CITY OF GREENSBORO CONDITIONS & TRENDS

DRAFT

City of Greensboro | DRAFT: March 15, 2018

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Comprehensive Plan Conditions & Trends

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Conditions & Trends Report

About this Report

This *Conditions & Trends Report,* a companion to the Data Book, is intended to inform public discussions during the planning process and aid decision makers in setting policy regarding the future growth of the City of Greensboro. The Data Book provides information essential to the Comprehensive Plan Update in areas such as population, housing, infrastructure, land use, and transportation. Analysis of the data includes comparisons with other cities, the state, and the nation, and presents the condition of Greensboro as a whole in key measures such as population growth, job creation, and environmental quality. This report focuses on how certain key measures differ within the City, and presents state, national, and global trends likely to affect Greensboro in the future. The report has been prepared in two parts:

Conditions

The Conditions section provides a finer grain examination of key social, economic, and demographic aspects of the City of Greensboro geographically in order to highlight and compare different areas by census tracts, which loosely conform to neighborhood boundaries. Census tracts are created and maintained by the US Census Bureau and offer the most reliable and consistent geography to examine data within the City. (Greensboro contains all or a portion of 119 census tracts, but they do not conform exactly to the boundaries of the city limits.) This document provides a snapshot of Greensboro based on the most recent data available from the US Census Bureau's American Community Survey and city data sources. In particular, the Conditions section looks more deeply at:

- Population
- Age Composition
- Race & Ethnicity
- Land Use & Development
- Employment & Unemployment
- Median Income & Poverty
- Housing Affordability
- Health & Wellness
- Infrastructure
- Public Safety

Trends

The Trends section looks at the influence of international, national, state, and local trends that will shape Greensboro in some way over the next two decades. Each trend is summarized, the likely impact to Greensboro is discussed, and the impact on issues of equity and sustainability is noted. The trends discussed in this report, listed below, are not intended to represent an exhaustive compilation of all factors that are anticipated to affect Greensboro:

- Placemaking: Cities for People
- Changing Demand for Housing Choices
- The Impact of Aging Infrastructure
- Transportation: The New Mobility
- Technology in the 21st Century
- Sustainability & Resilience
- The Disparity Gap & the Shrinking Middle Class
- Demographics: The Changing Face of America
- Economic Trends & the Future of Manufacturing
- The Transformation of Retail

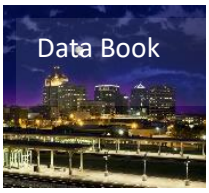
Sources

Sources and references are provided in the Appendix. Interactive maps and links to related sections of the Data Book are provided throughout the document.

Explore More

Look for these icons within the report to link to the Data Book, the PlanIt Dashboard on mySidewalk.com, and the City of Greensboro PlanIt GSO website.

To review the Data Book, visit https://www.greensboro-nc.gov/departments/planning/planit-gso.



Access interactive maps at www.greensboro-nc.gov/planitdashboard. Use these maps to zoom, pan, and see data for each census tract.

Follow the progress and stay current on opportunities to participate at the City's Comprehensive Plan update website at http://www.greensboro-nc.gov/departments/planning/planit-gso.

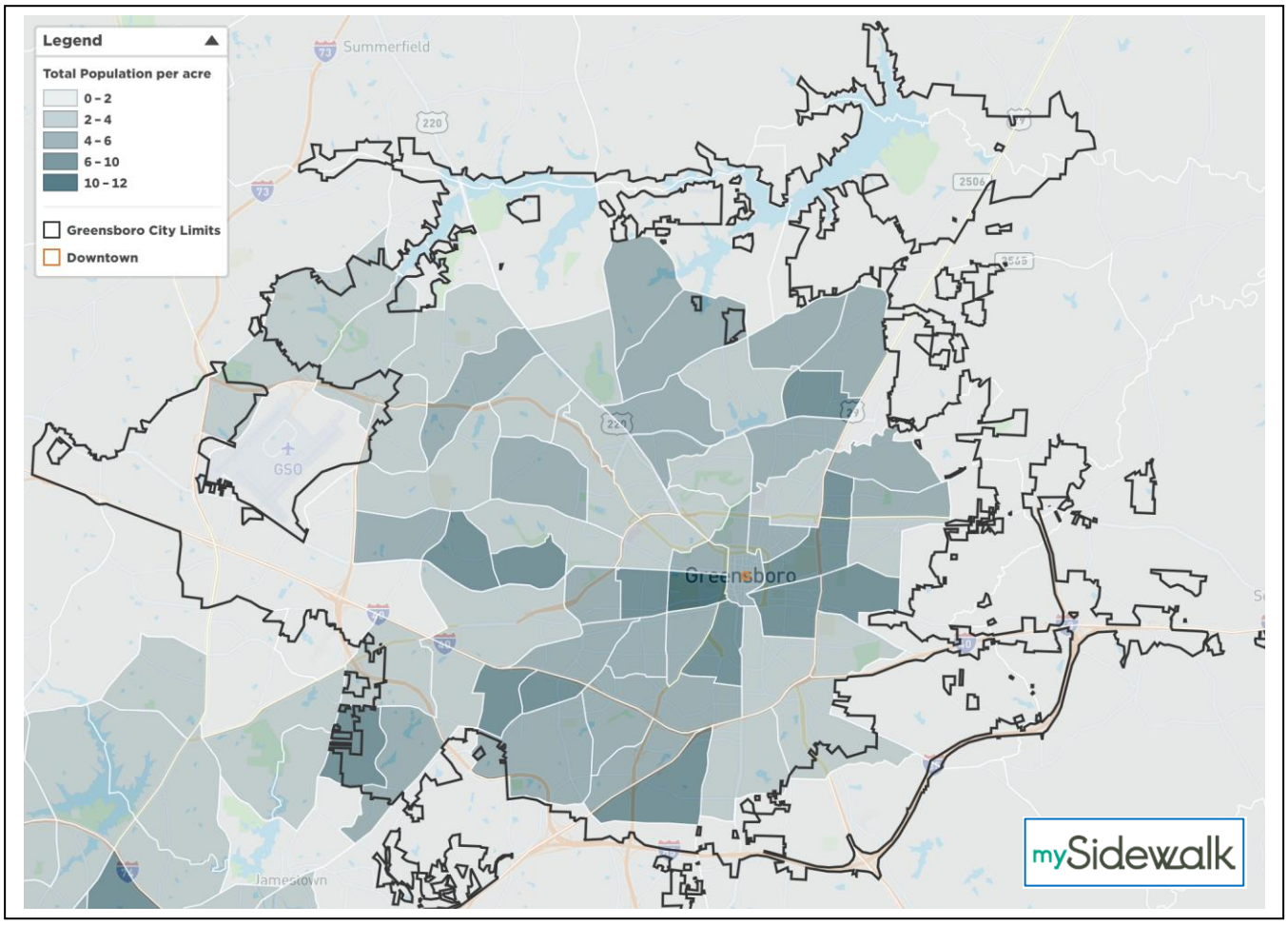
Conditions

Demographics

Population

Greensboro is the third largest city in North Carolina, home to 287,019 residents (2016). The City has added more than 63,000 people since 2000, growing by approximately 28%. The most populous census tract in the City is just west of Downtown, between Market Street and Oakland Avenue, and includes the University of North Carolina at Greensboro (UNCG) and Greensboro College. Other densely populated tracts encompass North Carolina A&T State University (NC A&T), older neighborhoods with smaller lots, and neighborhoods with large apartment complexes. The least-populated census tracts are found primarily at the edges of the City where residential lots are typically larger and densities are lower than tracts closer to the central business district. These tracts also contain industrial areas and employment centers with relatively few residents.

POPULATION PER ACRE



Generations By the Numbers

Matures
Born: 1946 & before
Age in 2016: 70 & over

Baby Boomers
Born: 1947-1966
Age in 2016: 50-69

Generation X
Born: 1967-1981
Age in 2016: 35-49

Millennials
Born: 1982-1997
Age in 2016: 19-34

Generation Z
Born: 1998 & after
Age in 2016: 18 & under

Source: American Community Survey 5-Year Estimates 2012-2016

Link: mySidewalk Dataset Library

Age Composition

Since 2000, the City's population of Baby Boomers has shown the greatest increase of any category, while the population of Millennials has shown the greatest decrease. As Greensboro grows and changes, the needs and interests of both groups will have substantial impacts on the City's future.

Median Age

Greensboro's median age is 34.3, which is lower than the median age for both North Carolina and the United States. Census tracts near downtown are home to colleges and universities, and have lower median ages than census tracts in more suburban areas. Four tracts within the City have a median age above 50; these are located on either side of Friendly Avenue, roughly the location of the Hamilton Forest and the Hamilton Lakes neighborhoods, which were built in the 1950s and 1960s. By comparison, the median age for the census tract where NC A&T State University and UNCG are located is 20.

The Retiring Workforce

Residents aged 50 and older make up almost a third of Greensboro's population and will have a significant impact on the City's future in a number of areas including aging-in-place housing and access to health services.

Tomorrow's Leaders

While attending one of Greensboro's seven colleges and universities, over 50,000 students call the City home during the academic year. Residents aged 20 through 34, many of whom are counted among the student population, make up approximately a fourth of Greensboro's population. They should be the City's emerging workforce and future leaders, but each year many complete their studies, move away, and are replaced by other students.

Race & Ethnicity

Reflecting a national trend, Greensboro's population has become more diverse over the last decade. Today, just over 50% of Greensboro's citizens identify themselves as one or more racial categories other than "White." In census tracts northwest of the central business district, the composition of neighborhoods is predominantly "White." In tracts east of Downtown, the composition of neighborhoods is predominantly "Black or African-American." Neighborhoods that are more racially and ethnically diverse are found in the northeast and southwest sections of the City.

Census Categories of Race & Ethnicity

The US Census Bureau considers race and ethnicity to be two separate and distinct concepts. The Census Bureau defines race as a person's self-identification as White, Black or African American, Asian, American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, or some other race. Survey respondents may report multiple races. Ethnicity determines whether a person is of Hispanic origin or not. For this reason, ethnicity is broken out in two categories, Hispanic or Latino and Not Hispanic or Latino. Hispanics may report as any race.

