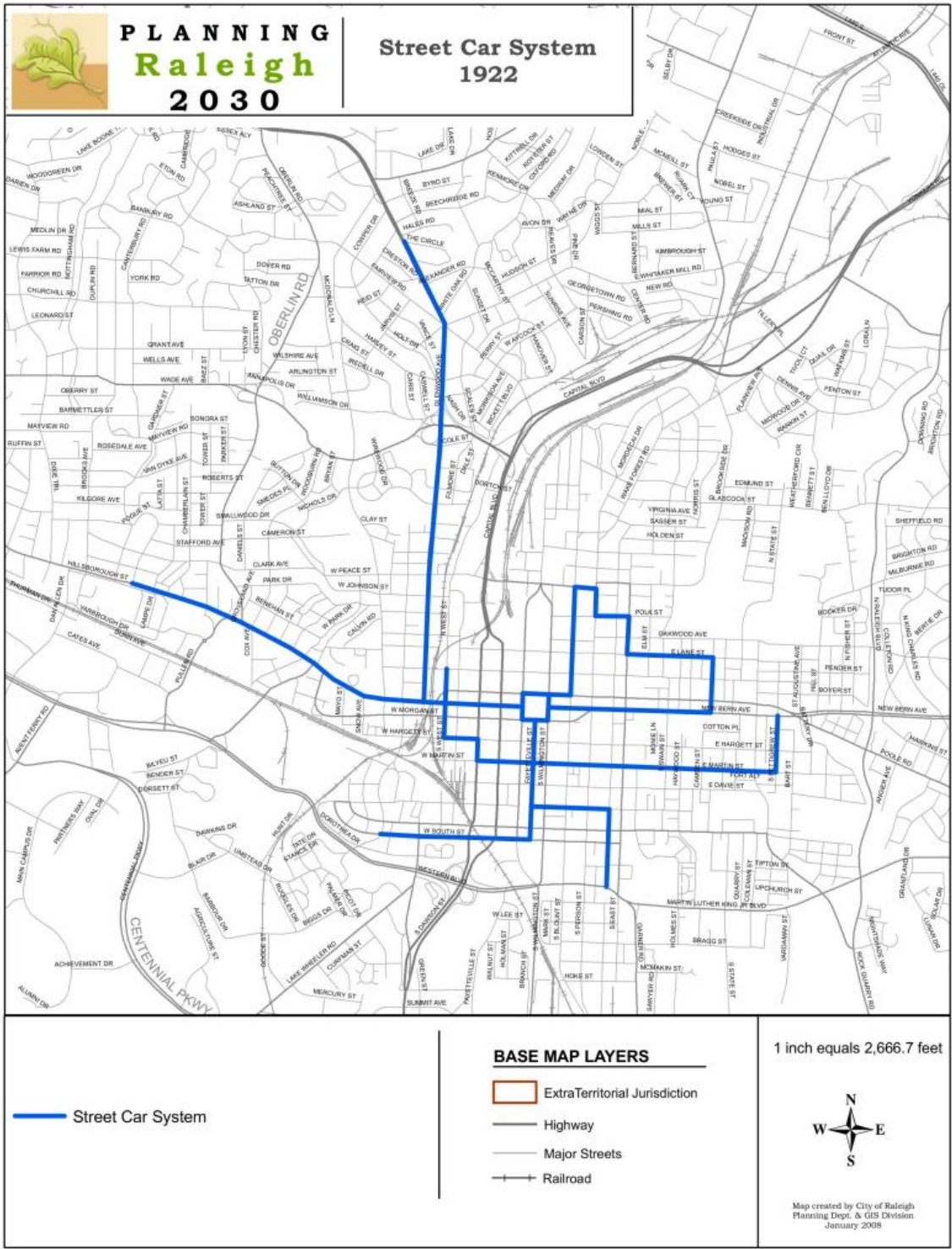
**Figure 12.1 William Christmas Plan**



### Streetcar Period

In the early 20th Century streetcar lines were extended out Hillsborough Street and Glenwood Avenue. New “suburbs” such as Cameron Park and Glenwood/Brooklyn were constructed along these lines, which permitted the city to grow beyond a size limited by walking. Even so Raleigh remained relatively small, with an overwhelmingly low-density residential character complimented by State government offices and institutions. Major retail uses remained clustered along Fayetteville, Wilmington and Hargett Streets in downtown with smaller shops integrated into surrounding neighborhoods. Remnants of these commercial nodes can be found on North Person and West South streets and at Five Points on Glenwood Avenue. Streetcars improved the convenience of traveling the further distance from home to downtown, but walking remained a primary design consideration.

Map 12.1 1922 Streetcar System







## **Auto Period**

The pre-1900 prevalence of non-motorized movement in the City assured a close proximity between residences and non-residential uses. By the mid 20th Century, however, rising incomes, low-cost fuels and the increased affordability of automobiles enabled a dramatic increase in distances between homes, shops, and offices.

With the rise of the automobile, extensive suburbanization became possible and often the preferred form of land development. The streetcars were discontinued and roadway design as well as development design focused on accommodating vehicles with diminished consideration of walking. Many developments in this period do not include sidewalks and the attached auto garage began to dominate residential building facades. Parking lots became a prominent feature along the streetscape and land uses -- homes and jobs -- continued to separate from each other. Zoning codes reinforced this pattern as the wave of the future with specific development standards. Lack of major geographical constraints permitted a steady spread of development across formerly rural land. In Raleigh, as elsewhere, the pattern of land uses broadly known as “sprawl” became the dominant development pattern. In the 1950s the establishment of Research Triangle Park several miles to the west of Raleigh proved to be a great impetus for growth. People from all over the country, and eventually from all over the world, migrated (and continue to migrate) to the Triangle region for work. As new housing development moved further from downtown, commercial services followed with designs that supported access primarily by automobile.

## **12.2 Current Urban Design Conditions**

### **The Vehicular Experience**

The automobile is the primary mode of travel in which one visually experiences Raleigh. This experience occurs along the highways and streets leading to and within the city. An aesthetic importance for visitors and residents has been placed upon this experience as reflected by landscape, signage and site design regulations.

#### **Interstate Corridors**

The Federal Highway Act of 1956 launched the national Interstate Highway System and provided a means to pay for the construction of the system through the Highway Trust Fund. Raleigh was a late addition to this system, with I-40 through the City only being completed in the mid-1980s. Further, unlike other cities such as Richmond, I-40 was not routed into the heart of the urban core. Rather, I-40 follows a southern route through Raleigh and also forms sections of the beltline around Raleigh along with I-440. This beltline is now being encircled by a second circumferential highway, I-540, some five miles out. Several state and US highways also converge and feed through the beltline systems. These roadways have limited access provided only at grade separated interchanges. As major conduits of vehicular traffic, air and noise pollution are important issues to address. As primary entry corridors for visitors to the city, appearance is also an important consideration. Raleigh has mitigated pollution impacts and improved appearance along these corridors by retaining a natural filter and green buffer of vegetation through the application of zoning standards. This green wall also helps to visually enclose the interstate corridors and minimize distraction. Business signage is limited and commercial billboards restricted from most highway areas with service information provided by organized signage within the right-of-way.

#### **Commercial Corridors**

For commercial development, access and visibility are key; in an automobile-based environment, highways quickly emerge as the focus of retail and office development. Site design along many of Raleigh’s commercial corridors is characterized by one-story “strip” centers and low-rise office buildings, fronted by surface

parking lots usually of considerably larger size than the building footprint. The building entrances are directly focused on the parking field, often irrespective of the street; street/sidewalk connections are generally omitted altogether in older centers. Signage located along the road frontage was oversized to assure visibility from swift moving vehicles. As development occurs, roadways are widened to accommodate the additional traffic resulting in multilane roadways and intersections exceeding eight lanes including travel and turn lanes.

In response to the resulting visual clutter and lack of special definition along the commercial corridors, landscape and signage regulations were adopted in the mid 1980s to buffer and improve the appearance of development. Commercial corridors that have developed since the adoption of these ordinances are more heavily vegetated with parked cars hidden behind a row of shrubs and street trees adding shade and a visual edge to the corridor. The size and number of signs along the corridors has also reduced. Landscape medians have increasingly been used to break up the roadway width and to provide safe havens for pedestrians.

The result is a more attractive view from vehicles along the corridor as well as for pedestrians, but the general environment remains very unfriendly to pedestrians due to vehicular-oriented site and roadway design. Building entrances separated from the street by parking and located sometimes below street grade as well as multiple driveway cuts in the sidewalk and lack of convenient crosswalks present multiple access challenges for the pedestrian. The landscape improvements do little to create a sense of place along the corridors especially for the pedestrian and also make wayfinding difficult. Site designs with stronger building orientation to the street would improve not only the enclosure of the public space and sense of place, but also the convenience of uses to pedestrians and transit users as well as the safety of the street environment with more eyes on the street.

**Picture 12.1 Wake Forest Road**



### **Residential Corridors**

The majority of thoroughfares in Raleigh began as residential corridors serving to link outlying areas to downtown. As suburbanization occurred many of the more heavily traveled roadways converted to commercial corridors. Many remain as residential corridors and have intensified in density and some now include a mix of office and institutional uses. Leesville, Rock Quarry and Buffaloe roads are examples that have remained primarily residential. Road widening to meet thoroughfare standards typically includes curb-gutter and sidewalks. Road widening often has a negative impact on the livability of smaller single family lots fronting a thoroughfare and alternate uses have been allowed to facilitate reuse of the properties for non-residential uses.



Creedmoor Road is an example of a residential corridor where office and institutional uses have been allowed to occupy former residential properties. This has occurred between commercial focus areas in the Urban Form designation “Corridor Transition Area.” (Please note: the Urban Form Map and its designations are explained in section C. Planning Framework of this chapter.) New residential development along residential corridors typically has an internal orientation served by a collector street; a design that is encouraged to reduce driveway cuts onto the thoroughfare, but results in the rear yards of residential uses facing the thoroughfare with limited pedestrian connectivity. The left-over landscaped area between the lots and the thoroughfare is often poorly maintained.

