

# City of Raleigh Databook 2018

DEPARTMENT OF CITY PLANNING  
DECEMBER 2019











# Table of Contents

INTRODUCTION	4
DEMOGRAPHICS & HOUSEHOLD TRENDS	5
LAND USE	21
ECONOMIC DEVELOPMENT & EMPLOYMENT TRENDS	30
HOUSING & NEIGHBORHOODS	50
TRANSPORTATION	55
PUBLIC UTILITIES	60
ENVIRONMENTAL RESOURCES	65
PARKS, RECREATION & CULTURAL RESOURCES	76
COMMUNITY FACILITIES	80
HISTORIC RESOURCES	83



## INTRODUCTION

The Raleigh Data Book is an annual publication of updated community information collected by City of Raleigh Planning Department 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 online: <http://www.raleighnc.gov/cp>

## ANNUAL UPDATES OF CITY DATA: RALEIGH DATA BOOK

The City of Raleigh 2030 Comprehensive Plan, adopted in October 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 City of Raleigh publishes the Data Book online each year. It focuses on topical areas of the Community Inventory Report reviewed through comprehensive planning initiatives throughout the previous calendar year, with a data benchmark point of December 31 whenever possible. All figures and tables are for the City of Raleigh corporate limits unless otherwise specified.





# DEMOGRAPHICS & HOUSEHOLD TRENDS

With a population increase of 16.1% from 2010 to 2018, Raleigh is one of the fastest-growing cities in the country. This chapter provides the most recent data available for understanding the characteristics of the individuals and households that make up Raleigh.

The data presented in this chapter was drawn from various 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 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 are 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 provide an overview of recent trends in housing construction.

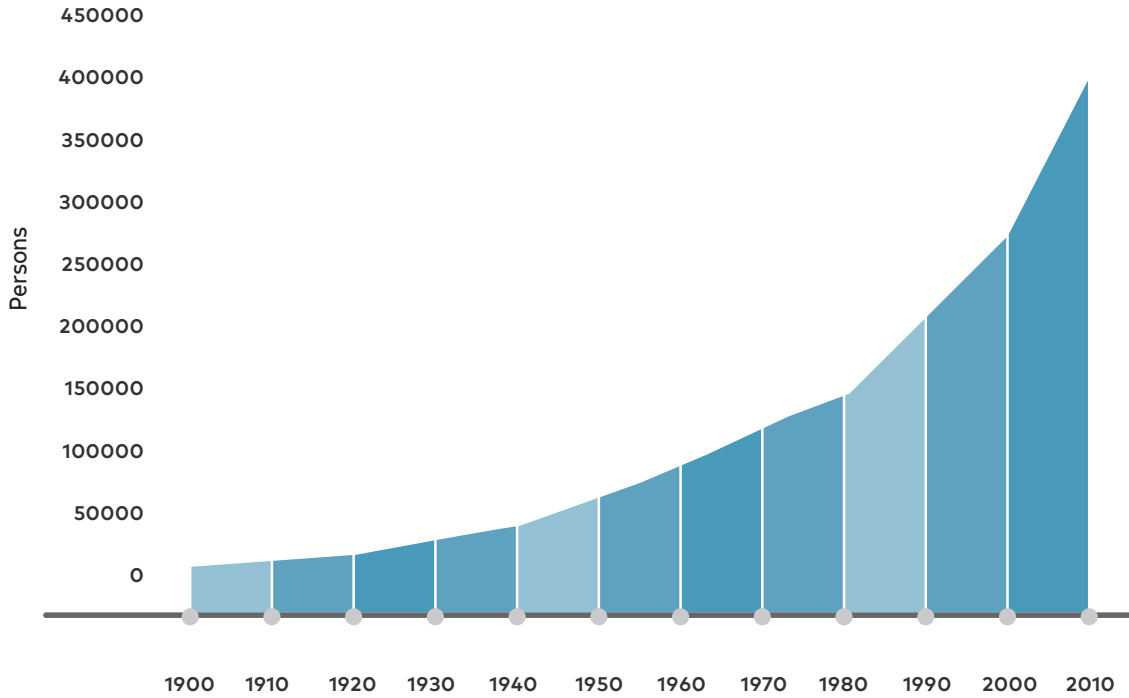
## CITY POPULATION & HOUSEHOLD TRENDS

The most recent Census population estimates reflect Raleigh's continued growth (see Figures 2.1 and 2.2). In 2018, the census estimated Raleigh a population of 469,298, a 0.98% increase from the previous year (see Figure 2.2). The number of housing units also grew, with an estimate of 203,936 units in 2017, an increase of 1.4% from 2016 (see Figure 2.5). Density of population and housing units has also increased, continuing the upward trend seen over the last few years (see Figures 2.4 & 2.5).



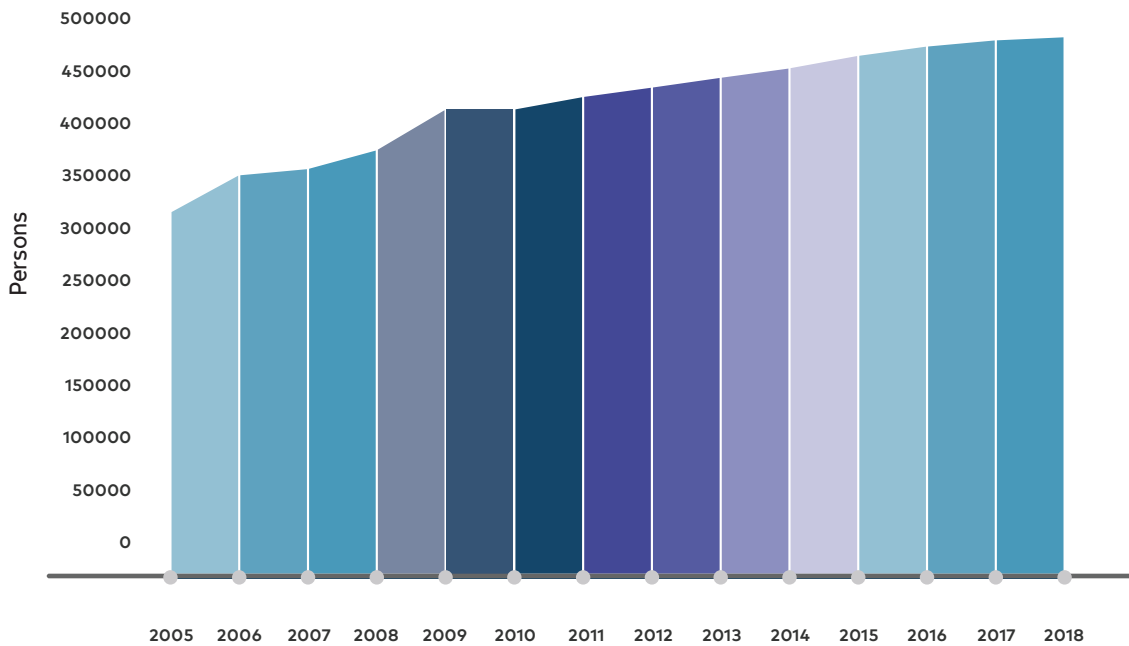


**FIGURE 2.1 CENSUS POPULATION COUNT**



Source: U.S. Census Bureau

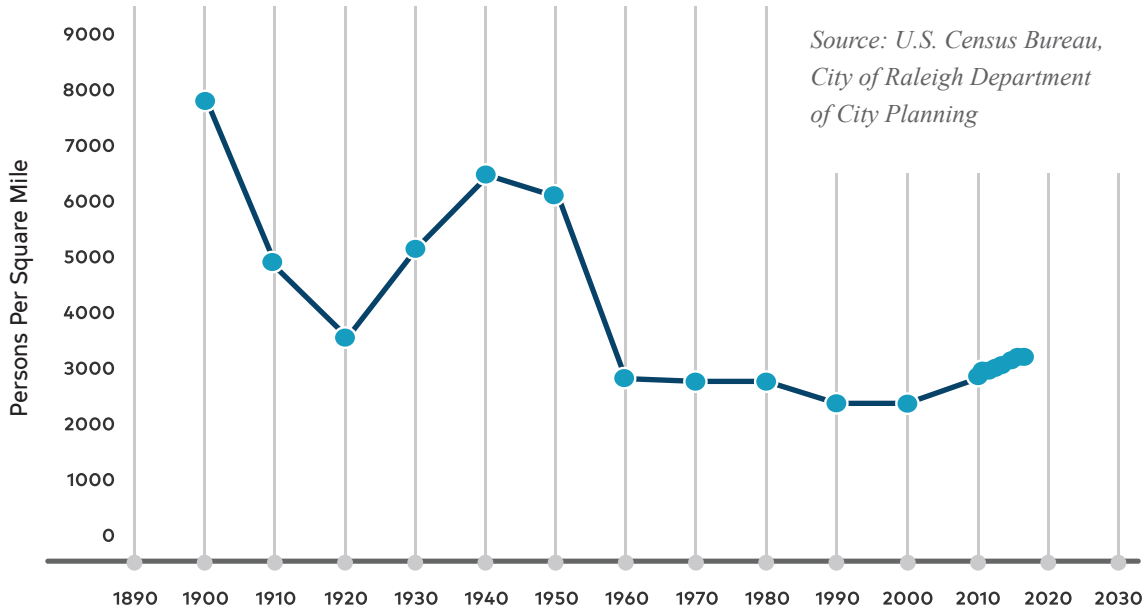
**FIGURE 2.2 CENSUS POPULATION COUNT AND ESTIMATES**



Source: U.S. Census Bureau, Population Estimates Program



**FIGURE 2.3 POPULATION DENSITY**



**FIGURE 2.4 POPULATION, GROWTH RATE, AND DENSITY**

Year	Population	Annual Percent Growth Rate	Land Area	Population Density (people per square mile)
1900	13,643	0.0%	1.757	7,765
1910	19,218	3.5%	4.026	4,773
1920	24,418	2.4%	6.961	3,508
1930	37,379	4.3%	7.254	5,153
1940	46,879	2.3%	7.254	6,463
1950	65,679	3.4%	10.883	6,035
1960	93,931	3.6%	33.669	2,790
1970	122,830	2.7%	44.929	2,734
1980	150,255	2.0%	55.165	2,724
1990	212,092	3.5%	91.395	2,321
2000	276,093	2.7%	118.707	2,326
2010	403,892	3.9%	143.845	2,808
2011	416,468	3.1%	144.303	2,886
2012	423,179	1.6%	144.45	2,930
2013	431,746	2.0%	144.86	2,980
2014	439,896	1.9%	145.17	3,030
2015	451,006	2.5%	145.76	3,094
2016	458,880	1.7%	145.98	3,143
2017	464,785	1.3%	147.01	3,162
2018	469,298	1.0%	147.41	3,184

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

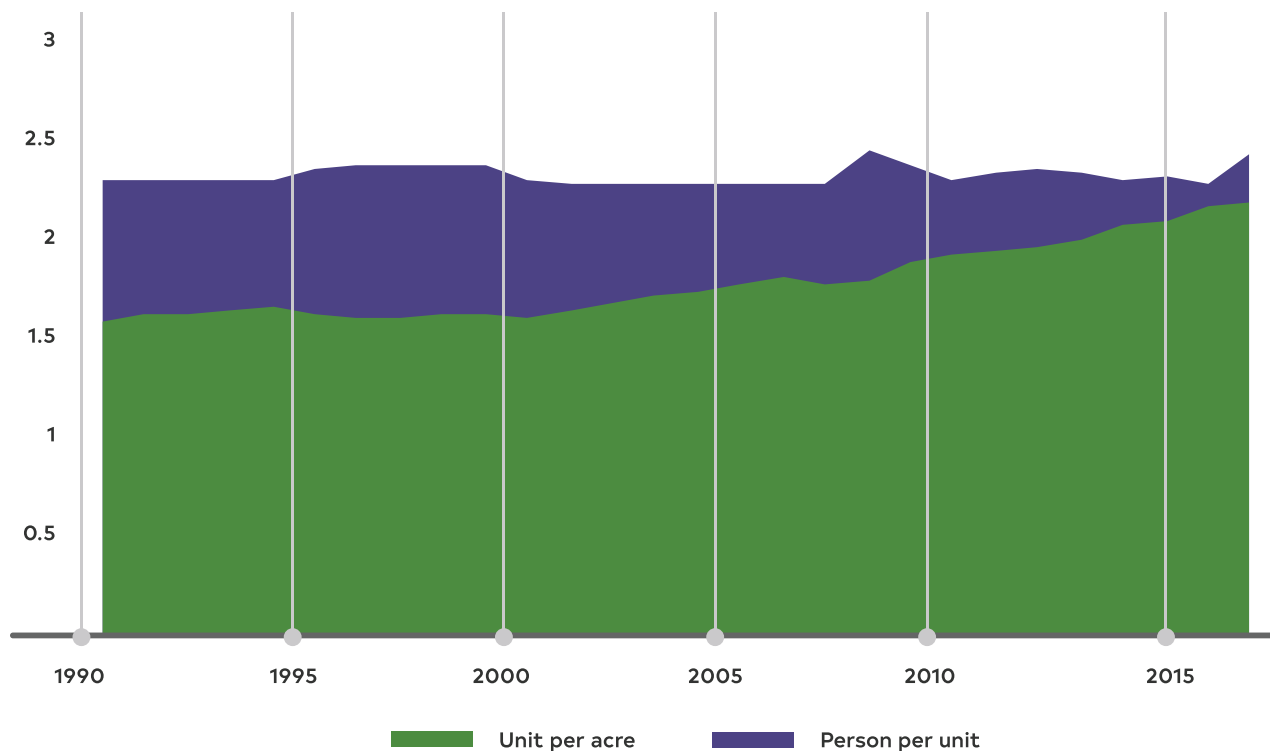


**FIGURE 2.5 HOUSING**

Year	Housing Units	Annual Percent Growth Rate	Land Area in Acres	Housing Density (people per square mile)
1970	38,464	-	28,755	1.34
1980	57,866	5.0%	35,305	1.64
1990	92,643	6.0%	58,493	1.58
2000	120,699	3.0%	75,972	1.59
2010	176,124	4.6%	92,435	1.91
2011	178,203	1.2%	92,710	1.92
2012	180,196	1.1%	92,838	1.94
2013	184,844	2.6%	93,047	1.99
2014	192,504	4.1%	93,306	2.06
2015	195,293	1.4%	93,652	2.09
2016	201,158	3.0%	93,775	2.15
2017	203,936	1.4%	94,088	2.17

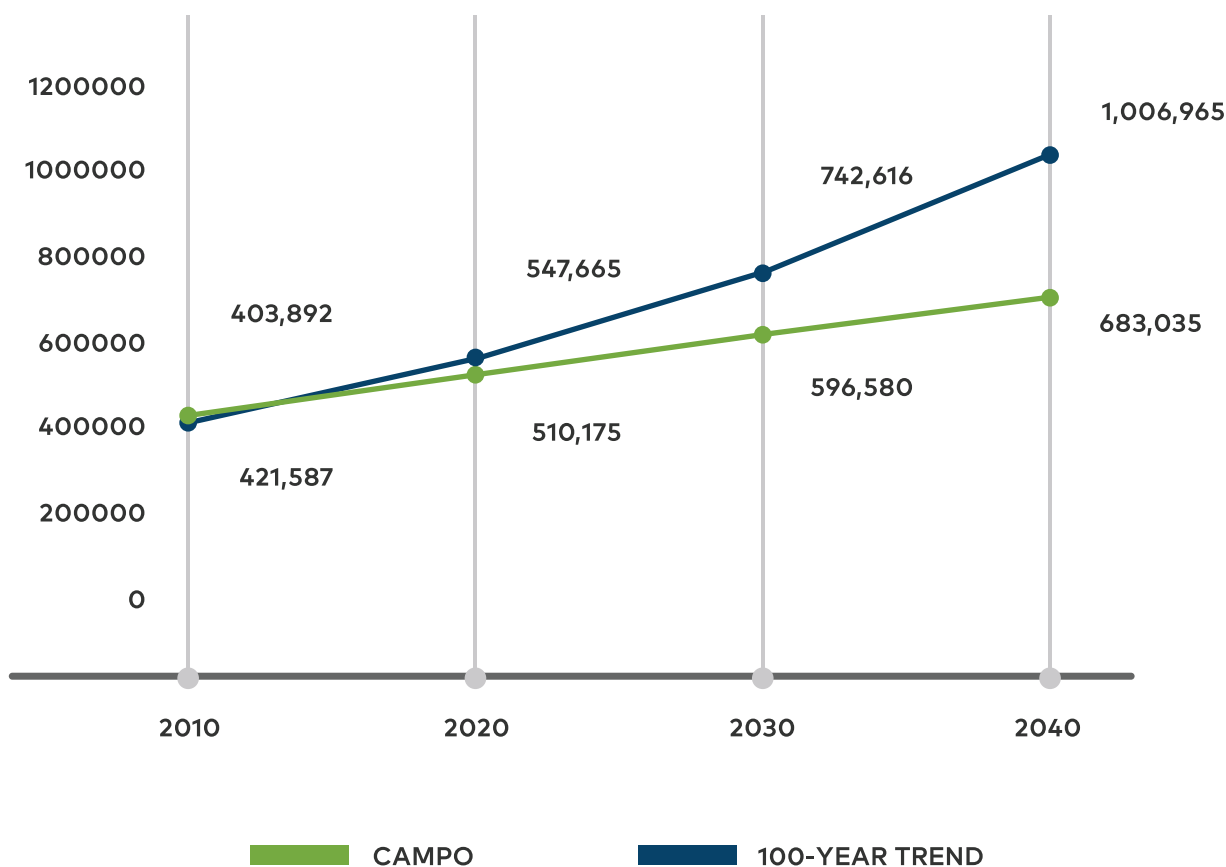
Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates, City of Raleigh Department of City Planning

**FIGURE 2.6 DWELLING UNIT DENSITIES, 1990 – 2017**



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



**FIGURE 2.7 RALEIGH POPULATION PROJECTIONS**


Source: Capital Area Metropolitan Planning Organization (CAMPO), U.S. Census Bureau, City of Raleigh Department of City Planning

## RESIDENTIAL DEVELOPMENT

Single-family detached dwelling units comprise 46.9% of housing in Raleigh, based on 2017 American Community Survey data (see Figures 2.8 & 2.9). Multifamily apartments come in second at 36.3%, followed by townhouses (13.9%), duplexes (1.6%), and mobile homes (1.3%) (see Figure 2.9). From 2010 to 2018, apartments made up 59% of all issued residential building permits. In 2018, apartment development comprised the largest share, 47% of residential building

permits issued in Raleigh (see Figures 2.14 and 2.15). Single-family development came in second at 38%.

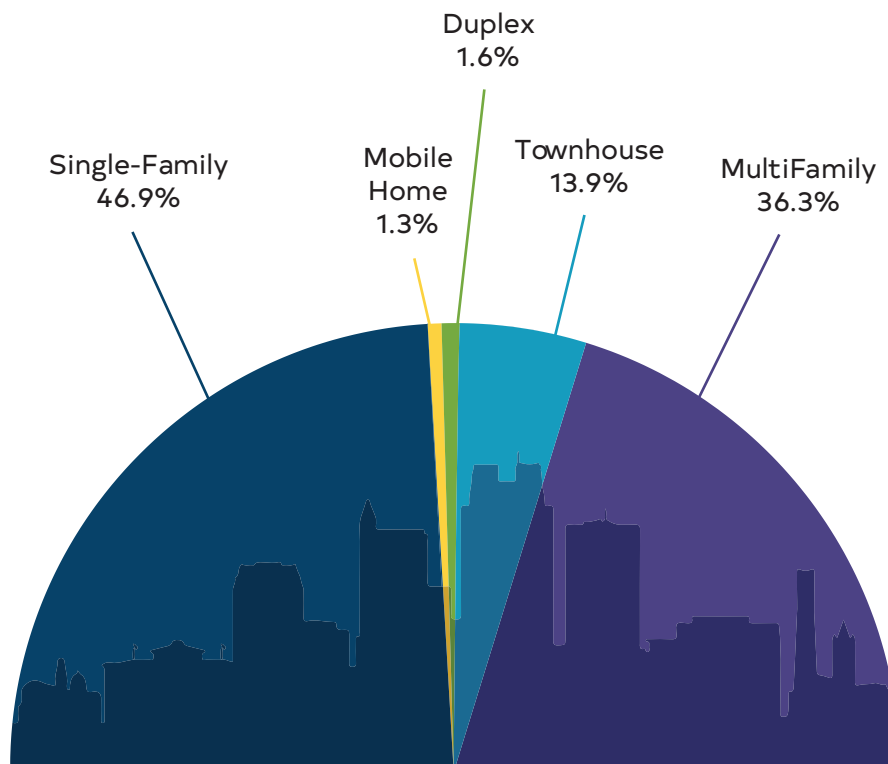
Raleigh's housing stock is relatively young, with approximately 64.8% of its housing units built in the last 48 years (see Figure 2.10). The overall household vacancy rate (homeowners and renters) is 9.9%, which is down from a peak of 11.3% in 2010 but up from 7.7% in 2016. The homeownership rate stands at 53.4%, nearly identical to the rate of 53.5% in 2010 (see Figures 2.12 and 2.13).

