

City of Raleigh Data Book 2017

DEPARTMENT OF CITY PLANNING
SEPTEMBER 2018



Table of Contents

INTRODUCTION	3
DEMOGRAPHICS & HOUSEHOLD TRENDS	3
LAND USE & ZONING	19
ECONOMIC DEVELOPMENT & EMPLOYMENT TRENDS	28
HOUSING & NEIGHBORHOODS	50
TRANSPORTATION	55
PUBLIC UTILITIES	59
ENVIRONMENTAL RESOURCES	64
PARKS, RECREATION, AND CULTURAL RESOURCES	74
COMMUNITY FACILITIES	77
HISTORIC RESOURCES.....	80

1 INTRODUCTION

The Raleigh Data Book is an annual publication of updated community information collected by City of Raleigh Department of City Planning staff. The Data Book builds upon the larger, more comprehensive “Community Inventory Report: Background Studies for the Comprehensive Plan” published in 2008. The Community Inventory Report remains the analytical basis for the City of Raleigh’s 2030 Comprehensive Plan and is accessible on-line: <http://www.raleighnc.gov/cp>

ANNUAL UPDATES OF CITY DATA: RALEIGH DATA BOOK

The City of Raleigh 2030 Comprehensive Plan, adopted in November 2009, provides implementation instructions regarding the monitoring of existing conditions (Action Item IM 3.3). More specifically, Action Item IM 3.4,

“Data Book Updates”, states that data in the report will be updated every year.

The Raleigh Data Book is published online in conjunction with population estimates conducted by city staff that occurs in January each year. It focuses on topical areas of the Community Inventory Report which have been reviewed through comprehensive planning initiatives during the previous calendar year, with a data benchmark point of December 31st whenever possible. All figures and tables are for the City of Raleigh corporate limits unless otherwise specified.

2 DEMOGRAPHICS & HOUSEHOLD TRENDS

With a population increase of 12.9% from 2010 to 2016, Raleigh is one of the fastest-growing cities in the country. This chapter provides the most up-to-date data available for understanding the characteristics of the individuals and households that make up the population of Raleigh.

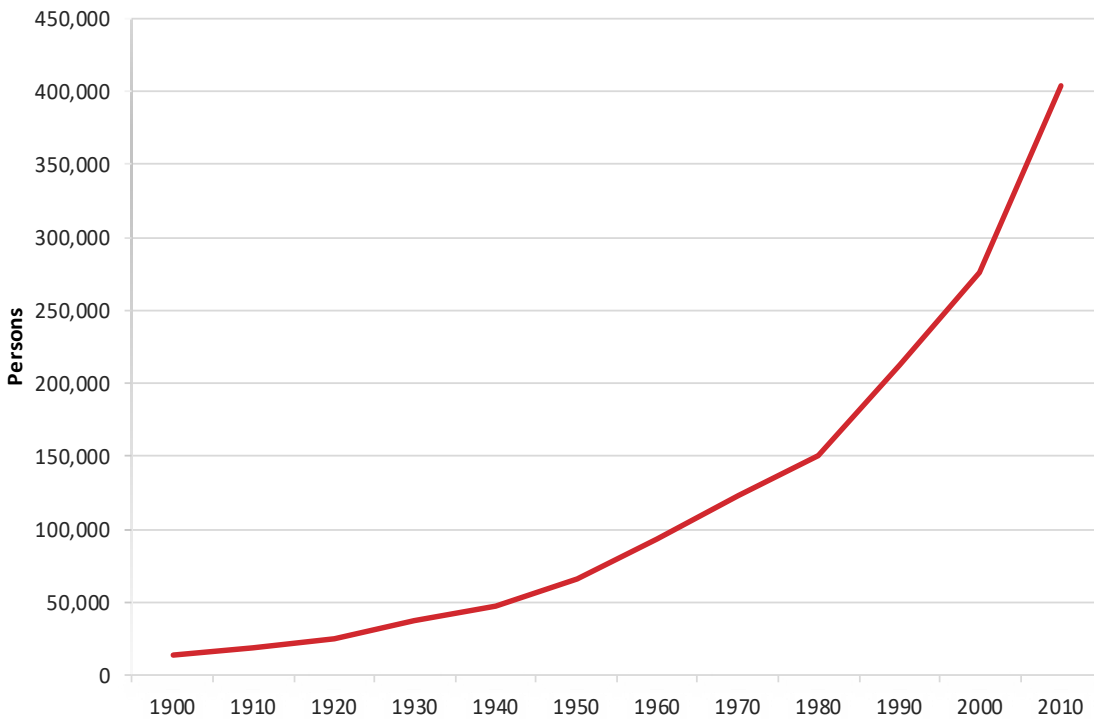
The data presented in this chapter have been drawn from a variety of sources. The decennial census count numbers provide the baseline for household and population estimates released in the intervening years. The American Community Survey (ACS) of the U.S. Census Bureau provides detailed demographics, summarized over time from sample data. The U.S. Census Bureau’s Population Estimates Program provides population estimates between the census years.

ACS data is best used for obtaining population characteristic distributions (percentages, means, medians, and rates) while the decennial census and the Population Estimates Program is best for population totals and basic characteristics (sex, race, age, Hispanic origin, and homeowner status.) ACS data should only be compared with basic characteristics from the 2010 census since more detailed information was not asked. In addition to census data building permit data is also used to give an overview of recent trends in housing construction.

CITY POPULATION & HOUSEHOLD TRENDS

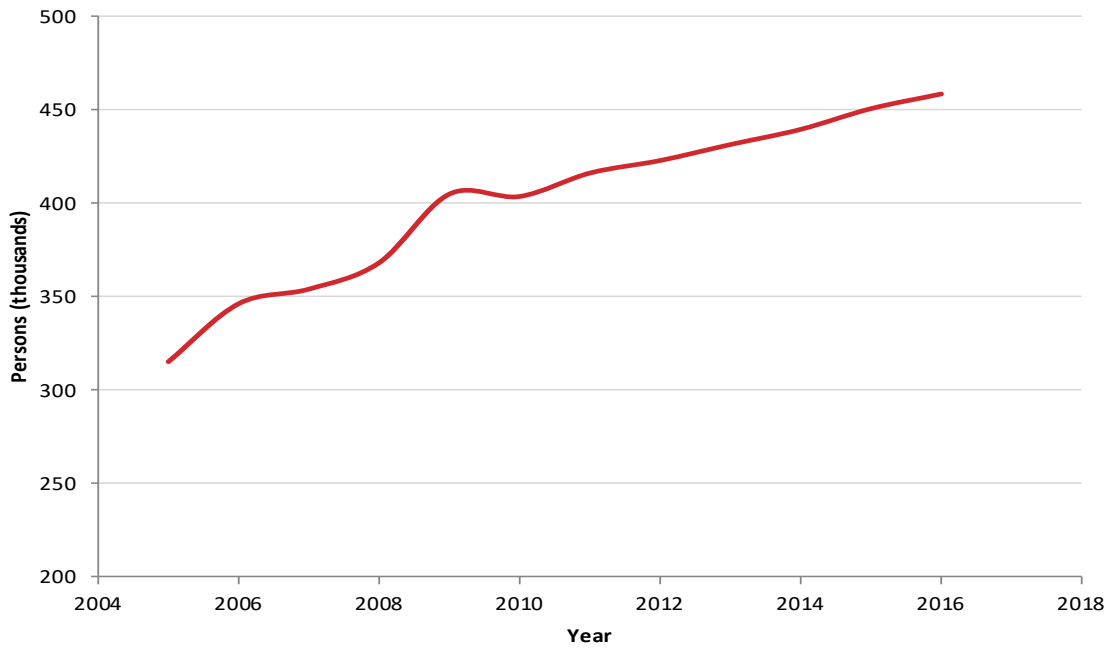
The most recent Census population estimates reflect Raleigh’s continued growth (see Figures 2.1 and 2.2). In 2016 Raleigh was estimated to have a population of 458,862 a 1.7% increase from the previous year (see Figure 2.1). The number of housing units has also grown, with an estimate of 201,158 units in 2016 representing an increase of 3% from 2015 (see Figure 2.5). The density of population and housing units has also increased, slightly continuing the upward trend seen over the last few years (see Figures 2.4 & 2.5).

FIGURE 2.1 CENSUS POPULATION COUNT



Source: U.S. Census Bureau, Decennial Data

FIGURE 2.2 CENSUS POPULATION COUNT AND ESTIMATES



Sources: U.S. Census Bureau, Decennial Data (1990, 2000, 2010), Population Estimates Program (July, 1991-2016)

FIGURE 2.3 POPULATION DENSITY



Source: U.S. Census Bureau, Decennial Data; Raleigh Department of City Planning

FIGURE 2.4 POPULATION, GROWTH RATE , AND DENSITY

Year	Population	Annual Percent Growth Rate	Land Area in Sq. Miles	Population Density (people per square mile)
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
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
2010	403,892	3.9%	143.77	2,809
2011	416,468	3.1%	144.30	2,875
2012	423,179	1.6%	144.45	2,917
2013	431,746	2.0%	144.86	2,970
2014	439,896	1.9%	145.17	3,007
2015	451,066	2.5%	145.76	3,078
2016	458,862	1.7%	145.98	3,143

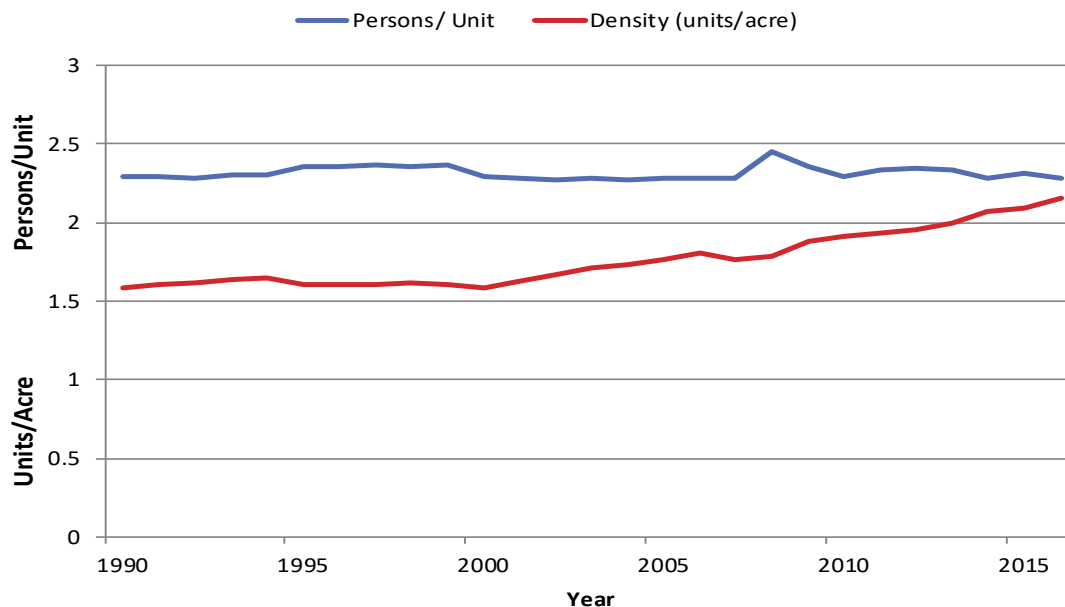
Source: U.S. Census Bureau, Decennial Data & Population Estimates; Land Area by Raleigh Dept. of City Planning

FIGURE 2.5 HOUSING

Year	Housing Units	Annual Percent Growth Rate	Land Area in Acres	Housing Density (units/acre)
1970	38,464	--	28,755	1.34
1980	57,866	4.2%	35,309	1.64
1990	92,643	4.8%	58,496	1.58
2000	120,699	2.1%	75,974	1.59
2010	176,124	2.5%	92,061	1.91
2011	178,203	1.2%	92,354	1.92
2012	180,196	1.1%	92,448	1.94
2013	184,844	2.6%	92,710	1.99
2014	192,504	4.1%	92,909	2.06
2015	195,293	1.4%	93,286	2.08
2016	201,158	3.0%	93,427	2.15

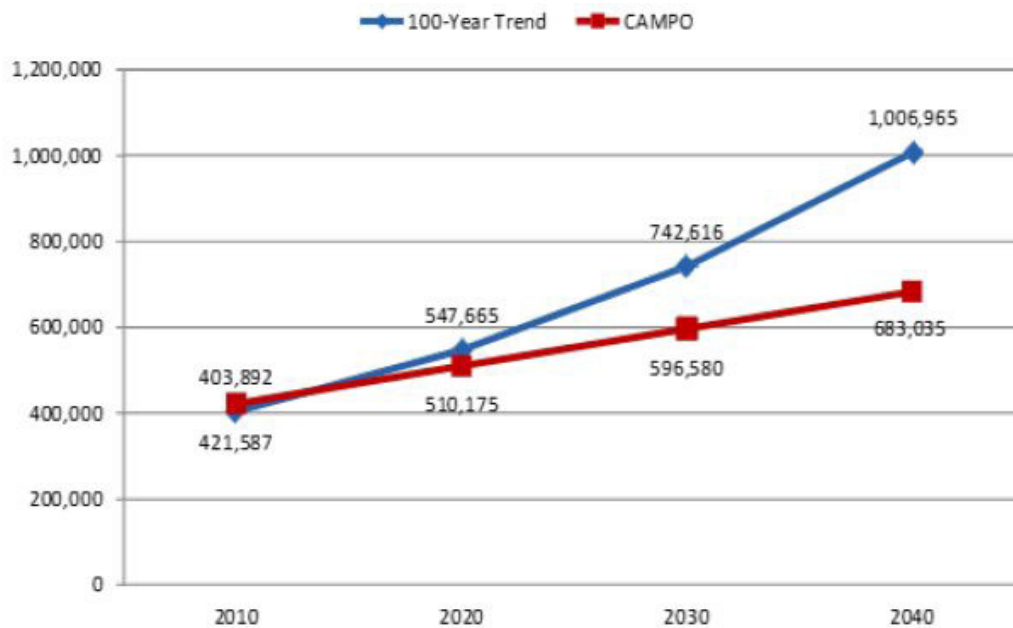
Source: U.S. Census Bureau, Decennial Data; Non-Decennial Year Housing Unit Estimates and Land Area by Raleigh Department of City Planning

FIGURE 2.6 DWELLING UNIT DENSITIES, 1990 – 2016



Source U.S. Census Bureau, Decennial Data; Raleigh Department of City Planning:

FIGURE 2.7 RALEIGH POPULATION PROJECTIONS



Source: U.S. Census Bureau, Decennial Data; Raleigh Department of City Planning

RESIDENTIAL DEVELOPMENT

Single family detached dwelling units comprise 43.7% of housing in Raleigh based on 2016 American Community Survey data (see figures 2.8 & 2.9). Multi-family apartments come in second at 38.2%, followed by townhouses (15%), duplexes (1.3%), and mobile homes (1.8%) (see Figure 2.9). From 2010 to 2016, apartments made up 62% of all issued residential building permits. In 2017, apartments comprised the largest share – 53.8% - of residential building permits issued in Raleigh (see Figures 2.14 and 2.15). Single family homes came in second at 30.5%.

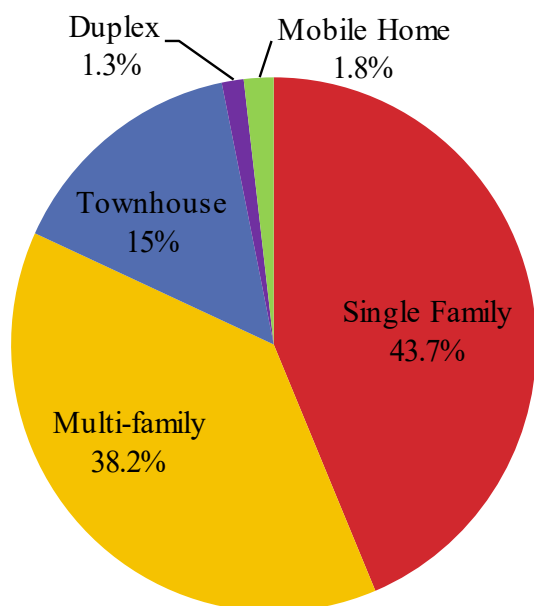
Raleigh's housing stock is relatively young, with approximately 82.3% of its housing units built in the last 46 years (see figure 2.10). The overall household vacancy rate (homeowners and renters) is 7.7%, which is down from a high of 11.3% in 2010. The homeownership rate stands at 49.1%, a decrease from 53.5% in 2010 (see figures 2.11 and 2.12).

FIGURE 2.8 TOTAL HOUSING UNITS BY NUMBER IN STRUCTURE, 2016

Units in Structure	Number	Percent
1- Unit Detached	87,829	43.7%
1 - Unit Attached	30,144	15.0%
2 Units	2,711	1.3%
3 or 4 Units	8,658	4.3%
5 to 9 Units	15,985	7.9%
10 to 19 Units	23,736	11.8%
20 or More Units	28,327	14.1%
Mobile Homes	3,677	1.8%
Total Units	201,156	100%

Source: U.S. Census Bureau, 2016 American Community Survey, 1-year Estimate

FIGURE 2.9 HOUSING SHARE BY BUILDING TYPE, 2016



Source: U.S. Census Bureau, 2016 American Community Survey, 1-year Estimate

FIGURE 2.10 HOUSING UNITS BY YEAR BUILT

Year Built	Number	Percent
1939 or earlier	6,437	3.2%
1940 to 1949	5,230	2.6%
1950 to 1959	7,644	3.8%
1960 to 1969	15,489	7.7%
1970 to 1979	24,138	12.0%
1980 to 1989	35,604	17.7%
1990 to 1999	38,823	19.3%
2000 to 2009	50,088	24.9%
2010 or later	17,701	8.8%
Total	201,158	100%

Source: U.S. Census Bureau, 2016 American Community Survey, 1-year Estimate

FIGURE 2.11 OCCUPANCY BY TENURE, 2016

Total Housing Units	201,158
Occupied Housing Units	180,841
Vacant Housing Units	20,316
Overall Vacancy Rate	7.7%
Homeowner Vacancy Rate	1.5%
Rental Vacancy Rate	6.2%

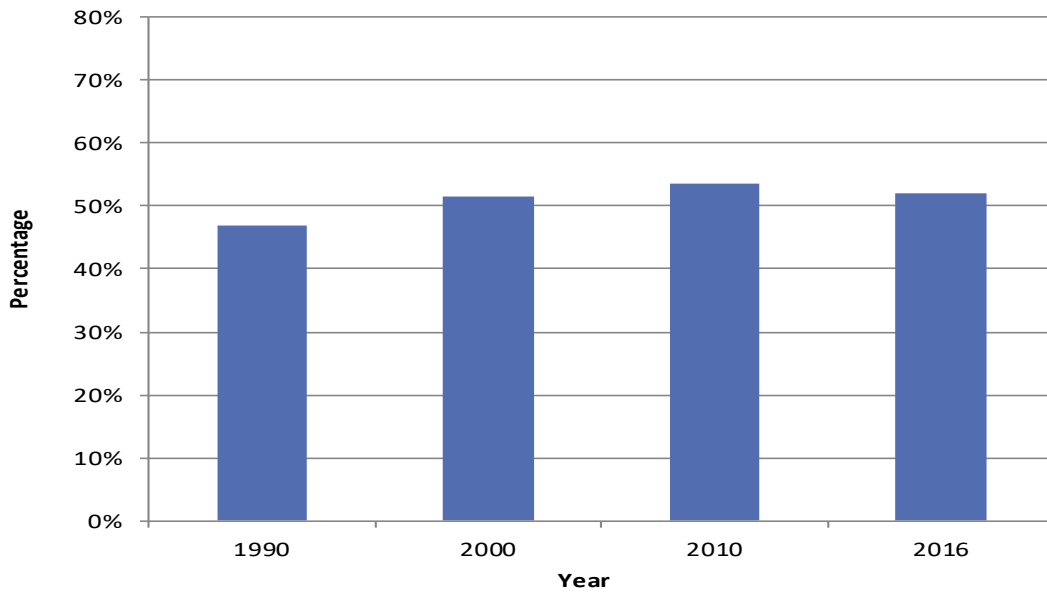
Source: U.S. Census Bureau, 2016 American Community Survey, 1-year Estimate