Source: US Census Bureau

Land Use Categories

Single-family Residential
Planned Unit Development
Multi-family Residential
Public & Institutional
Heavy Industrial
Commercial
Light Industrial
All Other, including

- *Agricultural*
- *Auto-Oriented*
- *Business Park*
- *Central Business*
- *Neighborhood Support*
- *Office*
- *Parkland & Natural Resource Area*
- *Traditional Neighborhood*
- *University Mixed Use*

Source: City of Greensboro 2017

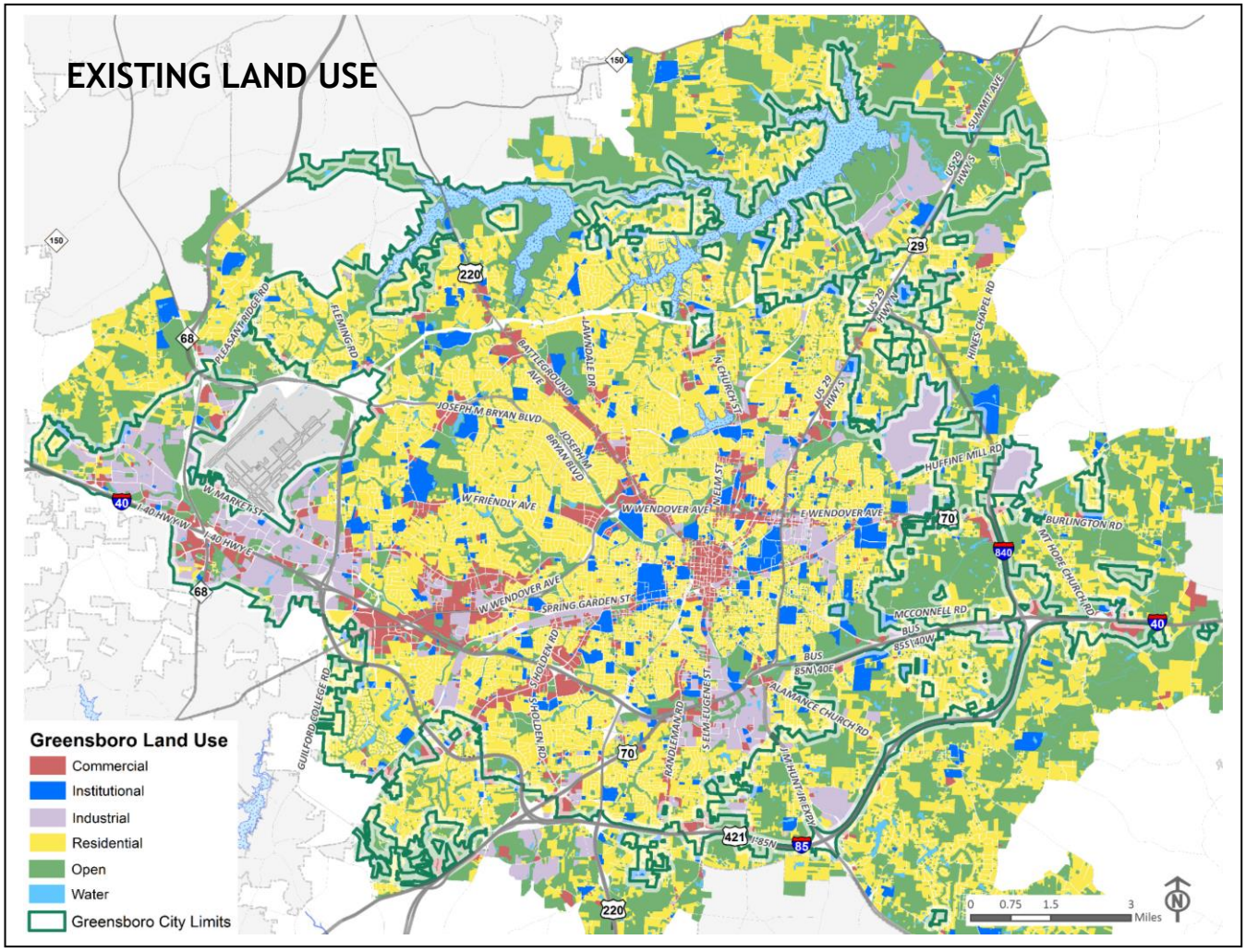
Development

Growth at the Fringe

Since 2000, Greensboro increased in land area by roughly 25 square miles or 16,000 acres. Most of this 23% increase in size was due to annexation, much of it in 2000 with "Reedy Fork Ranch" in the northeast and in 2008 with "The Cardinal" near the airport. Reforms to involuntary annexation by the North Carolina General Assembly have reduced the rate of physical expansion since 2011.

Land Use

Most of the land in Greensboro is used for residential development, with significant concentrations of commercial uses in the downtown area and along major roads. Industrial uses are concentrated just south of the airport and south of Downtown along I-40 Business, but it is important to note that from 2003 to 2017, the City lost 407 acres (10.6%) of Heavy Industrial land. Institutional uses align with locations of colleges and universities.



Density

Greensboro's population density increased by a little under five percent between 2000 and 2016 from 2,049 persons per square mile to 2,148 persons per square mile. Established neighborhoods close to the central business district are denser than suburban neighborhoods developed subsequent to World War II.

Zoning Changes

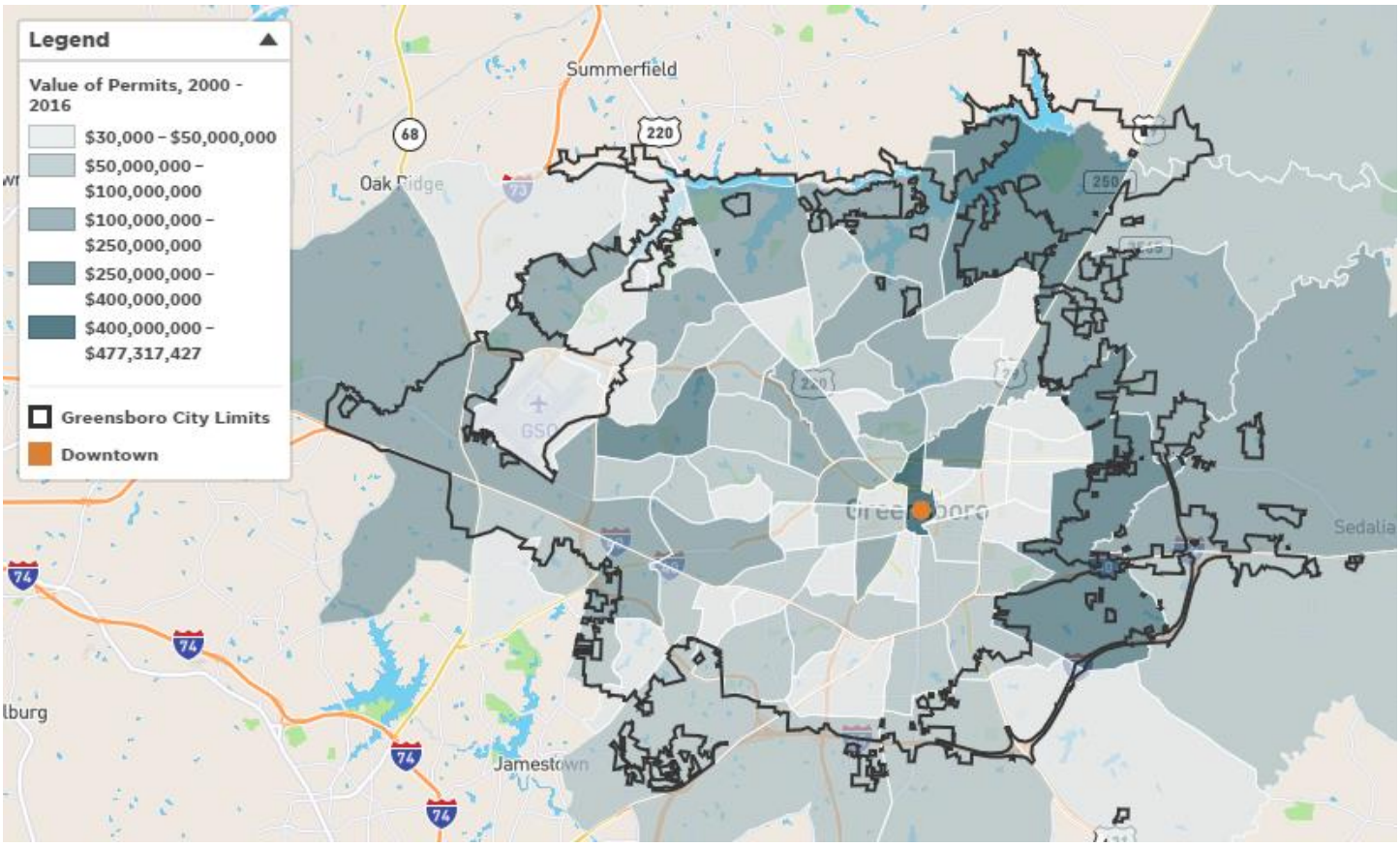
Between 2009 and 2016, some areas of the City experienced noticeably high levels of rezoning activity: Gate City Boulevard near UNCG, New Garden Road near Bryan Boulevard, and Pisgah Church Road between North Elm Street and Summit Avenue.

Rezonings in 2016 included 78 acres of land for Commercial use, 56 acres for Single-Family Residential use, 54 acres for Multi-Family Residential use, six acres for Planned Unit Development use, and 64 acres for Light Industrial use. No land has been rezoned for Heavy Industrial since 2013, reflecting Greensboro's shift away from large-scale manufacturing.

Building Permits

The number and location of building permits issued since 1998 show that the Downtown area has experienced the most development activity, with development tapering off towards the boundaries of the City. Permit data for 2016 shows an extensive area of development north of the City and also show the trend of tapering off towards the edges is continuing.

