# ZEBULON COMPREHENSIVE PLAN

As prepared by

HSMM of NC, Inc.

HSMM

Zebulon

# ZEBULON COMPREHENSIVE PLAN

## *"THE TOWN OF FRIENDLY PEOPLE"*

HSMM of NC, Inc.

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**JUNE 2008**

Zebulon

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Zebulon

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# Town of Zebulon Comprehensive Plan Executive Summary

A comprehensive plan is not a permanent document, however. It can, and should be changed and rewritten over time. For many fast growing communities, it is necessary to revise or update the comprehensive plan every five to ten years. In order for the comprehensive plan to be relevant to the community it must remain current.

The Introduction of this Comprehensive Plan provides a description of the purpose, as well as an overview of the development process. As described in the text, the Town of Zebulon considers itself "The Town of Friendly People" and the results of this study back up that statement. The Comprehensive Plan is composed of seven Plan Elements, each addressed in separate chapters as indicated on the Table of Contents:

- Economic Development
- Form and Environment
- Transportation
- Housing & Neighborhood
- Community Facilities
- Utilities
- Land Use

Each of the Comprehensive Plan chapters consists of a brief overview and concluding summary statements. These concluding summary statements consist of Goals, Policies, and Action Items. These summaries provide objectives for the Town's future development growth and strategies to accomplish each Plan Element's summary statements effectively.

The Town of Zebulon's Comprehensive Plan is to be consulted for future planning and growth decisions, and to be used as a guide for land use decisions within the Town's limits as well as the Town's Extra-Territorial Jurisdictional areas. The Goals, Policies and Action Items have been established to achieve a direction for Zebulon community stakeholders in this growing process. They encourage sensitive growth while preserving the Town's uniqueness and small town character. Whether the Town's decision making processes provide for growth by "New Urbanism", "Traditional Neighborhoods", "Activity Nodes", or any other developmental growth style, knowledge of stated hierarchy used in this Plan is vital to the understanding of the community as a whole. The following definitions are helpful for understanding this Comprehensive Plan intent:

**Goal:** **Object or end that one strives to obtain**

**Policy:** **Guiding principle used for decision making**

**Action Item:** **A definitive act or activity that can be measured for completion**

The successful implementation of this Comprehensive Plan will require the cooperative focus and effort of local, county and state officials, as well as the individual community stakeholders. In a time when fast change may be required to keep up with anticipated growth, it is crucial to have a shared vision for what the Town of Zebulon is to become. This Comprehensive Plan helps give definition and dimension to that shared vision, and establishes patterns for lasting growth and development. Community input, such as mapping workshops, public meetings, and public stakeholder surveys are important components of any successful planning document. This community support gathered from local meetings as part of this Plan development is thoroughly incorporated into the preparation, documentation and contents of this Comprehensive Plan. These methods help define the goals and objectives of the Plan and allow for a better understanding of the concerns and priorities of the residents, business owners and stakeholders as well as the Town of Zebulon's Planning and Engineering Departments.

This Comprehensive Plan and accompanying Land Use Plan and Land Use Map are not zoning regulations nor are they a zoning map. A zoning map deals with specific development requirements and regulations on individual parcels and groups of parcels. The Zoning Map and any alterations in property zoning should, however, be based on this Comprehensive Plan and the Land Use Plan Map. In general, this Zebulon Comprehensive Plan and Land Use Plan section are intended to be a comprehensive blueprint for the Town of Zebulon's vision for the future overall land use patterns desired within the Town jurisdiction. The Land Use Map is intended to be used in conjunction with the written content of the Land Use Plan along with Zebulon's established zoning regulations and requirements.

Zebulon's current land use pattern has evolved over the last 100 years to become what it is today because of the current zoning regulations in place. The challenge now is to maintain the significant historical areas of the Town, while paving way for new, quality sustainable development that will contribute to the Town for many years to come. The Land Use Map can be described as an overlay which melds the existing zoning district structure and the future desires for controlled growth into one usable document.

# Chapter 1 - Introduction

This Comprehensive Plan addresses the need for comprehensive foresight in planning for expansion areas of Town and helps define characteristics for future growth and development within Zebulon's planning jurisdiction. This Plan will provide specific descriptions of thoroughfares areas, utility service areas and projected land uses, as well as recommending general areas to set aside for protected historical elements and districts. This document shall serve as an interim measure intended to set Land Use standards and guidelines for decisions facing the Town Board as a result of increasing pressures of development. These pressures stem from the outward expansion of a growing metropolis now pushing eastward away from the City of Raleigh and toward Zebulon along the US Highway 64/264 Corridor.

## The Desires of the Planning Department

The Town Planning Department set two specific desires for this Plan:

- ***A systematically sound, broad and inclusive process of stakeholder involvement must guide the Plan and its recommendations.***
- ***The unique qualities of Zebulon must be maintained so that the Town of the future can be fully differentiated in the suburban landscape from the sprawling Raleigh metropolitan area.***

These directional requirements established early on in the Plan's planning process means that the aspect of vision and directionalized growth would be essential factors to translate into public policy. Therefore, the Comprehensive Plan is a citizen-influenced document that seeks to give form and structure to the Town's goals and translate them into standard instruments of public policy.

This document and its supporting research will give the Town Planning Department, the Town Board, Planning Board, and Board of Adjustments sufficient knowledge and understanding to address the aspects of change imposed by a gathering demand for housing, shopping, employment, recreation, and ever growing necessity for municipal infrastructure services.

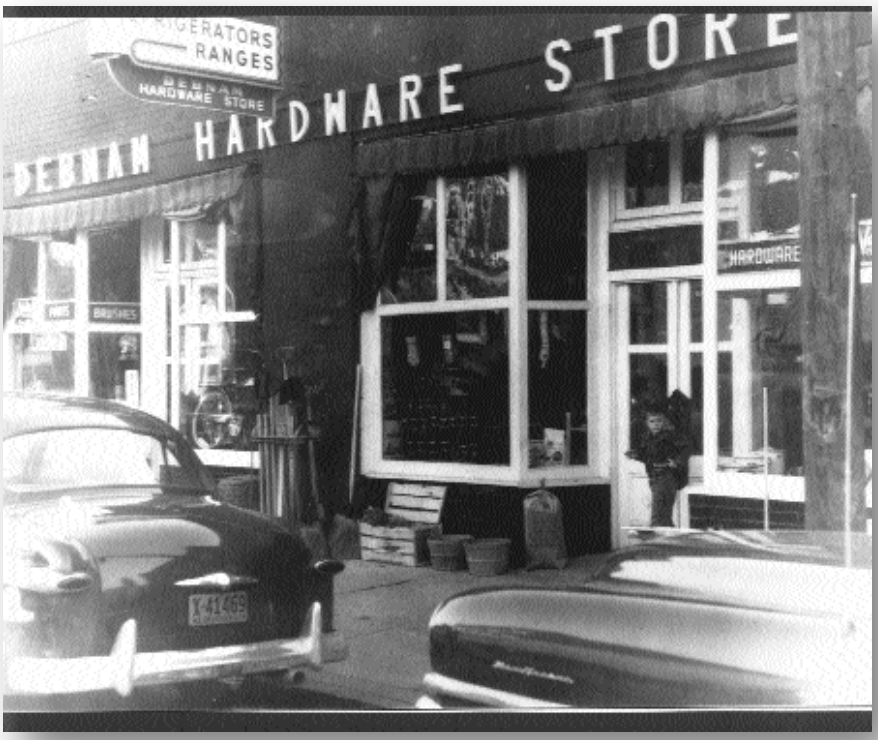
The Comprehensive Plan laid out in the following text is presented as it was developed in conjunction with continuous Staff, citizen and stakeholder involvement. This process is a unique reflection of a town whose leadership is determined to see Zebulon benefit from the economic reality of market development, without losing those aspects of heart and soul that make Zebulon a truly different North Carolina community.

This Zebulon Comprehensive Plan is a long-range plan that anticipates a built out condition which will likely occur by year 2025. It is intended for the use of Town Staff, Town Boards, other decision makers and citizens as they direct and influence the physical growth and development of the community. Therefore, this Comprehensive Plan establishes a generalized pattern of land use activities and districts as well as resulting transportation thoroughfare routes, bikeways, greenways, and suggested commercial/retail zones for the future. It also recommends strategies of action required to implement the elements of vision contained in this document.

Once adopted this plan will be incorporated as part of official policy for the Town of Zebulon to guide decisions regarding real estate development, necessary amenities such as schools, recreational parks and services, and capital expenditure. Also contained in the text are governmental and private funding sources that can be sought by the Town in areas of need. The Comprehensive Plan, although a public policy document, is to be used only as a guide and should not be construed as the Town's planning, zoning or development code. The Plan is an on-going evolving and living document that will need reassessment and updates as market diversity changes in culture occur and the outlook of Town stakeholders evolve over time.

Awareness of historic and future growth trends are the basis of this Comprehensive Plan. This approach will establish policies and action plans inclusive of public opinion and staff involvement. These will provide the tools needed to plan for the sustainable growth of The Town of Zebulon, and protect the health, safety and welfare of the public.

## Chapter 2 - History of Zebulon & Population




A Comprehensive Plan forms a bridge between the past, present and the future. The Plan is a tool for managing and directing future actions. Because the Town's history and heritage are important parts of community identity, any decision making processes must keep in step with historical purposes of the Town's origination. Zebulon and its countryside have a rich history. Most of the names associated with the area come from contributions made by significant community families. Such names include Chamblee, Strickland, Whitley, Bunn, Stallings, Fowler, Foster, Proctor, Pippen, Bell, Horton, Barbee, and Arendell. Social and kinship ties to the historic past remain strongly in existence today.

The surrounding areas that provide contributions to the larger Planning Extra-Territorial Jurisdictions (ETJ) include Pearces, Rosinburg, and Pilot located in Franklin County. To the south are Earpsboro and Emit in Johnston County. To the west and north lie Pleasant Hill, Fowlers Crossroads, Mitchell's Mill and Hopkins Crossroads also in Wake County.

***The Railroad***

Zebulon owes its existence to the decision made by the City Raleigh and Pamlico Sound Railroad Company, which decided to bring the rail through a dense pine forest between the Whitley and Horton family farms in 1906. That same year, Edgar B. Barbee and Falconer B. Arendell organized the Zebulon Company for development of the area. The company received its charter on February 15, 1906. Shortly thereafter, they began to divide up the original forty-nine acres into lots, blocks, streets and avenues. On February 16, 1907 the Town, consisting of 297.5 acres, was officially recognized as Zebulon, North Carolina. The Town was originally named after Zebulon B. Vance, the North Carolina Governor during the Civil War.

The first election was held in May of 1907 and Mayor Thomas J. Horton was elected as the mayor. The commissioners were Avon G. Kemp, Will S. Horton, Nathan L. Horton, Thomas F. Powell and Joseph F. Fields.

The last three decades in Zebulon have seen tremendous growth. Ninety years after its incorporation, Zebulon welcomed its neighbor community, Wakefield, into the Town. This annexation, which took place on December 31, 1997, increased the total acreage inside the corporate limits to 2,115 acres and the population to 3,908. In the years since then the population has grown steadily. According to the 1970 Census, the Town's population grew from 1,830 to 4,046 residents.

The Foster Home is believed to be the oldest house in Wakefield. After Wakefield's annexation into the community, the Foster Home became the oldest house in the greater Zebulon area. For many years the Foster Home was a stagecoach stop on the road from Raleigh to Tarboro. It was called the Half-Way House because people often stayed there overnight on their journey east.

***Town Government***

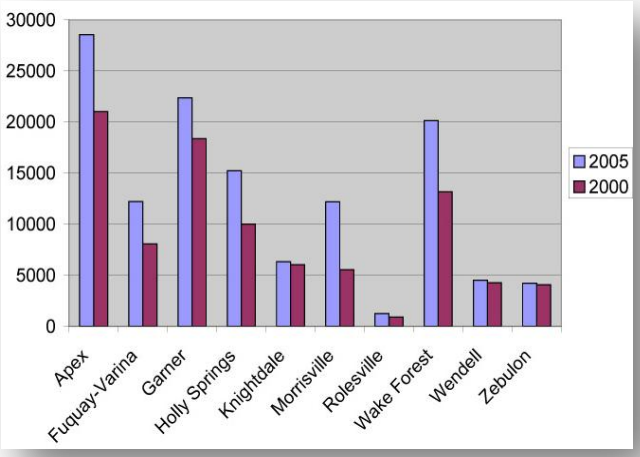
The Town of Zebulon has a Council-Manager form of government. Under this system the citizens elect a mayor and five council members as the Town's governing body. The Council then appoints the Town Manager who serves at the discretion of the Council. Town Board members are elected to four-year terms. Three of the members are elected in one year, the mayor and the two remaining members are elected two years later. The Mayor, as the principal elected official of the Town, provides leadership to the governing body and the community, and presides over Town Board meetings.

Regularly scheduled Council meetings are currently held at 7:00 pm on the first Monday of each month. Citizens are highly encouraged to attend and become concerned, active members of the community.

## Population

The US Census shows that between 1990 and 2000, there was a 30-35 percent increase in persons between ages 0 and 4 and ages 20 and 44. The fastest growing segment of the population, between the ages of 45 and 64, has increased 54 percent since 1990. The growth of this population age range, also known as the "baby boomers", is consistent with the trends throughout the United States.

The Town of Zebulon's most dramatic population increases occurred in the twenty year period from 1980 to 2000 when the Town's population almost doubled. In that period, the population increased from just over 2,000 people to over 4,000 people, an increase of 134 percent.




Forecasting population changes in sub-state regions on the municipal level is challenging. Even more so when a limited number of data collection points are available. Until recently, only two reasonable data points existed among the census data, the 1990 and 2000 Census collections.

Potential growth scenarios have been chosen to estimate a range of growth for the Town. The choice of growth rates for these scenarios must meet an economic rationality standard. They must bear some relationship to existing growth rates for the county or cities within the county, and these relationships and assumptions make common sense. As a result, one comparison of Eastern Wake County towns is the compound annualized growth rate between the 2000 and 2005 as adapted by Wake County Planning Department for like-sized communities (June 22, 2006).

As the graph to the right indicates, these growth rates encompass a wide range of actual growth paths for a cross-section of Wake County towns similar to the Town of Zebulon. The graph also represents an estimated range of future growth paths for Zebulon itself.

Population projections are by nature speculative and only partially conclusive. The expected growth rates develop as a range and not a definitive population number. For example, within a 40 year time span, the Wake County expectations range from a high population for Zebulon of a little less than 20,000 people, to a low projected population of just over 6,000. According to Wake County projections, the Town of Zebulon could expect that the actual growth rate will fall within this range.

Forecasting population changes in sub-state regions on the municipal level is challenging and even more so when a limited number of data collection points are available. Recently, the Capital Area Metropolitan Planning Organization (CAMPO) released population projections for Zebulon and other Wake County municipalities. The Capital Area MPO Socioeconomic Data Population Summary V-2004-02-26 indicated their projections for Zebulon at: Pop. Total for 2002 of 7,666; Pop. Total for 2010 of 8,620; Pop. Total for 2020 of 14,815; and Pop. Total for 2030 of 15,266. These are staggering numbers of growth to be handled by the small Town of Zebulon and its ever-expanding Extra-Territorial Jurisdiction.

The 2004 CAMPO projections were chosen to estimate growth since the Town has already surpassed the Wake County projected lower end estimates.

| Demographics | | Climate | |
|---|---|---|---|
| ETJ | 6674 acres | Average Temperature | |
| Corporate Limits | 1952 acres | January | 41.3 |
| Total | 8599 acres | June | 75.2 |
| Total Land Area | 13 square miles | Rainfall | 44.9 inches (annual/average) |
| | | Snowfall | 7.5 inches (annual/average) |

| Population Information | | | | | |
|---|---|---|---|---|---|
| 1970 | 1,839 | Census 2001 | 4082 | Median Age | 32.8 |
| 1980 | 2,055 | Male | 1860 | Average Household Size | 2.57 |
| 1990 | 3,173 | Female | 2186 | Total Housing Units | 1661 |
| 2000 | 4,046 | White | 2171 | Vacant | 120 |
| 2004 | 4,336 | Black | 1608 | Occupied | 1551 |
| 2005 | 4,606 | Other | 267 | Owner Occupied | 61% |
| | | | | Renter Occupied | 39% |

Growth rate boundaries regarding voluntary immigration or new citizens into the Town consider the following variables: Job Prospects, Economic Status Changes, Housing and Life Cycle Factors. The following economic factors in this chart taken from the current Town of Zebulon website document the current Town demographics.

It can be safely assumed that as the Town of Zebulon is able to offer a wide set of opportunities, it can expect a higher rate of immigration and thus be able to reap the higher potential growth rates. To the extent that Zebulon is unable to meet the needs of voluntary immigrants, the Town could expect the lower bounds of projected population growth which hovers around 6,000. A key development strategy is to concentrate Town efforts and capital expenditures on attracting new citizenship across the growing Town landscape.

| Town of Zebulon Growth Trends 1990 to 2000 | | | |
|---|---|---|---|
| | *1990* | *2000* | *Change* |
| Population | 3,173 | 4,046 | 27.5% |
| Households | 1,324 | 1,551 | 17.1% |
| Average Household Size | 2.63 | 2.57 | -2.3% |
| **Population Characteristics** | | | |
| Median Age | 33.0 | 32.8 | -0.6% |
| Percent Under 19 | 33.1% | 30.4% | -8.1% |
| Percent Over 65 | 15.0% | 12.4% | -17.6% |
| Percent Caucasian | 58.2% | 53.7% | -7.7% |
| Percent African American | 41.2% | 39.7% | -3.6% |
| Percent Hispanic (all races) | 0.9% | 8.6% | 910.7% |
| Per Capita Income | $10,463 | $17,026 | 62.7% |
| **Housing Characteristics** | | | |
| Total Units | 1,233 | 1,661 | 34.7% |
| Percent Owners | 56.4% | 61.0% | 8.1% |
| Single-Family Units | 834 | 1161 | 39.2% |
| Median Housing Value | $68,200 | $96,400 | 41.3% |
| Median Rent | $368 | $579 | 57.3% |
| *Source: US Census 1990, 2000.* | | | |

Despite the range of growth rates that are possible for Zebulon, there is a limited amount of available land supply within the current Planning Jurisdiction. The actual future population could be less than possible growth projections due to this available space limitation.

Projected population analysis of the existing Town of Zebulon's Zoning Plan reflects goals and aspirations of residents currently living in a largely undeveloped rural landscape. As time progresses and new housing developments fill in parcels of vacant land, the value of land will rise as the available supply diminishes. This is the basic law of supply and demand.

As rural landscapes transition from agricultural cropland and pasture to built residential and commercial uses, it goes through several layers of price adjustments. These include land investment, land speculation, land development, end use development, and sale/lease options. At each development stage there is an expectation of capitol return and consequently increased land costs. In all but the last two layers, end user development and end use, the land value assessed in the transaction is driven by expectation and therefore is not related to actual population.

As a result, the tendency exists for the Town's current land use preferences to be revisited and updated. Residential development is most susceptible to this dynamic, and is associated with dramatic population increase.

Another dynamic factor that must be considered with population increase is the deterioration established developments. This factor affects the current assumptions of this Comprehensive Plan and deteriorating developments, present and future, over the long term should be taken into account. Deteriorating developments, or in technical terminology, obsolescence becomes evident in two ways:

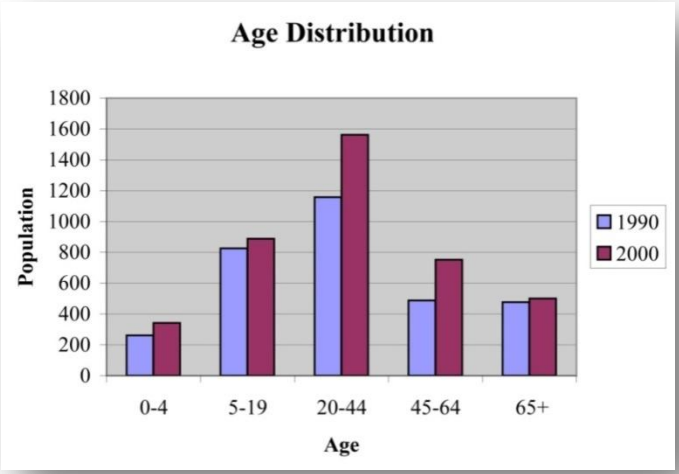
1. Redevelop: redevelopment as rising land values make developed uses unreliable as an investment

2. Need to redevelop: redevelopment generated by physical inadequacy or serviceability of existing developed uses.

Reconsidering land uses as developments deteriorate, should be a focus of the Planning Department so that fragmented developments do not occur that could obscure the clarity and cohesiveness of existing zoning within the Town.

Finally, increasing population will raise operational cost for Town services and governances. These cost increases also challenge land use policies as the need for increased tax base becomes more defined. Projected Town service costs relate directly to the tax income represented by the existing land uses. This correlation illustrates that the diversification of land uses represents a likely balance between cost and income of residents. Making land use changes as necessary seeks to bring greater tax base into the land use mix to support Town services associated with new developments.

The Town of Zebulon's most dramatic population increases occurred in the twenty year period from 1980 to 2000 when the Town's population almost doubled. In that period, the population increased from just over 2,000 people to over 4,000 people, an increase of 134 percent.




***Household Size***

The average household size within the Town has been slowly declining. The household size in 1990 was 2.63 and 2.57 in 2000 according to the US Census 1990/2000. Projections show that by 2010, the average household size will be 2.53, as projected by the Wake County Community Assessment 2006.

***Poverty Levels***

Federal poverty guidelines are issued every year by the U.S. Department of Health and Human Services. These established income level thresholds of poverty for both families and individuals are significantly higher for Zebulon than for the rest of Wake County as a whole. Wake County shows 4.9 percent of families and 7.8 percent of individuals at or below the poverty line in 2000. Zebulon exceeded those percentages in that same year with 12.8 percent for families and 16 percent for individuals.

In 2000 poverty status was defined as a one-person family or one-person household with an annual income of $8,350 or less. For each additional person, $2,900 is added (Federal Register 2000 - Vol. 65, No. 31, February 15, 2000, pp. 7555-7557). These guidelines are used for determining eligibility for certain federal programs such as Head Start, Food Stamp Program, National School Lunch Program, the Low Income Energy Assistance Program and the Children's Health Insurance Program as provided by the U.S. Department of Health and Human Services.

Immigration plays a key role in future population trends. The typical voluntary immigrant is younger in age and normally falls between the age of 20 and 44. Assuming this fact, Zebulon may expect at least 50 percent of the future population over future years to fall between the range of 20 and 44 years old.

## Chapter 3 - Economic Development

It is often common practice to define a municipality on either an economic or a political basis. Political definitions are not very satisfactory since the impact of a town spreads beyond its political boundaries. From an economic perspective, a town is defined by the function or purpose that the town serves. Competitive advantage is the terminology used if those town services are differing and of greater value from neighboring town offerings.

In simple terms, an area must produce something more efficiently and less expensively than other areas, and then be able to sell those goods profitably. Such sales can represent both goods and services. A town exports goods and services and imports money. This is a crucial concept to understand in establishing a town's master plan. No economic development strategy will be successful unless it is based on this underlying economic reality of competitive advantage. Competitive advantage involves three interrelated concepts. These concepts are:

- PLACE
- PROXIMITY
- PURPOSE

To understand the economic role the Town currently plays, and future changes or new directions in which the economy may move, we must examine each of these factors as well as their interaction.

