

Connecting the Dots

Linking Transit Investments, Development Decisions and Affordable Housing along Wake County's Bus Investment Corridors



Triangle J Council of Governments

July 2019

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Introduction

The expression “connecting the dots” refers to gaining understanding by piecing together information from diverse sources. It is also an analogy for what transit investments do: connect “dots” of land use via transit routes. Major transit infrastructure investments – like the Bus Rapid Transit (BRT) lines and frequent bus corridors in the Wake County Transit Plan – provide an opportunity to piece together strategies for compact and walkable development with efforts to preserve and create affordable housing, so that transit investments benefit us all.

This report is designed to inform a variety of decision-makers who, working together, will determine how well we align our transit investments with concrete actions to create compact, walkable neighborhoods – termed “transit-oriented development” or TOD – and preserve affordable housing near these investments. These decision makers include local elected officials, developers and builders, non-profit housing and community development staff, financial professionals, planning and transportation agency staff, and leaders in anchor institutions such as universities and medical centers.

The affordable housing challenge is especially important. The vast majority of housing – from single-family detached homes to townhouses to a range of multifamily housing in urban and suburban settings – is successfully provided and managed through the private marketplace. This report focuses on a particular segment of the housing market: housing that can remain affordable to low- and moderate-income households where public investments in high-quality transit may increase land values, market rents, and prices. Many of these households are home to people who make our communities run: the firefighters, teachers, nurses, technicians and others who provide vital services in our economy. Being thoughtful and deliberate in aligning our affordable housing and transit policies turns TOD into equitable TOD, or “eTOD.”

This report focuses on Wake County’s planned Bus Rapid Transit (BRT) and frequent bus corridors. A companion report will look at the “Connecting the Region” rail corridor linking Durham and Wake Counties. The report is as much about tools and methods and metrics as it is about solutions. With a wide variety of decision-makers and changing market conditions over time, erecting the framework that can build and sustain relationships and providing timely and trusted information is a critical early step to set us up for sustained success. This report surveys the current landscape, highlights approaches that have been successful elsewhere, and frames the next steps for greater progress along our planned transit corridors.

The Big Picture

Easy access to high quality transit helps connect Triangle employers with the workers on which business depends. Better access also increases the number of riders on transit systems, helping transit agencies develop and operate more cost-effectively. Better access also helps people get to critical services, from health care to social services to schooling, in addition to providing more opportunities to find gainful employment without needing to own a vehicle. Increasing the number of people who live near and regularly use transit – especially low- and moderate-income residents who are more likely to depend on and use transit – benefits citizens, economic development and the cost-effectiveness of public services.

Recognizing this mutually supportive relationship, the Federal Transit Administration includes land use and housing affordability metrics along transit corridors in the process it uses to decide which new transit investments to fund. These metrics reward communities that, through plans and actions, are collaborating on transit investments, land use plans and affordable housing decisions.

GoTriangle and the region's communities are working together to plan a network of high-quality bus and passenger rail services to connect communities within Wake, Durham and Orange Counties. With affordable housing options along transit lines, the Triangle's residents will be able to choose the travel option that best fits their budgets. Furthermore, the more that people who depend on transit to get to jobs, schools, and everyday needs live near transit stations, the better they will be able to access these services, and the more riders the system will carry, improving the Triangle's chances to secure the federal funds included in our transportation plans.

The housing-transit relationship is a pocketbook issue: average transportation costs for households living in location-efficient neighborhoods, which, according to the Center for Neighborhood Technology, are those that are compact, mixed-use, and with convenient access to jobs, services, transit, and amenities, tend to have lower transportation costs.¹ Moderate income households in Wake County spend approximately 56% of their incomes on housing and transportation costs combined²; accepted affordability benchmarks indicate this cost should be less than 45%.

Finally, as a result of increasing congestion and unpredictable travel times, Triangle employers may increasingly rely on the region's public transit infrastructure to get their employees to work each day; more than 40,000 households in the Triangle metro region have no car available.³ High profile companies, Amazon being a recent example, make it clear that they look at a community's quality of transit in making locational decisions. An increase in public transit options in the region may help attract and retain companies seeking more travel choices for their employees.



The development of new transit services increases the value of land near stations. This is due to improved access to jobs, healthcare, and other necessities that transit provides. While this increase in land value benefits cities, towns and counties along the transit corridors by increasing their tax base, it makes it harder for low- and moderate-income families to afford existing and new homes in or near these station areas, further exacerbating the challenge of living in transit-rich areas for lower income households. Since low- and moderate-income families tend to be more dependent on – and heavier users of – transit service, failure to make room for these families in station areas can hurt ridership, making transit service less cost-effective than it could be.

Creating and preserving affordable housing near transit will not happen by accident. Arlington County, VA, a national leader in both transit investment and affordable housing strategies, saw its market-rate housing affordable to households making 60% of the Area Median Income (AMI) decline by over 80% between 2000 and 2013.⁴ If the Triangle is to avoid a similar fate, creativity and collaboration among a wide range of actors will be needed, so that all the region's citizens can benefit from transit investments.

Project Overview

Wake Transit Project Process

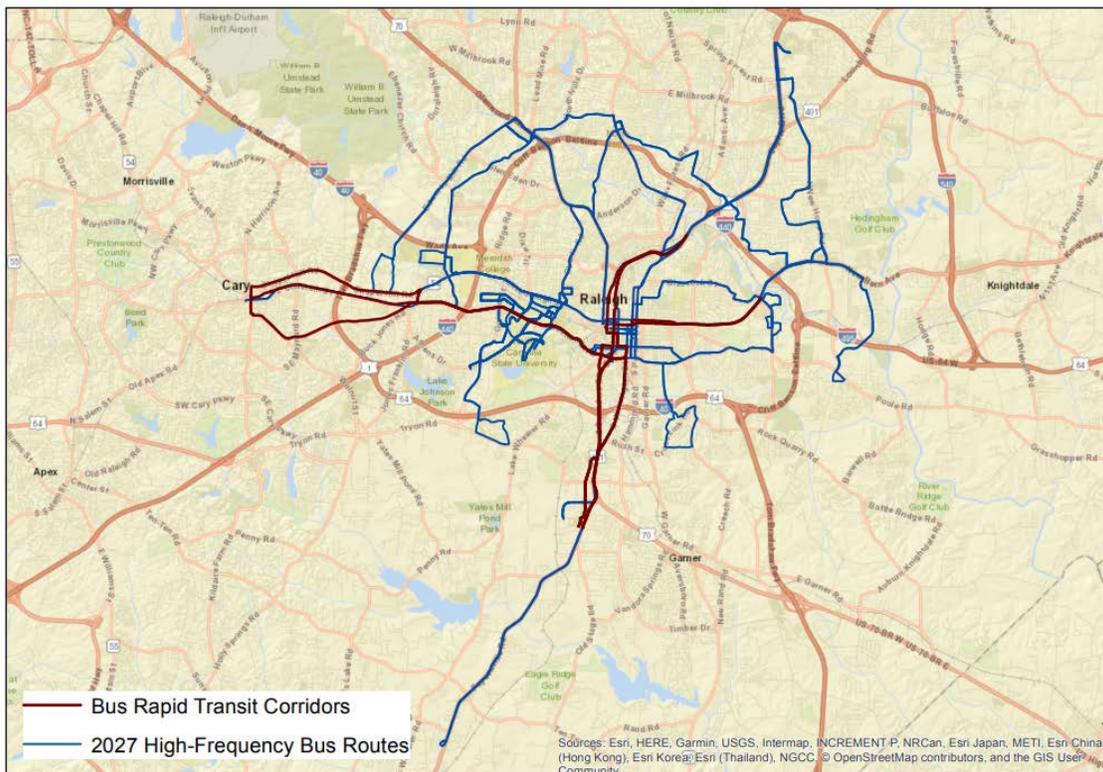
The 2016 Wake Transit Plan envisions investing \$2.3 billion over ten years in four major areas of improvement:

- (1) **Connecting Wake County to the region** through a 37-mile commuter rail investment connecting Garner, Raleigh, NCSU, Cary, Morrisville, the RTP, Durham, and Duke, and enhanced bus connections to RDU and Chapel Hill.
- (2) **Connecting all twelve municipalities in Wake County** via a combination of 30- and 60-minute all day service, peak-only service, and commuter rail.
- (3) **Expanding the frequent network** (15 minutes or better all day) from 17 miles to 83 miles, as well as adding 20 miles of Bus Rapid Transit (BRT) infrastructure.
- (4) **Improving fixed-route service** by extending the hours of service and days per week of operation, expanding the extent of fixed routes, and providing matching funding for towns to establish local services.

The Wake Transit Plan is funded by a voter-approved half-cent sales tax increase, vehicle registration fees, vehicle rental tax revenues, federal and state contributions, existing local revenues that fund current transit services, and fares paid by bus and train customers.⁵

The Wake County Transit Planning Advisory Committee (TPAC) was created as a staff-level advisory committee charged with coordinating planning and implementation aspects of the Wake County Transit Plan. One of the subcommittees of the TPAC is the Fixed Guideway Corridors Major Investment Study (MIS) Core Technical Team. The MIS Team is looking in depth at the 20 miles of BRT proposed by the Wake Transit Plan – evaluating potential concept alignments and looking at potential service models for the 37-mile commuter rail corridor between West Durham and Southeast Garner.⁶

Alongside the MIS effort, Triangle J Council of Governments (Triangle J COG) is leading a complementary planning study looking at land use and affordable housing in the BRT, high-frequency bus, and commuter rail station areas, called the Wake Transit Corridor Land Use & Affordable Housing Project.



Wake Transit Corridor Land Use & Affordable Housing Project

Triangle J COG staff are coordinating this effort with participation from several jurisdictions as well as planning and transportation organizations: Cary, Garner, Morrisville, Raleigh, Wake County, CAMPO, GoTriangle, and the Research Triangle Foundation.

The ultimate outcomes of this project are to help local governments:

- Align County and Municipal housing and land use policies with the Wake Transit plan
- Understand where current affordable housing is located in relation to transit corridors
- Understand how land use and affordable housing decisions are factored into state and federal transit funding decisions
- Use land use and affordable housing considerations in determining final alignments and stop locations for the BRT investments in the Wake Transit Major Investment Study (MIS) project
- Prioritize locations along the transit corridors where it could be important to preserve existing affordable housing or build new housing
- Use updated socioeconomic data in the region's travel demand model used to generate transit ridership forecasts to ensure it reflects the latest community plans

The Wake Transit Corridor Land Use & Affordable Housing Technical Group began meeting in August 2017 and has met roughly every two or three months since. In the first year, the group completed the following project activities, which laid the foundation for the overview and recommendations provided in this report:

- Review of existing housing and land use policies and plans for all jurisdictions
- Review of residential sales and rent prices in Wake County
- Inventory of legally-binding affordable units and naturally-occurring affordable apartments
- GIS-based Opportunity Sites Analysis to identify properties that may be suitable for affordable housing development. This includes criteria such as ownership, parcel size, land value, transit access, proximity to sidewalks, grocery store, pharmacies, and shopping
- Summaries of public and privately-owned opportunity sites and Naturally-Occurring Affordable Housing within a half mile of the BRT corridors
- Overview of Best Practices for Transit-Oriented Development and the status of each jurisdiction in considering, planning for, or implementing those best practices
- Compilation of Example Ordinances for Transit-Oriented Development, including specific ordinance language and examples around parking maximums, small block size, minimum and average densities, floor area ratio exchanges, special assessment districts, and affordable housing connections
- Overview of Federal Funding Scoring Systems and how they relate to the Wake Transit corridors

Wake Transit Land Use & Housing Report – Connecting the Dots

This report – a culmination of work completed within the Wake Transit Corridor Land Use & Affordable Housing Project – surveys the current landscape, highlights approaches that have been successful elsewhere, and helps frame future discussions across jurisdictions and planning and transportation organizations. The report may be used as a resource, rather than a guide, to help begin and continue discussions about housing affordability and transit investments within the Wake Transit Corridor. With a wide variety of decision-makers and changing market conditions over time, erecting the framework that can build and sustain relationships and providing timely and trusted information is a critical early step to set us up for sustained success.

Housing and Land Use Policies, Practices and Goals

Understanding the existing policy framework surrounding housing and land use decisions throughout Wake County can provide helpful insight into where municipalities should focus their energy in the future. An analysis of existing housing and land use policies, practices, and goals illustrates that municipalities are using an integrative approach to planning for transit improvements throughout Wake County. This approach promotes more effective and strategic decision-making for complex challenges, including the growing need to create and preserve affordable housing options. Through a comparison of such policies, practices, and goals found within the comprehensive and/or affordable housing plans for Cary, Garner, Morrisville, Raleigh, and Wake County, five themes emerge among the respective communities. As described below, these communities are adopting policies to:

- Increase the variety of housing types;
- Accommodate the housing needs of older adults;
- Encourage mixed-use development;
- Locate higher-density and affordable housing in opportunity-rich areas; and,
- Preserve the existing affordable housing stock.

Theme 1: Provide a Greater Variety of Housing Types

The provision of a variety of housing types is prioritized by most Wake communities in their respective plans. A variety of housing types supports multiple populations, specifically across income, household size, and age. Increasing the variety of housing types is typically associated with an expanded supply of affordable housing options and greater residential density.⁷ Policy H 1.9 in the City of Raleigh’s 2030 Comprehensive Plan specifically links housing diversity to affordable housing choices. This policy builds on other identified policies, including the promotion of zoning policy that allows for the construction of “a variety of housing types.”⁸

Greater housing variety also responds to demographic shifts in local populations. According to the Wake County Affordable Housing Plan, Wake County is expected to grow on average by approximately 22,000 people each year, producing an increased demand for housing.⁹ In the “Live” section of The Cary 2040 Community Plan, the policy to provide a variety of housing types acknowledges that the area’s changing population requires a “diversity of housing products.”¹⁰ Similarly, Garner emphasizes “growth areas” as a place to emphasize “new types of housing styles;” and, Morrisville states that incorporation of a “mix of housing types and lot sizes” improves options available to a “range of lifestyles and incomes.”¹¹

As noted in the Wake County Affordable Housing Plan, revisions to land use policy are one way to respond to growing housing needs.¹² Specific zoning districts may be used to promote housing-type variety. For example, the Town of Garner’s Unified Development Ordinance encourages design flexibility and a mix of housing types in several types of districts, including: Planned Unit Development, Planned Residential Development, and Traditional Neighborhood Development districts.¹³ Similar language is used by other Wake communities.

Theme 2: Provide Accessible, Safe and Affordable Housing Options to Older Adults

Agreement also exists among Wake communities for the promotion and provision of accessible, safe and affordable housing for older adults. According to the AARP, most older adults want to remain in their residence and age in place. Aging in place has been linked to various benefits, including greater life satisfaction, better health, and more self-esteem.¹⁴ Local housing, land use, and transportation policies can support or hinder the livability of communities for older adults.

Many Wake communities utilize financial resources to support affordable housing options for older adults. For example, on its website, the Town of Cary cites its partnership with DHIC to develop the Willow Creek Senior Living Apartments, which houses adults ages 55 and older.¹⁵ In its comprehensive plan, the City of Raleigh also mentions funding rehabilitation programs and offering property tax relief to older adults.¹⁶

In addition to leveraging their funds to promote more housing options, Wake communities are also pursuing certain land use policies. The Wake County Affordable Housing Plan, for instance, proposes working with local municipalities to revise Unified Development Ordinances in order to allow accessory dwelling units (ADUs).¹⁷ ADUs are one way to support aging in place and are similarly recognized in the comprehensive plans for Cary, Garner, and Raleigh. The diagram on the right illustrates how ADUs can be used for households to remain in their homes over time as their needs change.



Source: Paste in Place Graphic Design Studio

Theme 3: Allow and Encourage Shared-Use and Mixed-Use Development

A principle of transit-oriented development is active, walkable streets.¹⁸ Mixed-use development, specifically the mixing of residential, commercial, and employment uses, contributes to a walkable environment. Municipal governments in Wake County are pursuing mixed-use development primarily through the designation of mixed-use zoning districts. For example, Morrisville includes a transit-oriented development (TOD) district in its Unified Development Ordinance. The TOD district seeks to integrate a “mix of complementary high-activity uses.”¹⁹

Mixed-use developments are linked to increased density and walkability. However, they have also been linked to a reduction in housing affordability.²⁰ Jurisdictions may consider adopting incentives to encourage affordable housing development within mixed-use areas as well as supporting funds dedicated to the creation and preservation of affordable housing in those areas. Strategically designed density bonuses are one example of an incentive tied to land use policy.

Theme 4: Support Higher-Density and Affordable Housing in Opportunity-Rich Areas

In their comprehensive plans, Wake municipalities recognize the importance of locating higher-density and affordable housing in opportunity-rich areas. For example, within the housing section of its comprehensive plan, the City of Raleigh includes a policy to “preferentially locate affordable housing in areas with good access to transit services.”²¹ In practice, Raleigh has adopted an affordable housing location policy. This policy’s objectives include the locating of affordable housing near employment and commercial centers and existing and proposed transit stations.²²

Cary, Garner, and Morrisville define opportunity-rich areas through a similar lens as Raleigh. Cary describes the areas as within walking distance to daily conveniences, employment, schools, and transit.²³ Garner encourages housing development within “walkable, mixed-use locations.”²⁴ Morrisville emphasizes workforce housing near transit stops in the McCrimmon Transit Small Area Plan.²⁵ Many of the previously described policies converge to support this objective.