**FIGURE 2.8 TOTAL HOUSING UNITS BY NUMBER IN STRUCTURE, 2017**

Units in Structure	Number	Percent
1 Unit Detached	95,646	46.9%
1 Unit Attached	28,347	13.9%
2 Units	3,263	1.6%
3-4 Units	8,769	4.3%
5-9 Units	14,276	7.0%
10-19 Units	22,025	10.8%
20 or More Units	28,959	14.2%
Mobile Homes	2,651	1.3%
Total Units	203,936	100.0%

Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates

**FIGURE 2.9 HOUSING SHARE BY BUILDING TYPE, 2017**



Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates



**FIGURE 2.10 HOUSING UNITS BY YEAR BUILT**

Year	Number	Percent
Built 1939 or earlier	63,220	31.0%
Built 1940 to 1949	3,671	1.8%
Built 1950 to 1959	10,197	5.0%
Built 1960 to 1969	16,927	8.3%
Built 1970 to 1979	21,413	10.5%
Built 1980 to 1989	34,669	17.0%
Built 1990 to 1999	35,893	17.6%
Built 2000 to 2009	51,188	25.1%
Built 2010 or later	23,657	11.6%
Total	203,936	100.0%

Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates

**FIGURE 2.11 OCCUPANCY BY TENURE, 2017**

Total Housing Units	203,936
Occupied Housing Units	183,672
Vacant Housing Units	20,264
Overall Vacancy Rate	9.9%
Homeowner Vacancy Rate	1.0%
Rental Vacancy Rate	6.6%

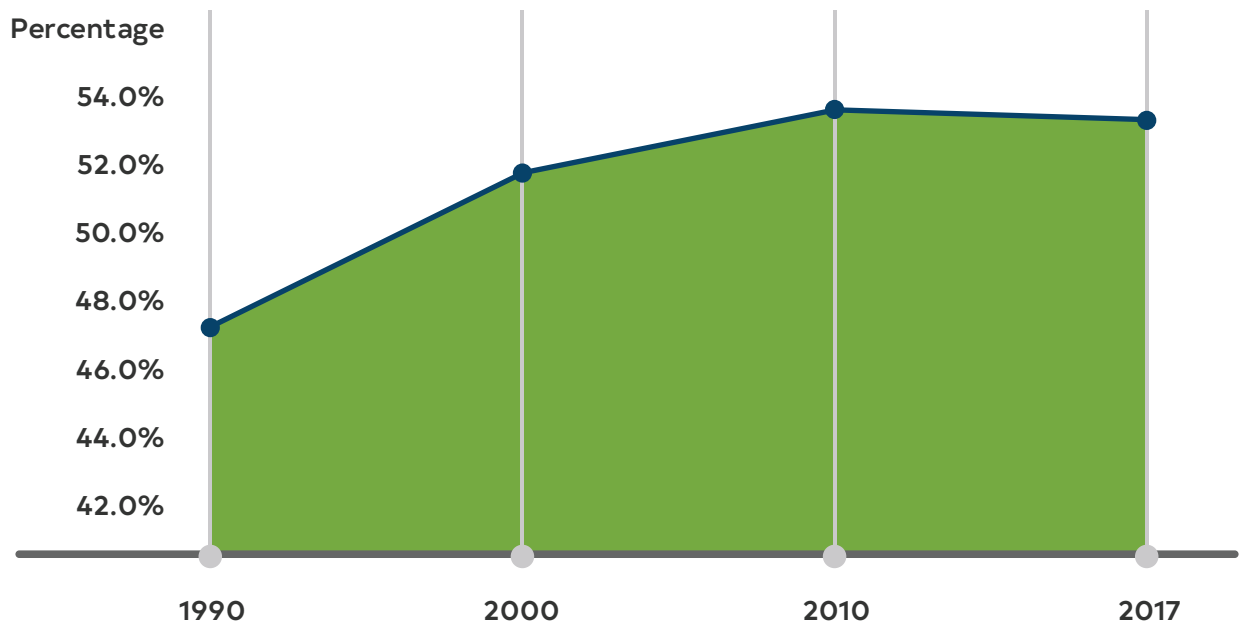
Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates

**FIGURE 2.12 HOUSING TENURE FOR OCCUPIED UNITS**

	2000		2010		2017	
	Number	Percent	Number	Percent	Number	Percent
Owner Occupied	58,079	51.6%	87,284	53.5%	98,081	53.4%
Renter Occupied	54,529	48.4%	75,715	46.5%	85,591	46.6%
Total Occupied Units	112,608	100.0%	162,573	100.0%	183,672	100.0%

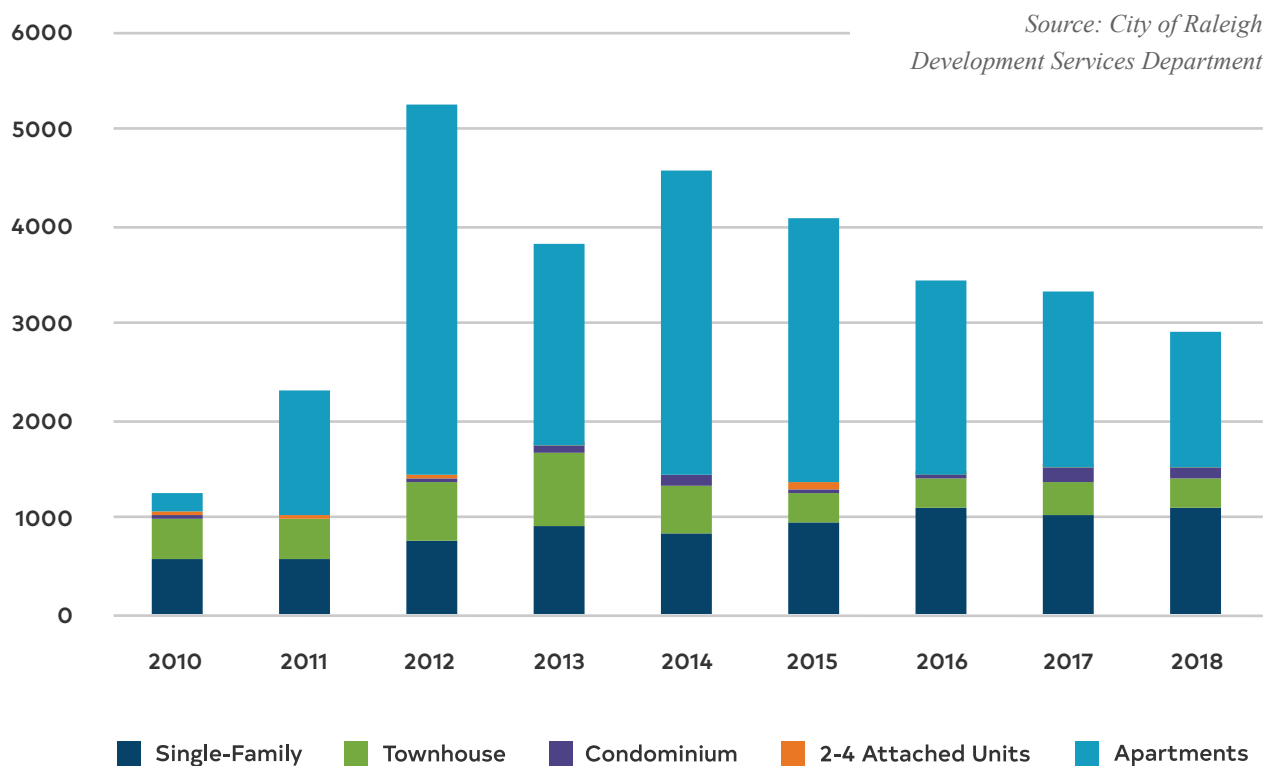
Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates

**FIGURE 2.13 HOMEOWNERSHIP RATE**



Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates



**FIGURE 2.14 RESIDENTIAL UNITS PERMITTED****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	608	23	43	3,806	5,273
2013	909	750	80	8	2,096	3,843
2014	829	491	125	0	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
2018	1,120	303	112	1	1,371	2,907
9-year Total	7,882	3,974	591	167	18,422	31,046
Percent of Total	25%	13%	2%	1%	59%	100%
9-year Average	876	442	66	19	2,047	3,450

*Source: City of Raleigh Development Services Department*

## CITY PROFILE

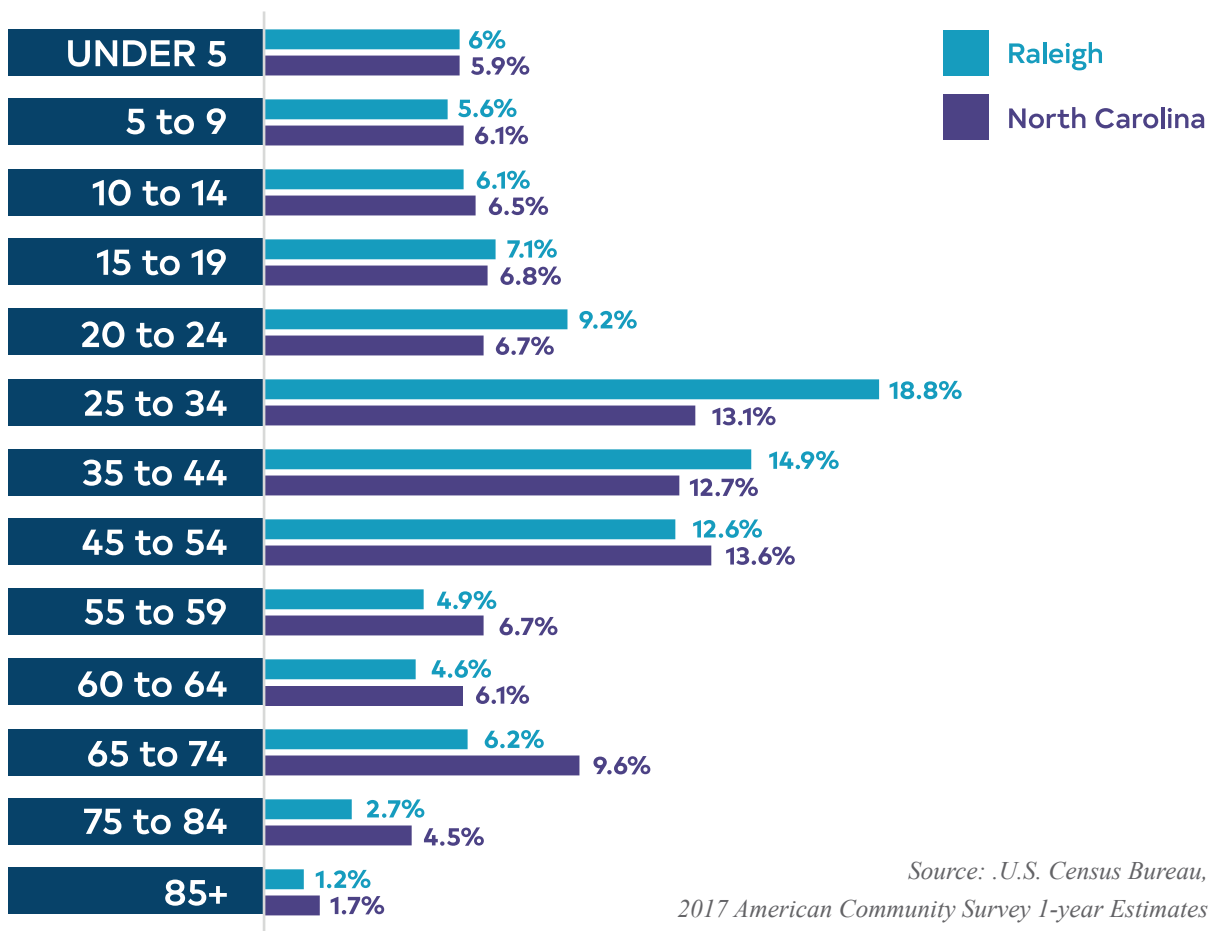
Looking at population distribution by age, Raleigh is younger than North Carolina as a whole, with higher percentages of teenagers aged 15-19 as well as adults aged 20-44 (see Figure 2.16). From 2000 to 2016, Raleigh's percentage of 20-44 year-olds declined. In contrast, the percentage of 45 to 84 year-olds has seen small but significant gains (see Figure 2.17).

In terms of Census designated racial categories, the white population in Raleigh has decreased between 2000

and 2017 from 63.3% to 56.8% (see Figure 2.18). During the same period, the African American population grew from 27.8% to 29.2%, and the Asian population grew from 3.4% to 5.1%. The Hispanic/Latino population, defined by the U.S. Census Bureau as an ethnic group and not a racial group, increased by 11.3% from 2000 to 2017, but slightly decreased its share of the total population from 11.9% to 10.9% (see Figure 2.19).

Regarding educational attainment, 93.0% of Raleigh residents have a high school diploma or higher and 58.5% of

**FIGURE 2.16 POPULATION DISTRIBUTION BY AGE GROUP**



Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates



Raleigh residents have a bachelor's degree or higher, both figures higher than the statewide and national averages (see Figure 2.21).

Approximately 1 in 6 people in Raleigh (18.4%) holds a graduate or professional degree, 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 12.6% in 2017. The percentage of families in poverty decreased from 13.9% in 2010 to 8.4% in 2017.

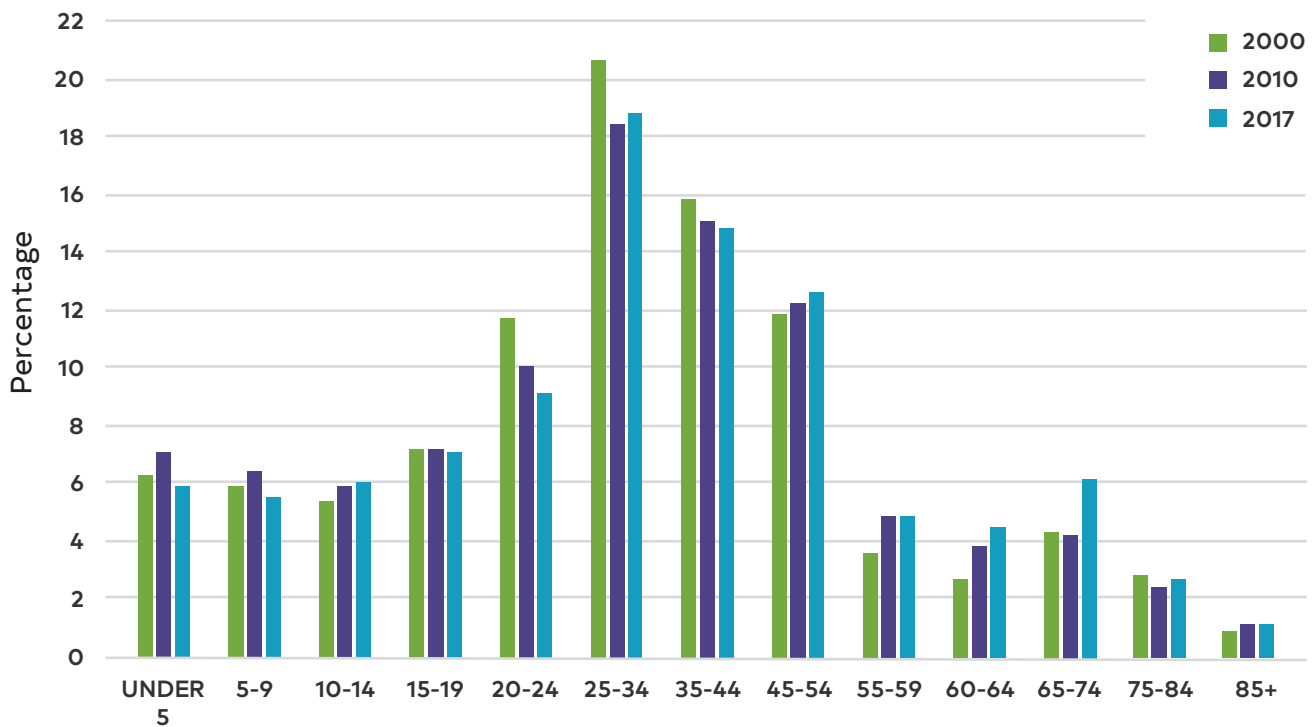
Median household incomes and per capita incomes peaked in 2000. Since then, median household incomes declined to \$64,660 in 2017. Whereas per capita income slightly to \$35,484 (see Figure 2.22).

Single parent households have declined, with other family households up approximately 3.9 % (see Figures 2.23 & 2.24). Married couple households with children have decreased slightly 0.5%. Persons per household has trended upward from 2000 to 2017 (see Figure 2.23).

Commuting modes in Raleigh have remained steady over the past five years. A large majority of people commute to work alone in a personal vehicle (78.7% in 2017.) Approximately 7.1% of people carpool to work (See Figure 2.25). Others either take public transit (1.9%), walk (1.6%), use other means (1.1%), or forgo a commute and work at home (9.3%). Raleigh's rate of driving remains somewhat higher than other comparable U.S. cities (see Figure 2.26).