***Place and Proximity***

Zebulon east of a triangle defined by Raleigh, Durham, and Chapel Hill. Areas within and around this triangle of cities are referred to as The Research Triangle Park, or RTP. RTP has seen dramatic growth and propserity over the past few years. An overall outlook of Wake County economic demographics shows that the Triangle region has had one of the most vibrant regional economies for the past ten years in the entire United States. While the national economy has experienced a mild downturn, the Triangle economy has remained robust. Over the past decade, this area's unemployment rate has been below the state and national rates. Currently hovering at 3.2 percent, the stable employment base, universities, medical centers, and government related jobs have resulted in unemployment trends that have been smoother than most unemployment rates. While higher than ten years ago, unemployment is still significantly below that of comparable cities in the US. Wake County has also experienced a relatively steady rise in per capita income with a rate between 1959 and 1989 from $4,400 to $5,700 every ten years. This increase fell off slightly between 1989 and 1999 with an increase of only $3,900.

| Table 2 – Recommended Population Projections | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Year** | **Population (1)** | | | | | | | |
| | **Raleigh** | **Garner** | **Rolesville** | **Wake Forest** | **Knightdale** | **Wendell** | **Zebulon** | **Total** |
| 2010 | 404,032 | 26,456 | 2,122 | 24,136 | 13,988 | 9,346 | 8,544 | 488,625 |
| 2015 | 441,871 | 37,431 | 3,802 | 27,981 | 26,678 | 15,259 | 15,877 | 568,899 |
| 2020 | 478,709 | 48,405 | 5,482 | 32,438 | 30,927 | 21,171 | 19,691 | 637,823 |
| 2025 | 519,634 | 57,781 | 7,711 | 37,605 | 35,853 | 26,386 | 23,957 | 708,927 |
| 2030 | 559,559 | 67,157 | 9,940 | 43,594 | 41,563 | 31,600 | 27,772 | 781,185 |

(1) Based on the population projections in the WQMP except for Wake Forest, for which the merger estimate projections were used, and Knightdale and Zebulon, for which the Little River EIS projections were used.

According to City-Data.com 380 people or 21% live and are employed in town. However, the population increases by 2,507 people or 62% every weekday morning as commuters travel into town for work. These figures indicate the Town is an employment destination.

***Purpose for a Town***

One way to gain some insight into the purpose of a city or town is to examine employment patterns and trends. Employment growth is always a major economic driving factor. The major employers for Wake County have been outlined in the Wake County Employers Chart. It should be noted that over 64 percent of the County's major employers are accounted for by the service and manufacturing sectors. Within the service sector slightly over half of the major employers are medical.

Purpose of any municipal entity or town refers to the competitive advantage that a location may have. Without such an advantage a municipality cannot grow and it may not survive in the long term. The location of steel mills close to rivers and near sources of iron ore represents an obvious example of a competitive advantage situation. If housing services represent one purpose or competitive advantage for a town then, by definition, that town is in fact a bedroom community for larger more urban neighbors.

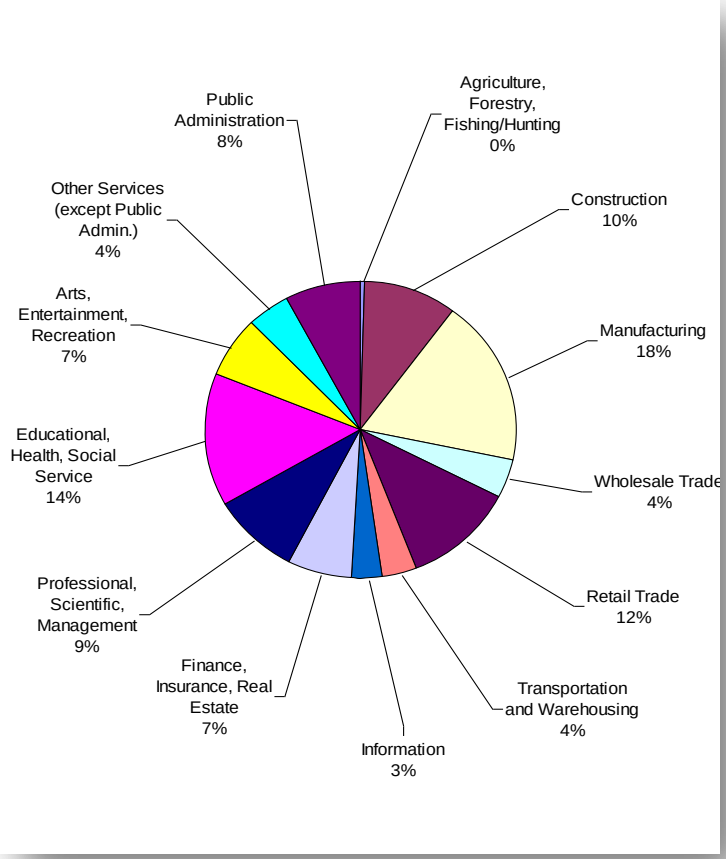
There are four keys to having a competitive advantage:

1. A higher quality local workforce
2. Superior infrastructure
3. Better public services
4. Link development with neighborhood needs

While issue #1 may not be directly under the control of the Town, the three remaining items are within the Town's control.

| Major Employers | | TopTenTaxpayers |
|---|---|---|
| GlaxoSmithKline | 1500 | GlaxoSmithKline |
| U S Food Services Inc. | 590 | Nomacorc LLC |
| Nomacorc LLC | 225 | Nomaco |
| Nomaco, Inc. | 215 | Zebulon LKE LLC |
| Devil Dog | 100 | Illinois Tool Works |
| | | Progress Energy |
| | | Bailey& Associates |
| | | Omark Properties, Inc. |
| | | D.G. Kami Zebulon Enterprises |
| | | US Foodservice, Inc. |

When the number of business establishments within a five-mile radius is considered, the largest distribution of business establishments is determined to be away from the Downtown center. This means there are additional economic issues to consider. Those who do not work in Town will, as expected, live in one of the residential developments occurring to the west and north. It is imperative to create structural connections between the Town center and new residential development to capture attention to community activity other than employment opportunities for the renovation for the Downtown. Efforts will have to be made to make purchasing goods and services within the Town easy and safe. If not, the relationship of residents to retail needs will shift retail opportunities to more established locations to the north of the Town.




Although there are limitless ways to examine distribution of businesses, the 2000 Census of Manufacturers gives insight on what should be expected. According to the 2000 Census of Manufacturers, Zebulon has 12 percent of its economy in retail trade. For the "other service" sector, Zebulon has 4percent. Finally, and perhaps most significantly, Zebulon's economy is 18 percent manufacturing related industries.

According to the U.S. Census Bureau, the 2000 Census indicates that for towns with similar demographics as Zebulon, for a cross-section of every 10 adult people:

- 5 male, 5 female
- 5 between ages of 25-54 years
- 6 are Caucasian
- 3 high school grad, 2 college grad, 1 grad degree, 2 no diploma, 1 adult with less than a 9th grade education
- Most drive a minimum 30 minutes to work

•Of those who are homeowner, 6 occupied home between 1995 and 2000

• 5 live in a house built after 1980

• 6 live in their own home

• 4 earn between $50k and $150k

***Potential for Retail Development within Zebulon***

Retail sales percentage verifies economic stimulous and can differ dramatically between national figures and local counties. Local communities may be able to create retail niches based upon countywide spending patterns. Such retail niches can form the basis for changing the current economic base of the area. Situations to take advantage of retailing opportunities at the local level will develop as the Town develops. These retail opportunities may come in the form of mixed-use developments, neighborhood retail centers, further renovation of Downtown areas, etc.

From the compiled data the results indicate retail development is all about location. Given location as a constant, then retail efficiency depends on the site characteristics of the development. Certainly potential sales revenue, degree of competition, and space availability play crucial roles in the profitability of any retail site. Retail locations involve two choices:

(a) The consumer's choice regarding which store to shop

(b) The retailer's location choice regarding the consumer

Store locations are influenced by two factors: (1) Range, and (2) Threshold.

**Range** is the maximum distance the consumer is prepared to travel to obtain the desired product. For example, low price, convenience and perishable products tend to have a very short range for which people expect to travel.

**Threshold** refers to the minimum amount of purchasing power necessary to ensure profitability for a retailer.

Range and threshold work together. The upper limit of the range of a product is determined by the degree of competition. Less competition means the consumer will travel further. The lower limit of the range is determined by threshold. For example, the more specialized the product, the higher the threshold and thus the wider the range needed to support that product.

***GlaxoSmithKline***

Within the Town of Zebulon and eastern Wake County like GlaxoSmithKline's (GSK) Corporate Headquarters. GSK's local manufacturing and distributing operation is also located in Zebulon's Headquarter campus. Although this corporation is not listed within the Wake County Major Employers chart, GlaxoSmithKline is the Town of Zebulon's largest corporate neighbor as well as the Town's largest employer. Zebulon relies heavily on GSK as the major contributor, approximately 38 percent, to the Town's tax base. GSK employs over 4,600 people with 1,500 employees locally on the Arendell Avenue campus, and plays a big role in the Town's developmental issues and projects. They have contributed regularly on roadway and infrastructure projects. Even though GSK is a good corporate neighbor for the Town, Zebulon must consider diversifying its income draw and economic base while continuing to work with the pharmaceutical manufacturer.

## Programs and Initiatives

***Building Re-Use Initiative***

Whether it's an empty storefront on Main Street or a boarded-up factory out on the highway, vacant buildings serve as daily reminders of the economic hardships being visited upon small towns throughout North Carolina. They are a source of discouragement to local residents and to investors considering downtown Zebulon for a new business. But these buildings also represent a town's potential. Restored, renovated, and equipped, they can once again become thriving centers of commerce, creating jobs and drawing attention back into the Town. These renovated buildings also add much-needed tax base for struggling communities.

The North Carolina Building Reuse and Restoration Program assists communities in transforming the potential these buildings represent into economic reality. Grants help local governments prepare the buildings for reuse by new, expanding and thriving vital businesses. The North Carolina Rural Center oversees the program as part of the $20 million North Carolina Economic Infrastructure Fund created by the N.C. General Assembly in July 2004.

Two types of grants were created. Predevelopment grants of $25,000 help cover the cost of an initial feasibility study or other activity necessary to secure commitments from a business or investor. Development grants of up to $400,000 are awarded to projects ready for renovation and must be matched by at least an equal amount of private and public funds. Awards are limited to local governments in rural counties, or the most economically distressed urban areas. Priority for the grants is given to towns with fewer than 5,000 people.

**N.C. Rural Economic Development Center**
4021 Carya Drive, Raleigh, NC 27610
Telephone: 919-250-4314
Fax: 919-250-4325

***Community Development Centers:***

The North Carolina Community Economic Development Grants Program, one of NC Rural Center's longest running programs, provides financial assistance to minority community development corporations to help them improve the economic well-being and quality of life in their communities.

Rural Center grants of this type are used by North Carolina's Community Development Centers (CDCs) to provide business loans, revitalize commercial districts, build housing for low-to-moderate income families, operate child-care programs, provide literacy training, engage in long-term community planning, and other activities tailored to local needs. To accomplish these tasks, the CDCs also raise money from other state and federal sources.

In addition to funding, the Rural Center provides CDCs with technical assistance through workshops and one-on-one consultations. This program provides assistance ranging from help with fund-raising and fiscal oversight to instruction on how to run funded housing projects and other programs.

The Rural Center's CDC grants program targets two categories of CDCs:

**Category I: New CDCs -** CDCs that 1) have not previously received state funds for community development projects, 2) are in the early stages of organizational development, or 3) have not demonstrated substantial project capacity. The maximum grant award for this category is $45,000.

**Category II: Previously Funded CDCs -** CDCs that have received grant awards from the Rural Center in the past. Funding in this category assists in financing specific projects and in sustaining the ongoing efforts of the organization. Past performance in handling funds and on project management must be clearly documented. The maximum grant award in this category is $65,000.

To be eligible under this grant program, an organization must be incorporated under N.C. General Statute 55A and must have received its federal 501(c) (3) tax-exempt status. It also must be able to provide evidence of organizational activity. Additional requirements apply for higher funding levels.

**Community Economic Development Grants Program**
**Rural Economic Development Center**
4021 Carya Drive
Raleigh, NC 27610
Telephone: 919-250-4314

***R&D Grants Program: New Ideas for Rural Development***

Created in 1987, the Rural Center's Research and Development Grants Program provides funds to community, regional and state-level organizations to carry out innovative projects that address critical rural development issues.

Throughout the years, the R&D Grants Program has joined with hundreds of rural groups and communities in testing development strategies that have led to:

- Alternative crops and markets for small farmers
- Expansion of markets for the state's specialized crafts industry
- Establishment of technical, apprenticeship and entrepreneurial training programs in the schools
- Expansion of quality child care available to rural working families
- Development and introduction of alternative water and wastewater systems
- Expansion of regional solutions to rural solid waste problems
- Sound models for distance learning and other rural telecommunications uses

Priority is given to projects that 1) show innovative rural development strategies; 2) lead directly to job creation or new business development; 3) target low-and moderate-income citizens; 4) meet a demonstrated need or fill an economic or community gap; and 5) can be easily replicated in other rural communities. Awards are made in each of the Rural Center's four rural economic development "building block" areas: Business development, Workforce development, Physical infrastructure, Civic infrastructure.

Currently, the average grant award available through the Research and Demonstration Grants Program is $40,000. Matching or leveraging of additional non-Rural Economic Development Center funding is encouraged. Grants are not made available for physical plants, fixed assets, indirect costs, endowments, seed or challenge grants for physical facilities, annual fund drives, loan funding or lobbying.

North Carolina non-profit organizations, local governments and educational institutions are eligible for the program. The Rural Center does not fund for-profit businesses.

**N.C. Rural Economic Development Center**
4021 Carya Drive
Raleigh, NC 27610
Telephone: 919-250-4314

***Recycling Business Development Grants***

North Carolina Recycling Business Assistance Center (RBAC) offers small grants to North Carolina recycling businesses. Request for proposals are typically made once a year, depending on funding availability.

The purpose of this grant program is to reduce the flow of solid waste to disposal facilities and encourage the sustainable recovery of materials from North Carolina's solid waste management program. To achieve that purpose, RBAC seeks viable, well-planned and effective proposals from recycling businesses in North Carolina wanting to start up or expand recovery efforts.

Projects involving the collection, processing or end use of materials in the solid waste stream are eligible for funding. Generally, the grant money is intended to fund sustainable investments in equipment and buildings necessary for increasing the capacity of a recycling business to divert more materials from disposal and into economic re-use. Grant money cannot be used to cover labor costs or the cost of contract processing.

**Recycling Business Assistance Center**
**N.C. Division of Pollution Prevention and Environmental Assistance**
2728 Capital Boulevard
Raleigh, NC 27604
Phone: (919) 715-6500
Toll Free: (800) 763-0136

***Brownfield Reclamation and Developments***

Several locations around the Town of Zebulon would qualify as Brownfield properties. The term brownfield technically refers to abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contaminations.

In city planning, Brownfield land, or simply a Brownfield, is land previously used for industrial purposes, or certain commercial uses, and that may be contaminated by low concentrations of hazardous waste or pollution and has the potential to be reused once it is cleaned up. Land that is more severely contaminated and has high concentrations of hazardous waste or pollution hazardous waste sites do not fall under the Brownfield classification.

Many contaminated Brownfield sites sit idle and unused for decades because the cost of cleaning them to safe standards is more than the land would be worth after redevelopment. However, redevelopment of Brownfield sites has become more common, as developable land grows less available in highly populated areas. Some states and localities have spent considerable money assessing the contamination present on local Brownfield sites, to quantify the cleanup costs in an effort to move the Brownfield redevelopment process forward.

Some state governments restrict development of Brownfield sites to particular uses in order to minimize exposure to leftover contaminants on-site after the cleanup is completed; such properties are deed-restricted in their future usage. Some Brownfields are left as green spaces for recreational uses. The EPA together with local and national government can provide technical assistance and some funding for assessment and cleanup of designated sites.

Locally, a firm headquartered in downtown Raleigh, NC specializes in funding and implementing Brownfield projects. The Cherokee Fund is made up of a broad group of professionals that provide expert resources to invest capital, cleanup pollution and create vibrant, healthy communities while providing strong returns for investors, partners and residents.

**Cherokee Fund**
111 East Hargett Street
Suite 300
Raleigh, North Carolina 27601
919-743-2500 telephone
919-743-2501 fax

***Conclusions & Recommendations:***

To achieve a competitive advantage the Town of Zebulon must be able to concentrate consumers to capture the needed income potential to support new developments. The reduction of range or distance that potential customers must travel to retail services is also of great concern. If the travel range for products is too wide then competition becomes a key issue. With a strategy that concentrates customers in a district or edge-of-town center Zebulon will be able to succeed in capturing needed revenue.

The Town of Zebulon has three main economic sectors, or more properly called clusters. These clusters include a manufacturing sector, a construction sector, and a wholesale trade sector. Recently residential clusters have evolved as a fourth economic driver. Developing and inter-connecting these clusters will become the basis for future growth. Corporations similar in nature will locate next to these clusters and other corporations which service these clusters will locate within the vicinity as well. Being in close proximity to the main cluster source drives further inter-related developments.

These are the economic factors which will create the future of the Town of Zebulon if no additional efforts are made to alternatively impact the current path of development. This growth will be fueled by needs in the greater Triangle region Clusters will be attracted to the US Highway 64/264 corridor, east of the Zebulon Downtown. Some recommendations for change follow:

1. Expand key economic clusters: The manufacturing sector, particularly pharmaceutical and medicine manufacturing industries represent clusters that should, according to the needs of the surrounding area, be expanded. Not only will there need to be expansion by these existing corporations, but also the firms that associate with them. Existing clusters of firms in both the construction and wholesale trade areas could be encouraged.. The Town should put efforts into attracting higher-wage, high-technology industries, and their location in proximity to existing industrial uses should be considered in any expansion plan

2. Build on quality of life enhancements that grow from this planning effort: Business and Financial Services represent two clusters which have a strong presence in the Triangle region. The Triangle's Business Service sector had the highest level of job creation for the period 1990 to 1999 within the region. Financial Services had the fifth highest job creation for that same period. Both of these sectors would support the larger Triangle region where the Town of Zebulon could be an attractive campus style setting. Quality of life is a key issue in relocation for such industries and their employees

3. Build on the potential of US Highway 64/264 to attract retail: The potential for residential development to add to the separation between place of residence and place of work is an obstacle to overcome. Efforts will have to be made to ensure integrated connections between residential and retail locations and the broader fabric of the Town. The intersection of East Gannon Avenue (NC Highway 97) and US Highway 264 is one critical juncture example.

4. Expand local employment opportunities: The Town of Zebulon should include plans to ensure that employment opportunities for residents are developed and enhanced. Residents who both work and live in Town spend more money in their local environment. Employment centers should be connected to regional clusters that already exist in Business Services, Financial Services, Technology, and Health Care

5. Build on industrial advantage created by railroad: The existing railroad through Town represents an opportunity for increased industrial development. However, such development should not occur in a manner which would hinder attempts to overcome separation in place of residence and work. Rails are often barriers to the interconnection between residences and retail locations especially for alternate means of transportation other than the automobile. The presence of the railroad also introduces the potential of establishing Zebulon as a future transit stop in the currently existing regional mass-transportation system program, the Triangle Transit Authority. Increased emphasis on the rail system should enhance the establishment and re-development of the historical downtown

6. Promote Business Incentive Policies: The Town of Zebulon Economic Development Incentive Policy is based in support for the development of an economic environment that attracts or encourages new investment, creates new jobs, and results in a healthy and diverse tax base. Details regarding the policy and its benefits can be found on the

Town of Zebulon's Economic Development Website www.zebnc.com. Wake County provides Business Investment Grants for companies that meet both a new investment threshold and new jobs threshold

7. Create a Strategic Industrial Marketing Plan: Bringing the development objectives of the Town into existence requires more than having designated property in a Land Use or Zoning Plan. In this regard the Town should initiate an effort to create a Strategic Industrial Marketing Plan. The vision of the Plan would be for Zebulon to be a "Light Industrial Hub" for small to medium sized firms in the Eastern Wake County region. The Plan would provide a framework for identifying opportunities and attracting new businesses to Zebulon

8. Redevelopment: The roots of redevelopment lay with the economic factors available. Limitations on available income sources means lack of disposable income needed to reinvest in property. Over time, the lack of investment leads to a deterioration of property. These undesirable conditions often spread to adjacent properties lowering property value and desirability. Redevelopment is an increasingly important community development issue for Zebulon. Several factors define the need for Town action:

- Redevelopment becomes a public issue when markets are not likely to solve the existing problems. While Zebulon has the ability to expand, development investors can overlook re-developable parcels and seek out vacant land, causing little to no incentive to correct deterioration problems

- Redevelopment property is often more expensive than vacant land. Property acquisition costs include both land and buildings. Redevelopment often requires the assembly of smaller parcels into a larger site compounding the complexity of land acquisition

- Redevelopment sites have more site preparation costs. Buildings must be demolished and the site cleared before new construction can occur

- Redevelopment may face the need and cost of environmental remediation. Old buildings may have asbestos or other hazardous materials that require special treatment. Certain commercial and industrial uses may have allowed pollutants to enter the soil and contamination abatement must occur prior to redevelopment

9. Downtown Zebulon Redevelopment Plan: The objective of the Downtown Redevelopment Plan would be to assure the long-term viability of downtown by making a connection to the rest of the community and utilizing its existing resources. Redevelopment will enhance the downtown's role as a residential, retail and commercial area, and re-attract investment in the downtown business district. This downtown area of redevelopment may alternatively be considered as an Historical Overlay District.

10. Create a focus on Downtown Commercial Strength: The Town has made an effort to improve the aesthetic appeal of the downtown through streetscape improvements. A strong

Downtown relies upon anchor uses such as grocery stores and smaller shops.

11.Emphasize the importance of employment center connectivity to Downtown: Loss of the connectivity between employment and downtown, or the Downtown, would reduce the Downtown to simply providing civic services for outlying areas. The plan for Zebulon should include provisions for employment centers that remain connected to and part of the Downtown. Building on the existing central business district as a continuing center for Zebulon will require economic policies directed at revitalization as well as connections between the historic center and contemporary sources of economic commercial value

All of these factors combine together to create potential significant economic barriers to redevelopment. Removal of these barriers with land use change is a primary focus of the Town of Zebulon's actions related to redevelopment.

## Economic Development – Goals, Policies, and Action Items

***Goals***

**Goal 1** Increase quality employment opportunities, the Town's taxable base, the diversity of business offerings and the quality of business districts while ensuring the sustainability of the economy and improving general quality of life

**Goal 2** Facilitate economic growth protecting the historical origins of the Town

**Goal 3** Protect, promote, enhance, and organize the existing commercial community within the Zebulon Main Street core to bring new vibrancy to existing downtown business environments

***Policies***

**Policy 1** Adopt strategies that create local job opportunities by attracting new businesses, and by encouraging business start-ups

**Policy 2** Establish guidelines that encourage commercial activities which are appropriately planned, constructed and landscaped for visual and physical compatibility with surrounding areas and uses

**Policy 3** Recognize and support local agricultural and farming businesses as important contributors to local economic diversity, health and fiscal stability

**Policy 4** Establish boundaries for the downtown business core

**Policy 5** Enhance the visual quality of downtown - improve the appearance of privately-owned buildings, storefronts, and signs, as well as public improvements that are designed to complement renewed economic activity

**Policy 6** Identify potential infill areas to encourage infill development and redevelopment

**Policy 7** Develop a comprehensive program to promote downtown through special events, community events, retail and restaurant promotions with marketing and physical improvements that attract customers to downtown stores and businesses

**Policy 8** Implement parking solutions that address the need for expanded, convenient, and attractively designed off street parking

***Action Items***

1. Offer a specific tax increment financing option to help developers pay for the cleanup of contaminated Brownfields sites

2. Explore utilizing a Building Reuse Incentive Program to reutilize vacant buildings

3. Explore strategies aimed at promoting investment where the greatest impact occurrences and improvements trigger additional residential investment.