Theme 5: Promote Preservation and Rehabilitation of Housing Stock

According to a 2013 publication by HUD’s Office of Policy Development and Research, preservation of existing affordable housing stock costs one-half to two-thirds the cost of new construction.²⁶ Investment in existing affordable housing stock may also assist in reducing the demolition of aging, naturally occurring affordable (NOAH) housing. Wake communities similarly recognize the value of investing in existing housing stock through preservation and rehabilitation efforts. Preservation tools are identified in the Wake County Affordable Housing Plan and include a preservation fund, a warning system, and public housing redevelopment.²⁷

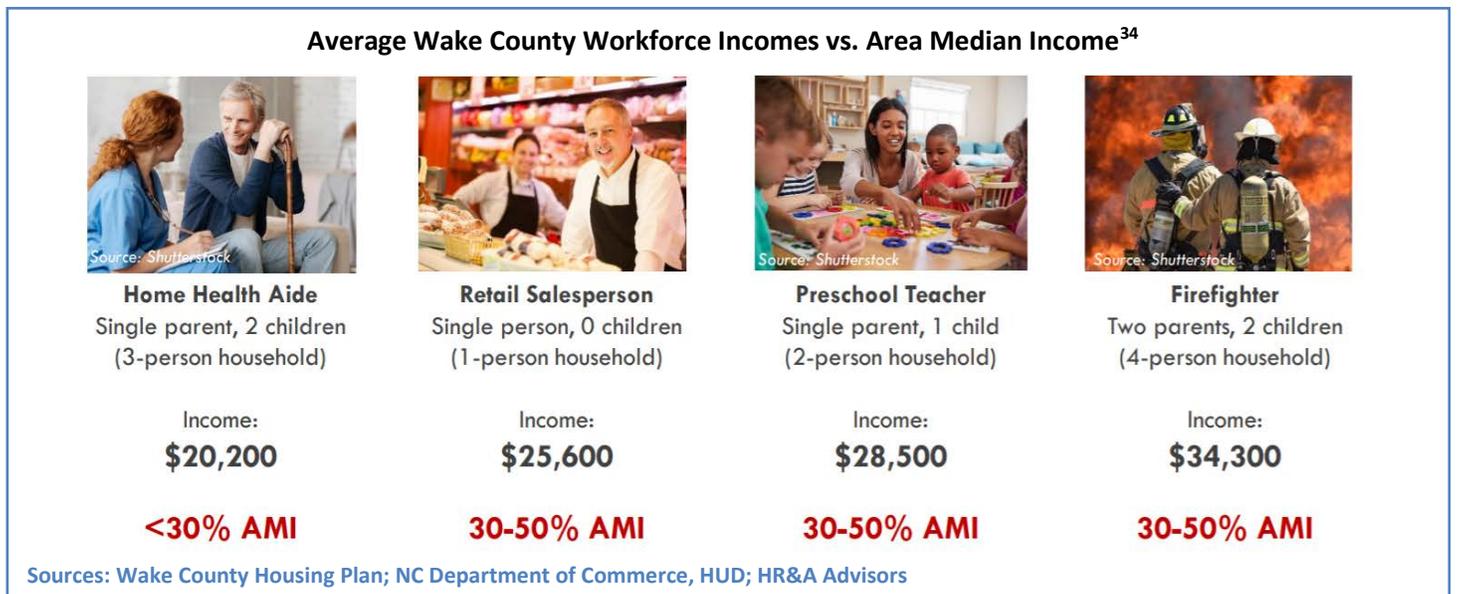
The first objective of Cary’s affordable housing policy, as it appears in the Town’s comprehensive plan, is preservation and rehabilitation of existing affordable housing stock.²⁸ In practice, the Town operates the Cary Housing Rehabilitation Program, which is federally funded and aids with a variety of repairs and improvements.²⁹ The City of Raleigh similarly operates a Homeowner Rehabilitation Program.³⁰ In its comprehensive plan, Raleigh also specifically names the preservation of existing affordable housing stock as a tool for preventing the conversion of naturally occurring affordable housing to market-rate housing.³¹

Housing Supply and Demand: What We Have and What We Need

Understanding the income and socioeconomic profile of households living within Wake County today is key to addressing the need for affordable housing. If a household can keep its housing expenses to a reasonable level, it is more likely to be able to access economic opportunities and achieve greater financial stability and educational outcomes. Affordable housing can also provide community benefits by generating public health savings, jobs, and increased tax revenue.^{32,33} The socioeconomic profile of a community helps us understand where existing low- and moderate-income households live and where they are most cost-burdened. Additionally, this data helps determine where there may be a need for higher-paying jobs within the community. By pairing this information with data on the current inventory of affordable housing and access to transit, we can most effectively focus limited resources and create strategies that are responsive to the unique context of the communities along proposed transit investments.

The Demand for Affordable Housing

Housing is considered affordable when housing costs, including rent or a mortgage and utilities, are no more than 30% of a household’s gross monthly income. Many of the people who work and live within Wake County make less than \$50,000. These workers include fire fighters, childcare workers, home health aides and minimum wage retail workers. In fact, the average annual earnings for these professions is 50% AMI or below.



For low- and moderate-income households in particular, spending more than 30% of their income on housing costs means they have limited funds to cover transportation, food, healthcare, education, and other essentials. Providing affordable housing near transit may be particularly beneficial for low- and moderate-income households, as they may be able to spend less of their remaining disposable income on transportation costs.

In Wake County, over 100,000 households are cost-burdened. Over 82% are low-income households that earn less than \$50,000 a year. These households are a mix of those who cannot find more affordable options, typically at lower-incomes, and those who choose to dedicate more of their income to housing.

Table 1: Cost-Burdened Households

	Wake County	Cary	Garner	Morrisville	Raleigh
Total Cost-Burdened Households	103,915	12,846	3,028	1,593	57,647
Total Low-Income Cost-Burdened Households (<\$50,000 a year)	82% (85,036)	75% (9,649)	89% (2,702)	76% (1,217)	87% (49,928)

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

Within Wake County, 67% of households that earn less than \$50,000 are cost-burdened. Low-income renters are more likely to be cost-burdened than low-income homeowners, with almost 75% of low-income renters cost-burdened throughout the County.

In each jurisdiction surveyed, more than 70% of low-income renter households are cost-burdened. Renters with very low incomes are even more likely to be cost-burdened – more than 85% of renters that make less than \$35,000 a year are cost-burdened, equivalent to approximately 50% AMI – the fire fighters, teachers, and minimum wage retail workers.

Figure 2: Cost-Burdened Low-Income Households in Wake County

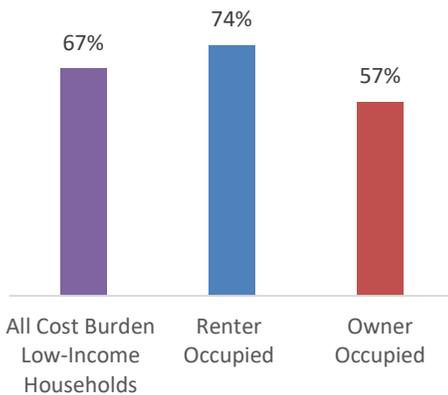
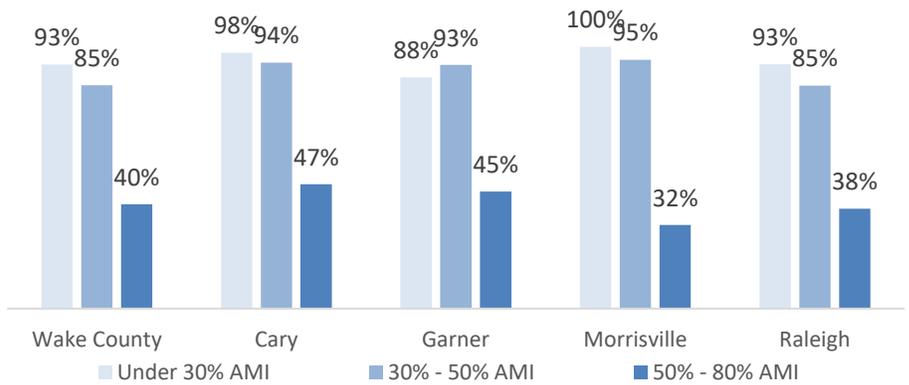
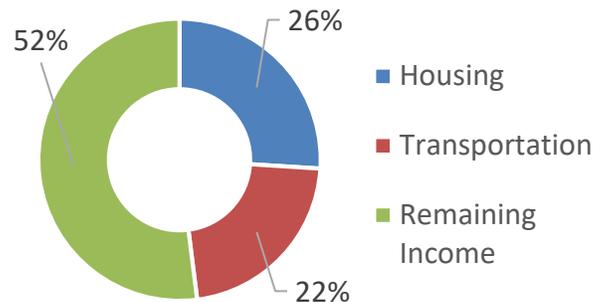


Figure 3: Cost-Burdened Low-Income Renter Households



To holistically understand whether a household is cost-burdened, we must also consider how much the household spends on their housing and transportation costs combined. The Center for Neighborhood Technology’s Housing and Transportation Index (H+T), defines housing and transportation cost-burden as households who spend more than 45% on housing and transportation costs combined. If a household has greater access to public transportation or job opportunities, they may choose to spend more of their income on housing. According to H+T, the average household in Wake County spends 48% of their income on housing and transportation costs combined, leaving them with only 52% of their remaining income to spend on all other expenses.

Figure 4: Wake County Average Monthly Household Expenses



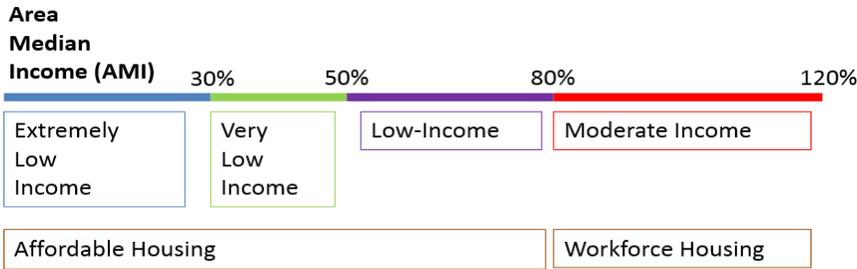
The Supply of Affordable Housing

The term “affordable housing” typically is used for households who make less than 80% AMI. The table below shows HUD’s 2018 Income Limits for the Raleigh Metropolitan Statistical Area (MSA). The figure on the next page also illustrates the income ranges that describe different affordable housing terms. When looking at Census data for households by annual income range, this report used \$50,000 or less as a rough equivalent to households making less than 80% AMI.

Table 2: 2018 HUD Income Limits by Household Size and AMI Level (Raleigh Metropolitan Statistical Area)

Median Family Income	FY 18 HUD Income Limit	1-person	2-person	3-person	4-person
\$84,300	30% AMI	\$17,750	\$20,250	\$22,800	\$25,300
	60% AMI	\$35,460	\$40,500	\$45,540	\$50,580
	80% AMI	\$47,250	\$54,000	\$60,750	\$67,450

Figure 5: Affordable Housing Terminology by Area Median Income



Affordable housing can be thought of in two ways – big “A” and little “a” affordable housing. Big “A” affordable housing broadly refers to housing that is intentionally developed as affordable housing and is only available to households that meet specific income limits. Big “A” affordable housing is often referred to as legally-binding affordability restricted (LBAR) housing or income-restricted affordable housing, and its affordability is tied to its funding source and/or its ownership. Little “a” affordable housing refers to housing that is affordable to low- and moderate-income households but is not income-restricted. This type of housing, also called naturally occurring affordable housing (NOAH) or market-rate affordable housing, is often older, smaller, or has fewer amenities than the general housing stock and thus is less expensive. To successfully plan for affordable housing strategies near the proposed transit investments in Wake County, both LBAR and NOAH should be tracked and considered in all jurisdictions.

Examples of LBAR and NOAH in the Triangle

Figure 6: Examples of LBAR Housing



Figure 7: Examples of NOAH



Source: Google Images

Legally-Binding Affordability-Restricted Housing

This housing is considered big “A” affordable housing. Income restrictions for this kind of housing are legally-binding, and are often set by the requirements of the funding or financing source used to develop the units. Housing built through Low-Income Housing Tax Credits, HOME Investment Partnerships Program (HOME), Community Development Block Grant (CDBG), or other federal funding sources fall in this category. In addition, homes built or managed by a specific entity, such as a housing authority, Habitat for Humanity affiliate, or a community land trust, often have legally-binding income restrictions. It is extremely difficult to build new affordable housing without a subsidy.

As shown to the right, the rent or mortgage paid by low- and moderate-income residents is simply not enough to cover the costs to construct and operate a property, including land acquisition, construction, and operating expenses. This mismatch between incomes and housing costs is only exacerbated by increasing land costs and construction prices. Because of this mismatch, often times subsidy is required in order to make housing prices more affordable for low- and moderate-income households. To secure the subsidy, which is often a public investment, legally-binding affordability restrictions are put in place.

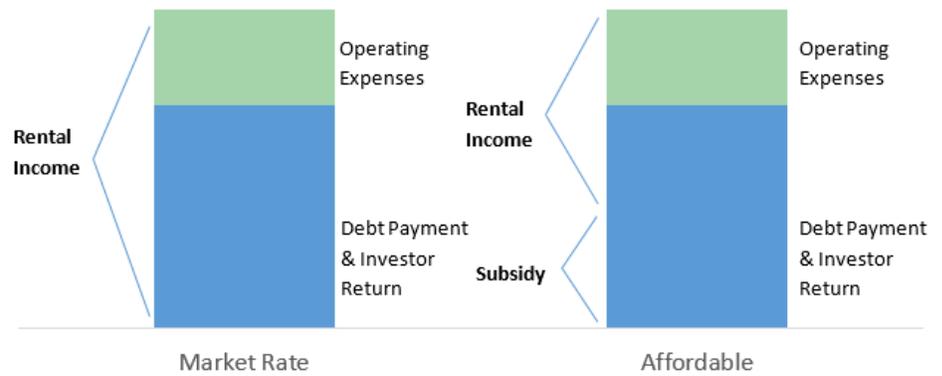


Figure 8: Difference Between Market Rate and Affordable Housing Sources and Uses
Source: City of Durham, Community Development Department (amended)

Two specific types of LBAR housing are public housing authority-owned units and units rented with public housing authority vouchers. Public housing units are built or purchased with government subsidies and are owned and operated by the local public housing authority. Public housing authorities generally only serve extremely-low income households, in the less than 30% AMI range, although some new management models are emerging. There are two public housing authorities in Wake County – the Housing Authority of the County of Wake (HACW) and the Raleigh Housing Authority (RHA). Both WCHA and RHA own and operate public housing units, which comprise more than 10% of existing income-restricted affordable housing in Wake County. Many public housing properties are located near the BRT corridors as well as the frequent bus routes.

Tenant-based Section 8 vouchers are also provided by public housing authorities and can be used for any property where the landlord accepts vouchers. This is another way of making market-rate housing affordable to lower income households. With a Section 8 voucher, a household pays 30% of their income towards rent and utilities, and the voucher pays the difference between that amount and the rental rate directly to the landlord. Known primarily as Section 8 vouchers, these are also referred to as Housing Choice Vouchers..³⁵

Legally-Binding Affordability Restricted Housing Inventory

Income-restricted units play a critical role in meeting the affordable housing need due to their long-term periods of affordability. For example, properties developed with Low-Income Housing Tax Credits or other federal funding sources have a 15-30 year affordability period. Maintaining an inventory of legally-binding units helps communities be proactive about preserving this housing, as tracking a property’s affordability restrictions allows local stakeholders to make decisions about the property before the restriction expires.

	Wake County
Table 3: Legally-Binding Affordability Restricted Housing Units	
Total Legally-Binding Units	14,542
Within ½ mile of BRT Corridors + ¼ Mile of Frequent Bus Routes:	5,288
BRT Corridors	2,552
Frequent Bus Routes (Addit’l Units)	2,736

There are more than 14,000 income-restricted housing units that serve households at 80% AMI or below throughout Wake County.³⁶ This number includes both single- and multifamily property types and both rental and homeownership units. Approximately 15% of income-restricted housing is publicly-owned and managed, 10% of which is managed by either the Raleigh Housing Authority or the Housing Authority of Wake County. Approximately 36% (5,288 units) of legally-binding units in Wake County are located within a ½ mile of the BRT corridors and ¼ mile of frequent bus routes.

Table 4: Expiring Affordability of Legally-Binding Units

	2017-2022	2023-2027
Total Expiring Legally-Binding Units Within ½ mile of BRT Corridors + ¼ Mile of Frequent Bus Routes:	241	878
BRT Corridors	141	377
Frequent Bus Routes (Add'l Units)	100	501

Within Wake County, there are 48 properties with close to 600 units that have affordability restrictions that will expire in the next five years, and 293 properties with close to 5,800 units that are set to expire in the next 20 years. If these units do not receive additional public subsidy to both repair the units and extend their affordability periods, the properties could leave the market and either fall into disrepair or experience rent increases – both of which would cause a loss of affordable housing.

Naturally Occurring Affordable Housing

Also known as market-rate affordable housing, this is housing that is affordable based on its price on the private market, and it is not restricted to occupancy by low-income households. As previously shown in Figure 7, rental rates for market rate properties are enough to cover the operating expenses, debt payment, and investor return. Naturally-Occurring Affordable Housing (NOAH) properties tend to be older, lack amenities, and may be of substandard quality. For purposes of this report, properties are considered NOAH if their rental rates are affordable to households at or below 80% AMI based on number of bedrooms and household size.

Naturally Occurring Affordable Housing Inventory

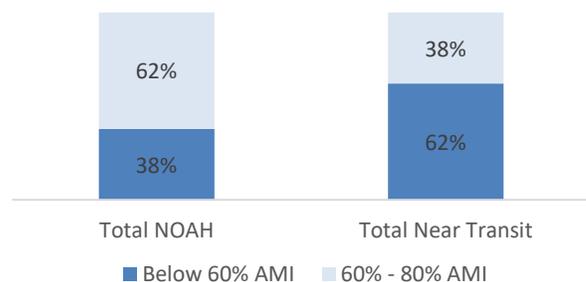
It is important to track NOAH as part of an overall affordable housing inventory, particularly to hone in on where changes in the market – potentially brought on by the proposed transit investments – may increase rents and cause the loss of NOAH units. Triangle J COG subscribes to CoStar, a real estate database with information on multifamily residential buildings, typically with 20 units or more. This data can be used to derive information on larger multifamily NOAH properties in Wake County. There are likely additional affordable rentals that are single-family, duplexes, or other smaller properties that are not included. Triangle J COG made a few assumptions for this NOAH analysis:

1. One individual lives in each bedroom. Therefore, we gauge the affordability of a one bedroom rental unit based on HUD’s income limits for a one-person household and so on. A unit is considered affordable if the rent is 30% or less of the monthly income for a household at 80% AMI, based on the unit size and household size. Due to data limitations, we are not able to include utility costs.
2. CoStar does not provide a complete listing of market-rate affordable housing – our analysis is dependent on its available listings.