**FIGURE 2.17 AGE DISTRIBUTION**



Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates

**FIGURE 2.18 POPULATION BY RACE**

Race	2000		2010		2017	
	Number	Percent	Number	Percent	Number	Percent
White	17,4786	63.3%	225,705	58.9%	264,298	56.8%
Black or African American	76,756	27.8%	112,948	29.5%	135,972	29.2%
American Indian and Alaska Native	981	0.4%	1,114	0.3%	1,169	0.3%
Asian or Pacific Islander	9,445	3.4%	16,935	4.4%	23,880	5.1%
Some Other Race	14,125	5.1%	20,371	5.3%	28,330	6.0%
Two or More Races	n/a	n/a	5,656	1.4%	11,320	2.4%
Total Population	276,093		382,729		464,972	

Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates



**FIGURE 2.19 HISPANIC POPULATION**

	Number	Percent of Total Population
2000	45,868	11.9%
2017	51,086	10.9%
Percent Change	+11.3%	-1.0%

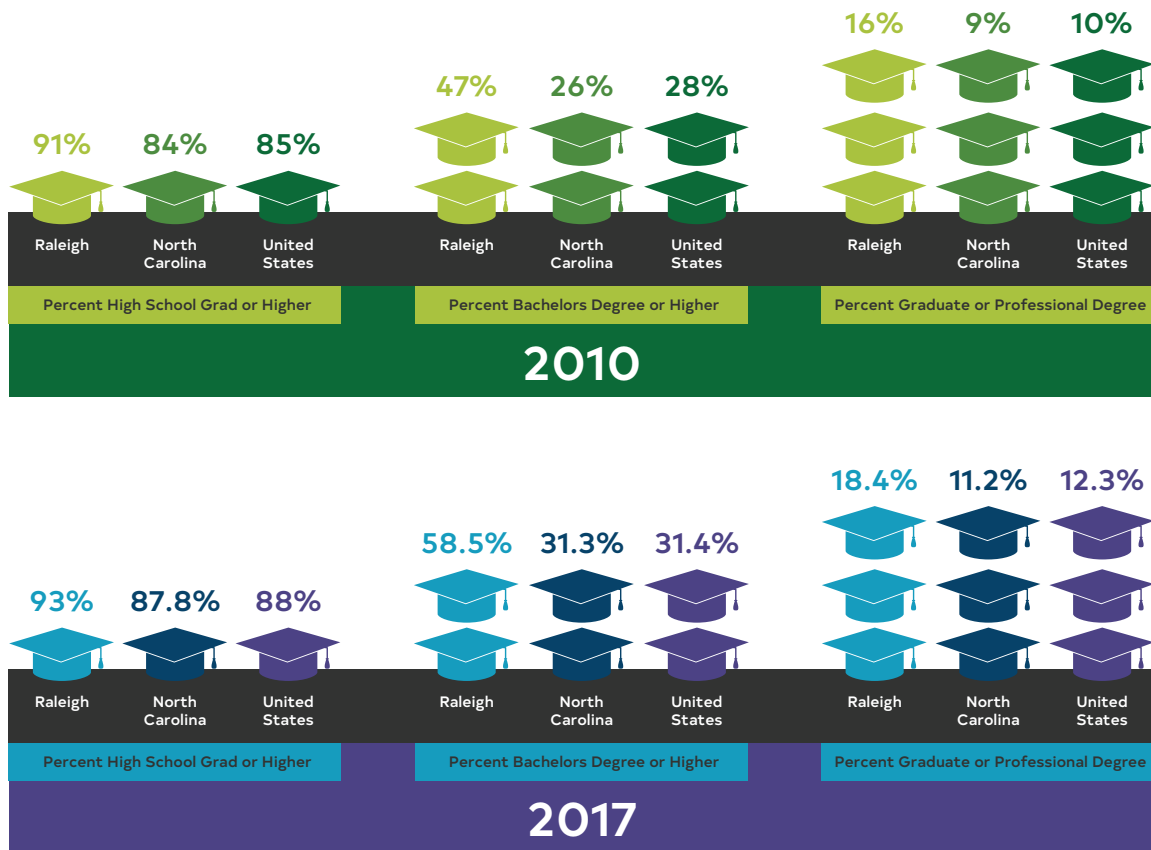
Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates

**FIGURE 2.20 COMPONENTS OF HISPANIC POPULATION**

Ethnicity	Number	Percent of Total Population	Percent of Hispanic Population
Mexican	24,839	5.3%	48.6%
Puerto Rican	3,354	0.7%	6.6%
Cuban	986	0.2%	1.9%
Dominican	1,969	0.4%	3.9%
Central American	10,301	2.2%	20.2%
South American	2,921	0.6%	5.7%
Other	6,716	1.4%	13.1%

Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates

**FIGURE 2.21 EDUCATIONAL ATTAINMENT AGE 25 AND OLDER**



Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates

**FIGURE 2.22 POVERTY, INCOME, AND EMPLOYMENT INDICATORS**

	1990	2000	2010	2017
Percent of Persons Below Poverty	11.8%	11.5%	18.4%	12.6%
Percent of Families Below Poverty	9.0%	7.1%	13.9%	8.4%
Median Household Income (2017 dollars)	\$61,192	\$67,720	\$55,362	\$64,660
Per Capita Income (2017 dollars)	\$32,984	\$36,491	\$31,104	\$35,484
Unemployment Rate	4.0%	3.8%	7.5%	3.5%
Labor Force Participation Rate	66.4%	72.7%	69.9%	71.5%

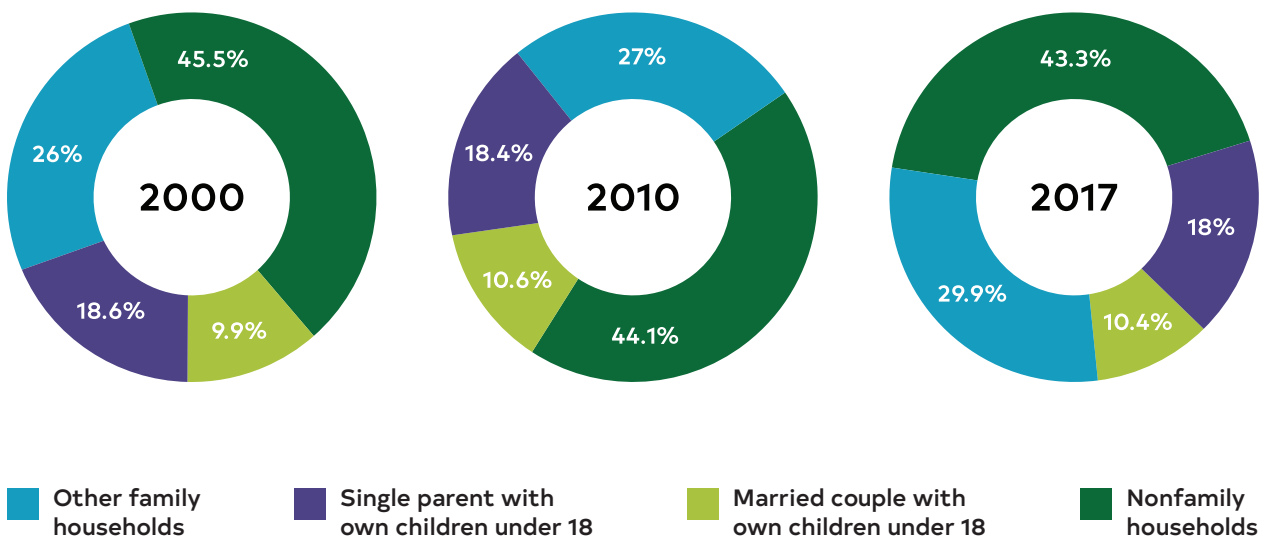
Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates

**FIGURE 2.23 HOUSEHOLD TRENDS**

	Number			Percent		
	2000	2010	2017	2000	2010	2017
Family Households	61,327	91,186	104,050	54.5%	55.9%	56.6%
Married Couple with Own Children Under 18 Years Old	20,914	29,973	33,042	18.6%	18.4%	18.0%
Single Parent with Own Children Under 18 Years Old	11,122	17,245	19,180	9.9%	10.6%	10.4%
Other Family Households	29,291	43,968	54,917	26.0%	27.0%	29.9%
Nonfamily Households	51,281	71,813	79,622	45.5%	44.1%	43.3%
Total Households	112,608	162,999	183,672	100.0%	100.0%	100
Persons Per Household	2.3	2.36	2.43	-	-	-

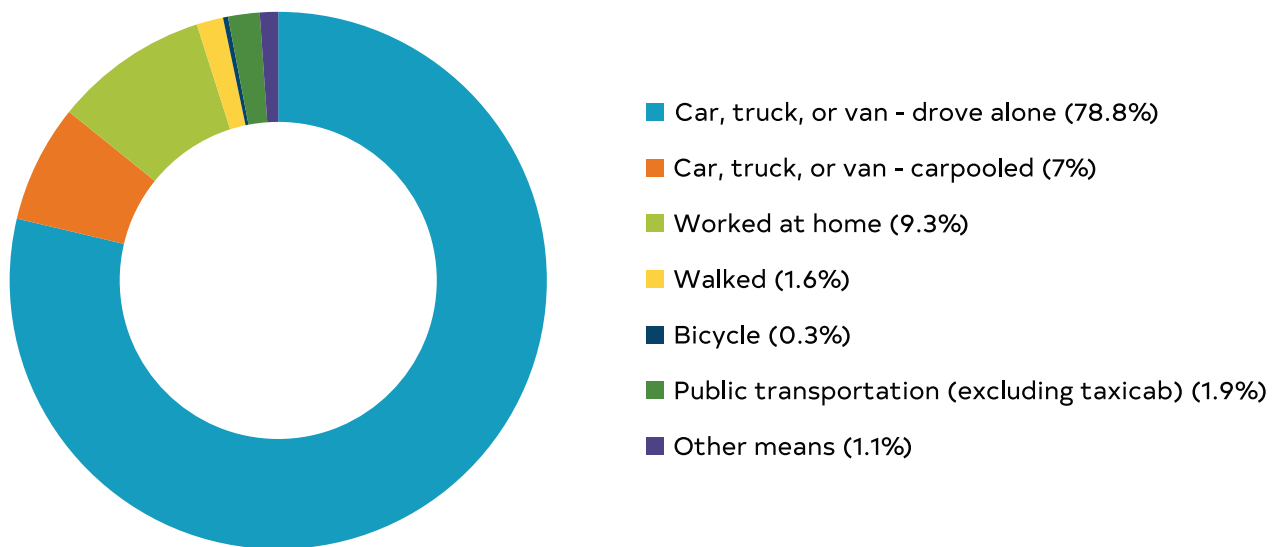
Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates

**FIGURE 2.24 HOUSEHOLD SHARE BY TYPE**



Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates

**FIGURE 2.25 JOURNEY TO WORK**



Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates

**FIGURE 2.26 JOURNEY TO WORK - COMPARISON WITH SIMILAR CITIES 2017**

	Atlanta, GA	Charlotte, NC	Raleigh, NC	Austin, TX
	Percent	Percent	Percent	Percent
Car, truck, or van - drove alone	68.7%	76.6%	78.7%	73.8%
Car, truck, or van - carpooled	6.9%	10.2%	7.1%	9.5%
Worked at home	7.6%	6.3%	9.3%	7.9%
Walked	4.4%	2.0%	1.6%	2.3%
Bicycle	0.9%	0.2%	0.3%	1.3%
Public transportation (excluding taxicab)	10.2%	3.5%	1.9%	3.9%
Other means	1.4%	1.1%	1.1%	1.2%

Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates



# LAND USE & ZONING

Land use is fundamental to the physical form and function of the city. The Comprehensive Plan is the primary policy guide to guide land use and the physical development 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 (UDO) is law. This code provides the regulatory framework for specific land uses and how the uses interact. It addresses the prescribed use of property, 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 implement the UDO, the city engaged in a multi-year remapping process in which 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. City Council reviewed sixty-five parcels totaling approximately 490 acres and rezoned these to UDO 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, 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](http://www.raleighnc.gov/cp)  
 Raleigh Zoning  
[www.raleighnc.gov/zoning](http://www.raleighnc.gov/zoning)

## LAND USE AND ZONING ALLOCATION

Approximately 64% of total land area in Raleigh's planning jurisdiction is residential. Mixed-use zones make up 25% of total land area (see Figure 3.1 and 3.2). 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 29.7% of total land area (see Figure 3.4).

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**FIGURE 3.1 RESIDENTIAL ZONING ALLOCATION**

Zoning District	Acres	Percent of Total Land Area
R-1 : Residential-1	4,854	4.2%
R-2 : Residential-2	2,044	1.8%
R-4 : Residential-4	40,066	34.5%
R-6 : Residential-6	17,387	15.0%
R-10 : Residential-10	10,024	8.6%
Total Residential	74,375	64.0%

*Source: City of Raleigh Department of City Planning, 2018*

**FIGURE 3.2 MIXED-USE ZONING ALLOCATION**

Zoning District	Acres	Percent of Total Land Area
RX- : Residential	3,886	3.3%
OP- : Office Park	540	0.5%
OX- : Office	7,964	6.9%
NX- : Neighborhood	762	0.7%
CX- : Commercial	5,767	5.0%
DX- : Downtown	582	0.5%
IX- : Industrial	9,741	8.4%
Total Mixed-Use	29,242	25.2%

Source: City of Raleigh Department of City Planning, 2018

**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	4,430	3.8%
Total Special Districts	12,526	10.8%

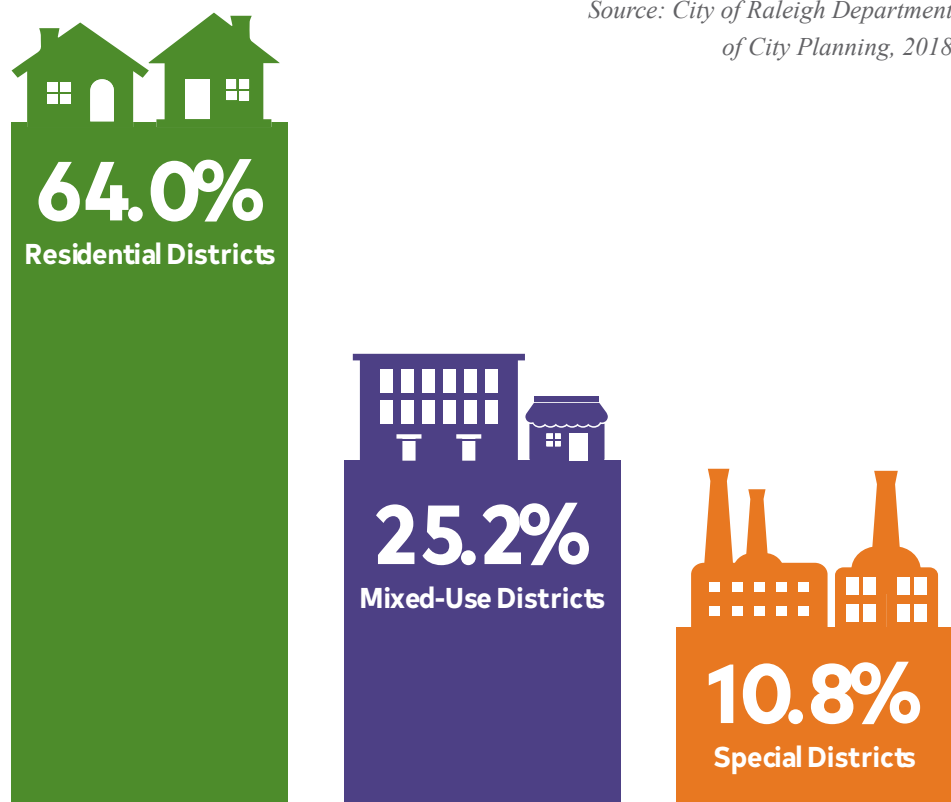
Source: City of Raleigh Department of City Planning, 2018

**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 Overlay District	1,450	1.2%
NCOD : Neighborhood Conservation Overlay District	3,165	2.7%
SHOD-1 : Special Highway Overlay District 1	7,910	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 Overlay District	0	0.0%
WPOD : Watershed Protection Area Overlay District	9,518	8.2%
Total Overlay Districts (not accounting for overlap)	37,927	32.7%
Total Overlay Districts (accounting for overlap)	34,486	29.7%

Source: City of Raleigh Department of City Planning, 2018

**FIGURE 3.5 GENERALIZED ZONING ALLOCATION**



Source: City of Raleigh Department of City Planning, 2018



A property's zoning district controls for the range of uses allowed on the property. The table below shows the actual uses that properties in Raleigh exhibit, based on 2015 data. As can be seen in Figure 3.6, parcels that account for 44.3% of total acreage in Raleigh are primarily residential. 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%). Approximately 20% of Raleigh's land area is considered vacant, meaning that there is no discernible use of the property.

**FIGURE 3.6 LAND USE ALLOCATION, PART 1**

Land Use Category	Parcels	Acreage	Percentage of Area
Residential	117,517	44,349.9	44.30%
Household Living: Single-unit Living	88,960	34,408.7	34.40%
Household Living: Townhouse Living	24,527	1,488.6	1.50%
Household Living: Two-unit Living	1,922	714.8	0.70%
Household Living: Manufactured	24	429.4	0.40%
Household Living: Multi-unit Living	1,979	6,464.6	6.50%
Group Living	71	213.1	0.20%
Social Service	34	630.7	0.60%
Public and Institutional	3,690	18,238.7	18.20%
Civic	476	5,264.3	5.30%
Parks, Open Space, and Greenways	3,134	12,538.9	12.50%
Utilities	80	435.6	0.40%
Commercial	3,509	10,662.3	10.60%
Day Care	93	157	0.20%
Indoor Recreation	100	441.8	0.40%
Medical	135	365.4	0.40%
Office	1,240	3,779	3.80%
Outdoor Recreation	114	2,033.4	2.00%

Source: City of Raleigh Department of City Planning, 2018

**FIGURE 3.6 LAND USE ALLOCATION, PART 2**

Land Use Category	Parcels	Acreage	Percentage of Area
Overnight Lodging	80	210.7	0.20%
Parking	313	343.3	0.30%
Passenger Terminal	10	15.1	0.00%
Personal Service	158	145.1	0.10%
Restaurant/Bar	348	310.1	0.30%
Retail Sales	762	2,371.4	2.40%
Vehicle Sales/Rental	156	489.9	0.50%
Industrial	1,421	5,637.7	5.60%
Heavy Industrial	133	1,800.4	1.80%
Light Industrial	296	690.2	0.70%
Light Manufacturing	68	146.7	0.10%
Research & Development	10	106.5	0.10%
Self-Service Storage	59	265.9	0.30%
Vehicle Service	333	365.8	0.40%
Warehouse & Distribution	294	1,230.2	1.20%
Waste-Related Service	6	424	0.40%
Wholesale Trade	222	607.9	0.60%
Open	18	1,473.9	1.50%
Agriculture	14	1,084.4	1.10%
Resource Extraction	4	389.5	0.40%
Mixed-Use	115	123.6	0.10%
Vacant	8,990	19,655.9	19.60%
Grand Total	135,260	100,142	100.00%

Source: City of Raleigh Department of City Planning, 2018

## LAND CAPACITY, ANNEXATION, AND GROWTH POTENTIAL

Figure 3.7 represents an estimate of undeveloped land and development capacity under the current zoning entitlement. This analysis is an update to an analysis completed in 2014 that

was based on the Part 10 zoning districts. It shows an estimate of land capacity by zoning district, including undeveloped land, possible dwelling units, and possible nonresidential area. Over 14,000 acres of land is undeveloped in Raleigh, which could support over 100,000 dwelling units city-wide. Undeveloped land in R-4, RX-3, and IX-3 districts contributed significantly to this capacity.

**FIGURE 3.7 LAND CAPACITY ESTIMATES BY ZONING DISTRICT, PART 1**

Zone	Undeveloped Land (Acres)	Dwelling Units	Non-Residential Area (Acres)
AP	442	154	-
CM	560	-	-
CX-12	23	1,568	1,725,219
CX-3	559	7,860	8,645,856
CX-4	44	717	788,692
CX-5	283	5,040	5,543,856
CX-7	12	651	716,585
DX-12	3	231	253,639
DX-20	3	220	241,723
DX-3	4	54	59,745
DX-40	1	74	81,535
DX-5	-	6	6,471
DX-7	2	94	103,895
IH	615	-	21,448,386
IX-12	-	16	17,802
IX-3	1,135	15,957	17,552,589
IX-4	-	6	6,585
IX-5	53	948	1,042,944
IX-7	-	7	7,227
MH	206	1,235	-
NX-3	120	1,685	1,853,469
NX-4	-	8	8,353

Source: City of Raleigh City Planning Department, 2018  
(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.

**FIGURE 3.7 LAND CAPACITY ESTIMATES BY ZONING DISTRICT, PART 2**

Zone	Undeveloped Land (Acres)	Dwelling Units	Non-Residential Area (Acres)
NX-5	-	8	8,846
OP-12	2	157	172,237
OP-3	4	55	60,231
OP-4	-	6	6,377
OP-5	-	-	-
OP-7	5	253	277,897
OX-12	8	508	558,859
OX-3	222	3,121	3,432,629
OX-4	41	674	741,122
OX-5	71	1,266	1,392,775
OX-7	40	2,109	2,319,357
PD	926	13,018	14,319,626
R-1	1,161	1,161	-
R-10	584	5,836	-
R-2	425	850	-
R-4	4,898	19,592	-
R-6	1,175	7,048	-
RX-12	-	-	-
RX-3	431	12,110	-
RX-4	14	464	-
RX-5	2	58	-
RX-7	-	-	-
Totals	14,072	104,822	83,394,528

Source: City of Raleigh City Planning Department, 2018

(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 2018, the city added 255 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 40,461 acres (see Figure 3.9). This includes both ETJ areas and Urban Services Areas (USAs). Combined with the city's current acreage of 94,343, the total potential city limits acreage is 134,804 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	35
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
2018	94,343	255

Source: City of Raleigh Department of City Planning, 2018

**FIGURE 3.9 FUTURE RALEIGH CITY LIMITS GROWTH POTENTIAL**

Geography	Acres
Current City Limits	94,343
Potential ETJ Growth Area	21,812
Potential USA Growth Area	18,649
Total Future Annexation Potential	40,461
Total Potential City Limits	134,804

Source: City of Raleigh Department of City Planning, 2018

# ECONOMIC DEVELOPMENT & EMPLOYMENT TRENDS

One of the nation's fastest growing regions, the Research Triangle, benefits from long-time investment in major educational and healthcare institutions, as well as the Research Triangle Park. The expanding base of technology industries generates new jobs and attracts skilled workers to fill them. The area's high 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, and existing industry spins off new businesses. In conjunction with the region as a whole, Raleigh's employment base has shifted to be more technology-based and less reliant on government and manufacturing.