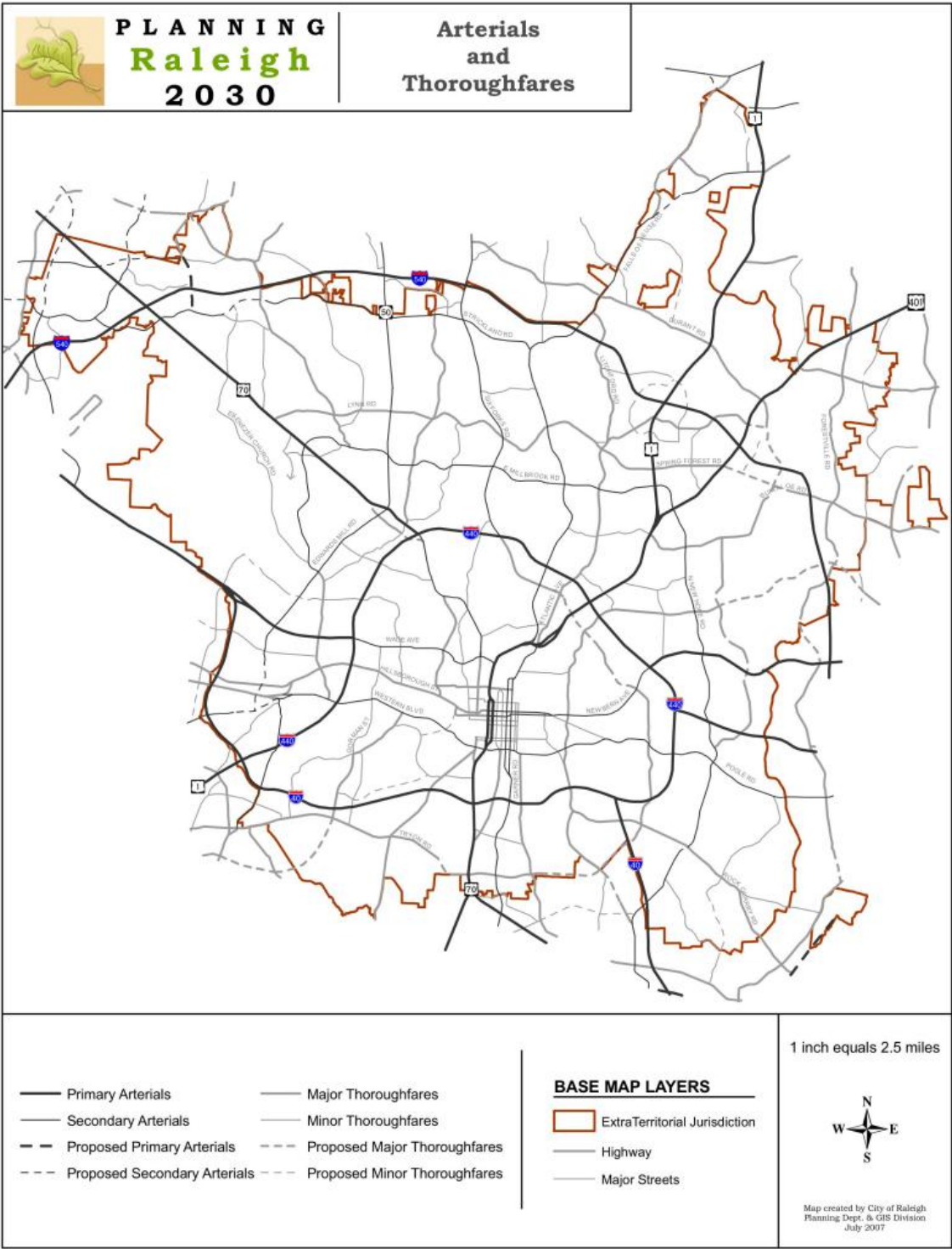
### Urban Grid

The 1792 William Christmas Plan for five squares in downtown Raleigh set the pattern for the original city. Radiating from the central Capital Square are four streets of which only Hillsborough Street remains with an open extended street from the capital building with New Bern Avenue now terminated at a cul-de-sac, Fayetteville Street terminated by a performing arts center and Halifax Street replaced by the state government center. The plan established an even north-south grid system for the streets, which was expanded in the early 20th Century to bigger blocks and curving streets, whose layout respected the natural forms of the site. Boylan Heights is a good example of this adaptation of the grid. Further out, the grid continued to expand and became more curving. In 1970s and 1980s more residential streets became cul-de-sacs and fewer streets connected to other developments. Blocks became larger and shopping centers tied down the intersection of main thoroughfares.

While the overall grid is still intact, the street patterns have evolved into a combination of cross and radial streets. Six Forks and Falls of Neuse, Creedmoor Road and U.S.1 generally go north-south. Spring Forest, Millbrook, Strickland and Tryon go east-west. These and other thoroughfares throughout the city define larger blocks or super blocks that are up to one mile wide and within which exist neighborhoods, large office and industrial parks. Due to the use of cul-de-sacs and isolated individual subdivisions, interconnection between developments is minimized resulting in a limited capacity road network and reliance upon the thoroughfares for most vehicle trips. With limited commuter travel routes provided gridlock is an issue especially in emergency situations as illustrated by the ice storm of 2005.

Raleigh’s current growth trends reflect that of an auto dependent city where low density, single land use development dominates the urban form vocabulary. While access to services and open space is available to all, residents must depend on automobiles to get around. Automobiles have greatly influenced the shaping of the contemporary form of the city and the region. The rapid growth of the region and continued automobile dependency manifests itself into an urban form characterized by wide streets, high volumes of traffic, large parking areas, limited pedestrian spaces, spread out low density development patterns, and expansive suburbs.

Map 12.2 Arterials & Thoroughfares







## Shopping Areas

The shape of commercial development in Raleigh is an outgrowth of changing technologies, a ready supply of land, and evolving approaches to design. Building design is shaped by the availability of air conditioning and high-intensity interior lighting, which precluded the need for natural ventilation and light; in retail construction, fenestration is minimal, and is concentrated at the entry. The result is the ubiquitous retail “box.” To these basic forms, corporations many times add distinctive architectural features as a means of branding, converting buildings, in effect, into billboards. Signage tends to follow suit. It is large scale to attract attention from vehicular traffic from out on the street. Lighting is also oversized to illuminate the widest possible stretches of the parking area. Pedestrian-scale lighting, if present, is usually reserved for the area closest to the store. Pedestrians most often share store access with vehicular traffic; walkers must negotiate their way through parked and moving cars to the entrance.

This pattern is repeated along most of Raleigh’s major commercial roadways, and its aesthetic shortcomings are apparent. The sense of place previously found in commercial development frequently is lost to a homogeneity little distinguished from that found in other communities. To address design and appearance issues landscaping regulations require vegetation—shade trees, ornamental trees, shrubs, and ground plantings—to be interspersed with parking spaces at set ratios, in combination with tree conservation and the planting of perimeter transition yards. The vegetation helps to serve as an edge to the corridor often in combination with building faces to allow business visibility and also helps to shade the extensive asphalt surfaces and cool the microclimate. Signage standards have sought to rein in visual clutter. Unity of development rules provide for internal aesthetic continuity through use of common colors, materials, or building components. Lighting standards look to limit spillover and glare; mechanical equipment must be screened from public view.

## Workplaces

Workplaces in Raleigh include the downtown area, educational, hospital and office campus settings, and the office and institutional uses lining many of Raleigh’s suburban thoroughfares. The downtown business district and Raleigh’s university and college campus areas are designed to accommodate pedestrians from the street and into the campus interior.

Office and institutional uses outside these areas are typically designed more with auto access in mind with pedestrians using the parking lot for access to buildings. Low intensity office uses line many of Raleigh’s thoroughfares with parking lots separating the buildings from the streetwall, which is sometimes replaced with vegetation. Recent development trends have moved the buildings forward due to site constraints and for visibility with parking located in the rear or side. This design improves the spatial definition of the street and as well as pedestrian access from the street sidewalk.

Connectivity between the individual office sites along the corridors is challenging. Several attractive older office campus areas provide a high intensity of development, but generally lack the pedestrian systems necessary to support walking between buildings or to the primary public street for transit use. More recent site designs now include the sidewalk connection between the street and building entrance, but often take on circuitous routes and require pedestrians to cross parking lots.

## The Pedestrian Experience

The street and site design of specific areas in Raleigh support walking by providing a safe, convenient and pleasant environment. These areas were generally built prior to the dominance of auto use, but also include newly emerging development, which is focused on the pedestrian environment as part of the shopping experience.



## Downtown

The pedestrian environment in downtown Raleigh greatly befits from the historic Christmas Plan's network of gridded streets, pedestrian friendly block sizes and open spaces. These elements remain the primary organizing form of downtown. Two of the five original squares, Caswell and Burke, have been given over to state buildings and there have been several alterations to the grid network when two way streets were converted to one way pairs. Exceptional landmark views are provided by the terminated vistas of Fayetteville Street and of the Capital building from Hillsborough Street. Major civic buildings and public squares also contribute to the orienting landmarks for downtown. Exceptional skyline views are provided from South Saunders Street, Chavis Park and the Dortha Dix property. More distant views are available from Western Boulevard at Pullen Park, Rock Quarry Road at I-440 and Wake Forest Road near St. Albans Drive.

As downtown densities and diversity increase, attention is needed on the pedestrian network. Downtown features several pairs of one way streets controlled by the NCDOT that serve to move a high volume of cars both to and through downtown. While speed limits in downtown do not exceed 35 miles per hour, many of the traffic signals are synchronized, which can often prompt drivers to accelerate to keep pace with the synchronized lights. Thirty-five miles per hour is a speed sufficient to create a perceived hostile pedestrian environment—a situation that is especially acute adjacent to Dawson and McDowell Streets. Bob Gibbs, a retail market analyst specializing in design of urban commercial streets, has stated that the ideal travel speeds for local commercial districts is 12 to 25 miles per hour, and that anything faster serves only destination type shopping (big boxes), which Raleigh does not have in its downtown. The allowance of right turn on red at busy downtown intersections presents an additional hazard to pedestrians.