FIGURE 2.12 HOUSING TENURE FOR OCCUPIED UNITS

	2000		2010		2016		Percent	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Owner-occupied	58,079	51.6%	87,284	53.5%	88,760	49.1%		
Renter-occupied	54,529	48.4%	75,715	46.5%	92,013	50.9%		
Total occupied units	112,608	100.0%	162,573	100.0%	180,773	100.0%		

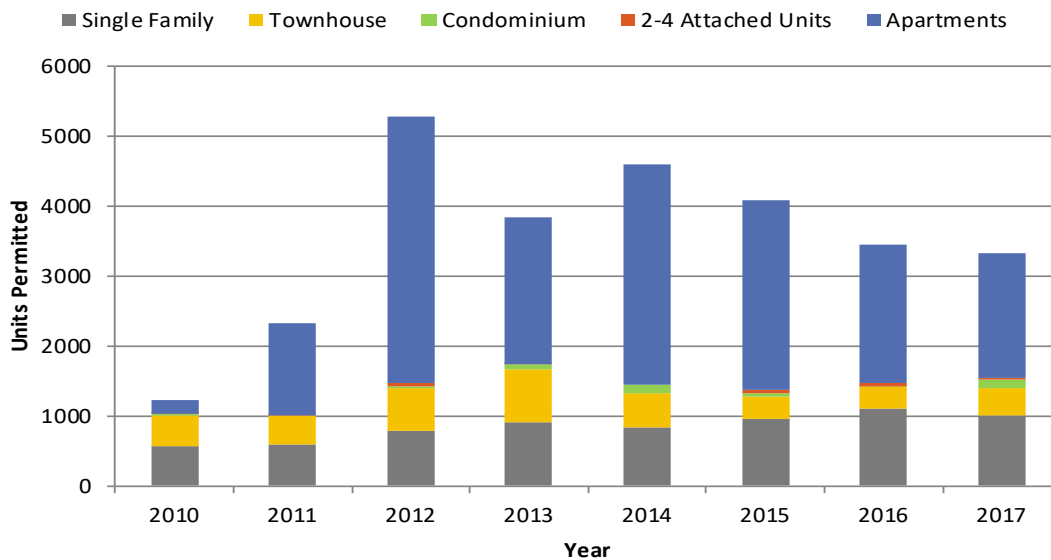
Source: U.S. Census Bureau, Decennial Data (2000, 2010); 2016 American Community Survey, 1-year Estimates

FIGURE 2.13 HOMEOWNERSHIP RATE



Source: U.S. Census Bureau, Decennial Data (1990, 2000, 2010); 2016 American Community Survey, 1-year Estimate

FIGURE 2.14 RESIDENTIAL UNITS PERMITTED



Source: City of Raleigh Development Services Department and Department of City Planning

*Refer to Figure 5.8 for information on square feet and construction value of residential building activity

FIGURE 2.15 **RESIDENTIAL UNITS PERMITTED**

Year	Single Family	Townhouse	Condominium	2-4 Attached Units	Apartments	Totals
2010	570	427	56	2	205	1,260
2011	592	405	0	20	1,299	2,316
2012	783	618	23	43	3,806	5,273
2013	909	750	80	8	2,096	3,843
2014	829	491	125	-	3,140	4,585
2015	965	308	42	49	2,723	4,087
2016	1,097	312	24	26	1,991	3,450
2017	1,017	370	129	18	1,791	3,325
8-year total	4,648	2,999	326	122	13,269	21,364
Percent of Total	22%	14%	2%	1%	62%	100%
8-year average	930	600	65	24	2,654	4,273

Source: City of Raleigh Inspections Department and Department of City Planning

This includes all units from the specified calendar year that have been permitted; it does not indicate construction.



CITY PROFILE

Looking at population distribution by age group, Raleigh is younger than North Carolina as a whole with higher percentages of children under 5 as well as 15 to 44 year-olds (see Figure 2.16). Raleigh's age distribution has changed somewhat from 2000 to 2016 with the percentage of 20 to 44 year-olds slightly declining as a share of the overall population. In contrast, the percentage of 45 to 84 year-olds has seen small but significant gains (see Figure 2.17).

In terms of population by race the share of White population has decreased from 2000 to 2016 (see Figure 2.18). The African American Population grew 27.8% to 29.1%, and the Asian population has grown from 3.4% to 4.7% since 2000. The Hispanic/Latino population defined by a census bureau as an ethnic group and not a race grew by 141.6% from 2000 to 2016, increasing its share of the total population from 7% to 10.2% (see Figure 2.19).

In terms of educational attainment, Raleigh has a higher percentage of residents with a high school degree or higher (92.2%) and residents with a bachelor's degree or higher (50.7%) than the state of North Carolina and the nation (see Figure 2.21). Approximately 1 in 6 people in Raleigh (18.7%) holds a graduate or professional degree, which is 73% higher than the statewide average.

After peaking in 2010, the percentage of people and families living below the poverty level has dropped significantly (see Figure 2.22). In 2010, the percentage of people in poverty peaked at an estimated 18.4% before falling to 12.1% in 2016. For families, the percentage decreased from 13.9% in poverty in 2010 to 8.0% in 2016.

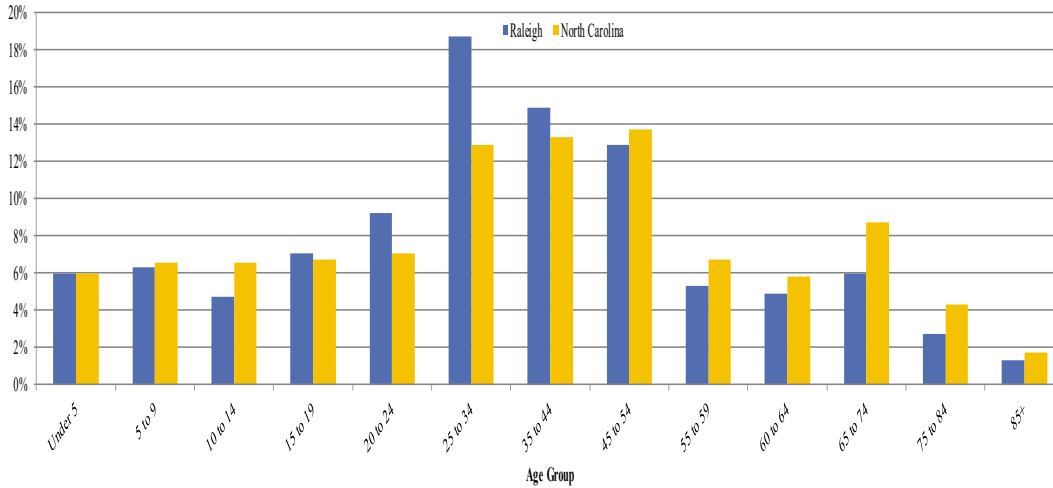
Median household incomes and per capita incomes have experienced converse trends during the last two decades. After peaking in 2000, median household incomes declined to \$64,456 in 2016 (see Figure 2.22). While per capita incomes also peaked in 2000, and experienced a decline between 2000 and 2010, the most recent

Census figures indicate they have increased slightly since then to \$33,682 in 2016.

The share of different types of households has also changed slightly during the last two decades (see Figure 2.23 & 2.24). Single parent households have declined, with other family households coming in second (up approximately 3.2%). Married couple households with children have decreased slightly (approximately 1.1%). Persons per household – as measured by the population in households divided by the total number of households – has trended upward from 2000 to 2016 (see Fable 2.23).

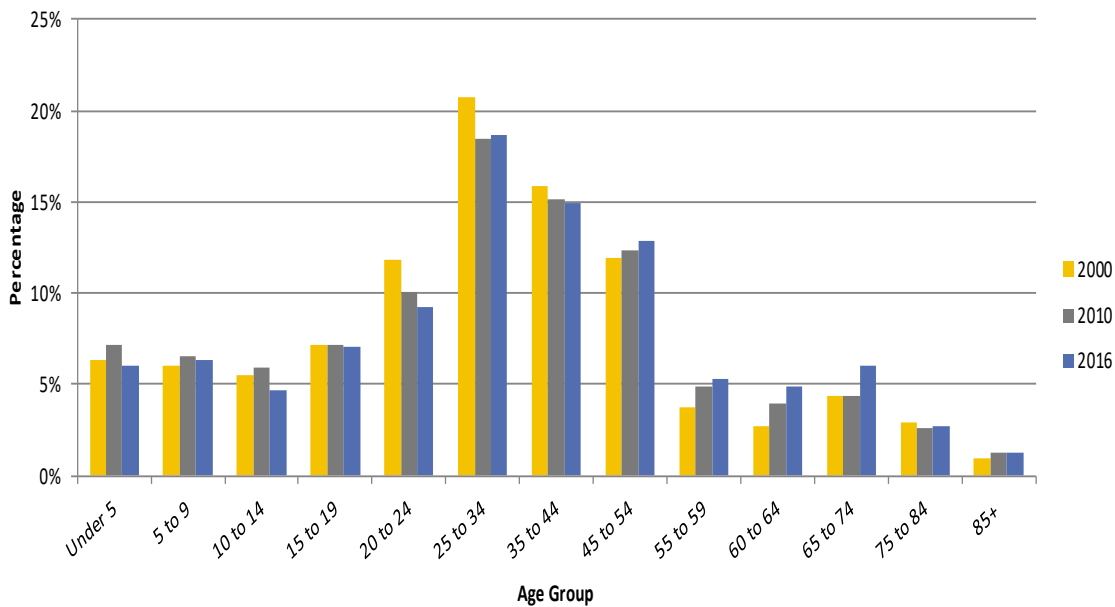
Commuting modes in Raleigh have remained steady over the past five years with a large majority of people driving to work alone in a personal vehicle (78.6% in 2016) and approximately 36.2% of the remainder that commutes carpooling to work (9.6%) (See Fable 2.25). The rest either take public transit (2.4%), walk (1.8%), use other means (1.5%), or forgo a commute and work at home (6.9%). Raleigh's rate of driving remains somewhat higher than other comparable U.S. cities (see Figure 2.26).

FIGURE 2.16 POPULATION DISTRIBUTION BY AGE GROUP IN RALEIGH AND NORTH CAROLINA, 2016



Source: U.S. Census Bureau, 2016 American Community Survey, 1-year Estimates

FIGURE 2.17 AGE DISTRIBUTION



Source: U.S. Census Bureau Decennial Data (2000, 2010); 2016 American Community Survey, 1-year Estimates

FIGURE 2.18 **POPULATION BY RACE**

Race	2000		2010		2016	
	Number	%	Number	%	Number	%
White	174,786	63.3%	225,705	59.0%	272,643	59.4%
Black or African American	76,756	27.8%	111,948	29.5 %	133,592	29.1%
American Indian or Alaskan Naive	981	0.4%	1,114	0.3%	1,445	0.3%
Asian or Pacific Islander	9,445	3.4%	16,935	4.4%	21,555	4.7%
Some Other Race	14,125	5.1%	20,371	5.3%	17389	3.8%

Source: U.S. Census Bureau Decennial Data (2000, 2010); 2016 American Community Survey, 1-year Estimates

FIGURE 2.19 **HISPANIC POPULATION**

	Number	% of Total Population
2000 Hispanic/Latino Population	19,308	6.9%
2016 Hispanic/Latino Population	46,649	10.2%
Percent Increase 2000 - 2016	141.6%	

Source: U.S. Census Bureau Decennial Data (2000); 2016 American Community Survey, 1-year Estimate

FIGURE 2.20 **COMPONENTS OF HISPANIC POPULATION, 2016**

Ethnicity	Number	% of Total Population	% of Hispanic Population
Mexican	21,703	4.7%	46.5%
Puerto Rican	4,415	1.0%	9.5%
Cuban	1,072	0.2%	2.3%
Other Hispanic or Latino	19,459	4.2%	41.7%
Hispanic or Latino (of any Race)	46,649	10.2%	100.0%

Source: U.S. Census Bureau Data; 2016 American Community Survey, 1-year Estimate

FIGURE 2.21 EDUCATIONAL ATTAINMENT AGE 25 AND OLDER

	2010			2016		
	High School Grad or Higher	Bachelors Degree or Higher	Graduate/ Professional Degree	High School Grad or Higher	Bachelors Degree or Higher	Graduate/ Professional Degree
Raleigh	91.0%	47.0%	16.0%	92.2%	50.7%	18.7%
North Carolina	84.0%	26.0%	9.0%	87.3%	30.4%	10.8%
United States	85.0%	28.0%	10.0%	87.4%	31.2%	11.9%

Source: U.S. Census Bureau Decennial Data (2010); 2016 American Community Survey, 1-year Estimates

FIGURE 2.22 POVERTY, INCOME, AND EMPLOYMENT INDICATORS

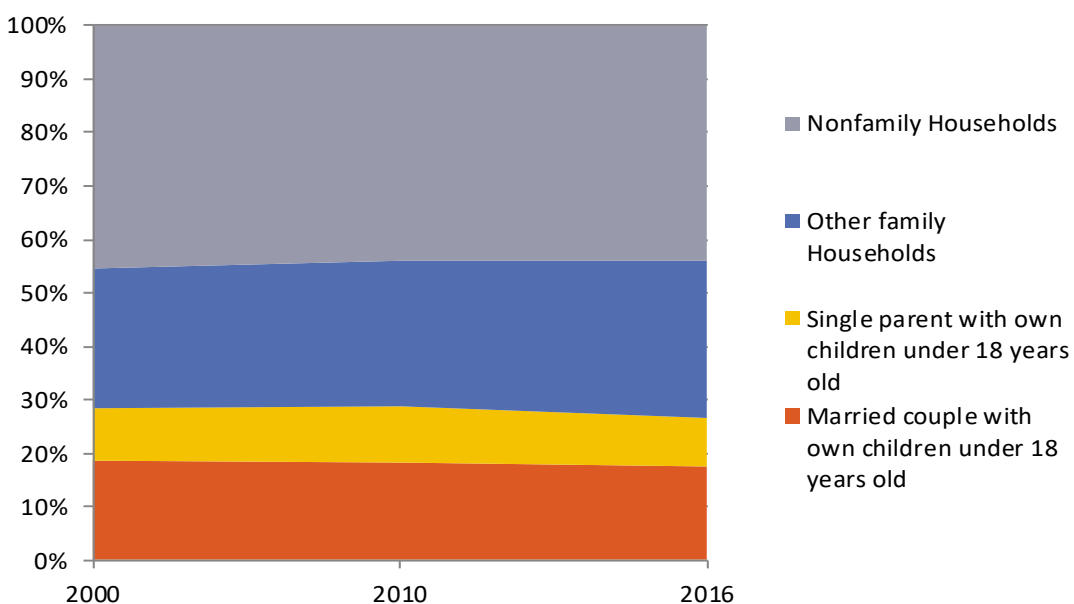
	1990	2000	2010	2016
Percent of persons below poverty	11.8%	11.5%	18.4%	12.1%
Percent of families below poverty	9.0%	7.1%	13.9%	8.0%
Median Household Income (2016 \$)	\$59,916	\$66,308	\$54,208	\$64,456
Median Per Capita Income (2016 \$)	\$32,296	\$35,730	\$30,456	\$33,682
Unemployment Rate	4.0%	3.8%	7.5%	4.2%
Labor Force Participation Rate	66.4%	72.7%	69.9%	71.8%

Source: U.S. Census Bureau Decennial Data (2000, 2010); 2016 American Community Survey 1-year Estimates

FIGURE 2.23 HOUSEHOLD TRENDS

	Number			Percent		
	2000	2010	2016	2000	2010	2016
Family Households	61,327	91,186	101,186	54.5%	55.9%	56.0%
Married couple with own children under 18 years old	20,914	29,973	31,644	18.6%	18.4%	17.5%
Single parent with own children under 18 years old	11,122	17,245	16,658	9.9%	10.6%	9.2%
Other family Households	29,291	43,968	52,884	26.0%	27.0%	29.3%
Nonfamily Households	51,281	71,813	79,587	45.5%	44.1%	44.0%
Total Households	112,608	162,999	180,773	100.0%	100.0%	100.0%
Persons per household	2.30	2.36	2.53			

Source: U.S. Census Bureau Decennial Data (2000, 2010); 2016 American Community Survey 1-year Estimates

FIGURE 2.24 HOUSEHOLD SHARE BY TYPE


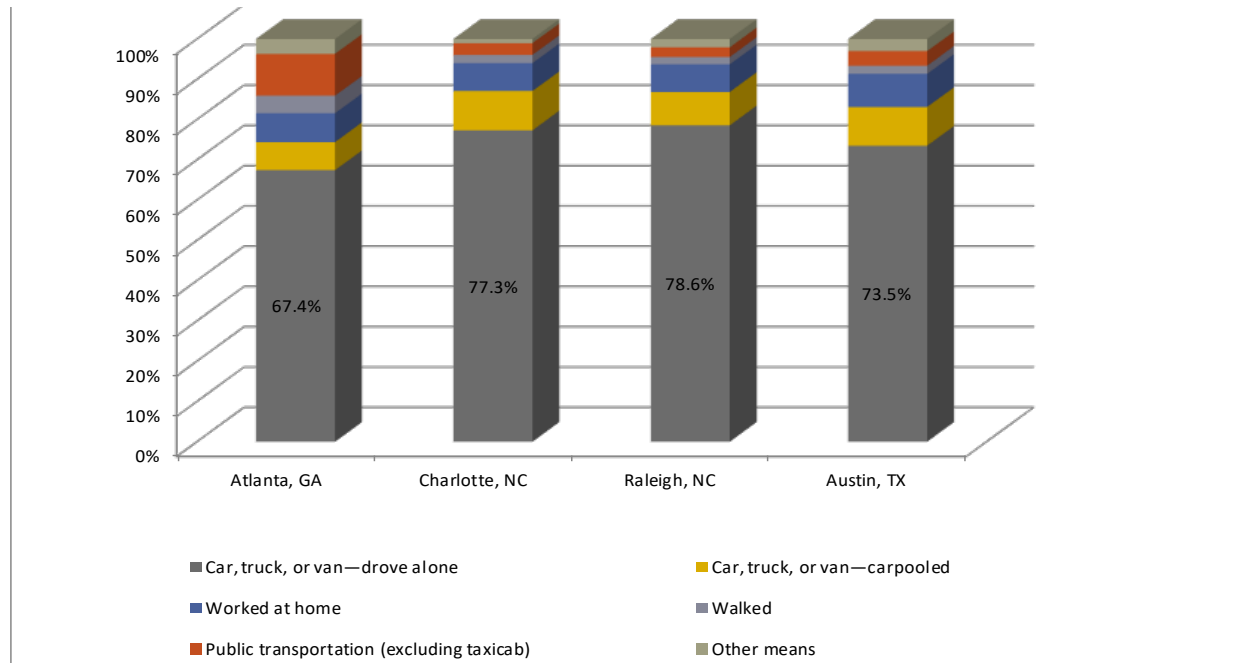
Source: U.S. Census Bureau Decennial Data (2000, 2010); 2016 American Community Survey 1-year Estimates

FIGURE 2.25 JOURNEY TO WORK

	Number	Percent
Car, truck, or van—drove alone	21,060	78.6%
Car, truck, or van—carpooled	17,477	8.3%
Worked at home	4,630	6.9%
Walked	6,084	1.8%
Bicycle	5,274	2.4%
Public transportation (excluding taxicab)	21,060	2.1%
Other means	17,477	78.6%

Source: U.S. Census Bureau, 2016 American Community Survey, 1-year Estimates

FIGURE 2.26 JOURNEY TO WORK - COMPARISON WITH SIMILAR CITIES 2016



Source: U.S. Census Bureau, 2016 American Community Survey, 1-year Estimates



3 LAND USE & ZONING

Land use is fundamental to the physical form and function of the city. 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 Unified Development Ordinance is law. This code provides the regulatory framework for specific land uses and how the uses interact with each other. It addresses not only the prescribed use of property, but also the scale, massing and placement of buildings, site design and landscaping, and the quantity of off-street parking required. Adopted in 2013, the Unified Development Ordinance (UDO) encourages mixed-use and pedestrian-friendly development. To fully implement the UDO, the city engaged in a multi-year remapping process whereby commercial and high-density residential districts were rezoned from the old code's legacy districts to new UDO zoning districts. The majority of those properties were rezoned in November 2015 with an effective date February 14, 2016. Sixty-five parcels totaling approximately 490 acres were reviewed separately by City Council and rezoned to Unified Development Ordinance zoning districts in April and May of 2016.

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 is 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. 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 uses, and are only addressed generally in this chapter.