VALUE OF BUILDING PERMITS BY CENSUS TRACT



Economy

Employment

Greensboro's economy continues to be adversely affected by the steep decline in the manufacturing sector, with jobs in this sector decreasing annually. Jobs in the service sector have increased significantly, and gains have occurred in the educational, health, and social services sector, which now represents the largest component of Greensboro's occupational workforce.

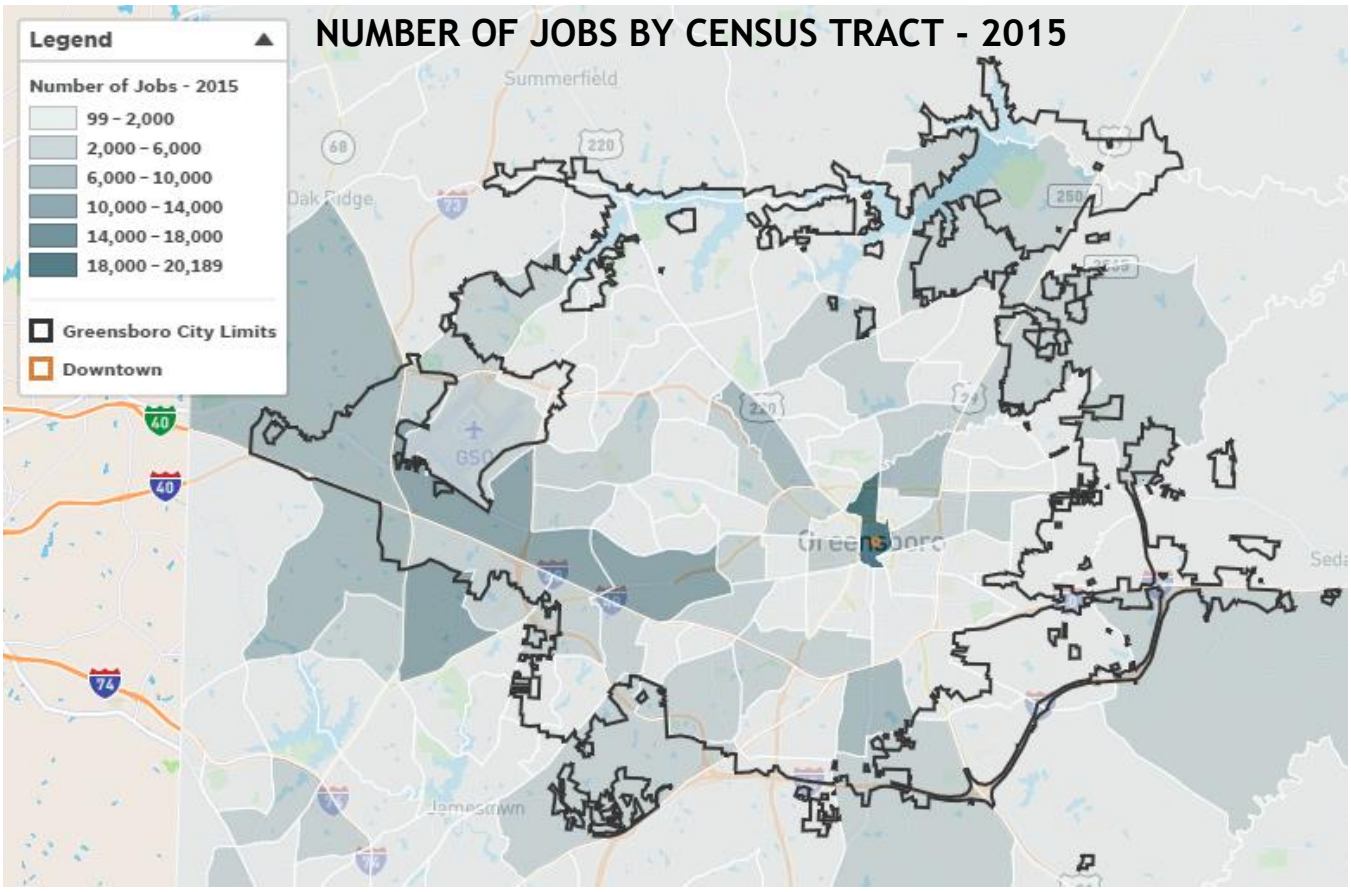
Guilford County Schools, Cone Health, and the Greensboro municipal governments are the three largest employers in the City; together they employ approximately 21,000 people.

Greensboro's Largest Employers

Guilford County Schools	9,228
Cone Health	9,090
City of Greensboro	2,945
Total	21,263

Source: City of Greensboro 2016

The greatest number of jobs are located within the census tract that includes the downtown area. The next largest cluster of jobs is within the two tracts along the northern border of Interstate 40, south and west of the airport, and represent the location of transportation, trade, and utilities industries.



Unemployment

The Bureau of Labor Statistics defines unemployment as "people who are jobless, actively seeking work, and available to take a job." The official unemployment rate in Greensboro was 4.4% in 2017, down from over 10% in 2010. The rate is below 7% in most census tracts with the exception of nine tracts just south and east of the downtown area that range between 9% and 15%. The census tract with the highest rate of unemployment, almost 16%, is located south of West Gate City Boulevard between South Elm Street and Freeman Mill Road.

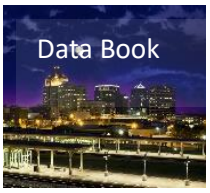
Poverty

The percentage of individuals with income below the poverty level in Greensboro was lower in 2015 than it had been for the previous six years, but remains significantly above the national average. Poverty rates are highest for households within the southern and northeastern areas of the City.

Housing Affordability

Median home values in Greensboro vary across the City, with the lowest values mainly in the south and east. The percentage of homeowners with excessive housing costs, defined as equal to or more than 30% of their income, is higher nearer the City limits than near Downtown. Tenants paying 30% or more of income for gross rent are more broadly distributed across the City.

mySidewalk



Health & Wellness

Educational Attainment

At just over 37%, Greensboro has a higher percentage of residents who graduate with bachelors and advanced degrees than the state and nation, but the percentage drops below 15% in much of the southern and eastern area of the City.

High school dropout, teen pregnancy, and infant mortality rates are published by race and ethnicity categories, and the numbers vary significantly across those categories. While it would be helpful to understand how these variables differ across the City, the data is only available at the county level.

Dropout Rate

The NC Department of Public Instruction defines dropouts as "individuals who were enrolled in school at some time during the reporting year, but were not enrolled on day 20 of the current year." Of a total of 490 high school dropouts reported in Guilford County during the 2015-2016 academic year, 367 (75%) were of races other than White or of mixed race. Of that number 240 (49% of the total) were Black. More information can be found at the NC Department of Public Instruction website: http://www.ncpublicschools.org/data/reports/.

2015-2016 High School Dropouts
by Race/Ethnicity

Race/Ethnicity	Guilford County		NC	
	#	%	#	%
White	121	24.7%	4,579	42.1%
Black	240	49.0%	3,379	31.0%
American Indian	*	*	160	1.5%
Hispanic	90	18.4%	2,202	20.2%
Asian	15	3.1%	103	0.9%
Pacific Islander	*	*	14	0.1%
Multiracial	22	4.5%	452	4.2%
Total	**490**		**10,889**	

Source: NC Department of Public Instruction

** Race/ethnicity cell totals of less than ten are redacted to comply with privacy recommendations.*

Teen Pregnancy Rate

Of a total of 505 pregnancies reported in Guilford County for teens aged 15-19 during 2016, 108 (just over 21%) were identified as "White, Non-Hispanic," and 298 (59%) were identified as "African American, Non-Hispanic." More information can be found at the NC Department of Health and Human Services website: http://www.schs.state.nc.us/data/vital.cfm.

2016 NC Resident Pregnancy Rates:
Age 15-19 by Race/Ethnicity

Race/Ethnicity	Guilford County		NC	
	#	%	#	%
White, Non-Hispanic	108	21.4%	3,662	39.6%
African American, Non-Hispanic	298	59.0%	3,268	35.3%
American Indian, Non-Hispanic	4	0.8%	223	2.4%
Other, Non-Hispanic	17	3.4%	143	1.5%
Hispanic	76	15.0%	1,879	20.3%
Total Pregnancies	**505**		**9,255**	

Source: NC Department of Health and Human Services

Infant Mortality Rate

Of a total of 52 deaths of infants under one year of age reported in Guilford County during 2016, 37 (over 71%) were identified as "African American, Non-Hispanic." More information can be found at the NC Department of Health and Human Services website: http://www.schs.state.nc.us/data/vital.cfm.

2016 North Carolina Infant Mortality:
by Race/Ethnicity

Race/Ethnicity	Guilford County		NC	
	#	%	#	%
White, Non-Hispanic	7	13.5%	335	38.4%
African American, Non-Hispanic	37	71.2%	380	43.5%
American Indian, Non-Hispanic	0	0.0%	12	1.4%
Other, Non-Hispanic	3	5.8%	35	4.0%
Hispanic	5	9.6%	111	12.7%
Total Mortalities	**52**		**873**	

Source: NC Department of Health and Human Services

Fresh Food Access

The Greensboro/High-Point Metropolitan Statistical Area (MSA) has ranked high in a poll as part of the Gallup-Healthways Well-Being Index survey conducted by the Food Research and Action Center that asked "Have there been times in the past twelve months when you did not have enough money to buy food that you or your family needed?" The MSA ranked second in 2011-2012 with a positive response rate of 23%, first in 2014 with a 27.9% positive response rate, and improved to ninth in 2015 with 22.2%. The United States Department of Agriculture (USDA) qualifies areas as "low-access" communities when at least 500 people and/or at least 33% of the census tract's population reside more than one mile from a supermarket or grocery store. There are a number of census tracts in Greensboro where residents live farther than one mile from access to healthy food, but the greatest proportion of "low-access" communities are in tracts to the south and northeast of Downtown, which reflects a lack of sustainability and balanced growth.

mySidewalk

Infrastructure

Greensboro's relatively slow growth rate has meant that infrastructure costs are generally manageable and traffic congestion and other consequences of rapid growth have for the most part been avoided. Greensboro residents generally pay less for water and sewer service than other top ten North Carolina cities.