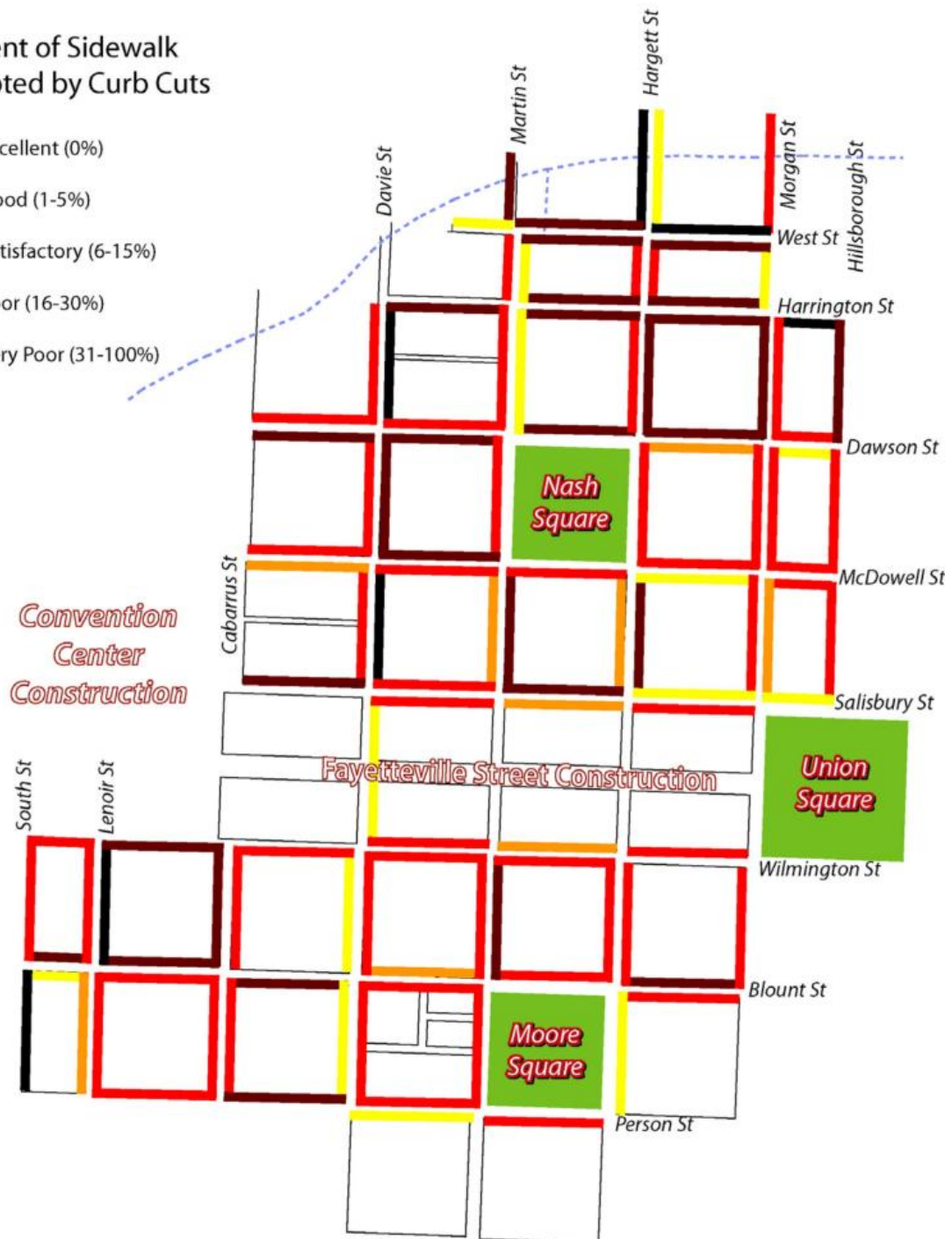
The condition of sidewalks also discourages an active street life in some areas downtown. The majority of sidewalks are less than 13 feet wide—too narrow to accommodate outdoor dining, and are in various states of disrepair. Too often these sidewalks are bisected by driveways and service areas that are designed to give the impression that motorists have the right of way. The Department of City Planning performed field studies in the summers of 2005 and 2007 in which the number of curb cuts as well as the state of sidewalk repair was observed, concluding that the sidewalks downtown are generally lacking in aspects of pedestrian safety and comfort. Map 12.3 shows the curb cuts in the core of downtown.



Map 12.3 Downtown Curb Cut Study

Percent of Sidewalk Interrupted by Curb Cuts

- Excellent (0%)
- Good (1-5%)
- Satisfactory (6-15%)
- Poor (16-30%)
- Very Poor (31-100%)



### Other Pedestrian Business Areas

There are several commercial areas outside of downtown that were developed prior to the automobile era such as Hillsborough Street at North Carolina State University, Person Street at Oakwood/Mordecai and Glenwood Avenue at Five Points. These commercial areas grew to serve the smaller market area of the surrounding residential neighborhoods with access by trolley and pedestrian. Narrow frontage, single and multistoried buildings line the street with front doors and windows opening directly onto the sidewalk. This creates an intimate streetscape with street trees and on-street parking providing a buffer from street traffic and where window shopping is an attraction. At the time of development, parking beyond that provided on the street was neither needed nor required. The infrastructure within these older commercial areas has become worn over time and current zoning regulations do not support the established development pattern. The City has initiated funding for streetscape and façade improvements through the Capital Improvement Program and provided zoning overlay regulations to address code conflicts and promote contextual redevelopment. A recent text change relaxed off-street parking requirements to ease the use of the historic building stock in these areas and provide for better urban design.

### New Developments

A recent development trend seeks to emulate attributes of the older commercial centers noted above and has been successful in creating attractive and walkable commercial settings in an outdoor street oriented environment. Streetscape elements include wide sidewalks, landscaping, furniture, decorative lighting and on-street parking all of which is meticulously maintained and programmed as private development. With the control exerted by a single development entity, these centers lack the variety of the older urban fabric. The redevelopment of the North Hills shopping center as a mixed-use center incorporating shopping, office and housing is the most prominent local example. Portions of Brier Creek are also developing in this manner. Additional mixed-use walkable developments are planned in north Raleigh at US-401 and I-540 (5401 North) and in west Raleigh at Edwards Mill Road and Wade Avenue (40 Wade).

**Picture 12.2 North Hills Shopping Center**



While featuring a walkable core, these developments still provide suburban quantities of parking. The mix of uses tends towards a heavy focus on retail, as they represent an evolution of the indoor shopping mall. They all too often lack walkable connections to surrounding development, resulting in a public street orientation that is primarily for automobiles, a problem that is reinforced by locations on wide, multi-lane arterial roadways. Large surface parking lots often separate building entrances from the public street and



landscaping is required to buffer parking along the street. In spite of these shortcomings, these new developments hold considerable promise in terms of encouraging livelier places and in facilitating transit use and non-motorized travel.

### Implications for the Comprehensive Plan

- Streetyard landscape regulations achieve the goal of reducing roadside visual clutter and establishing a visual edge for the thoroughfare, but also reduce the visibility of business uses from the thoroughfare.
- Commercial site design separates business uses from the thoroughfare with large parking fields which further reduces business visibility, but also establishes a harsh pedestrian environment between the thoroughfare and business entrances and provides little contribution to a sense of place. Buildings are more effective in defining a public space and creating an active streetscape with business visibility.
- Additional consideration should be given to providing connectivity between individual development sites during the design process in relation to grading, pedestrian movement and vehicular access. A lack of attention to this has resulted in a disjointed development pattern, the need for a vehicle for convenient movement between sites, and the need to return to the thoroughfare to access other sites. This inconvenience also increases congestion and friction on the thoroughfares. Different uses are typically separated with little mix on an individual site.
- Topographically challenged sites tend to use grading approach that places building entry and sometimes the building roof below the street grade creating pedestrian access challenges, appearance issues and drainage conflicts.
- Auto-oriented site designs with a linear building orientation along the thoroughfare create long blank walls and service areas adjacent to rear uses with little opportunity for convenient pedestrian or vehicular access.
- Thoroughfare designs often do not adequately address the needs of other travel modes such as transit, bike and walking. Transit accommodations such as shelters, benches, trash receptacles and landscaping are minimal.
- Sidewalks have little separation from roadway traffic, are frequently crossed by driveway cuts and intersection crossings are foreboding due to their length and the limited amount of protected crossing time provided by traffic signals.
- Sidewalks within specific locations in the downtown area and pedestrian districts are too narrow to accommodate the increasing intensity of development and other uses such as outdoor dining. Attention to the condition of the streetscape is needed due to a general state of disrepair and low maintenance of vegetation and pedestrian infrastructure.
- Building service areas and driveways for parking along downtown streets often break the continuity of active space along a building face on the sidewalk and intrude into the pedestrian streetscape.
- Downtown one way streets with 35 mph speed limits, which are often exceeded in practice, are not conducive to commercial uses and an active street life.
- The allowance of right turns when the traffic signal is red presents a hazard to pedestrians with vehicles blocking the crosswalk and allowing vehicular movement through the pedestrian protected signal phase.
- Zoning regulations in pre-auto designed commercial districts are not in keeping with built development pattern or to maintaining the pedestrian orientation of these older commercial areas.
- New retail centers that feature an internal pedestrian orientation remain isolated from other uses by parking fields and do not improve the pedestrian environment of the frontage thoroughfare.

## 12.3 Planning Framework

The State of North Carolina is a Dillon Rule State, and local governments therefore are limited to those powers that are specifically given to them by the state constitution and legislative statute. Cities and towns are granted the authority to set regulations for land use and planning related functions. Where warranted, local jurisdictions may adopt stricter regulations than that set forth by the State. These various interrelated land use and development regulations ultimately guide and shape the urban form, organization and growth pattern of Raleigh's built environment.