For further information see:

The 2030 Comprehensive Plan
www.raleighnc.gov/cp

Raleigh Zoning
www.raleighnc.gov/zoning

LAND USE AND ZONING ALLOCATION

Zones that primarily accommodate residential uses make up approximately 64% of the total land area in Raleigh’s planning jurisdiction and those that primarily accommodate commercial uses – the mixed-use zones - make up 25% of total land area (see Figure 3.1 and 3.2). Breaking those shares down further, mixed-use zones that primarily accommodate retail (NX-, CX-, and DX-) comprise 6.2% of total land area, those that are considered

industrial are 8.4% (IX-), and those that primarily accommodate office uses (OX- and OP-) make up 7.4%. In addition to the residential and mixed-use zones, there are also six special districts, which are meant for land conservation, specialized uses (heavy industry), and flexible uses (campus and planned developments). These special districts account for approximately 11% of Raleigh’s total land area (see Figure 3.3). Overlay zoning districts (historic overlay districts, special highway overlay districts, etc.) cover 26.8% of total land area (see Figure 3.4).

FIGURE 3.1 RESIDENTIAL ZONING ALLOCATION

Zoning District	Acres	Percent of Total Land Area
R-1: Residential-1	4,879	4.2%
R-2: Residential-2	2,044	1.8%
R-4: Residential-4	40,147	34.6%
R-6: Residential-6	17,298	14.9%
R-10: Residential-10	9,472	8.2%
Total Residential	73,835	63.7%

Source: City of Raleigh Department of City Planning, 2017

FIGURE 3.2 MIXED-USE ZONING ALLOCATION

Zoning District	Acres	Percent of Total Land Area
RX-: Residential Mixed Use	3,844	3.3%
OP-: Office Park	540	0.5%
OX-: Office Mixed Use	7,949	6.9%
NX-: Neighborhood Mixed Use	760	0.7%
CX-: Commercial Mixed Use	5,794	5.0%
DX-: Downtown Mixed Use	582	0.5%
IX-: Industrial Mixed Use	9,741	8.4%
Total All Mixed-Use Zones	29,613	25.2%

Source: City of Raleigh Department of City Planning, 2017

FIGURE 3.3 SPECIAL DISTRICTS ZONING ALLOCATION

Zoning District	Acres	Percent of Total Land Area
CM: Conservation Management	2,040	1.8%
AP: Agricultural Productive	1,957	1.7%
IH: Heavy Industrial	3,281	2.8%
MH: Manufactured Housing	819	0.7%
CMP: Campus	0	0.0%
PD: Planned Development	4,966	4.3%
Total All Special District Zones	12,975	11.3%
Total All Mixed-Use Zones	29,613	25.2%

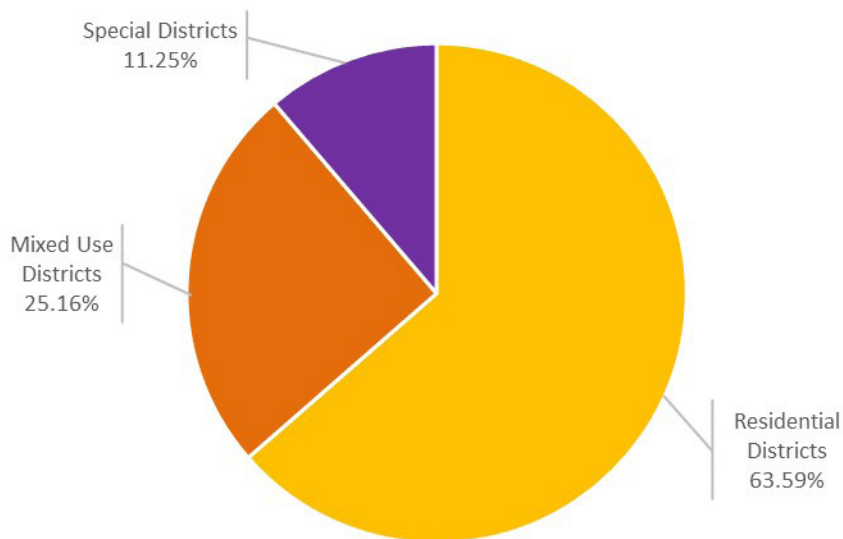
Source: City of Raleigh Department of City Planning, 2017

FIGURE 3.4 OVERLAY ZONING DISTRICT ALLOCATION

Zoning District	Acres	Percent of Total Land Area
AOD – Airport Overlay District	2,166	1.9%
HOD – Historic Overlay District	421	0.4%
MPOD – Metro-Park Protection Overlay District	1,450	1.3%
NCOD – Neighborhood Conservation Overlay District	3,142	2.7%
SHOD-1 – Special Highway Overlay District 1	7,909	6.8%
SHOD-2 – Special Highway Overlay District 2	5,065	4.4%
SRPOD – Special Residential Parking Overlay District	8,231	7.1%
TOD – Transit Oriented Development Overlay District	0	0%
WPOD – Watershed Protection Area Overlay District	9,518	8.2%
Total Overlay Districts (not accounting for overlap)	37,902	32.7%
Total Overlay Districts (accounting for overlap)	31,046	26.8%

Source: City of Raleigh Department of City Planning, 2017

FIGURE 3.5 **GENERALIZED ZONING ALLOCATION**



Source: City of Raleigh Department of City Planning, 2017

A property's zoning district controls for the range of uses that are allowable on the property. The table below shows the actual uses that properties in Raleigh exhibit. As can be seen in Figure 3.6, parcels that account for 44.3% of total acreage in Raleigh have Residential as their primary use, and in particular Single-Unit Living is the predominant

use in this category (34.4%). Other significant uses include Public and Institutional (18.2%), Commercial (10.6%), and Industrial (5.6%). Properties that account for approximately 20% of Raleigh's land area are considered vacant, meaning that there is no discernible use of the property

FIGURE 3.6 **LAND USE ALLOCATION**

Land Use Category	Parcels	Acres	Percent of Total Land Area
Residential	117,517	44,349.9	44.3%
Household Living: Single-unit Living	88,960	34,408.7	34.4%
Household Living: Townhouse Living	24,527	1,488.6	1.5%
Household Living: Two-unit Living	1,922	714.8	0.7%
Household Living: Manufactured	24	429.4	0.4%
Household Living: Multi-unit Living	1,979	6,464.6	6.5%
Group Living	71	213.1	0.2%
Social Service	34	630.7	0.6%
Public and Institutional	3,690	18,238.7	18.2%
Civic	476	5,264.3	5.3%
Parks, Open Space, and Greenways	3,134	12,538.9	12.5%
Utilities	80	435.6	0.4%
Commercial	3,509	10,662.3	10.6%
Day Care	93	157.0	0.2%
Indoor Recreation	100	441.8	0.4%
Medical	135	365.4	0.4%
Office	1,240	3,779.0	3.8%
Outdoor Recreation	114	2,033.4	2.0%
Overnight Lodging	80	210.7	0.2%
Parking	313	343.3	0.3%
Passenger Terminal	10	15.1	0.0%
Personal Service	158	145.1	0.1%
Restaurant/Bar	348	310.1	0.3%
Retail Sales	762	2,371.4	2.4%
Vehicle Sales/Rental	156	489.9	0.5%

FIGURE 3.6 **LAND USE ALLOCATION CONTINUED**

Industrial	1,421	5,637.7	5.6%
Heavy Industrial	133	1,800.4	1.8%
Light Industrial	296	690.2	0.7%
Light Manufacturing	68	146.7	0.1%
Research & Development	10	106.5	0.1%
Self-Service Storage	59	265.9	0.3%
Vehicle Service	333	365.8	0.4%
Warehouse & Distribution	294	1,230.2	1.2%
Waste-Related Service	6	424.0	0.4%
Wholesale Trade	222	607.9	0.6%
Open	18	1,473.9	1.5%
Agriculture	14	1,084.4	1.1%
Resource Extraction	4	389.5	0.4%
Mixed Use	115	123.6	0.1%
Vacant	8,990	19,655.9	19.6%
Grand Total	135,260	100,142.0	100.0%

Source: City of Raleigh Department of City Planning, 2015

LAND CAPACITY, ANNEXATION AND GROWTH POTENTIAL

The last land capacity estimate was completed in 2014 and was based on the Part 10 zoning districts rather than the newly adopted UDO districts. With the implementation of the new Unified Development Ordinance (UDO) in 2016,

all districts were rezoned to new UDO districts. Because of this change, the estimates found in Figure 3.7 do not reflect development entitlements presently in effect.

FIGURE 3.7 LAND CAPACITY ESTIMATES BY ZONING DISTRICT

Zone	Total Acres of Undeveloped Land	Projected Square Feet of Non-residential	Projected Dwelling Units
CM	410	0	0
AP	455	0	227
R1	1,203	0	853
R-2	444	0	613
R-4	5,505	0	15,961
R-6	2,330	0	11,307
R-10	646	0	6,286
R-15	346	0	5,177
R-20	63	0	1,180
SP R-30	3	0	60
R-30	1	0	22
MH	212	0	1,249
RB	3	21,265	12
O&I-1	282	4,603,033	2,749
O&I-2	217	4,723,683	2,953
O&I-3	36	516,841	0
BC	10	63,008	44
SC	405	2,644,192	4,497
NB	103	670,013	456
BUS	1	135,090	31
TD	1,522	9,945,877	22,735
IND-1	1,450	18,945,777	0
IND-2	243	3,172,522	0
Totals	16,671*	52,327,256	85,851

(For purpose of this analysis, general and conditional use districts have been treated the same, and are aggregated together in this table for simplicity.) *Totals do not include underdeveloped land. *Zoning Districts with residential and commercial types have been allocated at a 50/50 split.

In 2017, the city added 156 acres through annexation (see Figure 3.8). Changes in state laws restricting city-initiated annexations have resulted in petition-only annexations, usually of smaller parcels by individual owners. The total future annexation potential for Raleigh is 40,246

acres (see Figure 3.9). This includes both ETJ areas and Urban Services Areas (USA). Combined with the city's current acreage of 94,088, the total potential city limits acreage is 134,706 acres.

FIGURE 3.8 ANNEXATION, GROWTH OF THE CITY OF RALEIGH

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
1980	35,305	6,550
1990	58,493	23,188
2000	75,972	17,479
2010	92,435	16,463
2011	92,710	275
2012	92,838	129
2013	93,047	208
2014	93,306	262
2015	93,652	343
2016	93,775	123
2017	94,088	156

Source: City of Raleigh Department of City Planning, 2017

FIGURE 3.9 FUTURE RALEIGH CITY LIMITS GROWTH POTENTIAL

Geography	Acres
Current City Limits	94,088
Potential ETJ Growth Area	21,597
Potential USA Growth Area	18,649
Total Future Annexation Potential	40,246
Total Potential City Limits	134,344

Source: City of Raleigh Department of City Planning, 2017

4 ECONOMIC DEVELOPMENT & EMPLOYMENT TRENDS

One of the nation's fastest growing regions, the Research Triangle, is benefiting from its long-time investment in major educational and healthcare institutions as well as the Research Triangle Park. The expanding base of technology industries continues to generate new jobs and 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. The Triangle's jurisdictions are increasingly connected as employees cross-commute, new businesses develop to serve companies throughout the region, and existing industry spins off new businesses. In conjunction with the region as a whole, Raleigh's employment base has shifted to one that is more technology-based and less reliant on government and manufacturing.

Wake County has shared in the region's economic health with a growing job base, aiding in the recovery from the 2008 recession. The county's employment dichotomy is changing however, as technology, retail, and service jobs replace manufacturing and agricultural jobs that have declined as a share of the market historically. In 2000 there were 28,238 manufacturing jobs which contracted to 19,116 in 2010. Since 2010 the county has added back 5,997 additional manufacturing jobs, an important figure considering that this sector accounts for much of the county and region's overall economic output.

In terms of real Gross Domestic Product (GDP) growth, the Raleigh-Cary Metropolitan area grew by 5.3% ranking 14th in terms of growth out of the nation's 382 metropolitan areas in 2016 (see Figure 4.1). The Finance, Insurance, and Real Estate sector contributed 32.5% to real GDP growth, and Professional and Business services accounted for 23% of real GDP growth. These two sectors accounted for more than half of the real GDP growth in the metropolitan area. Slight declines occurred in real GDP growth for Natural Resources and Mining, Transportation and Utilities, and the Public Administration Sectors.

Within Raleigh, the state government, North Carolina State University, other educational institutions, and major health care centers have a higher proportion of the employment base. Job growth projections point to a major expansion of jobs in the city by 2040 with even faster growth in the balance of the county. University research and the growing technology sectors within Raleigh are supporting even greater business development in emerging industries. This section evaluates employment trends for the county, identifies key economic sectors and major employers, and provides projections for Raleigh's future employment based on regional land use coordination efforts

GDP GROWTH & EMPLOYMENT BY INDUSTRY

Overall, jobs in the service-providing sector account for a larger share of Wake County's employment than the goods-producing sector. Currently roughly 9-in-10 jobs are service-providing versus only 1-in-10 in goods-producing industries. This is similar to the United States as a whole which has a slightly higher proportion of good producing jobs than Wake County. In the last 6 years goods-producing jobs – such as those in agriculture, construction, and manufacturing – have grown at a 4.2% annual rate versus 3.4% for service-providing industries (see Figures 4.3 and 4.4). Higher growth in the goods producing sector can be primarily attributed to jobs added in the construction and manufacturing industry.

Despite that growth, the top three industries in terms of jobs in 2016 continue to be in the service-providing industry: Professional and Business Services; Education and Health

Services, and; Trade, Transportation, & Utilities. Utilities saw the largest annual percent change in employment (+10.7 %) from 2010-2016, other industries also saw large gains including Administrative and Waste Services (+5.1%), Professional and Technical Services (+5.2 %), and Manufacturing (+4.7 %).

Using the latest data from the 2010-2016 American Community Survey (ACS), Raleigh has a higher percentage of jobs in arts/entertainment, accommodation, and; finance, insurance, and real estate than the percentages for Wake County, North Carolina, and the U.S (see Figure 4.1). Raleigh is also ahead of the state and the nation in percentage of public administration, professional, scientific, management, and administrative; and information jobs.

FIGURE 4.1 **RALEIGH-CARY MSA REAL GDP GROWTH**

	2011	2012	2013	2014	2015	2016
GDP in Current Dollars (Millions of Dollars)	59,646	62,615	64,534	68,557	74,565	79,843
Rank GDP in Current Dollars Among Metro Areas	49	49	47	47	44	44
GDP Percentage Growth	2.7%	1.5%	1.2%	3.7%	7.0%	5.3%
Rank: GDP Percentage Growth	93	144	159	55	7	14

Source: Bureau of Economic Analysis: GDP by Metropolitan Area, 2016

FIGURE 4.2 RALEIGH-CARY MSA PERCENTAGE GDP GROWTH BY SECTOR

Sector	Percentage
Goods Producing	0.57%
Natural resources and mining	0.03%
Construction	0.24%
Durable-goods manufacturing	0.13%
Nondurable-goods manufacturing	0.17%
Service Providing	4.69%
Trade	0.50%
Transportation and utilities	0.20%
Information	0.47%
Finance, insurance, real estate, rental, and leasing	1.71%
Professional and business services	1.21%
Educational services, health care, and social assistance	0.37%
Arts, entertainment, recreation, accommodation, and food services	0.04%
Other services, except government	0.13%
Government	0.06%
Total	5.26%

Source: Bureau of Economic Analysis: GDP by Metropolitan Area 2016

FIGURE 4.3 WAKE COUNTY AVERAGE ANNUAL CHANGE IN EMPLOYMENT BY INDUSTRY 2010-2016

	2010	Percent of Total	2016	Percent of Total	Annual Change 2010 to 2016
Goods-Producing	44,226	10.2%	56,565	10.7%	4.2%
Natural Resources and Mining	1,032	0.2%	1,074	0.2%	0.7%
Agriculture Forestry Fishing & Hunting	770	0.2%	844	0.2%	1.5%
Mining	263	0.1%	230	0.0%	-2.2%
Construction	24,078	5.6%	30,377	5.7%	3.9%

FIGURE 4.3 WAKE COUNTY AVERAGE ANNUAL CHANGE IN EMPLOYMENT BY INDUSTRY 2010-2016 CONTINUED

	2010	Percent of Total	2016	Percent of Total	Annual Change 2010 to 2016
Manufacturing	19,116	4.4%	25,113	4.7%	4.7%
Service-Providing	387,348	89.8%	473,587	89.3%	3.4%
Trade Transportation and Utilities	80,011	18.5%	97,720	18.4%	3.4%
Utilities	1,394	0.3%	2,569	0.5%	10.7%
Wholesale Trade	18,192	4.2%	23,317	4.4%	4.2%
Retail Trade	49,775	11.5%	61,153	11.5%	3.5%
Transportation and Warehousing	10,652	2.5%	10,681	2.0%	0.0%
Information	16,333	3.8%	20,895	3.9%	4.2%
Financial Activities	25,666	5.9%	28,908	5.5%	2.0%
Finance and Insurance	17,971	4.2%	19,419	3.7%	1.3%
Real Estate and Rental and Leasing	7,695	1.8%	9,489	1.8%	3.6%
Professional and Business Services	81,028	18.8%	107,082	20.2%	4.8%
Professional and Technical Services	37,086	8.6%	50,315	9.5%	5.2%
Management of Companies and Enterprises	9,613	2.2%	10,395	2.0%	1.3%
Administrative and Waste Services	34,329	8.0%	46,372	8.7%	5.1%
Education and Health Services	84,394	19.6%	100,173	18.9%	2.9%
Educational Services	38,959	9.0%	43,883	8.3%	2.0%
Health Care and Social Assistance	45,435	10.5%	56,290	10.6%	3.6%
Leisure and Hospitality	45,801	10.6%	61,557	11.6%	5.1%
Arts Entertainment and Recreation	8,831	2.0%	11,088	2.1%	3.9%
Accommodation and Food Services	36,970	8.6%	50,469	9.5%	5.3%
Public Administration	40,553	9.4%	40,630	7.7%	0.0%
Other Services exc. Public Administration	13,293	3.1%	16,622	3.1%	3.8%
Unclassified	269	0.1%		0.0%	-100.0%
TOTAL	431,571	100.0%	530,125	100.0%	3.5%