Wake County continues to share in the region's economic health with a growing job base. However the dichotomy of the county's employment is changing, as technology, retail, and service jobs replace manufacturing and agricultural jobs. In 2000 there were 28,238

manufacturing jobs, which decreased to 19,116 in 2010. Since 2010 the county has added back 7,126 manufacturing jobs, an important figure considering that this sector accounts for much of the county and region's overall economic output.

The Raleigh-Cary Metropolitan area Gross Domestic Product (GDP) has increased 2.3%, ranking 93rd out of the nation's 383 cities in 2017 (see Figure 4.1). Half of this increase stems from the Professional and Business Services and Trade subsectors. Slight declines occurred in real GDP growth for nondurable goods, manufacturing and other services, except government.

The state government, North Carolina State University, other educational institutions, and major health care centers make up a proportion of the employment base. Job growth projections suggests a major expansion of jobs in the city by 2040 with even faster growth in 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

In Wake County, jobs in the service-providing sector account for a larger share of 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 goods producing jobs than Wake County. In the last 7 years, goods-producing jobs – such as those in agriculture, construction, and manufacturing – have grown 5.1% annually versus 3.5% 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 industries.

Despite that growth, the top three job industries in 2018 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 (+9.3%) from 2010-2018. Other industries also saw large gains, including Professional and Technical Services (+7.1%), Construction (+5.5%), and Accommodation and Food Services (+5.4%).

Using the latest data from the 2017 American Community Survey (ACS), Raleigh has a higher percentage of jobs in information; finance, insurance, and real estate; and public administration than the percentages for Wake County, North Carolina, and the U.S. (see Figure 4.5). Raleigh is also ahead of the state and the nation in percentage of professional, scientific, management, and administrative jobs.

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

	2011	2012	2013	2014	2015	2016	2017
GDP in Current Dollars (Millions of Dollars)	59,646	62,615	64,534	68,577	74,565	79,843	83,288
Rank GDP in Current Dollars Among Metro Areas	49	49	47	47	44	44	42
GDP Percentage Growth	2.7%	1.5%	1.2%	3.7%	7.0%	5.3%	2.7%
Rank: GDP Percentage Growth	93	144	159	55	7	14	93

Source: Bureau of Economic Analysis: GDP by Metropolitan Area, 2017

**FIGURE 4.2 RALEIGH-CARY MSA PERCENTAGE GDP GROWTH BY SECTOR, 2017**

Sector	Change in Percentage Points
Goods Producing	0.45
Natural resources and mining	-*
Construction	0.27
Durable goods manufacturing	0.27
Nondurable goods manufacturing	-0.09
Service Providing	2.23
Trade	0.72
Transportation and utilities	-*
Information	0.24
Finance, insurance, real estate, rental, and leasing	0.05
Professional and business services	0.79
Educational services, healthcare, and social assistance	0.32
Arts, entertainment, recreation, accommodation, and food services	-*
Other services, except government	-0.01
Government	0.12
Total	2.7

\* Not shown to avoid disclosure of confidential information.

Source: Bureau of Economic Analysis: GDP by Metropolitan Area, 2017



**FIGURE 4.3 WAKE COUNTY AVERAGE ANNUAL CHANGE IN EMPLOYMENT BY INDUSTRY 2010-2018, PART 1**

	2010	Percent of total	2018	Percent of total	Average annual change 2010-2018
Goods Producing	44,226	10.2%	62,099	11.1%	5.1%
Natural Resources	1,032	0.2%	1,200	0.2%	2.0%
Agriculture, forestry, fishing & hunting	770	0.2%	976	0.2%	3.3%
Mining	263	0.1%	224	0.0%	-1.9%
Construction	24,078	5.6%	34,658	6.2%	5.5%
Manufacturing	19,116	4.4%	26,242	4.7%	4.7%
Service providing	387,347	89.8%	498,173	88.9%	3.6%
Trade, transportation and utilities	80,011	18.5%	101,871	18.2%	3.4%
Utilities	1,394	0.3%	2,431	0.4%	9.3%
Wholesale trade	18,192	4.2%	24,251	4.3%	4.2%
Retail trade	49,775	11.5%	62,634	11.2%	3.2%
Transportation and warehousing	10,652	2.5%	12,555	2.2%	2.2%
Information	16,333	3.8%	21,815	3.9%	4.2%
Financial activities	25,666	5.9%	*		
Finance and insurance	17,971	4.2%	20,941	3.7%	2.1%
Real estate and rental and leasing	7,695	1.8%	9,651	1.7%	3.2%
Professional and business services	81,028	18.8%	114,015	20.3%	5.1%

\* Not shown to avoid disclosure of confidential information.  
Source: North Carolina Division of Employment Security

**FIGURE 4.3 WAKE COUNTY AVERAGE ANNUAL CHANGE IN EMPLOYMENT BY INDUSTRY 2010-2018, PART 2**

	2010	Percent of total	2018	Percent of total	Average annual change 2010-2018
Professional and technical services	37,086	8.6%	59,394	10.6%	7.5%
Management of companies and enterprises	9,613	2.2%	10,145	1.8%	0.7%
Administrative and waste services	34,329	8.0%	44,476	7.9%	3.7%
Education and health services	84,394	19.6%	106,363	19.0%	3.3%
Educational services	38,959	9.0%	45,890	8.2%	2.2%
Health care and social assistance	45,435	10.5%	60,473	10.8%	4.1%
Leisure and hospitality	45,801	10.6%	64,607	11.5%	5.1%
Arts, entertainment, and recreation	8,831	2.0%	11,554	2.1%	3.9%
Accommodation and food services	36,970	8.6%	53,053	9.5%	5.4%
Public administration	40,553	9.4%	41,776	7.5%	0.4%
Other services excluding public administration	13,293	3.1%	17,136	3.1%	3.6%
Unclassified	269	0.1%	*	*	*
Total	431,571	100.0%	560,272	100.0%	3.7%

\* Not shown to avoid disclosure of confidential information.  
 Source: North Carolina Division of Employment Security

**FIGURE 4.4 WAKE COUNTY ANNUAL CHANGE IN EMPLOYMENT BY INDUSTRY 2011-2018, PART 1**

	2011	2012	2013	2014	2015	2016	2017	2018
Goods Producing	44,837	44,795	49,414	50,919	54,792	56,565	59,180	62,099
Natural Resources	1,007	1,028	1,126	1,089	1,084	1,074	1,138	1,200
Agriculture, forestry, fishing & hunting	749	788	881	858	868	844	938	976
Mining	258	240	245	231	215	230	200	224
Construction	24,506	25,204	25,763	27,223	28,717	30,377	32,526	34,658
Manufacturing	19,324	18,563	22,525	22,607	24,992	25,113	25,517	26,242
Service providing	397,025	411,023	424,551	439,543	456,749	473,587	484,276	498,173
Trade, transportation and utilities	82,110	84,710	84,631	89,439	94,149	97,720	100,402	101,871
Utilities	1,397	*	*	2,327	2,400	2,569	2,397	2,431
Wholesale trade	19,152	20,990	20,540	21,009	22,189	23,317	24,176	24,251
Retail trade	51,037	52,040	53,622	56,105	59,105	61,153	62,184	62,634
Transportation and warehousing	10,524	10,468	9,594	9,998	10,456	10,681	11,645	12,555
Information	16,963	17,447	17,664	18,433	19,500	20,895	21,521	21,815
Financial activities	25,142	25,030	24,952	25,513	27,584	28,908	29,437	*
Finance and insurance	17,463	17,298	17,010	17,373	18,751	19,419	19,927	20,941
Real estate and rental and leasing	7,680	7,732	7,942	8,140	8,833	9,489	9,510	9,651

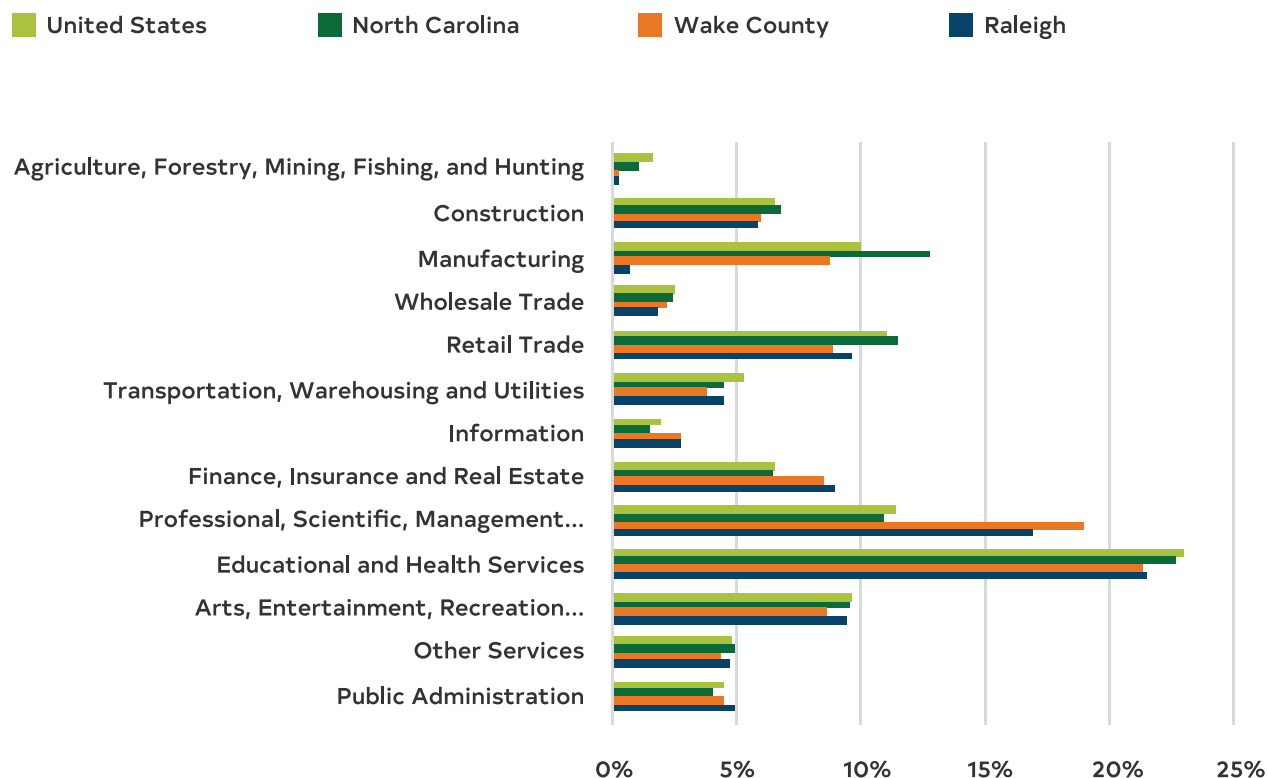
*\*Not shown to avoid disclosure of confidential information.  
Source: North Carolina Division of Employment Security*

**FIGURE 4.4 WAKE COUNTY ANNUAL CHANGE IN EMPLOYMENT BY INDUSTRY 2011-2018, PART 2**

	2011	2012	2013	2014	2015	2016	2017	2018
Professional and business services	85,987	91,441	99,455	102,826	104,472	107,082	108,515	114,015
Professional and technical services	39,563	42,177	45,296	47,185	48,673	50,315	53,773	59,394
Management of companies and enterprises	10,232	10,142	10,660	10,277	10,598	10,395	9,965	10,145
Administrative and waste services	36,192	39,122	43,499	45,364	45,202	46,372	44,777	44,476
Education and health services	85,780	88,177	90,081	92,437	96,201	100,173	103,147	106,363
Educational services	39,388	40,420	40,715	42,062	42,841	43,883	44,864	45,890
Health care and social assistance	46,392	47,758	49,366	50,375	53,360	56,290	58,283	60,473
Leisure and hospitality	47,918	50,765	53,180	55,501	58,754	61,557	63,602	64,607
Arts, entertainment, and recreation	9,105	9,293	9,892	9,973	10,822	11,088	11,363	11,554
Accommodation and food services	38,813	41,473	43,288	45,528	47,933	50,469	52,240	53,053
Public administration	39,491	38,789	39,768	40,138	40,622	40,630	41,129	41,776
Other services excluding public administration	13,634	14,659	14,820	15,256	15,456	16,622	16,522	17,136
Unclassified	*	5	*	*	*	*	*	*
Total	441,589	455,814	473,964	490,462	511,541	530,125	543,456	560,272

*\*Not shown to avoid disclosure of confidential information.*

*Source: North Carolina Division of Employment Security*

**FIGURE 4.5 JOBS BY INDUSTRY COMPARISON, 2017**


Source: Census Bureau, 2017 American Community Survey 1-year Estimates

## UNEMPLOYMENT RATES AND EMPLOYMENT PROJECTIONS

Raleigh's unemployment rate peaked in 2010 at 7.8%. Since then, unemployment rates have steadily declined to the current state of 3.6%. Between 2008 and 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. In 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).

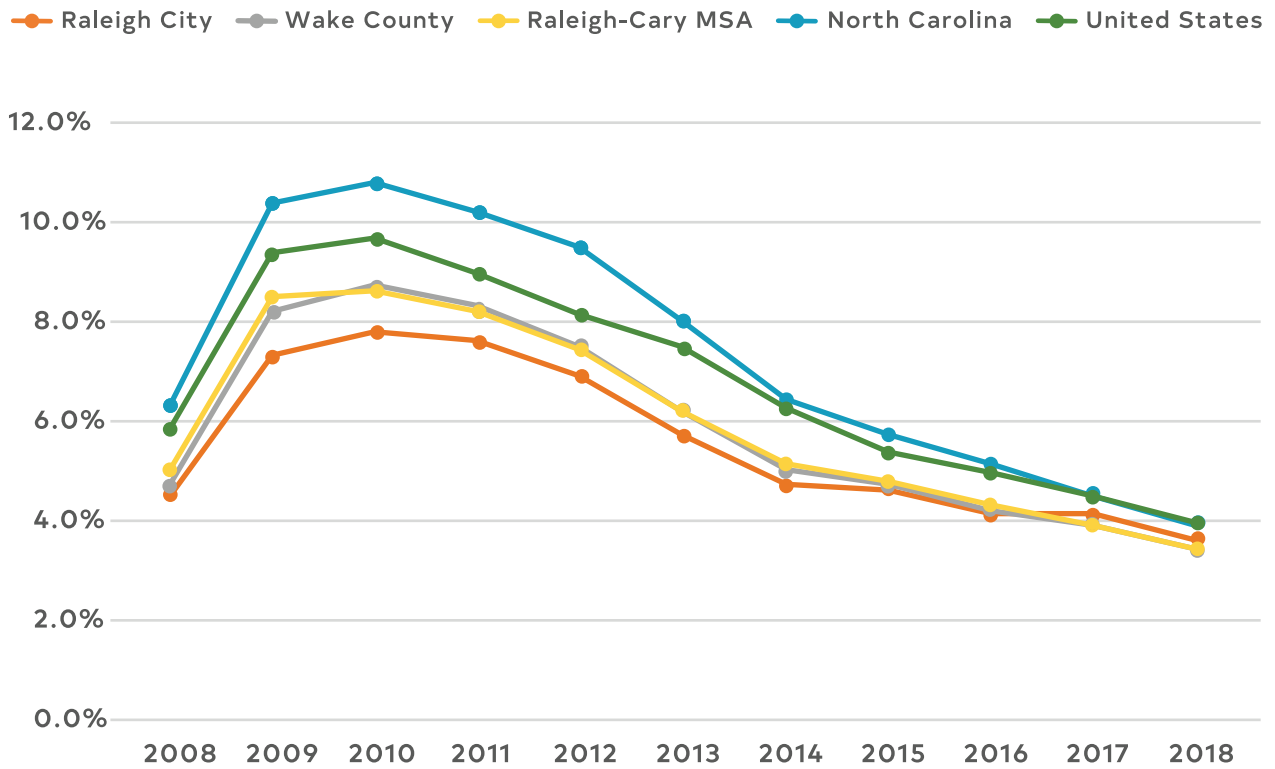
According to a model created by the Capital Area Metropolitan Planning Organization (CAMPO) with input from municipalities across the Triangle region, Raleigh is expected to add over 100,000 jobs from 2010 to 2040, an average increase of 1% every year (see Table 4.7 and Figure 4.8). The model expects Wake County to add the most jobs in the region in terms of raw numbers, but several exurban counties are projected

to have higher annual job growth rates, including Chatham County, Granville County, Nash County, and Harnett County. The model projects the following breakdown for new jobs 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 4.9).

More information on the employment projection model can be found here: [www.campo-nc.us/planning-for-the-future](http://www.campo-nc.us/planning-for-the-future).

**FIGURE 4.6 AVERAGE ANNUAL UNEMPLOYMENT RATES**



Source: North Carolina Division of Employment Security

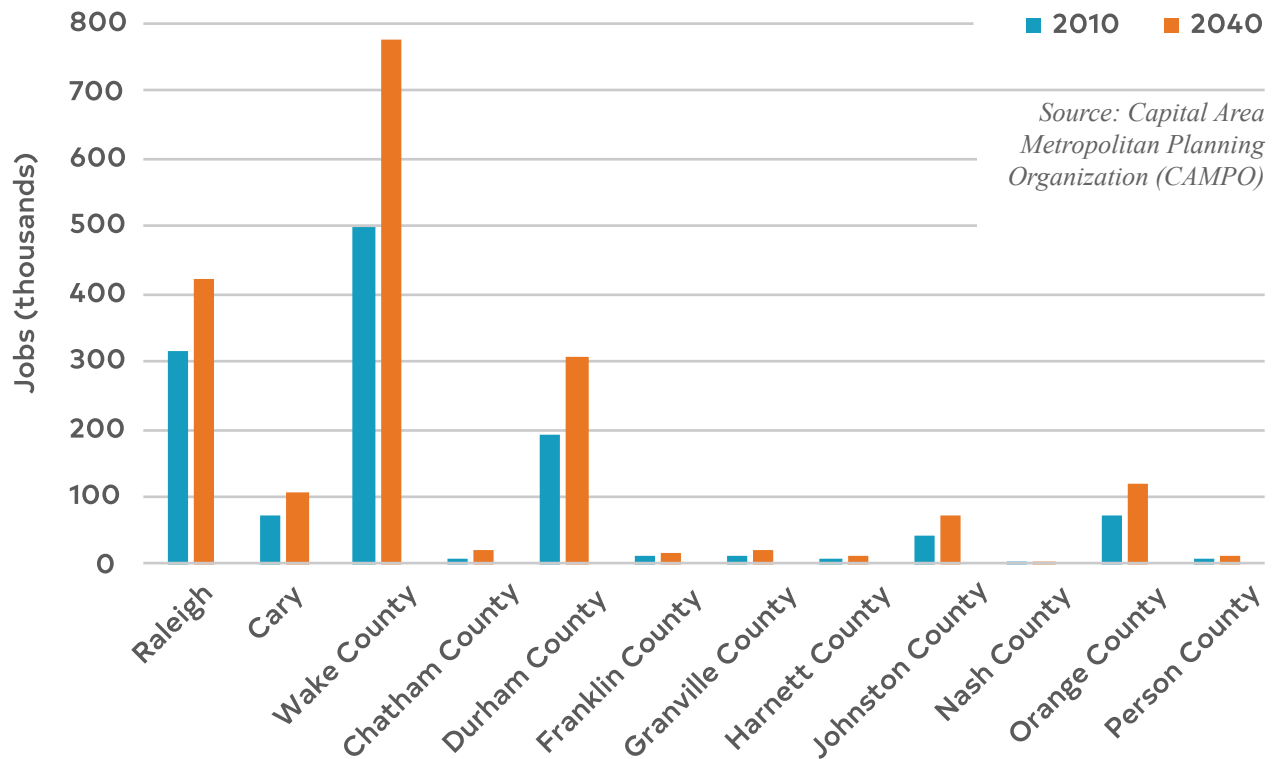


**FIGURE 4.7 TRIANGLE REGION EMPLOYMENT PROJECTIONS**

Place	2010	2020	2030	2040	Average annual projected growth 2010-2040
Raleigh	313,538	344,590	380,921	423,245	1.0%
Cary	74,112	83,111	93,619	105,872	1.2%
Wake County	497,634	577,053	669,927	778,175	1.5%
Chatham County	8,775	11,610	15,142	19,533	2.7%
Durham County	190,134	222,344	260,827	306,524	1.6%
Franklin County	13,164	14,486	16,039	17,868	1.0%
Granville County	10,870	14,059	17,730	21,954	2.0%
Harnett County	7,139	9,144	11,616	14,650	2.4%
Johnston County	42,345	49,486	58,687	70,730	1.7%
Nash County	705	1,362	2,204	3,261	5.2%
Orange County	70,984	84,064	100,225	120,274	1.8%
Person County	10,352	11,147	12,060	13,093	0.8%

Source: Capital Area Metropolitan Planning Organization (CAMPO)

**FIGURE 4.8 TRIANGLE REGION EMPLOYMENT PROJECTIONS, 2010 & 2040**



**FIGURE 4.9 SECTOR SHARE OF PROJECTED NET JOBS 2010 – 2040**

	Industrial	Office	Service	Retail	Highway	Total
Raleigh	5.7%	15.8%	66.0%	7%	5.5%	100%
Unincorporated Wake County	10.3%	9.3%	71.2%	3.5%	5.7%	100%
Other Jurisdictions	8.8%	10.5%	63.9%	6.9%	9.9%	100%
Countywide Total	7.6%	12.5%	64.9%	6.9%	8.0%	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 and Retail Trade. The 10 largest individual employers in Raleigh include the State, Wake County Public Schools, and WakeMed Hospitals. Together these ten organizations account for over 100,000 jobs countywide.