4. Investigate the use of Industrial Development Bonds as a viable alternative in financing industrial expansion and construction

# Chapter 4 - Form and Environment

### *Geology, Soils and Topography*

The geologic character surrounding the Town of Zebulon is typical of most towns located in the piedmont region of central North Carolina. Rolling hills and alluvial or water deposited soils dominate the landscape. Zebulon lies upon a mixture of granitic rock, mostly *Rolesville Pluton*, terrace deposits and upland sediments. *Rolesville Pluton* is the name for the granite bedrock that extends from northern Johnston County through Wake County and up as far as Franklin, Vance and Warren Counties. A terrace deposit is a geological term for a flat platform of land created alongside of a river or sea, where the river has cut itself a deeper channel, while upland sediments are soils deposited in-place by slow moving water features.

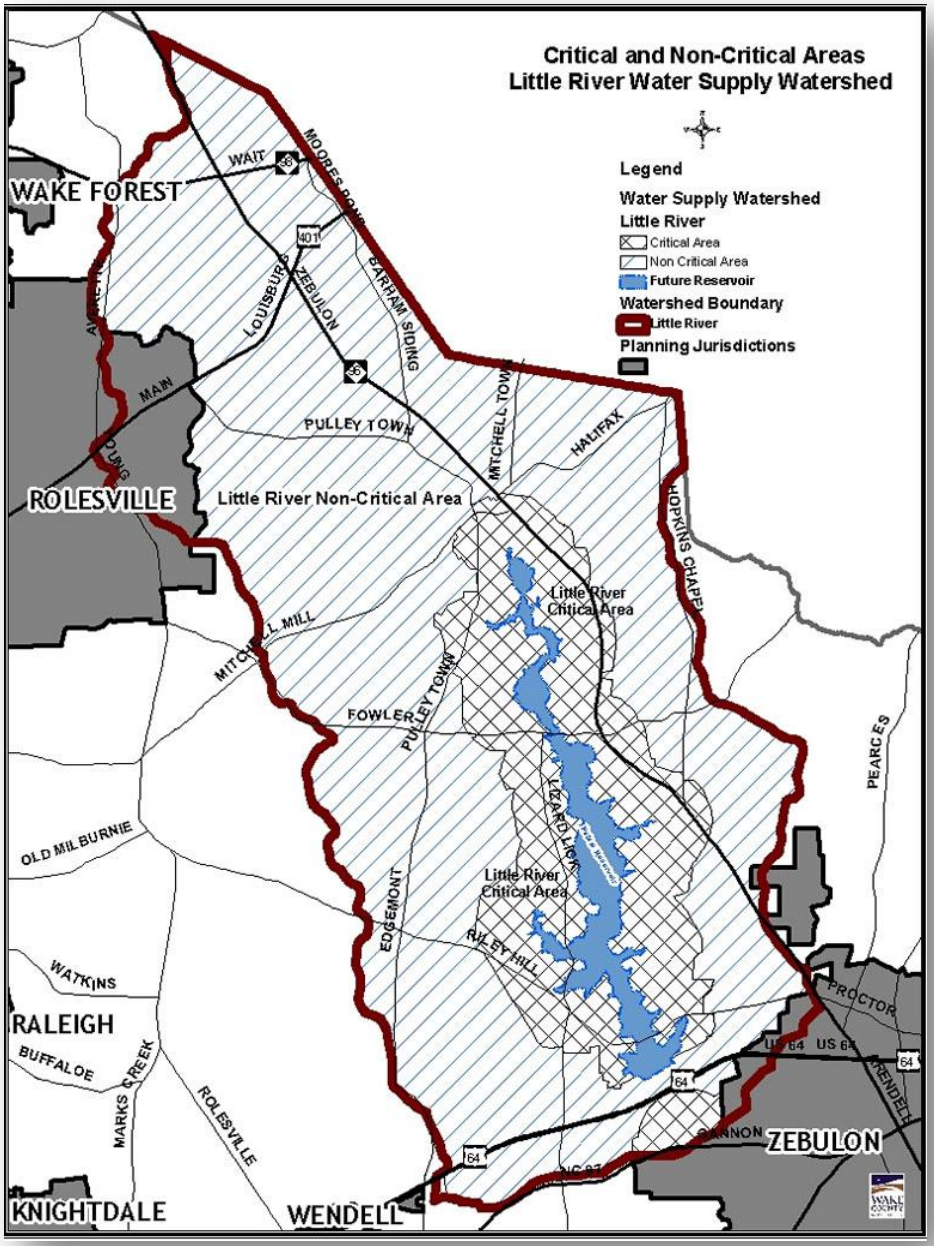
The Town of Zebulon typically has soils that are slightly acidic, and range from well drained sandy loams to excessively compacted clays. The soils and soil depths vary according to the topography, from gently sloping to steep in nature. Most of the hydric, or flood hazard soils in Zebulon are, by necessity, associated with stream courses and their associated floodplains.

A geologic ridge line runs through the center of Town dividing the area into two separate basins. Geologic ridges divide areas into two separate watersheds where stormwater on the west side of Zebulon drains into the Little River drainage basin. Stormwater on the east side drains into Moccasin Creek and the Little Creek drainage basins. Elevations of the area range from approximately 150 feet to 385 feet above sea level.

### *Hydrologic Features*

Watershed originally meant the dividing line between two drainage basins, from an old term shedding, meaning splitting or dividing. Some historical uses of the term keep this meaning but in North American geographical usage the term watershed has come to mean the drainage basin itself – a bowl shaped land area in which all stormwater runoff drains into one main collector source.

The Town of Zebulon lies entirely within the Upper Neuse Sub-basin of the Neuse River Basin. Due to the Neuse River drainage basin's poor water quality associated with agricultural waste and land development, the North Carolina Environmental Management Commission (NCEMC) adopted the Neuse River Buffer Rule in 1997. This rule was implemented to increase the basin's quality of water. It prohibits manmade activity of any kind within a 50 foot perimeter of water bodies in the Neuse River Basin. Exceptions to this policy are made only upon individual basis analysis and are usually limited to roadway and utility crossings. The water bodies within jurisdiction of the Neuse River Buffer Rule include perennial streams, lakes, ponds, and estuaries. Exemptions to this Neuse River Buffer Rule are water bodies which include intermittent streams, wetlands, ephemeral man-made streams, man-made ponds, lakes and ditches. South Wakefield Street as it extends south away from the Downtown is on the primary ridgeline that establishes the boundary between the east and the west stormwater drainage watersheds within the Town.




The Little River drainage basin, Sub-basin 6 of the Neuse River basin, drains the west side of Zebulon and incorporates a land area of 317 mi² and includes an aquatic natural heritage site. The majority of the Town of Zebulon is located in this area. The Moccasin Creek and the Little Creek drainage basins, Sub basin 7, draining eastern Zebulon, has a land area of 1,007 square miles and also includes an aquatic natural heritage site. "The Moccasin Creek and the Little Creek drainage basins, Sub basin 7, draining eastern Zebulon, has a land area of 1,007 square miles and also includes an aquatic natural heritage site. Little Creek, which runs through the Town of Zebulon, is a protected water body due to environmental zoning.

Until 2003, the Little River was a water supply source for the Town of Zebulon. Due to several drought stricken years this source of water began to run dry. The Town of Zebulon began purchasing water from the City of Raleigh due to increased cost of water treatment.

Today the Town purchases all of its water demand from the City of Raleigh. This drinking water source is drawn from the Falls Lake water supply watershed. The existing water treatment plant on the Little River is now owned by the City of Raleigh. It has been converted to a pumping and booster station where chlorine and ammonia are added to the drinking water brought in from Raleigh as a means of water quality control.

The Little River and its tributaries comprise natural corridors on the west side of Zebulon. Wake County has acquired land along the Little River to protect the water quality of this future water supply basin and to maintain the natural heritage and beauty of this local ecosystem. The Wake County land has been designated as part of the critical water supply watershed for what will eventually become Little River Reservoir. The Little River Reservoir is to become the new source of drinking water for the entire area which encompasses the land between NC Highway 96 to the east and the Little River watershed itself. Wake County has proposed tight restrictions on development within the watershed area. Moccasin Creek and its tributaries naturally establish the same scenic corridors on the east side of Zebulon, with Moccasin Creek being the border between Wake and Franklin County

***Non-Urban Activity Centers – Little River Reservoir Watershed Overlay District***

There are two types of activity centers proposed for the Little River Watershed – Non-Urban Neighborhood Activity Center and Non-Urban Community Activity Center.

Non-Urban Watershed Activity Centers within a drinking water supply watershed are designed to help protect water quality by limiting non-residential land uses to those with environmental characteristics less likely to adversely affect water quality. Emphasis is placed on concentrating more intense necessary non-residential development at existing intersections of essential major vehicular thoroughfares.. Under the proposed Land Use Plan Amendments for the Little River Reservoir, non-residential uses would only be allowed within designated activity centers, in accordance with the Wake County watershed zoning regulations. These Wake County watershed zoning regulations create an Overlay District that over-rules any zoning conditions normally associated with the land being developed. Public and civic uses such as fire stations and parks are permitted in areas outside of the established non-urban activity centers where they are needed to serve residential requirements.

***Non-Urban Neighborhood Activity Center***

This designation is primarily an area for convenience retail goods and personal services. Small-scale land uses typical of farm-serving uses are also permitted within this designation. The types of uses allowed are those that focus on serving the day-to-day needs and activities of the sparsely populated neighborhoods in the immediately surrounding area.

***Non-Urban Community Activity Center***

This designation is primarily an area for convenience retail goods and personal services Moderate-scale mixed land uses that focus on serving the day-to-day needs and activities of the core area occupants, as well as the greater needs and activities of surrounding neighborhoods. These non-residential use exceptions are not intended to be major commercial or employment areas.

Characteristics of these activity centers include land parcels accessible by major

vehicular thoroughfares and served by wells and septic systems. These non-urban activity centers are to be designed with limited impervious surface coverage. Land use and development regulations that are designed to protect water quality are applicable to these designations.

Other areas throughout the Town of Zebulon's Planning Jurisdiction are of extreme importance and should be actively considered along with those mentioned. Areas such as the dominant Little River tributary that extend northwest of the Pineview Properties crossing West Gannon Avenue and heading northeast toward the GlaxoSmithKline property have terrific potential for great success in any as the above mentioned activity centers. The Beaver Dam Creek watershed area at its western reaches extending into the areas just north of the Historic Wakefield boundary have excellent opportunities for environmental development as well. An inventory of these and other scenic areas should be developed into a document of public record for access to investors and the general informed public.

***Woodland Protection Overlay Zone***

Strategies to maintain Zebulon's mature tree canopy should be established to preserve this wonderful characteristic. Outside of the central business district of the Zebulon Downtown and the major highway corridors, Zebulon mainly consists of agricultural land of low elevation with original forests and natural piedmont bottomland forest.

The currently adopted Conservation Subdivision Ordinance for the Town of Zebulon serves to maintain the existing tree canopy by requiring residential lots to be placed in less environmentally sensitive land areas. Because of this ordinance and other measures taken to preserve the Town's tree canopy, Zebulon has been honored with the Tree City USA designation. Zebulon has required tree plantings on all new development since 1994. There are shade tree requirements in vehicular parking areas as well as along major thoroughfares throughout the Town's jurisdiction. Additionally, various tree plantings are required when buffer yards between differing uses exist. The Town has taken part in the regional re-vegetation program, Triangle J Council of Government, where public and private entities volunteer seedlings for public plantings. Various community groups, in conjunction with the Town, have planted hardwood seedlings on public property along the highway rights-of-way and in various parks throughout Zebulon.

The rural views within the Zebulon Planning Jurisdiction provide some of the most attractive, picturesque landscapes around. The views are very dramatic in some places offering long vistas of rolling pasturelands speckled with natural forest areas. These characteristics contribute heavily to the desirability of the area potentially for rural residential housing projects etc.

One possibility for public land use of the large open areas around Zebulon would be consideration for voluntary Open Space Preservation designations. In this type of land use landowners may voluntarily choose to protect and preserve the open rural characteristics unique to their properties. There is precedent from other local municipalities where governing jurisdictions themselves have purchased rural agricultural land as protected open space and kept working farms intact as an amenity for the entire community.

## Programs and Initiatives

***Urban & Community Forestry Grant Program***

This is a federally funded program awarding matching funds to encourage stakeholder involvement in creating and sustaining urban and community forestry programs. Municipalities, counties, regional agencies, interest groups, educational facilities, and private organizations are eligible to apply for funding for projects which enhance and promote the urban forest.

The Urban and Community Forestry Grant is not simply about planting trees. Grant applications for the sole purpose of tree planting or beautification are discouraged. Tree planting should happen within a larger project which is aimed at promoting and enhancing the tree population already present in the community.

Communities, interest groups, etc. may apply for grants annually although when funding is limited and project merits are solid a first-time application may have priority over a repeat applicant. In addition, grant funding is not meant to support on-going programs such as planting, maintenance or staffing opportunities. Eligible activities such as initiation of programs, educational uses, training or initial hiring of urban foresters are acceptable grant recipients as further described below.

The website for more detailed information: http://www.dfr.state.nc.us/urban/urban_createforester.htm

***Tree City USA Grants***

Since the Town of Zebulon already has this designation it may take advantage of this special grant. Tree City USA Communities may request a $5,000 tree planting grant. Proposals must be submitted by the governing municipality or be submitted by a closely allied organization partnering with the municipality.

While actual tree purchases are limited under the specific programs, trees can be included as part of a larger program particularly when volunteers are involved. Some projects may be eligible for a larger portion of available funding as in the following examples:

- Tree planting in low-income areas particularly when combined with neighborhood involvement and a tree adoption program
- Projects which have a commitment to using native species of trees, shrubs and other vegetation, particularly when they emphasize natural restoration of wildlife habitat or conservation priorities, riparian stabilization, soil and water conservation and community volunteer involvement.
- School projects which combine naturalization and tree planting with classroom and hands-on learning as well as project follow-up

- Planting or replacement projects which follow a prior tree inventory or hazard tree inventory project, and are part of an overall municipality Master Tree Plan

***Master Tree Plans***

Following a complete tree inventory, a community has the basis for creating a Master Tree Plan. This further establishes the commitment of the community to managing the urban forest. This includes planning for future tree planting, open space management and enhancement and protection for existing tree spans or green spaces.

The plan should reflect goals established by the Tree Board, town departments and governances, and should incorporate elements of the community Tree Ordinance. Master Tree Plans should indicate historically designated trees in the community as well. It may also address administrative, policy and budgeting needs. Effective plans often start with analysis of data collected through inventories or assessments and provide for periodic reviews and updates. Grant funds may be used to contract with qualified consultants, hire temporary staff, publish plans, etc.

Tree planting plans must be created for all projects with species selection, placement, design, detailed site drawings, installation details and establishment care. Grant funds may be used to contract with qualified consultants, such as urban foresters, landscape architects, etc.

***Arboreta***

An arboretum is the term for a collection of trees. More commonly today an arboretum is a botanical garden containing living collections of primarily woody plants intended at least partly for scientific study.

The line between creating a park and creating an arboretum is very thin. Funding priority is given to arboreta already in existence which can show on-going maintenance and educational use.

New arboreta proposals will benefit from a clear description, initial planning map, species list and a documented commitment from the local community and a cross-section of volunteer groups. Proposals should address specifically and in detail long-term maintenance and educational use. Active school involvement or other community group commitment will also add to the value of such a proposal.

The enhancement of the educational value of an arboretum by emphasis on native plants, the use of naturalized no-mow areas, and the re-creation of plant communities in their natural state and environment will increase the value of any arboretum project. Non-native species are appropriate within the larger plan for specimen trees suitable to local growing conditions, after the arboretum has been established and a significant proportion of native trees have been established.

Arboreta must be on public property and accessible to the general public to be eligible for public funding. Proposals may include the cost of trees, labeling, signage, brochures, etc.

Zebulon Community Park which consists of 47 acres is a terrific location for the implementation of this project. The many facilities available at the Community Park include two basketball courts, athletic fields, walking trails, championship disc golf course, picnic shelters, tot-lot playground, and fitness stations. There is even an educational trail which could be incorporated into the beginnings of this Woodland Protection Project or any other community involvement project that needs a home base from which to be located.

***Additional Tree Sources***

Where a community has a vacant lot in the downtown area, community or privately owned, the creation of a small pocket park is always an option for adding to the preservation of the town tree canopy. This option would be particularly beneficial if there is little else in the way of area vegetation. A pocket park is a commitment that the site will not be developed for at least five years, with native plants, benches with hardscape elements kept to a minimum. The reduction of trash and weeds, and the promotion of habitat and green space are beneficial to any community. The use of horticulture clubs, school groups etc., particularly with adoption by a group for maintenance can be met with in-kind funding obligations. Should the lot be developed, the park will have to be dismantled, but moving some of the trees to another site may be eligible for a subsequent public funding opportunity.

Finding and funding trees of a suitable size for on-going planting projects is a challenge for most communities or groups. The establishment of a small tree nursery for community use maintained by volunteers is one possible way to address this issue. Once the nursery has been established through a grant, the volunteer program can be used to plant trees on public land or to even provide trees for neighborhood planting projects for a per tree fee which can help fund the next series of seedling purchases.

Workshops which present tree care to members of the community, municipal staff, condo/facilities managers, developers and local tree care contractors can be considered. Tree species, site selection, pruning training, mulching, fertilizing, landscaping, watering, pest management, hazard tree management, tree protection measures during construction, cabling and bracing equipment are some workshop topics that can be covered.

Publically funded maintenance demonstrations are limited to communities with a population less than 50,000 and must be held on public land and accessible to the general public citizenry. The service of a professional tree care company certified with the International Society of Arboriculture is required and the matching funds from the grant are a cash match fund only.

Following a tree inventory, development of a master plan and tree board creation, a one-time grant should be considered to initiate a maintenance program within the community. A long-term commitment to a maintenance program is a factor in determining grant eligibility.

Aside from educational opportunities, valid grant projects including workshops for tree board members, local officials, city personnel, contractors, private tree care workers, and training of community volunteers. Such projects may involve local presentations by consultants. They may also incorporate the sponsoring of or attendance at workshops, conferences, seminars or meetings. The programs must be advertised broadly and made available to all interested parties, neighboring communities, related interest groups and businesses. Grant funds may also be used to purchase training videos, publications and reference materials.

Other educational opportunities include the development or purchase of educational materials that increase public awareness and understanding of urban tree values and benefits of tree care. Examples include newsletters, brochures, videos, slide programs, web pages, CD-ROM's, exhibits, etc. Materials may be for general distribution or target a specific audience. In general, grant funds may not be used to develop additional materials that already exist and are available for purchase.

***NeighborWoods***

The nationally recognized NeighborWoods program promotes tree planting in the community by coordinating businesses and volunteers, as well as homeowners and other stakeholders. This program requires commitment, pre-planning and organization but has been adapted very successfully in many communities throughout the United States. The program promotes a healthy urban space and the development of partnerships which bring together neighbors, local businesses, and the municipality to plant and care for street trees in the public rights-of-way.

Activities include:

1. Partnering with municipalities to establish programs for staff support where possible
2. Contact utility suppliers, local businesses, organizations and agencies for funding needs to purchase trees
3. Advertisement through local media to have more volunteer participation
4. Arrange for tree purchases with local nurseries or a local volunteer tree nursery
5. Tree Planning: This involves planning which trees should be planted where, and a basic instruction session with forestry consultant
6. Identify planting sites, wait for homeowner response, order trees, and establish delivery dates
7. Evaluate program success and areas for improvement

**NeighborWoods Guidebook**
http://www.treelink.org/docs/neighborwoods - Collection of PDF documents by the Sacramento Tree Foundation
**Stillwater NeighborWoods**
http://www.stillwater.org/commdev/treeboard/programs/neighbor.htm
Implementation of the NeighborWoods program by Stillwater

***Non-Profit Program Development***

To be eligible for a grant, organizations must qualify as non-profit groups under state and federal guidelines. Funding is available to assist in:

- Staffing and administration to employ or contract with part-time or full-time staff or establish internships to assist in program development or expansion of urban and community forestry activities. Duties may include organizing volunteer or educational efforts or administrative support. The grant may be used as seed money to assist in establishing a permanent position or to provide support for a particular project. Position qualifications and duties in the proposal.
- Volunteer training and coordination for new or expanded activities designed to enhance the role of volunteers in the community's local urban forestry program
- Public education materials and workshops which are not specific to the activities of the organization but focused on educating the public regarding urban forestry issues, etc
- Regional and Statewide Special Projects with a maximum grant request of $25,000, are intended to encourage creative and innovative proposals to address urban and community forestry needs and issues on a regional or statewide scale
- Urban Forester or Arborist Staffing with a maximum grant request of $25,000, is discussed in detail on the web site in Options for Creating an Urban Forester or Arborist Position. Local governments and certain non-profit organizations may apply for up to $25,000 to establish an urban forester or arborist position. A draft position description and qualifications must be submitted with the application. The remaining salary and operating expenses must be borne by the applicant or come from other non-federal sources and may be claimed as matching funds. Funding in future years is not guaranteed but will be considered for up to 3 years and will be evaluated on demonstrated accomplishments and the organization's efforts and success in establishing a fully funded permanent position. Priority will be given to Tree City USA communities under 100,000 in population that do not currently have an urban forester or arborist position

When developing urban forester position descriptions, be aware that North Carolina state law G.S. 89 B-1 requires that anyone using the title Forester, urban or otherwise, must be registered by the NC State Board of Registration for Foresters. For further information contact the Board at (919) 847-5441, or by email at NCBRF@aol.com.

***Conservation Reserve Enhancement Program***

The Conservation Reserve Enhancement Program (CREP) is a joint effort of the North Carolina Division of Soil and Water Conservation, the NC Clean Water Management Trust Fund, the Ecosystem Enhancement Program (EEP), and the Farm Service Agency - United States Department of Agriculture (USDA) to address water quality problems of the Neuse, Tar-Pamlico and Chowan River basins as well as the Jordan Lake watershed area in North Carolina. The Neuse, Tar-Pamlico and Chowan River basins were part of a recent national initiative, the Albemarle-Pamlico Estuarine Study, to evaluate the impacts of the estuaries. This national initiative attributed significant estuarine degradation within these study areas to nonpoint source pollution. The North Carolina Division of Water Quality has classified these basins and the Jordan Lake watershed as nutrient sensitive waters (NSW).

Landowners of existing agricultural land within the Neuse, Tar-Pamlico and Chowan River basins are eligible to participate in CREP. Under CREP, landowners can voluntarily enroll eligible land in 10-year, 15-year, 30-year, and

permanent contracts. The state will pay additional bonuses to landowners that enroll land in 30-year and permanent agreements. Cost sharing will be available for installation of forested riparian buffers, grassed filter strips, wetlands restoration practices, water control structures, livestock exclusion, and remote livestock watering in order to increase the efficiency of enrolled practices. Interested landowners should contact their local Soil and Water Conservation District or Farm Service Agency office.

***Environmental Quality Incentives Program (EQIP) - North Carolina***

The Environmental Quality Incentives Program (EQIP) was re-authorized in the Farm Security and Rural Investment Act of 2002, known as the Farm Bill, to provide a voluntary conservation program for farmers and ranchers that promote agricultural production and environmental quality as compatible national goals. EQIP offers financial and technical help to assist eligible participants install or implement structural and management practices on eligible agricultural land.