Source: North Carolina Division of Employment Security

**FIGURE 4.4 WAKE COUNTY ANNUAL CHANGE IN
EMPLOYMENT BY INDUSTRY 2010-2016**

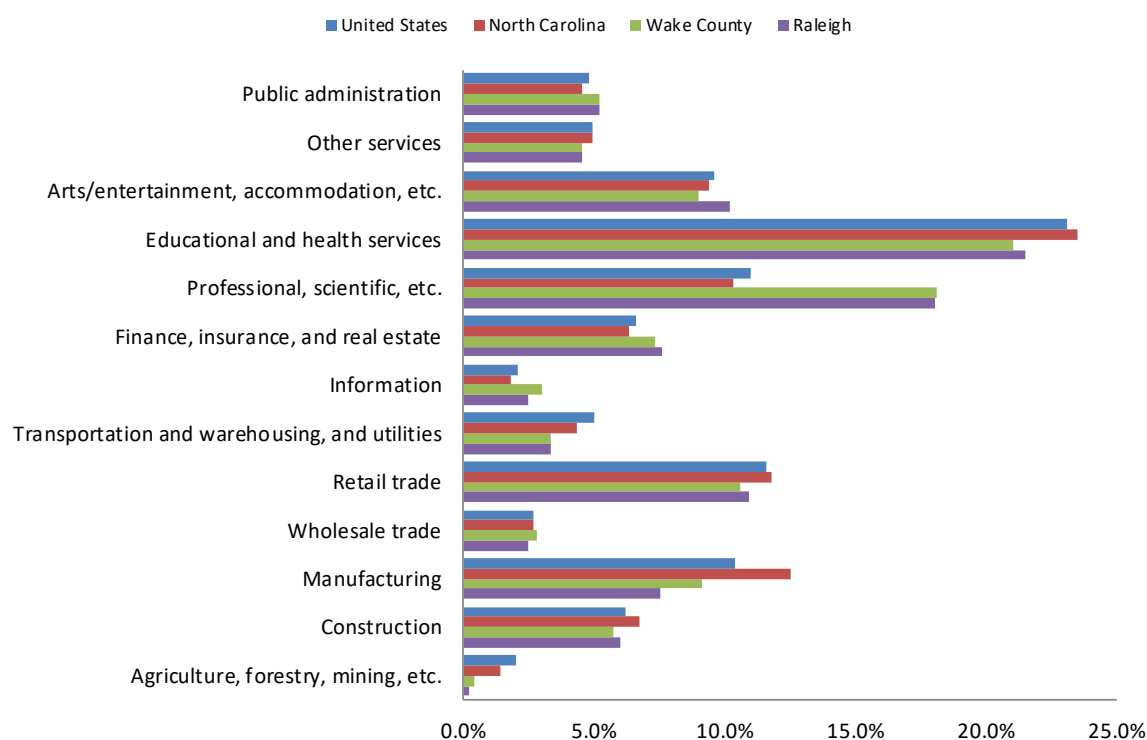
	2011	2012	2013	2014	2015	2016
Goods-Producing	44,837	44,795	49,414	50,919	54,792	56,565
Natural Resources and Mining	1,007	1,028	1126	1089	1084	1,074
Agriculture Forestry Fishing & Hunting	749	788	881	858	868	844
Mining	258	240	245	231	215	230
Construction	24,506	25,204	25,763	27,223	28,717	30,377
Manufacturing	19,324	18,563	22,525	22,607	24,992	25,113
Service-Providing	397,025	411,023	424,551	439,543	456,749	473,587
Trade Transportation and Utilities	82,110	84,710	84,631	89,439	94,149	97,720
Utilities	1,397	*	*	2327	2400	2,569
Wholesale Trade	19,152	20,990	20,540	21,009	22,189	23,317
Retail Trade	51,037	52,040	53,622	56,105	59,105	61,153
Transportation and Warehousing	10,524	10,468	9,594	9,998	10,456	10,681
Information	16,963	17,447	17,664	18,433	19,500	20,895
Financial Activities	25,142	25,030	24,952	25,513	27,584	28,908
Finance and Insurance	17,463	17,298	17,010	17,373	18,751	19,419
Real Estate and Rental and Leasing	7,680	7,732	7,942	8,140	8,833	9,489
Professional and Business Services	85,987	91,441	99,455	102,826	104,472	107,082
Professional and Technical Services	39,563	42,177	45,296	47,185	48,673	50,315
Management of Companies and Enterprises	10,232	10,142	10,660	10,277	10,598	10,395
Administrative and Waste Services	36,192	39,122	43,499	45,364	45,202	46,372
Education and Health Services	85,780	88,177	90,081	92,437	96,201	100,173
Educational Services	39,388	40,420	40,715	42,062	42,841	43,883
Health Care and Social Assistance	46,392	47,758	49,366	50,375	53,360	56,290
Leisure and Hospitality	47,918	50,765	53,180	55,501	58,754	61,557
Arts Entertainment and Recreation	9,105	9,293	9,892	9,973	10,822	11,088

FIGURE 4.4 WAKE COUNTY AVERAGE ANNUAL CHANGE IN EMPLOYMENT BY INDUSTRY 2010-2016 CONTINUED

	2011	2012	2013	2014	2015	2016
Accommodation and Food Services	38,813	41,473	43,288	45,528	47,933	50,469
Public Administration	39,491	38,789	39,768	40,138	40,622	40,630
Other Services Excluding Public Administration	13,634	14,659	14,820	15,256	15,456	16,622
Unclassified	*	5	*	*	*	*
TOTAL	441,859	455,814	473,964	490,462	511,541	530,125

Source: North Carolina Division of Employment Security

FIGURE 4.5 JOBS BY INDUSTRY COMPARISON, 2016



Source: 2011 - 2016 American Community Survey, 5-year Estimates

UNEMPLOYMENT RATES AND EMPLOYMENT PROJECTIONS

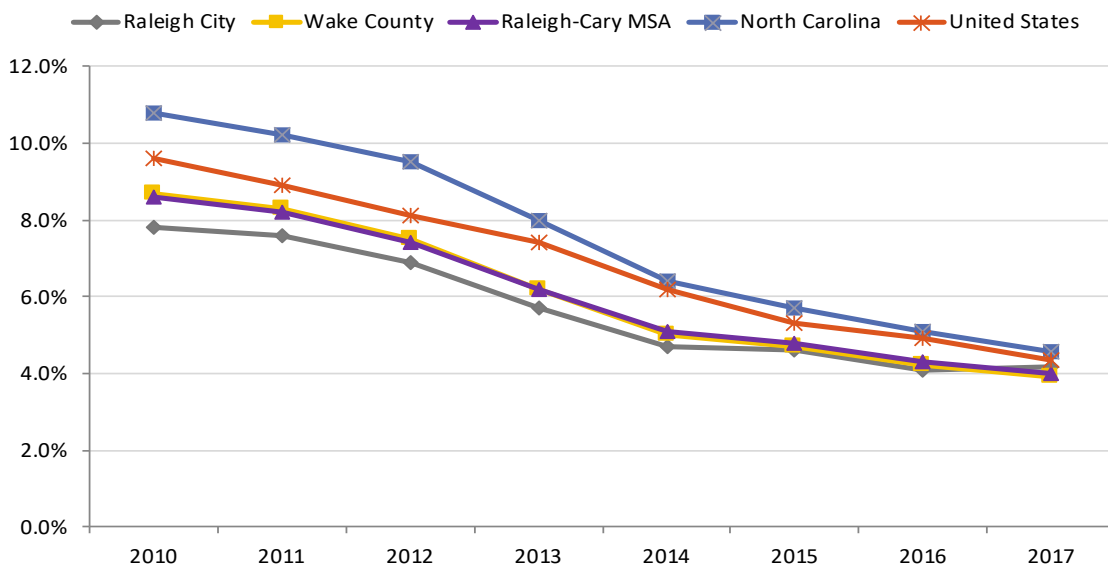
In Raleigh, the unemployment rate peaked in 2010 reaching a high of 7.8%. Since then unemployment rates have steadily declined as economic recovery continues to take place after the Great Recession. The current unemployment rate is 4.2% for Raleigh, slightly up from 2016 when it dipped to 4.1%. From 2010 to 2016, Raleigh’s unemployment rate remained lower than Wake County, the Raleigh- Cary MSA, North Carolina, and the U.S. In 2017 the unemployment rate in Wake county and the Raleigh-Cary MSA dipped below Raleigh. Over the last two years unemployment numbers within Raleigh, Wake County and the MSA differed by only a few tenths of a percentage point, indicating a healthy job market for the entire region(see Figure 4.2).

over 100,000 jobs from 2010 to 2040, an average increase of 1% every year (see Table 4.4 and Figure 4.3). Wake County is expected to add the most jobs in the region in terms of raw numbers; however several exurban counties are projected to have higher annual job growth rates, including Chatham County, Granville County, Nash County, and Harnett County. Looking at the types of projected new jobs, the model shows the following breakdown for new jobs projected to be created in Raleigh during the 2010-2040 time period: 66% in the service sector, 16% in office, 7% in retail, 6% in industrial, and 5% in highway (see Figure 4.4). More information on the employment projection model can be found here:

www.campo-nc.us/planning-for-the-future.

According to a model created by the Capital Area Metropolitan Planning Organization (CAMPO) with input from municipalities across the Triangle region, Raleigh is expected to add

FIGURE 4.5 AVERAGE ANNUAL UNEMPLOYMENT RATES



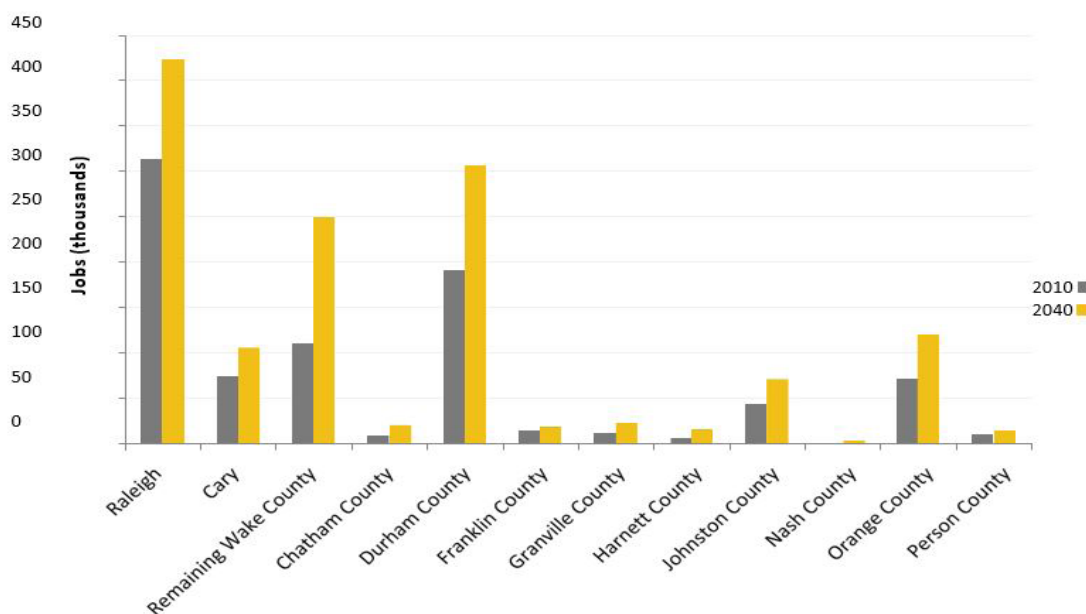
Source: North Carolina Division of Employment Security

FIGURE 4.6 TRIANGLE REGION EMPLOYMENT PROJECTIONS

Place	2010	2020	2030	2040	Average Annual Growth 2010 to 2040
Raleigh	313,538	344,590	380,921	423,245	1.00%
Cary	74,112	83,111	93,619	105,872	1.20%
Wake County	497,634	577,053	669,927	778,175	1.50%
Chatham County	8,775	11,610	15,142	19,533	2.70%
Durham County	190,134	222,344	260,827	306,524	1.60%
Franklin County	13,164	14,486	16,039	17,868	1.00%
Granville County	10,870	14,059	17,730	21,954	2.40%
Harnett County	7,139	9,144	11,616	14,650	2.40%
Johnston County	42,345	49,486	58,687	70,730	1.70%
Nash County	705	1,362	2,204	3,261	5.20%
Orange County	70,984	84,064	100,225	120,274	1.80%
Person County	10,352	11,147	12,060	13,093	0.80%

Source: Capital Area Metropolitan Planning Organization (CAMPO)

FIGURE 4.7 TRIANGLE REGION EMPLOYMENT PROJECTIONS, 2010 & 2040



Source: Capital Area Metropolitan Planning Organization (CAMPO)

FIGURE 4.8 SECTOR SHARE OF PROJECTED NET JOBS 2010 - 2040

Place	Industrial	Office	Service	Retail	Highway	Total
Raleigh	6%	16%	66%	7%	5%	100%
Unincorporated Wake County	10%	9%	71%	4%	6%	100%
Other jurisdictions	9%	11%	64%	7%	10%	100%
Countywide Total	8%	13%	65%	7%	8%	100%

Source: Capital Area Metropolitan Planning Organization (CAMPO)



MAJOR EMPLOYERS AND EXPANDING COMPANIES

The major employers in Wake County are concentrated in the following industries: public administration; education & health services; professional and business services; information, and; trade, transportation, and utilities. The ten largest individual employers in Raleigh include the State, Wake County Public Schools, and WakeMed Hospitals; together these ten organizations account for approximately 80,000 jobs.

In 2016, 45 major companies announced either new operations or expansions of present operations in Raleigh creating 2,795 new jobs, and additional investment of 224 million dollars in capital costs, facilities, and payroll (see Table 4.10).

FIGURE 4.9 MAJOR EMPLOYERS LOCATED IN RALEIGH, 2016

Rank	Name	Countywide Employment	Industry	Location in Raleigh
1	State of North Carolina	24,083	Public Administration	Yes
2	Wake County Public School System	18,554	Education & Health Services	Yes
3	WakeMed Health & Hospitals	8,422	Education & Health Services	Yes
4	North Carolina State University	7,876	Education & Health Services	Yes
5	Rex Healthcare	5,300	Education & Health Service	Yes
6	N.C. DHHS	3,800	Public Administration	Yes
7	Duke Energy	3,700	Trade, Transportation & Utilities	Yes
8	Wake County Government	3,692	Public Administration	Yes
9	City of Raleigh	3,673	Public Administration	Yes
10	Fidelity Investments	2,900	Financial Activities	Yes

Source: Capital Area Metropolitan Planning Organization (CAMPO)

FIGURE 4.10 **NEW & EXPANDING COMPANIES RALEIGH, 2017**

Name	Industry	New or Expanding	New Jobs	Investment
Lidl	Retail - Grocer	New	0	\$0
Wegmans	Retail - Grocer	New	350	\$0
Publix	Retail - Grocer	New	0	\$0
Alignment Healthcare	Healthcare	New	0	\$0
Ward and Smith	Legal Services	Expanding	9	\$0
Workplace Options	Insurance	Expanding	100	\$0
Argos Therapeutics	Biotechnology/ Pharmaceuticals	Expanding		\$10,000,000
Charter Communications	Interactive Digital	Expanding	215	\$0
Tethis	Advanced Manufacturing	Expanding	20	\$0
LogMeIn-GoTo	Software/Information Technology	Expanding	20	\$0
Sprouts Farmers Market	Retail - Grocer	New	150	\$0
First Bank	Financial Services	New	0	\$0
FM:Systems	Software/Information Technology	Expanding	10	\$0
Ward and Smith	Legal Services	Expanding	0	\$0
ABB	Smart Grid	Expanding	48	\$0
Academy Sports + Outdoors	Retail Sporting Goods	New	200	\$0
LexisNexis	Software/Information Technology	Expanding	175	\$0
Ascom Wireless Solutions	Advanced Medical Technologies	Expanding	0	\$0
MD Interconnect	Healthcare	Expanding	4	\$0
Verdesian Life Sciences	Advanced Manufacturing	Expanding	15	\$0
LogMeIn-GoTo	Software/Information Technology	Expanding	30	\$0
STOCK America	Advanced Manufacturing	New	15	\$2,200,000
Red Hat, Inc.	Software/Information Technology	Expanding	200	\$0

FIGURE 4.10 NEW & EXPANDING COMPANIES RALEIGH, 2017
CONTINUED

Name	Industry	New or Expanding	New Jobs	Investment
BitSight Technologies	Cybersecurity	Expanding	25	\$0
Map My Customers	Interactive Digital	New	50	\$275,000
Michael Best & Friedrich	Law Office	New	0	\$0
Locus Biosciences	Advanced Medical Technologies	Expanding	15	\$0
ATI Industrial Automation	Advanced Manufacturing	Expanding	275	\$0
Trilliant	Smart Grid	New	130	\$1,800,000
Recipharm	Advanced Manufacturing	Expanding	0	\$750,000
YMCA of the Triangle	Fitness Center	Expanding	0	\$0
The Home Center - Flooring & Lighting Company	Advanced Manufacturing	Expanding	50	\$0
VitalSource Technologies Inc.	Software/Information Technology	Expanding	10	\$0
Mann + Hummel	Smart Grid	Expanding	0	\$15,000,000
Credit Suisse	Financial Services	Expanding	1,200	\$70,500,000
Alamo Drafthouse Cinema	Retail, Entertainment	New	160	\$0
Slingshot Cofee	Cokee Producer	Expanding	3	\$0
Loading Dock Raleigh	Co-Working Space	Expanding	0	\$0
IKEA	Retail Trade	New	300	\$0
Field2Base	Software/Information Technology	Expanding	25	\$1,700,000
MetLitfe	Financial Services	Expanding	500	\$63,000,000
Medsis	Software/Information Technology	New	0	\$0
First National Bank	Financial Services	Expanding	0	\$0
KBI Biopharma	Biotechnology/ Pharmaceuticals	Expanding	0	\$30,000,000
Shred-Tech	Advanced Manufacturing	Expanding	0	\$0
Ajinomoto	Advanced Manufacturing	Expanding	24	\$0

FIGURE 4.10 **NEW & EXPANDING COMPANIES RALEIGH, 2017**
CONTINUED

Name	Industry	New or Expanding	New Jobs	Investment
GLobant	Software/Information Technology	New	0	\$0
Aligh Technology	Advanced Medical Technologies	Expanding	200	\$0
Prometheus Group	Software/Information Technology	Expanding	50	\$0
Global Specimen Solutions	Biotechnology/Pharmaceuticals	Expanding	10	\$0
Redhill Biopharma Ltd.	Advanced Manufacturing	Expanding	12	\$0
ZiIII Solutions, Inc.	Software/Information Technology	Expanding	0	\$0
Nomaco LLC	Manufacturing	Expanding	63	\$0
Covance Inc.	Other	Expanding	25	\$0
CiVentiChem	Other	Expanding	5	\$0
Marken	Freight and Transportation	Expanding	0	\$0
Infomerica	Software/Information Technology	Expanding	60	\$0
Avista Pharma Solutions	Advanced Manufacturing	Expanding	100	\$0
Infosys	Software/Information Technology	New	2,000	\$8,700,000
Alcami	Biotechnology/Pharmaceuticals	Expanding	150	\$0
Improved Nature	Food Processing	Expanding	35	\$3,000,000
A2Z Wireless	Software/Information Technology	New	250	5,600,000
Pendo	Software/Information Technology	Expanding	104	\$0
Höganäs Environmental Solutions	Advanced Manufacturing	New	72	\$0
Aerie Pharmaceuticals	Advanced Manufacturing	Expanding	0	\$0

FIGURE 4.10 NEW & EXPANDING COMPANIES RALEIGH, 2017
CONTINUED

Name	Industry	New or Expanding	New Jobs	Investment
Site 1001	Software/Information Technology	New	20	\$6,000,000
Investor Management Services	Software/Information Technology	Expanding	20	\$0
Dunkin' Brands Group, Inc.	Food Services	Expanding	0	\$0
Voith	Other	Expanding	0	\$0
MedPharm	Biotechnology/Pharmaceuticals	Expanding	15	\$0
Reason to Believe, LLC	Advanced Manufacturing	Expanding	10	\$26,000,000
Racepoint Global	Interactive Digita	New	5	\$0
TrialCard	Healthcare	Expanding	350	\$0
idfive	Software/Information Technology	New	0	\$0
Stone Basyx LLC	Brick, Stone, and Related Construction Material Merchant Wholesalers	New	5	\$0
Egnyte	Software/Information Technology	New	30	\$0
Dropsourc	Software/Information Technology	Expanding	20	\$5,300,000
Humacyte	Biotechnology/Pharmaceuticals	Expanding	25	\$0
Smartlink Health Solutions	Software/Information Technology	Expanding	90	\$0
CIMTEC Automation	Transportation/Electric Vehicles	New	0	\$0
Hoganas	Biotechnology/Pharmaceuticals	New	100	\$0
Issuer Direct	Software/Information Technology	Expanding	11	\$0
Xellia Pharmaceuticals	Biotechnology/Pharmaceuticals	Expanding	10	\$0

FIGURE 4.10 **NEW & EXPANDING COMPANIES RALEIGH, 2017**
CONTINUED

Name	Industry	New or Expanding	New Jobs	Investment
MaxPoint Interactive	Advertising	Expanding	12	\$0
PlantResponse	Biotechnology/ Pharmaceuticals	Expanding	20	\$0
Fahrenheit Group	Financial Services	New	60	\$0
Lighthouse Networks	Financial Services	Expanding	50	\$0
Rho, Inc.	Biotechnology/ Pharmaceuticals	Expanding	40	\$0
Chiesi USA	Advanced Manufacturing	Expanding	0	\$0
Simplilearn	Software/Information Technology	New	50	\$0
FilterEasy	Start-Up	Expanding	12	\$0
CyrusOne	Software/Information Technology	New	0	\$0
Sassool Mediterranean Cafe	Retail, Cafe	Expanding	2	\$0
CTI Towers	Software/Information Technology	New	25	\$0
Varonis	Software/Information Technology	Expanding	300	\$0

Source: Greater Raleigh Chamber of Commerce/Wake County Economic Development

NON-RESIDENTIAL BUILDING ACTIVITY & COST OF LIVING

After a robust year of non-residential building in 2015, Raleigh has seen a slight decline in non-residential development over the last two years. Permits issued are down from the previous year at 160, and the amount of overall square footage permitted is behind by 1,883,047 sq ft. The value of total construction decreased from the previous year by nearly \$98.9 million

or 32.3%. This can be mainly attributed to lower commercial and institutional building activity. Raleigh saw a slight uptick in the amount of commercial building activity over the previous year. Office building on the other hand saw significant decline in construction square footage and value, the lowest levels since 2013.