In recent years, however, the need for basic maintenance and repair of the City's streets, bridges, water and sewer lines, sidewalks, etc., has increased significantly, and Greensboro's prevailing pattern of low-density, unconnected development has contributed to higher infrastructure costs.

One way to reduce infrastructure costs and create healthier, more sustainable neighborhoods is to encourage development with more transit options. Coordinating development with public transportation, and designing streets that safely accommodate walking and bicycling, can reduce dependence on automobiles, lower infrastructure costs, and foster healthy lifestyles.

In general, residents near the City limits have greater commute times then residents nearer the downtown area, with the exception of two census tracts just south of Downtown. Use of public transportation is more common in the eastern and southeastern parts of the City, with a high concentration of ridership in tracts east of Highway 29 that include the Willow Oaks and Eastside Park neighborhoods. The greatest concentration of biking commuters is in proximity to UNCG and in neighborhoods just west of the university.

mySidewalk

Public Safety

In order to look at how certain crime activity impacts the residential quality of life as well as the viability of businesses in specific areas, 2016 crime activity was aggregated into the two categories shown below. It is important to note that these categories are similar to, but not the same as, those used by the Greensboro Police Department (GPD) to track and report crime activity in the City.

Improvements in public safety resulted in a steady decrease in the City's overall crime rate from 2000 through 2016. But in 2017, in keeping with national trends, the City experienced increased shootings, homicides, and opioid overdoses. These trends do not take away from the progress that has been made, but they are current conditions that need to be and are being addressed by GDP in partnership with the residents of Greensboro.

Crimes against Persons are not concentrated in any one area of the City, but activity is greater in the census tracts south and east of Downtown. Many of those tracts also show a concentration of Crimes against Property.

Crimes against Persons

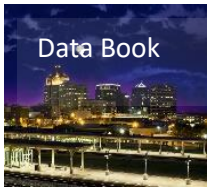
Aggravated Assault
Assault
Drug Offense
Family Crime
Homicide
Prostitution
Rape/Attempted Rape
Robbery
Sex Crime
Stalking

Source: City of Greensboro 2016

Crimes against Property

Arson
Auto Theft
Burglary
Larceny
Sale/Possession of Stolen Property
Trespassing
Vandalism

Source: City of Greensboro 2016



Trends

Placemaking: Cities for People

The Trend

The Placemaking approach to creating vibrant communities with lasting appeal and value is a recognition of the importance of designing places for people. People are drawn to places that offer: a range of features and qualities; a wide variety of structured and spontaneous activities; and most importantly, the presence of other people. The Project for Public Spaces (PPS) provides an extensive array of research and reference guides for advancing the Placemaking movement. According to PPS, the key attributes of great places are simple and intuitive:

- They are accessible and well connected to other important places in the area.
- They are comfortable and project a good image.
- They attract people to participate in activities there.
- They are sociable environments in which people want to gather and visit again and again.

According to Geoff Anderson, former CEO of Smart Growth America, Millennials tend to choose the region and community that offers their preferred lifestyle and array of amenities and then find work to support themselves once they have relocated. This approach is in strong contrast with that of Baby Boomers or Gen X-ers, who have generally allowed their employment situation to determine their options for places to live. Employers are realizing that in order to attract and retain the best employees, they need to position themselves in cities that provide the best living environment. The implication is that in the decades ahead, successful cities will recognize that in competing against other cities for market share, their product is the quality of place they offer. High quality places grow wealth for people and generate public revenue. Making great places for citizens improves livability, attracts jobs, and promotes prosperity.

Many cities are raising their standards for the quality of design and construction they approve, especially within prominent areas, in order to promote the creation of an outstanding urban environment. Cities are increasingly recognizing the role that design standards play in protecting property values. Basic design standards ensure that the mass, density, scale, and orientation of structures are appropriate to their location within the urban fabric, and present a people-friendly configuration. Mediocre design and cheap construction may be less expensive in the short term, but over the long term, careful human-centered design and high quality construction hold enduring value in a community.

Background

In 1926, the Euclid v. Ambler case established the validity of zoning as a tool for cities to separate incompatible land uses for the protection of public health, safety, and welfare. Separating use types from each other was the dominant approach to regulating urban growth and development, which made traditional mixed-use development more difficult to finance, approve, and build. Use of “Euclidean” zoning created cities and neighborhoods in which land uses are highly partitioned—single-family housing here, retail there, schools over there, offices somewhere else. Over the last twenty years, the improved quality of life associated with a finer-grained mix of uses has been a significant focus of planning literature and is now considered to be one of the most important principles in creating a vibrant city.

At its core, Placemaking is a strategy for creating centers of activity within a community and enhancing the quality of those centers in order to bring people together for social interaction, culture, commerce, and recreation. To be successful, a center should offer a variety of things a visitor can do, ideally without spending any money. According to PPS, creating these centers produces multiple benefits for the community, as they:

- Create improved accessibility
- Build and supports the local economy
- Foster social interaction
- Promote a sense of comfort
- Nurture and defines a sense of community
- Promote health

Placemaking can start as an experimental approach to try out ideas for short periods in order to evaluate their effectiveness. Some elements are dropped while others are refined and used again. When an idea appears to be particularly successful, it can shift from temporary to permanent. Good places usually combine multiple Placemaking tools and techniques, including street furniture and plants; food truck rodeos; pop-up shops, markets, and events; street or sidewalk art; outdoor games; wayfinding signage; and traffic-calming measures. Placemaking experiments can help change happen in ways that are smarter, more equitable, more sustainable, more connected, more fiscally responsible, and more people-centered.

What This Means for Greensboro

Placemaking efforts are being carried out by local governments, private businesses, non-profits, citizen-activists, or by partnerships among two or more of these groups. Greensboro is beginning to turn its attention to the principles of Placemaking as an element of its community and economic development strategy. To date, Placemaking activities in Greensboro have been primarily carried out by non-profits and private businesses.

Placemaking, especially in the downtown area but also in neighborhood-oriented centers or urban villages, could have a transformational effect on growth and development in Greensboro over the planning horizon. It can be especially valuable as a tool for improving quality of life in or near newer suburban areas that developed without the benefits of a mix of uses. Considering the growing demand for the type of community atmosphere that Placemaking can create, Greensboro stands to gain much by increasing its efforts on this front, and risks at least as much by failing to improve the quality of place it offers to its residents and visitors.

Changing Demand for Housing Choices

The Trends

Three primary trends are changing the level of demand for a variety of housing types, both at the national and local levels. First is the large and growing number of households in poverty, for whom many housing options, especially homeownership, are financially unattainable. The percentage of US households renting has increased significantly over the past decade, and in Greensboro, more households now rent than own. Second is the general socioeconomic trend of the young and highly mobile Millennial Generation now rivals the Baby Boom Generation as a primary driver of the US economy. The third trend is that affordable housing (or the potential for developing it) is frequently found in the locations that are highly sought after by households least concerned about affordability. These traditional walkable urban neighborhoods can become the sites of contentious debate about the positive and negative effects of redevelopment.

Background

In economics, demand is defined as a combined willingness and ability to pay for something. Households in the lowest income segment of our population have less ability to pay for healthy, safe, appropriate housing. As a result, the ordinary housing market does not adequately meet their needs. With a growing percentage of households in poverty, the "American Dream" of owning a single family home in a suburban neighborhood has become increasingly unattainable. The percentage of home-owning households in the US peaked around 2006 at 68.7% and has declined to 63.4% in 2016, with a corresponding increase in renter households. High financial barriers to homeownership have the effect of excluding a growing number of Americans from both the cost-saving and wealth-building benefits of owning versus renting.

Despite the increasing prevalence of rentership and the fact that renting is an appropriate option at some point during nearly every American's lifetime, there remains a strong cultural stigma against renters and rental housing, even among renters.

National housing preference surveys and demographic trends point to a 20% to 35% gap between supply and demand for housing in walkable urban places during the next decade. There is expected to be a shortage of three million units of small lot and attached housing units nationwide. Taken as a group, Baby Boomers and Millennials have the affluence and mobility to influence the housing market. Research by the National Association of Realtors and others indicates that Baby Boomers and Millennials have very similar preferences regarding housing options and residential environment; both groups strongly favor:

- Shorter commutes
- Walkable urban neighborhoods and small cities, over auto-oriented suburbs
- Small or no yard to maintain
- Rental over ownership
- Living in proximity to shops and services
- Living among people with a mix of incomes
- Living in areas with a mix of residential options
- Access to quality mass transit

Numerous analysts and national experts have noted that the variety of available housing types in the US is not well-aligned with current or anticipated levels of demand. Currently 53% of the US housing market consists of one- or two-person households. By 2025, 25% or fewer of US households will include children. The current supply of large-lot, single-family dwellings is sufficient to meet the anticipated level of demand for that product type through 2025.

The term "Missing Middle Housing" refers to dwelling types that span the middle ground between detached single-family homes and mid-rise multi-family residential: duplexes, triplexes, and fourplexes; courtyard apartments; bungalow courts;

townhouses; multiplexes; live-work units; and "granny flats." The typical zoning codes of many cities (including Greensboro) and the financing limitations of many lending institutions have allowed construction of very few units of these traditional housing types over the past 75 years. An important aspect of the Missing Middle range of housing types is that they can be very effective at supplying dwelling units that appeal both to customers in the influential segment of the market and meet the needs of low-income households with limited options.

Location has always been an important factor affecting housing values, but the types of residential locations in high demand is changing significantly. Demand for auto-oriented suburban development with single-family detached homes on large lots, often located many miles from centers of employment or basic services, has waned significantly. By contrast, demand has risen sharply for compact walkable urban neighborhoods with a mix of housing types and price ranges that are well served by mass transit and are near to a wide range of employment and services. A 2016 US Census Bureau study observes that revitalization has "replaced suburbanization as the urban trend of note" and that "demographic groups that formerly would have headed straight to the suburbs now seek to stay in the city."

