

CHAP VIII

C. East Raleigh/Knightdale Area Land Use Plan

1. What is an Area Land Use Plan?

a. Introduction

With the adoption of the Wake County Land Use Plan in 1997, the Board of Commissioners directed staff to complete area plans for the fifteen Urban Services Areas plus the five Non-Urban Areas. (These 20 areas have been combined into 8 study areas for the purpose of developing area land use plans.) The Wake County Land Use Plan consists of text and two maps: the General Classifications Map and the Land Use Classifications Map.

The Land Use Plan classifies all the land in Wake County's planning jurisdiction as one of six general classifications: Short-Range Urban Services Area; Long-Range Urban Services Area; Short-Range Urban Services Area/Water Supply Watershed; Long-Range Urban Services Area/Water Supply Watershed; Non-Urban Area; or Non-Urban Area/Water Supply Watershed. County planners have been working with municipal planners and actively involving the public in order to refine the General Classifications Map, as well as the Land Use Classifications in the text and map. In November 1999, the Board of Commissioners amended the Land Use Plan to add policies defining how current development in Urban Services Areas (USAs) should be designed in terms of its intensity and its provision of water, sewer, and transportation facilities and recreation areas.

The area land use plans will replace the Land Use Classifications Map for the area covered by the plans. It will revise and expand adopted joint plans with municipalities, expand upon the land use aspects of the water-supply watershed protection plan, and create new plans where no joint plans have been adopted with municipalities or in non-urban areas. These area plans will re-evaluate the USA boundaries in terms of where municipal sewer will be extended by 2010. This new delineation will revise Short-Range and Long-Range USA boundaries (see Transitional Urban Development Policies in 11).

These area plans will have a long-term time frame and will incorporate the objectives of emphasizing the development of communities; encouraging development in and around municipalities; maintaining resources including natural areas, historic sites, major wildlife corridors, potential parks and greenways; and coordinating with transportation plans. These area plans will also address open space, scenic and transitional areas along highways and recreation and leisure resources.

The East Raleigh-Knightdale Area Land Use Plan will encourage growth close to the municipalities and take advantage of existing and planned infrastructure, such as transportation, water and sewer facilities. The Plan will also encourage higher densities and a wider range of land uses where existing and planned short-range community facilities and infrastructure can support them.

b. Citizen Planners

At a time when apathy seems to run rampant in our society, it is very reassuring when a group of citizens takes the time to plan for their collective community's future. The Committee of citizen planners who met six times from July 1999 through January 2000, helped form the plan that will serve as a guide for those individuals who will make the decisions to invest the time and resources to develop the East Raleigh-Knightdale area.

The citizen planners on the East Raleigh-Knightdale Area Land Use Planning Committee are Gerald Bagwell, Mary Grady Bell, Vic Bell, Ed Brandle (Vice-Chair), Mary Conyers, Rupert Conyers, Lynn DeMent, Steve Eastman, David Edwards, Pam Edwards, Tim Edwards, Bob Gorman, Robert Hardee, George Hess, Michael Hicks, George Kahdy, Battle Koonce, Mary Koonce, Susan Moore, Betsy Olive, Sara Robertson (Chair), Phyllis Rush, Jim Smith, Richard Stockett, Beth Trahos, Claude Trotter, Bill Turner, Johnny Watson, Gerard ter Wee, and Sarah Williamson. Special thanks to Sarah

Williamson, Sara Robertson, Battle Koonce, Bob Gorman, Mary Grady Bell, and Gerald Bagwell; these Committee members attended all six meetings of the East Raleigh-Knightdale Area Land Use Planning Committee.

c. Citizen Participation and Schedule

On May 13, 1999, the East Raleigh-Knightdale Area Land Use Plan planning process started with an Issues Forum held at the Knightdale Town Hall. The meeting was well attended and received coverage on the WTVD News Channel 11, 11 o'clock news that evening. A small-group process was used to identify issues that were "liked" and "disliked" by the community. These issues were then discussed and expanded upon at the six-committee meetings from July 1999 through January 2000. (See Summary of May 13, 1999 East Raleigh-Knightdale Area Issues Forum in 18.)

The following agenda items were covered over the course of the six-committee meetings: project overview and plan goals, transitional urban development policies, Neuse River regulations and model stormwater program, transportation improvements, historic resources, open space plan, growth trends and land use, development choices, activity centers, agriculture and forestry, village concept, and the area land use plan map.

The schedule for adoption of the East Raleigh-Knightdale Area Land Use Plan follows.

- Public Open House: Thursday, February 10, 7 to 9 PM, Room C of the Commons Building, Wake County Office Park. The public review period of the plan ends February 29th.
- East Raleigh-Knightdale Land Use Planning Committee: Monday, March 13, 5 PM, Commons Building, Wake County Office Park. The Committee meets to review and discuss public comments, and provide input to staff regarding final draft of plan.
- Wake County Planning Board: Wednesday, April 5, 1 PM, Room 700 of the Wake County Courthouse. The Area Land Use Plan is presented to the Planning Board for its review and recommendation.
- Wake County Board of Commissioners: Monday, May 1, 2 PM, Room 700 of the Wake County Courthouse. The Area Land Use Plan is presented to the

Board of Commissioners for its review and adoption.

d. East Raleigh-Knightdale Area Communities

Communities such as Amber Acres/Ashley Hills, Mallard Crossing, Rivers Ridge, Shotwell, and Six Forks Crossroads, to name a few, are those communities which give the East Raleigh-Knightdale area its unique character. One of the goals of the land use planning effort is to maintain the "sense of place" where it already exists, and to create it where it does not now exist.

2. Adopted Goals for the East Raleigh-Knightdale Area Land Use Plan

In developing goal statements for the East Raleigh-Knightdale Area Land Use Plan, the planning committee relied on the adopted Wake County Land Use Plan's goals as the starting point for the Area Land Use Plan's goals. The Plan's goals form the basis for the development of more specific recommendations for guiding growth into the Short-Range Urban Services Areas that are adjacent to municipal jurisdictions (see Transitional Urban Development Policies in 11). Furthermore, the goals encourage greater density and intensity of development at Activity Centers. In this way we hope to remedy the adverse impacts that sprawl-type development is having on our quality of life throughout the Triangle region, but especially in the East Raleigh-Knightdale study area. The adopted goals for the East Raleigh-Knightdale Area Land Use Plan follow.

#1 Guide quality growth throughout the East Raleigh-Knightdale area in cooperation with local governments.

#2 Encourage growth that will take advantage of existing and planned infrastructure so that municipalities are able to provide basic public services in accordance with their adopted plans.

#3 Focus compact development in mixed-use activity centers that include housing, commercial services and employment opportunities designed with convenient pedestrian and vehicular access from surrounding development areas.

#4 Protect the unique character of the East Raleigh-Knightdale area by conserving significant natural features, historic resources

and the cultural heritage that collectively establish a sense of place.

#5 Ensure that the East Raleigh-Knightdale Area Land Use Plan takes advantage of, and reflects, the Capital Area's Transportation Plan.

#6 Support agriculture and forestry operations as viable land use options.

#7 Encourage the interlocal coordination of stormwater resources and programs to assure an efficient and cost-effective regional stormwater management system.

3. Location, Location, Location

Located in the heart of North Carolina's Piedmont area, the Research Triangle is formed by the three counties and universities: Duke University in Durham County, the University of North Carolina at Chapel Hill in Orange County, and North Carolina State University in Wake County. The 3,500-square-mile Triangle region is continually regarded as one of America's "Best Places" in national magazines and surveys. The region's population surpassed one million persons in 1996, and is projected to grow to 1.5 million in the next 25 years.

Wake County consists of a land area of 858 square miles, a 1998 population of 574,828, and 12 municipalities and the County government. This combination makes Wake County the largest and most diverse county in the region.

4. Population and Housing

With a projected population of 954,324 in 2020, Wake County is now the fastest growing county in the state. Since 1980, Wake County has experienced an annual growth rate of 3.4 percent, with its population doubling from 301,429 to 610,284 (2000 estimate). However, effective growth rates for the 12 individual municipalities within Wake County over the same period have ranged from less than 1 percent to more than 10 percent.

All of Wake County has experienced residential growth; however, not all areas have experienced that growth at the same rate. North Raleigh and Western Wake have led the County's residential growth over the last decade. Fast-paced residential growth has maintained Wake County as one of the fastest growing areas in the nation. In 1997, the area ranked 15th nationally in residential building starts.

This is not a short-term phenomenon. In fact, the projected population for Wake County in the year 2010 is 777,346 and by 2020 the population is expected to reach 954,324, this accounts for a 22.8 percent population increase over the ten-year period, and this increase will account for 19.2 percent of the population growth that is expected to occur in North Carolina from 2010-2020. This increase will continue fueling the rapid residential growth that is currently underway in Wake County. Given the current trends in land use, it is very important that efforts be strengthened to assure that a balanced tax base is maintained throughout the county.

The population of the East Raleigh-Knightdale area was estimated at 16,489 in 1995. The area's population is projected to increase to 48,885 by 2025; a 196 percent increase during the 30-year planning period. (See East Raleigh-Knightdale Area Population map)

5. Local Economy

While the national economy has been booming since 1992, Wake County and the Triangle have performed even better. Job growth, housing starts, and retail activity in Wake County are all exceeding national trends. Some indicators of this growth are:

- Employment - Total employment for the first 6 months in 1998 averaged 325,000 - a 20.2 percent increase since 1992, or 65,500 new jobs.
- Unemployment - Unemployment decreased steadily from 3.9 percent in 1993 to 1.7 percent in 1997.
- New Construction - Single-family residential building permits issued in 1997 increased 8.7 percent (from 1996) to 8,013, which was the most for any county in the region.

Employment in the East Raleigh-Knightdale area is expected to follow this trend. The following graphic shows how much, and where growth is expected to occur in the study area over the next 25 years. (See Employment Growth Map - Red dots are where new employment is expected to occur by 2025; each dot represents 15 employees.)

The community activity center planned at the Auburn-Knightdale, Rock Quarry Road and I-540 interchange is an employment area that is underreported on the employment growth map.

A small cluster of employment would be expected to occur at community activity centers throughout the study area. The principle centers of employment, however, will be located in Regional Activity Centers. (See principles for the development of employment areas in 12.c)

In 1995, a countywide survey and analysis was done to identify potential Class A industrial sites situated within areas that municipalities expected to extend planning jurisdiction to within 10 years. The Town of Knightdale alone identified some 17 potential Class A industrial sites in its USAs. Knightdale and Raleigh, working with the Wake County Economic Development Program of the Greater Raleigh Chamber of Commerce, should reevaluate and update the Class A industrial sites inventory for the East Raleigh-Knightdale area.

6. Transportation Issues

a. Introduction

The relationship between transportation and land use cannot be refuted. That is why it is so important to incorporate and closely coordinate our transportation planning and land use planning so as not to discourage the type of livable, pedestrian-friendly neighborhoods and communities that so many of us find attractive to live in. More persons attending the East Raleigh-Knightdale Area Land Use Plan Issues Forum liked small-lot cluster residential development than any other issue identified by the group that evening, and mixed-use development was the fifth most liked issue. The second and third most disliked issues were strip development and traffic congestion.

b. Developing a Roadway Network

Two major considerations in classifying roadway networks are access and mobility. The conflict between serving through movements and providing access to a dispersed pattern of land uses requires the differences in the various functional types of roads. Limitations on access are necessary on thoroughfares to help with their primary function of moving traffic, whereas the primary function of local roads is to provide access, which causes a limitation in mobility. The extent and degree of access control is a significant factor in defining the functional category of a road.

The thoroughfare system is comprised of interstate/freeways, major thoroughfares, and minor thoroughfares. Interstate/freeways are designed to move large volumes of through traffic from one urban region to another and

often have statewide continuity. Examples of these highways in the study area are proposed I-540 and U.S. Hwy 64 Bypass, U.S. Hwy 64, and U.S. Hwy 401.

Major thoroughfares are also regionally important roadways that are generally designated as North Carolina Primary and Secondary Routes. They generally have region-wide continuity. Maintaining high levels of travel service is considered the most important function of the roadway, while maintaining limited degrees of access is considered a secondary function. Examples of these roadways in the study area are Mitchell Mill, Buffaloe, Forestville, Smithfield, Auburn-Knightdale, and Poole Roads.

c. Roadway Improvements

The transportation network in the study area has not been fully developed in order to accommodate the growth and urbanization that will occur over the next 25 years. The completion of Interstate 540 and U.S. 64 Knightdale Bypass are very important transportation improvements if the area is to realize its potential as an integral part of the Triangle region.