FIGURE 4.11 RALEIGH COMMERCIAL BUILDING ACTIVITY

Year	No. of Permits	Square Feet	Construction Value
2007	56	1,357,355	\$190,443,492
2008	47	1,494,755	\$150,132,467
2009	30	691,702	\$101,233,024
2010	25	669,286	\$99,136,446
2011	20	317,563	\$30,390,667
2012	10	277,020	\$28,680,914
2013	16	246,234	\$27,798,301
2014	24	596,375	\$65,179,067
2015	23	709,735	\$100,908,455
2016	17	210,008	\$21,380,365
2017	24	268,271	\$27,833,571
TOTAL	292	6,838,304	\$843,116,769

Source: City of Raleigh Development Services Department

FIGURE 4.12 RALEIGH OFFICE BUILDING ACTIVITY

Year	No. of Permits	Square Feet	Construction Value
2007	55	1,073,572	\$81,385,165
2008	48	2,269,863	\$178,803,437
2009	30	517,432	\$44,230,191
2010	11	1,077,530	\$237,682,996
2011	18	398,962	\$38,756,590
2012	19	686,796	\$52,249,057
2013	9	363,100	\$26,180,658
2014	20	1,701,591	\$109,896,279
2015	15	947,374	\$123,938,256
2016	14	1,325,832	\$133,437,403
2017	8	363,131	\$42,021,677
TOTAL	247	10,725,183	\$1,068,581,709

Source: City of Raleigh Development Services Department



FIGURE 4.13 RALEIGH INDUSTRIAL BUILDING ACTIVITY

Year	No. of Permits	Square Feet	Construction Value
2007	40	659,898	\$37,177,945
2008	12	151,908	\$9,270,036
2009	9	141,810	\$7,789,500
2010	7	170,680	\$10,182,575
2011	7	33,913	\$1,276,400
2012	5	124,327	\$5,485,533
2013	5	149,230	\$7,017,000
2014	9	142,889	\$8,609,361
2015	16	395,375	\$20,555,006
2016	39	1,256,019	\$56,523,605
2017	12	585,372	\$40,276,748
TOTAL	161	3,811,421	\$204,163,709

Source: City of Raleigh Development Services Department

FIGURE 4.14 RALEIGH INSTITUTIONAL BUILDING ACTIVITY

Year	No. of Permits	Square Feet	Construction Value
2007	56	592,216	\$80,695,549
2008	68	482,000	\$158,807,201
2009	27	697,327	\$59,053,672
2010	29	415,985	\$49,697,344
2011	30	280,692	\$72,245,736
2012	14	104,310	\$13,953,376
2013	19	239,599	\$26,949,240
2014	36	1,351,236	\$273,003,337
2015	23	749,370	\$121,194,803
2016	14	296,309	\$21,368,840
2017	13	373,050	\$60,048,128
TOTAL	329	5,582,094	\$937,017,226

Source: City of Raleigh Development Services Department

TABLE 4.15 RALEIGH *OTHER BUILDING ACTIVITY

Year	No. of Permits	Square Feet	Construction Value
2007	171	1,813,719	\$65,301,239
2008	135	1,989,683	\$166,667,759
2009	76	1,040,954	\$31,560,301
2010	72	255,093	\$8,686,844
2011	108	553,061	\$24,449,866
2012	128	980,698	\$59,194,918
2013	101	623,262	\$31,359,616
2014	109	1,475,172	\$125,935,249
2015	122	1,049,419	\$49,226,608
2016	117	1,103,925	\$74,132,590
2017	103	719,222	\$37,706,103
TOTAL	1242	11,604,208	\$674,221,093

Source: City of Raleigh Development Services Department

*Includes parking garages, out buildings, cell phone towers, etc

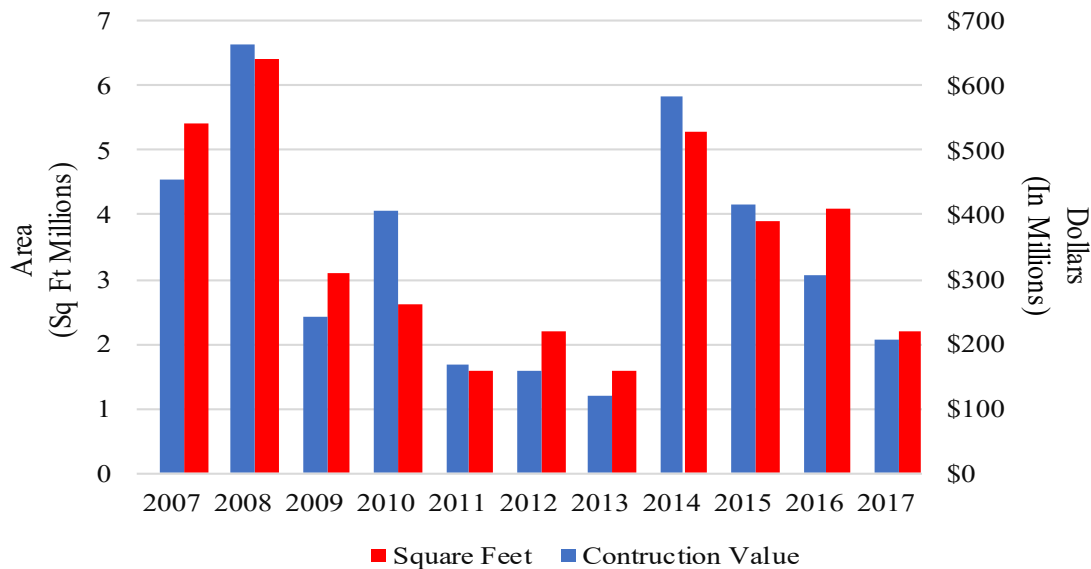


FIGURE 4.16 RALEIGH TOTAL BUILDING ACTIVITY

Year	No. of Permits	Square Feet	Construction Value
2007	378	5,496,760	\$455,003,390
2008	310	6,388,209	\$663,680,900
2009	172	3,089,225	\$243,866,688
2010	144	2,588,574	\$405,386,205
2011	183	1,584,191	\$167,119,259
2012	176	2,173,151	\$159,563,798
2013	150	1,621,425	\$119,304,815
2014	198	5,267,263	\$582,623,293
2015	199	3,851,273	\$415,822,608
2016	201	4,192,093	\$306,842,803
2017	160	2,309,046	\$207,886,227
TOTAL	2271	38,561,210	\$3,727,099,986

Source: City of Raleigh Development Services Department

FIGURE 4.17 RALEIGH TOTAL BUILDING ACTIVITY



Source: City of Development Services Department

COST OF LIVING COMPARISON TO SIMILAR CITIES

Founded in 1961, the Council for Community and Economic Research (C2ER) has been conducting city-to-city cost-of-living comparisons for over 50 years. Their 2017 Cost of Living Index assessed Raleigh as having a lower composite cost of living score than peer cities such as Atlanta, GA, Charlotte, NC, and

Austin, TX (see Figure 4.18). Significantly, Raleigh had a low cost of housing score as compared to the other peer cities, and it ranked as the third lowest cost city among the country's largest 40 metropolitan areas.

FIGURE 4.18 METRO AREA COST OF LIVING INDEX COMPARISON, 2017 ANNUAL AVERAGE DATA

	100% Composite Index	Grocery	Housing	Utilities	Transporation	Health	Misc Goods & Services
Raleigh NC	94.7	102.7	84	93.1	99	100.2	98.8
Atlanta GA	99	103.3	96.5	86.6	100	107.5	101.6
Austin TX	98.1	87.6	101.6	93.8	91.7	100.4	101.9
Charlotte, NC	96.3	98.5	86.7	96	97	105.8	101.8
Nashville- Murfreesboro, TN	97.9	96.9	91.8	93.8	99.3	81.7	106
Orlando, FL	94.8	101	88.5	107.1	94.6	88.4	95
Charleston, SC	104.6	100.6	96.8	126.7	93.8	105.1	108.8

Each quarter C2ER collects data and publishes cost of living information for participating Metro-Micro Urban Areas in the United States. To determine overall cost of living, the relative affordability of certain items (groceries, housing, utilities, transportation, health care, and miscellaneous goods and services) are indexed and a composite figure is calculated and then compared to the national average of 100. values lower than 100 indicate a lower cost living compared to the national average, and costs over 100 means the cost of living exceeds the national average. Since the index does not measure inflation and each quarterly report is a “snap shot” of a single point in time, index data from different quarters should not be compared.

Source: Council for Community and Economic Research (C2ER), Cost of Living Index, 2017 Annual Average Data

5 HOUSING & NEIGHBORHOODS

The City of Raleigh carries out several 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, as well as local residents.

The ultimate goal of housing programs is to increase housing opportunities for existing and future residents and to create diverse neighborhoods of choice that attract new investment and which do not exclude residents due to housing costs or discriminatory practices.

FIGURE 5.1 RALEIGH HOUSEHOLDS BELOW \$50,000 ANNUAL INCOME WITH 30%+ COST BURDEN, 2016

Renters Annual Income Category	Total Renter Households	Number of Burdened Households	Percent of Burdened Households
Less than \$10,000	7,633	5,981	78%
\$10,000 to \$19,999	11,904	10,816	91%
\$20,000 to \$34,999	17,724	14,868	84%
\$35,000 to \$49,999	15,209	5,717	38%
All Households <\$50,000	52,470	37,382	71%
\$50,000 or more	32,548	2,220	7%
All Households	85,018	39,602	47%
Owners Annual Income Category	Total Owner Households	Number of Burdened Households	Percent of Burdened Households
Less than \$20,000	4,258	3,677	86%
\$20,000 to \$34,999	7,214	4,402	61%
\$35,000 to \$49,999	9,469	4,467	47%
All Households <\$50,000	20,941	12,546	60%
\$50,000 or more	67,700	5,499	8%
All Households	88,641	18,045	20%

Source: 2012 - 2016 American Community Survey 5-Year Estimates, Table B25074, Household Income by Gross Rent as a Percentage of Household Income; Table B25106, Tenure by Housing Costs as a Percentage of Household Income

HOUSING AFFORDABILITY

Based on the 2012-2016 American Community Survey 5-Year Estimates, 47% of Raleigh's renter households pay more than 30% of their income in housing costs compared to 20% for owner households (see Figure 5.1). Households with annual income of less than \$50,000 – both renter and owner – are particularly burdened by

housing costs. Comparing the fair market rent for a 1-bedroom apartment in the Raleigh metro area to affordable housing costs (30% of income) for renter households making less than \$35,000 reveals a significant affordability gap (see Figure 5.2).

FIGURE 5.2 COMPARISON OF RENTER HOUSEHOLD INCOME, AFFORDABLE HOUSING COSTS, & FAIR MARKET RENT

Annual Income Category	Total Renter Households	Affordable Housing Costs at 30% of Income	Fair Market Rent for 1 Bedroom Apartment *	Affordability Gap
Less than \$10,000	7,633	\$250 (based on \$10,000)	\$818	(\$568)
\$10,000 to \$19,999	11,904	\$375 (based on \$10,000)	\$818	(\$443)
\$20,000 to \$34,999	17,724	\$687 (based on \$10,000)	\$818	(\$131)
All Households < \$34,999	37,261			

* This figure is for the Raleigh-Cary Metropolitan Statistical Area (MSA).

Source: 2012 - 2016 American Community Survey 5-Year Estimates; U.S. Department of Housing and Urban Development, FY2016 Fair Market Rent Documentation System

FIGURE 5.3 NUMBER OF ASSISTED AFFORDABLE HOUSING UNITS

City of Raleigh Affordable Rental Units	196
Raleigh Housing Authority Units	1,444
Rental Units with Funding Directly from HUD	961
Low-Income Housing Tax Credit (LIHTC) Units (no City funds)	2,215
Rental Units with Funding from City of Raleigh (Joint Venture)	3,306
Homeownership Units with Funding from City of Raleigh	504
Second Mortgages Provided by City of Raleigh	1,307
Raleigh Housing Authority Housing Choice Vouchers (Section 8)	3,869
Total	13,802

Source: City of Raleigh Community Development Division, FY2017

HOME SALES, AVERAGE RENT, RESIDENTIAL BUILDING ACTIVITY

In constant dollars, the median sales price for single-family detached units and townhouses has increased from 2011 to 2017 with fluctuations in the intervening years (see Figure 5.4). Median sales prices for condominiums decreased more significantly over this time period, although, again, there were yearly fluctuations. Single-family detached homes and townhouses both saw significant increases in median sales price from 2016 to 2017, while the median sales price for condominiums decreased by over \$1,000 after seeing an 8 percent increase between 2015 and 2016 (see Figure 5.5).

Looking at residential sales by price range, the highest number of single family homes sold during 2015 had a price tag of over \$400,000, although sales of homes between \$150,001 to \$200,000 were not far behind (see Figure 5.6). For townhouses, the price range with the highest

number of sales was \$150,001 to \$200,000, while condominiums ranged from \$100,001 to \$150,000. For all residential units combined, the largest number of sales was in the \$150,001 to \$200,000 category.

Cost of living data from the American Community Survey indicates that median rents for the city of Raleigh have annually increased over the past 5 years (see Figure 5.7). In 2017, median gross rent in the city was estimated to be \$966.

Looking at residential permit activity for 2017, apartments represented the largest category in terms of permit numbers (1,791 units permitted, or 67% of all residential building permits issued), square footage (3,611,532), and construction value (\$234,905,807) (see Figure 5.8).

FIGURE 5.4 MEDIAN SALES PRICE BY UNIT TYPE (2017 DOLLARS)

	2011	2012	2013	2014	2015	2016	2017
Single-Family Detached	\$232,445	\$245,239	\$244,971	\$241,719	\$255,909	\$259,357	\$275,000
Townhouse	\$161,005	\$167,403	\$171,057	\$168,737	\$176,035	\$178,691	\$185,500
Condominium	\$143,411	\$143,945	\$125,385	\$130,436	\$128,213	\$138,868	\$137,000

Source: Wake County Revenue Department

FIGURE 5.5 PERCENT CHANGE IN MEDIAN SALES PRICE BY UNIT TYPE (2017 DOLLARS)

	2010 to 2011	2011 to 2012	2012 to 2013	2013 to 2014	2014 to 2015	2015 to 2016	2016 to 2017
Single-Family Detached	-7.15%	5.50%	-0.11%	-1.33%	5.87%	1.35%	6.03%
Townhouse	-11.47%	3.97%	2.18%	-1.36%	4.33%	1.51%	3.81 %
Condominium	-4.67%	0.37%	-12.89%	4.03%	-1.70%	8.31%	-1.35%

Source: Wake County Revenue Department

FIGURE 5.6 NUMBERS OF RESIDENTIAL SALES BY PRICE RANGE AND TYPE OF UNIT, 2017

Price Range of Sales	Single Family	Townhouse	Condo	All Units
\$25,000 - \$100,000	82	65	271	418
\$100,001 - \$150,000	317	562	315	1,248
\$150,001 - \$200,000	977	797	113	1,887
\$200,001 - \$250,000	832	490	94	1,416
\$250,001 - \$300,000	875	263	54	1,192
\$300,001 - \$350,000	559	109	48	716
\$350,001 - \$400,000	832	36	40	458
over \$400,000	1,350	111	55	1,515
Total	5,428	2,433	989	8,850

Source: Wake County Revenue Department

FIGURE 5.7 RALEIGH ANNUAL MEDIAN GROSS APARTMENT RENT

Year	Gross Rent
2010	\$828
2011	\$855
2012	\$875
2013	\$897
2014	\$914
2015	\$926
2016	\$966

Source: 2006-2010, 2007-2011, 2008-2012, 2009-2013, 2010-2014, 2011-2015, and 2012-2016 American Community Survey 5-year Estimates

FIGURE 5.8 RALEIGH RESIDENTIAL BUILDING ACTIVITY, 2017

Residential Type	Number of Units Permitted	Square Feet Permitted	Construction Value
Single Family	1,038	2,795,442	\$356,316,007
Townhouse	370	627,026	\$54,772,745
2-4 Attached Units	18	21,027	\$1,792,763
Condominium	129	254,027	\$39,491,793
Apartment	1,791	2,142,375	\$180,087,519
Total	3,346	5,840,078	\$629,460,827

Source: City of Raleigh Inspections Department

**Refer to Figure 2.8 for a multi-year comparison of residential units permitted*

6 TRANSPORTATION

This section 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.

CONTEXT

The performance of the transportation system is a major factor for a community's economic prosperity and quality of life. The transportation system provides for accessibility to employment, services, goods, entertainment, and other daily needs. It also provides longer-distance mobility of people and goods, and over the long term, it influences patterns of growth and the level of economic activity. The Comprehensive Plan as well as adopted specialized transportation plans and studies helps Raleigh guide future development of its streets and highways, public transportation systems, bicycle network, pedestrian network, and greenway trail network. Together, all of these modes of transportation provide accessibility and mobility in support of desired land use patterns, community form, and sense of place.

The City of Raleigh depends on several organizations for transportation planning and implementation. The key organizations involved with transportation planning and implementation are:

- Capital Area Metropolitan Planning Organization (CAMPO): Long range regional planning, capital improvement planning
- North Carolina Department of Transportation (NCDOT): Long range planning on some major streets, capital improvement planning, construction/implementation on some major streets
- Raleigh Department of City Planning: Long range planning, capital improvement planning
- City of Raleigh Public Works Department: Construction, implementation, and operation of the transportation system
- GoTriangle: Long range regional transit planning, capital improvement planning, construction and implementation

CAPITAL IMPROVEMENT PROGRAM

The following is excerpted from the City of Raleigh Capital Improvement Plan (CIP) for fiscal years 2015 through 2019:

“The transportation capital program includes major street construction, street improvements, pedestrian and bicycle projects, downtown parking improvements, and transit projects. Total proposed funding for the five-year program is \$150.6 million with \$53.3 million planned for FY2015. The CIP programs the \$75 million transportation bond passed by voters in October 2013. The General Fund budget includes a 1.02 cent tax increase to fund the debt service and operating costs for the referendum. The CIP also programs the remaining budget from the 2011 transportation bond. All capital projects are consistent with the adopted goals of the 2030 Comprehensive Plan and incorporate “Complete Streets” principles, integrating bicycle, pedestrian and transit system elements into each project.

The CIP includes matching city funds for several projects planned by the North Carolina Department of Transportation (NCDOT), which include two bridge replacements in 2016 (Wade Avenue and Peace Street bridge replacements on Capital Boulevard) and two highway improvement projects (widening of the I-440 Beltline in southwest Raleigh, and improvements to the US 70 Corridor from Duraleigh Road to I-540).

The CIP also invests \$8.9 million in the city’s transit system, including facility maintenance and equipment replacement. This is roughly a 30% increase in planned investments in the transit system, allowing the city to leverage additional federal funds for transit improvements. The bicycle and pedestrian program includes \$8.2 million for sidewalk construction, maintenance, repair, streetlight installations, and bicycle facility improvements. Lastly, the CIP includes \$3.2 million for maintenance and improvements at downtown parking decks.”

Figure 6.1 shows the allocation of CIP funds in greater detail.

FEDERAL FUNDING

In addition to municipal bonds and the General Fund, federal grants are a significant source of funding for transportation improvements. These grants come from a variety of sources and serve distinct goals. City officials choose to accept federal grants based on their alignment with existing transportation policies and initiatives. Figure 6.2 shows the amounts and uses of grants awarded for the period between 2012 and 2017.

Transportation projects can be tracked with the [Transportation Project Map](#).