EQIP offers contracts with a minimum term that ends one year after the implementation of the last scheduled practice and a maximum term of ten years. These contracts provide incentive payments and cost-shares to implement conservation practices. Persons who are engaged in livestock or agricultural production on eligible land may participate in the EQIP program. EQIP activities are carried out according to an environmental quality incentives program plan of operations developed in conjunction with the producer that identifies the appropriate conservation practice or practices to address the resource concerns. The practices are subject to NRCS technical standards adapted for local conditions. The local conservation district approves the plan.

EQIP shares in the cost of a range of 50 to 75 percent of certain conservation practices. Incentive payments may be provided for up to three years to encourage producers to carry out management practices they may not otherwise use without the incentive. However, limited resource producers and beginning farmers and ranchers may be eligible for cost-shares up to 90 percent. Farmers and ranchers may elect to use a certified third-party provider for technical assistance. An individual or entity may not receive, directly or indirectly, cost-share or incentive payments that, in the aggregate, exceed $450,000 for all EQIP contracts entered during the term of the Farm Bill.

***North Carolina Conservation Tax Credit Program***

North Carolina has a unique incentive program to assist land-owners in protecting the environment and the quality of life. An income tax credit is allowed for participating individual and corporate land owners when real property is donated for conservation purposes. Interests in property that promotes specific public benefits may be donated to qualified recipients. Such conservation donations also qualify for a substantial tax credit.

**N.C. Conservation Tax Credit Program**
**c/o Office of Conservation & Community Affairs**
Dept. of Environment and Natural Resources
1601 Mail Service Center
Raleigh, North Carolina 27699-1601
919/715-4191

***North Carolina's State Trails Program Grant Information - Adopt-A-Trail Grant Program***

The Adopt-A-Trail Grant Program (AAT) awards $108,000 annually to government agencies, nonprofit organizations and private trail groups for trails projects. The funds can be used for trail building, trail signage, facilities, trail maintenance, trail brochures, maps, and other related uses. This program requires no local match or in-kind services.

***Recreational Trails Program***

The Recreational Trails Program (RTP) is a $1.3 million grant program funded by Congress with money from the federal gas taxes paid on fuel used by off-highway vehicles. The program intent is to meet the trail and trail-related recreational needs identified by the Statewide Comprehensive Outdoor Recreation Plan. Grant applicants must be able to contribute 20 percent of the project cost with cash or in-kind contributions.

***The Land and Water Conservation Fund***

The Land and Water Conservation Fund (LWCF) has historically been the primary funding source of the US Department of the Interior for outdoor recreation development and land acquisition by local governments and state agencies. In North Carolina, the program is administered by the Department of Environment and Natural Resources.

Since 1965, the LWCF program has built a permanent park legacy for present and future generations. In North Carolina alone, the LWCF program has provided more than $63 million in matching grants to protect land and support more than 800 state and local parks. More than 37,000 acres have been acquired with LWCF assistance to establish a park legacy in our state.

***Voluntary Agricultural District***

Agricultural farmlands are one of the land factors that leads to the perception of Zebulon as being rural. Measures should be taken to preserve the agricultural characteristics of this region.

The Wake County Soil and Water Conservation District Board of Supervisors have created a voluntary and non-binding Agricultural District Program in Wake County. The purpose of this program is to increase the visibility of farm communities in the County; focus more attention on the importance of these communities to the County; work with the County to make it easier for those who wish to stay in farming to continue doing so; advise the County on issues affecting agriculture; give farm owners a greater voice in local government decisions affecting their community; and reduce conflicts between farm and non-farm land uses.

The Wake County VAD program is summarized here: A seven (7)-member Agricultural Advisory Board will be appointed by the Wake County Board of Commissioners to manage the program. Five (5) members would be farm owners, one (1) member would work in agribusiness, and one (1) member would be a Soil and Water Conservation District Supervisor. All members would be recommended to the Commissioners for appointment by the Soil and Water Conservation District, Wake Cooperative Extension, the Wake County FSA Committee, and the Wake County Farm Bureau. Until the Advisory Board is established, the Wake Soil and Water Conservation Board of Supervisors act as the Advisory Board.

The Advisory Board considers applications from landowners to form agricultural districts; conduct hearings on public projects such as roads, schools, etc., that might have a negative effect on agriculture in a district, and advise the county on other issues affecting local agriculture.

All purchasers of land near agricultural districts are notified that they should expect dust, machinery noise, animal waste and chemical odors, and other similar things associated with living in a farming area.

**Wake Soil and Water Conservation District**
4001D Carya Drive
Raleigh, NC 27610-2921
919-250-1050

www.wakegov.com/water/conservation/conservation/volagdist.h

## Environment – Goals, Policies, and Action Items

***Goals***

**Goal 1** Implement recommendations set forth in the currently adopted *Zebulon Open Space & Greenway Master Plan* which relate to the protection of existing natural resources and open space for ecological, aesthetic, and recreational purposes

**Goal 2** Preserve and protect the quality of surface and groundwater sources to insure the long-term viability of the aquifer as a source of potable water for current and future residents of Zebulon

**Goal 3** Protect wetlands, stream corridors, and floodplains for their benefits to wildlife habitat, flood and stormwater control, groundwater protection, erosion control and recreation

**Goal 4** Require that all future development be carried out in a sustainable manner and that environmentally sensitive areas continue to be protected

***Policies***

**Policy 1** Reduce the amount of impervious surface within protective overlay districts to reduce stormwater management costs and environmental impacts

**Policy 2** Encourage low impact development standards for all new development

**Policy 3** Identify properties which most significantly contribute to environmental integrity or open space value and investigate methods to conserve or protect these properties

**Policy 4** Identify sources and secure funding to help protect and sustain existing natural resources

**Policy 5** Provide incentives for businesses and industries that utilize low impact development standards, and energy saving techniques

***Action Items***

1. Establish minimum standards for development of properties or conservation overlay districts, which contain or adjoin critical areas for the purpose of protecting such areas and enhancing their natural functions

2. Preserve significant scenic road corridors as identified in the currently adopted Town of Zebulon *Open Space and Greenway Master Plan*

3. Enhance ordinance code requirements for individual development proposals to mitigate negative impacts created by the development, particularly to an area identified as an environmentally sensitive area

4. Complete an inventory and identification of wetlands, and strive to achieve no net loss of wetlands, for continued natural water quality safeguards, as development and growth continues

5. Review the existing ordinances for conservation subdivisions, or conservation districts, and clarify or add language to the ordinance to ensure environmentally sensitive areas are protected, impervious areas are reduced and open space areas are preserved

6. Review the Town Zoning Ordinance as it relates to environmentally sound stormwater management practices and consider revising or amending with techniques that allow flexibility in setbacks, lot sizes and parking requirements to reduce impervious areas in efforts to promote passive drainage corridors and improving stormwater quality

7. Review and enhance the Town's Development Ordinance in a manner which requires development plans to minimize impervious surface cover and land disturbance, and maximize the retention of native vegetative cover. Promote design alternatives to:

   - Preserve open space and natural resources
   - Minimize the creation of new impervious area

8. Minimize increases in post-development stormwater runoff peak rate, frequency and volume

## Chapter 5 - Transportation

US Highway 64/264 is a major east-west corridor which sees directional movement at respective peak travel hours. Directional movement indicates a home-place and workplace relationship. Non-directional movement indicates a regional corridor where a majority of people live and work within the same local area.

US Highway 64/264 is significant in the future direction of growth. for Growth east of Raleigh creates a volume of trip demand sufficient to trigger further development. The combination of I-540, US Highway 64 and US Highway 264 creates an ideal crescent-shaped development. Such a relationship has been seen at the Wendell Boulevard and US Highway 64 interchange and the Business 64 and Old Knight Road into Knightdale. In each of these cases, the combined effect of regional east-west movement and directional north-south movement precipitated a combined commercial retail development explosion.

Like its neighbors Wendell and Knightdale, the Town of Zebulon exists at one of these transportation confluences.

The eastward growth from Raleigh has brought the completion of Interstates I-540, US Highway 64 and US Highway 264. These new regional thoroughfares provide direct links into the eastern portions of Wake County with the more developed north including the Research Triangle Park (RTP) and the Raleigh/Durham International Airport (RDU.

Zebulon's Census 2001 population was 4,082 with a median age of 32.8 years. Capital Area Metropolitan Planning Organization (CAMPO) projects population of 15,266 for the Town of Zebulon by year 2030, almost a 400 percent growth rate. The suggestions or recommendation made in this section are solely based on assessment of previous studies and observations made by the Town of Zebulon and by consultants from HSMM of North Carolina, Inc. The data used in this report comes from Zebulon's Multimodal Transportation Plan (2001), Thoroughfare Plan (2001), Capital Improvement Plan (2007-2013), Open Space and Greenway Plan (2004) and the projected growth as forecasted through the cooperative effort between HSMM and Town leaders. It is possible that actual growth patterns will differ from those logically anticipated by the research team. As a result, it may be necessary to accelerate or delay the development of some recommendations found in the Comprehensive Plan. Some parts of the plan may require revisions in order to accommodate unexpected changes in urban development.

The central purpose of strategies and actions described in this chapter is to define the changes that need to be made to move Zebulon away from auto dependency towards a more balanced transportation system that improves mobility and choice for residents. This requires new and innovative responses to today's growing transportation problems. Key concepts include:

- Multi- modal streets and highways that provide safe and efficient mobility for automobiles, transit, bicycles and pedestrians
- Public Transportation and Rail: Develop and maintain a public transportation system that supports inter-modal connection and provides safe, affordable and user-oriented transportation which will promote economic opportunity and development
- Bikeways and Greenways: Develop and maintain a system of safe and efficient bikeways (on-street bike lanes and off-street bike paths within greenways) designed to contribute to Town-wide mobility, connecting neighborhoods with activity centers, schools, parks, and other neighborhoods
- Parking: Develop a Town-wide parking system that recognizes the need for adequate short-term parking while encouraging policies and practices that minimize the long term parking
- Pedestrians: Develop and maintain a pedestrian circulation system, including sidewalks and greenway trails that provide direct, continuous, and safe movement within Town by linking neighborhoods to activity centers, transit stops, schools, parks, and other neighborhoods, and where possible connections to other communities
- Develop and maintain traffic management initiatives such as traffic impact guidelines, improve signal progression, and new traffic calming techniques like roundabouts
- Evaluation methods to measure the existing and future performance of all transportation modes
- Improved traffic impact analysis guidelines that will require a more complete disclosure of the transportation impacts of new developments
- Increase use of local and regional fixed and non-fixed transit, including an expanded park-and-ride system
- Transportation demand management programs that promote alternatives to the use of single-occupancy vehicles

An integrated approach to transportation and land use planning will be a key factor to successful implementation of these concepts. As an example, mixed land-use development is important to foster mixed transportation modes including transit, pedestrians, and bicycles in addition to private vehicles.

Currently, there is an almost continuous stream of large tanker trucks coming north on S. Arendell or NC Highway 96, toward Downtown. The frequency of trucks has been estimated at one every 15 minutes and often multiple trucks in tandem. The strain of truck traffic is great on both the transportation infrastructure and in the cohesion of the downtown; physically, visually, and audibly. The tankers are from a variety of public and private corporations south of Zebulon needing to access the interstate system for distribution

of goods. A comprehensive listing of origination sources is available in the Zebulon Multimodal Transportation Plan, Wilbur Smith Associates, and April 2001.

Finding an adequate solution to the inevitable presence of truck traffic within the Zebulon Planning Jurisdiction is of crucial importance to many factors beyond transportation, including economic development and the general cohesion of the Town. Further studies are necessary to evaluate the logistical feasibility of a truck bypass. An overlapping transportation issue exists between portions of Zebulon in the form of the proposed truck bypass as outlined in the existing Multimodal Transportation Plan.

Public opposition to this location was established during the public input phase of this planning process due disturbance of potential developable areas. Within the southwestern portion of Town, there is very little physical obstruction in terms of available land in which to locate such a bypass. Problems exist, however, as proposed northern portions of the route potentially conflict with the critical watershed of the future Little River Reservoir.

NC Highway 39 could play a significant role in developing an acceptable alternative truck route South of Zebulon near NC Highway 39 and NC Highway 96 the potential exists for truck traffic to bypass Downtown Zebulon yet still access major highways.

The presence of truck traffic along Arendell Avenue as it passes through Downtown is a significant planning issue facing the Town of Zebulon. Potential bypass recommendations have been addressed that deal with possible re-routing to the east and to the west. Once established, heavy enforcement of the truck bypass use would be necessary to curb the l use of Arendell Avenue through the center of Town. For many stakeholders in the public input process, the potential re-routing of truck traffic is a priority for transportation issues.

***Gateways***

Existing entrances into the Town of Zebulon are of great diversity. Some offer a sense of arrival, acting as Gateways into Town, while others offer the feel of a drive through the country side. Other entries into Zebulon are direct accesses from highways or interstates and offer no differentiation from any other small town America.

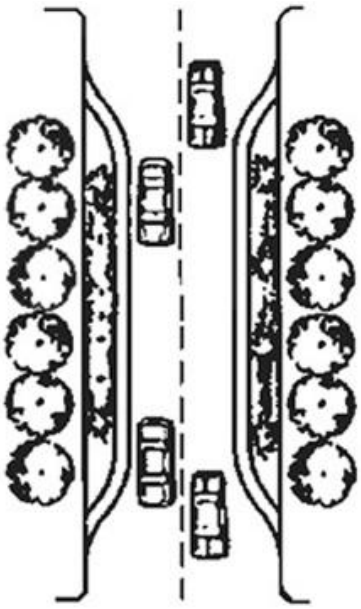
The existing Zebulon Multimodal Transportation Plan addresses the major entries and offers suggestions on how each one may be turned into gateways. Gateways should be used as "Arrival Points" letting one know that they have entered a new entity environment, and should help to emphasize the municipality with a sense of being. Gateways are a major tool for the enhancement of any municipal wayfinding system.

The Multimodal Transportation Plan suggests it is likely that development interests will increase along the Mack Todd Road corridor in the southwest area of Zebulon. Mack Todd Road currently exists as a main entry point, and as such lends itself to the establishment of a gateway. Plans may be generated for enhancement treatments such as a landscaped median.

The main vehicular access point into Town from the north is Arendell Avenue. At the US Highway 64 interchange, Arendell Avenue is another great opportunity for a landscaped median. The median would improve traffic flow and serve as an attractive northern gateway for the community. This enhancement was also recommended in the Multimodal Transportation Plan.

Downtown central business districts can also be enhanced with a Sense of Arrival point. Adding a gateway element to Zebulon's Downtown would function in this respect, as well as providing an improvement to existing traffic flow and an identifying element of the wayfinding system. At the railroad crossing, a median will improve safety by preventing motorists from driving around the gates when they are closed for approaching trains.

***Street Choker – Traffic Calming Device***



Shepard School Road is an important north-south connector between residential areas to the north and to the commercial area to the south. As development increases the regional patterns associated with development disperse housing across the northern landscape of Zebulon. The point of entry into the community should be strengthened and highlighted as a Town Gateway.

The intersection formed by Poplar Street and East Gannon Avenue should be enhanced as well to create a unique sense of place and capture a site specific element of transportation.

***Bikeway Routes***

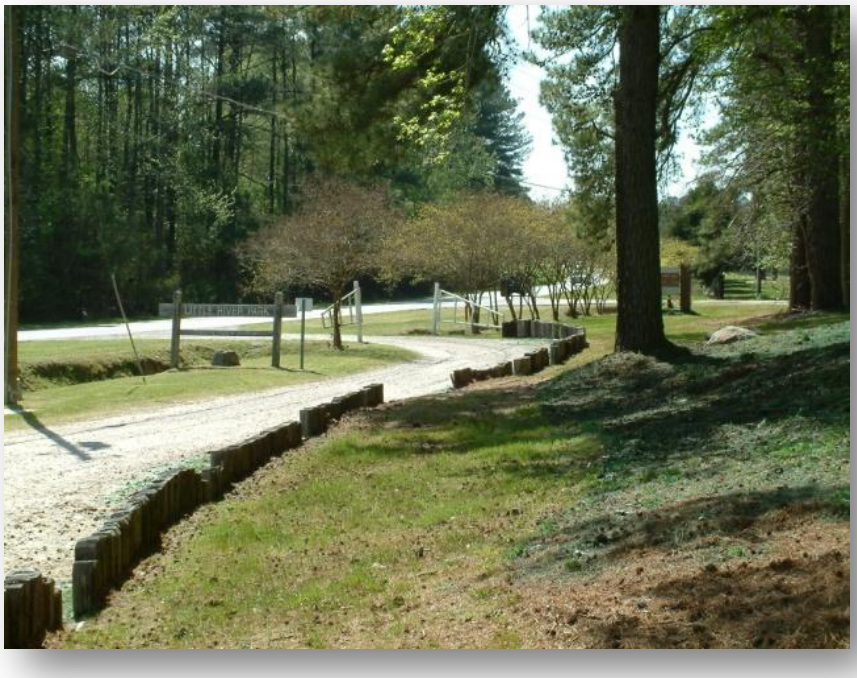
The Town's Multimodal Transportation Plan identifies several bikeway or greenway connectors that would extend beyond the ETJ into areas south and west of the Downtown. The Plan also considers roadways that may be suitable as bicycle routes today and roadways that may be suitable for bikeways once future roadway improvements are made. One example from the Mulitmodal Transportation Plan is Mack Todd Road.

The Multimodal Transportation Plan also identifies a bikeway route along Green Pace Road as it runs south and parallel to US Highway 64/264. This proposed route would be a valuable asset in providing connectivity between areas to the northwest and the North Zebulon portions of Town.

Proposed greenways extend along Beaver Creek, north along Debnam Road and east toward the proposed Moccasin Creek Greenway system. Bike routes would serve to connect the proposed developments to planned commercial areas along NC Highway 97. Efforts should be made to implement the segments of the Open Space and Greenway Master Plan that impact this subject area.

North Poplar Street connects to Shepard School Road on the north, making it a natural extension of the bikeway that extends along this corridor. A wide outside lane facility is planned for this street. This planned bikeway will serve Downtown bike travel demand as well as provide access to bike routes eastward through other sections of Town.

Another proposed bikeway route continues north on Pearces Road extending north from the Wakefield area. A bike route also extends along a portion of Shepard School Road between Beaver Creek and Old Bunn Road. Efforts should be made to implement the elements of the Wendell/Zebulon Open Space & Greenway Master Plan that lie within the North Zebulon areas.



***Greenway Corridors***

Extension of the existing greenway corridors is planned into the Long-Range Urban Service Plan that identifies these areas. These proposed extensions of the greenway corridors would provide valuable connection of development in this southwestern portion of Town with the Downtowns of both Zebulon and Wendell. Linking the two communities by greenways would provide a quality-of-life enhancing amenity for both towns.

A series of greenway and bikeway opportunities were identified in the Open Space & Greenway Master plan that included the Beaver Creek Greenway. This greenway system would serve to link the community of Weaver's Pond subdivision with parts of North Zebulon to the east along Beaver Creek.

A paved off-street bicycle greenway is proposed for this existing railroad corridor. A greenway in this corridor could provide an adventurous pedestrian or cyclist in Zebulon with a link to regional destinations such as Wilson, Wendell, and eventually other parts of the Triangle Area. This proposed route has great potential to enhance the recreational aspects of the planned system of bikeways, greenways, and sidewalks.

Any implementation of a bicycle route along this corridor will require close coordination with and approval from Norfolk Southern Railroad which owns the corridor. The greenway would also need to leave room for implementation of the future Triangle Transit Authority light rail service.

***Zebulon-Wendell Open Space and Greenway Master Plan***

The presence of Little River Park as one of these greenway linkages is a major community asset that provides a great deal of quality of life benefits. Gil Street Park lends the same community asset only on a smaller scale. These benefits extend beyond the local areas around the parks and add service into the greater Zebulon community. Extending to the north and south along the existing drainage systems, the proposed greenway extensions would create a network of connectivity and amenity for the residents of the northwestern portions of Town. The added benefits of creating wildlife habitat as well as preserving existing plant materials and natural resources are positive byproducts of utilizing prominent drainage basins as community greenway facilities. Efforts should be made to provide links into Downtown possibly with a pedestrian emphasis placed on the crossing of West Gannon Avenue at Rotary Drive.

The Open Space and Greenway Master Plan identified multiple connectivity routes that should be implemented where feasibility studies allow. The most significant proposed route noted in the Plan follows the electrical transmission line route through the southwest portion of Town toward Wendell. These linkages serve the valuable function of providing multiple modes of travel within the region. Quality of life issues are also enhanced by these valuable community amenities. The more these sources are added into the Town's community facilities, the more Zebulon will be set apart from other rural towns in Eastern Wake County with distinction as a desirable attractive place of residence and also as a corporate draw into the Town's economic tax base.

***Scenic Roadway Corridors***

The pastoral and rural character of the roads is one of the main attractions to the Town of Zebulon. This attraction is a tremendous driver for new residential developments, and therefore, increased Town tax base. Shepard School Road was identified in the Open Space & Greenway Master Plan as a designated 'Scenic Roadway Corridor'. To preserve the scenic and rural qualities, it will be an important consideration that development does not occur too close to the roadways with this designation and that buffers are provided to allow significant view sheds to remain open.

Not designated by the Open Space & Greenway Master Plan was the potential for Little River Reservoir as an enormous source of scenic corridors and overlooks. This area, and others recommended by the Open Space & Greenway Master Plan should be further studied and incorporated into the existing rural landscape around Zebulon. Any roadway extensions through environmentally sensitive areas should receive the designation of Scenic Roadway Corridor.

***Railroad Tracks***

The historical significance for the origination of the Town of Zebulon has great value to the renovation and redevelopment of the central downtown area as a functioning vital central business district. There are valuable benefits to emphasizing the railroad structures in-place, and possibly surrounding them as a planning theme for the future.

There are four existing at-grade railroad crossings within the Town of Zebulon's jurisdiction. One at the western end of Barbee Street, one at S. Wakefield Street, one crossing at Arendell Avenue, and the fourth crossing at East Horton Street further to the east end of Town. All crossings of the railroad within the Town are somewhat burdened by the at-grade crossing conditions. With the inevitable expanding population of the Town, increased traffic volume may experience congestion with cueing conditions relative to crossing trains. Train traffic is not viewed as a threat to access in terms of frequency of travel by the trains. The southeast portion of Town could potentially benefit from the immediate adjacency of the railroad tracks to the central portion of downtown.

As the railroad tracks leave Town Limits of Zebulon heading eastward, the system follows the US Highway 264 corridor to the south west. This combination of railroad and vehicular transportation systems lends itself to opening this area for the development of light industrial or industrial land uses.