The plans for the Knightdale Bypass call for a new divided freeway from I-440 to U.S. 64 East near Rolesville Road (10.2 miles). The northern section of I-540 is a divided freeway from NC 55 west of Morrisville to U.S. 64 East near Knightdale (29.0 miles). The eastern section of I-540 would connect with the Knightdale Bypass between Hodge and Clifton Roads, north of Poole Road. These roadway improvements are the top 2 priorities for the Wake County metropolitan area in its current 2002-2008-project priority list for transportation.

Two other important roadway improvements for east-west traffic flow in the study area are widening of the existing Rolesville-Buffaloe Road corridor, and the extension of Raleigh Boulevard east across the Neuse River to connect with I-540.

d. Collector Road Planning

Collector roads provide both access and traffic circulation within residential neighborhoods and commercial/industrial areas. A collector road system differs from the thoroughfare system in that roadways designated on the collector road system may penetrate neighborhoods, distributing trips from thoroughfare system

roadways through the area to their ultimate destinations.

The local street system consists of roadways not in one of the higher order systems. This system's primary function is to provide direct driveway access to abutting lots and connect to the collector road system or thoroughfare system. It offers the lowest level of mobility compared to the higher order systems of roadways. The collector road system also collects traffic from local streets and channels traffic to the higher systems of roads and highways.

Wake County does not currently have a Collector Road Plan to refer to during the subdivision and development plans review process. The County instead uses stub-road guidelines. Certainly in the past these guidelines were adequate in our rural areas, but as suburban growth has occurred these guidelines have not been adequate to provide the higher degree of connectivity necessary to adequately address traffic congestion.

A collector road plan would go a long way towards addressing this deficiency that currently exists in the development review process. A Collector Road Plan should be developed for the East Raleigh-Knightdale study area. The Collector Road Plan for the northern portion of the study area was done for the Joint U.S. 401 Perimunicipal Area Plan that was adopted by the Board of Commissioners in 1992, should be re-evaluated. This Plan serves as a good starting point for the development of a more detailed collector road plan for the entire East Raleigh-Knightdale study area. (See Thoroughfares / Local Collector Roads map)

e. Special Highway Overlay District

The County should apply Special Highway Overlay District (SHOD) zoning along the proposed I-540 and U.S. 64-Knightdale Bypass. Knightdale's Special Thoroughfare Overlay District zoning along existing U.S. 64 should be extended to include those portions of the highway within the County's jurisdiction. In order to accomplish this, without creating a new zoning district, the County's SHOD zoning could be applied along existing U.S. 64.

The SHOD applies to land adjacent to certain designated major highways. It is intended to help ensure that such land is developed so as to maintain or enhance the natural scenic beauty and wooded character viewed by

travelers along the highway, as well as to lessen the highway's potential adverse impacts on adjacent land uses. District regulations limit building height in relation to the building's distance from the highway, apply special vegetative buffers and visual screening along the highway right-of-way, and restrict signage visible from the highway. (See Special Highway Overlay District Regulations in 19.e)

f. Sidewalks and Bikeways

Livable, pedestrian-friendly neighborhoods require a degree of transportation planning that has not currently existed outside of Raleigh's municipal jurisdiction. As part of the implementation of this Area Plan and the County's Transitional Urban Development Policies, it is recommended that sidewalks and bikeways be required in all new developments.

Sidewalks should be provided along both sides of thoroughfares. Connections to bikeways away from thoroughfares are encouraged. Bikeways should be usable for neighborhood circulation and exercise too. A road, bikeway and sidewalk grid pattern would help to provide directional orientation, a rhythmic design pattern and clear circulation. Narrower streets would discourage through traffic and emphasize pedestrian scale.

Regular patterns for lot sizes and street yards would provide a shared basis for street treatment, where pedestrian and bicycle facilities will encourage those transportation modes. Pedestrian crossings should be improved to include protected crossings, pedestrian lights and intersection markers. (See principles of design that would help to achieve such livable, pedestrian-oriented neighborhoods in 12)

g. Public Transportation

Wake County's adopted Comprehensive Plan Transportation Goals and Objectives encourage the provision and use of alternatives to single-occupant driving by supporting an accessible and affordable multi-modal regional public transportation system, including fixed guideway and conventional transit, high occupancy vehicle lanes, van- and car-pooling, plus park-and-ride lots.

Triangle Transit Authority's Recommendations call for the expansion of the Regional Bus Service and development of a Regional Rail using self-propelled diesel cars. Full implementation of this plan will provide time

competitive transit options in most congested corridors. As Wake County's population continues to grow, we find it more difficult to get to and from home, work, shopping and school. Building more and wider highways, alone, will not solve traffic congestion. As is stated in Wake County's adopted Goal for Transportation, we need an accessible, efficient, and balanced multi-modal transportation system that promotes economic opportunities and is consistent with and complements the environment and nearby land uses in order to enhance individual mobility.

7. Natural Resources

a. Introduction

Wake County is located in two river basins in east-central North Carolina. The total surface area of Wake County is about 860 square miles - 720 in the Neuse River Basin and 140 in the Cape Fear River Basin.

Regulatory compliance requirements for municipalities in Wake County, and throughout the nation, changed dramatically during the 1990s. They will continue to change as public concern for natural resources grows and as urbanization increases the need for environmental protection and resource management. Within the Research Triangle region and Wake County, Falls Lake, Jordan Lake, the Cape Fear River, and the Neuse River have become environmental focal points for regulators.

Within Wake County there is recognition that our natural resources are a finite part of an interdependent ecosystem and must be managed wisely. The citizens of Wake County recognize the area's natural environment as a precious resource because it affects our health and well being, provides nourishment, and serves as the foundation of a prosperous economy.

b. Stormwater Management

To effectively solve water quality problems in North Carolina, the State must address nonpoint sources, such as stormwater runoff in urban areas, as well as point sources, such as discharges from wastewater treatment plants. The North Carolina Nutrient-Sensitive Waters (NSW) strategy addresses both sources in its plan to reduce nitrogen loading in the Neuse River.

The 75 percent of the county that is in the Neuse River Basin is subject to the NSW

stormwater management regulations. The Neuse River regulations require land uses in the basin to reduce their cumulative nitrogen contribution to the river by 30 percent. These regulations challenge the County to develop a stormwater management strategy that will benefit all of its constituents.

c. Neuse River Basin Nutrient Sensitive Water Management Strategy

The Neuse River regulations require the agricultural community in the basin to reduce their nitrogen contribution to the river by 30 percent. A Basin Oversight Committee (BOC) composed of representatives from state level agricultural agencies determined the target nitrogen reduction levels for the counties in the Neuse River basin. The BOC also determines the method by which nitrogen reductions will be calculated and which management practices will be recognized as being effective for controlling nutrient runoff.

The responsibility for developing and implementing local agricultural nitrogen reduction strategies lies with Local Advisory Committees (LACs) established for the various counties in the basin. LACs, composed of one or more counties, had until August 1, 1999 to sign up local farmers for cooperative nitrogen reduction efforts.

Farmers choosing not to sign up with an LAC must implement the limited standard options contained in the Neuse River regulations. In this part of the basin the only standard option available under the rules is to establish and/or maintain 50-foot vegetated buffers (the first 30 feet must be forested) around all affected perennial and intermittent streams as well as all ponds on these streams. Signing up with the LAC allows a farmer to work with LAC technical staff to develop a nitrogen reduction strategy tailored to their operation. This may allow a farmer to avoid having to install 50-foot buffers if that would adversely affect his operations. Joining the LAC gives a farmer greater flexibility in implementing nitrogen reduction practices for meeting the Neuse River regulations.

Wake and Franklin Counties decided to form a single LAC. The Neuse River basin contains 85 percent of Wake County and 10 percent of Franklin County. The Wake/Franklin LAC, formed in December 1998, is composed of representatives from agricultural agencies in the two counties and several local farmers. The Wake County Soil and Water Conservation

District, working with the Conservation District in Franklin, has been responsible for organizing and coordinating LAC activities. To date, this group has publicized the requirements of the rule in the local agricultural community and signed-up 75-80 percent of the farmers in the area for cooperative efforts with the LAC.

The Wake/Franklin LAC must now work with those who have joined the committee to achieve the collective nitrogen reduction goal of 30 percent. All work must be completed by August 1, 2003.

8. Urban Services Plan

a. Introduction

As one of America's "Best Places," the Research Triangle region - and Wake County - is undergoing significant changes in terms of population growth, economic development, public health concerns, and environmental protection requirements. Compounding the impacts of these changes is the expected addition of one-half million new residents to the Research Triangle region within the next 20 years - many of whom will locate in Wake County.

Some feel that growth is driven by a combination of economic strength, favorable climate and recreation activities, educational and cultural opportunities, and environmental quality. Still others hold that the growth and development in Wake County is the result of water and sewer system expansions. Others cite the extension of the roadway network.

Whatever the reason, it is apparent that Wake County and the Triangle region will continue to grow and in doing so face many environmental protection and natural resource management challenges.

It is for this reason that awareness of the existence, significance, and value of Wake County's natural resources is so important. As development occurs, conflicts arise over wetlands, property rights, habitat preservation, air and water quality, water supplies, and waste disposal practices.

b. Water and Sewer Systems

i. Introduction

Wake County does not own, operate, or maintain any water or sewer facilities. Historically, Wake County residents have relied on either municipal or non-municipal systems to meet growing demands for water and sewer

service. Non-municipal systems have been either community systems or individual on-site systems. Most of the county population on water and sewer systems is served by municipal systems, which have expanded to keep pace with population growth and more stringent regulations governing the quality of potable water and treated wastewater.

In general, each municipality in Wake County owns, operates, and maintains its own water distribution and wastewater collection systems. However, some municipalities have entered into interlocal agreements with neighboring municipalities for bulk water supply purchases and wastewater treatment services. There are currently 14 interlocal agreements and 32 individual contracts for water and sewer service in Wake County.

The Wake County Water/Sewer Plan recommends consolidation of services into two systems - one system for eastern Wake County and the other for the west. Eventually, these two systems would be consolidated into one system serving Wake County.

A general profile of Wake County's water and sewer infrastructure systems follows.

ii. Water

Per capita water demand for the county's municipalities ranges from 57 gallons per capita per day (gpcd) to 192 gpcd. For the year 2030, average day water demands on municipal water systems are estimated at 136 million gallons per day (mgd), with maximum day water demands of 204 mgd.

The county's existing raw water supply sources (surface water) provide about 119.2 mgd. New or expanded raw water supply sources within Wake County may increase the supply to 153.2 mgd. Four water treatment plants (WTPs) in Wake County have a total permitted water treatment capacity of 97.5 mgd. In 1996, daily average water use was 47.2 mgd, and maximum day flows at the treatment plants totaled 69.7 mgd.

A major expansion of the City of Raleigh's E.M. Johnson Water Treatment Plant is anticipated by the Year 2010. This expansion will upgrade the plant's treatment and transmission facilities from 78 million gallons per day to 100 million gallons per day. This will provide a potential water supply greater than the anticipated demands in the next 15 years. This plan also

includes the expansion of the City water service to outlying areas as these areas develop and become part of the City, as well as replacement of older water mains which have become substandard or insufficient in capacity.

iii. Wastewater

Per capita wastewater flows for the county's largest municipal sewer systems range from 110 gpcd to 124 gpcd. In 2030, average daily wastewater flows to municipal sewer systems are expected to be 128 mgd, with 160-mgd maximum month flows.

There are 10 wastewater treatment plants (WWTPs) in Wake County with total permitted and constructed capacities of 109.65 mgd and 95.35 mgd, respectively. In 1996, average monthly wastewater flows were 47.0 mgd and maximum month flows at the treatment plants totaled 55.2 mgd.

The City of Raleigh's wastewater plan has been designed to serve project demands in an economical manner with the minimum use of pumping facilities. The City has prepared its wastewater system plan in coordination with Wake County. The capacity of the Raleigh Neuse River Wastewater Treatment Plant, which is located in the study area, will increase to 60 mgd and should carry the City through 2025; however, plans will have to be made at the end of this period to increase the plant capacity to approximately 80 mgd. The City will also increase capacity of Crabtree Creek and Neuse River mains by installing parallel piping.