In Wake County, there are more than 80,000 NOAH units that serve households at 80% AMI or below. More than 125% of the existing NOAH units are located within a ½ mile of the BRT corridors and ¼ mile of frequent bus routes. Overall, the majority of NOAH units in Wake County have rents that are affordable to households between 60% to 80% AMI. However, NOAH units near transit are more likely to serve households below 60% AMI. As transit investments are made, NOAH units – particularly those that are currently affordable to households at or below 60% AMI – should be considered at-risk affordable housing, as increases in rent will occur to match market demand.

Table 5: Naturally Occurring Affordable Housing Units	Wake County
Total NOAH Units:	81,285
Total Within ½ mile of BRT Corridors + ¼ Mile of Frequent Bus Routes:	21,050
BRT Corridors	9,047
Frequent Bus Routes	12,003

Figure 9: NOAH Units near Wake Transit Corridors



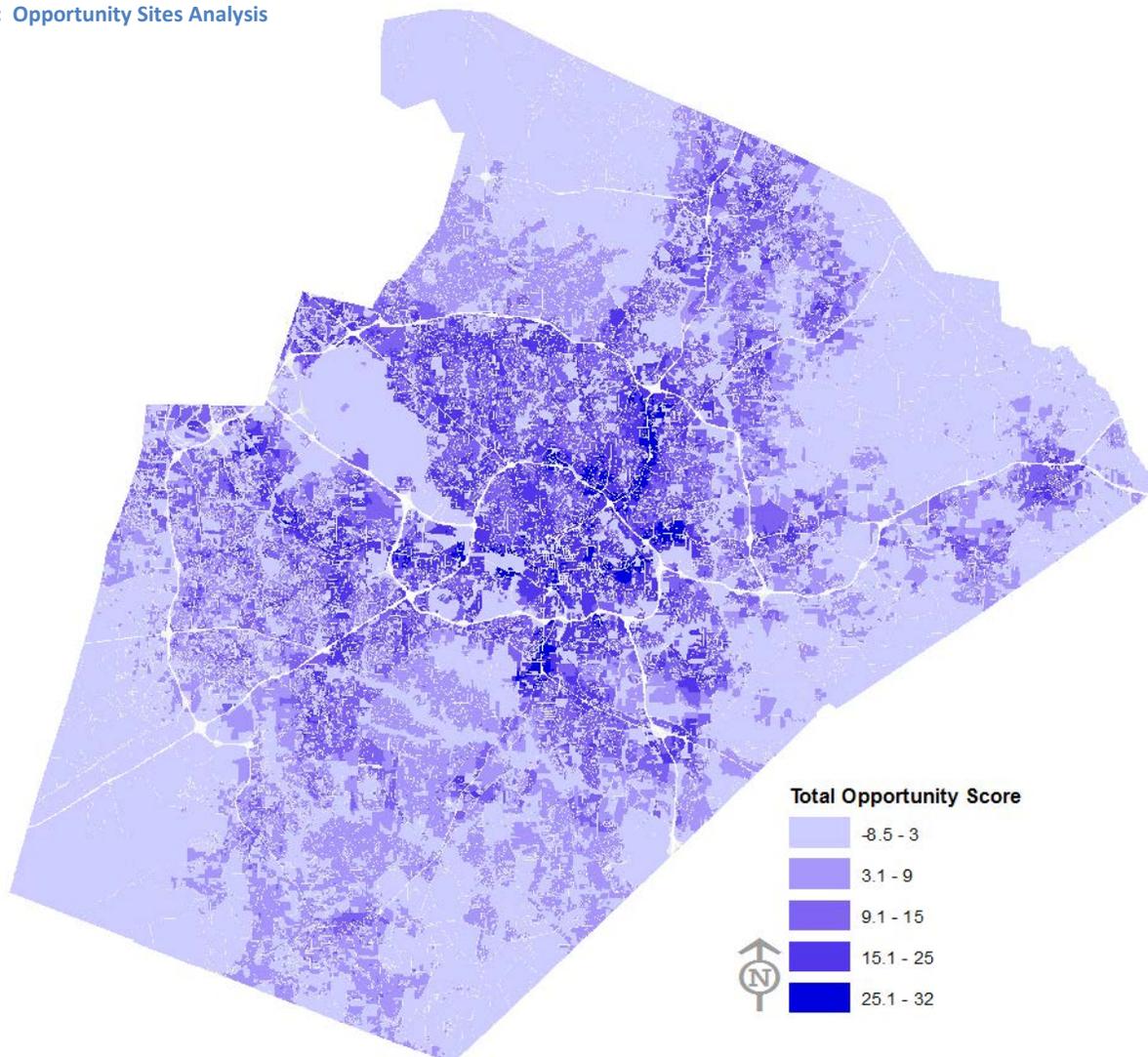
An Analysis of Opportunity Sites for Affordable Housing in Wake County

Understanding there is a shortage of accessible, safe, and affordable housing, Triangle J COG conducted a GIS-based analysis of publicly- and privately-owned parcels in Wake County to determine those that might be best suited for affordable housing development in the future. These opportunity sites may be further analyzed to help determine their suitability for specific affordable housing developments.

The opportunity analysis criteria, developed by the technical group, includes site characteristics such as ownership, parcel size, mixed-use zoning by right, development status (vacant or underdeveloped), land value per square foot, adjacency to a flood zone, and water/sewer access. The criteria also take into account proximity to amenities, including transit, sidewalks, grocery stores, shopping, and pharmacies.

Finally, two factors were used to remove parcels that are unbuildable or not intended for development. The first factor is public or private parks or open space. The second is the parcel shape factor, calculated as $\text{parcel perimeter}^2/\text{area}$; parcels with a parcel shape factor greater than thirty-five are generally considered unbuildable. Together, these criteria and factors help to narrow down over 350,000 parcels in Wake County to a shorter list that can be looked at in more detail to see if they are feasible opportunities for affordable housing development. The map below shows the overall opportunity site scores, with a higher score (darker color) indicating the site may be more suitable. Detailed information about the opportunity analysis criteria can be found in Appendix 1.

Figure 10: Opportunity Sites Analysis



Query for Properties Suitable for Low-Income Housing Tax Credit Development Projects

Given that low-income housing tax credits (LIHTC) can be a powerful financing tool to build affordable housing, the high-scoring opportunity sites were queried to identify publically-owned and privately-owned properties suitable for LIHTC development projects. The query was as follows:

- Acreage is greater than or equal to 4 acres for 9% LIHTC sites and 6 acres for 4% LIHTC sites.
- The site is within a municipal utility service area.
- Grocery, shopping, and pharmacy services are located within 1.5 miles of the site.
- The site is located within a half-mile buffer of a proposed Bus Rapid Transit corridor.

This query yielded 12 privately-owned sites that are either undeveloped or appear to have vacant structures, and nine publically-owned sites. The majority of the publically-owned sites are currently in active use, but many of them include considerable surface parking that may not be needed as better transit access is provided, and many may also be candidates for mixed-use development. Details on these sites were provided to the members of the technical group to use as they feel appropriate.

Figure 11: Privately-Owned Opportunity Sites near Wake Transit Corridors

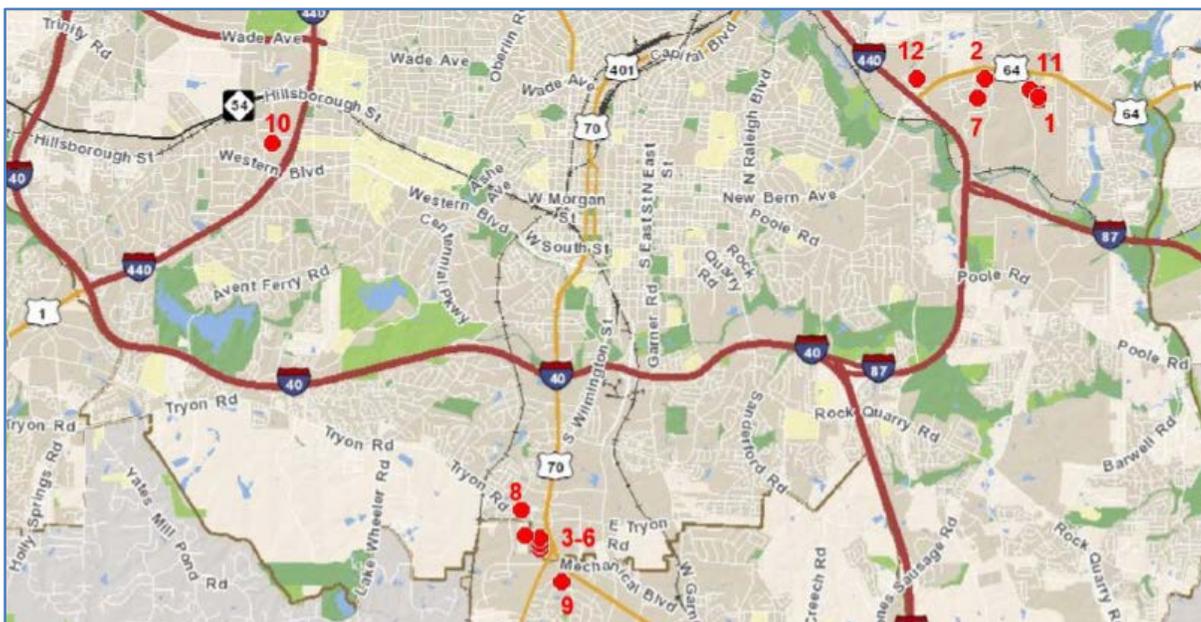
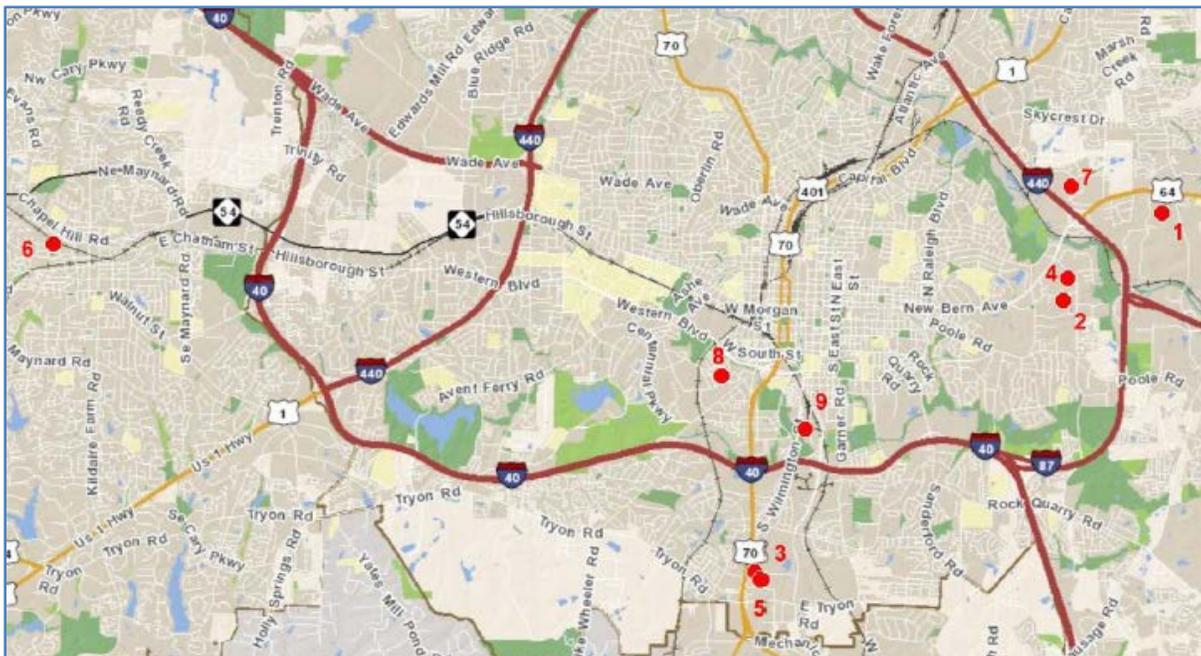


Figure 12: Publicly-Owned Opportunity Sites near Wake Transit Corridors



Additional Queries for Affordable Housing Development

Triangle J COG created an online map so that members of the Land Use and Housing Technical Group can access the parcel-level data for the opportunity sites analysis in conducted, as well as view the complete legally-binding and naturally occurring affordable housing inventories for Wake County.³⁷ This interactive map allows project partners to see overall scores for opportunity sites and their relationship to the proposed transit corridors. Using this format, Triangle J COG can update the parcel level data and opportunity sites analysis on a regular basis to stay up to date with market trends and be consistent with criteria set by funders, such as the North Carolina Housing Finance Agency.

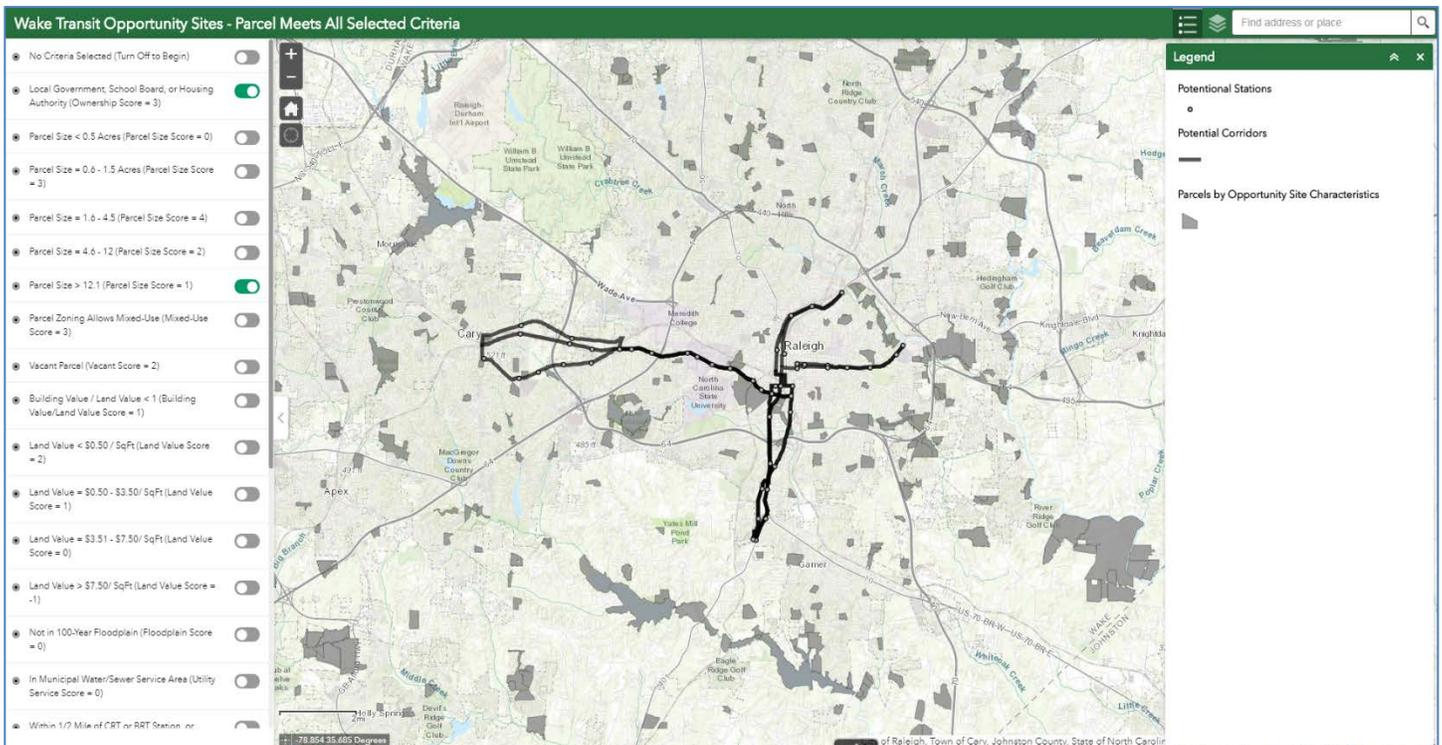
With feedback from project partners, Triangle J COG updated the online mapping tool to allow users to create simple queries to analyses parcels for potential development based on their priority criteria., rather than utilizing the pre-determined scores from the Opportunity Sites Analysis.

Triangle J COG is also interested in adding more pre-determined queries to assist users in identifying parcels for potential development projects, including those suitable for low-income housing tax credit developments (both 4% and 9%), small infill developments, accessory dwelling units, or public-private partnerships. Additionally, queries could include those that support a vacant land acquisition or land trust strategy. Triangle J COG will consult with the Land Use and Housing Technical Group as it continues to research and develop this tool so as to best align the tool with the needs of project partners.

Further refinements of the mapping tool may include the ability to:

1. More easily identify and analyze affordable housing properties with expiring funding sources, and
2. Search for naturally occurring affordable housing properties that may be prime for redevelopment

Figure 13: Wake County Opportunity Sites Mapping Tool



Corridor Character and Development Analysis

This section of the technical analysis uses data from Wake County parcel databases and the adopted Research Triangle Region *2045 Metropolitan Transportation Plan (MTP)* to examine characteristics of the planned BRT corridors today, and the population and job growth levels that were projected in adopting the region’s current long-range transportation plan. The analysis is designed to accomplish two things:

- i) to provide a foundation for thinking about both the complexities of land use in the bus corridors and how different segments of the corridors compare to one another; and
- ii) to provide a basis for future updates of the region’s Metropolitan Transportation Plan – the next update is expected to be completed in late 2021 or early 2022. Land use and development decisions along the BRT corridors and frequent bus routes will be made by the jurisdictions with land use authority along the corridors and routes using planning processes appropriate to their situations. For example, Raleigh is undertaking an Equitable Transit Oriented Development (eTOD) effort:

www.raleighnc.gov/business/content/PlanDev/Articles/LongRange/RaleighBRT.html

The corridor character and development analysis demonstrates how existing data sources and straightforward methods can be used to explore both existing and projected development, with the ability to update data periodically and refine projections or create alternative future scenarios. This analysis gives one example of how the data and methods can be used; Appendix 4 provides more detail on the data sources and quantitative methods, indicating how variations on the analysis could be done.