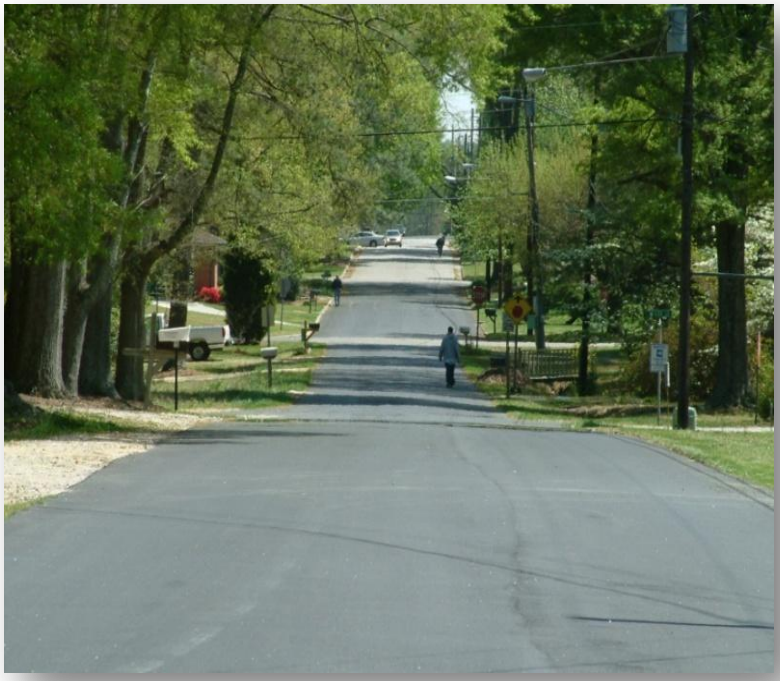
***Light Rail***

A major transportation element under consideration for the planning efforts of the Town is the possibility of a Triangle Transit Authority light rail station in the Downtown. Although viewed in the public planning process as an unlikely short-term prospect, the long term importance for the greater community should not be overlooked. Historically the rail was a significant contributor to quality of life for the early Zebulon community as it should be in Zebulon's future.

This proposed use would provide a major impact for the Town of Zebulon and for Eastern Wake County as it is a primary conduit between the Zebulon, Raleigh, and potentially even to Wilmington.

It would serve to create a significant positive quality of life by allowing an option for commuters to utilize a multi-modal transportation network. Lessening the burden of vehicular traffic on US Highway 64 as traffic travels to and from the City of Raleigh would be a positive byproduct of this progressive transportation movement.

Although funding is not within the forecast currently, the potential of the railroad tracks and the rail system to serve the community in the regional big picture is a tremendous opportunity that should be identified and capitalized upon. The long term impact of a light rail transportation system to the greater Zebulon region would be significant, especially for areas in the southeast or southwest portions. It should be recognized as a potential resource that is unique to Zebulon and an amenity that is not available in every town.



***The Historic Grid***

The historic grid of the Downtown is a positive element that contributes strongly to the sense of community and for quality of life support for the Town. Multiple options for mobility and travel are afforded in this easily understood street development system.

The opportunity for extension of the historic grid road system into the portions of the area adjacent to the existing Downtown would serve to physically and visually link new developments back to the Downtown. A logical framework for new development of higher densities would be provided by this connection and would therefore work in favor of maintaining the grid. The structural pattern of the Downtown dissolves as development moves farther out from the center of Town. A breakpoint of the grid would need to be established and could serve to better transition from the grid into more rural development patterns.

Historic Wakefield is an example asset that provides a variety of mobility options and a comfortable pedestrian scale environment which sets up logical patterns for development to occur. One way of combating congestion from proposed residential developments is to provide more than one point of ingress or egress into the developments. Having only one point of egress in developments of this kind for the number of homes provided is not optimal.

## Issues and Concepts

The interaction of the US Highway 264 eastern corridor with its intersections of NC Highway 97 and NC Highway 39 and the lands associated with them are of critical importance. Planning for these interchanges will serve to influence economic issues in terms of land use for this area. The significance of this corridor to the livelihood of the Downtown should not be overlooked. US Highway 264 at East Gannon Avenue provides a direct portal and important access to the Downtown. The experience that one has while entering the community from this corridor is an important transition from rural landscape to urban Downtown. Public perception will be impacted as imagery of gateways set the tone for the type of community that exists beyond the doorstep of this important threshold for the Town of Zebulon.

The configuration of Old US Highway 264 where it engages East Gannon Avenue near the new Wal-Mart entrance is an area of poor geometric alignment. Efforts should be made to create a more standard 90 degree alignment for this intersection. By swinging the existing roadway to the south at its westernmost point it would actually serve to enlarge the parcels zoned for Highway Business as well as accommodating traffic more effectively.

The NC Highway 39 interchange near Five County Stadium is another significant gateway into the community. Similar to the NC Highway 97/US Highway 264 interchange, it is an important access point to the Zebulon community that must be identified and enhanced. Unifying design elements should be made visible that connect this point of the community to the greater whole. Potential residential areas of northeastern Zebulon will utilize this

interchange as a highway access point. The highway interchange is currently a rural character and could be preserved as such by maintaining significant setbacks and preserving green space alongside the roadways.

Accessibility to the stadium needs to be maintained, preserved and possibly enhanced. The roadway design currently provides the ability to accommodate large volumes of traffic going into and away from the stadium. The ability to provide pedestrian and bicycle scale environments in the vicinity of the stadium and highway interchange should be evaluated and considered as bike routes and greenway trails enter and bisect this corridor. The Five County Stadium is of critical importance to Zebulon and must be capitalized upon as a significant drawing source for new residential and commercial investors and developers.

***The Significance of Major Transportation Corridors***

The real importance of Downtown redevelopment to the future of Zebulon lays in its key connections to NC Highway 97, NC Highway 96, US Highways 64 and 264. Downtown is a district bounded by these important value creating corridors. Although these areas are of great value, focusing on developing the corridors only would cause development to occur at the edges of Town and not bring the desired attention and focus into the Downtown. This sets up two ways of thinking – either focus on developing the outer Town boundaries or focus on inner area functions.The most logical response to this is to develop both areas creating areas that function together. Downtown, however, must be energized from within so that it does not fall by the wayside. Historically the Town of Zebulon grew from the center of the original buildings surrounding the railroad outward. The existing transportation corridors should not become a dominant focus alone but new development should focus on the Town as an entire entity including Downtown. Actions must be taken which create and preserve points of developmental importance that attract further development while generating public rights-of-way linking existing centers of activity and maintain the historical significance of the original Downtown environment.

## Programs and Initiatives

***Implications and Opportunities***

North Carolina's substantially increasing population and continuing economic growth through the 1990s provides an opportunity and challenge to the state for future transportation infrastructure and services. Continuing re-evaluation of the state's approach to surface transportation facilities and services is crucial to meeting increasing demands on the state's transportation system. Focused attention is vital to provide better mobility for isolated rural citizens and make transportation decisions that positively affect the environment and preserve North Carolinian's way of life.

Factors for change pushing traditional highway-based transportation decision making in North Carolina today arise from:

- Federal funding programs that currently are in effect which support substantially larger investments in rural and human-service transportation, urban and regional transit and intercity passenger train service
- Changes in local views about transportation initiatives by community leaders and elected officials, especially in urban areas. With increased support and development of transit, opposition to highway expansion in many areas of the state is no longer uncommon
- Greater realization that that small shifts in the overall state transportation budget could provide substantially more funds for public transportation, even though the highway portion of the budget, at 98 percent, is substantial and likely will continue to be vastly dominant. For example, a shift of only

two percent could provide an additional $45 million each year for investment in transit or high-speed rail

- Major nationwide initiatives to optimize the use of existing highways through technologically advanced intelligent transportation systems and other innovations. Communities across the nation, and in North Carolina, are realizing they can no longer 'build their way' out of traffic congestion by continuing to widen roads. Many areas are considering alternatives to highway expansion
- The degree of collaboration and cooperation in transportation planning, funding and financing is increasing as states share decision making responsibilities with local governments, metropolitan planning organizations and other regional agencies, enabling local communities to have more influence over transportation projects and project selection

These factors of change strongly suggest that North Carolina should continue developing a transportation program which emphasizes achieving the proper balance between highway and public transportation investments as well as their inter-connectivity into residential and commercial developments. There is a current opportunity for highway and transit programs together to support improved land-use planning and decision making throughout North Carolina that will lead to better transportation solutions, more efficient use of tax dollars, and a new era of cooperation and planning for the state in the twenty-first century.

The Town of Zebulon may be under-utilizing the collection of infrastructure monies from developers by way of the General Assembly of North Carolina 1987 Session chapter 668 House Bill 871 Act that allows the Towns of Knightdale and Zebulon to Impose Water and Wastewater Capacity Charges, as well as the possibility of initiating transportation Impact Fees. Currently, there is debate at the Wake County and NCDOT levels over the legitimacy of initiation of transportation impact fee programs for individual municipalities. These Impact Fees if imposed may be based on proposed developments acreage, square footage, or traffic generation rates determined by the Town at the time of site approval or building permit release.

***Funding Practices in North Carolina***

***Grant Programs***

The NCDOT Public Transportation Division is the agency responsible for administering state and federal transportation grant programs in North Carolina. There currently are eight major state and federal grant programs available to local governments and public transportation agencies in North Carolina. Major federal programs include:

- Section 5310 Elderly and Persons with Disabilities Program
- Section 5311 Non-urbanized Area Formula Program for transit in areas with populations smaller than 50,000

*The "section" number for each federal grant refers to its respective authoring legislation within the Intermodal Surface Transportation Efficiency Act, or ISTEA.*

State grant programs include:

- The Rural General Public Program for rural counties
- Rural Capital Program for transit agencies in rural areas
- Human Service Transportation Management Program and
- State Maintenance Assistance Program for urban and small urban areas

***Section 5311 Grant: Non-Urbanized Area Formula Program***

Administered by the Federal Transit Administration, Section 5311 Non-Urbanized Area Formula Program funds can be used for planning, capital, operating and administrative assistance to state agencies, local public bodies, non-profit organizations, Native American organizations and operators of public transportation in non-urbanized areas with populations less than 50,000. Goals of the Section 5311 program are to:

- Enhance access of people in non-urbanized areas to health care, shopping, education, employment, public services and recreation
- Assist in the maintenance, development, improvement and use of public transportation in rural and small-urban areas
- Encourage and facilitate the most efficient use of all federal funds used to provide passenger transportation in non-urbanized areas through the coordination of programs and services
- Assist in the development and support of intercity bus transportation
- Provide for the participation of private transportation providers in non-urbanized transportation to the maximum feasible extent

Applicants for Section 5311 funding must be lead agencies identified by the locally adopted transportation development plan, which also shows local needs, resources and opportunities for coordination. Lead agencies play an important role in coordinating services, implementing plans and submitting grant applications on behalf of other participating local agencies. The number of 5311 recipients in North Carolina varies, but averages about 35 each year.

FTA allocates funds to each state's RTAP by using a formula based on non-urbanized population, beginning with a basic minimum allocation of $50,000 per state and $10,000 per isolated areas. There is no local match funding requirement for federal RTAP funds. Additional RTAP funds are used to support the national program, which produces training materials and operates a national resource center.

***Rural General Public Transportation Grant Program***

Administered by the North Carolina Department of Transportation, Rural General Public, or RGP, funds assist transportation systems that serve the general public in North Carolina's rural areas. The funds are distributed by county and are allocated to eligible counties using a formula approved by the State Board of Transportation. In 1996, 43 counties were eligible to receive RGP funding. RGP funds help increase ridership of public transportation in rural areas by assisting with the operating costs for general-public routes operated by systems that historically have provided transportation only for human-service agency clients.

To be eligible to receive RGP program funds, transportation systems currently must receive Section 5311 funds from the Federal Transit Administration. Section 5311 recipients are categorized as dial-a-ride, or demand-responsive systems. They do not operate fixed routes, and patrons must call ahead to schedule their trip. The Section 5311 systems primarily transport human service agency clients, such as Work First or Smart Start participants.

***Rural Capital Grant Program***

Administered by the North Carolina Department of Transportation, Rural Capital Program funds assist transportation systems that serve the general public and human-service agency clients in North Carolina's rural areas.

To receive Rural Capital Program funds, the lead transportation agency applying for the funds and the capital needs that the funds will be used for must be identified by the locally adopted transportation development plan, which also shows available local resources and opportunities for coordination. Lead agencies play an important role in coordinating services, implementing plans and submitting grant applications on behalf of other participating local agencies. For eligible equipment, Rural Capital Program funds pay 90 percent of cost. Local matching funds must

cover the remaining 10 percent. Rural Capital Program grants are funded 100 percent by the state and are governed by Article 2B of Chapter 136, North Carolina General Statutes.

***Human Service Transportation Management Grant Program***

Administered by the North Carolina Department of Transportation, Human Service Transportation Management, or HSTM, Program funds help provide safe and reliable transportation for human service agency clients. They provide for staff support to help human service transportation systems coordinate transportation services. By using the highest possible levels of coordination between the local transportation systems and human service agencies, the HSTM funds help ensure that human service transportation throughout North Carolina is operated in an efficient and cost-effective manner.

HSTM funds may be used to pay up to 75 percent of the cost, but not exceeding $18,750 annually, for the salary and employee benefits of a full-time transportation coordinator. For counties where a full-time coordinator is not needed such as those with smaller transportation systems or a limited number of human-service agencies, the program will provide for a part-time coordinator instead. Local transportation systems must fund the remaining 25 percent of cost, which can be derived from operating fees charged to human-service agencies or local revenue.

***State Maintenance Assistance Grant Program***

Administered by the North Carolina Department of Transportation, State Maintenance Assistance Program, or SMAP, funds provide assistance to urban and small urban areas with operating costs for fixed-route and dial-a-ride public transportation that are not covered by federal shares. The allocation of SMAP funds cannot be used to match federal funds or as local matching funds for other state funds.

Urban and small urban areas, as defined by the U.S. Census Bureau that operate fixed-route transit systems are eligible to apply.

SMAP funds are allocated to eligible counties in North Carolina based on a formula approved by the State Board of Transportation. By the current formula, 60 percent of the allocation is based on performance, 30 percent is based on local commitment, determined by each transit system's share of total local revenues, and the remaining 10 percent is an equity share that is the same amount for all systems. Eighteen transit systems across the state received SMAP funding in 1996.

A local funding match of 10 percent is required for capital-project uses of SMAP funds. For the matching requirement, local government support to the transit system must equal or exceed the state Fiscal Year 1993 - I Level for each year the SMAP allocation will be used. Due to municipal cutbacks, if the local government will not receive at least the same amount of funding as it received in FY93, NCDOT will consider dispersing the allocation, except for the portion calculated on the basis of local commitment.

## Transportation - Goals, Policies, and Action Items

***Goals***

**Goal 1** Develop a connected and balanced multi-modal transportation network that is safe, economical, ecologically sound, accessible and aesthetically pleasing

**Goal 2** Conduct a parking study to identify parking supply, deficiencies, and future demand based on proposed economic growth

**Goal 3** Provide a multi-use trail system that provides connectivity to sidewalks, trails, and other pedestrian destinations

***Policies***

**Policy 1** Revise the strategies outlined in the existing Zebulon *Multimodal Transportation Plan*

**Policy 2** Require all development and redevelopment proposals to include the provision for interconnectivity, sidewalks and bikeways, where there are none, at the time of application

**Policy 3** Provide safe and attractive streets through traffic calming and channelization devices, appropriate pedestrian and bicycle facilities and improved streetscape design

**Policy 4** Identify all high traffic and pedestrian conflicts and properly construct, sign and light crosswalks at those locations

**Policy 5** Monitor the need for mass transit and bus service in conjunction with growth and development, and communicate with appropriate local, regional, county and state offices any needs change

**Policy 6** Support the development of the Triangle Transit Authority's Regional Rail Project by incorporating possible TTA transit station locations

**Policy 7** Allow shared parking among multiple uses and users, as well as for park & ride lots for future TTA

***Action Items***

1. Implement strategies recommended in Zebulon's adopted *Multimodal Transportation Plan* and Comprehensive Plan that function cooperatively with the long-range plans of agencies such as Capital Area Metropolitan Planning Organization (CAMPO), the North Carolina Department of Transportation (NCDOT), Triangle Transit Authority (TTA), other neighboring municipalities (Raleigh, Wendell and Knightdale) and counties (Nash, Franklin and Johnston), including the Wake County Government

2. Request a Comprehensive Transportation Plan from the NCDOT. Also review and update annually to ensure the Plan is current and meeting the multi-modal needs of the Town and region

3. Develop strategies in coordination with CAMPO, Wake County and NCDOT to improve vehicle-hazardous intersections and roadways within the Town limits. Further study and develop increased performance levels for existing and future intersection needs, and implement signalization and channelization as the studies indicate

4. Develop a Gateway Plan to improve and enhance major entries in the Town, including but not limited to the NC Highway 96, US Highway 64, and NC Highway 97 corridors

5. Develop a Master Streetscape Design Plan to improve and enhance major vehicular corridors

6. Develop and maintain a pedestrian circulation system, including sidewalks and multi-purpose paths that provide direct, continuous, and safe movement within Town by linking neighborhoods to activity centers, transit stops, schools, parks, and other neighborhoods. Update the plan annually and implement throughout the Town through the following steps:

    a. Seek planning assistance from the County and NCDOT to complete sidewalk repair/construction within the Town as well as other pedestrian improvement projects

    b. Amend ordinances to ensure that sidewalks, bikeways, paths, or trails which interconnect to existing pathways will be provided in new developments

    c. Connect existing sidewalks, paths, and trails by obtaining access easements from current residents to allow for those features through their property or street fronts

    e. Research and obtain grants from local, state, and non-profit sources to assist with completion of sidewalk repairs and new sidewalk construction

    d. Encourage walking or biking among citizens by developing programs such as "Safe Routes". Such programs can be encouraged by active participation from Town departments. Research and obtain grants from local, state, federal and non-profit sources to assist with completion of sidewalk repairs and new sidewalk construction

    f. Provide high visibility painted or alternate road surface crosswalks at high traffic pedestrian crossings such as schools

    g. Develop a signing and lighting plan into the wayfinding system for pedestrian friendly corridors within Town Limits

7. Revise the Town ordinances, regulations and policies to reflect traffic management initiatives, access management, parking, and multi-modal transportation plan

8. Develop traffic impact guidelines to enforce right-of-way protection, existing or future roads level of service, traffic signal operations, traffic calming methods and evaluation of alternatives like roundabouts and signal progression

9. Use the development approval process to ensure developers follow the established guidelines to improve the system. Insist on implementing proven traffic calming techniques to make residential areas more pedestrian friendly and safer by reducing vehicular speeds

10. Continue to coordinate with agencies such as TTA, CAMPO, NCDOT and Wake County to present and support mass transit needs at Town and regional level

11. Encourage use of public transportation with park-and-ride lots and ridesharing. Encourage incentive programs at work to use public transportation

12. Develop a parking plan that addresses off-street parking, on-street parking and Downtown public parking. Prepare and maintain parking facility database

13. Develop strategies with local commercial stakeholders to improve parking amenities in the center of Town

14. Develop public outreach and involvement programs to gain input and evaluate projects on an annual basis

## Chapter 6 - Housing & Neighborhoods

The Housing and Neighborhood Element of this Comprehensive Plan provides information on the existing housing stock, and examines the trends in available housing in the Town of Zebulon. The availability of diverse housing opportunities is an important contributing factor for quality of life and successful growth of the Town. The primary source of data for the statistics in this section is the 1990 and 2000 U.S. Census, which provides information on housing types, owner and renter occupancy, housing costs, and dates structures were built.

Results from the U.S. Census 2000 identify 1,661 total housing units within the Town limits. The mix of owner versus renter occupied units is approximately 60 percent to 40 percent, respectively. This mix has remained relatively constant since 1990, somewhat attributed to the increasing price of home ownership, a growing trend throughout Wake County according to the Wake County Community Assessment of 2006. The median value of the existing housing stock in 2000 was $104,709, while the median household income was $36,250 as the Census indicates.

The most significant amount of growth in housing construction has occurred between March 2000 and the present, with 47 percent of housing built in that time period. This growth has almost surpassed local housing construction. Although this growth is significant, the Town residents are still interested in increasing housing diversity and values of available housing stock within their housing market.

The small congregation of residential structures along Barbee Street adjacent to the railroad tracks continues the pattern of the historic Downtown grid. Of primary importance to the existing neighborhoods in the historic core is the provision of direct links from the neighborhoods to the highway business areas. The provision of quality pedestrian connectivity would greatly enhance the quality of life for the residents of these neighborhoods. The historic pattern of development creates a distinct variety and mix of housing options in the Downtown area. Homeowners in older established neighborhoods have created a visible sense of pride in ownership and sense of community.

Most of the current developments in the outlying areas of Town occurred as low-density residential subdivisions with curvilinear streets and cul-de-sacs., This provide a less connected street pattern, and less inter-neighborhood interaction. This pattern of development, also known as leap frog development has created a sprawl-like environment

The predominance of new development that is occurring is substantial and contains one of the largest land holdings of additional housing growth and new tax base for the Town. Set in the middle of the housing boom surrounding north Zebulon is the Historic Wakefield section of existing homes. These homes and farms which have a significant heritage to the historic community are becoming available for purchase and development. There are large tracts of land available for future residential projects. The area between Shepard School Road and US Highway 64 has a large amount of land that could serve a number of residential, public, or open space land uses. Development in this area must be balanced between open space and rural character with the densities sensitive to environmental concerns. Conflicts exist for housing projects of larger sizes with the numerous waterways contributing to the Little River Reservoir water supply watershed.

## Issues and Concepts

***Proximity to Community Facilities & Work Environments***

The proximity of housing and neighborhoods to existing and potential future work environments both in the Downtown and along future industrial zones would provide another important quality of life issue for residents by decreasing driving times to and from points of employment. Higher density multifamily housing may be possible in ways that are architecturally relevant to the rural character and have the ability to provide buffering from both the industrial and highway business areas to the Downtown. Such housing will serve as a sustainable function of providing housing within a walkable distance from proposed commercial and industrial uses, allowing future workers the ability to live and work in close proximity.

Another positive attribute for providing higher density downtown developments would be a close proximity to community facilities and to Zebulon Community Park. Providing a mix of housing that meets the needs of a variety of residential types and serves the purpose of creating walkable communities would encourage future corporate relocation into the area as well. The East Gannon/Shepard School Road commercial district near the intersection of NC Highway 96 and NC Highway 97 would be a candidate for this type of development. It is important that any proposed future housing developments maintain a high level of connectivity between other developments and to public and private amenities. The proposed Wendell-Zebulon Greenway Connector would provide a valuable resource in providing these inter-connections between home, work, and activity.

A concentration of higher density developments exist in a portion of southwestern Zebulon immediately adjacent to the Downtown on Primrose Place. The feasibility of providing higher density uses within areas already served by public infrastructure such as roads, water, and sewer is high. The current R-13 zoning in the portion within the ETJ

between S. Arendell and Wakefield would indicate the likelihood of having increased a diversity of development densities, including urban residential type housing. Several existing R-10 zoning areas would also serve the possibility of providing additional higher density land uses.

The precedent has already been established for higher density housing projects of this kind within the Town limits along Pony Road. Higher density developments adjacent to existing ones should be encouraged as part of the Town's long term planning. The Wakelon Townhome project is well designed and incorporates a high density arrangement of townhomes on a relatively small parcel of land. At its outset it provided an untested housing product for the Zebulon market but has proven to be successful.

The densities afforded by this type of development have several positive characteristics including concentration of multi-families, integration into a tight knit community, and walkability to commercial district including a library and Downtown activities. Several parcels in the Historic Wakefield area would be potential candidates for similar high-density types of development. They could serve as examples of sustainable or environmentally sensitive conservation principals.

***Mixed Use***

Mixed use or higher density projects include commercial, retail, office, and residential uses exists elsewhere within Zebulon's planning jurisdiction including Downtown. Mixed use Development depends on the extent of acreage and the ability to integrate with historical districts and highway and utility corridors. The success of this development type would depend on the ability to inter-connect with the adjacent land uses in a way that enhances quality of life issues such as buffering noise and reducing traffic congestion.

In the Downtown area, the use of infill development should encourage a mix of housing options. The creation of second story living quarters above commercial or retail ground floor uses for infill projects should be encouraged and would add the needed economic draw for revitalization. Incorporation of housing diversity is important in providing the critical mass of residents that would maintain the presence of vitality and activity in the area.