In 2018, 57 major companies announced either new operations or expansions of present operations in Raleigh, creating 2,787 new jobs, and additional investment of nearly 24 million dollars in capital costs, facilities, and payroll (see Figure 4.11).

**FIGURE 4.10 MAJOR EMPLOYERS LOCATED IN RALEIGH, 2018**

Rank	Name	Countywide Employment	Industry
1	State of North Carolina	24,083	Public Administration
2	Wake County Public School System	19,845	Education & Health Services
3	Wal-Mart	16,135	Retail Trade
4	WakeMed Health & Hospitals	9,105	Education & Health Services
5	North Carolina State University	9,069	Education & Health Services
6	Target	8,000	Retail Trade
7	UNC Rex Healthcare	7,400	Education & Health Services
8	Harris Teeter	5,000	Retail Trade
9	North Carolina Department of Health & Human Services	3,800	Public Administration
10	Fidelity Investments	3,700	Finance and Insurance

Source: Wake County Economic Development

**FIGURE 4.11 NEW & EXPANDING COMPANIES RALEIGH, 2018, PART 1**

Name	Industry	New or Expanding	New Jobs	Investment
Motif Medical	Advanced Medical Technologies, Other Medical Dental and Hospital Equipment and Supplies Merchant Wholesalers	New	0	\$0
VF Corporation	Advanced Manufacturing	New	0	\$0
Bandwidth	Software/Information Technology	Expanding	40	\$1,200,000
LearnPlatform	Software/Information Technology, Other Start Up	Expanding	0	\$0
Captrust	Financial Services	Expanding	50	\$0
Mutual Distributing Company	Other	Expanding	20	\$0
Sepi Engineering & Construction Inc	Other	Expanding	30	\$0
Prometheus Group	Software/Information Technology	Expanding	50	\$0
The Select Group	Other: Staffing Firm	Expanding	120	\$0
Captive-Aire Systems	Other	Expanding	120	\$0
The Greer Group	Other: Employment Services	Expanding	200	\$0
Kimley-Horn & Associates	Other: Engineering	Expanding	600	\$0
Carolina Partners in Mental HealthCare	Healthcare	Expanding	45	\$0
NetActuate	Software/Information Technology	Expanding	0	\$0
Valeant Pharmaceuticals	Advanced Manufacturing, Biotechnology/ Pharmaceuticals	Expanding	15	\$0

Source: Wake County Economic Development

**FIGURE 4.11 NEW & EXPANDING COMPANIES RALEIGH, 2018, PART 2**

Name	Industry	New or Expanding	New Jobs	Investment
Opendoor	Software/Information Technology	New	15	\$0
Cloud Bees	Software/Information Technology, Other: Start Up	Expanding	22	\$0
HIPRA	Advanced Manufacturing, Biotechnology/ Pharmaceuticals	New	10	\$0
Waltonwood Lake Boone	Healthcare	New	100	\$0
RapidScale	Software/Information Technology	Expanding	0	\$0
Slingshot Coffee	Other: Coffee Producer	Expanding	0	\$0
Majestic Kitchen & Bath Creations	Other: Construction	Expanding	30	\$0
Conversis	Other	New	5	\$0
Cohesity	Software/Information Technology, Other: Hyperconverged Storage Startup	New	100	\$0
Sheetz	Other Retail, Gas Stations	Expanding	117	\$0
Feelgoodz	Other	Expanding	10	\$0
Ipreo	Software/Information Technology	Expanding	250	\$2,100,000
Marshall, Gerstein & Borun	Other: Law Firm	New	5	\$0
IBM	Advanced Manufacturing, Software/Information Technology	Expanding	0	\$0
Insightsoftware	Software/Information Technology	Expanding	35	\$0
Red Hat In.c	Software/Information Technology	Expanding	0	\$0

Source: Wake County Economic Development

**FIGURE 4.11 NEW & EXPANDING COMPANIES RALEIGH, 2018, PART 3**

Name	Industry	New or Expanding	New Jobs	Investment
Sensefly	Advanced Transportation/ Electric Vehicles, Defense Technologies, Interactive Digital Media/Gaming, Software/Information Technology	New	17	\$0
Knock.com	Software/Information Technology, Other: Start Up	New	4	\$0
Celonis	Software/Information Technology	New	0	\$0
inMotionNow Inc	Software/Information Technology, Other: Start Up	Expanding	6	\$0
Pureport	Software/Information Technology, Other: Start Up	New	15	\$0
Advanced Auto Parts	Other	Expanding	435	\$5,500,000
Morgan Street Food Hall	Other: Food Retail	New	0	\$0
Goldberg Segalla	Other: Law Firm	New	6	\$0
Sysdig	Software/Information Technology, Other: Start Up	New	30	\$0
RedZone Technologies	Software/Information Technology	New	1	\$0
Dogwood State Bank	Financial Services, Other: Bank	New	25	\$0
Messer Construction	Other Construction	New	0	\$0
Oak Steakhouse	Other	New	0	\$0
Even	Software/Information Technology	New	20	\$0
BMC Stock Holdings Inc	Other	Expanding	0	\$0
Redhill Biopharma Ltd.	Advanced Manufacturing, Biotechnology/ Pharmaceuticals	Expanding	0	\$0

Source: Wake County Economic Development



**FIGURE 4.11 NEW & EXPANDING COMPANIES RALEIGH, 2018, PART 4**

Name	Industry	New or Expanding	New Jobs	Investment
Pendo	Software/Information Technology	Expanding	16	\$0
WalkMe	Software/Information Technology	Expanding	0	\$0
Workplace Options	Other: Insurance	Expanding	100	\$13,000,000
Pinnacle Financial Partners	Financial Services	Expanding	1	\$0
IAT Insurance Group Inc	Financial Services	Expanding	0	\$0
Capital Bank	Other	Expanding	50	\$0
Ferguson	Other	Expanding	0	\$2,000,000
ImageQuix	Software/Information Technology	Expanding	20	\$0
National Coatings	Other	Expanding	52	\$0
Access Staffing	Other	New	0	\$0

Source: Wake County Economic Development

## NON-RESIDENTIAL BUILDING ACTIVITY & COST OF LIVING

After a decrease in 2017, Raleigh increased non-residential development in 2018. Permits issued are up from 2017 at 297, and the amount of overall square footage permitted doubled from 2017 to 4,657,299 square feet. The value of total construction more than doubled as well from 2017 at over 463 million dollars.

Raleigh saw an increase in the amount of commercial and office building activity from 2017.

**FIGURE 4.12 RALEIGH COMMERCIAL BUILDING ACTIVITY**

Year	Number 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
2018	27	625,097	\$60,695,921
Total	319	7,463,401	\$903,812,690

Source: City of Raleigh Development Services Department

**FIGURE 4.13 RALEIGH OFFICE BUILDING ACTIVITY**

Year	Number 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	636,100	\$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
2018	17	1,300,994	\$191,469,847
Total	264	12,299,177	\$1,260,051,556

Source: City of Raleigh Development Services Department

**FIGURE 4.14 RALEIGH INDUSTRIAL BUILDING ACTIVITY**

Year	Number 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	\$40,276,478
2018	11	154,049	\$13,002,212
Total	172	3,965,470	\$217,165,651

Source: City of Raleigh Development Services Department

**FIGURE 4.15 RALEIGH INSTITUTIONAL BUILDING ACTIVITY**

Year	Number 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	\$121,194,840
2016	14	296,309	\$21,368,840
2017	13	373,050	\$60,048,128
2018	18	159,937	\$22,872,291
Total	347	5,742,031	\$959,889,554

Source: City of Raleigh Development Services Department

**FIGURE 4.16 RALEIGH OTHER NONRESIDENTIAL BUILDING ACTIVITY**

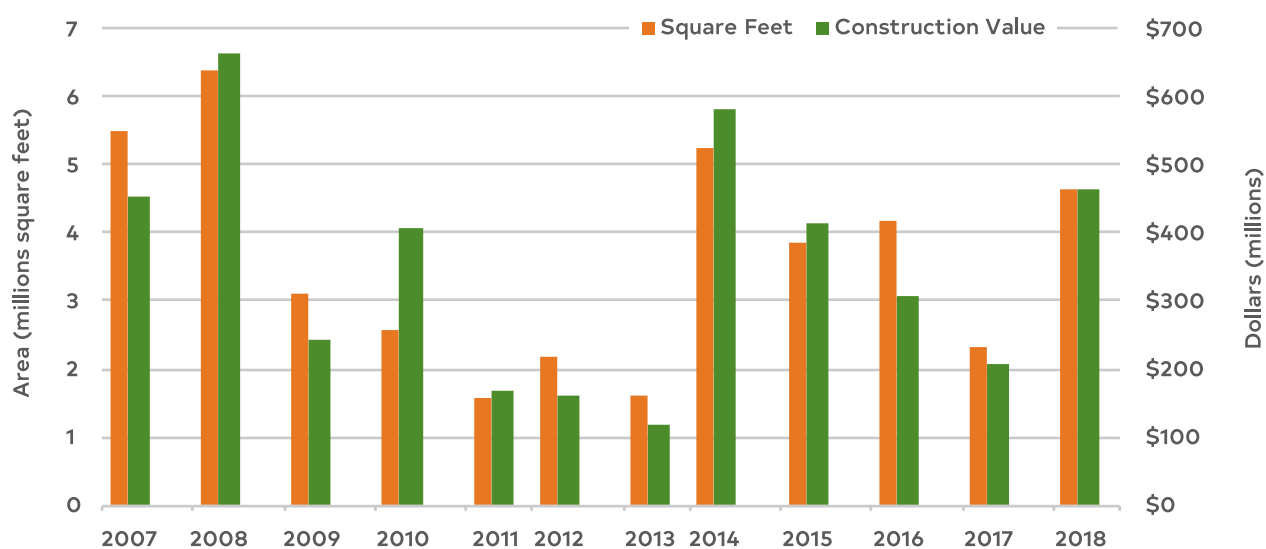
Year	Number of Permits	Square Feet	Construction Value
2007	171	1,813,719	\$65,301,239
2008	135	1,989,683	\$166,667,759
2009	76	1,040,954	\$31,560,301
2010	72	255,093	\$8,686,844
2011	108	553,061	\$24,449,866
2012	128	980,698	\$59,194,918
2013	101	623,262	\$31,359,616
2014	109	1,475,172	\$125,935,249
2015	122	1,049,419	\$49,226,608
2016	117	1,103,925	\$74,132,590
2017	103	719,222	\$37,706,103
2018	218	2,069,140	\$135,183,824
Total	1460	13,673,348	\$809,404,917

Source: City of Raleigh Development Services Department

**FIGURE 4.17 RALEIGH TOTAL NONRESIDENTIAL BUILDING ACTIVITY**

Year	Number 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
2018	297	4,657,299	\$463,528,925
Total	2568	43,218,509	\$4,190,628,911

Source: City of Raleigh Development Services Department

**FIGURE 4.18 RALEIGH TOTAL BUILDING ACTIVITY**

Source: City of Raleigh Development Services

## 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 2019 Q1 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). Raleigh also had a low cost of housing score and a low cost of groceries score when compared to the other peer cities.

**FIGURE 4.19 METRO AREA COST OF LIVING INDEX COMPARISON**

	100% composite index	Grocery	Housing	Utilities	Transportation	Health	Misc services
Raleigh, NC	94.5	90.8	85	96.3	97.7	101.3	101.7
Atlanta, GA	102.3	101.8	104.2	85.7	100.6	107	105.1
Austin, TX	99.5	89.7	103.1	95.6	91.2	106.2	102.6
Charlotte, NC	98.2	98.9	89.6	95.4	91.1	109.9	106.2
Nashville-Murfreesboro, TN	101.3	100.8	99.8	97.8	103.3	91.8	104.2
Orlando, FL	90.9	106.6	83.2	98.7	82.3	87.6	92.1
Charleston, SC	96.2	97.6	93	121.7	86.2	96.1	94.4

Source: C2er Cost of Living Index

## HOUSING & NEIGHBORHOODS

The City of Raleigh carries out several programs to increase the supply of affordable housing as well as stabilize and improve older neighborhoods that need additional resources. Many of these programs have been successful due to a partnership with governmental entities, for-profit and nonprofit organizations, and participation from and local residents.

Raleigh's housing programs strive to increase housing opportunities for both existing and future residents and to create diverse neighborhoods of choice that attract new investment without excluding residents due to housing costs or discriminatory practices.

**FIGURE 5.1 RALEIGH HOUSEHOLDS BELOW \$50,000 ANNUAL INCOME WITH 30%+ COST BURDEN, 2017**

Renters Annual Income Category	Total Renter Households	Number of Burdened Households	Percent of Burdened Households
Less than \$10,000	5,516	4,222	76.5%
\$10,000 to \$19,999	8,830	7,325	83.0%
\$20,000 to \$34,999	15,877	14,430	90.9%
\$35,000 to \$49,999	16,904	8,201	48.5%
All Households < \$50,000	47,127	34,178	72.5%
\$50,000 or more	38,494	1,909	5.0%
All Households	85,621	36,087	42.1%
Owners Annual Income Category	Total Renter Households	Number of Burdened Households	Percent of Burdened Households
Less than \$20,000	3,363	2,986	88.8%
\$20,000 to \$34,999	7,962	4,850	60.9%
\$35,000 to \$49,999	10,469	3,545	33.9%
All Households < \$50,000	21,794	11,381	52.2%
\$50,000 or more	76,086	4,571	6.0%
All Households	97,880	15,952	16.3%

Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimate



## HOUSING AFFORDABILITY

Based on the 2017 American Community Survey 1-Year Estimates, 42% of Raleigh's renter households pay more than 30% of their income in housing costs, compared to 16% 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	5,516	\$250	\$893	\$(643)
\$10,000 to \$19,999	8,830	\$375	\$893	\$(518)
\$20,000 to \$34,999	15,877	\$687	\$893	\$(206)
All Households < \$35,000	30,223			

Source: U.S. Census Bureau, 2017 American Community Survey 1-year Estimates, US HUD 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	516
Second Mortgages Provided by City of Raleigh	1,345
Raleigh Housing Authority Housing Choice Vouchers (Section 8)	3,869
Total	13,852

Source: *City of Raleigh Housing and Neighborhood Department, 2018*

## HOME SALES, AVERAGE RENT, RESIDENTIAL BUILDING ACTIVITY

In constant dollars, the median sales price for single-family detached units and townhouses has increased from 2010 to 2018 (see Figure 5.4). Median sales prices for condominiums in 2018 broke a trend of decreasing sales prices since 2010. Condominiums and townhouses both saw significant increases in median sales price from 2017 to 2018, with condominiums increasing by 14% (see Figure 5.5).

Looking at residential sales by price range, the highest number of single-family homes sold during 2018 cost over \$400,000, although a significant number of homes costing between \$200,001 to \$250,000 (see Figure 5.6). For both townhouses and condominiums, the price range

with the highest number of sales fell in the \$100,001 to \$150,000 range. For all residential units combined, the largest number of sales were 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 increased annually over the past 5 years (see Figure 5.7). In 2018, median gross rent in the city was estimated to be \$1,082.

In 2018, 57% of all residential building permits issued were for apartments (1,991 units permitted), but single-family detached development represented the largest category in terms of square footage (3,737,651) and construction value (\$381,110,337) (see Figure 5.8).

**FIGURE 5.4 MEDIAN SALES PRICE BY UNIT TYPE (2018 DOLLARS)**

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Single-Family Detached	256,367	238,024	251,125	250,850	247,520	262,051	265,582	281,600	292,500
Townhouse	186,240	164,869	171,421	175,162	172,787	180,260	182,980	189,952	205,000
Condominium	154,047	146,853	147,400	128,394	133,566	131,290	142,201	140,288	160,000

Source: Wake County Revenue Department

**FIGURE 5.5 PERCENT CHANGE IN MEDIAN SALES PRICE BY UNIT TYPE (2018 DOLLARS)**

	2010 to 2011	2011 to 2012	2012 to 2013	2013 to 2014	2014 to 2015	2015 to 2016	2016 to 2017	2017 to 2018
Single-Family Detached	-7.20%	5.50%	-0.10%	-1.30%	5.90%	1.30%	6.03%	3.87%
Townhouse	-11.50%	4.00%	2.20%	-1.40%	4.30%	1.50%	3.81%	7.92%
Condominium	-4.70%	0.40%	-11.10%	1.90%	-1.70%	8.30%	-1.35%	14.05%

Source: Wake County Revenue Department

**FIGURE 5.6 NUMBERS OF RESIDENTIAL SALES BY PRICE RANGE AND TYPE OF UNIT, 2018**

Price Range of Sales	Single-Family	Townhouse	Condo	All Units
\$25,000 - \$100,000	35	41	148	224
\$100,001 - \$150,000	198	340	269	807
\$150,001 - \$200,000	777	731	176	1684
\$200,001 - \$250,000	924	590	66	1580
\$250,001 - \$300,000	838	309	66	1213
\$300,001 - \$350,000	592	119	54	765
\$350,001 - \$400,000	460	67	49	576
over \$400,000	1423	117	120	1660
Total	5247	2314	948	8509

Source: Wake County Revenue Department

**FIGURE 5.7 RALEIGH ANNUAL MEDIAN GROSS APARTMENT RENT**

Year	Gross Rent
2010	844
2011	837
2012	881
2013	899
2014	937
2015	970
2016	1,027
2017	1,082

Source: American Community Survey 1-year Estimates

**FIGURE 5.8 RALEIGH RESIDENTIAL BUILDING ACTIVITY, 2018**

Residential Type	No. of Units Permitted	Square Feet	Construction Value
Single-Family	1,097	3,737,651	\$ 381,110,337.00
Townhouse	312	641,761	\$ 36,898,697.00
2-4 Attached units	26	45,167	\$ 3,231,414.00
Condominium	24	47,115	\$ 358,602.00
Apartment	1,991	2,477,700	\$ 194,028,461.00
TOTAL	3,450	6,949,394	\$ 615,627,511.00

Source: City of Raleigh Development Services Department

# 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. Transportation systems also provide longer distance mobility of people and goods. Over the long term, it influences patterns of growth and the level of economic activity. The 2030 Comprehensive Plan, as well as adopted transportation plans and studies, help Raleigh guide future development of its streets and highways, public transportation systems, bicycle and greenway trail networks, and pedestrian networks. Together, 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
- Raleigh Department of Transportation: 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 (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 include \$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 2016 and 2019.