Investment and change brings many benefits including: improved housing upkeep; lower crime rates; more retail and services; and improved living conditions. However, it can also bring negative impacts: marginalization and displacement of poor and minority households; unequal distribution of social and economic benefits; inadequate opportunities for shaping neighborhood changes; and general exclusion (real or perceived) from the neighborhood's changed social and cultural fabric. Failing to meet the housing and other basic needs of Greensboro's poorest households could harm its long-term vitality at least as much as a shortage of high-end housing stock. PolicyLink's National Equity Atlas provides extensive data and charts showing the high economic toll taken by inequitable employment and income in America's metropolitan areas.

What This Means for Greensboro

Demographic changes are likely to be the primary drivers of demand for most segments of the housing market in Greensboro over the PlanIt GSO planning horizon. The extent to which Greensboro's housing market differs from national and state level trends will probably be influenced by these local circumstances:

- Slower rate of population growth
- Slower increase in population density
- Slower rate of per capita income growth
- Higher unemployment rate
- Higher and increasing poverty rate
- Increasing median age

Over 50% of Greensboro households now rent their homes, so destigmatizing rentership becomes an increasingly important aspect of promoting fair, affordable, housing options and quality neighborhoods.

The slower rate of growth and lower overall demand for new housing in Greensboro may lead to more renovation and retrofitting of existing dwellings and neighborhoods than in peer cities such as Charlotte, Raleigh, and Durham. Sustained lack of investment and lower property values have left many of Greensboro's traditional walkable urban neighborhoods vulnerable to continued neglect and decline or the negative effects that can occur with revitalization. A stronger market for renovation in Greensboro may trigger a greater need for measures to prevent those negative effects.

Crucial challenges for Greensboro will include promotion of housing options at a wide range of price points, and finding a balance that allows neighborhoods to attract new investment and thrive, yet protects long-term residents from erosion of social connections, spiraling housing costs, and displacement. As actual market conditions develop over time, it will be important for Greensboro to continue applying appropriate housing standards and prioritizing adequate resources for proactive code compliance measures, in order to ensure that all dwelling units are maintained in a safe, healthy, and attractive condition, regardless of type, scale, location, or occupancy.

The Impact of Aging Infrastructure

The Trend

Many cities throughout the US are finding the responsibility of maintaining their public infrastructure systems increasingly costly. The Great Recession significantly reduced the revenue streams of many cities and prompted greater restraint in issuing debt to fund major capital investments. Meanwhile, the overall condition of public infrastructure systems throughout the nation, as reported by the American Society of Civil Engineers, has steadily degraded. The role of federal and state governments in subsidizing construction of new infrastructure, primarily highways and major thoroughfares, without providing corresponding funds for maintenance of those facilities has created perverse incentives for municipal governments to press forward with expanding systems that already exceed their financial means to maintain. Cities have attempted to respond to these challenges in a variety of ways, with varying degrees of success, which can provide some insights for Greensboro.

Background

Public infrastructure systems form the bulk of Greensboro's capital assets. Maintaining and, when necessary, replacing these systems and their components is an essential aspect of the City's responsibility to protect the public health, safety, and welfare. Greensboro has experienced greater than average economic impacts from the recession and, by some measures, has not yet fully recovered. Consequently, it is likely to be affected by the growing struggle to maintain its infrastructure systems as strongly as other communities are, if not more so. Among the infrastructure systems operated and maintained by Greensboro are:

- Streets, bridges, sidewalks, and paved greenways
- Clean water supply reservoirs and distribution
- Storm and sanitary sewer network
- Water and waste water treatment facilities
- Parks and recreational facilities
- Traffic signal system and telecommunications
- Public housing
- Fire stations
- City administrative facilities

Investments in public infrastructure systems can be prioritized in ways that effectively build value, support the community's preferred development patterns, and maximize the return on public investments. As noted by Chuck Marohn of Strong Towns, extending and adding infrastructure capacity without funding for appropriate maintenance and replacement of these assets drains value from the community and obstructs preferred development patterns. Expanding the asset inventory without a corresponding increase in the annual allocation of maintenance funding is not fiscally sustainable. The condition of these assets will inevitably decline over time to a point where they become unusable.

Cities employ a range of strategies to meet the maintenance needs of their aging infrastructure systems.

- The traditional approach for dealing with urban stormwater focuses on flow-control, detention, and retention. An alternative approach focuses on practices such as filtration, infiltration, and treatment. Stormwater infrastructure developed through this low-impact design approach enhances ecological functions, can be cost-effective, and serves as a civic asset.
- In limited cases, cities can abandon dedicated but unused rights-of-way to adjoining private property owners, which return land to the property tax roll, thereby increasing the city's revenue stream. This strategy also reduces the city's maintenance responsibility for unused rights-of-way.

- Cities can monetize an existing asset through privatization of infrastructure systems or subsystems, potentially providing for its ongoing maintenance. However, privatization can also be highly contentious, and there are few unqualified examples of long-term success.
- Some cities have found success by implementing road diets and/or "right-sizing" roadways. In many cases city streets were originally constructed to interstate highway standards, or greater, with excessively wide lanes or more lanes than needed to serve actual traffic volume. Narrowing and/or eliminating lanes can reduce long-term maintenance and replacement costs. This approach implies a change of focus from trying to accommodate only the free-flow of auto traffic to trying to ensure safe, comfortable mobility choices for all users.
- Growth on the urban fringe, especially large lot single-family residential development, imposes significant costs on cities due to the infrastructure needed to serve outlying areas. Encouraging infill development and discouraging fringe growth can significantly improve the long-term cost outlook for maintaining and ultimately replacing infrastructure systems. Infill development maximizes usage of existing infrastructure investments, rather than requiring new investments. This can result in greater property tax revenue per acre served, which can better facilitate repair and replacement of existing infrastructure systems.
- Investing in development of pedestrian and bicycle infrastructure has been demonstrated to provide overall better quality of service in the transportation system with a lower total cost per mile, greater economic impact per mile, reduced demand for private motor vehicle use, and lower ongoing maintenance costs.
- Similarly, providing a high quality mass transit system reduces private motor vehicle traffic at a lower overall cost of operation per passenger mile than the construction and maintenance costs of adding roadway capacity.

What This Means for Greensboro

A critical element of Greensboro's public infrastructure are the roadway bridges in or near the central business district. Many of these bridges are over 40 years old and will be in need of replacement in the next 10 to 20 years. For some of these bridges, replacement cost, in conjunction with other factors may lead to a decision to remove the structure and reconnect the roadways with an at-grade intersection. A notable example of the consequences of inadequate infrastructure maintenance is the 2007 collapse of the 50-year old I-35 bridge over the Mississippi River in Minneapolis, which resulted in the deaths of 13 people and injuries to 145 others. While not all types of infrastructure have the same potential for catastrophic impacts on safety and health, this example makes clear the importance of prioritizing and adequately budgeting in advance needed maintenance and replacement.

During the Great Recession and subsequent years, reduced municipal revenues led Greensboro to make budget cuts throughout the organization, including deferral of infrastructure maintenance in some cases. Deferring maintenance work can help a city ease budget constraints in the short term. However, as the overall condition of these assets continues to decline from lack of maintenance, the need for increased maintenance spending grows. This approach can lead to an extended "catching up" period and may hasten replacement needs in subsequent years, if maintenance funding is not restored in a timely manner.

In order to protect the health, safety, and welfare of its citizens and promote ongoing economic vitality, Greensboro will need to continue taking proactive steps to inspect, maintain, and replace components of its infrastructure systems before they reach structural or functional obsolescence.

Transportation: The New Mobility

The Trend

The streets, sidewalks, and trails of the transportation network are among the most basic and important of city-provided services and are constantly in the public eye. Broadly, transportation is seeing change in two areas. The first is development of new technology, particularly the growing development of autonomous vehicles and the associated changes they will bring, but also "smart" streets and utilities and changes in communication that enable the sharing economy and more timely service delivery. The second is the continuing growth of "complete streets" design, an approach that intentionally seeks to balance the needs of people using all travel modes (walking, bicycling, mass-transit, autos, trucks, rail, etc.) by providing safe, convenient, and appealing transportation facilities, appropriate to the adjacent land uses. Taken together they will require and enable a more flexible approach to transportation planning.

Background

Autonomous Vehicles and Technological Changes

The arrival of autonomous or self-driving vehicles is becoming widely accepted in transportation, though the actual date this will happen is uncertain. Cars and trucks that drive themselves will change how people shop, commute, and go about their daily lives. Other technology will combine with autonomous vehicles to create even greater changes.

A report from the Institute of Transportation Studies at the University of California, Davis examines different emerging technologies that will likely work together to have a major impact on how we move and build: the "Three Revolutions" of shared mobility, electrification, and automation. Predictions of how these changes will affect land use and day-to-day life vary widely, and taking best advantage of them will require a high level of awareness. Many anticipate that the need for parking may be reduced, as autonomous vehicles will be able to deliver multiple passengers, or run errands such as picking up goods ordered online without parking. The timeline for the general use of autonomous vehicles is uncertain; estimates range from 10 to 20 years.

As an example, one area likely to see improvement from autonomous vehicle usage is e-commerce and logistics. Changes in supply chain operations and shopping habits are increasing local shipping activities. The "just-in-time" shipping paradigm that has led companies to warehouse only minimal product and the quick delivery of items ordered online makes reliable on-time shipments considerably more important than they used to be. "Last mile" shipping concerns include mobility and safety and need to be addressed both for freight and for other users sharing the roadway. These issues are of particular importance to Greensboro, which is both a freight hub and a manufacturing/fabrication center.

Transit

Although current ridership levels are substantially higher than in 2000, the decline in local and regional bus ridership since 2014 mirrors declines in transit ridership nationwide. Some of this decline may be attributable to recovery from the Great Recession, but many transit analysts and advocates also point to the increasing popularity of ride-sharing and ride-hailing services as replacing trips that otherwise would have been made via transit.