FIGURE 6.1 TRANSPORTATION CAPITAL IMPROVEMENT PROGRAM

Project Category	FY2015	FY2016	FY2017	FY2018	FY2019	5-Year Total
Major Street Projects	\$26.20 M	\$23.55 M	\$17.39 M	\$.50 M	\$.48 M	\$68.13 M
Street Improvement Program	\$20.93 M	\$10.13 M	\$9.83 M	\$10.13 M	\$10.04 M	\$60.94 M
Bicycle and Pedestrian Improvements	\$3.25 M	\$2.73 M	\$.74 M	\$.67 M	\$.83 M	\$8.21 M
Studies and Planning Projects	\$.34 M	\$.10 M	\$.50 M	\$.25 M	\$.10 M	\$1.28 M
Transit	\$1.93 M	\$1.73 M	\$1.73 M	\$1.73 M	\$1.73 M	\$8.85 M
Parking	\$.67 M	\$.67 M	\$.66 M	\$.64 M	\$.64 M	\$3.24 M
Total Transportation Capital Improvement Program	\$53.31 M	\$38.76 M	\$30.86 M	\$13.91 M	\$13.81 M	\$150.65 M

*The City of Raleigh's fiscal year is from July 1 to June 30; FY2016 corresponds to the year beginning July 1, 2015.
Source: Raleigh Department of City Planning, Raleigh Department of Transportation*

FIGURE 6.2 FEDERAL GRANT ALLOCATIONS FOR TRANSPORTATION PROJECTS, 2012 - 2017

Project Description	STP-DA	CMAQ	TIGER
Wake Forest/Blount/Person Complete Streets	\$1.27 M		
Walnut Creek Greenway Trail - Trailwood Segment		\$0.68 M	
Crabtree Creek Greenway Trail West		\$1.55 M	
Lake Wheeler Road Improvements	\$1.72 M		
Creedmoor Road Sidewalk Improvements	\$1.20 M		
I-40 Overpass Pedestrian Retrofits/Improvements		\$2.54 M	
Capital Boulevard Improvements	\$0.86 M		
Six Forks Road Sidewalk Improvements		\$0.51 M	
Downtown Pedestrian Safety Improvements	\$0.12 M		
Citywide Bicycle Improvement Projects		\$0.48 M	
Union Station Phase 1			\$38 M
Capital Boulevard/Peace Street Bridge Replacement	\$5 M		
New Bern Avenue Pedestrian/Transit Improvements		\$1.75 M	
Leesville Road Safe Routes to School	\$0.45 M		
Raleigh Bikeshare Implementation		\$1.67 M	

STP-DA: Surface Transportation Program - Direct Allocation

CMAQ: EPA Congestion Mitigation and Air Quality Improvement Program

TIGER: USDOT Transportation Investment Generating Economic Recovery

7 PUBLIC UTILITIES

The City's public utilities are regional in nature. The City of Raleigh Public Utilities Department (CoRPUD) has merged with all the municipal utilities 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. Planning the infrastructure of the entire water system must be with the perspective of the entire region.

WATER SUPPLY

The majority of Raleigh's water supply comes from Falls Lake in the northernmost part of Wake County. Lake Benson, which is just south of Garner, provides a secondary source of raw water for the Public Utilities department. These two reservoirs combined can support up to 77.3 million gallons per day (MGD) of withdrawals. The available raw water supply from each of these sources is shown in Figure 7.1.

In 2016, the City used a little over 50 MGD to serve its regional customer base. The demand for treated water is projected to exceed the existing raw water supply by the year 2030 (Figure 7.2). The City of Raleigh and Wake County are considering a series of options to expand the supply of raw water in time to meet the projected demand. These improvements, creating an estimated 27.7 MGD of new supply, will enable the City to meet demand until close to the year 2050. Treatment capacity is not expected to be a limiting factor as the E. M. Johnson treatment plant is currently permitted to treat up to 86 MGD. A planned expansion, to be completed by 2025, will increase capacity at E. M. Johnson to 120 MGD.

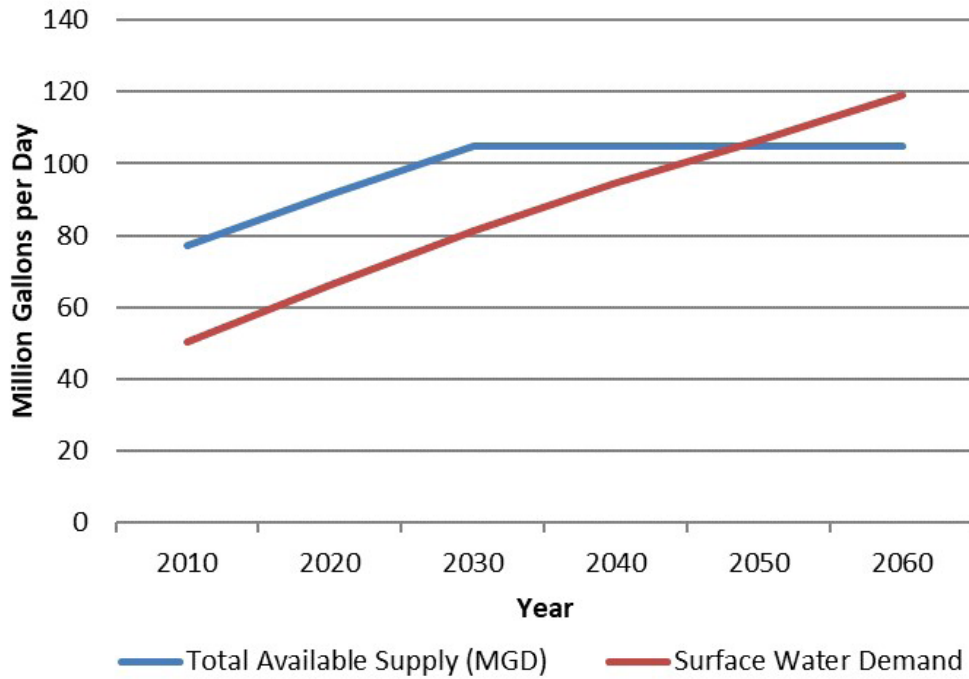
Total water demand is growing in Wake County, but this increase is the result of population growth rather than greater demand per person. Daily water demand per capita in Raleigh has been on a downward trend for over 15 years (Figure 7.3).

FIGURE 7.1 RAW WATER SUPPLY AND DEMAND FOR 2017

Reservoir	Average Daily Withdrawal (MGD)	Maximum Daily Withdrawal (MGD)	Available Raw Water Supply (MGD)
Falls Lake	40.86	66.40	66.10
Lake Benson	10.71	16.54	11.20

Source: NC Division of Water Resources

FIGURE 7.2 WATER SUPPLY AND DEMAND PROJECTIONS



Source: NC Division of Water Resources

FIGURE 7.3 DAILY TREATED WATER DEMAND PER CAPITA



Source: NC Division of Water Resources

WASTEWATER TREATMENT

The City of Raleigh operates three wastewater treatment plants (WWTPs) as well as a residuals management facility at Wrenn Road. The treatment capacities for the three WWTPs are shown in Figure 7.4. Treatment capacity at the Neuse River facility will be expanded to 75 MGD by 2018.

The Neuse River Resource Recovery Facility is the largest WWTP serving Wake County. As its name suggests, the operations of the plant have expanded beyond the treatment of wastewater to include the treatment of biosolids for land application and the production of biofuel. In conjunction with these efforts, the City of Raleigh has created a Mobile Biofuel Processor that can produce biofuel from feedstock on-site at any location.

The City of Raleigh Public Utilities served 174,570 sewer connections with 2,472 miles of wastewater pipeline and 115 public pumping stations in 2017. Figure 7.5 shows the amount of wastewater being treated at the City's three WWTPs. Throughput in 2017 was about 77% of the total capacity, and this figure has been stable or declining for over ten years. Even so, the City has been awarded a permit to expand the capacity at the Neuse River RRF by 15 MGD to 75 MGD. Expansion of the facility is in progress and is expected to be completed by 2018. Additional upgrades will enable the plant to

produce methane for electricity generation, reducing its operating costs and environmental impact.

In addition to treating our water supply and wastewater, CoRPUD also maintains hundreds of miles of pipes to transport each of these types of water. When wastewater pipes are used beyond their designed capacity or if they have a structural failure, a sanitary sewer overflow (SSO) can occur. SSOs can be dangerous and disruptive to human activities and environmental quality. If SSOs release a large enough volume of wastewater, the local utility may be fined by the state. For these reasons, CoRPUD carefully tracks SSOs and tries to minimize their frequency and magnitude. Figure 7.6 shows the annual number of SSOs for CoRPUD and the rate of SSOs per 100 miles of pipe. The overall number of SSOs has declined by nearly 50% over ten years, and the rate of SSOs has stayed below the national average over the past five years. Raleigh's rate of SSOs in 2017 was 4.4 compared to the national average of 4.5.

FIGURE 7.4 **WASTEWATER TREATMENT CAPACITY**

Treatment Plan	Maximum Capacity
Neuse River RRF	60 MGD
Little Creet WWTP	1.85 MGD
Smith Creek WWTP	3.0 MGD

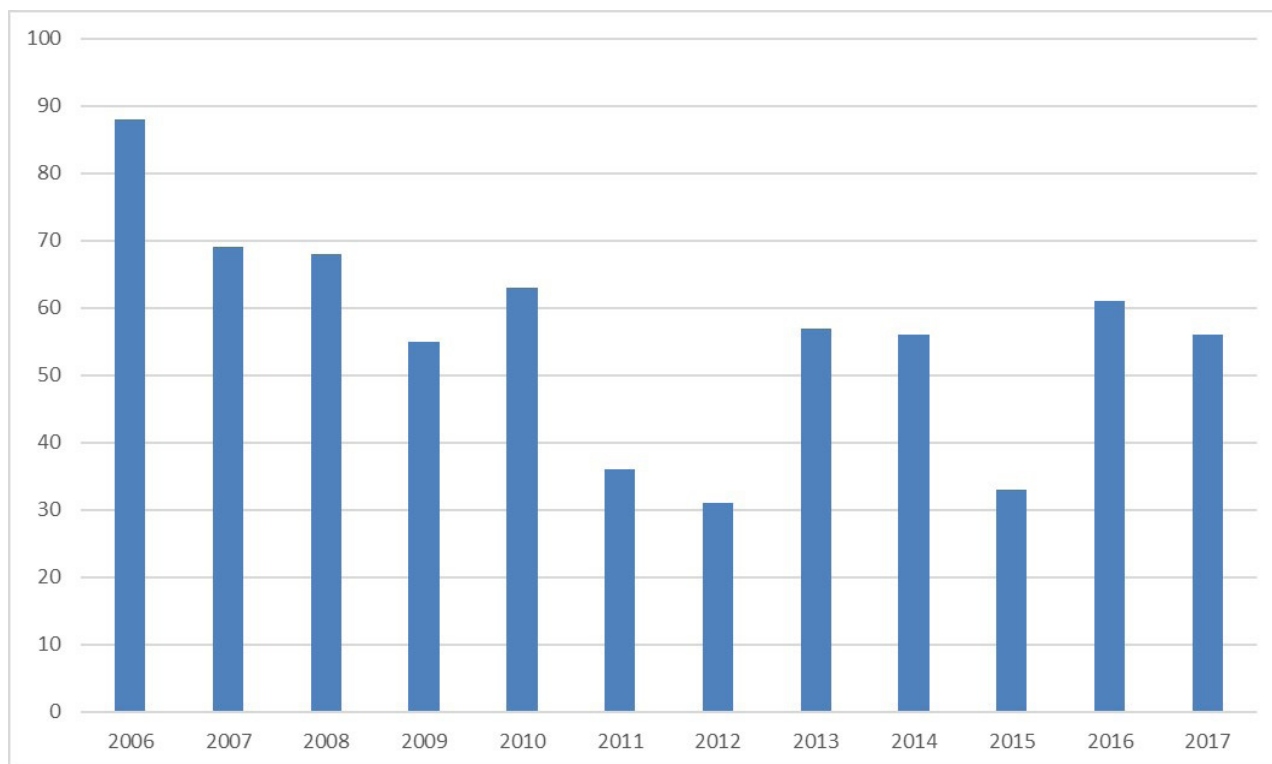
Source: NC Division of Water Resources

FIGURE 7.5 WWTP AVERAGE DAILY THROUGHPUT BY YEAR

Year	Neuse River RRF (MGD)	Little Creek WWTP (MGD)	Smith Creek WWTP (MGD)
2000	36.16	0.853	1.33
2001	35.61	0.757	1.331
2002	37.39	0.816	1.399
2003	44.3	0.93	0.442
2004	45.5	0.715	0.691
2005	46.2	0.58	0.713
2006	44.8	0.591	1.026
2007	42.01	0.552	1.04
2008	40.87	0.592	1.105
2009	42.46	0.664	1.206
2010	43.84	0.692	1.233
2011	41.59	0.616	1.293
2012	41.91	0.625	1.326
2013	43.96	0.742	1.479
2014	45.04	0.804	1.685
2015	46.41	0.851	1.809
2016	47.17	0.81	1.86
2017	47	0.75	1.97

Source: NC Division of Water Resources

FIGURE 7.6 SANITARY SEWER OVERFLOW COUNT



The City has funded several capital projects to ensure that utility infrastructure continues to produce a high level of service as additional ratepayers are added to the system. The following is a selection of the utility projects funded in the 2015-2019 Capital Improvement Program:

Begin construction of the Crabtree Basin Wastewater System Conveyance Improvement Project Phase II

Begin construction of the Wake Forest Richland and Smith Creek Interceptor Improvements

Continue construction of the NRWWT Expansion to 75 MGD Phase III and design and bidding of Phase IV.

Complete the DEBWTP Backwash Waste Recycle Facility project.

Update the Water Distribution System Master Plan

The addition of nearly \$200M in water and wastewater asset management related projects. Projects include the assessment and rehabilitation/replacement of our water and sanitary sewer pipelines.

Acceleration of design funds for the NRWWT Anaerobic Digester project.

Addition of Big Branch Pump Station Improvements to address wet weather flow compliance.

Addition of a Raw Water Reservoir at DEBWTP

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 look at watershed conditions and then provides a snapshot of air quality, water consumption and conservation, and greenhouse gas emissions.

EXISTING WATERSHED CONDITIONS

Figure 8.1 provides 2005, 2010, and 2016 water quality information for streams within Wake County. The NC Division of Water Quality

assessed these sites based on the health of their fish populations. The Neuse River is the most significant water system among the city’s watersheds which include: Buffalo Creek, Crabtree Creek, Little River, Marks Creek, Middle Creek, Moccasin Creek, Swift Creek, and Walnut Creek.

Overall, the bioclassification has declined throughout survey years for all streams except Smith Creek. The highest performing streams tend to be located in less urbanized areas on the periphery of the city.

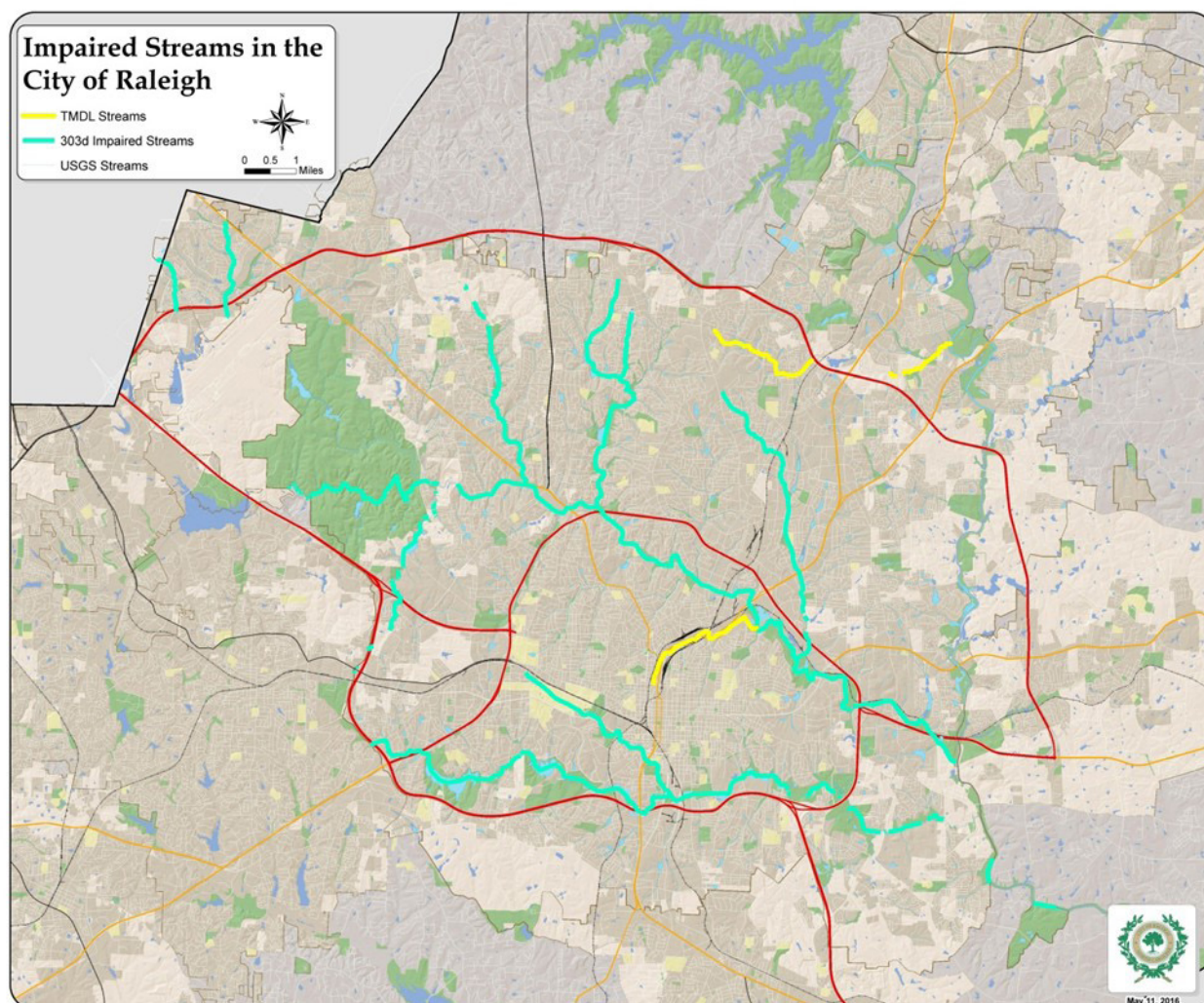
FIGURE 8.1 BIOCLASSIFICATION FOR RIVERS AND STREAMS IN WAKE COUNTY PORTION OF NEUSE RIVER SUBBASIN

Water Body	Monitoring Location	2005	2010	2016
Crabtree Creek	Ebenezer Church Rd	Excellent	Excellent	Fair
Little River	SR 2224	Good	Good	Good-Fair
Middle Creek	SR 1375	Excellent	Good-Fair	Good-Fair
New Light Creek	SR 1911	Good	Good	Good-Fair
Richland Creek	US 1	Excellent	Good-Fair	Good-Fair
Smith Creek	SR 2045	Fair	Good	Fair
Swift Creek	SR 1152	Not Sampled	Good-Fair	Fair
Terrible Creek	SR 2751	Good	Good	Fair
Upper Barton Creek	NC 50	Good	Good-Fair	Fair
Walnut Creek	South State	Not Sampled	Fair	Poor
Walnut Creek	SR 2544	Good-Fair	Good-Fair	Fair

Source: North Carolina Department of Environment and Natural Resources, Division of Water Quality

Fish populations are not the only measure of stream quality. The EPA requires states to monitor the concentrations of various pollutants in water bodies under federal jurisdiction. The most common pollutants in Raleigh's streams are nutrients like nitrogen and phosphorous. Polychlorinated biphenyl (PCB) is a carcinogenic industrial chemical that is also found in streams in Raleigh. PCB concentrations in local waters tend to be very low. Danger may arise from consuming fish that has accumulated PCB during its lifetime in contaminated waters.

A water body that has pollutant (usually nutrient) concentrations exceeding the statutory limit is placed on the 303(d) list, named after a section of the Clean Water Act. A consistently and acutely impaired stream can be assigned a total maximum daily load (TMDL) of pollutants which the local government is charged with enforcing. The map below shows the streams in Raleigh that have been placed on the 303(d) list as well as those with TMDLs.