9. Wake County Water/Sewer Plan

a. Introduction

The first Wake County Water/Sewer Plan was completed in 1972, and updated in 1989. In December 1996, the Wake County Board of Commissioners created a 21-member Wake County Water/Sewer Task Force (Task Force) to evaluate various near- and long-term alternatives for expanding water and sewer service throughout the defined Urban Services Areas of Wake County. The Task Force was charged with the development of the Wake County Water/Sewer Plan, which was adopted in 1998.

The mission of the Task Force was to develop a comprehensive water/sewer plan for the logical and orderly expansion of water and sewer service in a manner consistent with the community's values for economic development, environmental protection, and natural resource

management.

Working with key stakeholders, the Task Force used a consensus-building process to identify and evaluate options for future water/sewer service in Wake County. The goal of this collaborative process was to develop a water/sewer plan with the following objectives:

- Provide for better management, use, preservation, and conservation of limited natural resources.
- Systematically accommodate growth and development in and around existing urban centers in accordance with the Wake County Land Use Plan adopted in July 1997.
- Provide adequate, reliable and economical water and sewer service to all customers, regardless of location.
- Improve the management, operations, maintenance, and overall efficiency and cost-effectiveness of water and sewer delivery systems.

For the water and sewer utility industry, the dilemma of the 1990s is more versus less: more demands, regulations, risks, and uncertainties versus less time, money, and personnel to provide the services that customers demand. This dilemma is especially applicable to the water and sewer utility systems in Wake County today, and it will be even more so in the future.

b. Water/Sewer Funding Program

The current Wake County Water/Sewer Revolving Fund Policy provides water/sewer line extension funding for strategic industrial projects, failed systems, and size upgrades. A new program could include the following types of projects: system assistance (for projects better done on a countywide scale), economic development (for areas already planned for development), and failed systems (to prevent health hazards).

c. Non-Municipal Water/Sewer System Standards

About 138,800 county residents (26 percent) rely on groundwater sources for drinking water, and an estimated 153,000 (28 percent) rely on non-municipal sewer systems for wastewater treatment and disposal (1998 estimates). If not properly designed or operated, these systems can present the following risks:

- Adverse public health impacts associated with system failures.
- Adverse environmental impacts due to system malfunction or failure.
- Significant financial impacts to property owners, utility service providers, and local and state governments (in the event of system failure).
- Hinder future extensions and orderly development of public water and sewer systems

Based on experience, over \$9 million in public and private money will be spent from 1999 to 2001 to correct failed non-municipal systems for about 780 homes in Wake County. The Water/Sewer Plan recommends that improvements in the management framework are needed to ensure that non-municipal water and sewer systems are financially and environmentally sustainable, to prevent such failures from happening in the future.

10. Resource Management

a. Water/Sewer Best Management Practices

i. Water Conservation

Conservation will be necessary to maintain the current countywide rate of water use, since new development has historically meant higher water use rates. The primary benefit of water conservation is the reduction of peak usage rates, which, in turn, defers the need to develop new water supplies. Water supply developments are large capital projects requiring public financing of debt. Therefore, deferring these projects until they are absolutely necessary reduces the debt burden and stabilizes water rates. Consequently, the Water/Sewer Plan recommends municipalities should consider more ambitious conservation programs.

ii. Wastewater Reclamation and Reuse

The NSW requirement is probably the greatest reason for using reclaimed water. Every gallon of effluent that is not discharged reduces the nutrient contribution to the Neuse River. Using reclaimed water in non-potable applications reduces nutrient loading.

iii. Residuals Management

As WWTP processes have improved, the volume of residual solids has grown, along with the associated costs and concerns. When treated properly, these solids become a valuable recyclable, nutrient-rich material - biosolids - instead of a costly byproduct. The Water/Sewer Plan recommends municipalities should join in a countywide effort to consolidate and manage residuals.

b. Groundwater Resources Management

Groundwater resources have been and will continue to be very important to the County's quality of life, growth potential and economic vitality. About 138,800 county residents receive drinking water from groundwater sources, including 97,500 from on-site wells. Also, about 800 new wells are approved each year in Wake County. Development increases the amount of impervious surface coverage, which hinders groundwater recharge rates. The Water/Sewer Plan recommends that the County should manage growth and development so that cumulative groundwater demand does not exceed long-term recharge rates.

c. Summary for Water/Sewer and Stormwater Management Planning

Raleigh and the Triangle are consistently ranked as one of the top ten places to live in North America. It is one of America's "Best Places" because people work together to develop strategies focused on maintaining economic prosperity while preserving both the quality of life and the environment for future generations.

Water and sewer utility planning can be no exception to this cooperative effort. The key to successful implementation of the Plan is the continued cooperation of the stakeholder groups. The successful implementation of the Plan is the first major step toward a fully integrated, countywide environmental management and resource protection program. Such a program will ultimately address water supply, treatment, and distribution; wastewater collection, treatment, reuse, and disposal; residuals management; stormwater management; and other important natural resource preservation and restoration issues in the County.

Faced with constantly increasing demands for limited natural resources, state and local leaders must recognize that the economy and the environment are in fact linked, and the health of our local and state economies depends on sustaining the environment. The Water/Sewer Plan integrates and balances economic and environmental goals so that Wake County can continue to be recognized as one of America's "Best Places" to live, work, and play.

11. Transitional Urban Development Policies

a. Introduction

The County's Water/Sewer Plan recommendations recognize and address important needs, but alone they are insufficient to manage growth. It is essential that the recommendations be incorporated into the County's Land Use Plan if they are to guide the County's management of growth and land use.

That is why in November 1999, the Board of Commissioners amended the Land Use Plan to add policies defining how current development in Urban Services Areas (USAs) should be designed in terms of its intensity and its provision of water, sewer, transportation facilities, and recreation areas.

The Urban Services Areas are now split into Short-Range and Long-Range USAs, the Short-Range USA classifications apply to land within those portions of the "sewersheds" of municipal sewer line extensions projected to occur in the next 10 years (as delineated on the Water/Sewer Plan's Wastewater Facilities map) that lie within 1 mile of the extension. (See General Classifications Map)

For Short-Range USAs, new development will be required to connect to municipal water and sewer systems where practicable, and encouraged to provide centralized community water or sewer systems elsewhere. The policies also encourage new development served by centralized sewer be developed at urban intensities and that other new development be designed to facilitate future urban infill development once centralized sewer becomes available. The amendments also add a policy that new development be served by urban transportation facilities designed to municipal standards.

For Long-Range USAs, urban intensities will be discouraged as premature, and new development will be required to at least dedicate the rights-of-way necessary to facilitate future provision of urban transportation facilities designed to municipal standards.

For both Short-Range and Long-Range USAs, centralized community water and sewer systems will be required to be designed to municipal standards, and that new development not served by centralized water and sewer systems will be required to at least dedicate the easements necessary to enable such service in the future.

For Non-Urban Areas, new developments are

not to create service needs beyond that already found in and typical of non-urban areas, and centralized sewer systems are not to be provided except to protect public health when private sewer systems fail.

Policies require that new development reserve or dedicate recreation area to meet the neighborhood recreation needs generated by the development's residents.

b. Short-Range/Long-Range Urban Services Areas Boundaries

As part of the area land use planning process, the Committee re-evaluated the Short-Range, Long-Range USAs boundaries within the study area. The Committee, after consulting with the municipal public utilities staff, and based on updated sewer information, proposed changes to the Short-Range USA boundaries. (See Proposed Changes to Short-Range Urban Services Areas map)

The proposed changes will add 969 acres and delete another 4,443 acres from the East Raleigh-Knightdale Short-Range USAs. The net effect is a decrease of 3,474 acres in the Short-Range USAs. This recommended change, which is reflected by the Short-Range USA boundaries shown on the East Raleigh-Knightdale Area Land Use Plan map, would help to manage and guide growth in the East Raleigh-Knightdale area.

12. Standards for Activity Centers

a. Introduction

An Activity Center is a location where people come together for the purpose of work, shopping, eating, learning or recreation in a safe, clean and attractive setting. Activity Centers will encourage the development of integrated land uses, and community facilities, such as parks, libraries, and schools, as focal points for the areas as they develop. Activity Centers will help the East Raleigh-Knightdale area become an outstanding community of urban and rural areas where the demand for quality and affordable growth is met, economic development and opportunity is enhanced, environmental quality and cultural heritage are maintained, and all of these objectives are balanced with protecting the property rights of landowners.

b. Activity Centers' General Principles

The following general principles should provide guidance for the development of activity centers that meet the East Raleigh-Knightdale Area

Land Use Plan's goal of focusing compact development in mixed-use village centers that include housing, commercial services and employment opportunities designed with convenient pedestrian and vehicular access from surrounding development areas.

- Neighborhood-oriented development that allows people to safely walk or bicycle to, from and within activity centers, no matter what their size, purpose or function may be.
- Create a distinctive character that helps the surrounding community better identify to the Activity Center, and incorporate their daily living with it.
- Provide a variety of housing densities, ownership opportunities, prices and building types.
- Cluster a mutually supportive mix of land uses to create a focal point that integrates daily activities.
- Ensure that adjacent uses are compatible with each other in use and scale.
- Connect to municipal water and sewer where practicable and other new development be designed to facilitate future urban infill.
- Allow for a balanced transportation system that accommodates a variety of travel choices.
- Site and design buildings to create a pedestrian-friendly environment.

The neighborhood forms the building block for all activity centers: neighborhoods make up communities, and communities form regions. The descriptions that appear for the Neighborhood Activity Center core, residential area, and transitions in use and scale, in many cases will also apply for community and regional activity centers.

c. Activity Centers: Principles by Type

Activity Centers more equitably address non-residential development in the study area, for now and in the future. There are four types of Activity Centers; from largest to smallest they are Regional, Community, Neighborhood, and Residential Retail.

There are 10 Neighborhood Activity Centers located in the study area: U.S. 401-Forestville, Old Milburnie-Fixit Shop, Six Forks Crossroads,

Rolesville-Jones Chapel, Buffaloe-Lucas, Pet Crossroads, I-540-Hodge, Poole-Smithfield, Poole-Neuse River, and Battle Bridge-Auburn-Knightdale. There are 4 Community Activity Centers located in the study area: Buffaloe-Forestville, I-540-U.S. 64, Poole-Clifton-Bethlehem, and Rock Quarry-Auburn-Knightdale. There are 2 Regional Activity Centers located in the study area: U.S. 64-64 Bypass and Knightdale Town Hall. (The locations of Activity Centers are shown on the East Raleigh-Knightdale Area Land Use Plan – Land Use Classifications Map.)

Regional Activity Centers

- Large-scale, transit-supportive center of employee-intensive land uses.
 - Size: 320 to 640 acres.
- A regional activity center should have a core containing relatively large-scale and high-intensity urban land uses that are supported by and serve communities within the region.
 - Core area: 100 to 280 acres.
- Access is by interstate/freeways, major thoroughfares and public transportation, preferably including regional rail transit. Served by municipal water and sewer.
- Residential density: Average of 10 to 22 units per acre.
- Residential/Non-residential mix is about 30-70.

Activity Center Employment Areas

- Employment areas contain the workplaces for large numbers of jobs. Examples of employment areas are industries, warehousing or office parks.
- They are more aptly located at Regional Centers, but may also serve Community Activity Centers.
- Retail service jobs or facilities should not be a major part of employment areas, although they may be appropriate at designated retail areas or in certain locations within the employment areas.
- Access is critical for the economic viability of employment areas; compact development patterns and transit access, by bus or fixed guideway, is desirable for employment areas.

- Employment areas should provide amenities for workers. Open space, recreational facilities, lunch areas, access to greenways, an organized layout and sign system and general variety of public and private amenities for workers, are desirable in employment areas.

Community Activity Centers

- Combination of retail, personal services, civic, educational, and social uses that serves the needs of the surrounding neighborhoods.
 - Size: 160 to 320 acres.
- A community activity center should have a core containing relatively medium-scale development that focuses on serving the day-to-day needs and activities of the core area occupants as well as the greater needs and activities of the people living in adjacent neighborhoods.
 - Core area: 10 to 50 acres.
- Access is by major thoroughfares and public transportation, served by municipal water and sewer.
- Residential density: Average of 7 to 15 units per acre.
- Residential/Non-residential mix is about 50-50.