***Regional Form for Future Development***

Over the past decade a significant number of custom home subdivisions have sprouted up across the north Zebulon landscape. Housing developments laid out primarily with patterns of regional form abandon the historic street grid pattern as well as provide very limited connectivity between developments. Developments of this regional form not designed with the overall Zebulon community in mind should be heavily discouraged. One such development is Laurel Leaf where the use of multiple cul-de-sacs creates sole points of access at entry gateways Emphasis is now placed on connecting newer developments to Downtown and other t amenities Custom home developments have emerged in recent years adding to the distinction of residential value. Developments such as Tippet Creek, Brookfield, and Wakefield Meadows have identified this section of Zebulon as a resource for a large custom home community. Many of these developments have incorporated a standard pattern and characteristic which maintains a farm-land character for these high-end homes. These development characteristics include:

- No curb and gutter along road systems
- Minimal or no solid rear yard fencing
- Winding streets with fewer cul-de-sacs
- Preservation of existing topography and environment
- Preservation of existing topography and environment
- Living screen edges

The Town should formulate residential development guidelines which preserve the inherent qualities of the existing rural landscape while still providing for development. Developments should keep in mind the environmental aspects of the landscape such as protected watershed critical areas and remaining stands of forested lands.

The lack of solid fencing in much of these residential developments is an important perception in the quality of rural residential areas. Here it seems that property lines are less important than the sense of open space associated with country living. The reason people move to Zebulon is the quality of life afforded them.

Isolating and detaching the main roadway from the housing units will keep these secluded country lanes with a contemplative character distant from a built out frontage. Some current residential projects are preserving that separation by maintaining a spatial edge around the development project which does not crowd the roadway. Loss of this green distance between built environment and road would significantly diminish the rural character so attractive to residential development. Further residential development must maintain a sort of spatial separation between the rural road system, the internal road system and the built fabric which fronts the internal road system. Town standards should be established for these green distances or buffers either within a Scenic Corridors document or within the Conservation Subdivision Ordinance.

## Programs and Initiatives

The U.S. Green Building Council has developed a rating system for neighborhood location and design that emphasizes connectivity, preservation of ecologically sensitive areas, and green building principles. These are technically termed sustainable development principles. The Town of Zebulon should initiate a voluntary program encouraging developers to utilize this rating system in designing their communities. Utilizing sustainable practices such as preserving and conserving natural resources as outlined in the Leadership in Energy and Environmental Design (LEED) Neighborhood Standards can provide long term positive impacts for Zebulon including:

- revitalizing existing urban areas
- reducing land consumption
- preserving natural resources
- reducing automobile dependence
- promoting pedestrian and bicycle activity
- improving air quality
- decreasing stormwater runoff pollutions
- encouraging more livable, sustainable, communities for people of all income levels (Pilot Version, LEED for Neighborhood Development Rating System, 2007)

***Neighborhood Preservation***

The existing neighborhoods in the areas surrounding downtown Zebulon, particularly older and historic ones, are an important part of the community fabric. These neighborhoods define the character and history of Zebulon. In Zebulon's Downtown area, the housing stock currently consists of single family detached units, with a few multi-family units. A number of vacant properties with no structure, or properties with deteriorated structures, interrupt the cohesiveness of the neighborhood, particularly among those properties designated as historic. This is most prevalent along Arendell Avenue, Vance, Sycamore and Gannon Streets.

The opportunity exists for Zebulon to safeguard the Town's heritage by preserving historic properties and neighborhoods while encouraging infill development and enhancing existing properties. A well-planned redevelopment or improvement strategy for the residential areas which surround the Downtown can save on infrastructure investments in outlying areas, enhance community pride, and encourages further investment in downtown, creating full life-cycle housing opportunities for all ages within the community. Consideration of alternative zoning ordinances such as historic and other overlay districts can accommodate renovation needs of historic and aging structures, as well as the providing flexibility within the zoning code for mixed use and live-above-work units. Having these recommendations such as an historical overlay district within this Comprehensive Plan allows the ability of the Town to apply for state and federal funding of these items within all sections of the Comprehensive Plan.

***Infill Projects***

Infill projects, or new development inter-mixed with existing, should be encouraged. Potential sites within the Town should be evaluated for possibilities of higher density and mixed-use types of development and plans should be made for their incorporation. A priority should be given to infill developments that encompass areas near existing commercial zones. These areas would be best served by taking advantage of the mixed use and connectivity opportunities as well as the existing utility infrastructure already in place. Infill projects may also meet a need of an aging population that experiences mobility challenges such as alternative housing for the elderly. The widespread existence of utility services within the northwestern portion within Zebulon's ETJ will allow for a wide range of infill opportunities.

The neighborhoods surrounding Downtown Zebulon can be considered an opportunity for infill development because of the existing stable community that has been fully built-out in some areas with vacant or underutilized property scattered throughout. These neighborhoods have established infrastructure and commercial amenities within walking distance as well as direct access into Downtown activities.

***North Carolina Housing Finance Agency***

The North Carolina Housing Finance Agency provides financing to local governments and nonprofit organizations to build or rehabilitate affordable housing for low-wealth North Carolinians. The Agency's mission is to create affordable housing opportunities for North Carolinians whose needs are not met by their income within the local market. Since its creation in 1973 by the General Assembly, the Agency has financed nearly than 176,000 affordable homes and apartments, totaling more than $10 billion.

The Agency provides financing through the sale of tax-exempt bonds and management of federal and state tax credit programs, the federal HOME Program, the state Housing Trust Fund, and other programs.

***Homeownership Production Programs***

Nonprofits and government agencies bring affordable homeownership developments into the community through N.C. Housing Finance Agency programs that provide deferred, interest-free second mortgages, assist self-help organizations in building homes, and encourage high standards of energy efficiency in home construction.

***New Homes Loan Pool***

The North Carolina Housing Finance Agency's New Homes Loan Pool is available to nonprofit and government organizations that select and prepare home buyers, coordinate financing assistance for buyers, and either develop affordable homes or partner with local builders.

"New Homes" provides gap financing through deferred, interest-free second mortgages of up to $20,000 per home. The assistance is targeted to home buyers with incomes below 80 percent of the area median income.

Home buyers who borrow through the New Homes Loan Pool must complete a home buyer education course, and most must receive one-on-one homeownership counseling. Loan Pool Members can either offer the education themselves or partner with a counseling organization in the community. For information on training for counselors, go to Workshops and Technical Assistance as the following website:

http://www.nchfa.com/Nonprofits/RRworkshops.aspx

***Self-Help Loan Pool***

The Self-Help Loan Pool assists self-help housing organizations, such as Habitat for Humanity, to build homes for their clients.

Home buyers who borrow through the Self-Help Loan Pool must complete housing counseling. Loan Pool members can either offer the counseling themselves or partner with a counseling organization in the community.

***IDA Partnership Program***

The IDA Partnership Program provides interest-free, deferred second mortgages up to $15,000 for qualified participants in the North Carolina Department of Labor's Individual Development Account Program. Local nonprofits and governments are eligible to participate.

By participating in a systematic savings program, IDA home buyers become eligible for an interest-free second mortgage from the North Carolina Housing Finance Agency that reduces their monthly payments. No payments or principal are due until the home is sold. In addition, buyers in this program may be eligible for the Agency's low-interest FirstHome Mortgage.

***Mortgage Revenue Bond Program***

Mortgage Revenue Bonds (MRBs) are sold by the North Carolina Housing Finance Agency to finance low-interest mortgages for first-time home buyers with moderate and low incomes. Congress has authorized each state to sell tax-exempt Private Activity Bonds, up to $75 per capita, to provide financing for low-interest mortgages, industrial development, student loans, and other public uses. Mortgage Revenue Bonds fall under this authorization.

A typical MRB mortgage saves as much as $100 a month over market-rate mortgages, resulting in a savings of nearly $40,000 over the life of the loan. In North Carolina, MRB mortgages have made it possible for more than 73,000 lower-income families to purchase their first home. Nationwide, more than 2.4 million have benefited.

A household earning the median income for their county cannot afford the average home price in 16 of the 17 multiple listing service (MLS) areas tracked by the N.C. Association of Realtors.

### *HOME Investments Partnership (HOME) Program*

The HOME Investments Partnership Program (HOME Program) provides a federal block grant, based on population and housing needs, to state and local Participating Jurisdictions. The funds can be used to finance the acquisition, construction and rehabilitation of affordable housing, down payment assistance, and rent subsidies. Participating Jurisdictions receive 60 percent of the HOME funds and states receive 40 percent.

The North Carolina Housing Finance Agency administers the state's share of HOME Program funds to finance affordable housing in partnership with local governments, nonprofit organizations and for-profit developers. The North Carolina General Assembly annually appropriates a portion of the 25 percent matching funds required to receive the federal funds.

#### *Low-Income Tax Credit Program*

The Federal Low-Income Housing Tax Credit (Housing Credit) was authorized by Congress in 1986 to encourage the construction and rehabilitation of quality rental housing that is affordable for low-income families and elderly persons. In 2007, each state may allocate $1.95 of tax credits per capita, giving North Carolina an annual allocation of approximately $17 million.

Owners of Housing Credit properties agree to maintain the units as affordable housing for 15 to 30 years, in return for federal tax credits that offset part of the cost of developing the housing. Housing Credits finance virtually all the privately owned, affordable rental housing being built in the United States.

#### *State Housing Credit*

The State Housing Credit was created by the N.C. General Assembly in 1999 to be used in combination with the federal Low-Income Housing Tax Credit (Housing Credit). The purpose was to promote the development of privately owned, affordable apartments for lower income families and the elderly. In counties with higher median incomes, the State Housing Credit enables owners to offer rents that are affordable to households at 30 percent, 40 percent or 50 percent of median income, as compared with the federal Housing Credit income targeting at 60 percent of median income.

The N.C. Housing Finance Agency annually evaluates proposals for affordable rental developments seeking federal Housing Credits. Developments that receive federal Housing Credits are eligible for the State Housing Credit, as long as they meet the state credit income targeting requirements for the county in which the property is to be located.

#### *North Carolina Housing Trust Fund*

The Housing Trust Fund is North Carolina's only state-funded and state-designed resource for financing affordable housing. It was created by the General Assembly and is managed by the North Carolina Housing Finance Agency, a self-supporting public agency. The N.C. Housing Finance Agency pays all of the Trust Fund's administrative costs. All money appropriated by the General Assembly goes directly into home construction.

## Housing & Neighborhood - Goals, Policies, and Action Items

***Goals***

**Goal 1** Achieve a variety of housing types, designs and densities in both older neighborhoods and newly developing areas to meet the needs of all income levels and age groups

**Goal 2** Encourage the organization and enhancement of new and existing neighborhoods to support pedestrian and bicycle connectivity to community destinations in efforts to enhance quality of life and overall well-being of the residents of Zebulon

**Goal 3** Adopt regulatory provisions which emphasize low impact development techniques for infill and new housing development

***Policies***

**Policy 1** Evaluate and monitor the need and location for alternative housing choices such as townhomes, condos, duplex units and support services for all residents including the aging population

**Policy 2** Implement the strategies outlined in the *Open Space & Greenway Master Plan* and the *Multimodal Transportation Plan* that enhance the connectivity between neighborhoods and link the neighborhoods to community services and facilities

**Policy 3** Assess the need for a safe routes to school programs as a mechanism to establish pedestrian and bicycle connectivity between neighborhoods and schools

**Policy 4** Encourage housing and community design which utilizes innovative stormwater management techniques to enhance neighborhood appearance as well as improve stormwater quality such as rain gardens, bio-retention swales, and other ecological features

***Action Items***

1. Develop requirements for the interconnectivity between neighborhoods for vehicular, pedestrian and bicycle traffic
2. Develop standards and requirements for the design of streets, sidewalks and utilities to ensure safe, accessible, and convenient pedestrian and bicycle facilities
3. Examine current development standards and codes to ensure provisions encourage infill and redevelopment of historic, vacant, or otherwise underutilized parcels
4. Encourage mixed-use development within the Downtown that provides residential units as well as compatible retail and commercial uses
5. Explore the use of traffic calming techniques in new and existing neighborhoods to improve the safety of pedestrian and bicycle environments
6. Examine current signage ordinance to ensure standards maintain a balance between the need for adequate identification and communication and the desire for an attractive appearance in the community, particularly related to pedestrian way finding, and bicycle routes within and between neighborhoods

7. Nominate and designate all known historic resources which meet designation criteria for historic landmarks, historic districts or conservation districts

8. In the review process for proposed developments, address the historic context in which a property may exist, especially with regard to scale and neighborhood compatibility

9. Encourage residential developers to practice voluntary Green Building Standards.

# Chapter 7 - Community Facilities

***The Armory Renovation & Zebulon Community Park***

The renovation of the existing Armory into the new Zebulon Community Activity Center provides a major aspect of the Town's forward looking planning and an opportunity for community gathering and civic functions. This development could create a sense of civic pride.The site plan and architectural elements for the new Community Activity Center should respect the historic heritage

of the old Armory through artistic interpretations of the purpose the facility originally provided.. The need to create an updated and modern approach to providing community outreach facilities would greatly enhance the new facility. Programming activities should occur as community involvement directs to enrich the all cultural aspects of the Town. The Community Activity Center itself and its proximity to the adjacent Zebulon Community Park should become an important asset to the future of Zebulon. Linking these two elements together with greenways and bikeways would provide valuable benefits to the community now an in the future.

The Zebulon Community Park is an asset and amenity for the entire greater Zebulon community. Extension of the park and preservation of the surrounding natural resources would provide opportunity for woodland learning facilities and provide valuable increased wildlife habitat. Walking and mountain biking trails are provided within this area of the park and advance interconnectivity into the surrounding parts of Town.

***Zebulon's Schools***

The existing school facilities are Zebulon Gifted and Talented Magnet Middle, East Wake Academy Charter, Zebulon Elementary Gifted and Talented Magnet, Wakelon Elementary, and Heritage Baptist Academy. Providing better pedestrian and vehicular linkages between existing neighborhoods to schools is always of concern. Safe Routes should be established and patrolled

along pedestrian connections between neighborhoods and the schools. These are a great potential source for community involvement into the planning processes.

The new Wakelon Elementary School serves as an important cultural amenity for community functions and public gatherings. In general the schools should be envisioned as prominent influential factors to cultivate knowledge and the cultural arts.

***Existing Town Hall & Post office***

The existing buildings that serve municipal administrative functions for community facilities are the existing Town Hall and Council Chambers buildings. With the relocation of the Town Hall Campus at the renovated historic Wakelon High School property, the vacant old Town Hall buildings soon will become available for redevelopment. The existing post office has been discussed and evaluated in terms of enlargement. The Town had been in discussion with the Post Office personnel working toward acquiring a larger facility to meet the growing needs of Zebulon and the surrounding communities that utilize the Zebulon Post Office. The post office has served the needs of the community since it opened in 1963. Forty plus years of continued community growth have driven the need to explore options for enlargement of the existing facility and the creation of a branch office. Determination for the future needs should be evaluated as populations continue to grow in the community.

Another amenity in this zone is the Zebulon Public Library. The new library facility is a cultural resource that serves the function of informing and uniting the greater Zebulon community. Its impact in the immediate vicinity of Historic Wakefield should be noted for its influence as an attractor for higher density residential development. It provides a valuable resource that attracts development and public pride. Efforts should be made to provide pedestrian and bicycle connections to the residential areas surrounding it. The US Highway 64 corridor creates a distinct barrier for access to this amenity from the majority of land share of Zebulon residents to the south. A direct pedestrian access to the library should be provided to Shepard School Road for use by residents south of US Highway 64.

***Historical Sites***

The significant historical sites of which there are many in the Town of Zebulon and the historic Wakefield area should be identified and preserved for benefits to future generations yet to come. Where possible, efforts should be made to transfer ownership of significant historical sites into public trust for inclusion into the Parks system or as part of the community library system. Where these historical sites are not yet eligible for the National Historic Register preservation of these local historic sites does more than simply save a parcel of land, it also provides reflection to the past that is so easily forgotten. A connection to the past serves as a quality of life benefit of connecting and rooting the past with the present and future. Further efforts such as inventory and categorical listing should be conducted to ensure that significant properties are identified and preserved for possible transition into the public realm for the benefit of future generations.

Whitley Park was the first park for the Town of Zebulon. Formed in1952 the park was created by labor donated from within the community. The construction of the park could serve as a model for how additional public works projects could be achieved through the use of community citizens. For example, the creation of portions of trails and greenways could utilize voluntary community labor.

Future developments within Zebulon would likely generate a need for an increased level of community service in the form of community parks. Larger parks that provide a variety of recreation functions including both active and passive would provide the positive quality of life resources that benefit the community. Future parks may be added into the system by the use of the National Parks Service Recreation, Park and Open Space Standards and Guidelines, as one example. Future developments that consume a larger land mass could be required by the Development Code and the permitting process to provide a community amenity that would serve a larger population beyond the project limits.

***Five County Stadium***

The dominant community facility for the east highway corridor is the Five County Stadium. It serves as a regional entertainment draw for users in Wake and the surrounding counties. The Mudcats baseball team organization is viewed as a positive contributor to quality of life for the community and a draw for attracting new residents.

Although the economic impact of the Stadium facility for the town of Zebulon is positive, its contribution to

spurring additional entertainment type development has not been fully developed. Its remote destination along NC Highway 39 creates a level of isolation that has not generated a significant interest among developers seeking to add to the mix of entertainment type facilities. The mass of crowds assembled for an event at the stadium come into area and then exit the area the same way they came. Expanding this area to incorporate more Zebulon ETJ should be heavily considered. Providing additional entertainment associated land uses in the NC Highway 39 and US Highway 264 area would seem a worthwhile option to consider.

The stadium itself would benefit from an overall site master plan that addressed vehicular circulation, pedestrian circulation and overall landscape and site image upgrade. The experience of a patron entering the facility from the highway overpass area is extremely utilitarian. It serves the function of getting cars from point A to point B but does not fully address convenience issues such as the pedestrian experience outside the gates.

**Other possible significant historic properties within the Town of Zebulon include:**

- Underhill Horton House
- The Midway School
- Bell tenant house
- Joseph Fields house
- Eric. F. Davis Armory
- B.M and Furney Alford Store
- Billy Cone Store
- S.G. Flowers Store
- Todd Hotel
- William Brentley Store
- J.C. Jeffries Store
- N. B. Finch & Company
- Zebulon Supply Company
- Perry Bldg.
- First Blacksmith Shop
- Whitley Hotel
- Whitley Gallery
- Whitley Livery Stables
- Zebulon Hosiery Mill
- Zebulon Cotton Oil Mill
- McGuires Warehouse
- Wiggs Warehouse
- Center Brick Warehouse
- Farmers Warehouse
- Town Well
- Original site of Zebulon Baptist Church
- Wendell-Zebulon Hospital
- Free Will Baptist Church
- Mt. Zion Holiness Church
- Zebulon First Baptist Church
- Seymore Chamblee house
- Municipal Light and Power Plant
- Bank of Zebulon - 100 N. Arendell Ave.
- Avon Kemp Store
- Citizens Bank, 116 N. Arendell Ave.
- Caviness Bldg. 118-122 N. Arendell Ave
- John Bunn Store, 124 N. Arendell Ave.
- Whitley Bldg, 130 N. Arendell Ave., and the Railroad Station at Arendell Avenue and the tracks

***New Municipal Complex***

The new Municipal Complex at the Old Wakelon School fulfills an important need of the Town Administration operations by expanding its facility space and capacities. The reuse of this beautiful architectural facility will serve to provide the means for guiding the continued growth and development of the Zebulon Planning Jurisdiction.

The building has a significant historic past as the Old Wakelon High School. Its history as a valuable resource for potential educational purposes should be celebrated and recognition be given to its historical social significance in the community.

The historic Zebulon Community Library building currently houses the Town Board Chambers. Once the Town Hall and Town Board Chambers are relocated into the new Municipal Complex this historic building will be up for sale for new investors to renovate or re-develop.

***The Proposed Fire Station***

The proposed fire station to be constructed on Green Pace Road will be a significant community facility addition for the northern Zebulon area. This service will extend safety and welfare to a greater range of the community. The need for such expansion is made necessary by the sizable extent of residential development that is occurring in this area. Opportunities exist for this facility to provide public outreach for the advancement of life-safety knowledge throughout the community.

## Programs and Initiatives

***Rural Development Housing & Community Facilities Programs***

Community Programs, a division of the Housing and Community Facilities Programs, is part of the United States Department of Agriculture's Rural Development mission area. Community Programs administers programs designed to develop essential community facilities for public use in rural areas. These facilities include schools, libraries, childcare, hospitals, medical clinics, assisted living facilities, fire and rescue stations, police stations, community centers, public buildings and transportation. Through its Community Programs, the Department of Agriculture is striving to ensure that such facilities are readily available to all rural communities. Community Programs utilizes three flexible financial tools to achieve this goal: Community Facilities Guaranteed Loan Program, Community Facilities Direct Loan Program, and Community Facilities Grant Program.

***Community Facilities Guaranteed Loan Program***

USDA Rural Development, USDA or RD, provides a credit enhancement to help finance community facilities in rural areas. Through the Community Facilities Guaranteed Loan Program, RD guarantees up to 90 percent of loss of principal and interest on loans and bonds made to develop or improve essential community facilities in rural areas. A broad range of community facilities are eligible for guaranteed loans. These include, but are not limited to, community health services, health clinics, assisted-living facilities, hospitals, nursing homes, and medical and vocational rehabilitation centers; fire, rescue, and public-safety facilities such as police cars, fire trucks, communication centers, and police stations; educational and cultural facilities such as schools, libraries, art museums, and theaters; transportation facilities such as airports, municipal garages, street improvements, rail, or bus service; community support services such as child or adult day care and business incubators; and public buildings and improvements including community and multipurpose centers.

The guaranteed portion of the Loan Program is backed by the full faith and credit of the U.S. government and can be sold on the secondary market. An Assignment of Guarantee, representing the guaranteed portion is issued by the Rural Housing Service of USDA Rural Development; and the agency pays all principal and interest in the event of a loss. The non-guaranteed portion absorbs the loss, if any. Overall, USDA guarantees up to 9 percent of any loss of principal or interest. The guarantee fee is 1 percent of the guaranteed portion of the loan and is paid by the Lender of Record, or may be passed on to the borrower.

***Community Facilities Direct Loan Program***

Loan funds may be used to construct, enlarge, or improve community facilities for health care, public safety, and public services. This can include costs to acquire land needed for a facility, pay necessary professional fees, and purchase equipment required for its operation.

Refinancing existing debts may be considered an eligible direct or guaranteed loan purpose if the debt being refinanced is a secondary part of the loan, is associated with the project facility, and if the applicant's creditors are unwilling to extend or modify terms in order for the new loan to be feasible.

Community Programs can make and guarantee loans to develop essential community facilities in rural areas and towns of up to 20,000 in population. Loans and guarantees are available to public entities such as municipalities, counties, and special-purpose districts, as well as to non-profit corporations and tribal governments.

Applicants must have the legal authority to borrow and repay loans, to pledge security for loans, and to construct, operate, and maintain the facilities. They must also be financially sound and able to organize and manage the facility effectively.

***Community Facilities Grant Program***

Grant funds may be used to assist in the development of essential community facilities. Grant funds can be used to construct, enlarge, or improve community facilities for health care, public safety, and community and public services. This can include the purchase of equipment required for a facility's operation. A grant may be made in combination with other CF financial assistance such as a direct or guaranteed loan, applicant contributions, or loans and grants from other sources.

The Community Facilities Grant Program is typically used to fund projects under special initiatives, such as Native American community development efforts; child care centers linked with the Federal government's Welfare-to-Work initiative; Federally-designated Enterprise and Champion Communities, and the Northwest Economic Adjustment Initiative area.