The advent of autonomous vehicles may further depress transit numbers by offering more flexible, personalized service. However, others forecast that smaller, autonomous buses offer a flexible and economic mobility option. The reduction in costs brought by switching to electric buses will help reduce the operational costs of a fleet of smaller, more numerous

buses. Helsinki Finland currently has a 9-passenger bus that operates on regular city streets, and successful trials have been conducted with similar buses in London and Las Vegas.

A Growing Preference for Non-Automotive Transportation

A National Association of Realtors survey in 2015 of the 50 largest metropolitan areas shows a growing interest in having more access to walking and cycling for transportation and in neighborhoods that provide sidewalks and amenities within walking and cycling distance. These trends are particularly strong among millennials.

Vision Zero

At the national level, traffic fatalities and serious injuries over the last decade have improved less in the US than in Europe, Australia, and Japan, and over the last two years have actually increased in the US. Vision Zero is an international effort to improve traffic safety and eliminate deaths and severe injuries resulting from road traffic, while increasing safe, healthy, equitable mobility for all. The Vision Zero Network is a forum for best practices and resources for communities. Over a dozen US cities have announced Vision Zero initiatives, and both North Carolina and Greensboro have adopted Vision Zero policies.

Context Sensitive Designs and Complete Streets

Traditional transportation design focused almost exclusively on how many cars could safely move along a given street as quickly as possible. Currently it is more the norm to consider the impact of road design not just for cars but also for pedestrians, cyclists, and nearby residents and businesses. Transportation professionals have created two complementary approaches: Context Sensitive Solutions (CSS) and Complete Streets. Though very similar, CSS focuses on how a road interacts with adjacent homes, businesses, and offices, while Complete Streets focuses on the road itself.

The Federal Highway Administration defines CSS as “a collaborative, interdisciplinary approach that involves all stakeholders working together to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources, while maintaining safety and mobility.” CSS is an approach that considers the total context within which a transportation improvement project will exist.

NC Department of Transportation’s (NC DOT) Complete Streets design guidelines were adopted in 2009 and define the policy as the state’s “approach to interdependent, multi-modal transportation networks that safely accommodate access and travel for all users.” NC DOT’s guiding principles for CSS are:

- to produce solutions that address the transportation need;
- to be an asset to the local community; and
- to be compatible with the natural and human environment.

What This Means for Greensboro

Many of the new technologies will be rapidly changing and Greensboro will need to position itself to adapt. The effect of new transportation technology on mobility and parking should be a part of the conversation about investments. Greensboro’s transportation challenges include neighborhood traffic perceived as unsafe to residents; commercial corridors in decline; and a backlog of trail and sidewalk construction needs. If used intentionally and systematically, the new tools described here could offer solutions to these problems and better ways to use our existing infrastructure.

Technology in the 21st Century

The Trend

Technology is changing almost every aspect of people's lives at an increasing rate. Private market usage will continue to evolve, from ride-sharing and house rentals, to short-time office- and event-space rentals such as LiquidSpace, to compressed logistic chains. Many of these changes will affect how people work and travel and may challenge existing land use and transportation standards. Governments will feel this change in two ways. First, technology will directly change how they provide services, for example by the use of smart water meters that detect leaks and other changes in water usage in real time. Second, the range of services needed by the public is changing rapidly in ways that are difficult to predict.

Background

Improving Access to Government and City Services

Technology is improving the ability to provide some basic services. This includes improvements to traffic signalization and crosswalk safety; water and energy metering that saves resources; and increased flexibility to meet demands created by new technology such as ride-sharing and online commerce. Many of these changes revolve around the improved collection of real-time, site-specific data and improved communication between people and between objects.

The following excerpts are from reports on technology and the city. The first is from the Institute of Electrical and Electronics Engineers (IEEE), which looks at how different technology infrastructure will affect the demand and delivery of services. The second is from the President's Council of Advisors on Science and Technology and takes a broader look at technology and cities.

Smart Cities

A 2017 report from the IEEE titled "Smart Cities: An Overview of the Technology Trends Driving Smart Cities" emphasizes that a "smart city" does not just leverage a particular new technology, but creates an ecosystem where residents, civic institutions and technology come together in a way that they can all best use new technology. The report identifies a mix of human, technological and institutional factors that can create this ecosystem.

- Human actors, including information technology professionals developing Internet Protocol (IP) networks, software, analysis and security; and telecommunication companies, including broadband and internet providers, mobile telephones and network services.
- Institutions including government agencies and higher education, which can provide open-data and e-governance portals, and consider concerns about privacy and security.
- Technological devices that enable building automation, including energy management and device connectivity; and that are used for energy infrastructure, which covers the power grid, water supply and renewable energy.

Due to the global importance of technology and the rapid pace of innovation, there is a high level of unpredictability to smart city development. Opportunities and challenges facing cities include the following:

- **The Internet of Things (IoT):** The network that allows a wide variety of hardware and software technologies to communicate with each other is referred to as the Internet of Things (IoT). IoT includes such devices as traffic signals, in-pavement sensors, motor vehicles, smartphones, and building management systems. Interconnectivity

enables greater efficiencies in traffic movement and energy management, and enables real-time information exchange and decision-making.

- **Cloud Computing and Big Data**: The increasing amounts of data gathered by devices, businesses, and institutions creates data management challenges and opportunities. Cloud storage offers the opportunity to securely store and manage this data, while making it available to authorized users. This lends itself to "Big Data," defined as data that is highly accurate, arrives in real-time, and comes from a wide variety of sources. Cities have used these to improve trash pickup, analyze fire risk, and better manage road usage.

- **Citizen Engagement**: New technologies increase opportunities for residents to be engaged: first by providing a wider variety of means, such as smart phone apps, for residents to report issues and interact with city officials and second by providing more opportunities for citizens to have access to and use data similar to that used by government officials. The amount of data, and the increasing amount of online software that provides mapping and analysis capabilities, gives residents greater opportunities to think about local problems and engage on a deeper level.

Technology and the Future of Cities

A report from the President's Council of Advisors on Science and Technology titled "Technology and the Future of Cities" examines place-based technology strategies used by cities, many times using a "district" approach in small-scale trials before going city-wide. The report groups technology trends into the following sectors.

- **Transportation:** Multi-modal integration, autonomous vehicles, and on-demand mobility services
  Objectives: Timesaving; reduction in pollution, crashes, and noise; solutions for underserved
- **Energy:** Distributed renewable energy; district heating and cooling; low-cost energy storage; more efficient systems
  Objectives: Increased efficiency; less pollution; increased resiliency
- **Building and Housing:** New construction techniques; adaptive space designs
  Objectives: More affordable housing; healthier and more comfortable housing; increased resilience
- **Water:** Improved system design and management; quicker detection of problems
  Objectives: Better integration of water, sanitation, flood control, and environmental quality
- **Urban Manufacturing:** On-demand 3D printing; small batch manufacturing; high-value added activities
  Objectives: New jobs, converted urban space, close integration of living and work;
- **Urban Farming:** Food production and environmental services in non-traditional spaces within urban centers;
  Objectives: Cleaner, more efficient production and better deliverability, including in underserved areas.

What This Means for Greensboro

New technology enables better delivery of city services as well as providing a platform for new industries and jobs. To make Greensboro competitive in attracting new residents and businesses, local businesses and higher education will need to work together. Technology itself is changing rapidly, and we are unlikely to forecast accurately what new technologies will be created, how they will be used, and how this will affect cities. Taking advantage of technology and managing impacts will take a responsive, nimble, and collaborative approach to governing.

Sustainability & Resilience

The Trend

In 1987, the United Nations Brundtland Commission defined sustainability as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Sustainability is now a topic of concern across the globe in both the private and public sector. Sustainability is frequently referred to as requiring a "triple bottom line" approach, a term coined by John Elkington in 1994. The approach considers three areas: the natural environment, social equity, and fiscal responsibility, and is often paraphrased as "planet, people, profit." In the private sector these concepts are sometimes known as "Corporate Social Responsibility" and include better analysis of energy usage, product lifecycle analysis, and the social impacts of corporate actions.

Background

Planning for Sustainability

Sustainability is an important concept in planning, and in particular with comprehensive plan development. The American Planning Association has published two reports on sustainability in comprehensive plans and identified 10 guiding principles for sustaining places through comprehensive planning.

- **Livable Built Environment**: Ensure that all elements of the built environment, including land use, transportation, housing, energy, and infrastructure, work together to provide sustainable , green places for living, working, and recreation, with a high quality of life.
- **Harmony with Nature**: Ensure that the contributions of natural resources to human well-being are explicitly recognized and valued and that maintaining their health is a primary objective.
- **Resilient Economy**: Ensure that the community is prepared to deal with both positive and negative changes in its economic health and to initiate sustainable urban development and redevelopment strategies that foster green business growth and build reliance on local assets.
- **Interwoven Equity**: Ensure fairness and equity in providing for the housing, services, health, safety and livelihood needs of all citizens and groups.
- **Healthy Community**: Ensure that public needs are recognized and addressed through provisions for healthy foods, physical activity, access to recreation, health care, environmental justice and safe neighborhoods.
- **Responsible Regionalism**: Ensure that all local proposals account for, connect with, and support the plans for adjacent jurisdictions and the new rounding region.
- **Authentic Participation**: Ensure that the planning process actively involves all segments of the community in analyzing issues, generating visions, developing plans, and monitoring outcomes.
- **Accountable Implementation**: Ensure that responsibilities for carrying out the plan are clearly stated, along with metrics for evaluating progress in achieving desired outcomes.
- **Consistent Content**: Ensure that the plan contains a consistent set of visions, goals, policies, objectives, and actions that are based on evidence about community conditions, major issues and impacts.
- **Coordinated Characteristics**: Ensure that the plan includes creative and innovative strategies and recommendations and coordinates them internally with each other, vertically with federal and state requirements, and horizontally with plans of adjacent jurisdictions.