Information Sources for Existing Corridor Character and Future Projections

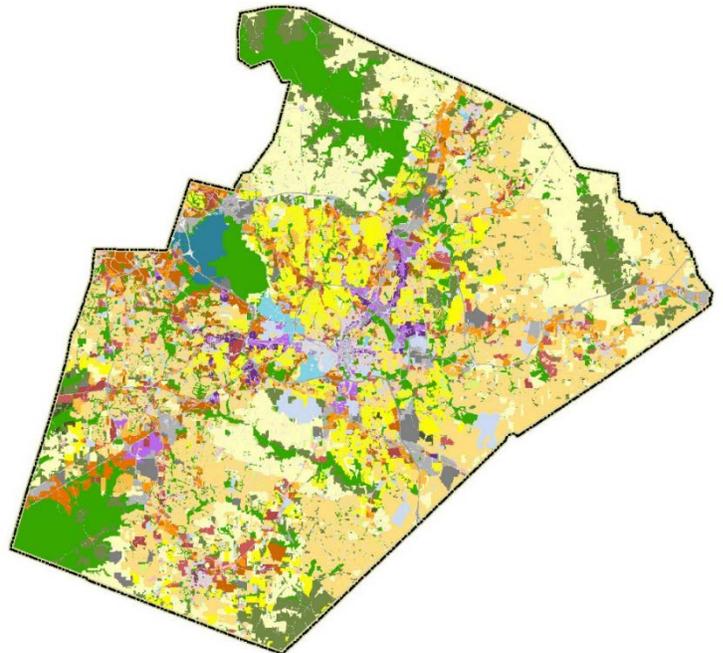
Existing development character in the corridors is based on information contained in the County’s continually updated parcel database, including residential units, commercial square footage, and institutional square footage.

Projected growth used the forecasts from *Connect2045*, the region’s long range Metropolitan Transportation Plan. These projections start with parcel-based “place types” selected by each local government from a menu of place type options, indicating the type of development that might be anticipated over the long term, and the development status of each parcel relative to the *Connect2045* future scenario. The map at right shows the *Connect2045* place types for Wake County.

Based on the place type and development status of each parcel, the capacity of each parcel for additional residential and non-residential growth can be calculated. These parcel-level capacities are aggregated into the grid cells used in the region’s CommunityViz Growth Model. The model allocates future job and population totals that are based on the projection techniques used by the State Demographer and independent data sources.

More information on the CommunityViz Model is available from the Triangle J Council of Governments.

Figure 14: Wake County Connect2045 Future Place Types



Applying the Data and Methods to BRT Corridors

The area analyzed was the “infrastructure zones” defined by the Wake Bus Rapid Transit Corridors Major Investment Study (MIS), shown in color in the map at right.

It covers 27 square miles (3% of Wake County’s land area) and includes Raleigh’s downtown and the four BRT corridors that radiate north, south, east and west from the downtown.

Greater detail on the Wake County BRT MIS and documents from that study are available at: <http://goforwardnc.org/project/wake-brt>

Using the CommunityViz Growth Model that generates the Metropolitan Transportation Plan job and population forecasts, CommunityViz grid cells were overlaid on the area of the MIS infrastructure zones.

Each grid cell is about 10 acres – roughly the size of 8 football fields. The analysis area includes 1,737 CommunityViz grid cells, shown in Figure 16.

The grid cells become the common area for calculating existing residential, commercial and institutional development – along with open space and vacant land – and also for reporting the future jobs and population from the long-range transportation plan.

Based on the existing development conditions, grid cells can be grouped into corridor segments with similar characteristics.

Although this particular analysis uses the transportation plan scenario to describe anticipated future growth, other scenarios can be created by changing the underlying place type or development status designations.

The Wake County parcel data were used to measure the prevalence of different land uses within each grid cell, rank grid cells based on land use prevalence, and define BRT corridor segments along dimensions of institutional, commercial, and residential intensity. Each of the grid cells was ranked across five measures: amounts of public open space and of vacant land, and intensity of institutional, commercial and residential development. The map below shows each cell’s most significant land use – with preference given first to open space and then institutional uses – and the degree of intensity of that land use. The map shows that although there are concentrations of some uses, each corridor includes a mix of uses and intensities. More detail on the analysis method, including additional maps showing the relative intensity of each development type are included in this report’s Appendix 4.

Figure 15: Wake County BRT Infrastructure Areas

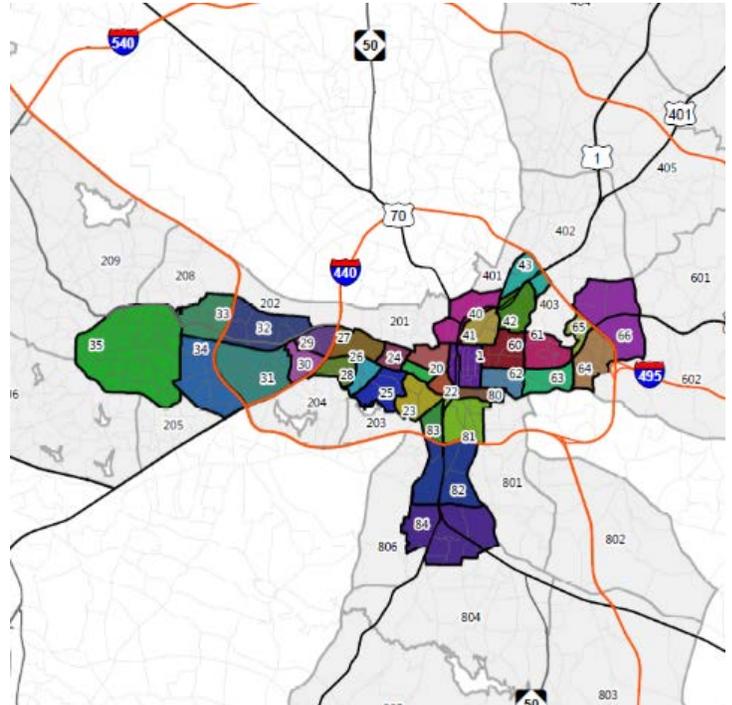


Figure 16: Analysis Area CommunityViz Model Grid Cells

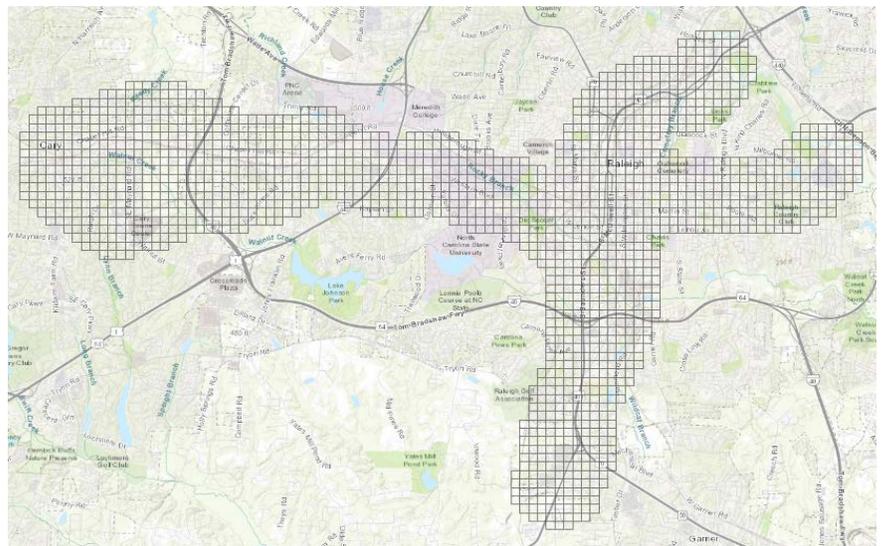
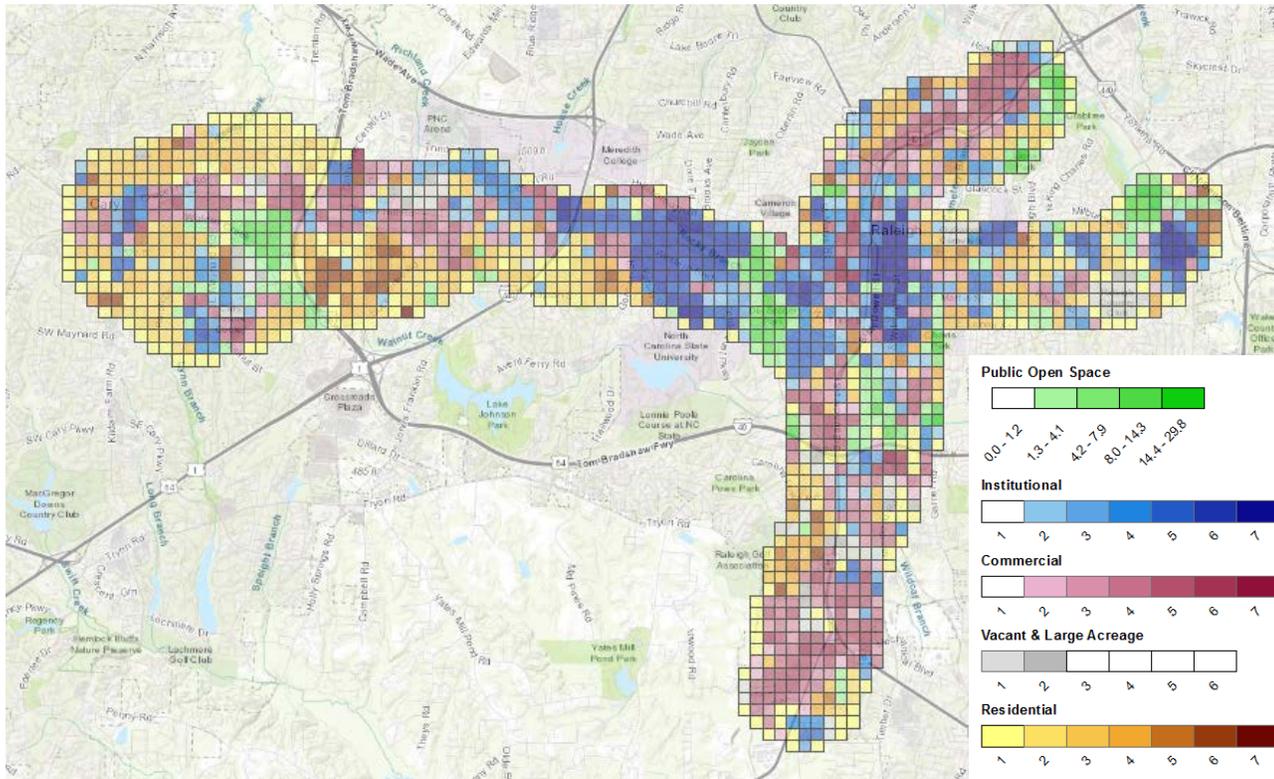


Figure 17: Grid Cells Ranked by Existing Land Use Prevalence



These grid-cell level existing land uses were analyzed to see how segments of the corridors may have similar or differing patterns of development. The analysis revealed six main patterns, shown in the map below, ranging from very high job, housing and institutional intensities in downtown Raleigh to significant housing but lower job concentrations along segments of the eastern and western corridors.

The potential population and job growth from the 2045 Metropolitan Transportation Plan was then summarized by corridor segment, shown in the map at the top of the next page. The Plan covered a 32-year period beginning in 2013 – the base year for the Plan – and stretching through the Year 2045.

Figure 18: Corridor Segments by Existing Jobs and Housing Intensity

If this growth is realized, the Bus Rapid Transit Infrastructure Zones defined in the Wake County BRT MIS would add 58,000 people and 210,000 jobs between 2013 and 2045, 7% of the population growth and 48% of the job growth anticipated in Wake County over that period.

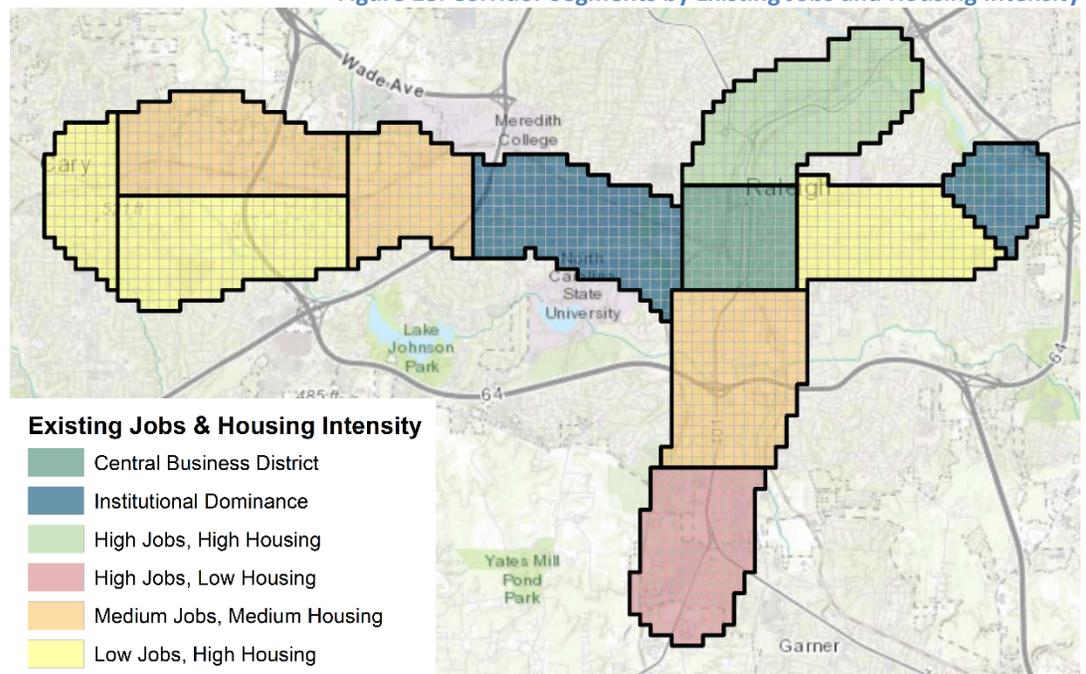
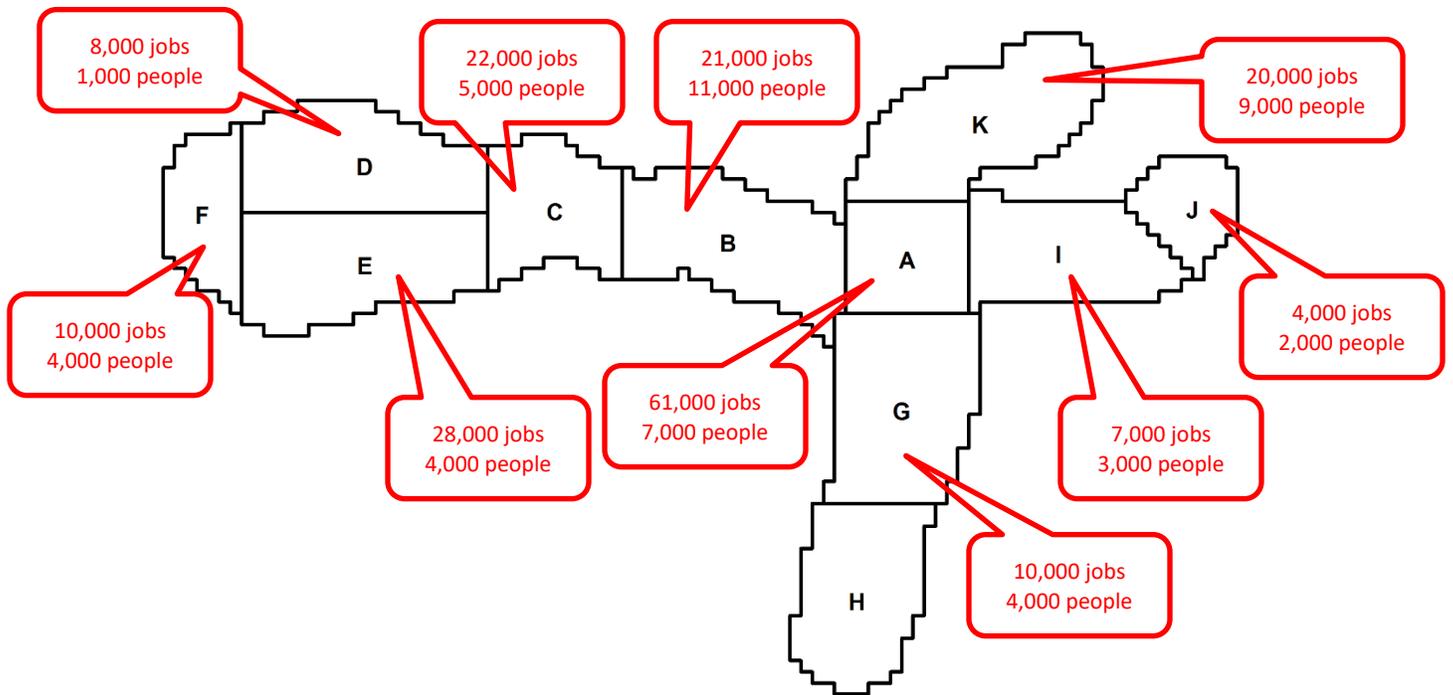


Figure 19: BRT Segment Transportation Plan Scenario Projected Growth in Jobs and Population (2013-2045)



Planners and decision-makers can use this kind of fine-grained information as they consider future land use changes, affordable housing strategies and more detailed transit investment decisions, such as final transit alignments, the location of transit stops, or the development of station area typologies.