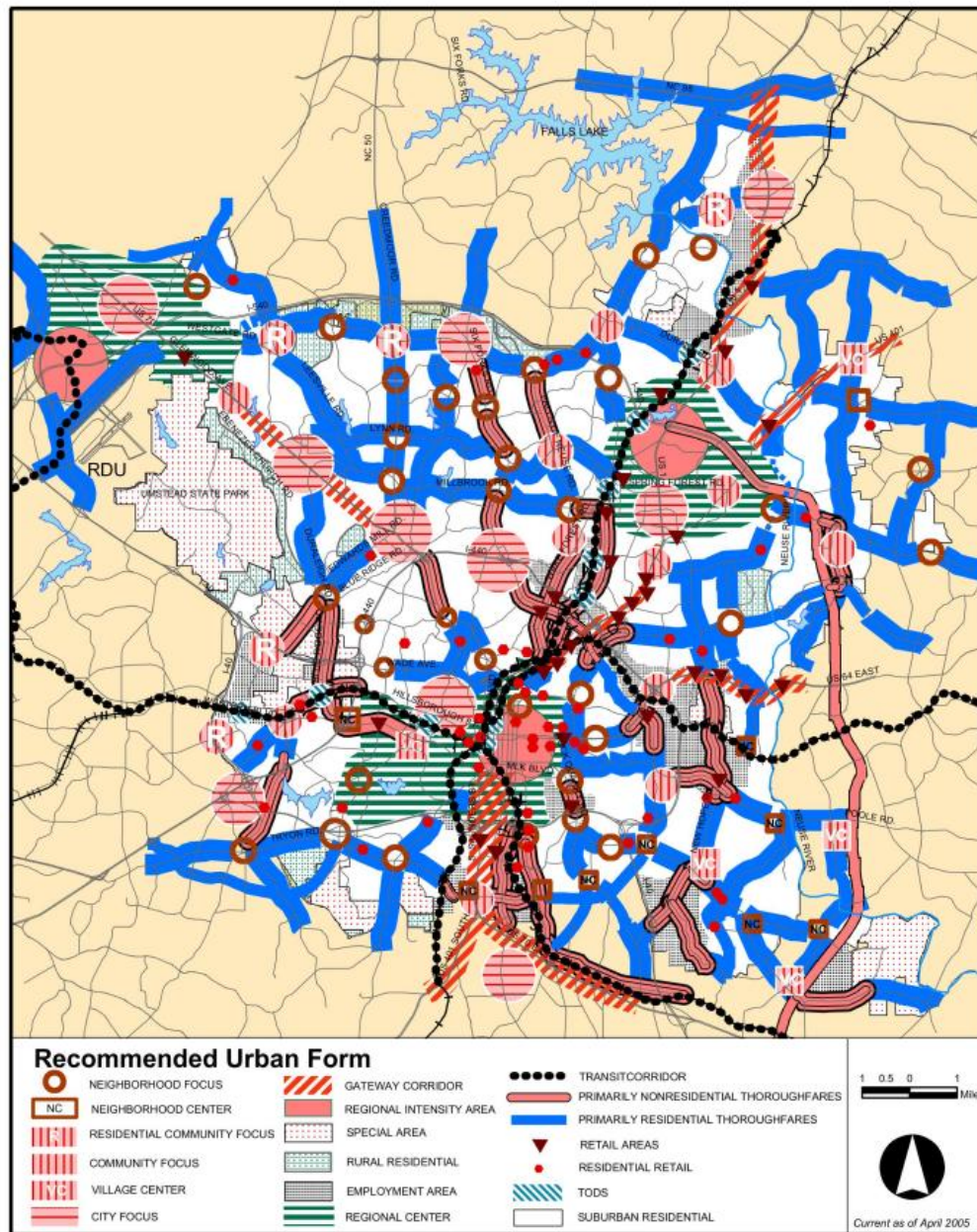
### Comprehensive Plan Urban Form Policies

The Comprehensive Plan is intended to provide the blueprint that guides the urban form and development of the city. The Urban Form Map provides the broadest municipal urban design policy for the City of Raleigh. The map shown on Map 12.4 below and associated policies began their development in local planning studies in the late 1970s and early 1980s. These conceptual underpinnings of the policy acquired community acceptance and technical elaboration with the adoption of the Vision 2020 Raleigh Comprehensive Plan of 1989. That plan was considered a living document, which allowed for modification through changing conditions and specific planning studies. The evolution of the document over the last 20 years has resulted in a highly detailed overlapping of plans and policies.





Map 12.4 Urban Form



7/07 Raleigh Comprehensive Plan

Plan Framework 3-3.A

## Centers/Focus Areas

The Urban Form Map includes a typology of centers, corridors, and focus areas. All of Raleigh's focus areas, regardless of scale, are intended to provide the opportunity for people to live, work and shop in close proximity, reducing car travel and strip development. The presence of high traffic roads, automobile oriented development, and separation of uses still requires the use of a car. The centers and focus areas differ mostly in intensity and scale, not mix of land uses.

**Regional Centers:** The regional center is intended to serve a regional market. The three designated regional centers are intended to contain the highest degree of economic activity of the city with major concentrations of employment and retail that attract commerce from the surrounding Triangle region. Typically they are located at the highly visible intersection of major transportation corridors. The urban design emphasis is placed on accommodating multiple transit opportunities, creating walkable interconnected development patterns, master planning development and mitigating the negative effects of large scale developments.

**City Focus Areas:** City focus areas are intended to serve the Raleigh-wide market. All of the city focus areas are anchored by major retail, residential and job concentrations. They are typically found at the intersection of major thoroughfares and have bus transit service. The urban design emphasis is placed on transitioning from adjacent neighborhoods and connections within and between developments.

**Community Focus Areas:** A community focus area is smaller than the city focus area and intended to serve the surrounding community. They are mostly concentrations of two or more strip retail centers, with some adjacent high density residential development and limited jobs. Typically they are located at intersections of minor thoroughfares with limited transit service. The urban design emphasis is on pedestrian connections to and buffering from adjacent residential areas.

**Retail Areas:** Retail areas occur in employment areas and gateway corridors (see Transportation corridors below). They often result in facilities of a large scale attracting customers from a large trade area. They may be mixed with employment centers. Connections within the areas should be designed to allow users to walk from one use to the other. Access to adjacent thoroughfares has to be carefully controlled to limit impacts on traffic flow. Appearance, traffic and access are key design considerations since located on designated gateway corridors that serve as entryways to the city.

**Neighborhood Focus Areas:** These focus areas are intended to serve the immediately adjacent neighborhoods with basic services. A neighborhood focus area contains a single retail center on one quadrant of an intersection with low intensity office and high density housing on the other quadrants. They are often located directly in neighborhoods on smaller intersecting streets. The urban design emphasis is placed on residential scale and compatibility.

**Residential Retail Areas:** The smallest of the retail concentrations are found only in neighborhoods and might consist of only a neighborhood market or café. Development within these areas should blend exceptionally well with the residential surroundings in scale and character. Often they have been designated for existing individual commercial uses when brought into the city's planning jurisdiction.

## Transportation Corridors

Transportation corridors include the frontage land on either side of a major roadway with general land use and design guidance provided for each corridor type. Raleigh's corridors are designed primarily for vehicular circulation. The most common development pattern along these corridors places parking between the street and building fronts. Some of the major corridors feature bus transit, but pedestrian and bicycle accommodation is often minimal. Focus areas of commercial uses are typically found at intersections with transition areas



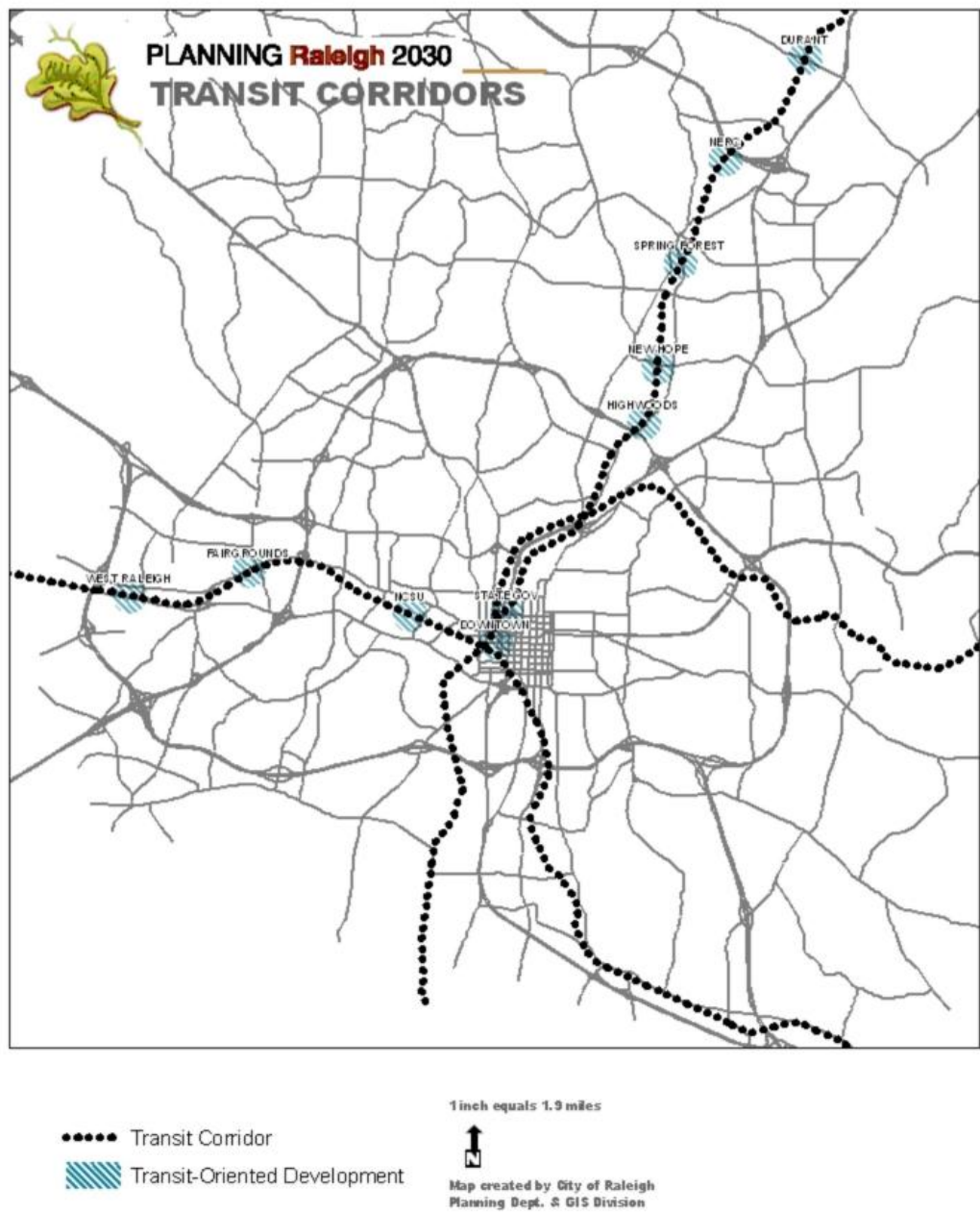
of lower intensity uses located between them. An ongoing policy discussion revolves around the nature of land uses along the corridors: how much retail is appropriate, the scale of development adjacent to neighborhoods, and appearance of properties lining corridors and which if any should have fixed rail transit.