Neighborhood Activity Centers

- Largely residential area with a mixed-use core that serves as a focal point for the neighborhood in meeting retail and service needs.
 - Size: 40 to 160 acres.
- Residential density: Average of 4 to 10 units per acre.

Neighborhood Activity Centers - Core

- Provides convenience shopping, professional services and social opportunities.
 - Core area: 4 to 20 acres.
- Located near the middle of the Activity Center.
- Buildings sited and designed to create a pedestrian-friendly environment.
- Medium- to higher-density residential development: apartments and townhouse condominiums.

- Urban open space areas; plazas, gardens, sidewalk cafés.

Neighborhood Activity Centers Residential Area

- Homes on small lots, townhouses, condominiums and apartments.
- Recreational and social facilities.
- Interconnected network of streets and sidewalks.
- Convenient sidewalk connections to neighborhood core.

Neighborhood Activity Centers Transitions in Use and Scale

- Ensure that adjacent uses are compatible with each other to eliminate potential conflicts.
- Use variety of scale, pattern and texture in buildings and landscape to create transitions.
- Proposed building orientation should relate to existing buildings and streets.
- Building design and location should complement and preserve existing natural landforms and trees, open space, and historic resources.

Neighborhood Activity Centers Site Design

- Provide convenient, direct and multiple connections between housing and core to shorten walking distance.
- Access is by collector roads and bus lines, served by municipal water and sewer.
- Accommodate pedestrians and bike travel in street right-of-way.
- Locate buildings close to the street with direct access to pedestrian ways.
- Create interesting pedestrian scaled streetscapes.
- Minimize parking between building and street.
- Allow on-street parking where feasible.

Residential Retail Activity Centers

- In most cases these are nonconforming, non-residential uses

that are already serving the neighborhood market.

- Size: Less than 5 acres.
- Maximum building height of 25 feet should complement existing and proposed surrounding residential structures.
- As part of this Plan, a comprehensive study of the entire area will be done in order to identify where Residential Retail Areas should be shown on the East Raleigh-Knightdale Area Land Use Plan - Land Use Classifications Map.

The development of Wake County's activity centers will focus compact development in mixed-use village centers that include housing, commercial services and employment opportunities designed with convenient pedestrian and vehicular access from surrounding areas. The County's activity centers will be appropriately located based on meeting the public's needs over the next 30 years.

By identifying the appropriate locations for activity centers we should be able to put safeguards in place so the activity centers can flourish, providing the necessary non-residential uses for the surrounding residential neighborhoods to utilize.

Residential land uses within those intensities would be allowed as permitted uses, and non-residential land uses that comply with the land use plan would also be allowed as permitted uses. Only exceptions to the plan would require rezoning or special permits. In order to ensure that needed improvements are made to support new developments, municipalities could include those requirements in their zoning and subdivision regulations.

East Raleigh/Knightdale/Northeast Area Activity Center Profiles

Old Milburnie Rd/Watkins Rd Neighborhood Activity Center

Type: Neighborhood Activity Center

Size: 23 acres

Background:

This activity center will provide for mixed-use development including small-scale commercial land uses in order to meet expected demands in this area.

The parcel-based neighborhood activity center encompasses parcels of land on each side of the intersection of Old Milburnie Road, Watkins Road, Old Crews Road, and Peebles Road (five points). The activity center lies within the Short and Long Range Urban Services Area of Raleigh. Raleigh’s Land Use Plan designates the parcels within the proposed activity center boundary for Neighborhood Retail Mixed Use.

The activity center functions as a neighborhood focus area providing retail convenience goods, which include a convenience store with gas pumps and a fire station. Multiple zoning districts could be developed for this neighborhood mixed use center.

A summary of the existing land use characteristics in the activity center is presented in the following table.

ACTIVITY CENTER LAND USE CHARACTERISTICS

Existing Development

<i>Land Use</i>	<i>Parcels</i>	<i>Acreage</i>	<i>Zoning</i>	<i>Units</i>
Residential	7	9	R-30	7
Commercial	1	4	R-30/GB	
Industrial	1	5	I-1	
Governmental	1	3.5	R-30	

Vacant Lands

<i>Land Use</i>	<i>Parcels</i>	<i>Acreage</i>	<i>Zoning</i>	<i>Approved Project</i>
Undeveloped/Vacant	1	1.5	R-30	

Historical, Cultural or Environmental Significance: No designated significant sites in activity center.

Development at this location should be in accordance with the recommendations of the Activity Centers Design Guidelines within the Wake County Land Use Plan. These guidelines address issues of compatibility between commercial and residential buildings, connections between residential areas and commercial areas, open space, buffers, transitional development, and place an emphasis on achieving safe and efficient access to thoroughfares. Access points should have sight distances that are adequate to permit safe stopping of vehicles.

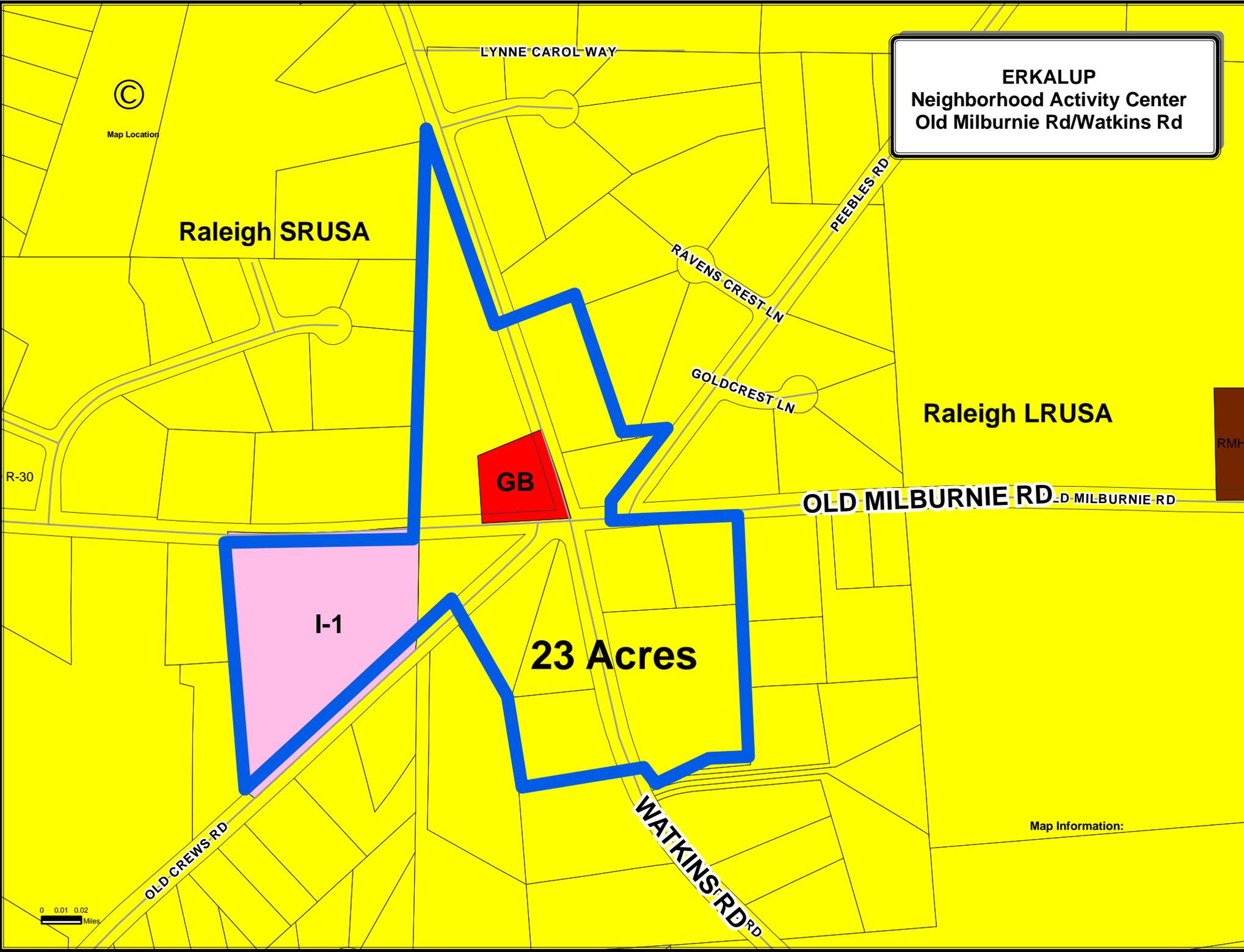
THOROUGHFARES
(Wake County Transportation Plan)

	<i>Pavement width Current/Planned</i>	<i>Right-of-way Current/Planned</i>	<i>Lanes</i>	<i>Road Classification</i>	<i>Level of Service, (NCDOT)</i>
Old Milburnie Road	20 ft / 36 ft	60 ft / 80 ft	2	Major	B*
Watkins Road	18 ft / 30 ft	60 ft / 70 ft	2	Minor (community Street)	Unavailable
Old Crews Road	21 ft / 30 ft	60 ft / 70 ft	2	Minor (community Street)	Unavailable
Peebles Road	21 ft / 30 ft	60 ft / 70 ft	2	Minor (community Street)	Unavailable

* Level of Service (LOS) pertains to operating conditions of facility in terms of traffic performance measures, on a scale of A-F. LOS = B: Slightly more congested, with some impingement of maneuverability of traffic.

The activity center is accessed by a road network that provides connections to the residential neighborhoods in this area of the county.

ERKALUP
Neighborhood Activity Center
Old Milburnie Rd/Watkins Rd



Raleigh SRUSA

Raleigh LRUSA

GB

I-1

23 Acres

OLD MILBURNIE RD OLD MILBURNIE RD

WATKINS RD

OLD CREWS RD

LYNNE CAROL WAY

RAVENS CREST LN

GOLDCREST LN

PEEBLES RD



Map Location

R-30

RMH

0 0.01 0.02 Miles

Map Information:

Fixit Shop Rd/Rolesville Rd Neighborhood Activity Center

Type: Neighborhood Activity Center

Size: 25 acres

Background:

This activity center will provide for mixed-use development including small-scale commercial land uses in order to meet expected demands in this area.

The parcel-based activity center is located on the northeastern side of the intersection of Fixit Shop Road and Rolesville Road within the Long Range Urban Services Area of Raleigh. Raleigh’s Land Use Plan designates the subject parcel of land (parcel-based boundary) for Neighborhood Retail Mixed Use.

A summary of the existing land use characteristics in the activity center is presented in the following table.

ACTIVITY CENTER LAND USE CHARACTERISTICS

Existing Development				
<i>Land Use</i>	<i>Parcels</i>	<i>Acreage</i>	<i>Zoning</i>	<i>Res Units</i>
Residential/Agricultural	1	25	R-30	1
Historical, Cultural or Environmental Significance: No designated significant sites in activity center.				

Future development at this location should be in accordance with the recommendations of the Activity Centers Design Guidelines within the Wake County Land Use Plan. These guidelines address issues of compatibility between commercial and residential buildings, connections between residential areas and commercial areas, open space, buffers, and transitional development.

THOROUGHFARES

(Wake County Transportation Plan)

	<i>Pavement width Current/Planned</i>	<i>Right-of-way Current/Planned</i>	<i>Lanes</i>	<i>Road Classification</i>	<i>Level of Service, (NCDOT)</i>
Fixit Shop Road	20 ft	60 ft	2	Minor	Unavailable
Rolesville Road	20 ft / 36 ft	60 ft / 80 ft	2	Major	B*

* Level of Service (LOS) pertains to operating conditions of facility in terms of traffic performance measures, on a scale of A-F. LOS = C: More congestion than B, with some impingement of maneuverability of traffic. Roads remain safely below but efficiently close to capacity. LOS D: LOS of a busy shopping corridor in the middle of a weekday or a functional urban highway during commuting hours. Speeds are somewhat reduced.