In-Depth Look at Best Practices for Transit-Oriented Development

Transit-oriented development is key to making the most out of development along the Wake Transit Corridor. Transit-oriented development has three major goals: 1) Active, walkable streets 2) Building intensity and scale 3) Careful transit integration.³⁸ Each of these broad goals has specific best practices. Triangle J COG conducted research on a selection of best practices for transit-oriented development, highlighting each within the context of Wake Communities. Many of these best practices also work in tandem with the affordable housing strategies discussed above.

The selected best practices include: parking maximums, small block sizes, density minimums, FAR exchanges, and strategies to set goals and track affordable housing. The following section reviews these specific practices through an examination of how communities pursuing transit-oriented development employ the practices and any current efforts within Wake communities. Each practice includes information from “a planner’s perspective,” which contain snippets from interviews with planners in the communities associated with the best practice.

Implement Parking Maximums in Transit-Oriented Development Areas

Explanation of tool: Parking maximums help address the problem of an oversupply of parking. The tool can also assist with the creation of more travel choices.

Examples of best practices: Many communities pursuing TOD create parking maximums with consideration of use and/or proximity to transit stations.

- In the Buckhead Parking Overlay, the City of Atlanta requires no minimum parking for most uses. Parking maximums are specified by use. For instance, commercial and retail uses are allowed a maximum of 2.5 spaces per 1,000 square feet of floor area. In contrast, recreation and entertainment uses are permitted a maximum of 1.5 spaces per 1,000 square feet of floor area.³⁹
- The City of Aurora defines parking maximums by use and by TOD zoning sub-district. Three sub-districts exist: core, general, and transition. A parking gradient thus appears, with the least parking allowed in the core sub-district.⁴⁰
- In their TOD Districts, the City of Baltimore and the City of Charlotte eliminate many of the parking minimums. In addition to establishing more traditional parking space maximums, Baltimore also establishes that parking lots cannot exceed 1 acre in size. Charlotte, interestingly, distinguishes certain parking maximums according to proximity to single-family zoning.⁴¹
- Like Aurora, the City of Jacksonville and the City of Lakewood create parking gradients through their regulations. Jacksonville defines parking requirements according to distance from a TOD-designated transit station. Lakewood uses established contexts, such as urban and transit, to determine parking maximums.⁴²

Current efforts: Municipalities in Wake County are more likely to use parking minimums as opposed to parking maximums. Parking maximums that are described in current ordinances are limited. For instance, the Town of Cary specifies a parking maximum for commercial uses in Section 7.8.2 of its Land Development Ordinance.

A planner’s perspective: A planner with the City of Charlotte noted that parking remains a struggle. Charlotte residents use transit and bike-share, but most still desire to own a vehicle. This becomes especially difficult when regulating parking for residential uses.



Source: Google Images

Improve Walkability through Small Block Sizes

Explanation of tool: Small block size improves walkability and street frontage for pedestrian travel. Desirable block sizes can be achieved through specifying minimum and maximum block lengths.

Examples of best practices:

- Albuquerque describes block length according to center and corridor areas. As expected, the downtown area includes the lowest range, which is between 200 and 400 feet. The areas specified as urban center and main street have a range of 300 to 400 feet. Employment centers are allowed the longest block length at 800 feet.⁴³
- In the Lindbergh Transit Station Area Special Public Interest District, the City of Atlanta specifies: “new development shall not contain entire block faces greater than 600 feet in length.”⁴⁴
- With its block length specifications, the City of Aurora provides a TOD-grounded principle to guide the development standard. The desired block length is specified as between 300 and 660 feet, and “no more than 1,800 feet around the perimeter.”⁴⁵

Current efforts:

- The Town of Garner specifies certain block length requirements in its UDO. Block length is specified in the guidelines for traditional neighborhood development. Additionally, the design of streets is instructed to avoid the creation of residential blocks in excess of 1,000 feet.⁴⁶
- In Section 8.3.2 of the City’s UDO, Raleigh specifies maximum block perimeter standards by district. The smallest perimeter of 2,000 feet is found in the downtown mixed-use district and the transit overlay district.⁴⁷

A planner’s perspective: A planner with the City of Albuquerque reflected block length was decided according to a walkable distance. A pedestrian orientation should drive block-size decisions.

Foster Increased Density near Transit Stations by Adopting Density Minimums

Explanation of tool: Requiring minimum residential densities, rather than setting maximums, allows communities to foster higher densities around transit stations where a certain concentration of residents is needed for a transit-oriented development to be successful.

Examples of best practices: Many communities set density minimums that transition from higher densities near the transit station to lower densities within ¼ mile and ½ mile walking distances.

- The City of Aurora allows residential densities to be determined by a station area plan, with the general principle that residential densities in TODs are higher than in surrounding areas, and transition from higher densities near the transit station to lower densities adjacent to surrounding neighborhoods. If no station area plan has been adopted, minimum densities are at least 60 units per acre in the core area, 40 units per acre in the general area, and 20 units per acre in the transition area.⁴⁸
- In both the City of Charlotte and the City of Jacksonville, the residential density minimums are twenty units per acre within ¼ mile from a transit station, and fifteen units per acre between ¼ and ½ mile of a transit station.⁴⁹
- In Charlotte, the ordinance also permits up to 20% of the total development gross square footage of retail, institutional, civic, and office uses to count towards meeting the minimum residential densities at a ratio of one dwelling unit to two thousand square feet of development.⁵⁰
- In Lakewood, minimum densities vary by mixed-use district, ranging from 12 units per acre to 30 units per acre.⁵¹

Current efforts:

- Morrisville's Transit-Oriented Development District sets minimum net densities based on the dwelling type. Single-family detached dwelling units are a minimum of 7.5 units per acre, and single-family attached and multi-family dwellings are both a minimum of 15 units per acre.⁵²
- Raleigh doesn’t set minimum densities specifically, but does require minimum building heights in some areas.⁵³

A planner’s perspective: Charlotte, Redmond, and Albuquerque planners note that density standards have not led to desired intensities. Each is shifting towards a focus on height and form rather than a specific number of units per acre.

Leverage Private Investment Using Floor Area Ratio Exchanges

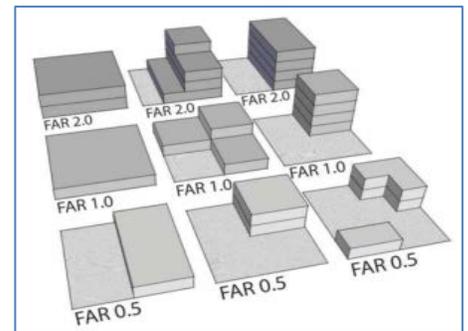
Explanation of tool: Density bonuses are a common tool for residential uses, but some communities are also offering exchanges in floor area ratio for transit-related facilities or cash contributions to transportation funds.

Examples of best practices:

- In Mountain View, properties with the T zone overlay designation are allowed to apply for a higher floor area ratio (up to 0.50, or 0.65 if adjacent to a public rail transit station) if they incorporate transit-related facilities and comply with development standards intended to increase transit ridership.⁵⁴
- The City of Orlando allows for reductions in minimum intensity standards, down to a base minimum of 0.10, if the developer makes a contribution to the City of Orlando Trust Fund for Alternative Transportation. The contribution amount is calculated as one percent of construction cost for every 0.05 FAR reduction or portion thereof; or developers may dedicate a portion of the site to the City for the development of transit improvements, with the assessed value of the dedicated land deducted from the total cost of the contribution.⁵⁵
- In Redmond, developers are incentivized to build transit-oriented development by receiving both height and FAR increases in certain zones. For commercial buildings, developers may build one additional story and up to an additional 0.25 FAR. For residential and full-service hotel/conference center buildings, developers may build two additional stories, and up to an additional 0.75 FAR for residential development. In addition, the ordinance permits transferring the undeveloped bonus FAR from one site to another, assuming the receiving site also satisfies the criteria for the bonus.⁵⁶

Current efforts: None of the municipalities in Wake County currently offer an exchange in floor area ratio for certain improvements.

A planner's perspective: A planner in the City of Redmond noted that just allowing large amounts of density by right limited the development of public features like art and plazas. Redmond planners wished they had established a better incentive bonus system from the beginning to encourage certain features in TOD districts as development activity increased.



Source: City of Sacramento

Increase Funding for Affordable Housing Using Special Assessment Districts

Explanation of tool: Special assessment districts (SADs), also known as municipal service districts, are created to charge property owners for some provided benefit. Generally, the benefit is defined as an increase in property values.⁵⁷ Historically, SADs have been created to fund transit, utility expansion, and similar infrastructure-related projects. Interest is growing around the use of SADs to increase funding for affordable housing.

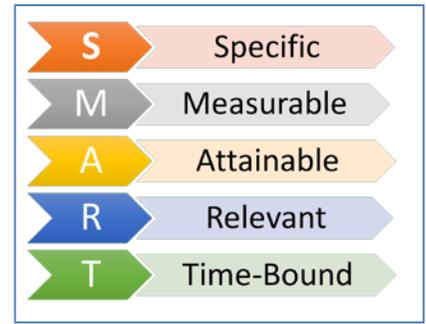
North Carolina context: Examples of SADs for the benefit of affordable housing are difficult to locate. In North Carolina, municipal and county governments are enabled by the North Carolina legislature to create SADs. A table of SAD authorized projects is available in Local Finance Bulletin Number 40, published in 2009 by the UNC School of Government.⁵⁸ An affordable housing benefit requires use of the “new” special assessment authority.

Communities in North Carolina have listed SADs as potential strategies for increasing funding for affordable housing. Those communities include: Town of Chapel Hill, City of Durham, and Wake County.

Current efforts: Wake County identifies SADs as a potential funding source for affordable housing in its Affordable Housing Plan. Within this plan, the County discusses collaborating with municipalities to explore the use of SADs for affordable housing.⁵⁹

Set, Measure, and Track Transit Corridor Housing Goals

Explanation of tool: Setting affordable housing goals is key to addressing the affordable housing need throughout the proposed transit corridors in a meaningful way. To accomplish these goals, local governments must be able to point to specific actions and outcomes that will support preservation and creation of additional housing and also identify adequate measurements of successful implementation. Implementation timeframes and continued revision of goals, outcomes, and metrics are critical to ensuring that the needs of the community are met and objectives accomplished. To ensure goals and objectives are clear and achievable, each one should be specific, measurable, actionable, relevant, and time-bound, or S.M.A.R.T.



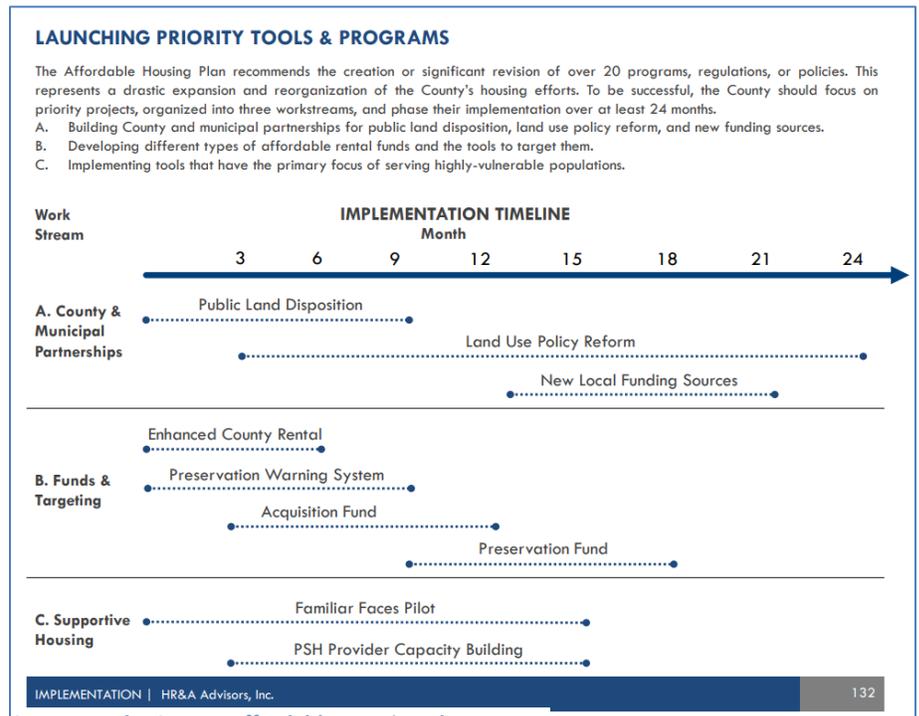
Source: Google Images

Examples of best practices:

- In The Columbia Pike Neighborhoods Area Plan, Arlington County, Virginia commits to “retain or replace” 100% of existing market rate affordable units (MARKs) for households earning at or below 60% AMI and between 60% and 80% AMI. In total, this commitment amounts to approximately 6,200 units.⁶⁰
- The Atlanta Beltline 2030 Strategic Implementation Plan presents the target that 20% of the 28,000 new residential units to be built in the planning area be affordable. Affordable is defined separately for rental and ownership units. For rental, the definition applies to households earning below 60% AMI, while ownership units applies to 100% AMI. In support of this goal, the City adopted an ordinance requiring 15% of revenues from the tax increment financing district to be directed to the BeltLine Affordable Housing Trust Fund (BAHTF).⁶¹
- The City of Austin adopted the Austin Strategic Housing Blueprint in 2017. Included in the plan are two 10-year targets for linking housing with transportation. The first target sets a goal that 25% of affordable housing created or preserved be within ¼ mile of high-frequency transit. The second target poses that 75% of affordable housing created or preserved by within ¾ mile of local, fixed-route transit service.⁶²

Current efforts: The Wake County Affordable Housing Plan outlines the timeline for implementation over a two year period. This outline provides an overall understanding of where the County should focus on priority projects, which is organized into three work streams.

The plan also suggests the need for guiding and tracking implementation of affordable housing tools as a critical consideration for implementing the Affordable Housing Plan. The report suggests that the County produce an annual report that tracks the state of Wake County’s housing to evaluate the County and municipalities’ progress toward meeting their goals. Additionally, in 2017, the City of Raleigh adopted a goal of creating 570 affordable housing units each year for the next 10 years.



Source: Wake County Affordable Housing Plan

Measuring Performance

Tracking Data to Achieve Affordable Housing and Land Use Goals and Outcomes

Jurisdictions throughout Wake County have several overarching goals related to affordable housing and land use throughout their communities:

1. Preserve Legally-Binding (LBAR) and Naturally Occurring Affordable Housing (NOAH) Units
2. Create New Legally-Binding Affordability Restricted (LBAR) Units
3. Encourage transit-oriented development near proposed transit investments to promote affordable and accessible communities

A system could be implemented to track and monitor progress toward achieving all three affordable housing goals. Data could be comprised of metrics related to each of the three goals and associated desired outcomes. Metrics may also be included to measure the overall trends throughout the transit corridors. Updates could be completed on a scheduled basis to assist with data tracking and monitoring. As a regional organization, Triangle J COG is well-suited to track and maintain this data and convene regional stakeholders to assess the progress made towards these goals annually. A set of proposed metrics are outlined below for consideration.

Table 6: General Demographic and Housing Metrics

Topic	Metric	Data Source
Population Characteristics	<ol style="list-style-type: none"> 1. Population 2. Population density (per sq.mi) 3. % White alone 4. % African American alone 5. % Other races or multiracial 6. % Hispanic/Latino (of any race) 	U.S. Census Bureau, American Community Survey
Household Characteristics	<ol style="list-style-type: none"> 1. Number of households 2. % Family households 	U.S. Census Bureau, American Community Survey
Resident Economic Characteristics	<ol style="list-style-type: none"> 1. Median family income 2. Median Family income as a % of area median income 3. Median household income: owner occupied unit 4. Median household income: renter occupied unit 5. % of renter households below 80% AMI who are housing cost-burdened 	U.S. Census Bureau, American Community Survey
	<ol style="list-style-type: none"> 6. Median household income 7. % families with income below poverty level 8. Share of aggregate household income in bottom two income quintiles 9. Number and proportion of zero car households 	U.S. Census Bureau, American Community Survey
	<ol style="list-style-type: none"> 10. % of income spent on housing and transportation costs for households less than 80% AMI (a household is considered cost-burdened if they spend more than 4% of income on combined costs) 	Housing + Transportation Affordability Index
Housing Supply Characteristics	<ol style="list-style-type: none"> 1. Number of housing units 2. % owner-occupied units 3. % renter-occupied units 4. Median gross rent 5. Median owner-occupied house value 6. Median gross rent as a % of household income 7. Median owner costs as a % of household income (with mortgage) 	U.S. Census Bureau, American Community Survey
	<ol style="list-style-type: none"> 8. % single-family properties 9. % small multifamily properties 10. % large multifamily properties 	U.S. Census Bureau, American Community Survey

Table 7: Metrics Related to Affordable Housing Goals

Goals	Outcomes	Metrics & Desired Trend	Data Source
1. Preserve Legally-Binding (LBAR) and Naturally Occurring Affordable Housing (NOAH) Units	1.1 Maintain the number of existing LBAR units	1.1.1 Number of LBAR units that have reverted to market-rate within the last year (→)	TJCOG-maintained affordable housing inventories
	1.2 Prevent displacement of low- and moderate-income renters and homeowners	1.2.1 Number of homeowners provided with financial assistance to rehab their homes (↗)	Wake County and jurisdictions with home repair programs
		1.2.2 Number of homeowners who receive property tax assistance (↗)	Wake County
		1.2.3 Proportion of residential properties that are 10+ years old that have sold within the last year (→)	Wake County property records
	1.3 Maintain the number of naturally occurring affordable housing units	1.3.1 Number of multifamily NOAH units (→)	TJCOG-maintained affordable housing inventories
1.4 Increase availability of healthy, safe, and affordable places for renters	1.4.1 Number and proportion of rental properties considered to be in poor, very poor, or unsound condition by the tax assessor (↘)	Wake County Tax Assessor	
2. Create New Legally-Binding Affordability Restricted (LBAR) Units	2.1 Increase in number of LBAR units	2.1.1 Number of LBAR units (↗)	TJCOG-maintained affordable housing inventories
		2.1.2 Proportion of legally-binding units within 1/2 mile station area buffer vs. proportion of total legally-binding units in the county in which station is located (↗)	TJCOG-maintained affordable housing inventories
	2.2 Increase the availability of market-rate units with a range of sizes	2.2.1 Difference between number of units by bedroom size compared to the number of households by household size (↘)	U.S. Census Bureau, American Community Survey
3. Encourage Transit-Oriented Development	3.1 Increase employment opportunities near affordable housing and public transportation	3.1.1 Number of employees (↗)	Longitudinal Employer-Household Dynamics “OnTheMap” database
	3.2 Increase population densities near public transportation	3.2.1 Number of people who live and work within the transit corridor (↗)	Longitudinal Employer-Household Dynamics “OnTheMap” database
	3.3 Increase mixed-use transit-oriented development communities	3.3.1 Square feet of office, multi-family, industrial, hospitality, retail, health care, and sports & entertainment properties (↗)	CoStar database

Desired Trend Outcomes
↗ Metric increases over time
→ Metric remains the same over time
↘ Metric decreases over time

Next Steps: Advancing Affordability and Transit Oriented Development in Wake County

Wake County and its municipalities do not have deep pockets relative to the larger and more prosperous regions that are investing significant amounts of public money to address their affordable housing shortages. Additionally, they are hampered by state restrictions from applying innovative tools used successfully elsewhere to create and preserve affordable housing. In order to be successful, people of good will must collaborate voluntarily to do their part.