Gateway Corridors: Some of the most intensely developed commercial corridors are the major US highways leading into downtown, called the “gateway corridors” in the Comprehensive Plan. These roads form a spokes-of-a-wheel pattern out of downtown and carry the highest traffic volumes and typically attract the largest concentrations of retail, service and office uses. Appearance, traffic and access are key design considerations.

Primarily Residential and Nonresidential Corridors: These thoroughfares are characterized by the type of land use policy associated with each as the name suggests. Stable residential neighborhoods exist along many of these thoroughfares. Along the residential corridors office and institutional uses are allowed only within designated corridor transition areas. Nonresidential corridors allow higher intensity office and high density residential uses. The goal of the Comprehensive Plan to concentrate intense uses into focus areas has been more successful along these corridors. Creedmoor Road, which is punctuated by retail centers spaced one mile apart at major intersections, is considered a success. The centers are separated from one another by less intense, non-retail uses.

Fixed Guideway Transit Corridors: These corridors include design guidelines intended to support use by transit vehicles and are currently designated along existing rail corridors. The impetus for this designation was the Triangle Transit Authority plan to use existing railroad corridors to support commuter rail cars connecting northeast Raleigh with downtown Raleigh, Cary, Research Triangle Park and downtown Durham. Due to funding constraints, this proposal is undergoing further feasibility study.

Map 12.5 Transit Corridors & TOD's







## Areas

The Urban Form Map also defines “areas.” These are broad areas within the city, between corridors and focus areas. They are mostly developed with single land uses.

Suburban Residential Areas: These appear as open areas on the urban form map (often referred to as the “white space”), and are without other urban form designations. In practice these are developed for mostly low density residential uses. These are the core residential neighborhoods of the city, but there is little guidance provided on their desired form or density.

Employment Areas: These areas have been reserved for employment-generating land uses, especially for industry, manufacturing and office parks. The original intent was to diversify Raleigh’s economy in these employment sectors; however market forces have pushed towards retail and even housing development in these areas. Policies recommend that at least 70 percent of the land area within an Employment Area should be devoted to employment uses.

Special Areas: Publicly owned lands are the sole tenants of the special areas, which include Umstead State Park, NC State research farmlands, Fairgrounds, landfills and water treatment facilities. They are designated for their unique land use purposes not found in other areas.

### Implications for the Comprehensive Plan

- The urban design strategy of the city as expressed by the Urban Form Map and associated policies needs revision as a result of dramatic changes in population, proposed new transit strategies and the limits of market acceptance of it tenets.
- The Urban Form Map designations are defined by graphic symbols on the map with no specific edges. This makes the map difficult to use and leaves the actual boundaries of the areas up for interpretation, which has historically been done through the development of small area plans and corridor plans or through the rezoning process.
- The Urban Form Map designations are complex and overlapping.
- The retail uses guidelines as articulated in the centers typology are out of date in relation to market conditions including the maximum size of a single retail establishment as well as other specific retail recommendations.
- The location of focus areas at major intersections results in a busy and pedestrian-unfriendly intersection being the focal point of development, rather than a meaningful public space.

## Urban Design Guidelines for Mixed Use Centers

The Urban Design Guidelines for Mixed Use Centers are the next level of urban form and design guidance for the City. These guidelines carry forward a guiding principal of the Comprehensive Plan: “To provide for orderly growth and to encourage more compact, efficient urban form”. An emphasis is placed on creating a high-quality, pedestrian-oriented concentration of mixed uses in specifically designated locations that support existing and planned transportation networks and connect with surrounding residential areas.

A Mixed Use Center is defined by three organizing elements: the Core, a Transition, and the Edge. The Core consists of the most intense urban buildings in mass and use including vertically mixed use buildings and is the center of pedestrian activity. The Transition serves as a transition in intensity from the Core to the surrounding less intense supporting neighborhood areas and consists of medium and high density residential



uses as well as appropriately located professional office uses. The Edge is not typically part of the Mixed Use Center consisting of single family housing which is seamlessly connected to the Core by pedestrian-friendly streets.

Two Mixed Use Center categories are identified in the Urban Design Guidelines based upon size and intensity:

Neighborhood Center: Core Area of eight to 30 acres and a maximum height of three stories. Residential densities range from seven to 15 units per acre.

Village Center: Core Area of 30 to 125 acres and maximum height of six stories. Residential density should exceed 30 units per acre especially near transit stations.

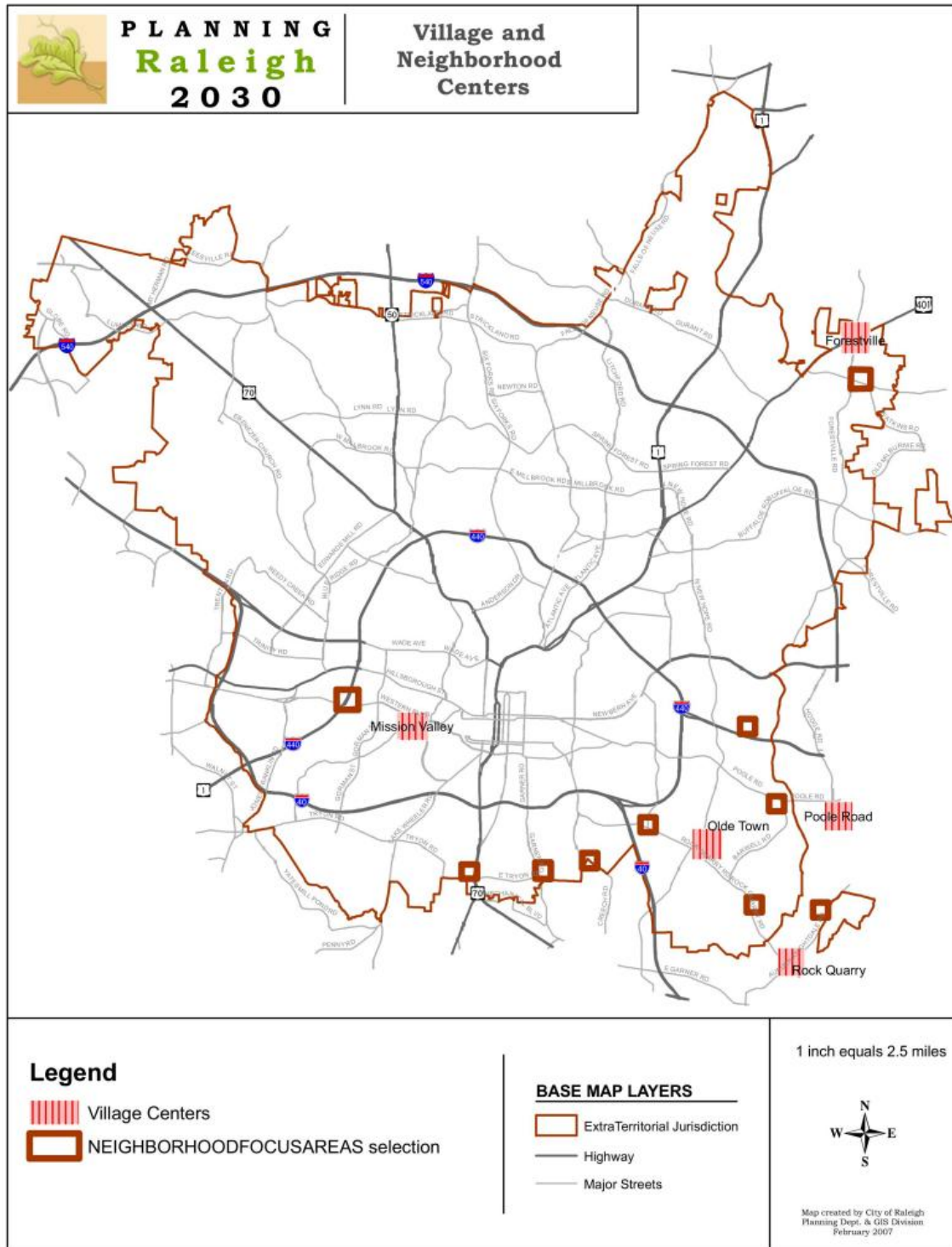
Before the adoption of the Urban Design Guidelines as an element of the Comprehensive Plan in 2001, the implementation of the guidelines was on a voluntary basis. This was considered a preliminary phase to allow familiarity with how to best apply the guidelines and resulted in limited success in creating walkable interconnected commercial centers due to the modification of key design elements during development review to align more with typical highway oriented designs.

The designation in the Comprehensive Plan of specifically located Mixed Use Centers followed this voluntary phase. Mixed Use Centers were designated with the update of the Southeast and Southwest District Plans. The Forestville Village Center and Wake Crossroads Neighborhood Center were designated as a result of commercial rezoning requests. Details for how the guidelines are to be applied in specific centers are described in Small Area Plans and often incorporated into zoning conditions for a development site. By working with the developer to identify primary pedestrian streets and connectivity to neighborhoods a more walkable development pattern resulted. Examples include the Forestville Village Center, Olde Towne Village Center, and Battlebridge Neighborhood Center.