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	\$0.50 M	\$0.48 M	\$68.13 M
Street Improvement Program	\$20.93 M	\$10.13 M	\$9.83 M	\$10.13 M	\$10.01 M	\$60.94 M
Bicycle and Pedestrian Improvements	\$3.25 M	\$2.73 M	\$0.74 M	\$0.67 M	\$0.83 M	\$8.21 M
Studies and Planning Projects	\$0.34 M	\$0.10 M	\$0.50 M	\$0.25 M	\$0.10 M	\$1.28 M
Transit	\$1.93 M	\$1.73 M	\$1.73 M	\$1.73 M	\$1.73 M	\$8.85 M
Parking	\$0.67 M	\$0.67 M	\$0.66 M	\$0.64 M	\$0.64 M	\$3.24 M
Total Transportation CIP	\$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: City of Raleigh Department of Transportation*



**FIGURE 6.2 FEDERAL GRANT ALLOCATIONS FOR TRANSPORTATION PROJECTS, 2016-2019**

Project Description	Funding	Source	Mode
Raleigh Union Station Phase II: RUS Bus	\$20,000,000	BUILD	Transit
Capital Blvd/Peace St. Interchange Enhancements	\$5,000,000		Roadway
New Bern Ave Pedestrian Improvements	\$1,754,071	CMAQ	Bike/Ped
Trailwood Sidewalk	\$592,200		Bike/Ped
Leesville SRTS	\$446,480	STP-DA	Bike/Ped
Raleigh BikeShare Implementation	\$1,548,800		Transit
Wake Forest/Blount/Person Rd. Complete Streets	\$1,274,400	TAP	Roadway
Walnut Creek Greenway - Trailwood Segment	\$683,400	CMAQ	Bike/Ped
Crabtree Creek West Greenway	\$1,547,000	CMAQ	Bike/Ped
Computer Aided Dispatch and Bus Tracking	Repurposed		Transit
Gorman Street Connector	\$260,000	CMAQ	Bike/Ped
Transit Signal Priority Project	\$1,000,000		Transit
Compressed Natural Gas Fueling Station	\$2,024,947		Transit
Rock Quarry Road- Part A	\$9,928,100	STP-DA	Roadway
New Bern Ave. Bottleneck Elimination	\$409,600	STP-DA	Roadway
Blue Ridge Road Pedestrian Improvements	\$3,595,800	CMAQ	Bike/Ped
FY2019 Bus Stop Improvements	\$876,000	STP-DA	Transit
Navaho Drive Sidewalk	\$352,600	TAP	Transit
Total Allocations	\$46,028,111		
Total Bike/Ped Allocations	\$13,168,862		
Total Roadway Allocations	\$22,201,720		
Total Transit Allocations	\$10,657,529		

*STP-DA: Surface Transportation Program – Direct Allocation*

*CMAQ: EPA Congestion Mitigation and Air Quality Improvement Program*

*BUILD: USDOT Better Utilizing Investments to Leverage Development*

*TAP: Transportation Alternatives Program*

*Source: Capital Area Metropolitan Planning Organization*

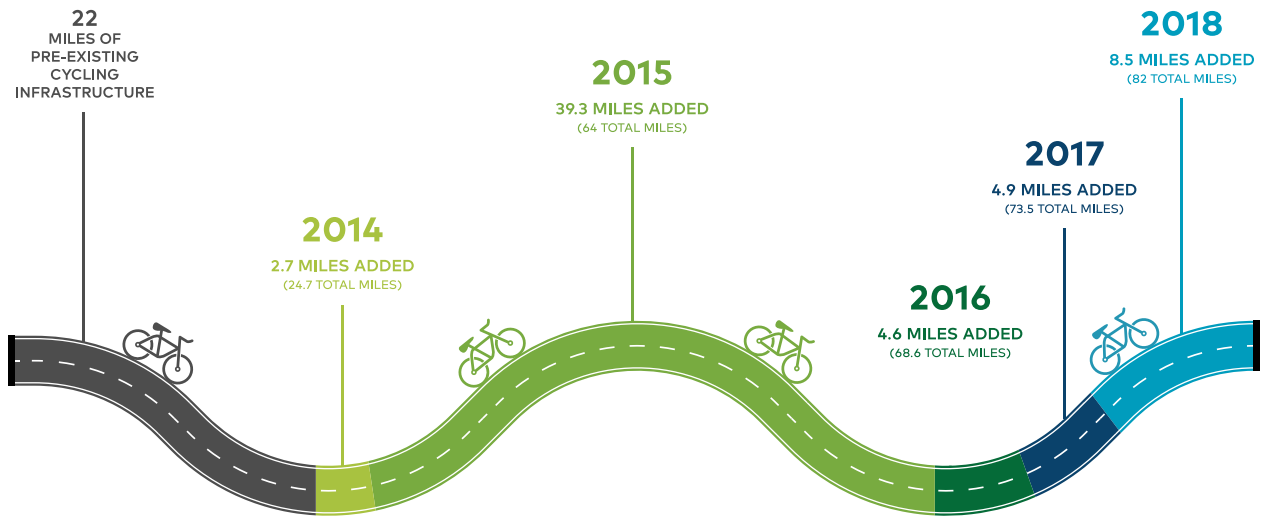
## CYCLING IN RALEIGH

In 2009, Raleigh adopted the Bicycle Transportation Plan, a framework that helped Raleigh earn a bronze-level Bicycle Friendly Community status. In 2016, Raleigh adopted BikeRaleigh as an update to this plan, evaluating progress on the 2009 plan goals and adding new research, peer city examples, and best practices. BikeRaleigh is centered around the vision of Raleigh as “a place where people of all ages and abilities

bicycle comfortably and safely for transportation, fitness, and enjoyment.” The plan identifies long-term route plans, which can be seen online [here](#).

Implementation of BikeRaleigh has continued at a steady pace, with 8.5 miles of on-street bicycle infrastructure added in 2018 (Figure 6.3) for a total of 82 miles of bicycle lanes, neighborhood bikeways, and separated bikeways around the city.

**FIGURE 6.3 TOTAL MILES OF CYCLING INFRASTRUCTURE AND MILES ADDED PER YEAR**



Source: City of Raleigh Department of Transportation

## TRANSIT

Bus service serves Raleigh through local GoRaleigh routes, regional GoTriangle routes, and Wolfline routes serving NC State University campus and surrounding neighborhoods. Ridership of GoRaleigh routes remain stable in recent years at around 5 million trips per year (Figure 6.4). A majority of riders pay by fare, with just over 10 percent of ridership in 2018 via a Go Pass. The area's colleges and universities, including NC State University, make up the largest section of Go Pass ridership, with local and state government employees making up a

smaller but consistent portion of Go Pass ridership. Go Pass ridership increased noticeably in 2018, likely due to the implementation of the Youth Go Pass. This pass includes unlimited fare-free rides for youth on GoRaleigh, GoTriangle, GoCary, and GoDurham routes for youth in the Triangle region. Since its introduction in August, Youth Go Pass ridership on GoRaleigh routes rose to around 13,000 monthly trips, peaking in October at 17,720 trips. Go Pass ridership not affiliated with a government or educational institution also increased during this same period (Figure 6.5).

**FIGURE 6.4 ANNUAL RIDERSHIP FOR GORALEIGH ROUTES**

2016	5,179,023
2017	4,837,344
2018	5,183,676

Source: GoRaleigh

**FIGURE 6.5 GO PASS RIDERSHIPS, 2018**

	Local and State Government	Colleges and Universities	Other	Youth Go Pass	Total
January	5,321	28,099	2,767	0	36,187
February	6,617	29,497	3,015	0	39,129
March	6,825	30,969	3,295	0	41,089
April	6,615	29,662	2,963	0	39,240
May	7,140	26,467	4,909	0	38,516
June	6,995	21,639	3,441	0	32,075
July	5,987	19,518	3,441	0	28,946
August	7,472	28,044	11,038	9,347	55,901
September	5,695	28,591	14,980	13,212	62,478
October	7,471	31,257	20,230	17,720	76,678
November	5,746	25,610	14,376	12,352	58,084
December	6,173	19,490	14,927	13,253	53,843
				Total	562,166

Source: GoRaleigh

# PUBLIC UTILITIES

The city's public utilities are regional in nature. The City of Raleigh Public Utilities Department (CoRPUD) 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. Combined, these two reservoirs combined can support up to 77.3 million gallons per day (MGD) of withdrawals. Figure 7.1 shows the available raw water supply from each of these sources.

In 2018, 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.

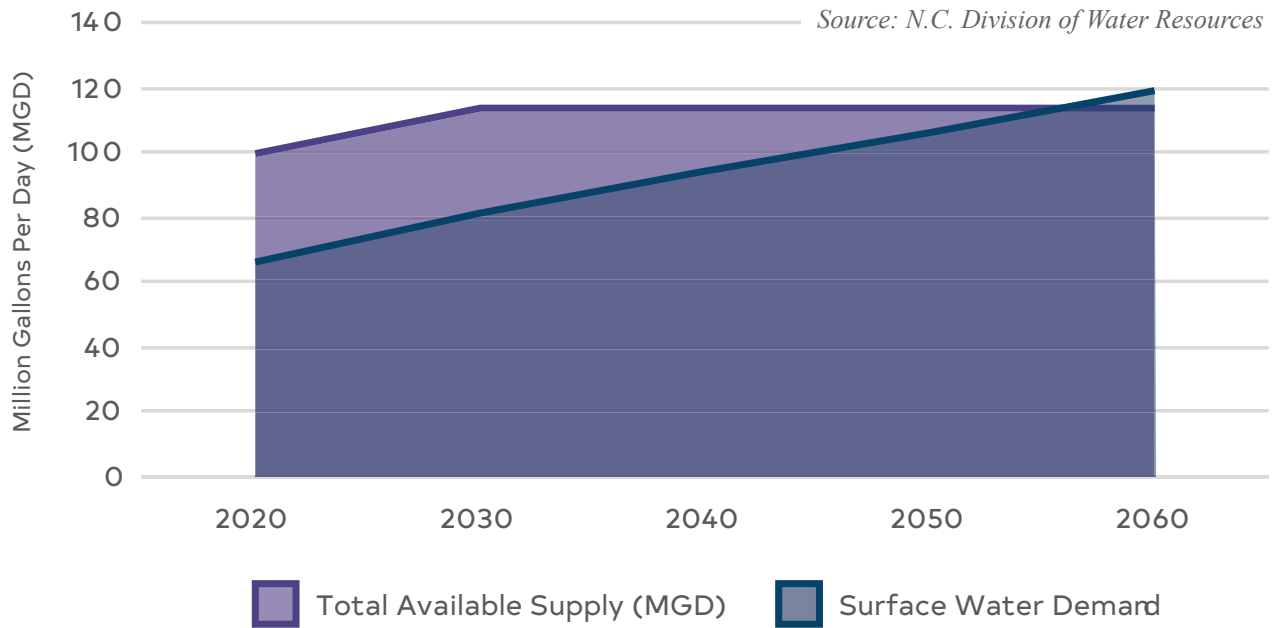
Total water demand is growing in Wake County, but this increase is the result of population growth rather than greater demand per person. Daily water demand per capita in Raleigh has been on a downward trend for over 15 years (Figure 7.3).

**FIGURE 7.1 RAW WATER SUPPLY AND DEMAND FOR 2018**

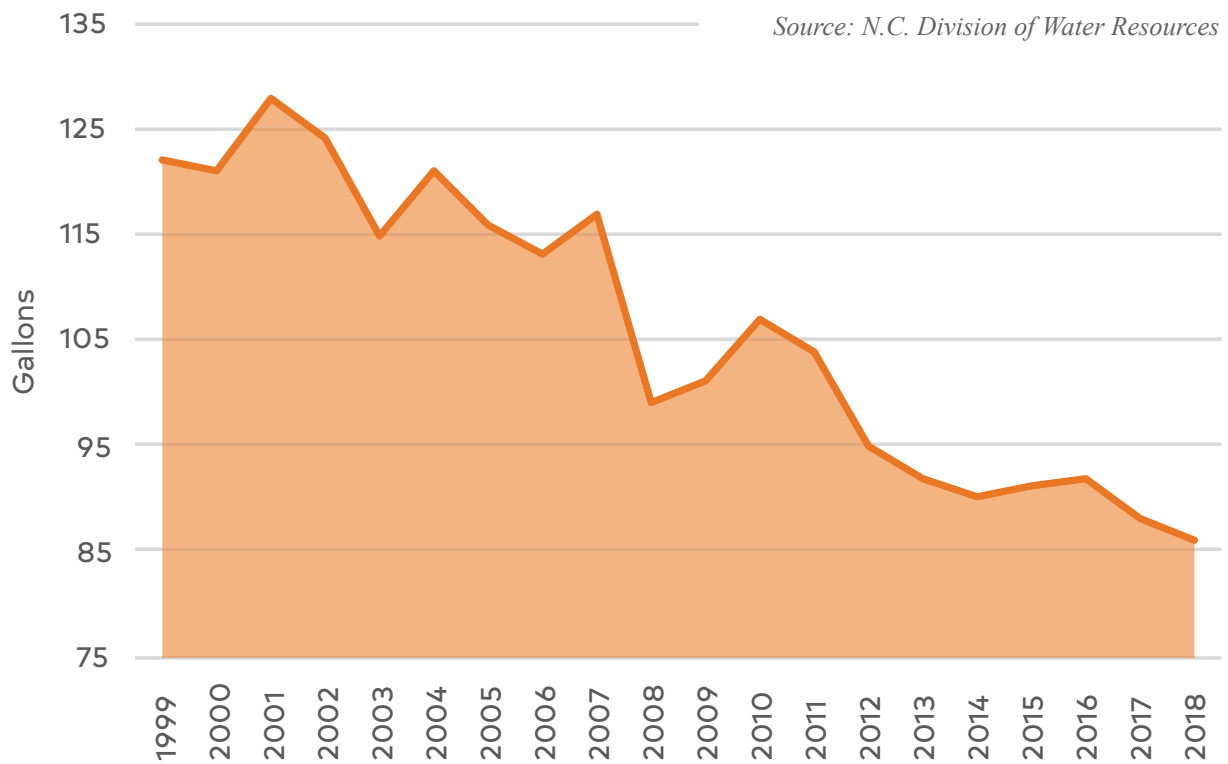
Reservoir	Average Daily Withdrawal (MGD)	Maximum Daily Withdrawal (MGD)	Available Raw Water Supply (MGD)
Falls Lake	40.94	73.25	66.1
Lake Benson	10.93	15.5	11.2

Source: N.C. Division of Water Resources

**FIGURE 7.2 WATER SUPPLY AND DEMAND PROJECTIONS**



**FIGURE 7.3 DAILY TREATED WATER DEMAND PER CAPITA**



## WASTEWATER TREATMENT

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

The Neuse River Resource Recovery Facility is the largest WWTP serving Wake County. 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. Along 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 serves 178,375 sewer connections with 2,561 miles of wastewater pipeline and 115 public pumping stations in 2018. Figure 7.5 shows the amount of wastewater being treated at the city's three WWTPs. Throughput in 2018 was about 77% of the total capacity, and this figure has been stable or declining for over ten years. Even so, the city received a permit

to expand the capacity at the Neuse River Resource Recovery Facility by 15 MGD to 75 MGD. The project successfully concluded in 2018. These 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 activity and environmental quality. If SSOs release a large enough volume of wastewater, the state may fine the local utility. 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 10 years, and the rate of SSOs has stayed below the national average over the past five years. Raleigh's rate of SSOs in 2018 was 1.1 compared to the national average of 4.5.

**FIGURE 7.4 WASTEWATER TREATMENT CAPACITY**

Treatment Plant	Maximum Capacity
Neuse River RRF	60.00 MGD
Little Creek WWTP	1.85 MGD
Smith Creek WWTP	3.0 MGD

Source: N.C. 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
2018	47.71	0.84	1.52

Source: N.C. Division of Water Resources



**FIGURE 7.4 WASTEWATER TREATMENT CAPACITY**

Year	Yearly Total SSOs	SSOs per 100 Miles of Pipe
2006	88	2.1
2007	69	3.0
2008	68	3.0
2009	55	4.1
2010	63	3.6
2011	36	6.9
2012	31	8.1
2013	57	4.0
2014	56	4.1
2015	33	1.3
2016	61	4.0
2017	56	4.4
2018	29	1.1

Source: City of Raleigh Department of Public Utilities

The city 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 Neuse River Resource Recovery Facility Expansion to 75 MGD Phase III and design and bidding of Phase IV.
- Complete the D.E. Benton Water Plant 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 Neuse River Resource Recovery Facility Anaerobic Digester project.
- Addition of Big Branch Pump Station Improvements to address wet weather flow compliance.
- Addition of a Raw Water Reservoir at D.E. Benton Water Plant.

# ENVIRONMENTAL RESOURCES

This chapter addresses Raleigh's natural and environmental resources and the challenges that need to be addressed to protect these resources. This chapter first addresses watershed conditions, 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 N.C. 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. Others include: Buffalo Creek, Crabtree Creek, Little River, Marks Creek, Middle Creek, Moccasin Creek, Swift Creek, and Walnut Creek.

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

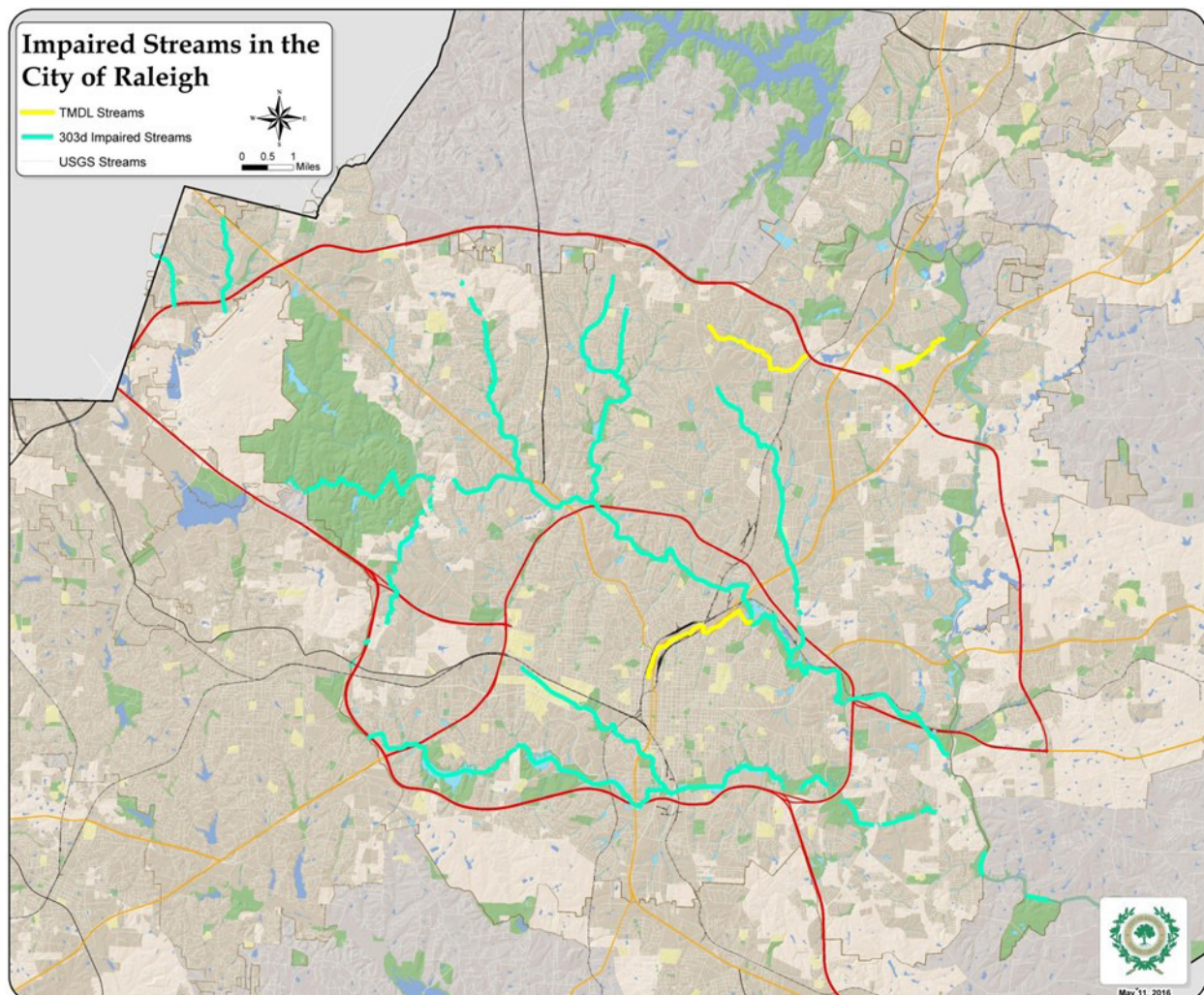
**FIGURE 8.1 BIOCLASSIFICATION FOR RIVERS AND STREAMS IN WAKE COUNTY PORTION OF NEUSE RIVER SUBBASIN**

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: N.C. 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, such as 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 PCBs during its lifetime in contaminated waters.