The tools and best practices outlined in this report can lead to better land use and affordable housing results, but none is a silver bullet, and the effect of each is stronger when used as part of a comprehensive approach. For these strategies to achieve their full potential, partnerships between interdisciplinary stakeholders can be created where they do not yet exist, and nurtured and strengthened where they do.

Two existing partnerships can continue to be supported to serve as cornerstones for collaboration:

- *The Triangle Housing Practitioners Group* – Consisting of stakeholders from the public, private and civic sectors with direct responsibility to fund, build, manage or regulate affordable housing, the practitioners group was created in 2017 and is convened by the Triangle J COG to examine specific techniques, learn about emerging opportunities, and share effective practices.
- A *Land Use-Housing-Transit Partnership* that brings together expertise from different “silos” for a laser-like focus on the inter-related decisions that communities make on land use regulation, transit investment, and housing programs. The existing Land Use & Housing Technical Work Group can be continued and expanded to support more regional collaboration around land use, housing, and transportation over time.

These two partnerships can have the added benefit of supporting affordable housing efforts not just in the Wake Transit corridors, but along other bus and rail investments planned in the region.

In addition to partnerships, four other next steps can form an effective framework for pursuing the strategies outlined in this report:

1. Monitoring, Evaluation and Reporting. Both Triangle J COG and GoTriangle have work programs oriented to TOD performance. By divvying up tasks and coordinating efforts, they can provide decision-makers with timely information to inform policies and make course corrections. Triangle J COG has particular strengths in housing and community land use planning due to its work with the national Housing Preservation Database and the CoStar development database, and as the managing partner of the CommunityViz Growth Allocation tool for the two Metropolitan Planning Organizations. GoTriangle has particular strengths and interests in tracking project submittals affecting station areas and land values along transit corridors. GoTriangle and Triangle J COG can develop a collaborative monitoring, evaluation and reporting system that can work seamlessly with other tools, like Chapel Hill’s Affordable Housing Dashboard. As monitoring results accumulate over time, the data can help us discern where we have come from, in an effort to plan for where we would like to go, and how we can get there.

What If ...

If partnerships are crucial to implementing strategies, what can help strengthen partnerships?

Partnerships need to be more than people sitting around a table discussing issues. Four pillars could provide a foundation:

- Recognition. What if we created a “Part Of The Solution” recognition program that rewarded developers and communities that go the extra mile?
- Commitment. What if we created an “A Place For All” Resolution that communities could sign on to strengthen the connective tissue of regional housing partnerships?
- Policy Advancement. What if we worked with the state to allow tried-and-true affordable housing tools in carefully designated Transit-Oriented Development (TOD) areas – and partnered with local government, financial, and housing organizations to create policies that better support equitable Transit Oriented Development (eTOD)?
- Innovation. What if we created a Land Use-Transit-Housing Strategy Laboratory that brought together university, community, developer and non-profit expertise to explore and test innovative approaches?

2. Resource Attraction. Innovative techniques to attract non-traditional revenues for affordable housing emerge periodically. Ensuring Wake County and its municipalities are on the leading edge to take advantage of these opportunities could have significant benefits.
3. Top Priorities and Next-in-Line. With a variety of specific affordable housing and transit oriented development strategies identified in this report, it would be easy to dilute collaborative efforts by trying to pursue everything at once. One task of the partnerships can be to select a limited set of top priorities for collaborative effort, and a “next-in-line” list to begin to gather information about, even while individual organizations may work on some of the other strategies.
4. Annual Development & Transit Investment Summit. Building on the work of the partnerships and the monitoring and evaluation effort, an annual summit can showcase what communities along proposed transit investments are doing to meet their affordable housing goals and introduce fresh ideas from people in the Triangle and experts from peer regions. A summit or similar event can be a way to partner with organizations with similar interests, such as the Urban Land Institute, and engage regional stakeholders.

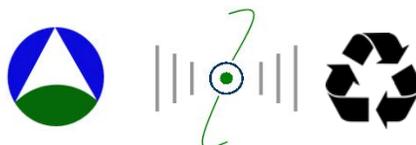
While this report does not point to a single solution, it does outline a range of tools and techniques that can be utilized to improve our efforts at creating and preserving affordable housing in our region. Preserving housing affordability near transit will not happen by accident. Our solutions must be intentional and strategic, so that over time, we can look back and know we have done what we could to increase the chances for a boisterous celebration about our housing affordability successes and decrease the chances for loud complaints about what we were unable to do.

Acknowledgements

This report was prepared by Erika Brown, Aspen Romeyn, Ashley Ownbey and John Hodges-Copple of the Triangle J Council of Governments. For questions or comments, please contact Erika Brown at 919-558-2700 or ebrown@tjcog.org. Copies of this report, along with supplementary material and additional mapping, are available for download from the Triangle J COG website at: www.tjcog.org

Additional Resources

- TJCOG Housing – www.tjcog.org/housing.aspx
- Wake Transit Plan – <http://goforwardnc.org/county/wake-county/about/>
- Enterprise Community Partners – www.enterprisecommunity.com
- HUD Evidence Matters – www.huduser.org/portal/evidence.html
- Center for Transit Oriented Development – www.ctod.org
- TJCOG Affordable Housing Glossary - <https://bit.ly/2tml3o0>
- Housing and Transportation Index – <https://htaindex.cnt.org/>
- Longitudinal Employer-Household Dynamics - <https://onthemap.ces.census.gov/>



Appendix

Appendix 1: Wake Transit Corridor Land Use & Housing Project Meeting Overview

Triangle J Council of Governments staff are leading this project effort with participation from: Cary, Garner, Morrisville, Raleigh, Wake County, CAMPO, GoTriangle, and the Research Triangle Foundation.

All activities and deliverables associated with the Wake Transit Corridor Land Use and Housing Project are listed below, and copies can be requested from TJCOG staff:

- Review of existing housing and land use policies and plans for all jurisdictions
- Review of residential sales and rent prices in Wake County
- Inventory of legally-binding affordable units and naturally-occurring affordable apartments
- GIS-based Opportunity Sites Analysis to identify properties that may be suitable for affordable housing development. This includes criteria such as ownership, parcel size, land value, transit access, proximity to sidewalks, grocery store, pharmacies, and shopping
- Overview of Best Practices for Transit-Oriented Development and the status of each jurisdiction in considering, planning for, or implementing those best practices
- Compilation of Example Ordinances for Transit-Oriented Development, including specific ordinance language and examples around parking maximums, small block size, minimum and average densities, floor area ratio exchanges, special assessment districts, and affordable housing connections
- Summaries of public and privately-owned opportunity sites, naturally-occurring affordable apartments, and legally-binding affordable units with expiring funding sources within a half mile of the BRT corridors and within a quarter mile of the high-frequency planned (2045) bus routes
- Overview of Federal Funding Scoring Systems and how they relate to the Wake Transit corridors
- Creation of ArcGIS online application to view and manipulate the following data: Opportunity Sites Analysis, naturally-occurring and legally-binding affordable housing inventories, Opportunity Zones, Racially or Ethnically Concentrated Areas of Poverty, the Wake County 2017 Vulnerability Assessment Index Series, and the Wake County 2017 Economic Health Index Series.

Summary of meetings:

- 8/24/17 – Developed initial activities, received update on Wake Affordable Housing Steering Committee
- 10/12/17 – Review of proposal project activities, overview of existing data/methodology
- 12/12/17 – Provided Comparison of Housing Plans & Comprehensive Plans, Wake Residential Sales Data, initial Opportunity Sites Analysis
- 2/27/18 – TOD Best Practices spreadsheet, updated Comparison of Housing Plans & Comprehensive Plans, revised analysis of Wake Residential Sales Data, revised Opportunity Sites criteria
- 5/2/18 – Housing Focus Group – defined Opportunity Sites Analysis queries, specific policies to look into
- 6/19/18 – Brief on Federal Funding Scoring Systems, Example TOD ordinances, Opportunity Site Summaries
- 8/8/18 – Mapped at-risk housing (naturally-occurring affordable apartments and Low-Income Housing Tax Credit Properties expiring within 5 years), updated Federal Funding Scoring Systems brief, updated TOD ordinances report, online map of Opportunity Sites and Affordable Housing Inventory
- 12/12/18 – Review outline for *Connecting the Dots*, a report summarizing the work done as part of the Wake Transit Corridor Land Use & Affordable Housing Project. Review updated naturally-occurring affordable apartments, legally-binding affordable housing units with expiring funding sources, and Opportunity Sites Summaries for properties near high-frequency planned (2045) bus routes.
- 4/23/19 – Review draft *Connecting the Dots* report, review updated online mapping application.
- 6/24/19 – Review final draft of *Connecting the Dots* report and final updates to online mapping application.

Appendix 2:

Legally-Binding Units with Expiring Funding (2017 – 2030) Near BRT Corridors (1/2 mile)

Primary Source: National Housing Preservation Database

Property Name	Property Address	Owner Name	Total Affordable Units	Year of Funding Expiration	Funding Stream
AS WAKE CO GH #2	534 Walnut St, Cary, NC 27511-4042	AUTISM SOCIETY WAKE COUNTY HOUSING CORP #2	7	2017	Section 8
AT-229	229 Adams St, Cary, NC 27513-4585	ADAMS AT ASSOC	3	2020	LIHTC
JEDAHOLU	627 Dorothea Dr, Raleigh, NC 27603	JEDAHOLU ENTERPRISES	6	2020	LIHTC
AT-231	231 Adams St, Cary, NC 27513-4581	JOHN & JEANINE MENNEAR	3	2020	LIHTC
SKEETER CREEK APARTMENTS	609 Dorothea Dr, Raleigh, NC 27603	JEDAHOLU ENTERPRISES	6	2020	LIHTC
CASA-CEDAR STREET APTS(CHDO)	214 E Cedar St, Cary, NC 27511		4	2022	Other HUD
1004 PARKTHROUGH ST	1004 Parkthrough St, Cary, NC 27511	WILLIAM E. REESE II	1	2024	LIHTC
KRENDLE WOODS	1001 Parkthrough St, Cary, NC 27511	DR TSONG-TE LEE	1	2024	LIHTC
1005 PARKTHROUGH ST	1005 Parkthrough St, Cary, NC 27511	DENNIS RAY RAMSEY & BONITA P. RAMSEY	1	2024	LIHTC
1000 PARKTHROUGH ST	1000 Parkthrough St, Cary, NC 27511	JOHN WILLIAM JR. & KATHRYN WILLIAMS GRESHAM	1	2024	LIHTC
1006 PARKTHROUGH ST	1006 Parkthrough St, Cary, NC 27511	MICHAEL W. WARD GWENDOLYN V. WARD	1	2024	LIHTC
1016 PARKTHROUGH ST	1016 Parkthrough St, Cary, NC 27511	HARRY A. THOMPSON, JR. & BURLINE P. THOMPSON	1	2024	LIHTC
1018 PARKTHROUGH ST	1018 Parkthrough St, Cary, NC 27511	TUCK PROPERTIES INC	1	2024	LIHTC
1017 PARKTHROUGH ST	1017 Parkthrough St, Cary, NC 27511	LIANG-JYH CHANG, LEESHA CHANG	1	2024	LIHTC
1013 PARKTHROUGH ST	1013 Parkthrough St, Cary, NC 27511	GENE W. WILKES, SR & EULA C. WILKES	1	2024	LIHTC
1009 PARKTHROUGH ST	1009 Parkthrough St, Cary, NC 27511	FREDRICK L. KEYSER, III LEIGH R. KEYSER	1	2024	LIHTC
WEST PARK ST APARTMENTS	218 W Park St, Cary, NC 27511	DURHAM WEST INVESTMENTS LLC	2	2024	LIHTC
621 CAROLINA AVE	621 Carolina Ave, Raleigh, NC 27606	LARRY D. JOHNSON & JOY M. JOHNSON	1	2024	LIHTC
1002 PARKTHROUGH ST	1002 Parkthrough St, Cary, NC 27511	KAO-ZON JOHN WEI SHUE-CHUNG WEI	1	2024	LIHTC
1011 PARKTHROUGH ST	1011 Parkthrough St, Cary, NC 27511	JAMES CLARK LEE & HOLLY C. LEE	1	2024	LIHTC
619 CAROLINA AVE	619 Carolina Ave, Raleigh, NC 27606-	THOMAS R CAROLE A DANA J DAVID A SHUTE	1	2024	LIHTC
1012 PARKTHROUGH ST	1012 Parkthrough St, Cary, NC 27511	Brenda Turnipseed	1	2024	LIHTC
1008 PARKTHROUGH ST	1008 Parkthrough St, Cary, NC 27511	TUCK PROPERTIES INC	1	2024	LIHTC

Property Name	Property Address	Owner Name	Total Affordable Units	Year of Funding Expiration	Funding Stream
1010 PARKTHROUGH ST	1010 Parkthrough St, Cary, NC 27511	SVEN FROBERG	1	2024	LIHTC
1019 PARKTHROUGH ST	1019 Parkthrough St, Cary, NC 27511	OWEN H. CHOI, ERIN H. CHOI	1	2024	LIHTC
625 CAROLINA AVE	625 Carolina Ave, Raleigh, NC 27606	JAMES D POLK & GALE J POLK	1	2024	LIHTC
1003 PARKTHROUGH ST	1003 Parkthrough St, Cary, NC 27511	Dr Shu-cherng Fang & Chi Hsin Fang	1	2024	LIHTC
1014 PARKTHROUGH ST	1014 Parkthrough St, Cary, NC 27511	ROBERT A. HAMILTON	1	2024	LIHTC
1015 PARKTHROUGH ST	1015 Parkthrough St, Cary, NC 27511	KENNETH E.C. LLOYD	1	2024	LIHTC
617 CAROLINA AVE	617 Carolina Ave, Raleigh, NC 27606	B FALLON MELVIN JR & BETTY W MELVIN	1	2024	LIHTC
1007 PARKTHROUGH ST	1007 Parkthrough St, Cary, NC 27511	SAMUEL L. DILL & MARILYN M. DILL	1	2024	LIHTC
623 CAROLINA AVE	623 Carolina Ave, Raleigh, NC 27606	PAUL W CARR & CAROLE J CARR	1	2025	LIHTC
WESTRIDGE WOODS APARTMENTS	306 Buck Jones Rd, Raleigh, NC 27606	Jerry A. Hailey Jr	16	2027	LIHTC
CASA	510 S Harrington St, Raleigh, NC 27601	CASA	12	2029	Other HUD
MEADOW SPRING APARTMENTS	190 Fieldspring Ln, Raleigh, NC 27606	Evergreen Construction Co.	33	2029	Multiple
CASA4761-4761 BLUEBIRD CT	4761 Blue Bird Ct, Raleigh, NC 27606	CASA	10	2030	Other HUD

Additional Legally-Binding Units with Expiring Funding (2017 – 2030) Near Frequent Bus Routes (1/4 mile)

Primary Source: National Housing Preservation Database

Property Name	Property Address	Owner Name	Total Affordable Units	Year of Funding Expiration	Funding Stream
OAK HILL APARTMENTS	3310 Sun Hill Ln, Raleigh, NC 27610	OAK HILL APTS INC	14	2017	Section 8
ROBERTSON HILL APARTMENTS	1725 Poole Rd, Raleigh, NC 27610	ROBERTSON HILL APTS INC	9	2017	Section 8
SHADE HILL APARTMENTS	3014 Poole Rd, Raleigh, NC 27610	Shade Hill Incorporated	7	2017	Section 8
COMMUNITY ALTERNATIVES FOR SUPPORTIVE AB	624 W Jones St, Raleigh, NC 27603	CASA	5	2017	Other HUD
GLASCOCK MANOR P	2120 Glascock St, Raleigh, NC 27610	KIRAN FRAMPTON & TIFFANY FRAMPTON	28	2018	LIHTC
DUPLEX	219 Lord Anson Dr, Raleigh, NC 27610	JEFF BULLOCK & CAROLYN RIDDICK	2	2018	LIHTC
JEFFRIES RIDGE	1713 Poole Rd, Raleigh, NC 27610	DHIC, Inc.	32	2019	LIHTC
JAMES E WILLIAMS-202-2025 E HECK ST	202 Heck St, Raleigh, NC 27601	JAMES E WILLIAMS	2	2019	Other HUD
MURPHEY SCHOOL	443 N Person St, Raleigh, NC 27601	DHIC, Inc.	52	2020	LIHTC
CITY OF RALEIGH 806-810 E JONES ST	806 E Jones St, Raleigh, NC 27601	CITY OF RALEIGH	4	2021	Other HUD
TRYON GROVE APARTMENTS	2508 Tryon Grove Dr, Raleigh, NC 27603	DHIC, Inc.	48	2022	LIHTC
FISHER HEIGHTS APARTMENTS	209 Lord Anson Dr, Raleigh, NC 27610	J BULLUCK PROP SERV	2	2022	LIHTC
2120 HAWKINS ST	2120 Hawkins St, Raleigh, NC 27610	CARSON ASSOC	4	2023	LIHTC
1606 JOE LOUIS AVE	1606 Joe Louis Ave, Raleigh, NC 27610	R GAMBILL & ASSOC	1	2023	LIHTC
TAMMY LYNN ICF/MR	737 Chappell Dr, Raleigh, NC 27606	TAMMY LYNN MEMORIAL FOUNDATION INC	7	2025	Multiple
815 CLAY ST	815 Clay St, Raleigh, NC 27605	CLAY STREET PARTNERS	4	2025	LIHTC
ORCHARD POINTE	2021 Orchard Hollow Ln, Raleigh, NC 27603	Sun America	100	2025	LIHTC
CAPITAL TOWERS I	4812 Six Forks Rd, Raleigh, NC 27609	CTC LP	208	2026	LIHTC
RIPLEY STATION	3030 Ripley Station Way, Raleigh, NC 27610	DHIC, Inc.	48	2026	LIHTC
NEW HOPE VILLAGE HOUSING ASSOC LLC-1710	1710 N NEW HOPE RD, RALEIGH, NC 27604	LYLE GARDNER	45	2027	Other HUD
MARSH CREEK APARTMENTS	2400 Brentwood Rd, Raleigh, NC 27604	PINE KNOLL LP	24	2027	Multiple
GARDEN SPRING APARTMENTS	2830 Kidd Rd, Raleigh, NC 27610	Evergreen Construction Co.	33	2027	Multiple
CASA(CHDO/EN) OAK HOLLOW APT/551615	3321 Sun Hollow Ln, Raleigh, NC 27610	CASA	10	2027	Other HUD