The guidelines have also been successfully used to define development design intent in conditional use zoning cases and to review developer master plans involving large mixed use developments including the Brier Creek Village Center, 40 Wade on Edwards Mill Road, 5401 North on Louisburg Road and Renaissance Park at Tryon Road and South Wilmington Street. Map 12.5 shows the neighborhood and village mixed use centers as designed in the Urban Design Guidelines.



Map 12.6 Neighborhood and Village Mixed Use Centers



### Implications for the Comprehensive Plan

- No mixed-use centers have been designated outside of those identified with updates to the Southeast and Southwest Districts and one designation in the Northeast District as result of a zoning request. Their designation citywide is an important step in guiding the application of the Urban Design Guidelines since all focus area locations may not be appropriate for such design principals.
- The Urban Design Guidelines have not been integrated into the City's development code and are not clearly included in the regulatory review and approval process. This limits the use of the guidelines in new development and especially in commercial redevelopment areas that would benefit from a walkable development pattern.
- The application of the Urban Design Guidelines for locations involving multiple property owners is difficult due to different development schedules among sites and in coordinating grading and road layout.
- The inclusion of high density housing within or adjacent to a mixed use center is an important element that is often not achieved. Pedestrian connectivity between housing and the center is necessary to support transit and walkability within these communities. The EPA report *Our Built and Natural Environments: A Technical Review of the Interactions between Land Use, Transportation, and Environmental Quality* (2001) notes that infill and redevelopment of older suburbs would reduce vehicle miles of travel per capita by 39 to 52 percent.
- Open space is an important element of the pedestrian environment and in creating a sense of place. Open space serves as a gathering place and a location for special events and should be centrally located within mixed use centers.
- Specific design issues that hinder the successful application of the guidelines relate to an interest in orienting commercial development to a major thoroughfare for visibility of the businesses and the parking field serving the use. While visibility is important, the strict adherence to highway oriented design does little for walkability, efficient transit and the creation of a sense of place. Connectivity to adjacent neighborhoods also becomes a challenge when commercial buildings turn their backs and service areas to face the neighborhood. On the other hand, attempts to create internally focused retail areas in developments such as Bedford have experienced difficulty in attractive tenants and financing. A balance needs to be struck between thoroughfare visibility and access and neighborhood walkability.

### Downtown Urban Design Guidelines

The Downtown Urban Design Guidelines, adopted in 1989, were intended to help direct the renewal of downtown into an active and attractive area. These guidelines are organized around six key premises and identify seven districts with provide further guidelines for development in these districts. The themes are structure, diversity, density, pedestrian, civic spaces and heritage. The districts are Union Square, State Government Center, Fayetteville Street Mall, Nash Square, Southside, Moore Square, and Burke Square.

While the Downtown Urban Design Guidelines were a positive first step towards guiding the form of development in downtown, they did not anticipate the scale and amount of development that would happen downtown starting in the late 1990s and continue through the present day. They are still applicable for the majority of downtown and have not been updated since their adoption.

Since their adoption in 1989, there have been numerous changes to downtown. Glenwood South emerged as a nightlife destination and has recently developed into a residential hub. Increased density is being proposed in the Seaboard Warehouse District and the eastern edge of downtown, but these areas are not



covered by the Downtown Urban Design Guidelines. The scale of buildings has increased dramatically as have the parking and service demands. The Downtown Urban Design Guidelines recommended FARs do not reflect the desire for significant density, and the regulation of parking and service uses does not adequately ensure a pedestrian friendly streetscape. The most critical weakness of the guidelines is their inconsistent enforcement. They are not written in a way that can always be clearly and consistently interpreted. They are advisory in nature, leading to selective implementation. While this may have been the appropriate strategy for a downtown that was only beginning to reemerge as a desirable place to build, there is now a strong market for redevelopment and a need for clear guidance.

In 2003 the Livable Streets Plan was adopted with the intent of helping to guide the reemergence of downtown as a vital place to live, work and play. The plan articulates five actions to be taken over the course of five years: complete a Fayetteville Street Renaissance; fund and build a new convention center and hotel; improve the pedestrian environment; undertake regulatory reform; and expand downtown management.

The implementation of the “Five in Five” strategy also contributed two noteworthy urban design projects: the reopening of Fayetteville Street and the construction of a new convention center. Fayetteville Street now features 30-foot wide sidewalks lined with oak trees, benches, kiosks and cafés and supports a mix of high rise office towers, residential developments, hotels, restaurants and retail. The new convention center, located one block off of Fayetteville Street, has prompted the emergence of a new district in downtown that will be characterized by hotels, cultural institutions, significant amounts of ground floor retail space as well as a new public space known as City Plaza.

The Fayetteville Street Urban Design Handbook (UDH) was developed as part of the Fayetteville Street reopening project. The handbook addresses many of the individual site guidelines found in the Downtown Urban Design Guidelines in greater detail and also includes guidelines for the design of public spaces within its bounds. Unfortunately, it only covers the first four blocks of Fayetteville Street, which are now largely built out.

The pace of development in downtown continues to be brisk. Many of these new developments are on the site of former surface parking lots, but increasingly these projects involve the demolition of smaller scale buildings resulting in a change in the scale of streetscape form and character. Downtown is also increasingly becoming a residential neighborhood, with the population expected to more than double to 8,000 people over the next five years.

The number of residents, however, has not yet been enough to prompt a large number of retail establishments to open in the downtown. Recent analysis by the Department of City Planning’s Urban Design Center has shown that if the purchasing power of visitors and office workers was added to that of the residents, despite our small residential population, there is a net leakage of over \$32 million in retail spending from downtown. Some new development includes commercial space on the ground floor that will eventually accommodate these needed services. These retail spaces are not yet clustered into strong commercial districts and are often separated from one another by service uses. Downtown will need a contiguous, walkable agglomeration of retail of sufficient mass to attract shoppers’ spending in a meaningful way.

Downtown’s small blocks and lack of alleys often result in service bays facing the street. This condition is particularly acute on Salisbury and Wilmington Streets as the back of house functions for buildings fronting Fayetteville Street (where no curb cuts are allowed) line one side of Salisbury and Wilmington Streets while the other sides are lined with commercial spaces. This one-sided retail condition, combined with the pedestrian unfriendliness and unsightliness of the back of house functions, prevents these streets from being strong retail corridors. The location and design of service areas, as well as priority locations for retail areas are not addressed in the Downtown Urban Design Guidelines.

Because of the small size of the downtown core, as well as the lack of industrial zones, the downtown core is surrounded by single family neighborhoods, in some cases as close as four blocks from the Capitol building. This transition from core to single family neighborhood is being studied and discussed. The Westside Gateway Plan and the Olde East Raleigh Small Area Plan have recently provided additional guidance. However, as sites in the core of downtown become scarce, there is increasing interest in adding larger scale projects on the periphery. The Downtown Urban Design Guidelines do not adequately address this transition between the core and the surrounding neighborhoods and how to guide development in this area. Competing goals of neighborhood stabilization, affordable housing, and downtown vitality and growth need to be addressed.

Hargett and Martin streets were converted from one way to two way traffic in 2004 and are now characterized by a high pedestrian count and multiple new commercial spaces, effectively forming a connection between two previously distinct districts: Moore Square and Fayetteville Street. Lenoir and South Streets will be converted to two way in the summer of 2008, with Lane and Jones scheduled to be the next conversions. The conversion of east west through streets helps connect districts and create more pedestrian friendly streets that in turn support the development of active ground floor uses. Strengthened urban design guidelines are needed to identify these pedestrian priority areas, and give guidance to ensure new projects in these areas create pedestrian friendly environments.

Many projects have missed critical opportunities to contribute to the ongoing revitalization. Future guidelines should be more closely integrated with the Downtown Plan component of the Comprehensive Plan so that the goals for downtown are closely tied to urban design strategies. The intent of the guidelines should also be included in the zoning code when it is updated to make them regulations that are the basis of development project reviews and not advisory.

### Implications for the Comprehensive Plan

- The Downtown Urban Design Guidelines need to be updated to respond to current challenges and initiatives.
- The Downtown Urban Design Guidelines are not uniformly enforced and are not written in a way that can always be clearly and consistently interpreted. They are currently advisory in nature, leading to selective implementation.
- The transition area between downtown and adjacent neighborhoods is not adequately addressed by the guidelines.
- The pedestrian realm of downtown needs to be improved. Sidewalks should be widened and maintained, curb cuts consolidated, and service and parking minimized at the sidewalk edge.
- Clear and safe pedestrian networks within and connections to nearby center city neighborhoods need to be enhanced.
- The presence of parking decks along the street edge, especially along key corridors needs to be minimized, and active building frontage maximized.
- A contiguous, walkable agglomeration of retail of sufficient mass to attract shoppers' spending in a meaningful way is needed.
- The location and design of service areas, as well as priority locations for retail areas are not addressed in the Downtown Urban Design Guidelines. Retail needs to be strategically placed so that destination clusters and districts can be developed and thrive.





## Zoning Regulations That Address Urban Design and Form

Zoning regulations have been adopted over time in the form of overlay districts to address urban design issues present in the more auto-oriented, base zoning districts found in the zoning code. The overlay districts noted below are oriented to commercial and mixed-use areas and include requirements for pedestrian and transit oriented design.

### Pedestrian Business Overlay District

Adopted in 1988, the goal of the Pedestrian Business Overlay Zoning District (PBOD) is to coordinate streetscape design improvements along older commercial streets and to modify zoning standards that do not support the pedestrian orientation and experience of the commercial district. The existing base zoning in these areas typically include auto oriented design standards while the existing development reflects a pedestrian design with buildings set forward to the public sidewalk and parking located behind or beside the building. Such commercial streets include Hillsborough Street, Glenwood Avenue, Person Street and Peace Street. The preparation of a Streetscape and Parking Plan is a required element in establishing a PBOD.