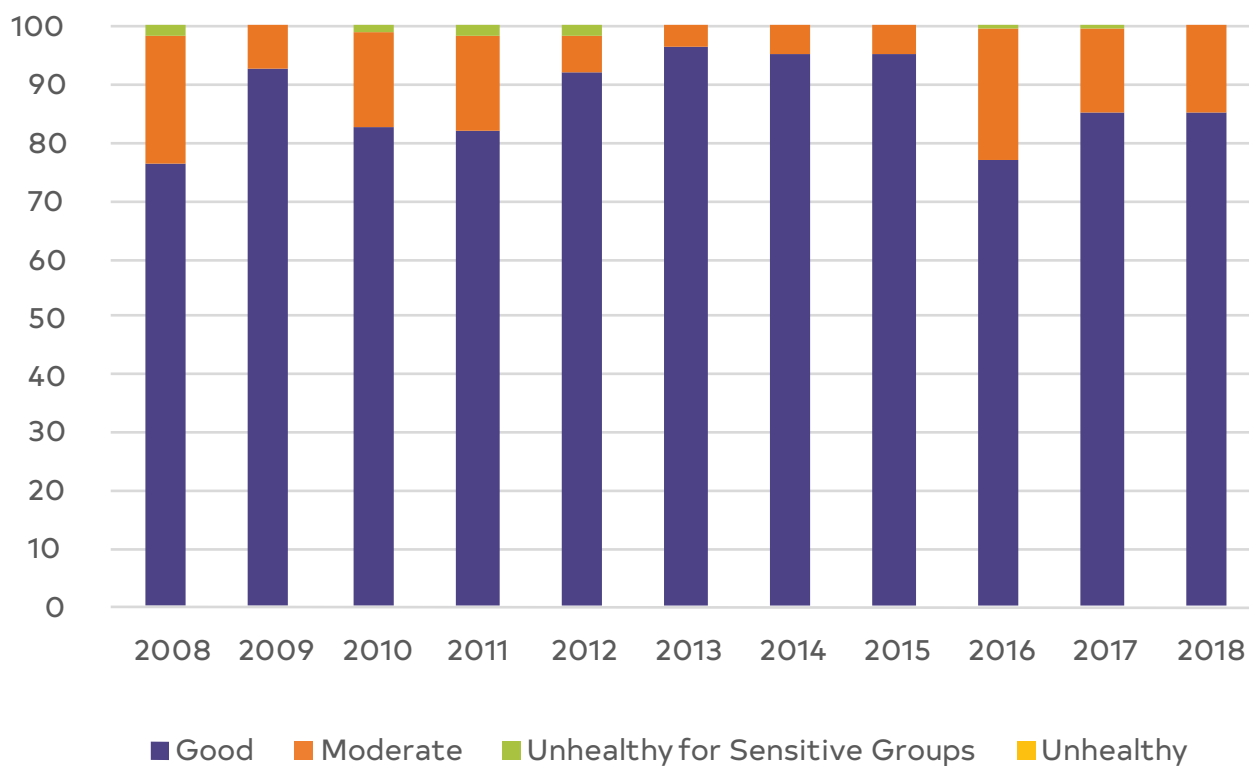
A water body that has pollutant (usually nutrient) concentrations exceeding the statutory limit is placed on the 303(d) list, named after a section of the Clean Water Act. A consistently and acutely impaired stream can be assigned a total maximum daily load (TMDL) of pollutants which the local government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



## 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). Air quality has improved since 2016, with no recorded day categorized as “unhealthy for sensitive groups” in 2018. These readings are from the Millbrook Monitor, the only reporting station within the City of Raleigh.

**FIGURE 8.2 OZONE CATEGORY DAYS**



Source: North Carolina Department of Environmental Quality

**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
2018	205	35	0	0

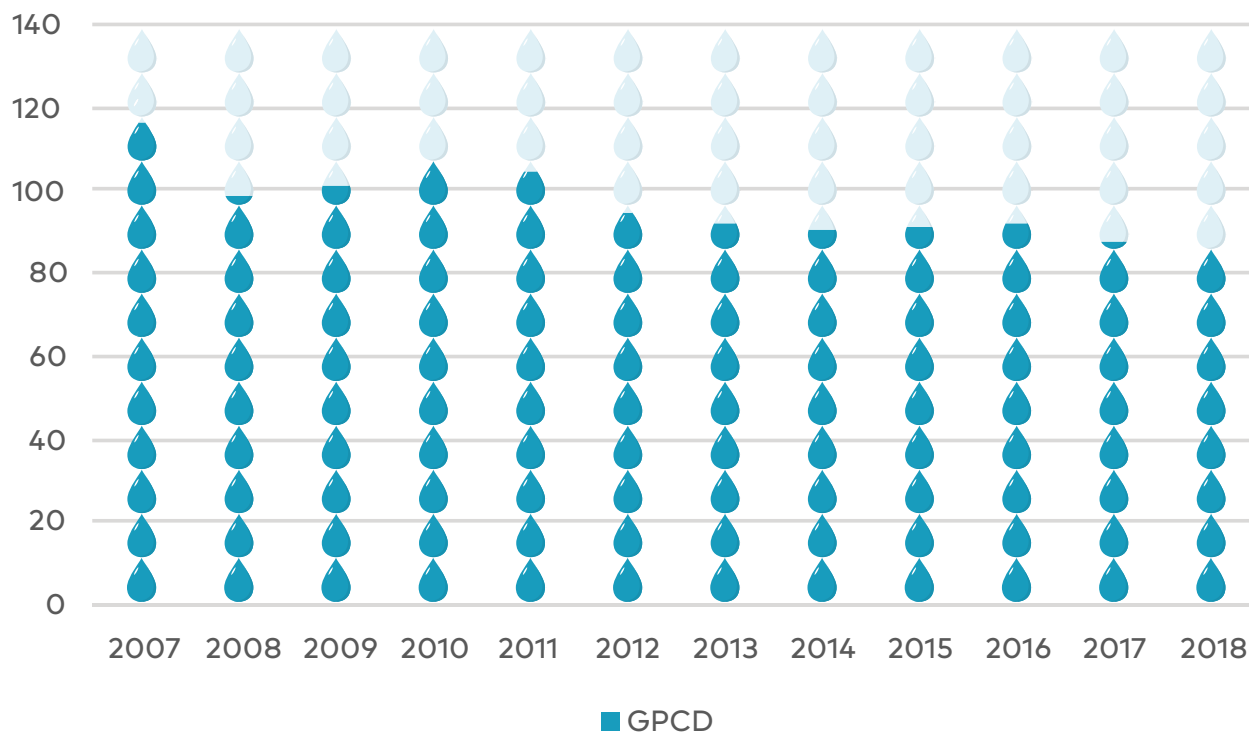
Source: North Carolina Department of Environmental Quality

## WATER CONSUMPTION AND CONSERVATION

The City of Raleigh has implemented 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 toilet rebate program, a showerhead swap-out program, a 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 addresses the quantity and the quality of precipitation runoff, or rainwater 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. Services also include reviewing and inspecting private developments and stormwater control measures for conformance to stormwater management, erosion and sediment control, and floodplain management requirements.

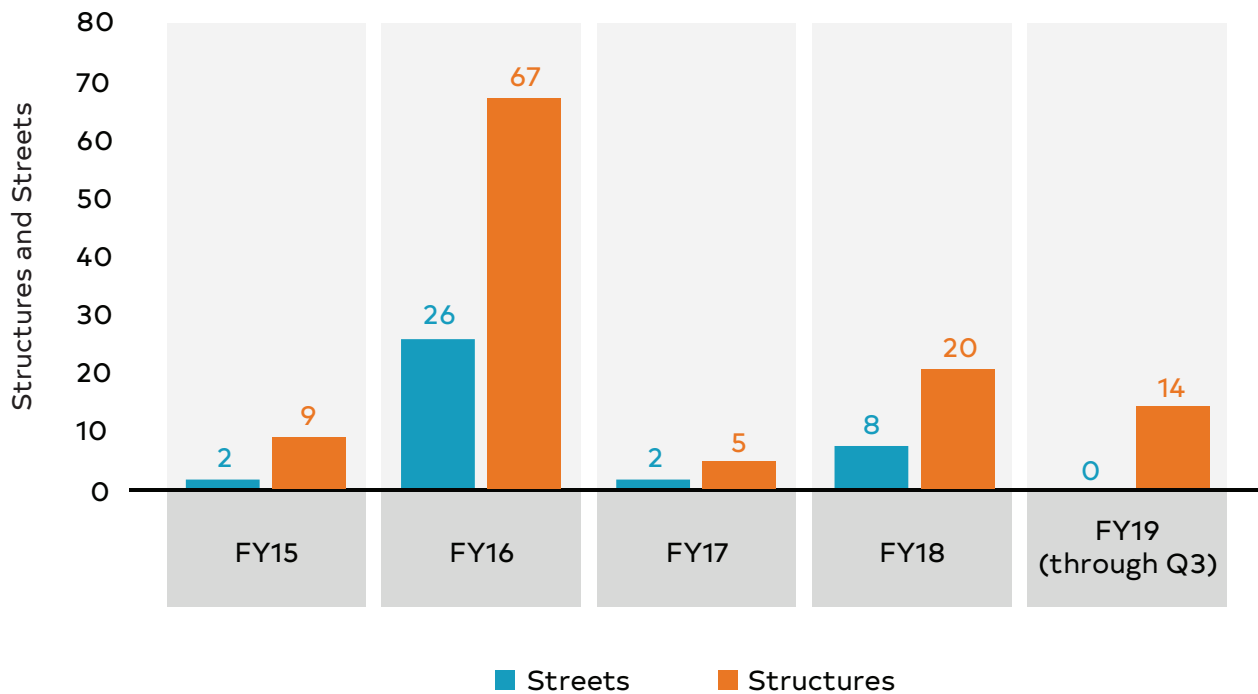
The Stormwater Division aggressively monitors the results of its program, projects, and operations. While historic data is limited, evidence from recent years shows how investments in stormwater management are protecting life and property, reducing pollution, and restoring local waterways.



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 and that surface water quality is protected or improved. Potential risks of

uncontrolled runoff are continued flooding hazards, surface water pollution, and stream erosion. Stormwater projects completed in fiscal year 2018 reduced the risk posed by runoff for 20 structures and 8 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 for flood damage. The Stormwater Division assists property owners at the local level by informing homeowners of 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 they 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 out of ten in 2018, with a lower rating preferable. The Stormwater Division actively assists homeowners in the floodplain with acquiring elevation certificates. The division expects to have recorded the necessary certificates to achieve an improved rating of seven within the next year. In early 2019, there were 2,070 NFIP policyholders in Raleigh insuring nearly \$589 million in property. The combined premiums of these policyholders amount to \$1.97 million per year.

Another goal of the Stormwater Division is to limit the amount of nutrients and other pollutants entering local waterways. 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 during a rain event by capturing it for a period of time. SCMs 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.

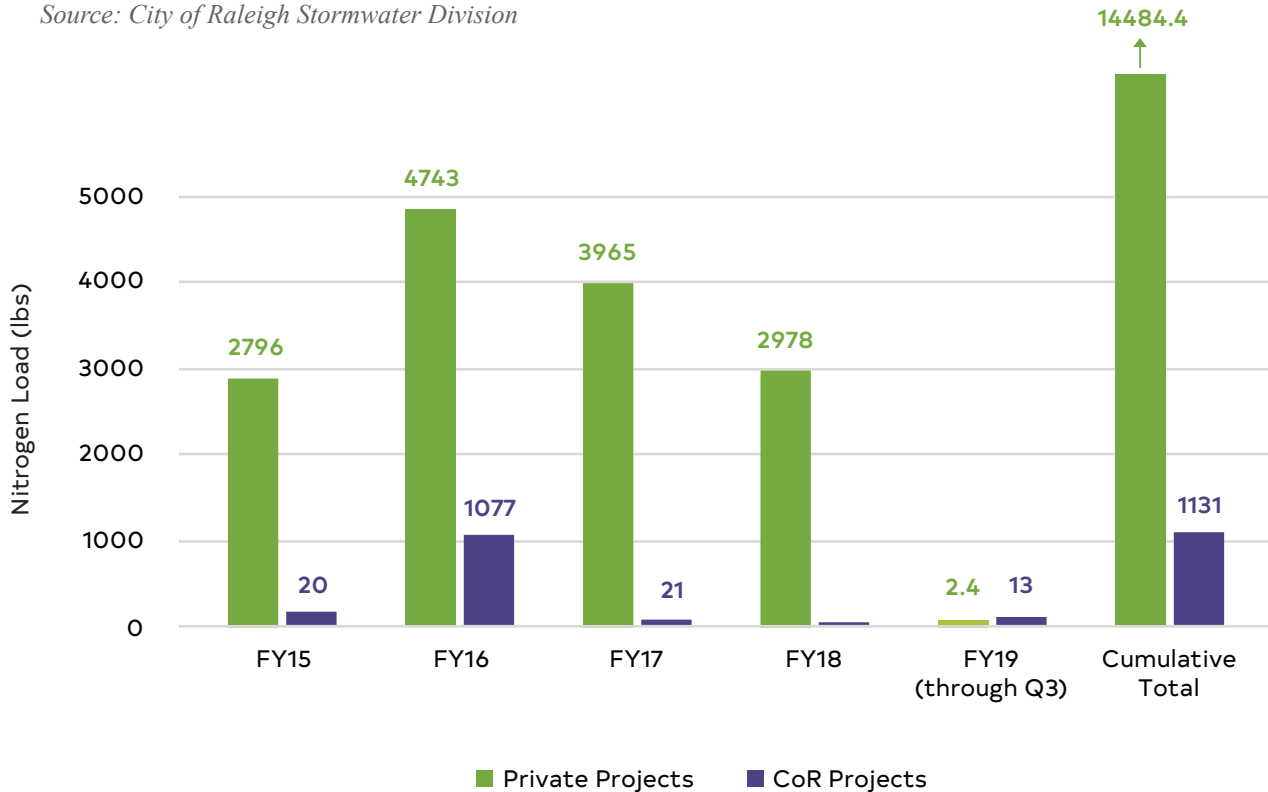
Stormwater management often takes the form of engineered infrastructure projects, but the natural world also provides valuable resources for preventing floods and protecting our streams and surface waters. Proper conservation of wetlands, streams, and riparian vegetation can generate a significant return on investment with runoff control and water quality. As a 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.

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

Source: City of Raleigh Stormwater Division



Even with SCMs and stream maintenance, growing cities require proactive investment in storm sewers to effectively transport runoff to the stream network. The following lists some of the Stormwater Division’s projects funded by the 2015-2019 Capital Improvement Program:

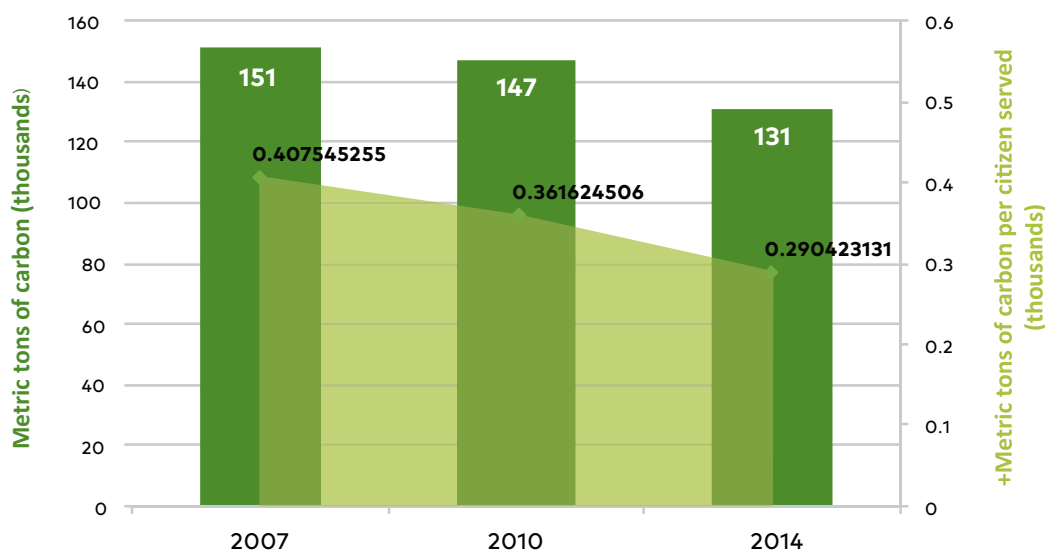
- Supplemental funding of \$1.8 million for the construction of the high priority Lower Longview Dam and restoration of Albemarle Avenue. This project will upgrade the dam and spillway capacity, reducing hazards to property owners and allowing traffic to resume on Albemarle Avenue.
- Continued funding 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 year, city operations emitted 151,479 metric tons of carbon (MTCO<sub>2</sub>E) to the atmosphere.

Between 2007 and 2010, Raleigh implemented various programs and projects that reduced greenhouse gases by an estimated 11.3% per citizen served. Greenhouse emissions per citizen served dropped another 19.7% between 2010 and 2014 (see Figure 8.7). This increase in efficiency is the equivalent of taking more than 1,600 cars off the road annually during the interval 2007-2014.

**FIGURE 8.7 MUNICIPAL OPERATIONS GREENHOUSE GAS EMISSIONS**



*Source: City of Raleigh Office of Sustainability*

These reductions were accomplished with relatively low capital expenditures, few impacts on city 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 built on this momentum by drafting a Clean Energy Action Plan to

identify options for further reductions in GHG emissions. The plan evaluates 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, 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

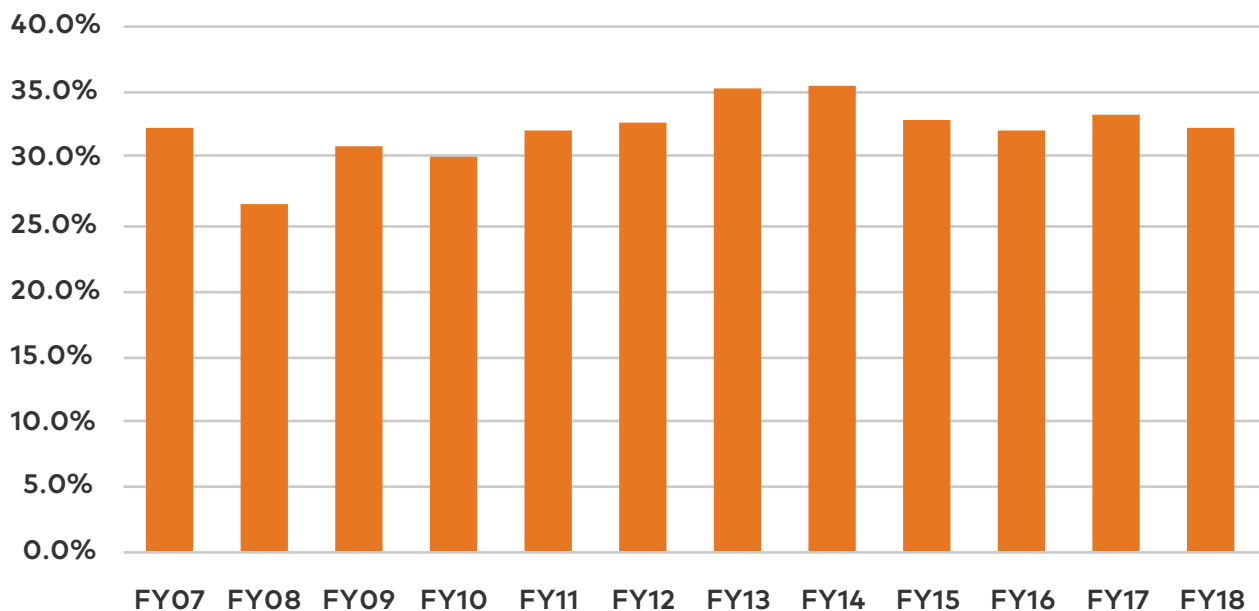
The City of Raleigh provides curbside pickup services to residential customers for garbage, recycling, and yard waste through the Solid Waste Services division. The recycling program began in 1989, and the yard waste program started in 1992. Collected yard waste is converted into wood chips, mulch, and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

Recycling and yard waste are 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 between 30 and 35 percent over the last 10 years

(Figure 8.8). Diverting solid waste to recycling and yard waste programs keeps it 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 are passed on to customers through reduced tipping fees. Recycling consumer products and re-purposing yard waste also reduces our impact on the environment.