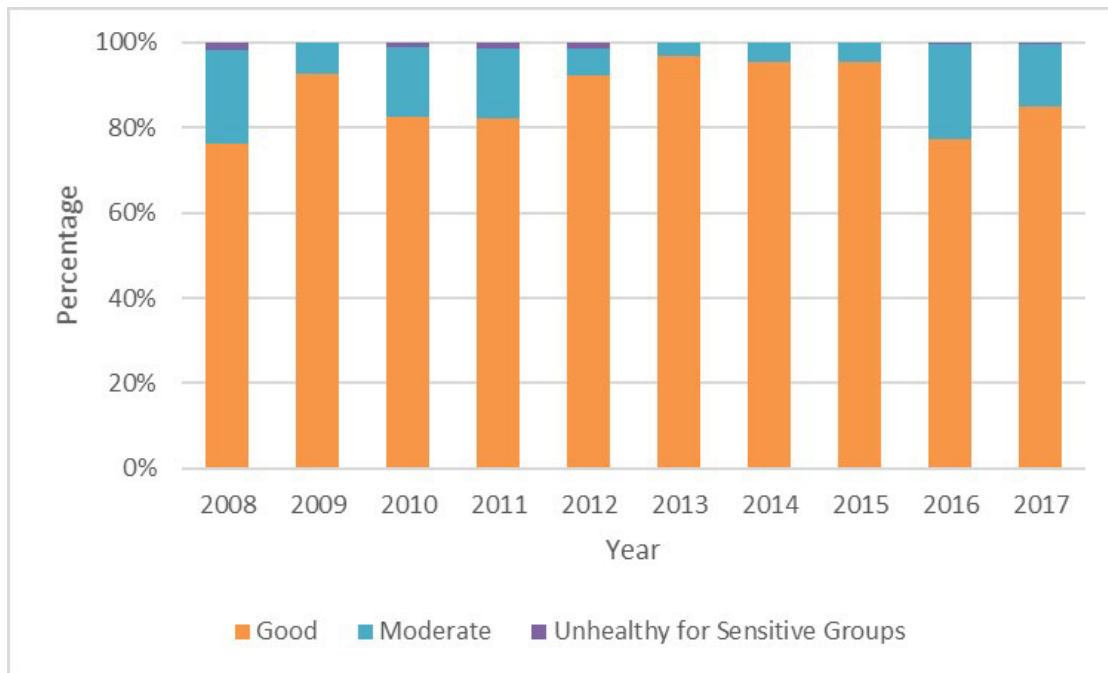
Source: City of Raleigh Stormwater Division

AIR QUALITY

Two large air quality problems in North Carolina are ground-level ozone (the primary ingredient in “smog”) and particulate matter. Both pollutants are caused by emissions from cars and trucks and from the fossil fuel burning power plants that supply most of our electricity. Air quality improved steadily from 2008 to 2015 only to return to 2008 levels in 2016 (see Figure 8.2 and 8.3).

Raleigh’s streak of three consecutive years without recording a single day categorized as “unhealthy for Sensitive Groups” was broken in 2016. These readings are from the Millbrook Monitor, the only reporting station within the City of Raleigh.

FIGURE 8.2 OZONE CATEGORY DAYS



Source: U.S. Environmental Protection Agency, NC Department of Environment and Natural Resources

FIGURE 8.3 NUMBER OF OZONE RATING DAYS, MILLBROOK MONITOR

	Good	Moderate	Unhealthy for Sensitive Groups	Unhealthy
2008	163	47	4	0
2009	198	16	0	0
2010	177	35	2	0
2011	176	35	3	0
2012	191	13	3	0
2013	207	7	0	0
2014	204	10	0	0
2015	203	10	0	0
2016	156	45	1	0
2017	203	35	1	0

Source: U.S. Environmental Protection Agency, NC Department of Environment and Natural Resources

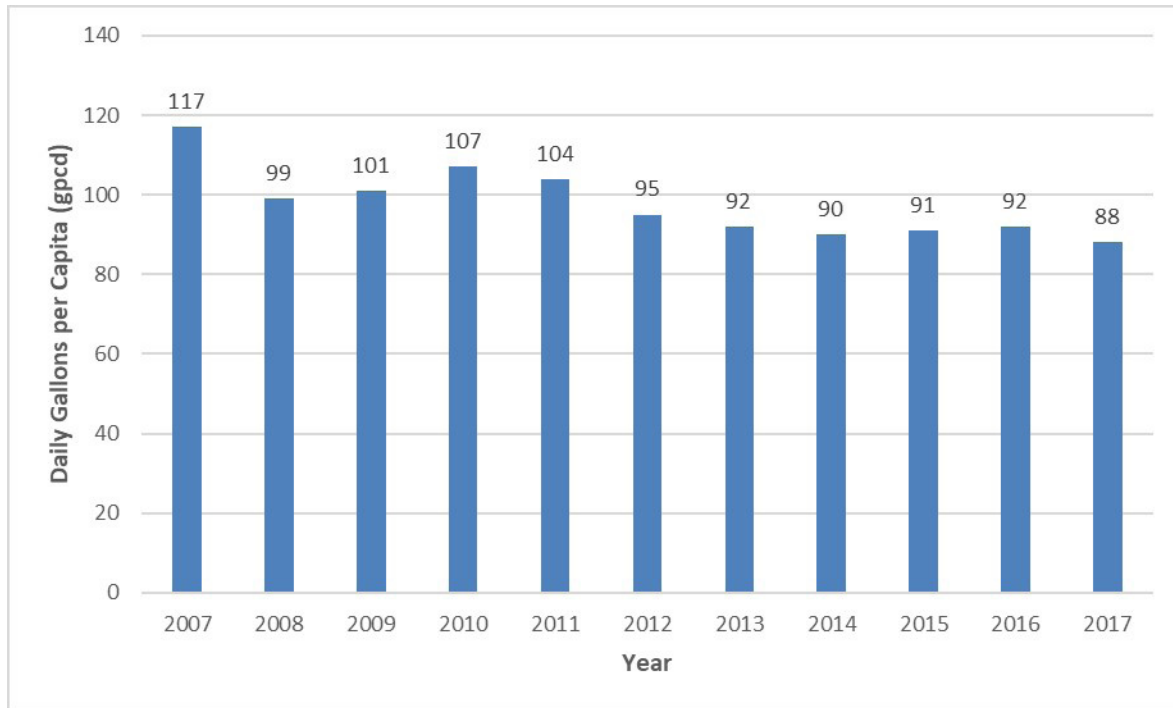
*Data reported only during ozone forecast season, April-September

WATER CONSUMPTION AND CONSERVATION

The City of Raleigh has initiated several programs to help educate customers about the most water-efficient technologies and to understand the City's mandatory conservation measures. These programs include water efficiency tips, a WaterSense toilets rebate program, showerhead swap-out program, water conservation kit, and educational presentations, including the Sustainable Home Raleigh

program. Efficiently using natural resources makes environmental sense and provides economic benefits by reducing energy costs in the treatment and distribution of water. Water consumption as measured in daily gallons per capita (gpcd) trended downward from 116 gpcd to 92 gpcd between 2007 and 2013 and has stabilized at around 90 gpcd since then (see Figure 8.4).

FIGURE 8.4 DAILY WATER CONSUMPTION AGGREGATED BY CITY POPULATION



Source: City of Raleigh Public Utilities Department

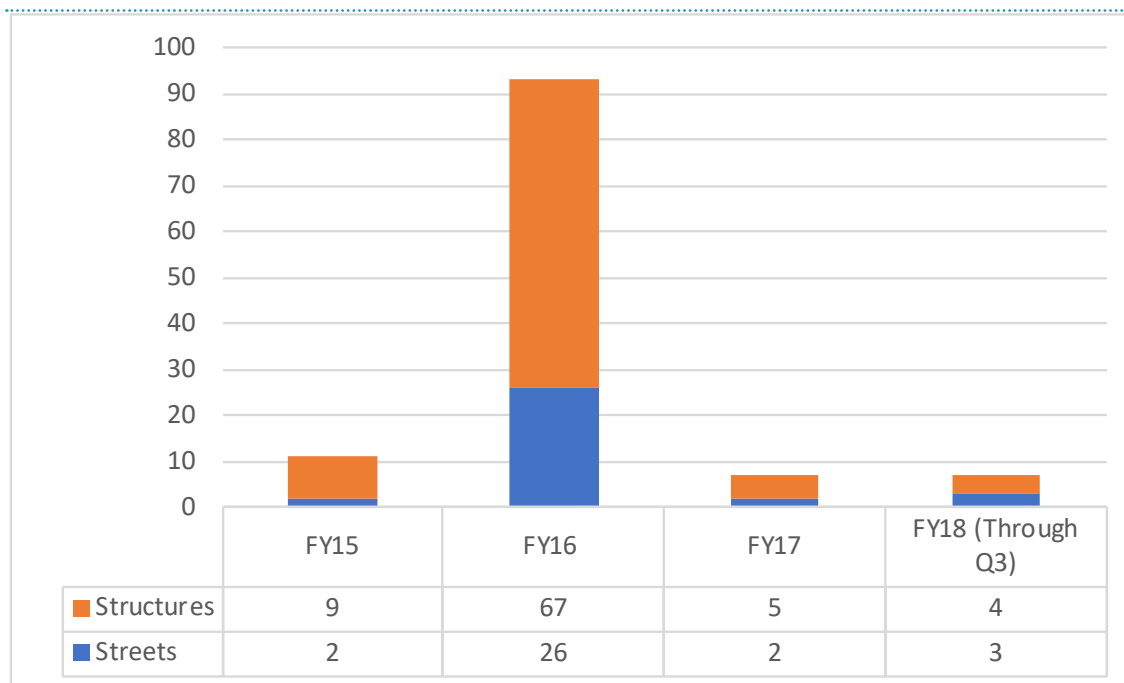
STORMWATER MANAGEMENT

Stormwater management must address the quantity as well as the quality of precipitation runoff, commonly associated with rainwater falling and moving along impervious surfaces. The Stormwater Management Division delivers stormwater services for the citizens of Raleigh empowered through the City's Stormwater Utility. Stormwater services include the drainage and water quality assistance programs, capital improvement stormwater projects, watershed and asset management, drainage system maintenance, citizen inquiry response, and the water quality program mandated by the Federal Clean Water Act. In addition, services include reviewing and inspecting private developments and stormwater control measures for conformance to stormwater management, erosion and sediment control, and floodplain management requirements.

The Stormwater Division has recently begun to aggressively monitor the results of its program, projects, and operations. While historic data is limited, evidence from recent years shows how investments in stormwater management are protecting life and property, reducing pollution, and restoring local waterways.

New construction on formerly natural areas increases the amount of runoff entering the drainage and receiving stream system. Prioritized regular improvements ensure that flood hazards continue to be reduced or mitigated and that surface water quality is protected or improved. Potential risks of uncontrolled runoff include continued flooding hazards, surface water pollution, and stream erosion. Stormwater projects completed in Fiscal Year 2018 reduced the risk posed by runoff for 4 structures and 3 streets, as shown in Figure 8.5.

FIGURE 8.5 REDUCTION IN STRUCTURES AND STREETS AFFECTED BY EXCESS RUNOFF BY FISCAL YEAR



Source: City of Raleigh Stormwater Division

Stormwater management cannot eliminate the threat of major floods, however. The National Flood Insurance Program (NFIP), run by the Federal Emergency Management Agency (FEMA), provides a way for homeowners in flood hazard areas to be better financially prepared if flood damage occurs. The Stormwater Division assists property owners at the local level by informing homeowners of the risks they face and ways the NFIP can help them.

FEMA evaluates the quality of these educational efforts as well as overall floodplain management and awards points using the voluntary Community Rating System (CRS). Attainment of CRS points is rewarded with lower NFIP premiums for homeowners. Raleigh received a CRS rating of nine in 2018, on a scale of one to ten, with a lower rating preferable. However, the Stormwater Division is actively assisting homeowners in the floodplain to acquire elevation certificates. The Division expects to

have recorded the necessary certificates to achieve an improved rating of seven within the next year. In early 2018, there were 1,942 NFIP policyholders in Raleigh insuring nearly \$548 million in property. The combined premiums of these policyholders amount to \$1.87 million per year.

Another goal of the Stormwater Division is to limit the amount of nutrients and other pollutants entering local waterways. The nutrients nitrogen and phosphorous are ingredients in most fertilizers used for lawn maintenance and landscaping. Fertilizer not absorbed by the soil may be washed into storm drains with potential negative impacts on surface waters and stream ecosystems. Stormwater Control Measures (SCMs) are required for all commercial and multi-family residential developments in Raleigh. SCMs reduce the intensity of runoff leaving a site during a rain event by capturing it for a certain period of time. They also treat the runoff to

remove nutrients. The City is augmenting the use of SCMs in private development with publicly funded control measures. Figure 8.6 shows the benefits in nutrient reduction that are being achieved through stormwater management.

Stormwater management often takes the form of engineered infrastructure projects, but the natural world also gives us valuable resources for preventing floods and protecting our streams and surface waters. Proper conservation of wetlands, streams, and riparian vegetation can generate a significant return on investment in terms of runoff control and water quality. As an added bonus, healthy waterways offer recreational, educational, and cultural benefits that can increase property values and make Raleigh a more desirable place to live. The Stormwater Division facilitates several popular volunteer programs for maintaining these

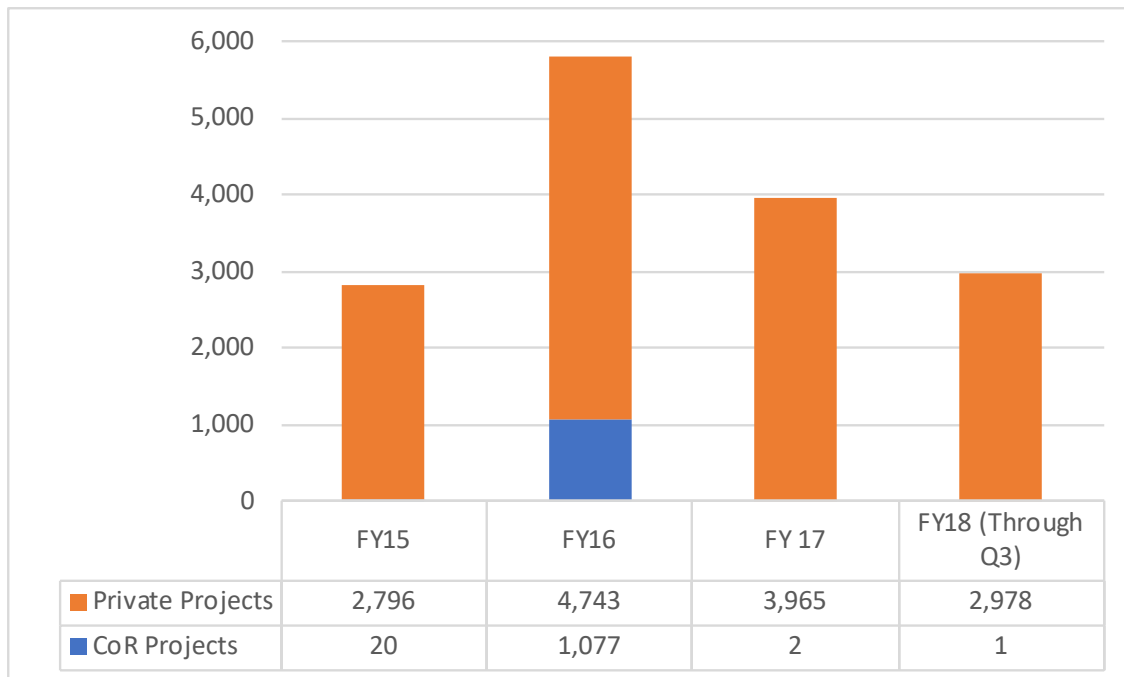
valuable natural resources. For each of the past three years, individuals and organizations have given over 2,400 hours of volunteer labor to programs such as:

- Adopt-A-Stream
- Foster-A-Stream
- Stream Monitoring
- Storm Drain Marketing

Not only do these efforts put tens of thousands of dollars of labor towards improving our infrastructure and environment, they also help citizens connect with each other and feel invested in their communities.

Even with SCMs and stream maintenance, a growing city requires proactive investment in storm sewers to effectively transport runoff to the stream network. The following lists some of

FIGURE 8.6 REDUCTION IN TOTAL NITROGEN LOAD BY FISCAL YEAR (LBS/YR)



Source: City of Raleigh Stormwater Division

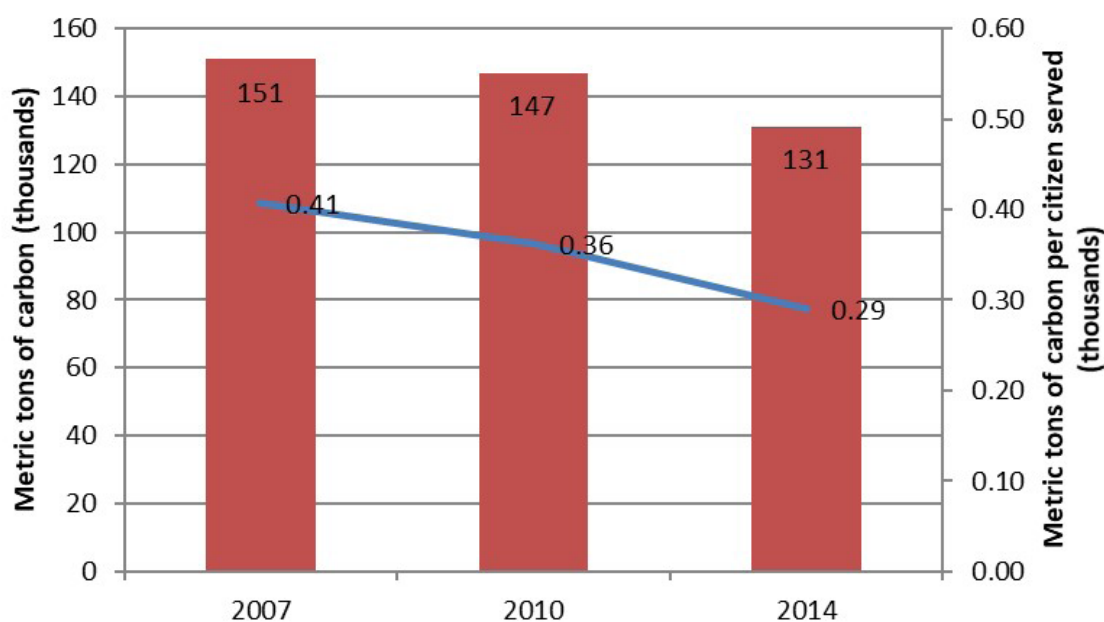
the Stormwater Division's projects funded by the 2015-2019 Capital Improvement Program:

- Supplemental funding of \$1.8 million for the construction of the high priority Lower Longview Dam and restoration of Albemarle Avenue. This project will upgrade the dam and spillway capacity, reducing hazards to property owners and allowing traffic to resume on Albemarle Avenue.
- Continued funding totaling \$550,000 for water quality retrofit projects and the water quality cost share program.
- Continued funding totaling \$750,000 for the significantly growing drainage petitions program. This program includes cost-share projects to reduce structural flooding and stabilize severely eroding stream banks.
- \$1,000,000 in funding for continued neighborhood drainage system improvement projects.

GREENHOUSE GAS EMISSIONS

The City of Raleigh conducted greenhouse gas emissions inventories for municipal operations in 2010 and 2014. The base year selected for this emissions inventory was 2007. In that base year, City operations emitted 151,479 metric tons of carbon (MTCO₂E) to the atmosphere. Through implementation of a number of programs and projects, it is estimated that between 2007 and 2010 City operations reduced greenhouse gases emitted by 11.3% per citizen served. Greenhouse emissions per citizen served drop another 19.7% between 2010 and 2014 (see Figure 8.7). The effect of this increase in efficiency is the equivalent of taking more than 1,600 cars off the road for every year of the interval 2007-2014.

FIGURE 8.7 MUNICIPAL OPERATIONS GREENHOUSE GAS EMISSIONS



Source: City of Raleigh Greenhouse Gas Emissions Inventory: Years 2007, 2010, and 2014

These reductions were accomplished with relatively low capital expenditures, few impacts on City or department operations or budgets, no increased cost to customers, and no reduction in level of service to customers. Many of these projects were already underway prior to completion of the Greenhouse Gas Emissions Inventory for Municipal Operations.

The City has built on this momentum by drafting a Clean Energy Action Plan to identify options for further reductions in GHG emissions. The plan evaluates a variety of actions across multiple City departments that have the potential to reduce GHG emissions per citizen served by more than 20% over 2014 levels. The total costs of all actions in the plan is estimated at around \$100 million, but individual components range in costs from those that pay for themselves through energy cost savings to more ambitious steps that require significant expenditures to achieve reductions.