**Picture 12.3 Glenwood South Streetscape**



Streetscape and Parking Plans along with the implementing PBOD zoning have been successful in maintaining the pedestrian orientation of these older commercial streets as well as encouraging redevelopment. Glenwood South has been particularly successful in this respect. The code requirements for building setback, building height, façade design, parking location and amount may be modified to reflect the existing built characteristics. Design standards for streetscape elements including sidewalk width, street trees, furniture, and signage as well as cross walk and street design are coordinated to accommodate pedestrians. Implementation of improvements initially was through private redevelopment projects using a reduction in required parking

as an incentive. This approach resulted in spotty improvements and funding was established in the Capital Improvements Program to provide more of an economic stimulus and to update infrastructure within the older commercial districts.

Though most PBODs have been established by the City, the tool has also been used in establishing streetscape design standards in private developments including Cameron Village and Glen Lake Office Park. The attraction in using the PBOD includes the ability to modify the setback and parking standards without changing the underlying zoning and associated land uses.

### **Transit Oriented Development Guidelines**

These guidelines were adopted in 2004 to outline components of a Transit Oriented Development (TOD) strategy for the City as it plans for and implements a transit-supportive mixed-use environment around proposed transit stations. The Urban Form Map of the Comprehensive Plan designates 10 TOD locations based upon the planned locations of the proposed Triangle Transit Authority (TTA) Regional Rail stations. The goal of the guidelines is to allow a large, concentrated population which lives and/or works within the one-quarter to half mile service area of each transit stop. Each stop would include a commercial center with retail/office services and open space to support the surrounding medium/high density concentration of residential uses. Buildings would be oriented to a pedestrian friendly grid of streets creating a walkable urban environment that would in turn support transit use.

Because of the unique setting of each designated transit stop, the Transit Oriented Development Guidelines require that the boundary and specific development standards of each TOD station area be prepared through a public planning process and adoption of a Transit Station Area Plan. Each plan must identify a station area boundary and Core Area, appropriate land uses, minimum density and intensity levels, street/sidewalk design and circulation, site design standards including building placement, facade design, height and parking ratios. Plan recommendations are then implemented through the zoning code with the application of the Transit Oriented Development Overlay District (10-2062).

Many of the recommended elements of the TOD strategy have been implemented with the exception of the preparation of station area plans and application of the TOD zoning. Action on these elements has not taken place due to delays in funding and construction of the regional rail system as well as the lack of staff resources for implementation. To regroup and reevaluate regional transit options, the region's leading transportation agencies have appointed a Special Transit Advisory Commission (STAC) to undertake the Transit Infrastructure Blueprint Project. The project will produce a vision plan for regional transit by 2035, with an interim 2020 plan for commuter rail and enhance bus service. This commission is expected to make recommendations by the spring of 2008.

### **Planned Development Conditional Use Overlay District**

The Planned Development Conditional Use Overlay District (PDD) is intended to provide an opportunity to incorporate alternative designs involving a mixture of uses to promote transit usage, more usable open space, affordable housing, facilitate the more economic arrangement of buildings, preserve significant natural features, protect roadway corridors from strip development, contain innovative architectural elements and design, and provide for community-wide public services and amenities. Design flexibility is achieved through the use of a master plan, which has demonstrated its superiority to the underlying district. Another purpose of this district is to establish a more efficient and responsive decision-making process for mixed use developments.



Being the only land use tool that provides flexibility to accommodate mixed use developments, the PDD has been credited with producing a few notable planned communities in Raleigh. However, the standards and procedures associated with the approval of PDD's make it an economically viable tool for large tract projects only, and the approval process tends to be complex and time-consuming.

### Special Highway Overlay District

There are four different Special Highway Overlay District (SHOD) designations established for achieve specific environmental and design objectives. Special Highway Overlay Districts 1 and 2 are used along freeways to establish a vegetative buffer to filter noise and air pollution and to establish a green edge for the corridor to help organize the space and improve appearance. Special Highway Overlay Districts 3 and 4 have been used along commercial corridors such as New Bern Avenue and Louisburg Road as an urban design element. Special Highway Overlay District 3 provides a landscape buffer along the roadway intended to establish a green edge with little visibility to the development behind the buffer. Special Highway Overlay District 4 is called a connective yard and provides a landscape buffer as well, but allows buildings to serve as part of the corridor edge for increased visibility of business uses.

#### Implications for the Comprehensive Plan

- Streetscape and Parking Plans cover only a limited portion of the City and can be difficult to interpret as they function as both plan and code.
- The Pedestrian Business Overlay District, which is the implementing zoning for Streetscape Plans is an overlay district that allows the land uses of the underlying zoning and landscape standards such as transitional protective yard requirements remain in place. The result is frequent conflict with the urban mixed-use intent and pedestrian orientation of the streetscape plan.
- Station Area Plans have not been prepared and the Transit Oriented Development Overlay District zoning has not been applied to guide development patterns around future TOD's. Many TOD sites are being developed with suburban standards and their contribution in supporting transit has been lost for the immediate future.

## 12.4 Current Initiatives

### Public Realm Study

The Public Realm Study is an initiative identified in the Five-in-Five strategy to improve the pedestrian environment in the downtown area. The public realm is best defined as the network of public spaces – streets, squares, plazas, parks and sidewalks – that comprise the connective tissue of spaces that citizens share in their daily lives. It is these public spaces that most clearly define a city. The character of public spaces is formed by the arrangement and details of the elements that define them such as the walls, the building edges, public squares, storefronts along a commercial street, or dwellings that line a residential avenue.

Raleigh's public realm is strongest within the downtown limits, Planned Development Districts, Pedestrian Business Overlay Districts and Mixed-Use Centers. These are all areas in which the pedestrian network is emphasized. In other parts of the City, the connection between the various elements that define the public realm, such as plazas, parks and sidewalks is commonly missing. While the development code provides for the dedication of adequate open space, sidewalks, tree conservation and connectivity, these issues are

addressed on a site by site basis rather than in comprehensive, network based approach. In some cases, the development code may actually impede this connectivity of public spaces by requiring separation of uses, transitional protective yards, and large setbacks.

Buildings are typically oriented towards the most common point of access — streets — rather than open spaces, greenways or plazas. The required open space is allowed to be located towards the edges of the development on parcels otherwise unsuitable for development rather than in a central location where it could be used as a space actively used by the community.

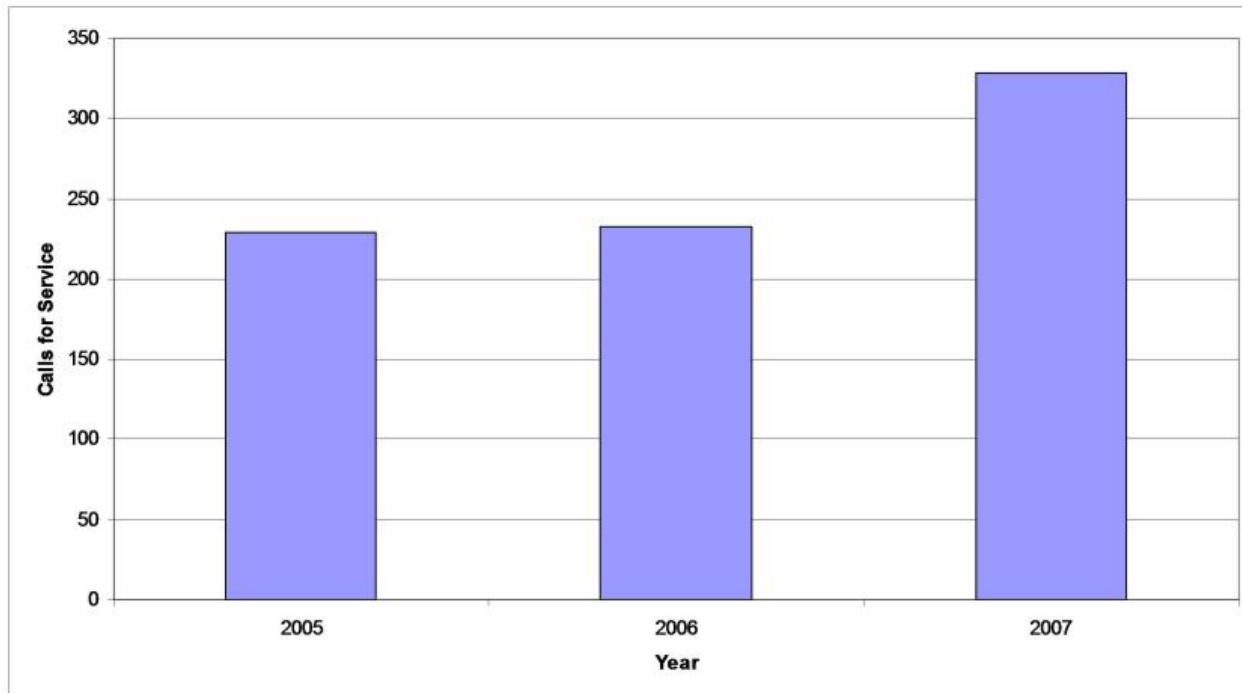
City owned parks and greenway facilities are the key public spaces designed to be used by the broader community. The role of parks and open spaces as an amenity for all citizens has been central to the vision of the City of Raleigh. They are considered part of the City's infrastructure. Parks in proximity to neighborhoods are not only valuable as an amenity they can also increase the land values in the surrounding neighborhood. While parks are developed to be accessible to as much of the community as possible, this accessibility is often via car rather than through a larger network of public spaces (trails or greenways linked to other public gathering spaces). While neighborhoods may be proximate to parks, the connective tissue between the neighborhood and the park may be missing because travel between the two is only possible via car.

This reliance on the car to connect pieces of the public realm is not uncommon in Raleigh. It was only in 1987 that sidewalks were required on both sides of the street in new neighborhoods. There are large commercial areas that contain no sidewalks at all. Even where sidewalks are present, the distance between public spaces may be so large that the pedestrian connection is essentially broken.

Raleigh has actually become worse for pedestrians in terms of safety. According to Raleigh Police Department data, over the past three years there have been an average of 263 calls for service for pedestrian accidents with a total of 328 in 2007.



**Figure 12.2 Pedestrian Accident Service Calls**



Locations of these pedestrian accident calls for service are shown on Maps 12.7 and 12.8 below. Mean Streets, 2004 publication of the Surface Transportation Policy Project, which details pedestrian fatalities in United States, lists the Raleigh-Durham-Chapel Hill, NC MSA as having a 8.7 percent increase in its Pedestrian Danger Index (PDI) from 1994 to 2003. The PDI combines two factors, a measure of the average yearly pedestrian fatalities per capita adjusted for the number of walkers. Raleigh ranked 23 out the top 50 metro areas in the study in the number of pedestrian fatalities per capita.