Property Name	Property Address	Owner Name	Total Affordable Units	Year of Funding Expiration	Funding Stream
FAMILIES AT HOME	3310 Sun Hollow Ln, Raleigh, NC 27610	CASA	10	2028	Other HUD
MILBURNIE ROAD APARTMENTS	901 Sawpit Dr, Raleigh, NC 27610	Mills Construction Company, Inc.	50	2028	LIHTC
WYNWOOD PLACE	801 Vardaman St, Raleigh, NC 27610	Wynwood Place Apartments Llc	24	2029	LIHTC
WESTWOOD PARK APARTMENTS	3300 Idlewood Village Dr, Raleigh, NC 27610	WEST CARY APTS LLC	72	2029	LIHTC
MAGNOLIAS	2151 Glascock St, Raleigh, NC 27610	Wynnefield Properties Inc.	40	2029	Multiple
HOPE CREST	1721 Poole Rd, Raleigh, NC 27610	CASA	10	2029	Other HUD
PINE HILLS	1650 Royal Pines Dr, Raleigh, NC 27610	Eastside Equities LLC	48	2030	LIHTC
PRAIRIE BUILDING	113 S Wilmington St, Raleigh, NC 27601	PRAIRIE LLC	11	2030	LIHTC

Appendix 3: Opportunity Sites Criteria

Site Characteristics

1. Ownership Status

Category/Criteria	Points
Local Government, School Board, Housing Authority	+3

GIS field: OWNSCORE

2. Parcel Size

Category/Criteria	Points
0 to 0.5 acres	0
0.6 to 1.5 acres	+3
1.6 to 4.5 acres	+4
4.6 to 12 acres	+2
More than 12.1 acres	+1

GIS field: PARSZSCORE

3. Mixed-Use Zoning By Right

Category/Criteria	Points
In a zoning district that allows mixed-use development by right	+3

GIS field: MUZSCORE

4. Development Status

Category/Criteria	Points
Vacant	+2

GIS field: DEVSCORE

Where "LANDDECODE" = 'Vacant'.

5. Building Value to Land Value

Category/Criteria	Points
< 1	+1
>= 1	0

GIS field: BVLLVLSCRE

A ratio less than 1 suggests the parcel may be vacant or underdeveloped.

6. Land Value per Square Foot

Category/Criteria	Points
Less than \$0.50/sf	+2
\$0.51 - \$3.50/sf	+1
\$3.51 - \$7.50/sf	0
More than \$7.50/sf	-1

GIS field: LVFSSCORE

7. Flood Zone

Category/Criteria	Points
Center of parcel in Zone AE	-5
Portion of parcel in Zone AE	-4

GIS field: FLOODSCORE

Zone AE designates areas subject to inundation by the 1-percent-annual-chance flood event, also known as the 100-year floodplain.

8. Water/Sewer Access

Category/Criteria	Points
Outside of municipal utility service area	-5

GIS field: UTILITYSCO

Proximity Characteristics

9. Transit Access

Category/Criteria	Points
Within ½ mile of a planned Commuter Rail Transit station	+4
Within ¼ mile of existing high-frequency bus service	+5
Within ¼ mile of planned (2045) high-frequency bus service	+5
Within ½ mile of a planned Bus Rapid Transit station	+5
Within two of the above (high-frequency bus and/or BRT and/or CRT)	+10

GIS field: TRANSSCORE

High-frequency defined as 15-minutes or better.

10. Sidewalk Proximity

Category/Criteria	Points
Within ¼ mile of existing sidewalk	+5

GIS field: SDWLKSCORE

11. Grocery Proximity

Category/Criteria	Points
Grocery, within ¼ mile	+3
Grocery, within ½ mile	+2
Grocery, within 1 mile	+1.5
Grocery, within 1.5 miles	+1
Grocery, within 3 miles	+0.5

GIS field: GROSCORE

Vendor location data from CoStar.

12. Shopping Proximity

Category/Criteria	Points
Shopping, within ¼ mile	+3
Shopping, within ½ mile	+2
Shopping, within 1 mile	+1.5
Shopping, within 1.5 miles	+1
Shopping, within 3 miles	+0.5

GIS field: SHOPSCORE

Vendor location data from CoStar.

13. Pharmacy Proximity

Category/Criteria	Points
Pharmacy, within ¼ mile	+3
Pharmacy, within ½ mile	+2
Pharmacy, within 1 mile	+1.5
Pharmacy, within 1.5 miles	+1
Pharmacy, within 3 miles	+0.5

GIS field: PHARMSCORE

Vendor location data from CoStar.

Factors to Remove Unbuildable Parcels

14. Parks & Open Space (multiplied by subtotal)

Category/Criteria	Points
Public or private park/open space	*0
Not a public or private park/open space	*1

GIS field: PARKSCORE

15. Parcel Shape (multiplied by subtotal)

Category/Criteria	Points
Parcel shape factor > 35	*0
Parcel shape factor <= 35	*1

GIS field: PARSHPCOR

Parcel shape factor = (Parcel perimeter²/Area)

Methodology

Each parcel was given a score for each of the above criteria, and then a sum score was generated using this formula: Sum Score = (Ownership + Parcel Size + Mixed-Use Zoning By Right + Development Status + Building Value to Land Value + Land Value per Square Foot + Flood Zone (negative score) + Water/Sewer Access (negative score) + Transit Access + Sidewalk Proximity + Grocery Proximity + Shopping Proximity + Pharmacy Proximity) * Parks & Open Space * Parcel Shape. Of all the parcels in Wake County, the highest total score was 32 points.

The locations of grocery stores, shopping, and pharmacies were pulled from CoStar, and includes the vendors shown in the below table:

Amenity	Vendors Included
Grocery	ALDI, Compare Foods, Earth Fare, Food Lion, Fresh Market, Harris Teeter, IGA, Kroger, Lowes Foods, Publix, Trader Joe's, Walmart Market, Whole Foods Market
Shopping	Big Lots, Dollar General, Dollar Tree, Family Dollar, Kmart, Ollie's Bargain Outlet, Roses, Target, Walmart
Pharmacy	CVS, Eckerd Drug, Kerr Drug, Medicap Pharmacy, Rite Aid, Target, Walgreens

Appendix 4: Corridor Character and Development Analysis

Using parcel data from Wake County GIS, a set of criteria was developed to evaluate development status, residential, institutional, and commercial intensity, and development mix. The parcel data was aggregated to the grid cell level from the Connect 2045 CommunityViz preferred scenario, and summarized according to the criteria shown below.

Development Status

Parcels larger than 5 acres with non-residential and non-commercial improvements were considered “Large Acreage”, and parcels with a vacant LANDDECODE in the attributes were considered “Vacant”. The acreage for these two attributes was summed, aggregated to the grid cell level, and scored according to the criteria to the right.

Development Status	
Acreage	Score
< 1 acre	6
1-2 acres	5
2-4 acres	4
4-6 acres	3
6-8 acres	2
> 8 acres	1

Residential Intensity

Parcels were classified as residential if they had one of the following LANDDECODE descriptions, “Acres Greater Than 10 With House,” “Apartment,” “Retirement Home,” “Residential Less Than 10 Acres,” “Mobile Home Park.” Parcels with either the “Condo Complex” or “Historic” codes were assessed individually and classified as either residential, commercial, institutional, or vacant. The number of residential units and acreage was aggregated to the grid cell level and scored according to the criteria to the right.

Residential Intensity	
Acreage	Score
> 20 units/acre	7
8-20 units/acre	6
6-8 units/acre	5
4-6 units/acre	4
2-4 units/acre	3
1-2 units/acre	2
< 1 unit/acre	1

Institutional Intensity

Parcels were classified as institutional if they had one of the following LANDDECODE descriptions, “Exempt,” and “Part-Exempt.” The building square footage and acreage was aggregated to the grid cell level and scored according to the criteria to the right.

Institutional Intensity	
Acreage	Score
> 1600 sq. ft./acre	7
8000-16000 sq. ft./acre	6
4000-8000 sq. ft./acre	5
2000-4000 sq. ft./acre	4
1000-2000 sq. ft./acre	3
500-1000 sq. ft./acre	2
< 500 sq. ft./acre	1

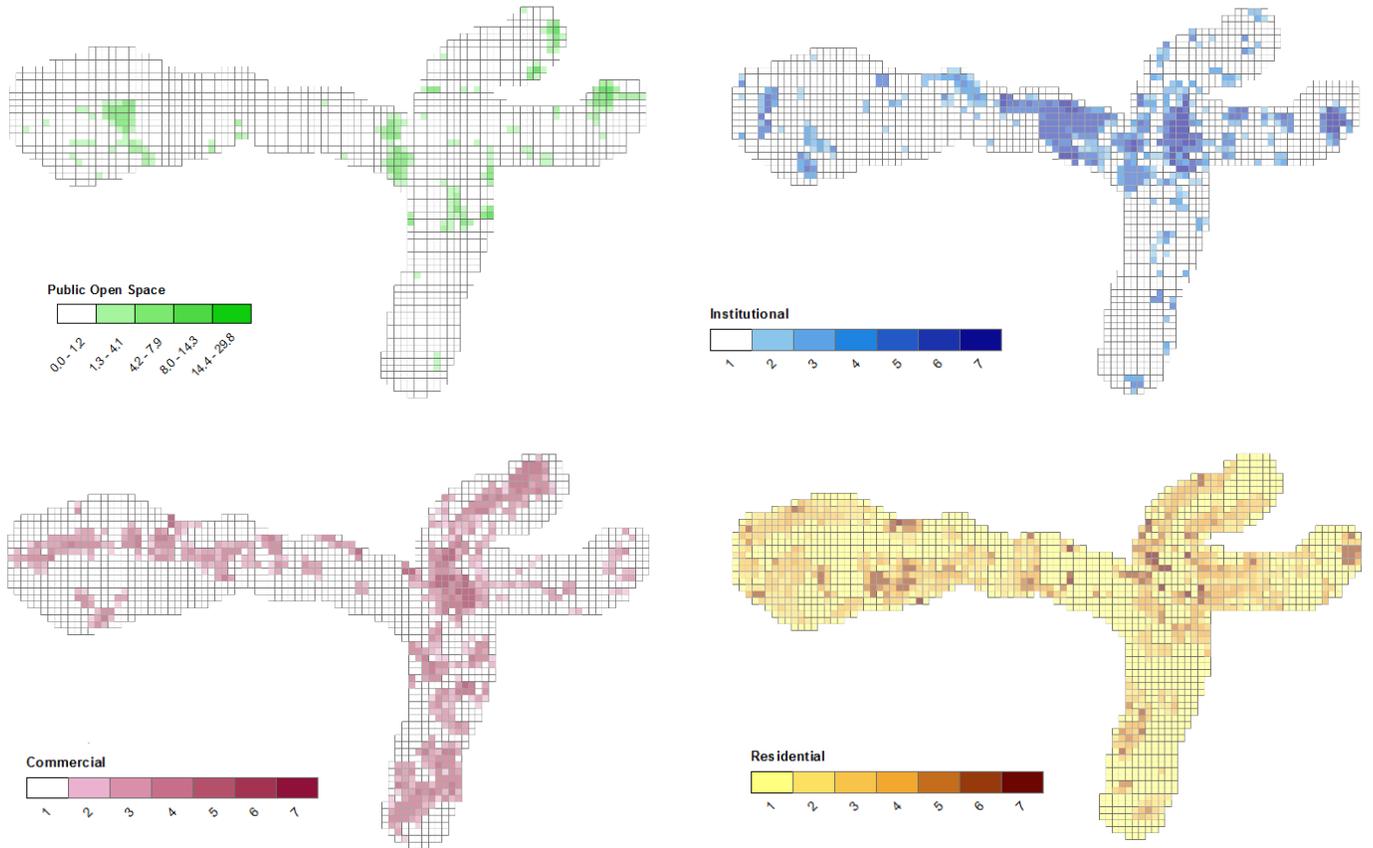
Commercial Intensity

Parcels were classified as commercial if they had one of the following LANDDECODE descriptions, “Commercial” and “Industrial.” A few parcels classified as either “Condo complex” Or “Historic” were assessed individually and reclassified as commercial. The building square footage and acreage was aggregated to the grid cell level and scored according to the criteria to the right.

Commercial Intensity	
Acreage	Score
> 1600 sq. ft./acre	7
8000-16000 sq. ft./acre	6
4000-8000 sq. ft./acre	5
2000-4000 sq. ft./acre	4
1000-2000 sq. ft./acre	3
500-1000 sq. ft./acre	2
< 500 sq. ft./acre	1

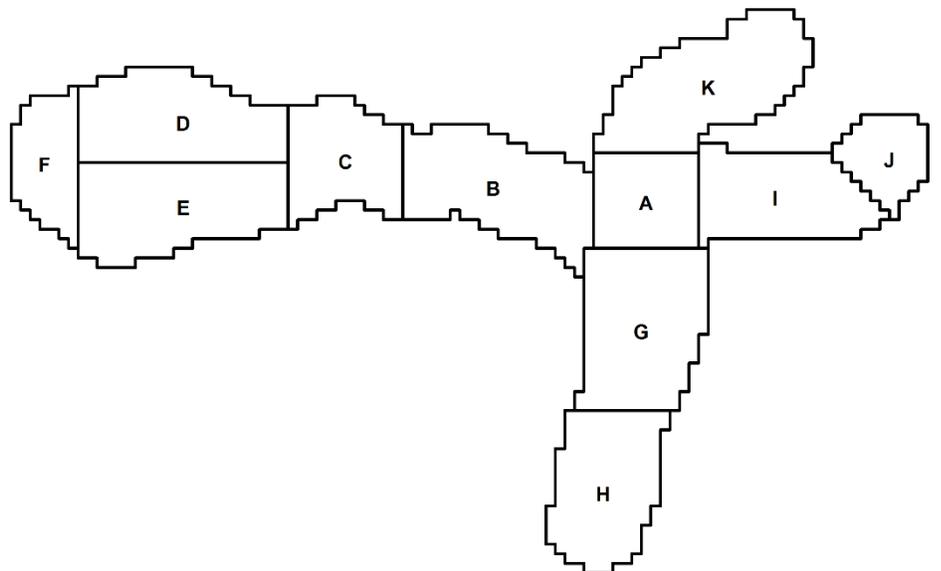
The scored grid cells were mapped and layered to show each grid cell's most significant land use and the degree of intensity of that land use. The layers were displayed in the following order: public open space, institutional, commercial, vacant & large acreage, and residential. The public open space, institutional land use, commercial land use, and residential land use grid cell layers are below.

Grid Cells Ranked by Land Use Prevalence – Public Open Space, Institutional Land Use, Commercial Land Use, and Residential Land Use



These scores were considered alongside the Connect 2045 allocated jobs and housing units to roughly draw eleven segments along the BRT corridors, as shown to the right.

The eleven segments were summarized and analyzed in the table on the following page, with the highlighted cells showing a higher intensity of that land use in that segment.