ERKALUP
Neighborhood Activity Center
Fixit Shop Rd/Rolesville Rd



RALEIGH LRUSA

R-30

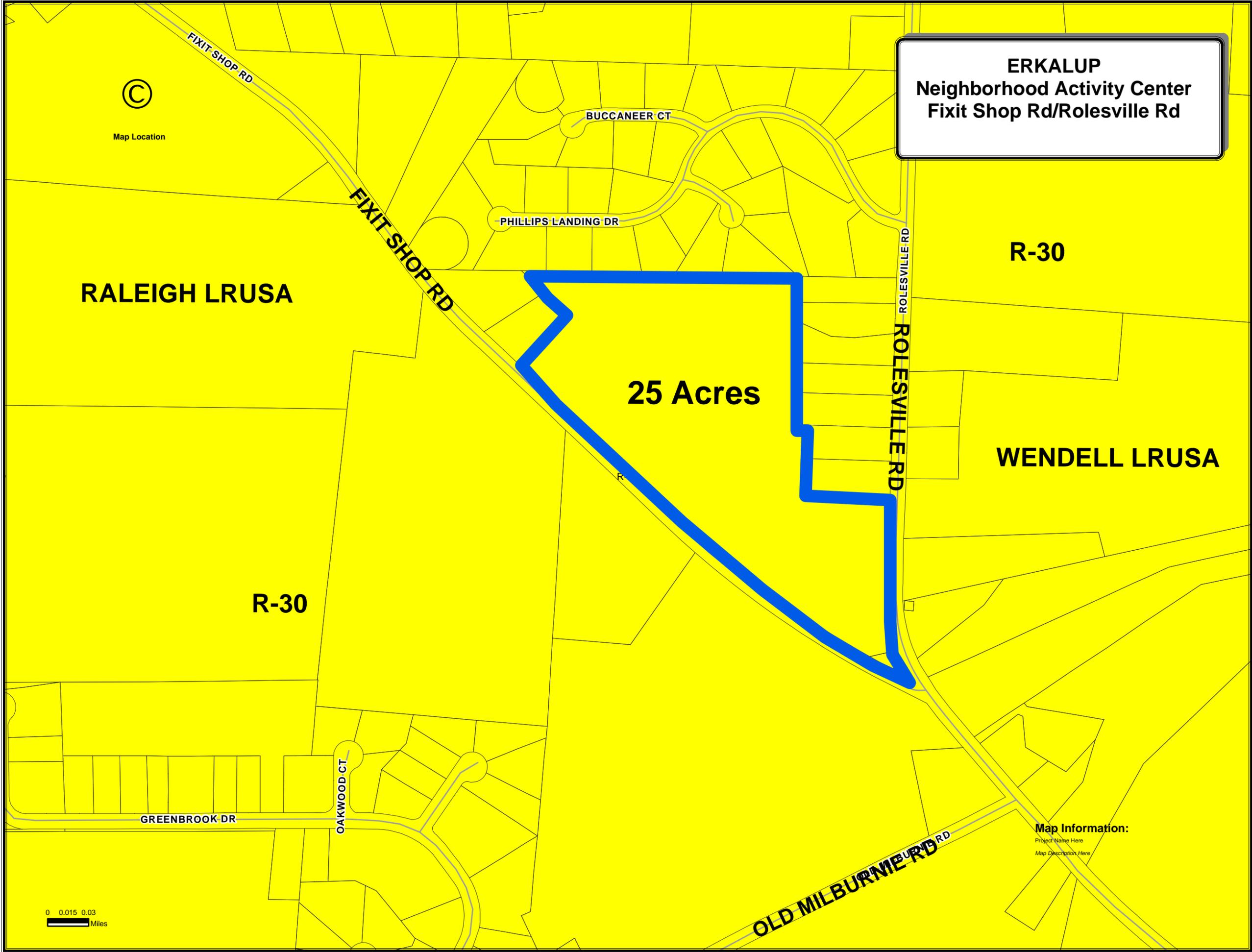
25 Acres

WENDELL LRUSA

R-30



Map Information:
Project Name Here
Map Description Here



Smithfield Rd/Poole Rd Community Activity Center

Type: Community Activity Center

Size: 128 acres

Background:

The activity center is to allow for moderate-scale mixed use development (including residential, office, and commercial) that would serve the surrounding neighborhoods.

The activity center lies within the Short Range Urban Services Area of the Town of Knightdale. Knightdale’s Plan designates the intersection of Smithfield Road and Poole Road as Secondary Activity Center promoting node development. The area of the activity center incorporates residential and commercial zoning and land uses.

A summary of the existing land use characteristics in the activity center is presented in the following table.

ACTIVITY CENTER LAND USE CHARACTERISTICS

Existing Development				
<i>Land Use</i>	<i>Parcels</i>	<i>Acreage</i>	<i>Zoning</i>	<i>Units</i>
Residential	5	99	R-30 & R40	5
Heavy Commercial	1	20	CU-HC	
<i>Vacant Lands</i>				
<i>Land Use</i>	<i>Parcels</i>	<i>Acreage</i>	<i>Zoning</i>	<i>Approved Project</i>
Undeveloped/Vacant	2	9	CU-GB	
Historical, Cultural or Environmental Significance: No designated significant sites in activity center.				

Future development at this location should be in accordance with the recommendations of the Activity Centers Design Guidelines within the Wake County Land Use Plan. These guidelines address issues of compatibility between commercial and residential buildings, connections between residential areas and commercial areas, open space, buffers, pedestrian access, and transitional development, and place an emphasis on achieving safe and efficient access to thoroughfares. Access points should have sight distances that are adequate to permit safe stopping of vehicles.

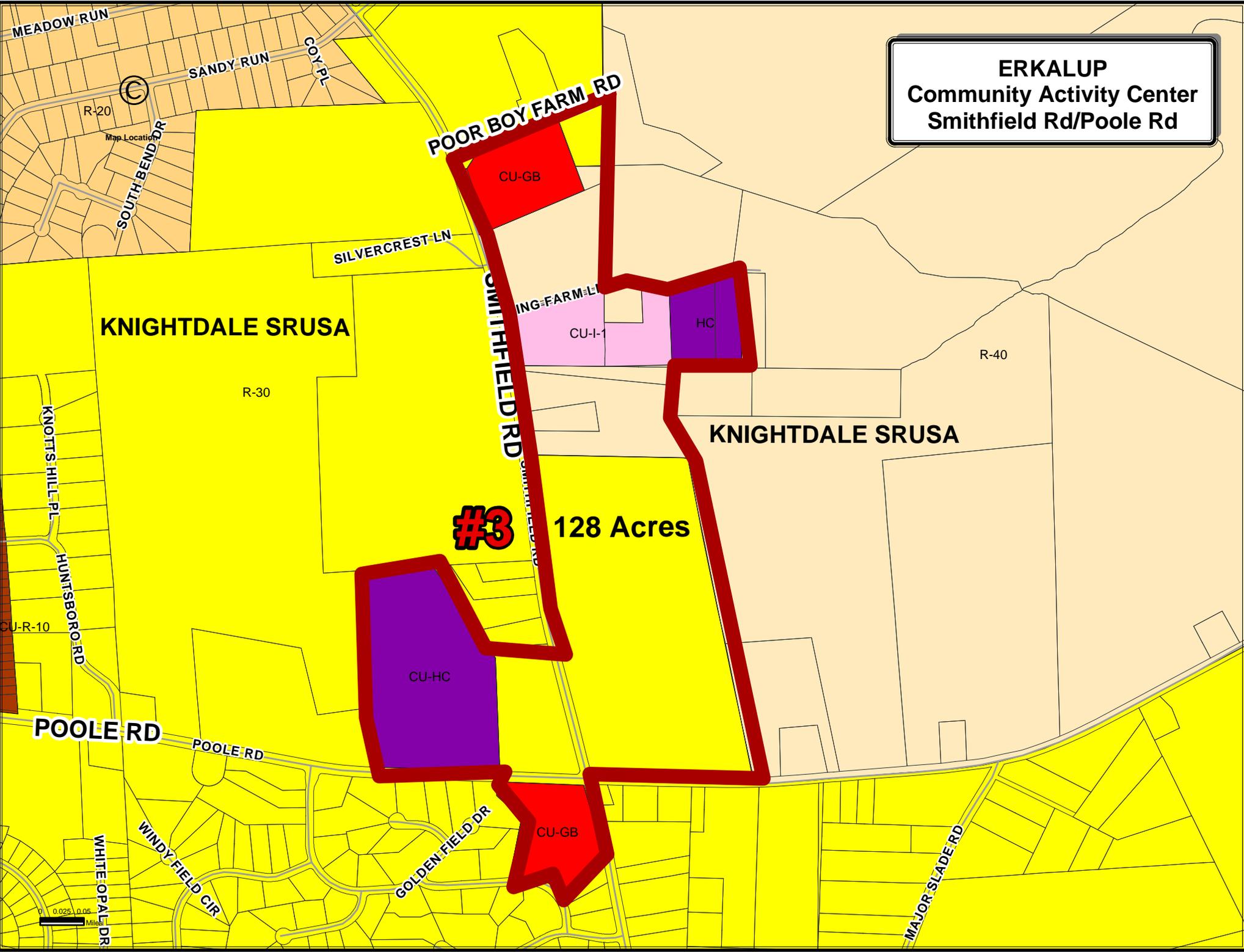
THOROUGHFARES

(Wake County Transportation Plan)

	<i>Pavement width Current/Planned</i>	<i>Right-of-way Current/Planned</i>	<i>Lanes</i>	<i>Road Classification</i>	<i>Level of Service, (NCDOT)</i>
Smithfield Road	24/70 (4 LN)	60/120	2	Major	D*
Poole Road	24/70 (4 LN/MED)	60/120	2	Major	Unavailable

* Level of Service (LOS) pertains to operating conditions of facility in terms of traffic performance measures, on a scale of A-F. LOS = A: LOS “A” is the best. Traffic flows at or above posted speed limit and all motorists have complete mobility between lanes (best LOS).

**ERKALUP
Community Activity Center
Smithfield Rd/Poole Rd**



KNIGHTDALE SRUSA

R-30

#3 128 Acres

CU-HC

CU-GB

CU-I-1

HC

CU-GB

R-40

KNIGHTDALE SRUSA

0.025 0.05 Miles

Rock Quarry Rd/Auburn Knightdale Rd Community Activity Center

Type: Community Activity Center

Size: 55 acres

Background:

This activity center would allow for moderate-scale mixed use development (including residential, office, and commercial) that would serve the surrounding neighborhoods.

The parcel-based community activity center encompasses the northern and eastern quadrants of the intersection of Rock Quarry Road and Auburn Knightdale Road within Raleigh’s Short Range Urban Services Area. Raleigh’s Land Use Plan designates this area for Community Retail Mixed Use. The area on the southern quadrant of the intersection of Rock Quarry Road and Auburn Knightdale Road falls under the Fuquay-Varina/Garner Area Land Use Plan (designated as residential 4-8 du/ac). A portion of the area on the western quadrant is within Garner’s jurisdiction.

A summary of the existing land use characteristics in the activity center is presented in the following table.

ACTIVITY CENTER LAND USE CHARACTERISTICS

Existing Development				
<i>Land Use</i>	<i>Parcels</i>	<i>Acreage</i>	<i>Zoning</i>	<i>Residential Units</i>
Residential/ Agricultural	4	55	R-30	2
Historical, Cultural or Environmental Significance: No designated significant sites in activity center.				