## Wayfinding

As the City seeks to draw more visitors into a revitalized downtown through the construction of new destinations and the conversion of traffic flow from one way to two way, new signage is necessary to direct users to their destinations. Corbin Design was hired to analyze existing conditions, design a signage package, and identify preferred routes to destinations. The recommended sign design and location plan successfully fulfills two goals: to efficiently direct visitors to destinations and parking, and to establish a graphic identity for the City of Raleigh. The signage system features a dark blue background with simple white lettering and a perforated aluminum fin with an oak leaf detail.

In addition to a more visible, more flexible design package, Corbin has also paid close attention to the location of signs. All signs are on the right side of the road, approximately 200 feet before an intersection where possible to allow time for drivers to make any necessary lane changes. The system also features two sign types to aid pedestrian wayfinding: guide signs similar to the vehicular guide signs, but smaller in scale and placed at major pedestrian intersections, as well as pedestrian map kiosks that are oriented to the viewer's perspective to aid in legibility and understanding.



During the approval process, the design was praised for striking a balance between being contemporary and classic, with selective ornamentation and a sense of permanence reflective of the architectural vocabulary seen in downtown. While the project's boundaries are currently the downtown core, the system has been designed with changeable panels and prefabricated parts so system expansion and modification will be possible in the future.

Beltline signage was identified as an area that needs improvement. Coordinate with NCDOT to improve these gateways to the city may be a future phase of the wayfinding initiative. Also, expansion of the system may be particularly valuable in other urbanizing areas of the city, where a dense development pattern makes destination identification difficult, and compact form makes the anticipatory value of a uniform sign system useful for visitors trying to find their way.

### Implications for the Comprehensive Plan

- The development code provides for the dedication of open space, sidewalks, tree conservation and connectivity. These elements are addressed on a site by site basis rather than in comprehensive, network based approach. In some cases, the development code may actually impede this connectivity of public spaces by requiring separation of uses, transitional protective yards, and large setbacks.
- Sidewalk standards, as set forth the Streets, Sidewalks and Driveway Access Handbook, call only for a minimal four foot width regardless of context. This dimension is far too small for areas accommodating higher pedestrian flows, such as downtown and several pedestrian-oriented business districts.
- Required open space is allowed to be located on the edges of a development site or along the rear yards of street fronting properties in areas otherwise unsuitable for development rather than in a central location where it could be shared and actively used by the community.
- While parks are developed to be accessible to as much of the community as possible, this accessibility is often by car rather than through a larger network of public spaces (trails or greenways linked to other public gathering spaces). While neighborhoods may be proximate to parks, the connective tissue between the neighborhood and the park may be missing because travel between the two is only possible via car.
- Current development regulations do not require or help to coordinate open space corridors or pedestrian connections between developments.
- Raleigh ranked 23 out of the top 50 metro areas in the Mean Streets, 2004 publication of the Surface Transportation Policy Project, which details pedestrian fatalities in United States.
- Wayfinding is a city wide issue especially for those not familiar with their destination. Street signs are difficult to read along thoroughfares where traffic flow exceeds 35 miles per hour. The separation of buildings from the street and required landscaping used to mitigate unsightly parking lots hinders site and business visibility.
- Beltline signage is confusing and needs orientation modifications to improve wayfinding to the gateways of the city.



## 12.5 Conclusion: Key Issues and Potential Strategies

### Key Issues

#### Current Urban Design Conditions

##### Key Issue 12.1

Landscape regulations are designed to buffer conflicting uses and hide roadway clutter rather than encourage appropriate transitional site and building design.

##### Key Issue 12.2

Individual developments do not adequately consider or coordinate site design to enhance vehicular and pedestrian connectivity between sites and uses. Many land uses tend to back up to each other rather than employing site design standards that conveniently connect the uses. Site grading and design allows building entry and roof to be located below street grade.

##### Key Issue 12.3

Transit, bike and pedestrian modes of travel are not adequately accommodated along thoroughfares and other city streets. Transit stop amenities are often inadequate or non-existent. Sidewalks often have little separation from roadway traffic, frequent driveways interrupt sidewalk continuity and intersection crossings are foreboding due to the width of roadway and the signal timing sequence. Crosswalks often inconveniently spaced for pedestrians.

##### Key Issue 12.4

Zoning regulations in existing pre-auto designed commercial districts are often in conflict with the built development pattern and do not support maintaining the pedestrian orientation of these older commercial areas with redevelopment.

##### Key Issue 12.5

Many downtown sidewalks are not adequately sized to accommodate the increasing intensity of development and street activating uses. Vehicular drives and building service areas interrupt the continuity of active space along the street and intrude into the pedestrian streetscape.

### **Key Issue 12.6**

Right turn on red introduces a hazard to pedestrians at many downtown intersections.

## **Planning Framework**

### **Key Issue 12.7**

The existing Urban Form Map and policies along with the City's other guidelines are confusing, out of date, and provide inadequate direction to guide growth and development.

### **Key Issue 12.8**

Location of focus areas at major intersections results in disconnected quadrants of development with no central focus.

### **Key Issue 12.9**

The designation of mixed-use centers and application of the Urban Design Guidelines has not progressed effectively to provide for orderly growth and to encourage a more compact, efficient urban form on a citywide basis. The Urban Design Guidelines have not been integrated into the City's development code and are not consistently referenced in the regulatory review and approval process.

### **Key Issue 12.10**

The Downtown Urban Design Guidelines do not respond to many current challenges including open space, pedestrian realm conflicts, streetscape activation, retail uses and neighborhood transitions.

### **Key Issue 12.11**

The Downtown Urban Design Guidelines are an element of the Comprehensive Plan and do not include any requirements that they be uniformly enforced.



### **Key Issue 12.12**

Streetscape and Parking Plans and associated PBOD zoning are difficult to interpret as they function as both plan and code.

### **Key Issue 12.13**

The PBOD as an overlay district allows only the land uses of the underlying zoning and regulatory standards that may be in conflict with the intent of the streetscape plan to support pedestrian orientated mixed-use development patterns.

### **Key Issue 12.14**

Station Area Plans have not been prepared and the Transit Oriented Development Overlay District zoning has not been applied to guide development patterns around future TOD's resulting in suburban development patterns.

## **Current Initiatives**

### **Key Issue 12.15**

Open space standards are not effective in creating centrally located and useable open space. Required open space is allowed to be located on the edges of a development site, along the rear yards of street fronting properties or in areas otherwise unsuitable for development rather than in a central location more conducive to active use by the community. In some cases, the development code may actually impede this connectivity of public spaces by requiring separation of uses, transitional protective yards, and large setbacks.

### **Key Issue 12.16**

Beltline signage is confusing and needs orientation modifications to improve wayfinding to the gateways of the city.

## Potential Strategies

### Potential Strategy 12.1

Codify the Urban Design Guidelines for application in the development review process in designated mixed-use centers and newly designated multi-modal transportation corridors to support transit and other modes of travel.

### Potential Strategy 12.2

Designate appropriately located mixed use centers city wide to support efficient urban design and multiple forms of travel. The location of the mixed use centers should allow for connectivity with the surrounding community and should not infringe upon important natural areas and floodplains.

### Potential Strategy 12.3

Designate multi-modal transportation corridors and adopt code standards for street/thoroughfare design and site design that supports efficient compact urban form with an emphasis on transit, bike and pedestrian use in addition to vehicular travel.

### Potential Strategy 12.4

Amend the development code to allow alternate means of compliance for landscape requirements (for example, transitional protective yards, and street yards) within areas applying urban design standards such as in mixed-use centers, multi modal corridors and pedestrian business areas.

### Potential Strategy 12.5

Provide incentives to support the application of the Urban Design Guidelines in new commercial and redevelopment projects. Incentives could include density bonuses, reduction in facility fees, parking reductions and city initiated rezoning of properties designated as mixed use centers.

### Potential Strategy 12.6

Review and revise the Comprehensive Plan's Urban Form map's typology of designated centers, corridors and areas. In addition, establish specific boundaries for urban form elements. This revision should include update of policies and guidelines to more effectively guide growth and development in the City.





### **Potential Strategy 12.7**

Update the Downtown Urban Design Guidelines to address usable open space, pedestrian realm conflicts, streetscape activation, retail uses and neighborhood transitions. Require the development of meaningful spaces that are designed to attract people. Current regulation only requires open space.

### **Potential Strategy 12.8**

Adopt updated Downtown Urban Design Guidelines into the zoning code as standards for all downtown development. Urban design should not be viewed as a separate, selectively implemented component of the comprehensive plan but rather as a necessary tool to ensure successful and sustainable development citywide.

### **Potential Strategy 12.9**

Expand the Downtown Urban Design Guidelines to cover areas all areas within and adjacent to the boundaries of the Downtown Overlay District. Adjust the boundaries of downtown and prepare a strategy for density transitions.

### **Potential Strategy 12.10**

Prepare Station Area Plans for designated TOD areas on the Urban Form map and codify standards through the Transit Oriented Development Overlay District zoning to guide development patterns in preparation for future transit stops.

### **Potential Strategy 12.11**

Revise residential and commercial open space standards to emphasize the creation of centrally located, usable and interconnected open space areas. Consideration should not only include the urban open spaces within downtown and mixed-use centers, but also suburban residential development.

### **Potential Strategy 12.12**

Improve wayfinding citywide through increased street sign size based upon traffic speed, use of tract ID signs and site design improvements. Coordinate beltway signage with NCDOT to improve the gateways to the city.

**Potential Strategy 12.13**

Update the Streets, Sidewalks, and Driveway Handbook to include pedestrian oriented design standards including a maximum distance between crosswalks and markings at intersections.

**Potential Strategy 12.14**

Prohibit right turn on red within a designated area downtown.

**Potential Strategy 12.15**

Identify and open prominent views to downtown to establish landmarks for wayfinding.