**Contact Information:**

North Carolina State Rural Development Office
State Director, Rural Development

4405 Bland Road
Raleigh, North Carolina 27609
919-873-2000
919-873-2075(FAX)

## Community Facilities - Goals, Policies, and Action Items

***Goals***

**Goal 1** Provide facilities and programs to address existing and anticipated community needs

**Goal 2** Study services such as police, fire, emergency and healthcare. Continue to ensure that the Town of Zebulon is a safe community by meeting or exceeding recognized standards for public safety

**Goal 3** Locate and maintain public facilities and community services in order to provide the highest level of service, accessibility, and multi-functional use opportunities

**Goal 4** Parks & Recreation Community Centers, Social Assistance Programs and Public Open Spaces - Provide safe, clean, usable, and attractive public facilities which enhance the quality of life for Zebulon citizens of all ages, characteristics, needs and interests

**Goal 5** Connect public facilities and amenities to the community through the development of a pedestrian and bicycle network throughout the Town of Zebulon and within the greater region where possible

***Policies***

**Policy 1** Evaluate the availability and capacity of community services (e.g., educational, social) and identify needs for expansion

**Policy 2** Ensure that new development occurs first in areas where existing services and facilities can be most effectively and efficiently provided (Promote In-Fill Development)

**Policy 3** Explore the possibilities of co-locating community facilities to maximize operating efficiencies and avoid redundancies

**Policy 4** Efficiently utilize existing public facilities (via adaptive re-use or shared facilities) for multi-functional activities and uses

**Policy 5** Ensure facilities are maintained in a manner which supports the provision of the highest quality level of service

**Policy 6** Create balance and accessibility for all types of parks (active and passive recreation), and community facilities through appropriate design and with amenities that appeal to all ages

**Policy 7** Fully implement the recommendations of the *Open Space & Greenway Master Plan* and the *Multimodal Transportation Plan*

***Action Items:***

**1.** Determine the market need and capacity for a local urgent care center within the Town limits in a highly accessible and central location for all Zebulon residents and emergency services

**2.** Determine the market need and capacity for high quality independent care, assisted living, and skilled nursing healthcare facilities and services to accommodate projected demographic trends in the aging population

**3.** Identify areas of anticipated growth and select appropriate locations for future Emergency Services, Police, and Fire facilities based on development density

**4.** Continue to improve and maintain fire-fighting capabilities for the Town of Zebulon

**5.** Continue to locate new facilities for Emergency Services, Police, and Fire in areas that are highly visible and accessed by existing roadways. Explore the feasibility of co-locating police and fire services to supplement the existing facilities

**6.** Continue to assess the market need and capacity for community services (library, post office) and develop a plan to pursue expansion of these services as the market need changes

**7.** Continue Community Policing Program in both developing and existing neighborhoods as well as in downtown Zebulon

**8**. Continue to implement the recommendations found in the Open Space and Greenway Master Plan (2001)

**9.** Ensure pedestrian and bicycle access to all parks and public open space through greenways and other multi-use paths

**10**. Ensure the new Community Activity Center, located in the old Armory, is easily accessed via multiple modes of transportation by all community members

**11**. Identify facilities that are in need of repair or replacement and revise or establish a maintenance and replacement program

**12.** Establish a lifecycle maintenance improvement plan for parks and recreation facilities

**13.** Work with residents and property owners to identify and document areas where historic properties exist or sites which represent a significant connection to Zebulon's heritage

**14.** Develop or adopt a rehabilitation code to address code issues for all existing structures and include a historic building component, such as the Nationally Applicable Recommended Rehabilitation Provisions published by U.S. Department of Housing and Urban Development or the Uniform Code for Building Conservation

**15.** Explore the use of density bonuses, impact fees or other revenue generating techniques to help subsidize the creation and maintenance of civic space, greenway trails, pedestrian and bicycle corridors

## Chapter 8 - Utilities

On October 2, 2006 Zebulon transferred ownership of all water, sewer, and reclaimed water utility systems to the City of Raleigh. With this new utility relationship the City of Raleigh became the entity singularly responsible for the operation and maintenance of the three systems. Hence, the Town's hands are, to a certain degree, tied concerning issues of utility extension and placement. The Town may only give recommendations but all operational decisions come through the City of Raleigh Engineering and Utility Departments. Therefore, material in this section of the Comprehensive Plan should be considered in that light.

The extension of utilities from the existing infrastructure would ultimately enable more residential and commercial development to occur. The Long Range Urban Services area extends well beyond the Town of Zebulon's ETJ. Development and required support level of utility service required would be determined by the extents of utility services made possible by allocations associated with the City of Raleigh merger agreement. The residential lots of the existing and currently proposed residential developments are of low to medium densities and therefore need little utility services beyond extension of existing facilities to service those properties. As urban services continue northward from Zebulon, densities of development are expected to increase and service demand will be higher. The extension of existing sewer and water line service to the proposed residential areas north along Pippen Street will allow the higher densities to occur in the North Zebulon areas. Eventually, utility services will need upgraded both in size and distribution in order to keep in step with development. The recent annexations of outlying parcels to incorporate the development within the Town limits have occurred. Additional public utility planning efforts should consider the incorporation of future development areas along Debnam Road as possible extension opportunities.

There is interest in regards to the current and future sources of water from and the quality of wastewater being discharged to receiving natural water supply resources. Even though ownership of utility pipelines and facilities has been transferred to Raleigh, it does not lessen the need for the local citizenry to be good stewards of the local environment because drinking water will ultimately going to come from resources within the immediate area.

In recent years, Raleigh and the surrounding area have experienced considerable growth. Given a continuation of current trends, it is highly likely that the Raleigh area will continue to attract new residents and development. As such, Raleigh's own development will require services from their resources and Zebulon's utilities will require new facilities and new resources. The Town of Zebulon is looking to bring on-line a master sanitary sewer pump station which would be able to handle the effluent from the three existing smaller pump stations. This will take the existing three pumpstations off-line making additional capacity available. Zebulon is also planning a major bypass interceptor along the eastern side of Town extending north to the proposed master pump station.

In an effort to trim the community's use of water, Zebulon's leaders have sought to promote the use of reclaimed water or non-potable/non-drinking water. One benefit of promoting reclaimed water is that non-potable water is made available for industrial needs such as water for cooling towers and irrigation of green areas, a very large draw on water supplies. Another benefit is that it reduces wastewater loads on receiving streams as well as conserving natural water usages. In some instances, stricter limits set by the State of North Carolina on the level of contaminants being discharged to the receiving streams may result in Raleigh's treatment facilities having to spend more money for treatment technology.

***Stormwater Management & Mitigation***

On February 23, 2006, a kick-off meeting of the Wake County Collaborative Stormwater Management Task Force was held. This meeting brought together representatives from the Town of Zebulon, Wake County, and 11 other municipalities for the purpose of proposing stormwater management options throughout Wake County. This task force has its roots in a 2004 inter-local agreement for County wide stormwater management. At the December 6, 2004, Task Force meeting Commissioners gave their approval to an Inter-local Agreement for Countywide Stormwater Management Evaluation. At this meeting it was reported that "The evaluation will focus on water-

quality protection and flood prevention through stormwater management, and on compliance with regulatory mandates such as the National Pollutant Discharge Elimination System (NPDES) Phase II stormwater program. Wake County is required to have a Stormwater Management Plan under Phase II regulations."

The NPDES activity is a consequence of the Federal Water Pollution Control Act Amendments of 1972, PL 92-500. The intent of this program is to protect the Nation's waterways from the negative effects of pollutant laden stormwater runoff and sewer effluent discharges.

In concert with the other 12 public bodies, the Town of Zebulon proposes to manage stormwater by implementing, in part, the NPDES program's six minimum control measures: Public education and outreach, Public Participation, Illicit discharge detection and elimination, Construction site runoff control, Post construction runoff control, and Pollution prevention and good housekeeping policies .

Since the February 23, 2006 meeting the Wake County Task Force has met an additional 12 times to implement these policies. To date, the Task Force has provided continual guidance to engineering consultants on a range of proposed flood protection and stormwater measures. Proposed measures vary by size of jurisdictional population within the participating municipality. For example, only the City of Raleigh is required to have prepared hydrology/hydraulic modeling for stormwater collection and conveyance systems. The smaller participating municipalities are not required to do so. Zebulon's leaders are encouraged to develop and implement the first and second items listed above - public education and outreach and public participation.

These types of measures should be prepared to reach the public through written and publicly published announcements. The expectation is that as the Town's leadership promotes public education and outreach the citizenry will begin to act more responsibly concerning stormwater runoff. Overall community benefits will result as levels of awareness and knowledge for these stormwater runoff control and management policies continue to increase.

North Carolina law currently requires sediment and erosion control practices to be employed on all construction sites undergoing an acre or more of land disturbance. Further, sediment control measures, sometimes referred to as "best management practices" or BMPs are required to be inspected weekly and after a ½" or greater rainfall for each development. Sediment accumulating from stormwater runoff from construction sites above a reasonable level must be removed and disposed of properly by the contractor as an enforcement of these NPDES policies. At the construction site, the contractor is required to maintain a written log of these rainfall event inspections for review by State and County Erosion Control inspectors recording maintenance of the BMPs.

The Task Force is considering a land disturbance permit be required for a minimum of ¼ acre of land disturbance. If enacted this measure should further control runoff from construction site down to the individual homeowner level.

In regards to managing erosion and sedimentation control, it is important to make a distinction between BMPs designed to capture disturbed sediment from eroding, and those BMP techniques aimed at preventing the extent and severity of erosion in the original pre-development condition. These differences are known as Water Quality BMP's verses Water Quantity BMP's. Silt fences as a measure of erosion control capture transported sediments, limiting the extent of acreage that can be disturbed at any one time may be beneficial to the community. The Task Force favors recommending to local officials that limits be established on the amount of acreage to be disturbed at any one time. The City of Durham, for instance, required mass grading operations for residential developments to be carried out in five acre segments with erosion control measures implemented for each segment.

The implementation of more rigorous erosion and sediment control measures may impose a heavier burden of responsibility on municipal inspections staff. At some time in the near future there may be a need to hire additional staff members within the Town of Zebulon to carry out a more active stormwater management inspection program.

The Wake County Collaborative Stormwater Management Task Force is performing a valuable service for Wake County and the municipal residents. The Town's leadership is keeping current with the deliberations of the Task Force. This group is proposing courses of action that may benefit the inhabitants of Zebulon both public and private. Added information can be found at:

www.wakegov.com/water/watershed/taskforce/default.htm.

***The Long and Short Range Urban Service Area***

The southeast portion of the Town of Zebulon has very limited municipal water and sewer service. The extent of services in this area is located in closer proximity to Zebulon's Downtown.

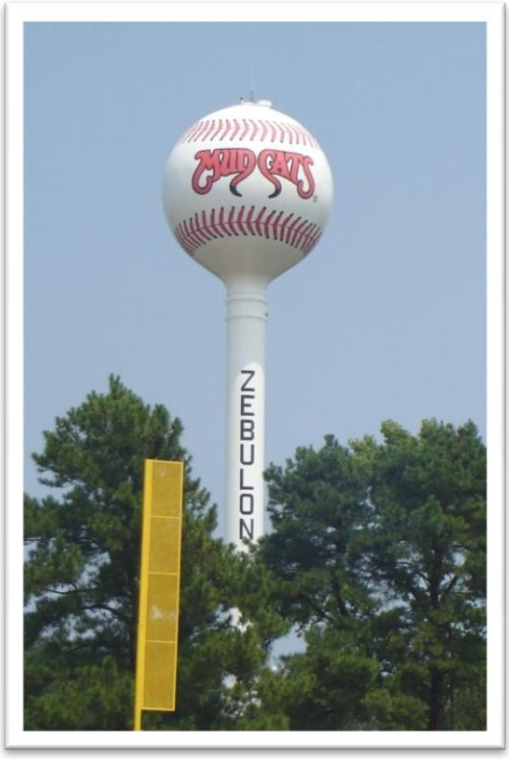
Existing sewer and water mains extend along the roadway corridors with extensions stopping at the Town limits. Extension of municipal services requires evaluation to determine the carrying capacities for sanitary sewer, water, and storm lines, keeping future development capacity needs in mind. The extent of water and sewer extensions, and therefore the extent of developments, would be determined by the allocations and expansions as set forth by the City of Raleigh merger agreement.

The current power line right of way which cuts across the Town in a southwest to northeast direction is an unchanging factor for shaping future developments. Therefore, the design of future expansion of the existing utility infrastructure must consider its impact on the remaining rural characteristics of the area and the existing tree canopy.

The presence of the existing water line along the Barbee Street Extension would allow for some future connections to occur along Moss Road and to parts of south Zebulon. This would be one of the primary routes to provide urban services into far southern ranges of the proposed Long Range Urban Service Areas.

Within the southwest study area a significant network of utilities exist along Mack Todd and Pony Roads serving existing land uses including the industrial sections of Town. Existing water service extends south along Mack Todd Road toward Wendell at Old Zebulon Road and Tarpley's Pond. A possible loop connection with Wendell may be available at areas south of this connection but would require cross jurisdictional coordination between municipalities including the City of Raleigh.

Currently within the Town limits, a majority of properties are served by or have access to municipal utility services. As a result, a wide variety of land uses could occur including higher density residential, commercial, industrial and mixed land uses with these extended services.




The reclaimed water line extends from the ballpark through northeastern portions of Zebulon west toward GlaxoSmithKline. The presence of this reclaimed water line would possibly serve to benefit the promotion of additional industrial users and would encourage this land use in its vicinity. The "Mudcats" water tower at the park baseball field marks the reclaimed water line source.

Municipal water and sewer service is confined mostly within the existing Town boundary on the northeastern side of town and has created an obstacle to future highway business development east of US Highway 264. The extension of water to the north Zebulon portions of the Town provide an important loop as the water utilities extend further north into proposed residential developments. While the infrastructure for major development is in place with the highway interchanges providing access to NC Highway 97 and NC Highway 39.

Although water wells and sewer septic tanks are not permitted within the Town limits, the existence of these public services into developing areas would serve to protect the Little Creek watersheds from pollutants by reducing the impact wells and septic tanks have on the environments. Extensions should be evaluated as demand increases. Extents, volumes and ranges will be influenced by the continued distribution rates determined by the utility merger agreement.

The provision of municipal water and sewer to potential developed areas west of NC Highway 96 may further protect the critical watersheds by lessening the negative effect of depleting the watershed. Further determination of developable extents west of NC Highway 96 will need coordination with Wake County and neighboring municipalities.

The area outside of the ETJ east of US Highway 64 is entirely void of utilizes but lies within the Short Range Urban Service Area. As development pressure extends eastward, the ability to provide urban services beyond US Highway 64 and US Highway 264 will require evaluation of where and how installation shall occur. It is likely to occur near the US Highway 264 and East Gannon highway interchange. Once it crosses into the east side of Zebulon to accommodate future highway commercial development, service areas north of US Highway 264 would be opened up. Utility service north of US Highway 264 should occur and will be necessary for the future development of this area.

Important utility considerations involve keeping a handle on maintaining rural character while providing the necessary infrastructure to allow for economic progress in the region. The balance to be struck however is maintaining suitable levels of density that retain a rural character while providing enough density to pay for the service itself. The ability to provide a seamless visual landscape for residential neighborhoods within the Downtown would benefit from the replacement of all overhead utilities with underground services. Continued evaluation should be considered to remove overhead utility wires from the established neighborhoods especially in historic zones.

## Utility - Goals, Policies, and Action Items

***Goals***

**Goal 1** Plan for the provision of adequate, reliable and cost efficient utility services in collaboration with the City of Raleigh with consideration for the future demand within the Short and Long Range Urban Services Areas

**Goal 2** Promote energy and water conservation, and recycling efforts throughout the community

**Goal 3** Establish and implement minimum standards for storm water management in collaboration with Wake County to be used in development permitting, facility planning and operations and maintenance. These standards should at minimum meet all local, state and federal health and safety requirements

***Policies***

**Policy 1** Partner with state, local governments and other jurisdictions, utility franchises and other public service entities to provide services as appropriate

**Policy 2** Coordinate roadway construction with utility installation

**Policy 3** Expand sale of gray or industrial water as reclaimed water resources

**Policy 4** Assess current and future needs and capacities of current for all utility services

***Action Items***

1. Allocate capacity to current and future development projects in accordance with available allocations and in conjunction with this Comprehensive Plan and Land Use Plan Map

2. Manage the location and extent of development by continuing expansion of utility services in agreement with the Town's development goals and objectives and the Land Use Plan and Map

3. Encourage quality control measures related to stormwater discharge into receiving streams. Promote initiatives to improve the Town's use of stormwater Best Management Practices and encourage the more stringent control measures in the NPDES guideline

4. Promote initiatives to trim the Town's use of water including stormwater best management practices and encouraging the use of reclaimed water

5. Continue to make available non-potable water for industrial needs, cooling towers, and irrigation of green areas while utilizing this resource as a recruiting tool to bring in additional industries

# Chapter 9 - Land Use & Overview

The right of a municipality to coordinate growth is rooted in its need to protect the health, safety and welfare of local citizens. An important part of establishing the guidelines for such responsibility is the development of the municipality's Land Use Plan within the context of the adopted Comprehensive Plan. The Land Use Plan establishes an overall framework by incorporating all supporting background data compiled by the Comprehensive Plan. . The Land Use Plan designates various areas within the Town for particular land use recommendations, based principally on specific land use goals, policies, and action items outlined in this and previous sections. The Land Use Plan, although an integral part of the Comprehensive Plan, does not capture the full intent of the Comprehensive Plan or Zebulon's Town policies and regulations nor does it identify the full range of recommended strategies or any implementation priorities. This section of the Zebulon Comprehensive Plan deals only with Land Use, or the desired use for land within the planning jurisdiction at the twenty year projected Town build-out, and does not handle or alter any of the Town of Zebulon's zoning issues and classifications.

***Land Use vs. Zoning***

Legal definitions of Land Use and Zoning Law both involve the regulation of the use and development of real estate. The most common form of land-use regulation is zoning. Zoning regulations and restrictions are used by municipalities to control and direct the development of property within their borders. Property zoning is the separation or division of a municipality into districts. It regulates buildings and structures in such districts in accordance with their construction and the nature and extent of their use. It also dictates the dedication of such districts to particular uses designed to serve the general welfare. Zoning classifications are much more detailed and site specific than the Land Use Plan classifications are to set forth.

Zoning helps city planners bring about orderly growth and change. It controls population density and helps create attractive, healthful residential, commercial and retail areas. In addition, zoning helps assure property owners and residents that the characteristics of nearby areas will remain stable and that their property will not some day be adjacent to an industrial park.

Land Use Plans designate broad areas that meet criteria for particular uses usually projected for a future point in time. In zoning issues, the local governing body considers the character of the property as well as its fitness for particular uses. A comprehensive and land use plan is a general design tool to control the use of properties in the entire municipality or at least in a large portion of it. Individual pieces of property should not be singled out for special treatment. For example, one or two lots may not be placed in a separate zone and subjected to restrictions that do not apply to similar adjoining lands.

This Comprehensive Plan and proposed Land Use Plan Map is not a zoning map. A zoning map deals with specific development requirements and regulations on individual parcels and groups of parcels. The Zoning Map and any alterations in property zoning should, however, be based on the Land Use Plan Map. In general, this Zebulon Comprehensive Plan and Land Use Plan section are intended to be a comprehensive blueprint for the Town of Zebulon's vision for the future overall land use patterns desired within the Town jurisdiction. The Land Use Map is intended to be used in conjunction with the written content of the Land Use Plan along with Zebulon's established zoning regulations and requirements.

The Land Use Map summarizes the Town's discussions on how development, preservation, and capital expenditures should play out over the next twenty years. Being able to visualize a picture of the end result is helpful in directing the multiple decisions required to guide development in a direction the Town desires. While the Map does not identify the implementation process or the interim results, it does show the end point sometimes called the "desired future condition" of development activity and land use decisions over the planned duration. Land Use Maps establish the overall desire for the Town's growth in order for the Zoning Map to set specific regulations and requirements for land classifications, as well as accommodate changes in the real estate market factors that drive the substantial growth in any municipality.

The Land Use Map can be described as an overlay which melds the existing zoning structure and the future desires for controlled growth into one usable document. This Land Use Plan and the accompanying Land Use Map has been established to achieve the following:

- Address the needs of the Town of Zebulon's growth as a cohesive entity
- Address the concerns and issues raised throughout this planning process
- Provide policy guidance in establishing the Town's vision statement, goals and objectives
- Ensure that Zebulon is a unique, sustainable and vital community

***Land Use Categories***

The following Land Use Categories provide explanations and descriptions of land use patterns depicted on the Land Use Map. This Land Use Map is not to take the place of the current Zebulon Zoning Map or zoning classifications within the Town. It is merely an instrument for implementing the Town's desires and forward thinking by the governing officials and Planning Staff for the form of Town they would like to see developed over the next twenty years.