Global Change

Humans are creating widespread, long-lasting changes to the plants, animals, atmosphere, surface and ground waters, landscape, geology, climate, and rotation of the Earth. Together these changes will have unpredictable impacts on the world economy due to increased droughts, more intense storms, changes to agriculture, and, in some locations, sea-level rise and rising temperatures. The US Department of Defense stated in 2014 that "The pressures caused by climate change will influence resource competition while placing additional burdens on economies, societies, and governance institutions around the world."

What This Means for Greensboro

Sustainability and resiliency are important for the long-term success of any community. Changes in technology, the climate, and the economy will continue at a rapid pace, and the ability of a community to adapt will be key to its ability to flourish.

Despite the importance of adaptability and resiliency to future success, there are negative perceptions of sustainability to keep in mind. A 2010 study reported in the American Marketing Association suggests that people assume that products that emphasize sustainability are not as good in quality as other products. The study also suggests that people will act differently, and less favorably towards "sustainable" products, when they do not think they are being observed. Though this study was not specifically about public policy, it is reasonable to assume that there may be a similar bias.

Cities often encounter problems that extend far beyond their jurisdictional boundaries, affecting all or most of the surrounding region. Typically, such problems cannot be addressed effectively at the local level. In such cases, solutions may be more attainable through inter-jurisdictional cooperation and collaboration at the regional level. Traditional political boundaries do not always lend themselves well to successful management of resources and systems or efficient provision infrastructure and services. Some issues necessitate area-wide coordination; regional partnerships or governments are a common means of comprehensively addressing issues that reach beyond the boundaries of a single city or county. The Piedmont Together regional planning initiative, led jointly by the Piedmont Authority for Regional Transportation and the Piedmont Triad Regional Council, provides a strong foundation and framework through which Greensboro could seek to address such broader issues.

Regarding climate change, Greensboro is particularly drought sensitive because it lacks a major river and depends on artificial reservoirs fed only by local rainfall for its water supply. The size and types of further impacts from increased storm frequency and from broader economic changes caused by changes in weather patterns and agricultural productivity, both in North Carolina and in other parts of the country are difficult to forecast. This increased uncertainty emphasizes the need for Greensboro to build greater resilience into its economy and infrastructure. In particular, more frequent and more intense storms are likely to exceed the capacity of older portions of the storm sewer system, resulting in flooding in low-lying areas and along Greensboro's many small creeks.

Greensboro is located in an area that is subject to relatively few major natural catastrophes, such as tornadoes, earthquakes and hurricanes, and is removed from direct danger due to rising sea levels. This may offer a locational advantage in business site selection decisions, and in relocation choices by households.

The Disparity Gap & the Shrinking Middle Class

The Trend

A disparity gap in the United States has been developing in America for decades. Wealth and income inequality in America is at an all-time high, and the disparity between the wealthiest and poorest US households is far greater than in other developed countries. The share of income going to the wealthiest one percent of the population has increased disproportionately since the mid-1970s. Real incomes for the highest wage earners have nearly tripled, while incomes for median-level wage earners have increased by only 25% during that same period. The Center for Economic and Policy Research reports that between 1979 and 2007, the share of national income going to the top one percent of wealthy households grew from 9.6% to 20%.

While income disparity is more apparent, wealth disparity is also important, and there is a significant difference between the two. Simply put, income is how much one earns, and wealth is how much one owns. The majority of the top one percent's wealth comes from the accumulation of assets that generate revenue, earn interest, and/or appreciate in value over time. Studies show that America's top one percent holds nearly half the national wealth invested in stocks and mutual funds. Wealth inequality manifests differently than income inequality, but has far-reaching repercussions when looking at aspects of the economy like home- and car-ownership, debt per capita, and share of total assets. The majority of wealth for the poorest ninety percent comes from their principal residences. Conversely, the top ten percent's wealth comes primarily from stocks and mutual funds.

This gap in wealth is greater when looked at through the lenses of race and ethnicity. Because homeownership is the most common and effective means used by typical US households to retain and grow wealth, reducing disparities in homeownership rates across racial and ethnic groups would also reduce the wealth gap. The historical context of America explains some of the disadvantages for minority households, for example outlawed practices such as redlining. More recently, the Great Recession disproportionately affected minority households compared to white households. Research suggests that working toward a more equal playing field in homeownership could have substantial positive effects for reducing the wealth gap.

Background

Cities

While the disparity numbers are indeed stark for the country as a whole, they are worse when looking at America's largest cities. In Washington D.C., for example, white families are on average 81 times richer than non-white ones. In Los Angeles, median wealth for whites was close to 89 times as much as non-whites, and in Miami it was 30 times as high. Studies suggest that since this is a national problem, municipalities struggle to find effective strategies to close the gap since many of these factors are out of their control.

According to the National Equity Atlas (NEA), achieving economic inclusion would benefit not only persons of color, but the economy as a whole. NEA argues that raising wages and incomes, especially for low-income households, leads to more consumer spending which is a key driver of economic growth. For instance, in Greensboro, NEA estimated that average annual income would have been approximately $21,000 higher for both the Black and Latino population in 2014 if there had been racial equity in income.

The Shrinking Middle Class

The most significant result of growing disparities in income and wealth has been the rapid decline of the US middle class, long considered the driving force in the US economy. This decline is evidenced by the decline in real wages. Although absolute middle class wages have increased over the past four decades, wages have actually stagnated when inflation is taken into account. Research points to national factors that together have caused the cumulative effect of a missing middle class, including globalization and regulatory impediments.

A related issue in the discussion of income disparity is the extreme growth in compensation for corporate executives relative to typical workers among US firms over the past 40 years. According to a report from the Economic Policy Institute, the ratio of CEO-to-worker compensation has ballooned from 30-to-1 in 1978 to 270-to-1 in 2016. This vast and growing differential in compensation has further accelerated the income disparity between the wealthiest one percent and the rest of US wage earners.

What This Means for Greensboro

Increases in disparity have affected Greensboro as much as or more than other urban centers. According to the US Census Bureau, Greensboro's poverty rate is nearly 19% higher than both the state and overall US level. One impact is a high level of food insecurity as a source of disparity in Greensboro with over 82,000 residents living in areas determined to be "food deserts" by the USDA. The high level of poverty can be attributed to a variety of factors including:

- The shift from manufacturing jobs to service-oriented professions; and
- The increasing portion of Greensboro residents who commute elsewhere for employment, expending a greater percentage of their income on transportation.

Over the course of the comprehensive planning process, the City will explore strategies for alleviating disparity through recommendations aimed to address inequities. While the trend is a national issue, Greensboro, as well as other municipalities around the country, can use innovative economic development and city service strategies to close the gaps. Research shows that providing high quality public education, empowering young entrepreneurs, and providing social and other assistance in minority communities can go a long way in addressing these issues. Also ensuring that city services are provided as equitably as possible, both geographically and socio-economically, will be an effective measure in minimizing this issue and, in the long term, closing the gap between different income groups, wealth groups, and races within the City limits.

Demographics: The Changing Face of America

The Trend

Municipalities across the country are dealing with, and adapting to, the changing demographics of American cities which have changed in a variety of ways. Over the last 20 years, statistics on America's population, including race, age, place of birth, home-ownership, and family structure, have undergone significant transformations.

Background

Population Growth

The US Census Bureau estimates that by the year 2055, America will have added approximately 100 million people, reaching a total of around 400 million. According to the Pew Research Center, over the next five decades, the majority of US population growth is projected to be linked to new Asian and Hispanic immigration. At the state and local level, this population growth will be primarily in urban areas, which will in turn equate to increases in the need for city services, infrastructure, housing, and multilingual services.

Race and Ethnicity

The racial composition of America's population is shifting towards a more diverse and multicultural nation. This trend holds true for both North Carolina and Greensboro. According to the Pew Research Center, by 2055, the US will not have a defined racial ethnic majority. According to the Economic Policy Institute, by 2043, Latino and Asian populations are expected to nearly triple, and approximately 60% of people under age 18 will be non-white. Research also indicates that a large percentage of babies born in the coming decades will be of mixed race/ethnicity with one white parent. The way race is defined and categorized will change drastically during the coming decades.

Greensboro's white population has decreased annually as a percentage for some time, from 53% of the population in 2010 to 48% in 2015. Conversely, the non-white population in Greensboro has been increasing since 2012 with Hispanic or Latino populations representing 7.8% of the total in 2015. Being inclusive and having equitable distribution of city services will be an even larger responsibility for Greensboro in years to come.

Age

Age composition trends for the US as a whole and for its major cities are starkly different. The median age for the nation is rising, while the median age in many cities is steadily decreasing. The rise of the median age in the country is due to a variety of factors tied to longer life expectancy, which has improved due to better access to health care and education. Urban areas tend to have a younger population while rural areas tend to be older. Research shows that young college graduates prefer dense, urban, walkable areas. The number of young college graduates living in urban areas has risen since 2000, while the share of working-class high school graduates has decreased. Working class young adults are responding to higher urban rents by moving to cheaper and less dense areas of the cities, which means longer and more expensive commutes. This trend is especially apparent in revitalized areas like Brooklyn, Los Angeles, and Washington D.C.

Greensboro's median age is on the rise; between 2000 and 2015 the percentage of residents 44 and under have decreased by 5.4%, while residents 45 and up have increased by 14.8%.

Foreign Born

America has always been a country of immigrants, but the places people emigrate from and the rate at which they do so are changing rapidly. The bulk of immigration into the United States since 1990 has been from Mexico, but between 2009 and 2014, the Pew Research Center reports that the net migration flow reversed. More immigrants that are Mexican returned home than arrived in the US during that 5-year span. Asians are currently the only major racial or ethnic group whose immigration numbers are rising. In Greensboro, the foreign-born population is primarily of Hispanic or Latino descent. Immigrants to the US each year collectively make significant positive economic impacts as creators and innovators. Greensboro's immigrant population is an important aspect of its economic vitality.