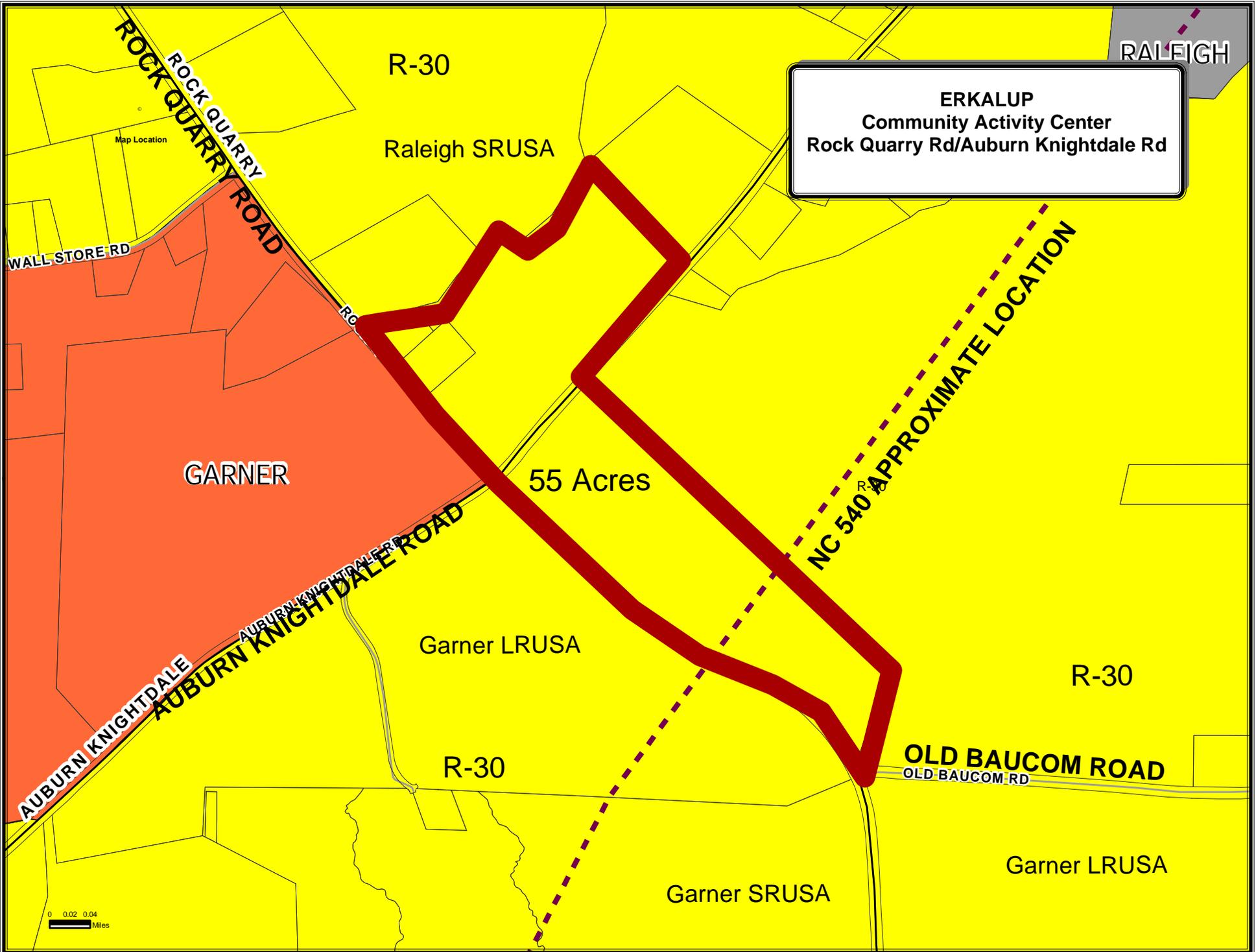
Future development at this location should be in accordance with the recommendations of the Activity Centers Design Guidelines within the Wake County Land Use Plan. These guidelines address issues of compatibility between commercial and residential buildings, connections between residential areas and commercial areas, open space, buffers, and transitional development.

THOROUGHFARES

(Wake County Transportation Plan)

	<i>Pavement width Current/Planned</i>	<i>Right-of-way Current/Planned</i>	<i>Lanes</i>	<i>Road Classification</i>	<i>Level of Service, (NCDOT)</i>
Auburn Knightdale Road	19/36	60/80	2	Major	D*
Rock Quarry Road	19/70	60/120	4	Major	D*

* Level of Service (LOS) pertains to operating conditions of facility in terms of traffic performance measures, on a scale of A-F. LOS = D: LOS of a busy shopping corridor in the middle of a weekday, or a functional urban highway during commuting hours.



ERKALUP
Community Activity Center
Rock Quarry Rd/Auburn Knightdale Rd

RALEIGH

R-30

Raleigh SRUSA

GARNER

55 Acres

NC 540 APPROXIMATE LOCATION

Garner LRUSA

R-30

R-30

OLD BAUCOM ROAD
OLD BAUCOM RD

Garner LRUSA

Garner SRUSA

0 0.02 0.04
Miles

Map Location

Auburn Knightdale /Battle Bridge Rd Neighborhood Activity Center

Type: Neighborhood Activity Center

Size: 12 acres

This activity center will provide for mixed-use development including small-scale commercial land uses in order to meet expected demands in this area.

Background:

This activity center will provide for mixed-use development including small-scale commercial land uses in order to meet expected demands in this area of the county. The activity center functions as a neighborhood focus area providing retail convenience goods, which includes a convenience store with gas pumps. The activity center lies within the Long Range Urban Services Area of Raleigh. Raleigh's Land Use Plan designates the area on the east side of Auburn Knightdale Road for Community Retail Mixed Use.

A summary of the existing land use characteristics in the activity center is presented in the following table.

ACTIVITY CENTER LAND USE CHARACTERISTICS

Existing Development				
<i>Land Use</i>	<i>Parcels</i>	<i>Acreage</i>	<i>Zoning</i>	<i>Residential Units</i>
Residential	3	8.5	R-30	3
Commercial	1	2	CU-GB	
Vacant	1	1.5	R-20	
Historical, Cultural or Environmental Significance: No designated significant sites in activity center.				

Future development at this location should be in accordance with the recommendations of the Activity Centers Design Guidelines within the Wake County Land Use Plan. These guidelines address issues of compatibility between commercial and residential buildings, connections between residential areas and commercial areas, open space, buffers, and transitional development.

THOROUGHFARES

(Wake County Transportation Plan)

	<i>Pavement width Current/Planned</i>	<i>Right-of-way Current/Planned</i>	<i>Lanes</i>	<i>Road Classification</i>	<i>Level of Service, (NCDOT)</i>
Auburn Knightdale Road	19/36	60/80	2	Major	D*
Battle Bridge Road	24	60	2	Major	Unavailable

* Level of Service (LOS) pertains to operating conditions of facility in terms of traffic performance measures, on a scale of A-F. LOS = D: LOS of a busy shopping corridor in the middle of a weekday, or a functional urban highway during commuting hours.

R-20
RALEIGH SRUSA

GOLF COURSE

ERKALUP
Neighborhood Activity Center
Auburn Knightdale Rd/Battle Bridge Rd

BATTLE BRIDGE RD

BATTLE BRIDGE RD

R-20

R-30 R-30

CU-GB
CU-GB

400'

12 ACRES

R-30

810'

R-30

BAGWELL FARM RD

AUBURN-KNIGHTDALE RD

RALEIGH

AUBURN-KNIGHTDALE RD

AUBURN-KNIGHTDALE RD

0 0.0050.01
Miles

13. Municipal Planning Jurisdictions

A municipality's planning jurisdiction is the land that lies within its corporate limits plus its extraterritorial jurisdiction (ETJ). Since development occurring in municipal planning jurisdictions greatly affects what occurs in the County's planning jurisdiction, and vice versa, the Land Use Plan should be coordinated with municipal plans, goals, and objectives. State law authorizes municipalities to have ETJ so they can control development in areas that are expected to come within their corporate limits in the near future. This enables municipalities to better ensure that development patterns and associated infrastructure will allow the efficient provision of urban services. In Wake County, the Board of Commissioners must agree to any extension of a municipality's ETJ, and may rescind its approval of an ETJ extension.

Although State law provides a framework for evaluating ETJ and deciding whether or not the County should agree to municipal requests for ETJ extensions, it does not provide detailed criteria. For this reason, the Board of Commissioners has adopted, as part of the Wake County Land Use Plan, criteria to evaluate the potential for an area's development, the municipality's ability to provide services, and its capability and commitment to good planning and managing of development. In addition to conformance with these criteria, the Board of Commissioners will also consider the opinions of residents and property owners in the area requested for ETJ.

Conformity with the criteria does not automatically guarantee that an ETJ request will be granted. The criteria for evaluating requests for extension of ETJ, as well as proposals to rescind previous ETJ extensions follow.

- ETJ extension should only be within the Short-Range Urban Services Areas and Short-Range Urban Services Areas / Water Supply Watershed.
- The municipality should demonstrate a commitment to comprehensive planning; preferably including adopted land use, public facilities and transportation plans, engineering studies, and a capital improvements program (CIP) including funding to implement the CIP.
- Where the municipality proposes ETJ expansions along major transportation corridors designated by the County as

Special Transportation Corridors, the municipality should have adopted, and be willing to apply, regulations comparable to those for Special Transportation Corridors.

- The municipality should show how the area proposed for ETJ expansion would be served by water and sewer service within five years of the effective date of ETJ extension. The systems should be designed with adequate treatment capacity and adequately sized major trunk line extensions to service the area proposed for ETJ expansion. The municipality should include needed improvements in its capital improvements program.
- Areas proposed for ETJ extension by a municipality should be capable of being developed to an average density feasible for municipal annexation. This criterion is closely related to the ability of a municipality to serve the area with water and sewer service in accordance with its plan for development.
- ETJ extensions should only be granted for areas to be substantially developed and annexed within ten years. The ten-year period projection should be used as a guideline, and is adopted with the understanding that actual progress in development and annexation of a given ETJ area may vary from that originally projected at the time of ETJ extension. To determine the potential for annexation within ten years the following should be considered: relevant County and Municipal plans and policies, past development experiences, and previous projections.
- When a municipality requests additional ETJ, the municipality must demonstrate its progress in annexing and supplying municipal services, especially water and sewer, throughout the entirety of its existing ETJ. An ETJ expansion may be granted to a municipality only when it demonstrates substantial progress in meeting this criterion.

14. Affordable Housing

The goal for affordable housing in the context of the county's land use plan is to create an adequate supply of properly zoned land served by adequate public facilities--water, sewer, roads, schools, parks and public transportation--which will enable more affordable housing to be built.

If developers could build on land in the most efficient and effective ways (structurally sound and aesthetically blended with the surrounding community), then we could make significant progress in meeting the demand for affordable housing and assist more families with the current level of local, state and federal housing funds.

The following actions should be undertaken to enhance affordable housing development.

- Provide for density in accordance with the area land use plan.
- Extend water and sewer services on a regular basis.
- Improve roads, provide schools, parks and extend public transportation service in areas targeted for growth.
- Allow multi-family developments as permitted uses in appropriate zoning districts.
- Allow mother-in-law apartments as an accessory use to single family dwellings.
- Allow manufactured housing as a permitted use in districts, which allow single-family dwellings constructed on-site.
- Provide incentives for the development of affordable housing.

15. Historic Preservation

The National Register of Historic Places is the nation's honorary list of buildings and places significant in American history. Properties listed in the National Register can include, but are not limited to; residences, commercial buildings, barns and other agricultural buildings, farm complexes, neighborhoods and commercial or industrial districts, archeological sites, military installations, roads, sculptures and monuments, and cemeteries. The National Park Service in conjunction with each state's Historic Preservation Office administers the National Register program.

Each state may have different procedures for listing properties in the National Register. In North Carolina, a report, called a "nomination," is prepared and submitted to the State Historic Preservation Office (SHPO). The nomination includes a physical description of the property, historical information, maps and photographs. The SHPO reviews the report and determines if the property meets the criteria established by the National Park Service. If SHPO believes the

property meets the criteria, the nomination is sent to the National Park Service for listing in the National Register.

In North Carolina, before a National Register nomination can be prepared a property must be placed on the state's Study List. The Study List is maintained by the SHPO, and is a preliminary list of properties that the SHPO believes meet the National Register criteria and therefore have a good chance of being approved by the National Park Service if a nomination is prepared. It is primarily a screening tool that discourages the nomination of properties that are not likely to be listed in the National Register. To place a property on the Study List, a brief application is filed with the SHPO. The SHPO informs the applicant whether or not the property is placed on the Study List. If the property is placed on the Study List, the official nomination process can begin.

Listing in the National Register is an honor. It does not restrict the use of the property, nor does it require the owner to maintain the property. However, National Register listing does provide protection against negative impacts from federally funded projects, including local government projects using federal funds. Examples include road construction and improvements, airport expansions, mass transit, urban renewal and community revitalization, and other types of activities. If a project uses federal money, the lead agency must take into account the effects of the project on National Register and Study List properties and make an effort to avoid or minimize any adverse effects on historic properties in the project area.