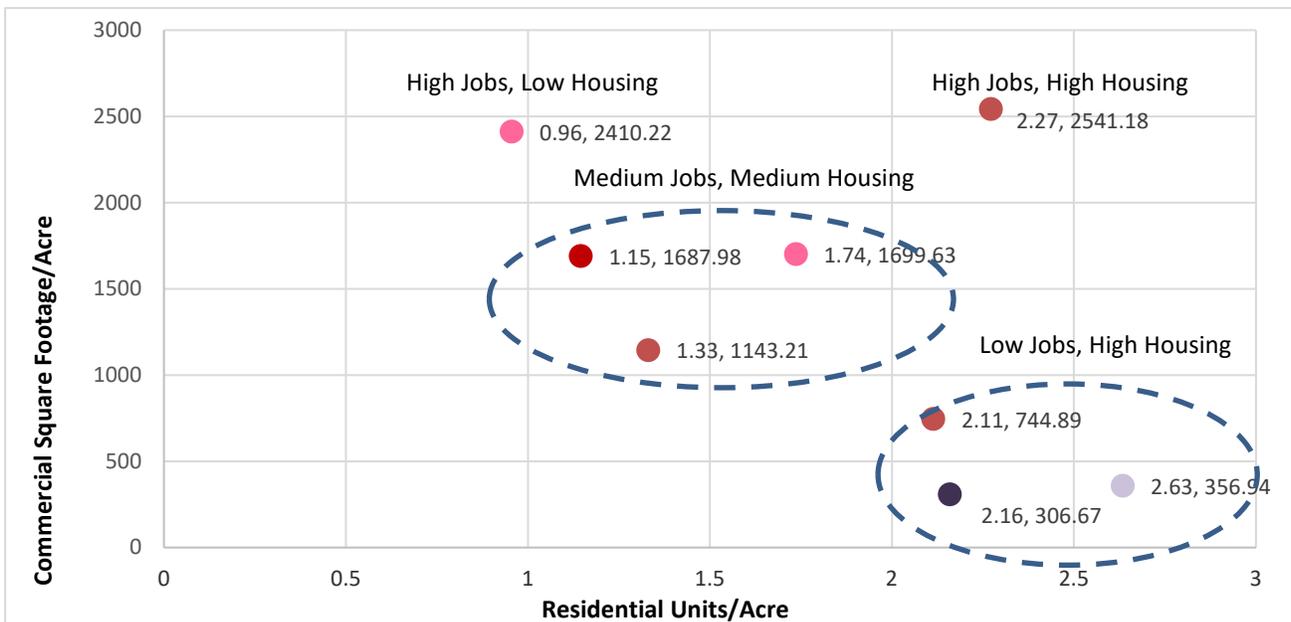


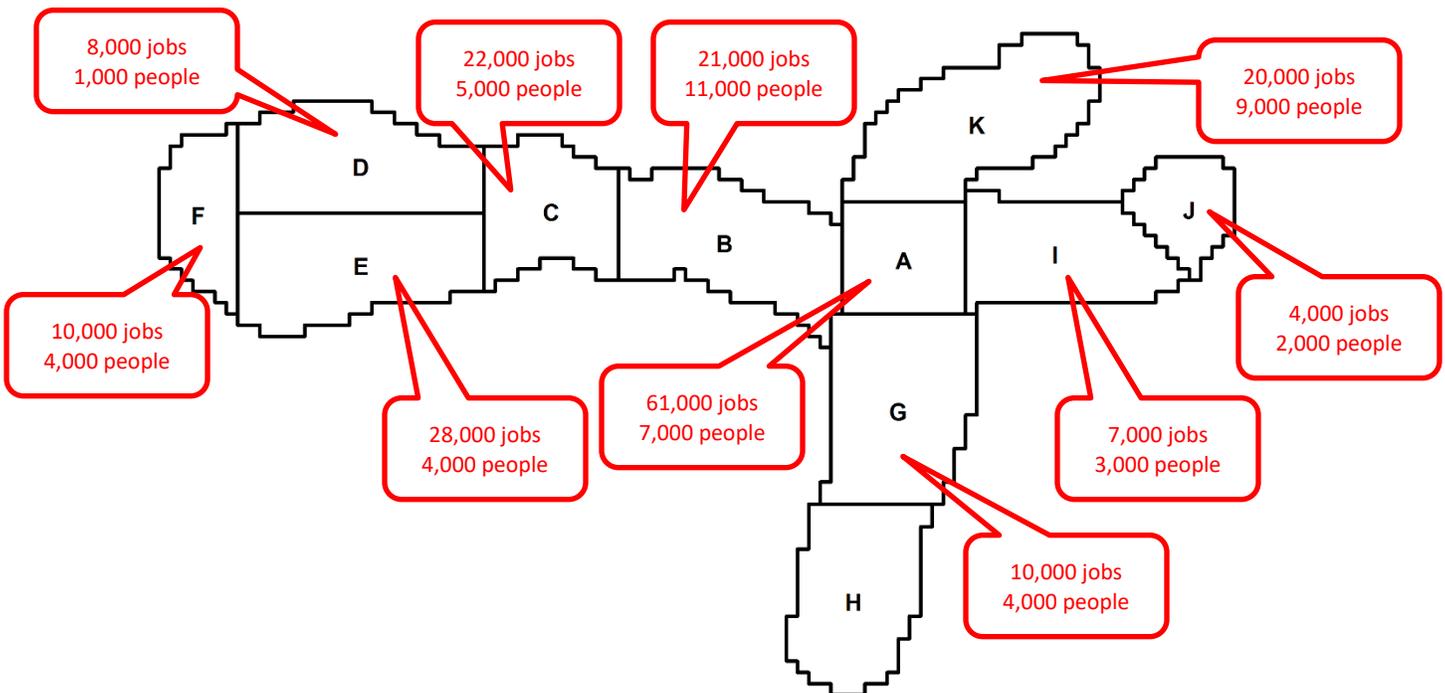
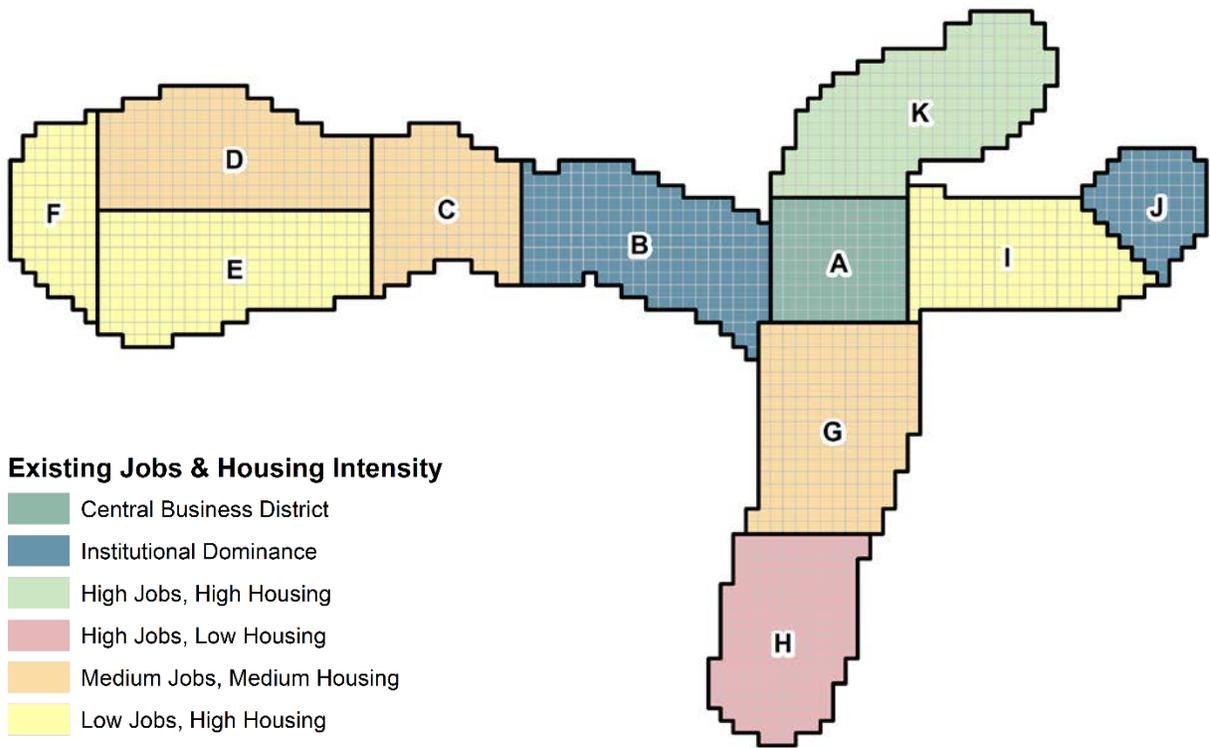
Segment ID	# of grid cells	# of acres	# of Res. units	Res. Units/Acre	Inst. Sq. Ft.	Inst. Sq. Ft./Acre	Comm. Sq. Ft.	Comm. Sq. Ft./Acre	Vacant Acres	Large Acreage	Public Open Space
1	110	1100	6708	6.1	13092738	11902	10927551	9934	82.4	1.4	16.3
2	200	2000	3515	1.8	10288660	5144	1672054	836	147.0	0.0	228.4
3	133	1330	1771	1.3	755806	568	1520476	1143	180.9	6.9	22.9
4	185	1850	3213	1.7	325459	176	3144315	1700	197.2	74.3	78.0
5	199	1990	5243	2.6	695900	350	710301	357	162.3	77.3	148.6
6	92	920	1945	2.1	1119594	1217	685303	745	56.7	0.9	5.7
7	208	2080	2384	1.1	1184139	569	3510995	1688	350.8	23.9	197.5
8	169	1690	1616	1.0	479256	284	4073268	2410	338.1	83.8	10.1
9	159	1590	3433	2.2	1763275	1109	487606	307	103.6	219.1	54.6
10	73	730	1657	2.3	3910695	5357	360707	494	63.7	0.0	174.7
11	209	2090	4750	2.3	1449666	694	5311062	2541	96.0	0.0	172.3

Then, each the land use of each segment was ranked according to the relative intensity of each use.

Segment ID	Res. Units/Acre	Res. Ranking	Inst. Sq. Ft./Acre	Inst. Ranking	Comm. Sq. Ft./Acre	Comm. Ranking
1	6.10	1	11902.49	1	9934.14	1
2	1.76	7	5144.33	3	836.03	7
3	1.33	9	568.27	8	1143.21	6
4	1.74	8	175.92	11	1699.63	4
5	2.63	2	349.70	9	356.94	10
6	2.11	6	1216.95	4	744.89	8
7	1.15	10	569.30	7	1687.98	5
8	0.96	11	283.58	10	2410.22	3
9	2.16	5	1108.98	5	306.67	11
10	2.27	4	5357.12	2	494.12	9
11	2.27	3	693.62	6	2541.18	2

The segment with the highest intensity of residential, institutional, and commercial is the Central Business District (CBD). The next two highest institutional rankings, 2 and 3, are the WakeMed campus and NC State University campus, respectively. The residential and commercial intensity of the remaining eight segments were charted to determine their relative intensities of jobs and housing.





Appendix 5: Comparison of Housing Goals & Strategies for Wake County Communities

The following is a comparison of policies, practices, and goals presented in comprehensive plans and affordable housing plans for communities in Wake County. Circles are used to indicate implementation status. The full circle indicates "in practice." The half circle represents stated policies or goals. The empty circle indicates the policy or goal is currently not listed in a plan or evidenced in practice.

Policies, Practices, & Goals	Cary[i]	Garner[ii]	Morrisville[iii]	Raleigh[iv]	Wake County[v]
Comprehensive Goals					
Provide a greater variety of housing types that offers choices to all residents	◐	●	◐	●	●
Adopt a comprehensive affordable housing strategy or vision	◐	○	◐	●	●
Provide accessible, safe, and affordable housing options to older adults wishing to age in place	●	◐	○	◐	●
Research, Education, & Evaluation					
Establish realistic targets for the creation of affordable housing and routinely monitor program activity and progress	◐	○	○	●	●
Build a common understanding of and shared commitment to quality permanent supportive housing through technical assistance and training	○	○	○	○	●
Evaluate housing proposals on a lifecycle cost and revenue basis	○	◐	○	○	●
Perform a lifecycle housing analysis to determine current affordable housing stock	○	○	◐	○	●
Research and quantify the number, type, and location of affordable housing units that are needed and desired by the community	◐	○	○	●	◐
Consider and strive for innovation and partnerships in the creation of ordinances, policies, and programs for affordable housing	●	○	○	◐	●
Policies & Incentives					
Allow and encourage shared-use and mixed-use development	●	●	●	●	●
Support residential development on infill and redevelopment sites	◐	◐	○	●	●
Amend ordinances to permit or reduce restrictions on alternative housing models ("granny flats," cottage housing, accessory dwelling units)	◐	●	◐	○	●
Support higher density and affordable housing in high-opportunity areas (i.e. near transit)	◐	◐	◐	●	●
Provide workforce housing near transit stations	◐	○	◐	◐	◐

Policies, Practices, & Goals	Cary[i]	Garner[ii]	Morrisville[iii]	Raleigh[iv]	Wake County[v]
Vary the types and price-points of housing to encourage social and economic diversity within each planning area	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Promote universal design standards to accommodate the aging population	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Facilitate the creation of a reasonable proportion of housing as affordable ownership or rental units	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Revise Unified Development Ordinance to enable greater overall affordable housing production	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Extend the required affordability for all projects receiving local, state or federal subsidies	<input type="radio"/>				
Support changes to the North Carolina Housing Finance Agency's process for allocating Low Income Housing Tax Credits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Encourage efforts to pilot Community Land Trust (CLT) models in neighborhoods experiencing significant gentrification pressures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Elevate the standards for multi-family housing, including exterior materials, open space requirements, and facades	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Require affordable housing in new, multi-family and small-lot detached housing developments and increase exemptions to assist	<input type="radio"/>				
Ensure all new publicly-supported housing construction and rehabilitation meet energy efficiency standards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Ensure zoning policy provides ample opportunity for developers to build a variety of housing types and keep the housing market well supplied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Promote housing diversity and affordable housing choices for households at 50% of AMI or below in immediate area around transit corridors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Address regulatory and policy barriers to affordable housing development while maintaining high-quality development standards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Ensure newly created affordable housing units remain affordable through CLT, developer agreements, and the like	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Support programs that minimize residential displacement by redevelopment activity and provide replacement housing in general area of original housing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Ensure enforcement of the federal Fair Housing Act	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Financing					
Develop or increase a dedicated funding source for permanent affordable housing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Provide site acquisition assistance for affordable housing development	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Expand the use of the 4% tax credit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

Policies, Practices, & Goals	Cary[i]	Garner[ii]	Morrisville[iii]	Raleigh[iv]	Wake County[v]
Enhance gap financing program to encourage production of units for populations below 50% AMI and permanent supportive housing units	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Establish a preservation loan fund, in partnership with other investors, to provide low-cost financing for maintaining existing affordable multifamily rental properties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Provide funding to nonprofit partner for guarantees on first mortgage loans and no-interest second mortgage loans for low-income homebuyers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Establish an acquisition loan fund, in partnership with other investors, for acquiring sites for affordable housing developments in strategic locations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dispose of publicly-owned sites to support affordable housing development through discounted land prices or sale proceeds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facilitate and support the creation of new affordable housing units by nongovernmental entities with financial assistance	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Leverage and target affordable housing funding to support neighborhood revitalization efforts	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Reallocate funds to assist individuals or replace affordable housing units lost due to redevelopment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Offer incentives for new affordable housing on privately-owned vacant sites	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Development, Site Acquisition, & Inspections					
Promote preservation and rehabilitation of housing stock, especially affordable housing units	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Distribute affordable housing units equitably, avoiding excessive concentration in individual neighborhoods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Identify and use government owned sites for affordable housing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Develop and maintain an affordable housing preservation warning system that tracks existing affordable housing and guides preservation investments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Emphasize growth areas for new types of housing styles, especially in walkable, mixed-use locations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Favor master-planned, larger tracts over smaller, greenfield developments to maximize private contributions and amenities	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encourage different styles of multi-family housing in a way that is more compatible with existing communities	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Build full service neighborhoods, as opposed to large, single use subdivisions, with residentially scaled services close at hand	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facilitate the reuse of abandoned, vacant, and tax-delinquent properties for housing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Policies, Practices, & Goals	Cary[i]	Garner[ii]	Morrisville[iii]	Raleigh[iv]	Wake County[v]
Remove and eliminate blighted conditions through the demolition of vacant, abandoned, and dilapidated structures and provide replacement housing where feasible	◐	○	○	○	○
Continue to acquire vacant and substandard residential lots for new affordable or mixed-income housing	○	○	○	●	◐
Placemaking & Community Amenities					
Maintain neighborhood character	◐	●	◐	●	○
Support neighborhood "brand identity" to create loyalty and an added sense of place	○	◐	○	○	○
Encourage density increases that do not alter the character of downtown	○	●	○	○	○
Maintain existing public spaces in neighborhoods with a Neighborhood Improvement Grant program	●	○	○	○	○
Strive to locate housing within close proximity to daily conveniences, employment, schools, and transit service	◐	●	○	○	●
Assure a quality living environment and access to public amenities for all residents, regardless of income	◐	●	○	○	●
Supportive Services					
Support coordinated efforts to provide housing and supportive services for homeless persons and those at risk	●	○	○	●	●
Develop permanent supportive housing project for high-need, high-cost clients	○	○	○	○	●
Develop a service roadmap that surveys current service infrastructure and outlines a path for integrating available resources to provide the most comprehensive support services	○	○	○	○	●
Improve the system for assessing and placing populations into housing to ensure permanent supportive housing units go to the highest-need, highest-barrier populations	○	○	○	○	●
Support more 55+ housing opportunities, both in attached and separated formats, especially those that are integrated with the parks and greenways	○	◐	○	○	●
Address the root causes of homelessness by supporting workforce training, access to transportation, access to child care, and other strategies to help low-income residents reach self-sufficiency	○	○	○	◐	●
Strengthen linkages between public agencies and Public Housing Authorities to provide supportive services	○	◐	○	◐	◐
Support the creation of an integrated, comprehensive system of care to provide health care, housing, and social services	○	○	○	●	●
Promote the development of additional housing for persons with disabilities	○	○	○	◐	

Policies, Practices, & Goals	Cary[i]	Garner[ii]	Morrisville[iii]	Raleigh[iv]	Wake County[v]
Direct Assistance for Renters & Homeowners					
Coordinate with other local governments to align existing housing counseling programs for homeowners and renters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Coordinate homeowner rehabilitation programs run by various groups to increase efficiency and improve access	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Encourage weatherization of existing homes to improve energy-efficiency and reduce utility costs	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Provide, enable, or encourage direct support to individuals and families in need of affordable housing	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Expand range of housing assistance programs benefiting persons of low and moderate incomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Remove barriers to age in place by assisting elderly homeowners to repair, modernize, and improve the energy efficiency of their homes	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Partnerships with Developers & Affordable Housing Providers					
Facilitate and support the creation of new affordable housing units by nongovernmental entities through regulatory assistance, partnerships, agreements, or other means	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Work with local housing authorities to develop a comprehensive redevelopment plan for public housing sites, where desirable and feasible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Establish a landlord partnership program to increase private landlords' willingness to accept housing vouchers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Conduct yearly summits with developers to ensure that development reviews, practices, and regulations are not discouraging desirable products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Facilitate collaboration between government departments during major housing projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

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- ³⁶ Affordable housing data included in this inventory includes data from the National Preservation Database, Wake Habitat for Humanity, the City of Raleigh, and CoStar, a real-estate database.
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