Home-Ownership and Family Structure

Family structure in the United States is moving away from the traditional nuclear family. Marriage rates have been declining for decades and the number of American adults who have never married is at an all-time high. Simultaneously, two parent households are on the decline, and approximately 33% of American adults are single. The shift in household structure will create greater demand for different types of housing stock. Cities will have to become more innovative and thoughtful regarding both the location and the types of new housing units constructed.

What This Means for Greensboro

Like other urban areas, Greensboro will need to adapt and be forward-thinking about how city services are provided and distributed. Population growth will create denser living environments, changing family sizes will create a need for different types of housing stock, and age composition will drive demand for walkable, connected environments. Cities that recognize these needs and plan progressively, as opposed to reactively will be successful, vibrant places.

Economic Trends & the Future of Manufacturing

The Trend

In 1970, manufacturing made up 20% of the overall US workforce. Today, only 9% of American workers are employed in manufacturing. Most of the manufacturing job losses in the US over the past 25 years are related to automation and state and federal regulations. Overall, manufacturing represents 12% of the economic activity in the United States. The Economics & Statistics Administration reports that 76% of job gains in 2015 were from three durable goods industries: Transportation Equipment, Fabricated Metal Products, and Machinery. The United Nations Industrial Development Organization (UNIDO) has set industrial development goals for each member state, emphasizing technological development, creation of new industries, and national security in the US.

Background

In 2013, manufacturing shipments exceeded production levels prior to the Great Recession. In more recent years however, the numbers have begun to fall. The manufacturing industry points to environmental regulations and high corporate taxes as the reason for America's decline in this area. As a response to these challenges, several programs and partnerships at NC State University are working with national experts to "uncover new innovations and apply them directly to the industry." The goal of these efforts is to help manufacturers be more efficient, safer, and more profitable. According to Phil Westmoreland, who leads NC State's work in this area, "When people think of manufacturing, they usually think of things like cars and large equipment. But in North Carolina especially, manufacturing also means using processes to make pharmaceuticals, biofuels, and food products."

The "maker movement," a rapidly growing trend, involves manufacturing on a smaller scale with respect to facility size, production quantities, and/or product size than the traditional heavy manufacturing. The term refers to the design and fabrication of objects, often using new technologies, alongside traditional technology and skills, with an emphasis on tinkering and innovation.

"Making" often takes place in locations accessible by the general public like public libraries, schools, and community centers, and in some cases, smaller "incubators" and factories. The authors of "The Maker Movement and Urban Economic Development" state "the significance of the maker movement to economic development planning, however, lies principally in the emergence of new small-scale manufacturing enterprises that integrate design with production."

Larger manufacturers are seeing a "skills gap" as they move to more automated, technologically advanced equipment. The term refers to a shortage of workers with the necessary technical skills to handle machinery, perform service on the equipment and use advanced technology. In a 2017 Charlotte Observer interview, Michael Lamach, the CEO of Ingersoll Rand, which employs 2,000 local residents of Davidson NC, says they have 1,000 job vacancies attributable to the skills gap. He and others say the US needs to refocus the emphasis on four-year degrees to training programs that utilize STEM (science, technology, engineering and math) skills and vocational skills acquired through two-year training and company training programs.

What This Means for Greensboro

To reduce the skills gap in Greensboro, colleges and universities will need to provide flexible continuing education for working students. They may need to partner with corporations to stay abreast of training needs and guide students to future employment opportunities. Industry-specific certifications could reduce the amount of time needed to train new hires or retrain current employees for new assignments, and increasing graduation rates of students focused on STEM fields

will help to expand the pool of candidates. There is opportunity in Greensboro to capitalize on the educational and training resources already available in the community to help meet the skills gap at the local level.

Greensboro already has an established maker's movement. Local co-working facilities and support groups like The Forge, Co//ab, the Nussbaum Center for Entrepreneurship, and Made in Greensboro are successful examples. Kitchen Connects GSO was launched in 2017 to support local food-business entrepreneurs through a grant from the US Department of Agriculture. Mixed use areas could be encouraged by integrating low impact manufacturing into a broader range of zoning categories.

Industrial building permits filed with the City of Greensboro decreased over the 16-year period examined in the April 2017 Trends Report, so loss of land zoned for industrial use may not be a problem in the short-term. However, if portions of large industrial land tracts are rezoned or change to non-industrial uses, there will be less land available to attract large manufacturing companies to the area in the future.

The Transformation of Retail

The Trend

The American retail industry is changing dramatically as people become more reliant on technology, electronic devices, and access to products and information. In the US retail accounted for $1.3 trillion in second quarter 2017 sales, according to the US Census Bureau. However, terms like "retail apocalypse" and "retail spiral" are seen and heard frequently in news reports to describe the growing trend of store closures. But the ongoing transformation of the retail sector is not as simple as a catch phrase.

There are three primary explanations for the changes in the retail industry. The first of these is what most observers point to: the continuing rise of e-commerce, which has drawn significant market share away from brick-and-mortar retail sales. Nearly all traditional retailers have had to add e-commerce platforms in order to remain competitive, and some have been far more successful in this transition than others. The second factor is the over-construction of retail space in communities nationwide. The third major factor is the high debt that some retailers have incurred as they sought to add more bricks-and-mortar locations, which has led to store closures and company bankruptcies. These national trends and influencing factors are likely to affect Greensboro over the planning horizon.

Background

Of the $1.3 trillion in retail activity cited above, e-commerce sales accounted for $115.5 billion, which represents an estimated 8.9% of total sales and an increase of 16.3% from the same period in 2016. Analysts expect this upward momentum to continue. In a recent report by MSN Money, retail chains have announced 6,800 store closings and over 3,000 openings, a net decrease of 3,800 stores. Some brick-and-mortar retailers are consolidating and in some cases filing for bankruptcy, but many others are making the transition to 'Blurring' or 'Omnichannel' retailing. Omnichannel retailing is the convergence of online and offline buying, where neither has a pricing advantage over the other. Consumers are presented with options for buying on multiple platforms: online, in-store, or both (order online and pickup in store or order in store and have it delivered). Traditional retail giants such as Walmart, Target, Home Depot, and Toys-R-Us, have adjusted their platform to allow for online shopping with a local pick-up option. Home Depot's online sales grew 23% in the second quarter of 2017, compared to the same period in 2016, which accounts for 6% of its overall revenue. Of Home Depot's online sales, 43% are picked up in-store.

Analysts speculate there will be a shift from traditional brick-and-mortar stores to "fulfillment" centers as an alternative to closing store locations. Prophet, a global brand and marketing consulting agency, assists retail companies such as T-Mobile, Target, and Cisco, in the transition to brick-and-mortar/e-commerce partnerships. Prophet refers to this shift as "The Blur" and stated in a 2017 online post, "As The Blur progresses, the focus will become less and less on comparing online and physical sales, but rather looking at how the brand and customers are exchanging value throughout the entire customer experience." With 3000 store openings and announcements of additional openings by Amazon and Apple, it is clear that physical retail stores are still effective.

Many retailers will successfully adapt to the digital age, but some who have already established this partnership are still filing for bankruptcy. In some cases the debt burden from overexpansion is coming due, and lack of lender confidence is providing little to no opportunity to refinance this debt. Retail debt includes over-borrowing for development, leveraged buyouts, delinquent loan payments by malls and shopping centers, debt from borrowing by troubled retailers, and store credit card obligations.

Store closures are also attributed to overdevelopment. “We are extremely over-retailed,” says Christopher Zahas, a real estate economist and urban planner in Portland, Oregon, “Filling a million square feet is a tall order.” The number and floor space of retail stores in the US far outnumber that of any other First World country. Retailers are making adjustments to scale back this excess.

What This Means for Greensboro

Retail accounts for eight million jobs nationwide. The closing of stores impacts employment with the loss of low-income sales and cashier jobs that may shift to warehouse distribution and fulfillment centers, which is linked to e-commerce. An increase in skilled labor to support e-commerce will be in the form of software engineers, developers, marketing analysts, and social media teams. Greensboro is home to multiple colleges, universities, and technical schools that could capitalize on these training opportunities.

Vacant retail space presents a challenge for communities, including Greensboro, to develop plans for empty sites and particularly for large complexes like shopping malls. Fulfillment centers are only one answer. Former retail spaces are transitioning into office space, mixed use commercial, residential, and even churches and health facilities nationwide. Large complexes are being demolished and re-envisioned as parks and community gardens. Large land tracts offer the opportunity to create more walkable areas that combine a mixture of residential and commercial. The demand for retail is unlikely to increase significantly given predictions of slow population and income growth, so new retail will take market share away from existing retail, and establishing other uses to fill vacant space will become more important.

The City’s Economic Development and Business Support (EDBS) Office states that there is an inventory of such sites available for redevelopment across the City. Greensboro can facilitate redevelopment through tools like its *Long-Term Vacant Big Box Revitalization Loan Program,* which provides a source of capital to credit-worthy developers willing to invest in empty retail sites larger than 25,000 square feet. While redeveloping retail sites is challenging for a variety of reasons such as costs, existing infrastructure, and market forces, understanding and acknowledging these hurdles can go a long way to ensuring a smooth and successful commercial redevelopment project.

As Greensboro looks to the future of retail, a 2016 Nielsen Report provides a glimpse into some of the emerging trends:

- Stores will either become one-size shopping experiences or become smaller scale quick stops.
- Stores will offer more of an “experience” for shoppers while also providing a place to socialize and gather. Grocery stores are offering beer tasting experiences and children’s stores, like American Girl, offer dining.
- Technology will play an important role by providing touch screen ordering and mobile coupons.
- Brands will open premium stores to offer exclusive items and may partner with celebrity names.
- Dominant technology companies will be establishing a footprint outside the tech world through retail stores.
- Deep discount stores will maintain continued success, but low prices alone may not be enough.

Offering variety in shopping presents the opportunity for Greensboro to create interesting new places and capitalize on existing distinctive places. Walkable shopping areas and locally-owned stores that sell unique products can heighten this experience. Greensboro is fortunate to have a vibrant downtown. The attention to redevelopment of our downtown demonstrates that providing new and interesting businesses can build on a growing interest in living and working in an urban environment and create a strong city.

Conditions and Trends

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