Wake County has a comprehensive list of its historic resources that are the architectural traditions, styles, and forms that define the history of Wake County. Properties included in the list are, in most cases, visible from a public road, are occupied, and are in reasonably good condition. Most properties are listed in or are eligible for the National Register of Historic Places, or are designated local historic landmarks. Unless noted, all properties are private and must be viewed from the road. Properties that are open to the public are noted. (The list of historic sites in the East Raleigh-Knightdale study area, including those sites of local interest that are not eligible for National Register designation, is in 19.a.)

16. Preserving Open Space

a. Introduction

Open space areas usually have attractive plants, trees, and views of nature. Owners of properties that include open space, or view open space, have value added to their properties. Attractive areas are more desirable to homebuyers, and the resulting existence of a market for goods in turn brings more jobs and attractive places to live and shop to the community.

- Investing in the environment through parks and the provision of open space in residential areas leads to an increase in neighborhood property values through accessibility to environmentally friendly green spaces and associated recreational opportunities.
- Parks, open spaces, and recreational opportunities motivate business relocation and expansion; new businesses prefer to locate in communities with parks and quality environments.
- Open space helps filter pollutants from our drinking water sources. It costs much more for us to pre-treat water than to let open space do it naturally. The maintenance of open space reduces the need for future spending on environmental clean up and revitalization.

b. Neuse River Basin Nutrient Sensitive Water Riparian Areas

The Neuse River regulations require land uses in the basin to reduce their cumulative nitrogen contribution to the river by 30 percent. The regulations require the establishment and/or maintenance of 50-foot vegetated buffers (the first 30 feet must be forested) around all affected perennial and intermittent streams as well as all ponds on these streams. In order to protect the Neuse River, this Plan calls for the creation of greenway easements along the river whenever development is proposed.

c. Protecting the Neuse River

In order to protect the water quality and habitat value of the Neuse River, enhance the value of the river corridor as a visual and recreational resource, and provide for continuity of the recreational aspects of the Corridor, new development should maintain a vegetated buffer of 150 feet on each side of the Neuse River. Any subdivision or site plan that includes land within 150 feet of the bank of the Neuse River should reserve the land as a greenway.

This area adjacent to the Neuse River contains an abundance of wetlands which yield varying combinations of the following values: flood storage and reduction of peak stormwater flow, refuge for species of special concern, and groundwater recharge and discharge; migration/travel corridors for wildlife species; protects surface water from runoff associated with adjacent uses; and functions as a buffer from adjacent development. The 100-year flood plain, associated wetlands, the 150-foot buffer, and the river itself, when combined, form a distinct and substantial natural and recreational resource.

d. Open Space Planning and the Neuse River Watershed Plan

As part of a countywide open space planning effort, a comprehensive study of the open space resources in the Neuse River watershed has been developed under the guidance of the Wake County Open Space Advisory Committee.

The Board of Commissioners reviewed the Plan and adopted it in concept on February 7, 2000.

e. Neuse River Watershed Parks and Greenways

The City of Raleigh plans an 18-mile greenway along the Neuse River, as well as three parks: Horseshoe Farm, Milburnie, and Anderson Point. There is a city-owned canoe access off of Poole Road. Greenways are also planned along many of the Neuse's tributaries. The Neuse River Watershed Plan also identifies special open space areas.

f. Special Open Space Areas

Temple Rock to Lake Mirl: Temple Rock is a significant granite outcropping owned by the Triangle Land Conservancy (TLC). The site contains examples of many of the plant species specific to southeastern flatrocks. Other significant granite outcroppings in the area include Hodges Mill and Lake Mirl. Lake Mirl was built in the 1930s and served as a recreation area for the community until the late-1980s (see historic sites of local interest lists in 19.a and 19.b). The Temple Rock to Lake Mirl area lies southeast of the Six Forks Neighborhood.

Tarheel Clubhouse Area: The Tarheel Clubhouse is located in the midst of several important historic and open space sites. This area is southwest of the Pet Crossroads

Neighborhood, and overlooks the Neuse River and the proposed Neuse River Greenway. The twin Beaverdam and Neuseooca Lakes provide outdoor recreation opportunities, such as fishing.

A greenway is planned around the perimeter of the lakes, which will connect with the Neuse River Greenway. Further down the river is the 59-acre Milburnie Park. The Park is the site of Milburnie Dam; the dam has been used by various mills and as hydroelectric plants (its current use) from 1855 to present. Lastly, just south of Milburnie Dam off of U.S. 64 are the remains of a roadside rest area built by the CCC or WPA during the Great Depression (see historic sites of local interest lists in 19.a and 19.b).

Walnut Hill to Robertson's Pond: The County should develop a scenic drive and bikeway from the Walnut Hill Plantation to Robertson's Pond. Along the way it would feature Walnut Hill, Shotwell, Lake Myra, Eagle Rock and Robertson's Pond.

A rural historic district designation is proposed for Walnut Hill (see historic site #9, above). Lake Myra was once home to a cotton ginning facility and later a turbine-operated gristmill. Through the early- to mid-1900s, the millpond became a favorite community recreation spot. The Neighborhood Activity Center planned at the corner of Smithfield and Poole Roads can once again re-create the type of gathering place that this area once was.

In addition to the development of the preceding special open space areas, which the East Raleigh-Knightdale Area Land Use Planning Committee endorses, the Committee supports the development of greenways throughout the study area. By developing greenways along creeks, such as Harris, Beaverdam, and Poplar, neighborhoods and activity centers can be linked through an interconnected series of greenways. Greenway easements would be created whenever development is proposed along the creeks. The future development of a greenways network will provide utilitarian and recreational bicycling and walking opportunities to the residents of the East Raleigh-Knightdale Area.

17. Farmland Preservation

a. Introduction

The East Raleigh-Knightdale Area Land Use Planning Committee has expressed the desire

to preserve the rural character of the area. The committee also favors higher density and intensity development at the rural activity centers, thereby creating villages. The objective is to try to accomplish both in a fair and consistent manner that results in a land use pattern of higher density/intensity villages surrounded by lower density residential development and rural landscapes. The Committee opposes severely limiting development by down zoning rural land or agricultural zoning. The Committee opposes any farmland preservation options that are not totally voluntary.

However, the potential for sprawl-type development, which will destroy the special character of the area, threaten the natural environment, and cause traffic congestion is undesirable too. In addition, the Committee expressed the concern that certain landowners should not receive all of the monetary benefit of development just because their property falls within the activity centers, while others receive no increased economic benefit for their property located elsewhere in the study area. Landowners, developers, and County staff will be studying this issue. In the meantime, the only farmland preservation option supported by the Committee is the existing Wake County program.

b. Wake County's Existing Program

In October 1989, Wake County adopted a farmland preservation program. The voluntary program established criteria for designating Agricultural Priority Areas (APA). Owners of agricultural land within the APAs are eligible to apply for purchase of development rights (PDR). The Wake County Board of Commissioners, however, has never adequately funded this voluntary PDR program.

The preservation of Wake County's best agricultural land in a manner that directs and accommodates growth and development is something that would benefit all residents of Wake County. To this end the County establishes the following goals:

- To protect and conserve those soils in Wake County best suited to agricultural uses and located in areas of the County which are most appropriate for agricultural uses.
- To identify and harmonize policies and programs of government at all levels

which may conflict with the goal of preservation of farmland.

- To reduce land use conflicts between agriculture and other land uses.
- To promote agriculture as an integral part of the Wake County economy.
- To maintain a desirable mixture of urban and rural land uses in the County.

The Wake Soil and Water Conservation District Board of Supervisors (Board of Supervisors) would advise the County in administering the Farmland Preservation Program. The Staff from the Department of Soil and Water Conservation within Wake County Community Services assists the Board of Supervisors in evaluating candidate properties and making subsequent development rights purchase recommendations to the County Board of Commissioners for final approval. Additional County Staff, as assigned by the County Manager, provides assistance with property value appraisals, purchase negotiations, execution of appropriate documents, and other such acts necessary to the implementation of this program.

The County Board of Commissioners would establish Agricultural Priority Areas (APA) after consideration of recommendations from the Board of Supervisors. In determining areas to recommend for inclusion in an APA, the Board of Supervisors may confer with any governing body affected by the proposed APA, receive recommendations from the Wake County Planning Board, or conduct a public meeting to receive public comments. The County Board of Commissioners would establish APAs by resolution and adopt an official map showing boundaries of all APAs:

- The owner(s) of agricultural land within the boundaries of an APA would be eligible to apply for purchase of their development rights by Wake County in perpetuity. Agricultural land not within an APA is eligible for participation in the PDR program but will be considered on a lower priority basis.
- The owner(s) of agricultural land within an APA will be given priority for the County's acceptance of development rights by donation in perpetuity or for a term of years. Agricultural land not within an APA may also be accepted for donation.

Wake County may purchase development rights in agricultural lands by payment following an application process. The Board of Supervisors based on location and site factors, considering the level of development pressure and agricultural production capability, would rank applications of landowners. Additional factors considered may include but not be limited to the distribution of acquisitions in the County, the likelihood of protecting adjacent properties, and the general condition or appearance of the farm. After consideration of the ranking of farm properties, the availability of allocated funds and other factors deemed appropriate, the Board of Supervisors would recommend purchases to the County Board of Commissioners for final approval.

- Compensation for development rights would be based on the determination of the difference between independent market value and agricultural value appraisals. The purchase price will be subject to negotiation.
- The purchase of development rights is legally binding, restricting the owner and future owners to agricultural use of the land.
- The agricultural land must be at least ten acres in size and be in agricultural use.

The donation or purchase of development rights is legally binding, restricting the owner and future owners to agricultural use of the land. Agricultural uses include but are not limited to the production of crops, trees, horticultural specialties, and livestock and livestock products. Associated uses are allowed, such as the home site, and sales and processing necessary and customarily incidental to the agricultural activity on-site, which are in keeping with the purpose of the program.

c. Voluntary Agricultural Districts Program

Wake County Soil and Water Conservation District is exploring the possibility of establishing a voluntary agricultural districting program in the county. This program would allow owners of farmland to voluntarily agree to keep their land in agricultural use for 10 years. Participating farms or groups of farms would be called "agricultural districts." Farmers would be free to withdraw from such districts at any time. Benefits that can be provided to agricultural districts under state statute include waivers from water and sewer utility assessments, additional notification provided to buyers of

property in the area regarding the presence of farm operations (provides additional protection from nuisance suits associated with chemical spraying, animal waste odors, etc.), and requires hearings for public projects proposed in agricultural districts.

A total of 45 persons attended the East Raleigh-Knightdale Issues Forum held on the evening of May 13, 1999, at the Knightdale Town Hall. Those persons attending the Forum disliked landfills in residential areas, strip development, traffic congestion, sprawl and narrow rural roads with high speed limits.

Participation in a program of this type would promote community pride in traditional farming areas of the county, and help identify priority areas for the expenditure of available purchase of development rights funds.

18. Summary of May 13, 1999, East Raleigh-Knightdale Area Issues Forum

ISSUES	LIKED	DISLIKED
landfills in residential areas	1	15
strip development	0	11
traffic congestion	0	7
sprawl	0	6
narrow rural roads , high speed limits	1	6
transfer of development rights	0	4
special use/permit process	0	3
forced annexation	0	3
cul-de-sac streets	0	3
preserve agricultural heritage	2	2
municipal water/sewer to protect water resources	0	2
multi-lane roads	1	2
way for children to get around neighborhood	1	1
total system design	3	1
school overcrowding	0	1
fiber production (hemp)	7	1
apartments in single-family	0	1

Wake County Land Use Plan

ISSUES	LIKED	DISLIKED
neighborhoods		
transit options	2	0
small-lot, cluster residential w/ open space	11	0
sidewalks	1	0
respect for private property	1	0
protect water resources	4	0
protect Neuse River and tributaries	7	0
open space/agriculture preservation	5	0
more residential development	1	0
mixed-use development	1	0
mix of housing size and price	5	0
managed growth (services occur w/ development)	4	0
high density	1	0
farmland preservation	3	0
coordinated growth planning (inter-governmental)	2	0
alternative transportation	3	0

Those persons attending the Forum liked small-lot cluster residential development that maintains a large portion of the total tract in open space, protecting the Neuse River and its tributaries, respect for others property, open space/agriculture preservation, and mixed-use development.