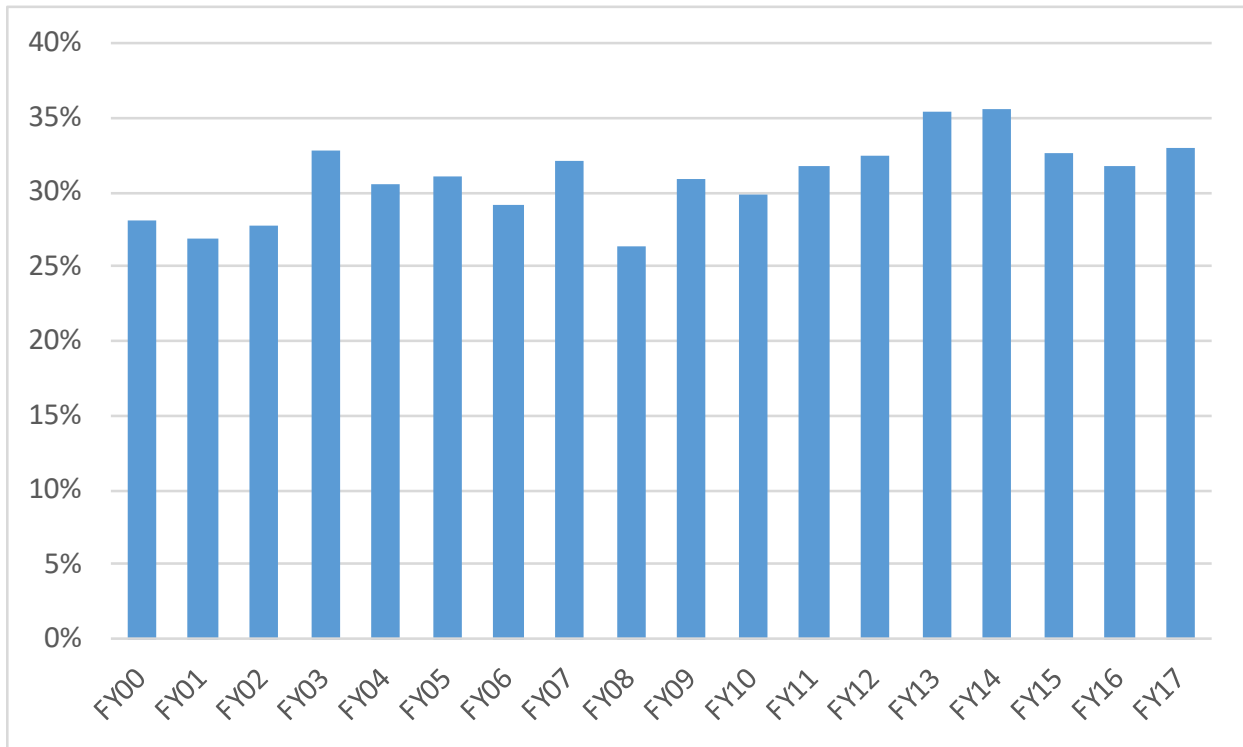
SOLID WASTE

The City of Raleigh provides curbside pickup services to residential customers for garbage, recycling, and yard waste through the Solid Waste Services division. The recycling program began in 1989, and the yard waste program started three years later in 1992. Collected yard waste is converted into wood chips, mulch, and compost for sale to the public. Solid Waste Services has also been offering curbside pickup for recycling to downtown commercial customers since 2006. There are now more than 130 businesses participating in this program.

Recycling and yard waste have become a regular and significant part of the city's solid waste stream. City residents, with the help of Solid Waste Services, have maintained a diversion rate of about 30% for over ten years (Figure 8.8). Diverting solid waste to the recycling and yard waste programs keeps that waste out of landfills. This in turn saves money for Wake County by delaying expenditures on decommissioning a full landfill and establishing a new one. Those savings can be passed on to customers through reduced tipping fees. Recycling consumer products and re-purposing yard waste also reduces our impact on the environment.

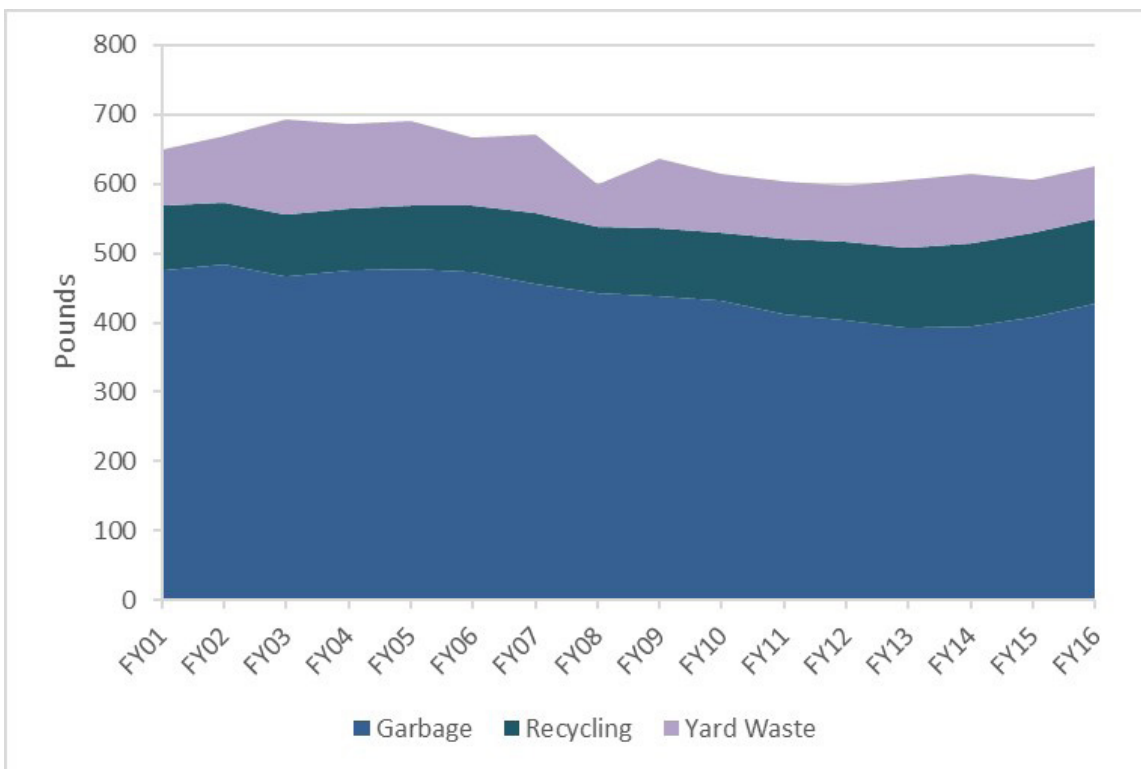
In addition to diverting more waste, Raleigh citizens are also producing less waste per person (Figure 8.9). Between 2002 and 2015, garbage collection per resident dropped by more than 15%. Increased recycling accounts for almost half of this change, but the majority comes from residents simply throwing away less garbage.

FIGURE 8.8 SOLID WASTE DIVERSION RATE



Source: City of Raleigh Solid Waste Services Division

FIGURE 8.9 SOLID WASTE COLLECTION PER CAPITA



Source: City of Raleigh Solid Waste Services Division

9 PARKS, RECREATION, & CULTURAL RESOURCES

EXISTING PRCR SYSTEM AND PLANNING FRAMEWORK

The City's parks, greenways and cultural resources are invaluable assets for cultural pursuits, natural conservation and active and passive lifestyle activities. The Raleigh parks, recreation and cultural resources system has 6169 acres of park land and 3868 acres of greenway property. These acres contribute to providing the residents of Raleigh parks, greenways and cultural resources experiences at 224 park properties, and along 117 miles of greenway trail.

In addition to providing parks and facilities the public is provided with a variety of programs to meet their household's interests. The Parks, Recreation and Cultural Resources Department publishes the "Leisure Ledger" on a regular basis to provide a listing of the park, recreation and cultural resources program offerings and facilities available to the general public.

To ensure the public has a voice for the planning of new facilities and experiences, the City Council adopted the Department's Public Participation Policy for Park Planning in 2012. This policy provides direction to ensure an effective and efficient process is used to fairly and equitably maximize citizen input and support for the planning and development of the park system.

The Parks, Recreation and Cultural Resources System Plan was adopted by City Council on May 6, 2014. The System Plan provides guidance on the design, development and delivery of facilities and services over the next 20 years. The System Plan supplements the City of Raleigh 2030 Comprehensive Plan.

Park and greenway planning and development projects can be tracked on-line through the following webpage: www.raleighnc.gov/home/content/PRecDesignDevelop/Articles/ParkAndGreenwayPlanningAndDevelopment.html

PARKS AND RECREATION FACILITIES

Raleigh has one of the most well-developed park systems in the Southeastern United States. The City's developed parks system consists of a variety of experiences. Initiated by public input into the System Plan and as Action Items for Implementation, the department is developing a new classification system based on experiences.

During the System Plan process the public identified core neighborhood-based experiences desired within a walkable distance from their home. The activities in the core neighborhood-based experiences or all "at-will" activities include:

- Sitting outside, reading, contemplating, meeting friends (socializing);
- Going to a playground;
- Open play
- Walking or Riding a bike in a park or on a greenway trail.

Regional experiences were also identified during the System Plan process. These experiences are typically found at a larger park facility or are resource based. These experiences may require planning to attend or registering for a program, as well as, traveling out of your neighborhood to the experience. The activities included in the regional experiences include:

- Playing on an athletic field or court;
- Enjoying the outdoors or nature;
- Aquatic recreation;
- River or lake-related activities;
- Fitness;
- Enjoying cultural opportunities.

In 2015 the City of Raleigh and the State of North Carolina agreed to have the city acquire Dorthea Dix Park. At 307.9 acres it is the largest park in the city. The park can be divided into 2 sections, 143 acres are to the west of the railroad and 164 acres to the east. The historic character of the eastern parcel, which includes the Dix Hill National Register Historic District, makes it very distinct from the park-like setting of the western parcel. There are 85 structures on the campus totaling 1.2 million square feet of building space, for nearly 2,000 Department of Health Employees. In 2017 a master planning process was initiated to turn Dix into a destination park for the city. Many opportunities for public involvement will be available through spring 2019 during the master planning process.

Additionally, parks and recreation needs are met on a regional basis by Wake County, with several county parks located within Raleigh: Historic Oak View Park, Historic Yates Mill Park, and North Wake Landfill District Park.

GREENWAYS

The Capital Area Greenway corridor system is a land use within the Comprehensive Plan. It is generally based on the drainage systems of the Neuse River and of the following creek systems: Crabtree, Walnut, Richland, and Harris. The City of Raleigh currently provides approximately 3,868 acres of greenway land through its community wide, Capital Area Greenway System. In addition to the 117 miles of existing trail, an additional 120 miles are proposed.

On January 6, 2015, the City Council adopted a new Capital Area Greenway Planning and Design Guide. The new guide incorporates existing City procedures with the standards and best practices of public agencies and municipalities nationwide. The document supplements the System Plan. It is designed to ensure that the Capital Area Greenway System continues to be a safe and accessible multi-use trail system providing recreation and transportation opportunities, while preserving thousands of acres of natural areas. More information is available at the following webpage: www.raleighnc.gov/home/content/PRecDesignDevelop/Articles/CapitalAreaGreenwayTrailSystem.html

Although 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 & Recreation. Residents from Triangle communities use the park for hiking, viewing wildlife, off- road biking, and other recreational pursuits. This park includes a 500 acre lake and 215 upland acres with an extensive trail system. Greenway trail access from Raleigh to Umstead Park also connects with the Town of Cary's greenway system and Lake Crabtree County Park.

FUTURE PARK AND OPEN SPACE NEEDS

The Parks, Recreation and Cultural Resources Department developed a new model for evaluating access to experiences provided by parks and open space. The Experience-Based System model uses distance based on the street network and demographics in the community to evaluate access to the closest park experience. Historically, the City of Raleigh has acquired and planned parks and recreation facilities according to the National Recreation and Parks Association's (NRPA) Level of Service (LOS) Standard, which include:

- Acres per Population,
- Facilities per Population,
- Quality of the Facilities, and
- Availability of Programs.

Equitable access to inherent experiences is not measured with these techniques. Incorporating a fifth measurement technique—Access Distance or Travel Time—can help progress the simple idea that every citizen should be able to access an inherent park, recreation or cultural experience within similar walking, bicycling, and/or driving distance. The creation of an experience-based model helps to better evaluate how parks, recreation, and cultural resource experiences offered by the City of Raleigh function as a dynamic system.

The specific metrics used for the Experience-Based System evaluation include distance to closest park, accessible parks per person, and accessible acres per person. The evaluation also calls for the use of census block centroids, park access points, and the Wake County road network. This model first identifies all parks offering core experiences, which includes opportunities for socializing, going to a playground, informal open play, and walking or riding a bike in a park or on a greenway trail. The Experienced-Based System model then uses the following measures to evaluate accessibility to the parks providing a core experience:

- The distance to the closest park measures the distance from each Census Block centroid to the closest park access point. This distance is calculated using the Wake County road network and does not consider sidewalks, trails, walking paths, greenways, or any other connection type. Using this methodology, core experiences are accessible to a census block when the distance is less than or equal to 1.29 miles.
- The number of accessible parks per person is calculated by dividing each park by the total population of all of the surrounding Census Blocks within a distance of 1.29-miles to determine parks/person. Each Census Block receives the sum of the calculated number of parks/person for all parks within the 1.29-mile distance.
- The number of accessible park acres per person is calculated by dividing the park's acreage by the total population of all Census Blocks within a distance of 1.29-miles to determine acres/person. Each Census Block gets the sum of the acres/person values of all parks within a 1.29-mile distance.
- Once these three metrics are calculated, they are combined for each census block. The census block values are then aggregated up to census block groups and those values are weighted by population.

The Experience-Based System model will be used for targeting connections to existing parks and greenway trails, determining where to add amenities and identifying areas for land acquisition. As

a first step to improving access the Department is currently developing a new Neighborhood and Community Connections (N&CC) Program and Policy to identify areas of the city where communities are close to a park but have low access. Using the existing experience-based system model, the N&CC Program will compare current service to potential service levels to assess which parks have the greatest need for accessibility improvements.

10 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 tables captured below represent data collected through comprehensive planning efforts that occurred during the past calendar year.

FIGURE 10.1 **POLICE FACILITIES**

Police Facility	Number of Staff	Number of Vehicles	Facility Sq. Ft.	Address
Headquarters and North	160	110	45,900	6716 Six Forks Road, 27615
Downtown	82	59	33,700	218 W. Cabarrus Street, 27602
Front Street	92	100	48,000	1221 Front Street, 27609
Southeast	93	100	10,594	1601-30 Cross Link Road, 27610
Southwest	72	75	14,400	601-104 Hutton Street, 27606
Greens Dairy Detective Division	164	180	54,905	5240 Greens Dairy Road, 27616
Northeast	96	75	13,851	5220 Greens Dairy Road, 27616
Northwest	52	50	11,000	8016 Glenwood Avenue, 27612
The Academy	52	12	12,416	4205 Spring Forest Road, 27616
The Range	9	21	9,260	8401 Battle Bridge Road
The Range			7,000	Range Road (New Building)
The Range			1,280	Two trailers (Used as office space)
The Range			260	Old cinder block range house
The Range			400	Four storage sheds on property
The Range			320	Range 2-story garage
Total	874	782	254,026	

Source: City of Raleigh Police Department

FIGURE 10.2 FIRE FACILITIES

Performance Measure	Actual FY2014	Actual FY2015	Actual FY2018	Actual FY2017	Projected FY2018
Fire calls answered	1,133	1,227	1,079	1,188	1,100
Rescue and EMS calls answered	23,119	22,356	24,047	24,697	25,000
Fires investigated	265	251	291	270	260
Permits issued	1,738	1,730	2,961	2,828	2,800
Average hours per fire call (hrs)	0.55	0.57	1.05	0.62	0.7
Average hours per EMS call (hrs)	0.20	0.20	0.33	0.2	0.25
Average response time to emergency calls (min)	4.43	4.44	4.46	4.46	4.45
Percent of citizens reached by public fire education	10%	10%	9%	100%	100%

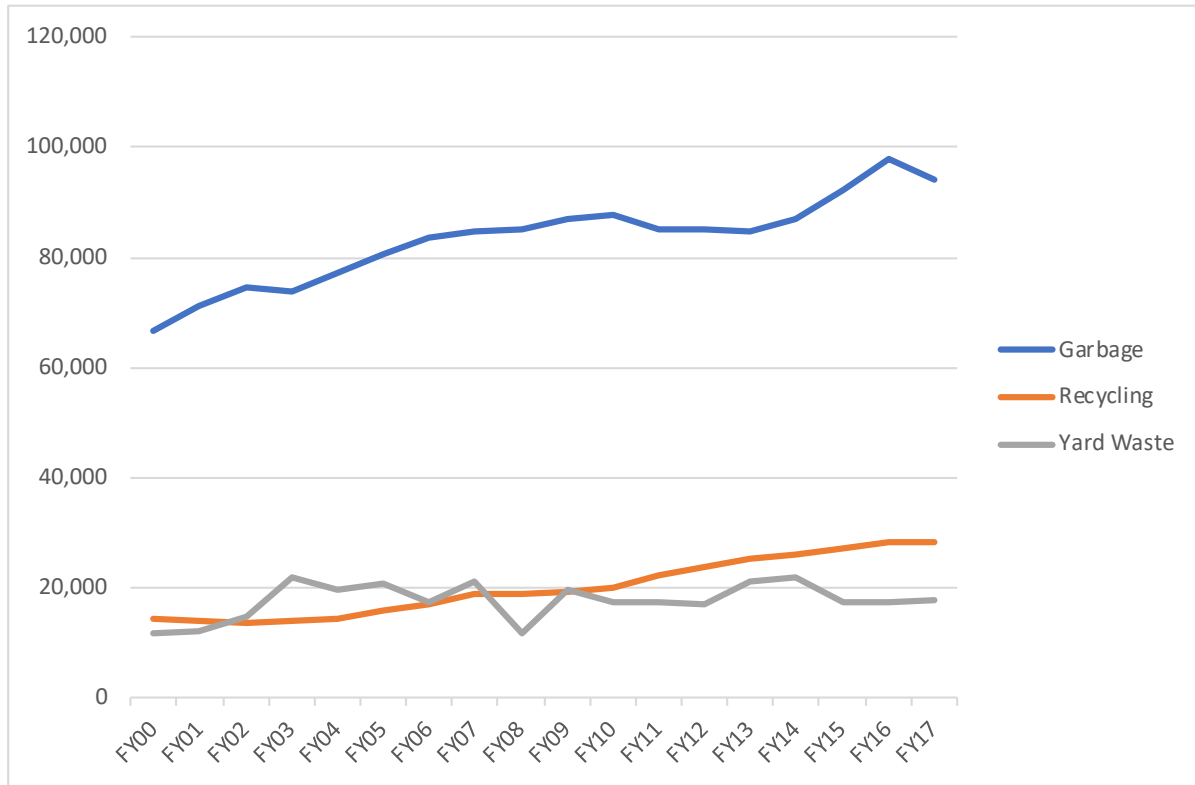
Source: City of Raleigh Fire Department

FIGURE 10.3 SOLID WASTE SERVICES EQUIPMENT

Number	Type
100	Large vehicles
53	Automated refuse collectors
40	Rear loader garbage and yard waste collectors
3	Split body rear loaders (collect garbage and recycling at same time) (1)
2	Rollout trucks (for recycling drop offs)
2	Knuckle Boom trucks (for bulky item and appliance pickup)

Source: City of Raleigh Solid Waste Services Department

FIGURE 10.4 **SOLID WASTE COLLECTION IN TONS**



Source: City of Raleigh Solid Waste Services Department

11 HISTORIC RESOURCES

The City of Raleigh has a unique heritage. It was created in 1792 as 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 during the closing days of the Civil War, the city still enjoys the visual aspect of its original plan, parks, and built environment.

THE CITY'S HISTORIC PRESERVATION PROGRAM

The Raleigh City Council has supported historic preservation activities in the city through an appointed citizen committee since 1961—five years before the passage of the National Historic Preservation Act. The Raleigh Historic Development Commission (RHDC) is the successor organization to that committee. The RHDC assists in the planning and implementation of appropriate changes to Raleigh Historic Landmarks and local historic district properties through the Certificates of Appropriateness (COA) process. In 2017, preservation planning staff and the RHDC processed 191 COAs.

Raleigh currently has a total of 168 Local Historic Landmarks, 29 National Register Historic Districts, 7 Historic Overlay Districts, and 3 National Historic Landmarks. RHDC is Raleigh City Council's official historic preservation advisory body to identify, preserve, protect, and promote Raleigh's historic resources.



Raleigh

raleighnc.gov/planning