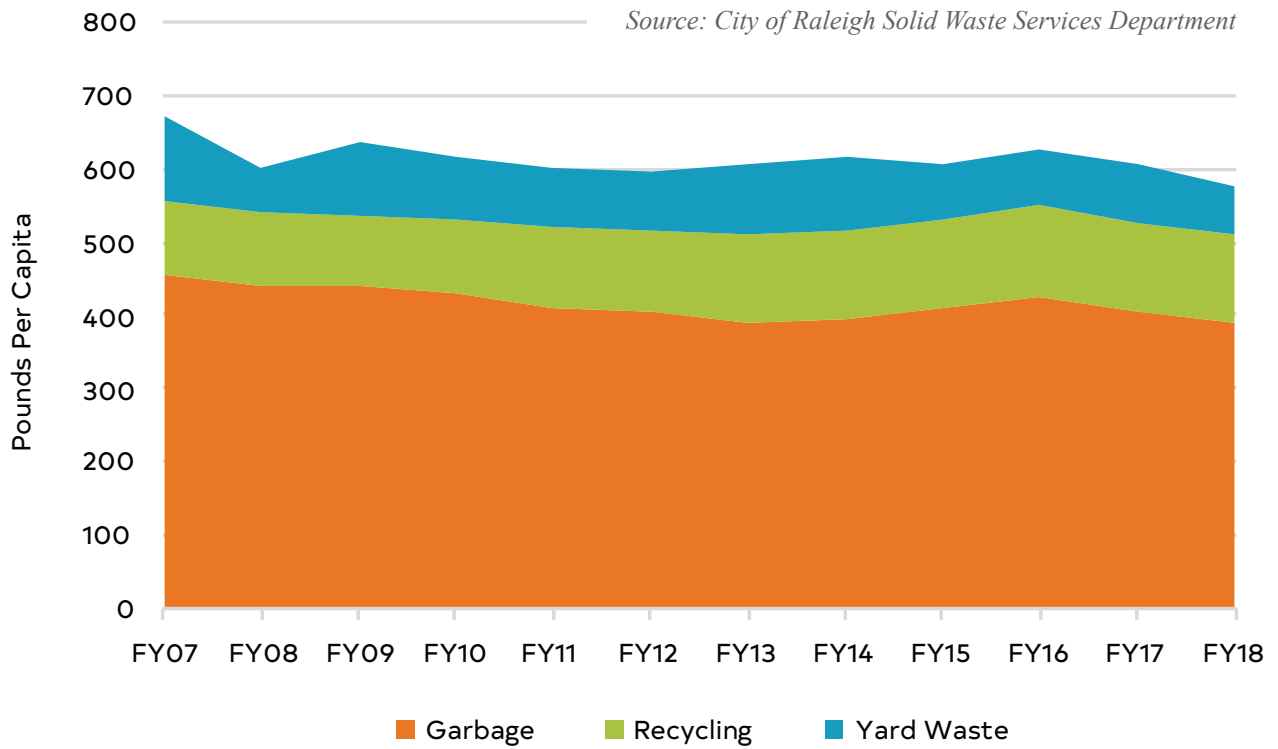
In addition to diverting more waste, Raleigh citizens are also producing less waste per person (Figure 8.9). Between 2002 and 2015, garbage collection per resident dropped by over 15%. Increased recycling accounts for almost half of this change, but the majority comes from residents simply throwing away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

**FIGURE 8.8 SOLID WASTE DIVERSION RATE**



Source: City of Raleigh Solid Waste Services Department

**FIGURE 8.9 SOLID WASTE COLLECTION PER CAPITA**



# PARKS, RECREATION, & CULTURAL RESOURCES

## EXISTING PRCR SYSTEM AND PLANNING FRAMEWORK

Raleigh'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 6,169 acres of park land and 3868 acres of greenway property. These acres provide the residents of Raleigh parks, greenways and cultural resources experiences at 224 park properties and along 119 miles of greenway trail.

In addition to providing parks and facilities, the department publishes the "Leisure Ledger" regularly to provide a listing of the Park, Recreation and Cultural Resources program offerings and facilities available to the 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 online through the following webpage:

[www.raleighnc.gov/home/content/](http://www.raleighnc.gov/home/content/)

[PRRecDesignDevelop/Articles/](http://www.raleighnc.gov/home/content/PRRecDesignDevelop/Articles/)

[ParkAndGreenwayPlanningAndDevelopment.html](http://www.raleighnc.gov/home/content/PRRecDesignDevelop/Articles/ParkAndGreenwayPlanningAndDevelopment.html)

## Parks and Recreation Facilities

Raleigh has one of the most well-developed park systems in the Southeastern United States, consisting 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 walking 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. 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. Activities in these 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 on the city acquiring 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 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, the city initiated a master planning process to turn Dix into a destination park for the city. In 2019,

after extensive public input, the City Council approved the Dix Park Master Plan.

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 119 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. This 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 that provides recreation and transportation opportunities, while preserving thousands of acres of natural areas. More information is available at the following webpage: [www.raleighnc.gov/greenways](http://www.raleighnc.gov/greenways)



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 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

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.

To address this gap, 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.

Incorporating a fifth measurement technique, Access Distance or Travel Time, can help progress the simple idea that every citizen should have access to an inherent park, recreation or cultural experience within reasonable walking, bicycling, and/or driving distance. The creation of an experience-based model helps to better evaluate how Parks, Recreation, and Cultural Resource experiences 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 evaluates accessibility to parks providing core experiences using the following measures:

- 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.

## COMMUNITY FACILITIES

A community facility is primarily for the benefit and service of the population of the local community. 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	156	100	45,900	6716 Six Forks Road, 27615
Downtown	83	72	33,700	218 W. Cabarrus Street, 27602
Front Street	85	148	48,000	1221 Front Street, 27609
Southeast	91	80	10,594	1601-30 Cross Link Road, 27610
Southwest	74	55	14,400	601-104 Hutton Street, 27606
Greens Dairy Detective Division	154	194	54,905	5240 Greens Dairy Road, 27616
Northeast	102	51	13,851	5220 Greens Dairy Road, 27616
Northwest	58	53	11,000	8016 Glenwood Avenue, 27612
The Academy	37	12	12,416	4205 Spring Forest Road, 27616
The Range	11	17	9,260	8401 Battle Bridge Road (Total of all buildings)
The Range			7,000	Range Road (New Building)
The Range			1,280	2 old Trailers (Used as office space)
The Range			260	Old Cinder Block Range house
The Range			400	(4) Storage Sheds on Property
The Range			320	Range 2-Story Garage
Oberlin Rd Location Moved to Greens Dairy				
Total	851	782	263,286	

Source: City of Raleigh Police Department

**FIGURE 10.2 FIRE FACILITIES**

Performance Measures	Actual FY 2013	Actual FY 2014	Actual FY 2015	Actual FY 2016	Actual FY 2017	Actual FY 2018	Projected FY 2019
Fire calls answered	1,077	1,133	1,227	1,079	1,188	1,138	1100
Rescue and EMS calls answered	21,951	23,119	22,356	24,047	24,697	24,718	25,200
Fires investigated	258	265	251	291	270	215	245
New construction permits issued	1,272	1,738	1,730	2,961	2,828	2,756	2,730
Average hours per fire call (hrs)	0.92	0.55	0.57	1.05	0.62	0.51	0.55
Average hours per EMS call (hrs)	0.33	0.2	0.2	0.33	0.2	0.21	0.25
Average response time to emergency calls (min)	4.43	4.43	4.44	4.46	4.46	4.43	4.44
Percent citizens reached by public fire education	10%	10%	10%	9%	10%	11%	12%

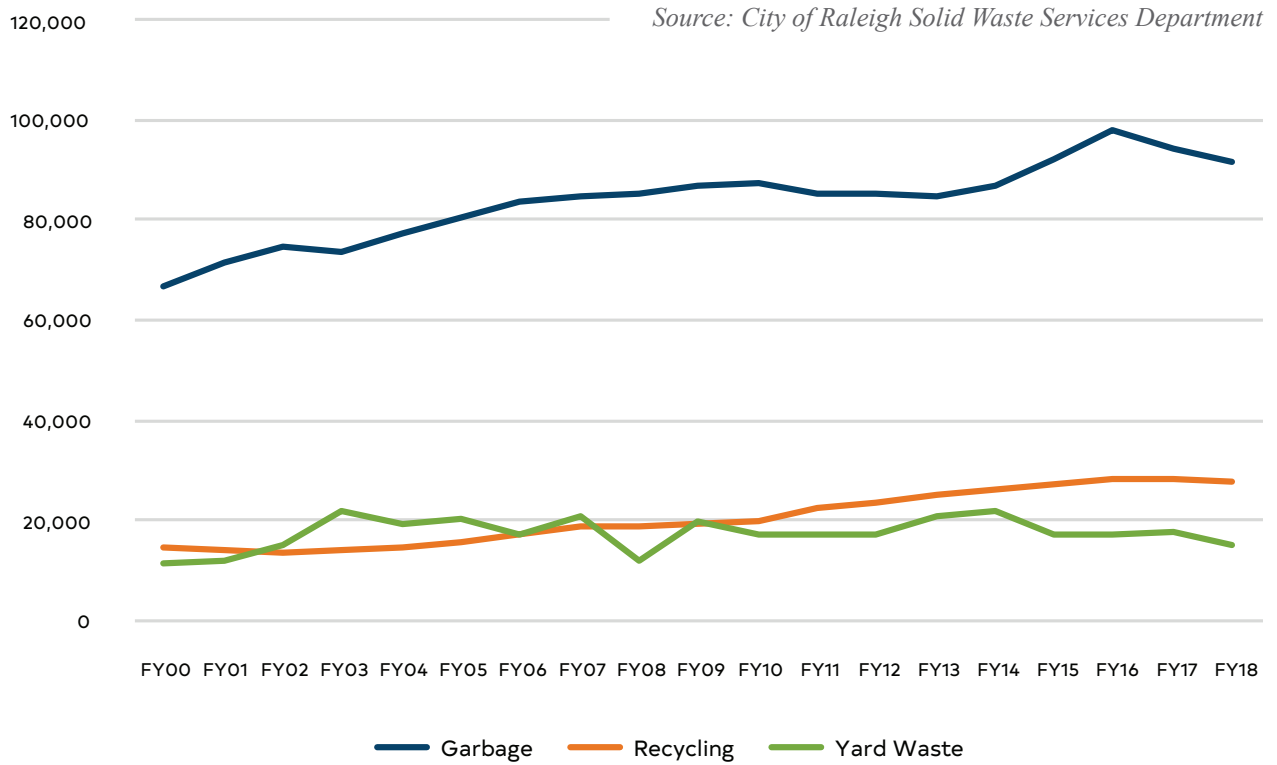
Source: City of Raleigh Fire Department

**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**



## HISTORIC RESOURCES

The City of Raleigh has a unique heritage. It was established in 1792 as the planned site for the capital city of North Carolina. Through over 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 businesses for decades were the 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 2018, preservation planning staff and the RHDC processed 203 COAs, an increase of 12 COAs from 2017.

Raleigh currently has a total of 173 Local Historic Landmarks, 28 National Register Historic Districts, 8 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.

# GLOSSARY

## Demographics:

### POPULATION ESTIMATES

The calculated number of people living in an area at a specific time. For example, U.S. Census Bureau population estimates are calculated for July 1st.

### HOUSEHOLD

One or more individuals who occupy a housing unit as their usual place of residence.

### DEMOGRAPHICS

Information, both direct counts and calculated estimates, relating to the structure of populations. This includes age, sex, gender, and many other topics.

### AMERICAN COMMUNITY SURVEY (ACS)

A nationwide survey administered by the U.S. Census Bureau. The ACS produces estimates on demographic, social, housing, and economic topics.

### U.S. CENSUS BUREAU

The federal agency that manages and executes the census and related data surveys.

### CENSUS BLOCK

A geographic area defined by the U.S. Census Bureau. It is the smallest geographic unit that the Bureau provides 100% data for.

### POPULATION DENSITY

Number of people per square mile on average within a city.

### PERCENTAGE

A measure of something expressed as a number per every 100 of that thing.

### RATE

A measure of occurrences in a given period of time divided by the possible number of occurrences during that period.

### HOUSING UNIT

A place of residence that can include a house, an apartment, a mobile home, or a single or set of rooms. Housing units in the City of Raleigh are required to have cooking and bathing facilities.

### HOUSING UNIT DENSITY

Number of housing units per square mile.

### LAND AREA

A area measurement of the size of the land referred to, often in square miles.

### POPULATION PROJECTIONS

Estimates of the population for future dates.

### HOMEOWNER VACANCY RATE

The number of unoccupied units for every 100 owner-occupied housing units.

### RENTAL VACANCY RATE

The number of unoccupied rental units for every 100 rental units.

### MEDIAN

The middle value in a list of data values ordered from smallest to largest.

### MEDIAN AGE

The age that is the midpoint of the population, where half the population is older and half is younger.

### MEDIAN INCOME

The annual income that represents the midpoint of the labor force, where half the incomes are below and half are above.

### PER CAPITA INCOME

An average created by adding up all income of a population and dividing by the population number.

**COMMUTING (JOURNEY TO WORK)**

The trip people take from home to their place of work.

**Land Use and Zoning:****COMPREHENSIVE PLAN**

The planning document that guides city activities across departments, particularly with regards to land use, development, and transportation.

**UNIFIED DEVELOPMENT ORDINANCE**

The ordinance that regulates development in Raleigh.

**MIXED-USE**

A term to indicate the presence of multiple land uses, for example mixed-use zoning districts permit a variety of land uses.

**EXTRATERRITORIAL JURISDICTION (ETJ)**

The area outside city limits where a city or town has authority to administer zoning and other planning activities.

**ANNEXATION**

The act of officially making a property part of the corporate city limits. Property owners must request annexation.

**CORPORATE (CITY) LIMITS**

The area that is official Raleigh, where residents pay city taxes and receive city services such as water & sewer, trash pick up, and fire protection.

**URBAN SERVICE AREA**

The area that a municipality, such as Raleigh, provides public services to such as water and sewer utility.

**ZONING**

The local law that regulates development, including types of land uses, building height, and location on property.

**OVERLAY ZONING DISTRICT**

An additional layer of zoning, usually with a particular aim such as neighborhood conservation or watershed protection.

**LAND USE**

The type of activity conducted on a piece of property, such as residential, commercial, and industrial.

**Employment:****GROSS DOMESTIC PRODUCT**

A measure of national production. The total market value of all goods and services produced by labor and property in the United States.

**UNEMPLOYMENT RATE**

The number of unemployed people in the workforce for every 100 people in the workforce.

**Housing:****COST OF LIVING**

The amount of money needed to sustain a certain standard of living, including housing, food, healthcare, and other expenses.

**AFFORDABLE HOUSING**

Housing that costs less than 30 percent of a household's income. (is there a distinction to be made between this type of affordable and big A affordable?)

**SINGLE-FAMILY DETACHED**

A dwelling unit occupied by one household that is standalone and not connected to other units or buildings.

**TOWNHOUSE**

A dwelling unit, sometimes multi-story, that shares walls with dwelling units to the left and right. Sometimes called a row house.



**CONDOMINIUM**

A multi-unit housing type where residents own the unit.

**APARTMENT**

A multi-unit housing type where the resident rents but does not own the unit.

**GROSS RENT**

The total cost of housing, including an average monthly cost of utilities and fuels.

**Transportation:****CAPITAL IMPROVEMENT PROGRAM**

A five-year plan for how to pay for high priority projects. The CIP is approved by City Council and covers transportation, parks, housing, stormwater, public utilities, and other needs. Often abbreviated as CIP.

**COMPLETE STREETS**

A street that is safe and usable for all people regardless of age, ability, or mode.

**MUNICIPAL BONDS**

Loans investors make to local governments.

**GENERAL FUND**

The primary fund used by a government. A general fund is used to record revenue and expenses not associated with a program-specific fund.

**FEDERAL GRANTS**

A financial award issued by the United States government to carry out a public purpose.

**BICYCLE FRIENDLY COMMUNITY**

A designation program administered by the League of American Bicyclists intended to help cities, states, universities, and businesses improve conditions for bicycling. The program provides ratings from Bronze to Platinum, as well as Honorable Mentions.

**Public Utilities:****MGD (MILLION GALLONS PER DAY)**

A measure used to describe the volume of water or wastewater that a system treats per day.

**WASTEWATER**

Water and other material that goes down the drain or is flushed down the toilet.

**SANITARY SEWER OVERFLOW**

An event where wastewater makes its way outside the system of pipes between homes and wastewater treatment plant.

**WATERSHED**

An area where water collects and drains into the same river, bay, or other body of water.

**POLYCHLORINATED BIPHENYL**

A man-made chemical previously used in industrial and commercial products. It was found to cause health issues and is no longer legal to use.

**CLEAN WATER ACT**

The federal law establishing standards for surface waters, making it illegal to dump pollutants into streams, lakes, and other water bodies unless a permit is obtained.

**TMDL (TOTAL MAXIMUM DAILY LOAD)**

A term used by the U.S. Clean Water Act to describe the maximum amount of a pollutant allowed to enter a waterbody so that the water body will continue to meet water quality standards.

**GROUND-LEVEL OZONE**

While ozone high in the atmosphere protects us from the sun's harmful ultraviolet rays, ozone on the ground causes health problems in people and the natural environment. Vehicle exhaust and industrial emissions react with sunlight to produce ozone.

**GPCD**

Gallons per capita per day, a measure of water used in one day averaged over the total population.

**STORMWATER**

Water from precipitation events like a rain storm.

**RUNOFF**

Rain water that is not absorbed into the ground or collected by trees or other vegetation.

**COMMUNITY RATING SYSTEM (CRS)**

A voluntary incentive program of the NFIP that recognizes and encourages community floodplain management activities that exceed NFIP requirements.

**FEMA**

The Federal Emergency Management Agency, the agency that oversees disaster preparation and recovery activities and funding at the national level.

**NATIONAL FLOOD INSURANCE PROGRAM (NFIP)**

A national insurance program for property owners and businesses in flood prone areas aimed at encouraging adoption and enforcement of floodplain management regulations.

**STORMWATER CONTROL MEASURES (SCM)**

Small structures installed in urban areas that capture, retain, and improve the quality of storm runoff.

**GREENHOUSE GAS EMISSIONS**

Production of gases that contribute to warming of atmosphere (the 'greenhouse effect'). Greenhouse gases are often measured in metric tons, and most common gases are carbon dioxide, methane, and nitrous oxide.

**SOLID WASTE**

Types of waste not managed by the sewer system, including trash, recycling, and yard waste.

**Parks:****GREENWAY**

Linear open space open to the public for walking, hiking, biking, and more.

**NATIONAL RECREATION AND PARKS ASSOCIATION (NRPA)**

a national organization promoting public parks, recreation and conservation.

**LEVEL OF SERVICE**

a standard that measures how well people are served by a piece of infrastructure, such as a road or a park. A letter grading system is often used to describe each level.

**EXPERIENCE-BASED SYSTEM**

The current method that Raleigh Parks uses to measure level of service of its parks. This method considers how many 'experiences' or different types of activities a neighborhood has access to and uses the distance to the nearest park based on the current street pattern rather than 'as the crow flies' distance.



**Raleigh**

[raleighnc.gov/planning](http://raleighnc.gov/planning)