Wake County Land Use Plan

ISSUES	LIKED	DISLIKED
small-lot, cluster residential w/ open space	11	0
protect Neuse River and tributaries	7	0
respect for private property	5	0
open space/agriculture preservation	5	0
mixed-use development	5	0
protect water resources	4	0
managed growth (services occur w/ development)	4	0
total system design	3	1
farmland preservation	3	0
alternative transportation	3	0
preserve agricultural heritage	2	2
transit options	2	0
coordinated growth planning (inter-governmental)	2	0
landfills in residential areas	1	15
narrow rural roads , high speed limits	1	6
multi-lane roads	1	2
way for children to get around neighborhood	1	1
sidewalks	1	0
more residential development	1	0
mix of housing size and price	1	0
high density	1	0
strip development	0	11
traffic congestion	0	7
	0	6

Wake County Land Use Plan

sprawl		
transfer of development rights	0	4
special use/permit process	0	3
forced annexation	0	3
cul-de-sac streets	0	3
municipal water/sewer to protect water resources	0	2
school overcrowding	0	1
apartments in single-family neighborhoods	0	1

19. Appendix

a. Historic Sites Located in the East Raleigh - Knightdale Study Area

Property Name	Account Number	Acreage	Significance Level
Rogers-Whitaker-Haywood House	0107603		NATIONAL REGISTER
Joseph Blake Farm	0093781	21	NR STUDY LIST
Williamson, Bailey House	0060591		Local interest
Walnut Hill (portion of site 3)	0098130	345	NR STUDY LIST
Walnut Hill (portion of site 3)	0182284	100	NR STUDY LIST
Walnut Hill (portion of site 2)	0078026	100	NR STUDY LIST
Henry R. Goodson Farm	0053278	63	NR STUDY LIST

Wake County Land Use Plan

Baucom-Stallings Farm	0080527	28	NR STUDY LIST
Hickory View Farm	0004648	111	NR STUDY LIST
Bridge401/Neuse River			Local interest
Wake Crossroads Baptist Church	0089055		Local interest
Matthew Perry House	0067185	102	Local interest
Pet Crossroads Store	0001452		Local interest
Upchurch-Hester House	0030400	47	Local interest
John M. Watkins House	0074678	7	Local interest
James P. Robertson Complex	0088173	14	Local interest/outbuildings
Watkins House	0142119	28	Local interest
Lake Mirl Complex	0060497	48	Local interest/outbuildings
Smith-Robertson-Knott House	0039770	81	Local interest
Debnam, Thomas & Priscilla House	0074521		NR STUDY LIST
The Oaks	0042160	11	Local interest
Ferrell School	0033423	42	Local interest
Lake Myra Complex	0044275		Local interest
Shotwell	Major Slade Rd		Local interest

b. Historic Sites Bordering the East Raleigh - Knightdale Study Area

Property Name	Account Number	Acreage	Significance Level
Midway Plantation	0206765		NATIONAL REGISTER
Beaver Dam	0032278		NATIONAL REGISTER
Oaky Grove	0008992		NATIONAL REGISTER
Montague Store and House			Local interest

Raleigh Union Lodge			Local interest
Auburn	East Garner Rd		Local interest
Stell-Perry House	0129274		NR STUDY LIST
Harmony Plantation (Montague-Jones Farm)	0189881		NR STUDY LIST
Horton, Charles & Lilly Farm	0085226		NR STUDY LIST
Avera-Winston House	0008513		NR STUDY LIST
Hood-Anderson Farm	0001883		NR STUDY LIST
Hephzibah Baptist Church	0089703		NR STUDY LIST
Eagle Rock	Eagle Rock Rd		Local interest

c. East Raleigh-Knightdale Area Population

d. Thoroughfares/Local Collector Roads

e. Special Highway Overlay District Regulations

SECTION 1-1-46 SPECIAL HIGHWAY OVERLAY DISTRICT

(A) INTENT

Special Highway Overlay District (SHOD) zoning is intended to ensure that lands adjacent to Special Highways are developed in a manner that maintains or enhances the natural scenic beauty and wooded character viewed by travelers on the Special Highway. Further, it is intended to mitigate potential adverse impacts of the Special Highway on adjacent land uses. Special Highways Overlay Districts shall be applied to areas identified as Special Transportation Corridors in the Wake County Land Use Plan.

(B) DISTRICT BOUNDARIES

(1) General Application

Where applied, SHOD zoning shall include the existing or proposed right-of-way of the Special Highway plus adjacent lands where development may affect the natural scenic beauty viewed by travelers on the Special Highway. In general, district boundaries shall follow property lines and identifiable geographic features located between one thousand two hundred fifty (1,250) and one thousand five

hundred (1,500) feet from the Special Highway, as measured from and perpendicular to each side of the highway right-of-way.

(2) Exceptions

District boundaries may be located closer to the Special Highway where

- (a) intervening topography or other permanent natural features preclude adjacent development from being visible from the Special Highway, or
- (b) the adjacent underlying zoning is Residential and existing or approved residential development has already defined or substantially altered the natural character of adjacent land.

(C) DEVELOPMENT STANDARDS

The use and development of land or structures within the SHOD shall comply with use and development regulations applicable to the underlying zoning district, except that the following regulations shall apply wherever they are more restrictive than those of the underlying zoning district.

(1) Signs

Signs shall be regulated by those Section 1-1-21 regulations applicable to Special Highway Overlay Districts.

(2) Maximum Building Height

The height of any building shall be limited to sixty (60) feet above the centerline elevation of the Special Highway's travel lanes nearest the building; provided, however, that this height limit may be increased by one (1) foot for each two

(2) feet of distance between the building and the Special Highway bufferyard, up to a maximum height limit of one hundred fifty (150) feet; and provided further that this height limit shall not apply where it would limit a building's height to less than sixty (60) feet above the highest finished grade at the building's foundation. For the purpose of measuring this height limit adjacent to a proposed Special Highway, the centerline elevation of Special Highway travel lanes shall be determined from the best design information available from the North Carolina Department of Transportation.

(3) Special Highway Bufferyards

(a) Bufferyard Required

1. A Special Highway bufferyard shall be provided and maintained immediately adjacent to and along each side of the Special Highway right-of-way, including the full length of controlled access right-of-way associated with the Special Highway that extends away from the Special Highway at intersections.
2. Where the underlying zoning is a Residential District and the principal use, either existing or proposed, is a one-family or two-family dwelling, the minimum width of the Special Highway bufferyard shall be thirty (30) feet. In all other cases, the minimum width of the Special Highway bufferyard shall be fifty (50) feet.
3. Where public necessity requires the location of major public utility lines adjacent to a Special Highway and the easement or right-of-way for a line precludes provision of a Special Highway bufferyard immediately adjacent to the highway right-of-way, the required bufferyard shall be provided adjacent to the outer edge of the utility easement or right-of-way. The public utility line easement or right-of-way shall be screened in accord with the requirements of (b)(2) below.

(b) Bufferyard Screening and Vegetation

1. General

Along that part of the Special Highway bufferyard closest to the Special Highway, existing vegetation shall be retained or supplemented with additional planting as necessary to provide Type A Screening. Within the remainder of the bufferyard existing vegetation shall be left undisturbed except as necessary to allow the construction or installation of structures permitted in the bufferyard [see (c) below]. The provisions of Section 1-1-29 (I) through (L), applicable to transitional bufferyards, shall also apply to Special Highway bufferyards.

2. Screening of adjacent public utility lines, existing or proposed

Where public necessity requires the location of

major public utility lines adjacent to a Special Highway, sufficient vegetation and/or other screening shall be retained or provided within the Special Highway right-of-way (with approval from NCDOT) or the public utility line easement or right-of-way to minimize any dominating linear view of the cleared utility line easement or right-of-way seen by travelers on the Special Highway.

(c) Structures Permitted in a Special Highway Bufferyard

The following minor structures are allowed in a Special Highway bufferyard:

1. Pedestrian or bicycle paths, including steps;
2. Planters, retaining walls, fences, park tables and seating, hedges, and other landscaping structures;
3. Utility lines (above or below the ground), their support structures, and minor structures accessory to utility lines, provided that they generally cross rather than run along the length of the bufferyard.

(4) Exterior Lighting

All exterior lighting shall be constructed or located so that the light source is not directly visible from a vehicle traveling on the Special Highway.

f. Proposed Changes to Short-Range Urban Services Areas

20. To view the East Raleigh / Knightdale Area Land Use Classifications map: see "Land Use Plan Maps".



1. Hickory View Farm

Mid 19th c.; Auburn vicinity (SR 2553). The house contains architectural elements from the 19th c. to the present, including an elaborate sawnwork porch. Numerous outbuildings remain, including two tenant houses, a smokehouse, two storage barns and four tobacco barns.



2. Harmony Plantation

Early 19th c.; 5104 Riley Hill Rd. (SR 2320). Dr. Henry W. Montague and his bride, Ann Jones, established their residence at the center of this 600-acre plantation known as "Harmony" soon after their marriage in the 1830s. The hip-roofed Greek Revival-style I-house commands a rural setting.



3. Horton Farm

Circa 1910; 5236 Riley Hill Rd. (SR 2320). The Charles H. and Lilly J. Horton farm is a remarkably intact medium-sized farm complex dating from the 1910s.



4. Hephzibah Baptist Church

Circa 1875; Wendell vicinity (NC 97). The church is a rare and extremely well preserved example of late Greek Revival church architecture. Hephzibah Baptist Church, organized in 1809, was one of the first congregations founded in eastern Wake County, and for the first 100 years of its history it served a biracial membership with both black and white ministers and deacons in the mid-nineteenth century.



5. Rogers-Whitaker-Haywood House

Started ca. 1771; Forestville Rd. and Louisburg Rd. (SR 2049 and Hwy. 401). The primary assets of this early plantation house are its finish details, which include Federal mantels, raised-panel doors, high paneled wainscot, and sections of original paint techniques.



6. Midway Plantation

Constructed 1848; Knightdale vicinity (U.S. 64). Midway Plantation is the best preserved of three remaining plantations owned by the Hinton family in eastern Wake County. A complex of outbuildings also survives, including the carriage house, kitchen, schoolhouse, and playhouse.



7. Beaver Dam

Constructed 1807-1810; Knightdale vicinity (SR 2049). Beaver Dam was the seat of a 4,000-acre plantation during the first half of the nineteenth century and is an outstanding example of transitional Georgian/Federal-style architecture. Situated on an undeveloped 86-acre tract, the farm symbolizes eastern Wake County's agrarian heritage.



8. Oaky Grove

Circa 1818; 5800 Turnipseed Rd. (SR 2507); private NR; LM. Built by Thomas Price in 1818, Oaky Grove was the seat of one of the largest and most prosperous early Wake County plantations. The dwelling was expanded in the late nineteenth century.



9. Walnut Hill Plantation

19th & early 20th c.; Mial Plantation Rd. (SR 2509). Walnut Hill was one of Wake County's largest cotton plantations. Except for the main house, many of the plantation's core buildings survive, such as the Walnut Hill Cotton Gin and the Oaky Grove Methodist Church.



10. Goodson Farm

Early 20th c.; 5409 Mial Plantation Rd. (SR 2509). Henry Rufus Goodson, a prosperous African American farmer, rebuilt a Colonial Revival style house on the site where an antebellum house burned.



11. Blake Farm

Late 19th c.; 4301 Mial Plantation Rd (SR 2509). The farm includes excellent examples of nineteenth and twentieth-century domestic buildings and agricultural outbuildings.



12. Baucom-Stallings House

Circa 1851; 7709 Old Baucom Rd. (SR 2542). Despite the economic depression in the years following the Civil War, Troy Baucom and his wife built a two-story addition in Greek Revival style to their small, original house.



13. Thomas and Priscilla Debnam House

Early to mid-19th c.; 8537 Highway 64 East. The house was built in several stages and features both Federal- and Greek Revival-style details.



14. Avera-Winston House

Circa 1874; Wendell vicinity (SR 2324). The house is a rare example of the Italianate style in eastern Wake County, with more decorative trim than the average nineteenth-century country dwelling.



15. Hood-Anderson Farm

Circa 1830-1840; Eagle Rock (SR 2366). This complete antebellum farm complex includes an early Greek Revival-style house; a store building, and what may have been an early schoolhouse. The farm remains in the Anderson family.



16. Stell-Perry House

Circa 1865; Rolesville vicinity (SR 2051). The House is a well-preserved mid-nineteenth-century vernacular farmhouse and possibly the earliest board-and-batten house surviving in rural Wake County.