| ***Land Use Categories*** | **Description** | **Density and Design Characteristics** |
|---|---|---|
| Rural Residential<br><br>Code: RR | Low density residential land use. The Rural Residential area includes land currently developed and directed for future growth as residential in areas not served by municipal sewer and water. Predominant land use will be single family detached homes. "Cluster Subdivisions" place housing closer together in order to preserve greater areas of undeveloped land. | • A gross density of 0.4 units per acre or 1 unit per 2.5 acres<br>• Density bonuses may be allowed for preserving natural features which are not otherwise protected by ordinance, implementing the Zebulon-Wendell Open Space and Greenway Plan Master Plan beyond the typical required park dedication or incorporating energy saving building techniques<br>• Encourage or require conservation measures |

| *Land Use Categories* | **Description** | **Density and Design Characteristics** |
|---|---|---|
| Medium Density Residential<br><br>Code: MD | The Medium Density Residential areas include land designated for residential use in areas that will be served by the municipal water and sanitary sewer system. This land use is designated by the density of development and not the type of housing. Densities of this development pattern would range from a low density pattern consisting mostly of single family detached homes. | • An average overall density of approximately 3 to 4 units per acre over all lands designated Medium Density Residential<br>• Implementation will likely require multiple zoning districts within this land use classification that apply alternative density restrictions in order to achieve the overall density of 3 to 4 units per acre<br>• Uses include single family detached housing, duplexes, townhomes and multiple-family dwellings. Housing units may either be owner or renter occupied.<br>• |
| Traditional Neighborhood<br><br>Code: TN | Characterized by grid or connected street pattern, houses oriented with shorter dimension to the street and detached garages, some with alleys. Limited commercial, schools, churches, and home businesses. Parks and open space areas are scattered through or adjacent to neighborhoods in this classification. Includes many of Zebulon's historical and older neighborhoods, infill projects and neighborhood extensions, and new traditional neighborhood areas. | • 4-8 units/acre<br>• Form standards and conservation development an option<br>• Mix of housing types such as townhomes, duplexes, and quad-plexes<br>• Limited commercial uses serving neighborhoods<br>• Necessary facilities on the outskirts of neighborhoods such as grocery store, pharmacies, schools and fire stations |
| High Density Residential<br><br>Code: HDR | Consists of multi-family attached housing oriented in a vertical fashion, more commonly known as apartments and condominiums. May accommodate a combination of side by side townhomes with multi-story dwellings.<br><br>Located in places with compatible adjacent land uses and where the local street system accommodates the increased traffic. May be used as a transitional zone between Medium and Rural Residential and other land use classifications. | • Densities targeted in this category are over 8 and up to 20 units per acre.<br>• When planned adjacent to lower density neighborhoods, high density housing can be designed to transition from its most intense use of 3 or 4 story apartments to a lower density small lot single family or attached townhomes as it approaches lower density neighborhoods<br>• 4-8 units/acre with smaller lots or attached housing<br>• High Density Residential uses may also be located in appropriately zoned locations within Mixed Use and Downtown classifications |

| *Land Use Categories* | **Description** | **Density and Design Characteristics** |
|---|---|---|
| Mixed Use<br><br>Code: MU | The Mixed Use land use category allows a mixture of housing, employment, commercial and retail service uses in close proximity to each other. This could mean vertical mix.<br><br>This land use creates the potential for people to work close to their employment and offers an environment where one can live, work and shop with less reliance on vehicles. This area provides another setting for High Density Residential land use. | • Mixed use is frequently proposed in the redevelopment of commercial areas. "Vertical" mixed-use puts residential uses over street level retail or office uses into a single building. Provides for horizontal arrangement of uses with strong pedestrian connections fostering pedestrian and bike friendly environments<br>• Reflects current market trends which seek to integrate residential and non residential development in a common setting close to possible transit services |
| Downtown<br><br>Code: TC | Encompasses the unique land use mixture within and around Downtown. This area includes parcels around the Downtown with related development issues.<br><br>Reflects the need and opportunity for preservation, revitalization, renovation and redevelopment. Redevelopment should be oriented to housing, commercial uses and public spaces that support the existing character of the Downtown. | • Potential protection of historic buildings or building groups<br>• Explore historical based architectural guidelines<br>• Pedestrian oriented design<br>• Limited off-street parking requirements with loading facilities required for building uses<br>• Uses need to be compatible with the character and scale of the designated Downtown Zoning Overlay District<br>• A variety of uses fit into the Downtown designation such as, but not limited to, community-scale retail, professional services, public/civic uses, park, offices, dining and entertainment, banking, lodging, and housing |
| Community Commercial<br><br>Code: CC | Focuses on community retail development. These uses are often service and convenience oriented. Development is typically smaller in size and oriented more towards the neighborhood. Examples of Community Commercial uses include drug store, dry cleaners, and coffee shop arranged in a strip mall configuration | • Building footprints generally less than 20,000 sq. ft. Individual storefronts as small as 3,000 sq. ft.<br>• Parking less prominent than pedestrian or bicycle circulation<br>• Centralized type clustering pattern rather than linear development |

| *Land Use Categories* | **Description** | **Density and Design Characteristics** |
|---|---|---|
| Neighborhood Commercial<br><br>Code: NR | Small areas of commercial uses integrated nearby residential neighborhoods. Located on or near collector or arterial corridors or key intersections to maximize market viability. | • Part of a larger, 40 acres or more, residential project<br>• Designed to minimize non-local traffic flow through adjacent residential neighborhoods<br>• Limited in size to not more than 20,000 sq. ft. of retail or service space<br>• Not within ½ mile of other NR or CC uses |
| Regional Retail<br><br>Code: RT | Commercial, retail and office development focused primarily on the needs and convenience of the motorist, without losing pedestrian access and connections. Residential uses not permitted. May include a mix of vehicle and neighborhood oriented uses or transition into Community Commercial. | • Total square footage devoted uses in any single retail development or establishment not to exceed 50,000 square feet<br>• Landscaping of parking areas, pedestrian walkways, and buffering of adjacent residential and Community Commercial uses required |
| Highway Business<br><br>Code: HB | Most intensive form of commercial development. Largest both in terms of size and traffic generation. Market orientation tends to be regional in nature. Shopping centers and big-box retail development. Planned internal circulation patterns while accommodating pedestrian access. Requires access to regional transportation routes or corridors. | • Located within the Urban Services Boundary requiring possible public service upgrades and adjacent to regional highways or corridors<br>• Footprints exceed 50,000 sq. ft.<br>• Regional low-impact infrastructure for watershed protection<br>• Heavily landscaped parking and buffer areas with priority given to pedestrian access and connections |
| Light Industrial<br><br>Code: LI | The Light Industrial land use classification includes industrial uses that are lower in intensity and activity. These uses limit the potential for adverse impacts on adjacent land uses due to factors such as noise and odor. Examples of Light Industrial uses include offices, enclosed storage and warehousing, research laboratories, medical offices, and light manufacturing. | • Densities are variable<br>• Performance standards set to accommodate 'Low Impact' and 'Green' environmental design<br>• Must be accommodated within the environmental aspects of the land around the proposed land use |

| *Land Use Categories* | **Description** | **Density and Design Characteristics** |
|---|---|---|
| Medium Industrial<br><br>Code: MI | Medium Industrial land uses are intended for businesses with more intensive uses. The level of intensity refers to the amount of land used by the business, the nature of the industrial activity, and the potential for heavy truck traffic. Examples of Medium Industrial uses include contracting yards, grain and feed elevators, concrete products processing, and truck terminals. | • Parcels are larger than Light Industrial<br>• Required performance standards for environmental effects, byproducts, and nuisance mitigation<br>• Densities are variable |
| Public/Semi-Public<br><br>Code: PSP | This category includes larger tracts of land used for public and institutional purposes. These uses include Town and County governmental buildings, and religious institutions. Educational facility or facilities for the purpose of educational instruction including curriculums for preschool, kindergarten, elementary, or secondary education as well as trade training curriculums, college level curriculums, etc. Such facilities may be private or public. | • Maintain relationship to institutional master plans, which should guide expansions and auxiliary uses in adjacent land use areas |
| Open Space<br><br>Code: OS | The Open Space category contains public and private park and recreation systems. Open land dedicated to preservation of natural areas, protection of natural drainage ways, or development of facilities for recreational purposes. Developed Open Space can include various recreation buildings such as an indoor swimming pool and facilities for individual or team recreational events. Developed Open Space can include those spaces developed for beauty and solitude. | • Low intensity uses such as trails and greenways<br>• Incorporates view shed protection and access<br>• Limited parking<br>• Incorporates environmental preservation to the extent possible |

***Using the Land Use Map***

Understanding and using the Land Use Map requires an understanding of the difference between comprehensive planning and other land use planning efforts that help move the Town of Zebulon toward the Comprehensive Plan goals. It is not master planning that prescribes parcel specific details and priorities for development patterns. Again, a Land Use Map must not be confused with a zoning map even though the two are interdependent upon each other.

The Land Use Map, in conjunction with the Land Use Goals, Policies and Action Items provides direction to land owners, developers, government staff and elected officials as they make land use decisions over a designated period of time. Development investment, preservation activities, infrastructure and regulatory decisions should all ideally move the Town toward the desired future condition shown on the Land Use

***Limitations of the Land Use Map***

The Land Use Map is a critical component of the Zebulon Comprehensive Plan. When using the map in decision-making or evaluating potential development or preservation investments, several limitations must be kept in mind:

- The land use descriptions are, as noted earlier, *preferred* future land uses. The descriptions are not regulatory in nature or prescriptive which sets them apart from zoning districts or other regulatory districts. Long range land use maps are of necessity more general in nature than specific area plans, master plans, or regulatory zoning maps. The user must keep in mind that the land use map identifies the *preferred* mix of land uses, not the *allowed* mix of land uses.
- This Land Use Map indicates land uses at a point in time in the distant future setting the direction for growth to take place. It was determined at the onset of the development process of this Comprehensive Plan that this designated point in time would be a 20 year projection from today. A similar snapshot of Zebulon's land uses at an interim point in time, such as in five years or ten years, would not portray the same mix of uses or extent of development, preservation, or public investment activities. The user must keep in mind that the land use map shows the preferred uses in 20 years, not necessarily the uses for today or tomorrow.
- The Land Use Map shows general land use categories that include, in almost every designation, a mix of zoning, possible land uses, building forms, development patterns, and infrastructure.
- Two areas with the same land use designation will not necessary look the same or have the identical mix of land uses. These regulatory land classifications must come from the more detailed town of Zebulon Zoning Map. The land use categories are intended to reflect the unique opportunities and assets associated with neighborhoods, natural resources, and public infrastructure. The user must keep in mind that land use designations reflect a *general mix* of land uses, not *specific design* for development or preservation purposes that the Zoning Code would enforce.
- The user must keep in mind that in implementing the Land Use Map it must be used *in conjunction with* the Goals, Policies, and Action Items of the entire Comprehensive Plan, along with other public data sources and maps. For even closer range planning, the Land Use Map must be used in tight conjunction with the Town's Zoning Map.

***Town of Zebulon Development Strategies***

The Downtown area is the heart of the Town of Zebulon. It is a unique asset that is of historical significance to the Town's forward looking planning and development. It gives the Town of Zebulon its identity and has the opportunity to be a major factor in attracting new residents and businesses to the area. The best way to enhance this asset is to build on the historic characteristics of walkability, continuity of street frontages, and a healthy mix of retail, restaurant, residential and business uses. The Downtown designation should not be just a destination for specialty antiques and decorations, but a categorical preservation designation for the history that makes the Town of Zebulon unique. The goal of creating sustainable pedestrian environments should not only occur within the Downtown but also one which should be reflected throughout the Town in new and redeveloping retail and commercial districts.

A sustainable Downtown will have some of the following characteristics:

- Creates a Sense of Place
- Is pedestrian-oriented
- Provides for access by a variety of transportation modes – walking, bicycling, transit and vehicles
- Contains a mixture of residential uses and dwelling sizes that serve housing needs over a lifetime
- Attracts successive generations adding to age diversification within the designation
- Creates flexible commercial space
- Is environmentally sensitive

Creating attractive pedestrian connections to neighborhoods throughout Zebulon will increase the desirability and value of those neighborhoods while at the same time supporting business activity. Sidewalks in and around community facilities and connected to the Town's greenways are a vital part of the infrastructure. They must be wide enough to accommodate two-way pedestrian traffic in heavily concentrated retail and restaurant areas. Sidewalks in a vibrant redeveloped area must provide interesting views, shade and a feeling of safety, as well as necessary site furniture amenities.

There is currently vacant and under-utilized development within and surrounding the Town of Zebulon which create a lack of distinct inter-connection to the surrounding neighborhoods. These areas could be used for infill with commercial, offices and higher density housing that would both strengthen the Town physically and financially, and provide a more attractive and usable inter-connection to the rest of the Downtown.

A parking plan has been developed that consolidates visitor and employee parking in two to three convenient locations around Downtown which would separate vehicular uses from the historic Downtown. These exterior parking facilities would provide reliable availability of parking and would eliminate the need for visitors to circulate the streets trying to locate a vacant space to park. The sites for this parking should have easy access to major roadways in and out of Downtown and should be large enough to accommodate a possible parking garage as the need becomes evident. Parking lots throughout the community should have specific design standards and requirements just like the Town's Subdivision Ordinance in requiring trees and green spaces.

A streetscape plan results in an attractive environment for pedestrians. The streetscape plan will help the Town to know where to concentrate capital investments by prioritizing improvements. This makes the most impact with the funds currently available and for future spending as well. This streetscape plan includes lighting, pedestrian corridor identification, sidewalk and landscaping standards, and a wayfinding as well as buildings and land use standards.

Public financial investment in an area is often needed to spur or support private interest and investment until private monies support redevelopment efforts by themselves. Incentives from the public or Town based incentives of this kind signal to the private sector that an area is worth monetary investment and long term commitment. The Town

should therefore consider adopting some incentive policies for the overall Zebulon planning jurisdiction which could include:

- Participation in needed infrastructure
- Low interest funding for community facilities, parking lots or garages
- Expedited development approval for proposals for investment in the Downtown area

Example funding sources from governmental agencies and private foundations have been listed in the preceding chapters of this Comprehensive Plan.

Building form or architectural standards should be adopted in some format to supplement the Town's Transitional (TR) zoning regulations of any established historic overlay district or separation from commercial business and residential dwellings. These standards should address key urban design issues resulting from current renovation progress. As buildings are rehabilitated, new ones are constructed and public improvements are implemented, the Downtown area will grow in vitality, encouraging outlying developments. The primary goal of such standards is to create an aesthetic, safe and enjoyable environment through building and site designs that are consistent and follow the same context.

This step by step process can simply evolve or may follow a specific type of design principal typifying the evolution from rural to urban design and densities known as the "Form Based Code Standards".

We have included this design possibility as only one alternative direction to head if the Town so chooses. The above planning process is attributed to the 'SmartCode v. 0.9', which is a planning process on-line and distributed free for the use of towns and municipalities at their discretion. These "Form Based Code Standards" address issues such as:

- how developments interact with the street in terms of location, front walls, height and materials
- where and how retail space should be provided to support pedestrian activity and retail businesses
- how residential land uses should integrate into the fabric of the Downtown
- how parking should be addressed
- flexibility of building space to allow for changing markets over the long term
- applicable buildings are being rehabilitated and new ones are constructed

For further information and understanding of this type of planning, refer to Appendix II information on the 'SmartCode v. 0.9' developed by Duany Plater-Zyberk & Co., http://www.smartcodecentral.com.

## Land Use Plan and Comprehensive Plan Summary

This final Land Use Plan chapter of the Zebulon Comprehensive Plan should be implemented along with the overall concepts, goals, policies, and action items of each of the seven Plan Elements discussed previously as the foundation for the Plan development. Without an understanding of the foundational concepts and precepts, the Land Use Plan and the Land Use Map will not flow together as effectively as they should. The Plan elements combine together to culminate into the Zebulon Comprehensive Plan which in turn represents the Town's vision and forethought for its own future. By incorporating the Comprehensive Plan into official Town of Zebulon policy, the Mayor, the Joint Governing Boards, and the Planning Department Staff have established a tremendous vision and direction for the coming years, and have set achievable interim milestones in reaching Zebulon's full development potential.

## Land Use – Goals, Policies, and Action Items

***Goals***

**Goal 1** Achieve the optimal balance of land uses that efficiently utilizes resources, enriches economic viability, preserves the existing small town character, and enhances the overall health and well-being of the residents of Zebulon

**Goal 2** Continue to pro-actively manage growth and direct development in a manner that can most efficiently access existing, and future infrastructure and community services, and preserves natural resources

**Goal 3** Encourage land use patterns and intensities that promote accessibility and connectivity to community destinations via alternative modes of transportation such as walking, bicycle, carpool, mass transit, etc

**Goal 4** Promote continual residential and commercial infill development in the Zebulon Downtown

***Policies***

**Policy 1** Ensure development is compatible with and complementary to adjacent land uses and regulate transition and/or buffering between land uses to mitigate impacts

**Policy 2** Explore annexation strategies

**Policy 3** Assess the viability of a Voluntary Agricultural District Program or alternatives

**Policy 4** Promote "Green" or Low Impact Development within designates areas

**Policy 5** Promote the development of vacant, underdeveloped, and re-developable land where public utility services are currently available. Promote and encourage Brownfield development to reclaim land

**Policy 6** Ensure the pattern, form, and design of new development encourages the conservation of energy, water and other natural resources

***Action Items:***

1. Implement the strategies outlined in the adopted *Zebulon-Wendell Open Space & Greenway Master Plan* and the *Multimodal Transportation Plan*

2. Encourage mixed-use development of compatible uses such as residential and neighborhood retail

3. Encourage appropriately scaled development along major thoroughfares that is compatible with and integrated into the surrounding uses

4. Develop and adopt a strategic plan to guide the improvement and expansion of public facilities and services to support new development, infill, and redevelopment projects

5. Develop and adopt a Downtown Master Plan with associated design guidelines to guide downtown development and help to increase investment and density while preserving the character of Zebulon

## Appendices

Appendix I..... Action Item Prioritization

Appendix II ..... Smart Code ver. 0.9

Appendix III ..... Zebulon/Wake County Industrial Sites

Appendix IV ..... General Assembly of North Carolina 1987 Session Chapter 668 House Bill 871

Appendix V ..... References Used in Report

Appendix VI ..... National Park Service Guidelines

# References Used in Report

**Zebulon & Wendell Open Space & Greenway Master Plan**
Town of Zebulon
Zebulon Town Hall
100 N. Arendell Avenue
Zebulon, North Carolina 27597

(919) 269-7455 Phone
(919) 269-6200 Fax

**Multimodal Transportation Plan (Adopted April 2001)**
Wilbur Smith Associates
333 Fayetteville Street Mall, Suite 1450
Raleigh, North Carolina 27602

**Zebulon Code of Ordinances**
City of Zebulon
100 N. Arendell Avenue
Zebulon, NC 27597
www.ci.zebulon.nc.us

## National Parks Service - Recreation, Park and Open Space Standards and Guidelines

The National Recreation and Park Association (NRPA) recognizes the importance of establishing and using park and recreation standards as:

- A national expression of minimum acceptable facilities for the citizens of urban and rural communities.
- A guideline to determine land requirements for various kinds of park and recreation areas and facilities.
- A basis for relating recreational needs to spatial analysis within a community-wide system of parks and open space areas.
- One of the major structuring elements that can be used to guide and assist regional development.
- A means to justify the need for parks and open space within the overall land-use pattern of a region or community.

The purpose of these guidelines is to present park and recreation space standards that are applicable nationwide for planning, acquisition, and development of park, recreation, and open space lands, primarily at the community level. These standards should be viewed as a guide. They address minimum, not maximum, goals to be achieved. The standards are interpreted according to the particular situation to which they are applied and specific local needs. A variety of standards have been developed by professional and trade associations which are used throughout the country. The standard derived from early studies of park acreages located within metropolitan areas was the expression of acres of park land per unit of population. Over time, the figure of 10 acres per 1,000 population came to be the commonly accepted standard used by a majority of communities. Other standards adopted include the "percent of area" approach, needs determined by user characteristics and participation projections, and area use based on the carrying capacity of the land. The fact that some of the standards have changed substantially is not an indication of their obsolescence. Changes are a measure of the growing awareness and understanding of both participant and resource (land, water, etc.) limitations. Parks are for people. Park, recreation, and planning professionals must integrate the art and science of park management in order to balance such park and open space resource values as water supply, air quality.

| ACTIVITY/ FACILITY | RECOMMENDED SPACE REQUIREMENTS | RECOMMENDED SIZE AND DIMENSIONS | RECOMMENDED ORIENTATION | NO. OF UNITS PER POPULATION | SERVICE RADIUS | LOCATION NOTES |
|---|---|---|---|---|---|---|
| **Badminton** | 1620 sq. ft. | Singles – 17'x44'<br>Doubles – 20'x44' | Long axis north-south | 1 per 5000 | ¼ -1/2 mile | Usually in school, recreation center or church facility. Safe walking or bike access. |
| **Basketball**<br>**1. Youth**<br>**2. High School**<br>**3. Collegiate** | <br>2400-3036 sq. ft.<br>5040-7280 sq. ft.<br>5600-7980 sq. ft. | <br>46-50'x84'<br>50'x84'<br>50'x94' with 5' unobstructed space on all sides | Long axis north-south | 1 per 5000 | ¼ - ½ mile | Same as badminton. Outdoor courts in neighborhood and community parks, plus active recreation areas in other park settings. |

| ACTIVITY/ FACILITY | RECOMMENDED SPACE REQUIREMENTS | RECOMMENDED SIZE AND DIMENSIONS | RECOMMENDED ORIENTATION | NO. OF UNITS PER POPULATION | SERVICE RADIUS | LOCATION NOTES |
|---|---|---|---|---|---|---|
| **Handball**<br><br>**(3-4 wall)** | 800 sq. ft. for 4-wall<br><br>1000 for 3-wall | 20'x40' – Minimum of 10' to rear of 3-wall court. Minimum 20' overhead clearance | Long axis north-south.<br><br>Front wall at north end. | 1 per 20,000 | 15-30 minute travel time | 4-wall usually indoor as part of multi-purpose facility. 3-wall usually outdoor in park or school setting |
| **Ice Hockey** | 22,000 sq. ft. including support area | Rink 85'x200' (minimum 85'x185') Additional 5000 sq. ft. support area | Long axis north-south if outdoor | Indoor – 1 per 100,000 Outdoor – depends on climate | ½ - 1 hour travel time | Climate important consideration affecting no. of units. Best as part of multi-purpose facility. |
| **Tennis** | Minimum of 7,200 sq. ft. single court (2 acres for complex) | 36'x78'. 12' clearance on both sides; 21' clearance on both ends. | Long axis north – south | 1 court per 2000 | ¼-1/2 mile | Best in batteries of 2-4. Located in neighborhood/community park or adjacent to school |
| **Volleyball** | Minimum of 4,000 sq. ft. | 30'X60'. Minimum 6' clearance on all sides | Long axis north-south | 1 per 5000 | ¼ - ½ mile | Same as other court activities (e.g. badminton) |
| **Baseball**<br><br>**1. Official**<br><br>**2. Little League** | 3.0-3.85 A minimum<br><br>1.2 A minimum | Baselines – 90' Pitching distance 60 ½' foul lines – min. 320' Center field – 400'+<br><br>Baselines – 60' Pitching distance– 6' Foul lines–200' Ctr. field 200'–250' | Locate home plate to pitcher throwing across sun and batter not facing it. Line from home plate through pitcher's mound run east-north-east. | 1 per 5000<br><br>Lighted 1 per 30,000 | ¼ - ½ mile | Part of neighborhood complex. Lighted fields part of community complex. |
| **Field Hockey** | Minimum 1.5 A | 180' x 300' with a minimum of 6' clearance on all sides. | Fall season – long axis northwest to southwest. For longer periods north-south | 1 per 20,000 | 15-30 minutes travel time | Usually part of baseball, football, soccer complex in community park or adjacent to high school. |
| **Football** | Minimum 1.5 A | 160' x 360' with a minimum of 6' clearance on all sides. | Same as field hockey. | 1 per 20,000 | 15-30 minutes travel time | Same as field hockey. |
| | | | | | | |

| ACTIVITY/ FACILITY | RECOMMENDED SPACE REQUIREMENTS | RECOMMENDED SIZE AND DIMENSIONS | RECOMMENDED ORIENTATION | NO. OF UNITS PER POPULATION | SERVICE RADIUS | LOCATION NOTES |
|---|---|---|---|---|---|---|
| **Soccer** | 1.7 – 2.1 A | 195' to 225'x330' to 360' with a minimum 10' clearance all sides. | Same as field hockey. | 1 per 10,000 | 1-2 miles | Number of units depends on popularity. Youth soccer on smaller fields adjacent to schools or neighborhood parks. |
| **Golf-driving Range** | 13.5 A for minimum of 25 tees | 900'x690' wide. Add 12' width for each additional tee. | Long axis south-west-northeast with golfer driving toward northeast. | 1 per 50,000 | 30 minutes travel time. | Part of a golf course complex. As separate unit may be privately owned. |
| **¼ Mile Running Track** | 4.3 A | Overall width – 276' Length – 600.02' Track width for 8 to 4 lanes is 32'. | Long axis in sector from north to south to north-west-south-east with finish line at northerly end. | 1 per 20,000 | 15-30 minutes travel time | Usually part of high school, or in community park complex in combination with football, soccer, etc. |
| **Softball** | 1.5 to 2.0 A | Baselines – 60 ' Pitching distance-46' min. 40' (women).<br><br>Fast pitch field Radius from<br><br>Plate – 225' Between foul Lines.Slow Pitch – 275'(men) 250'(women) | Same as baseball | 1 per 5,000 (if also used for youth baseball) | ¼ - ½ mile | Slight differences in dimensions for 16" slow pitch. May also be used for youth baseball. |
| **Multiple Recreation Court (basketball, volleyball, tennis)** | 9, 840 sq. ft. | 120' x 80' | Long axis of courts with *primary* use is north-south | 1 per 10,000 | 1-2 miles. | |
| **Trails** | N/A | Well defined head maximum 10' width, maximum average grade is 5percent not to exceed 15percent. Capacity rural trails – 40 hikers/day/mile. Urban trails – 90 hikers/day/mile. | N/A | 1 system per region | N/A | |
| **Archery Range** | Minimum 0.65 A | 300' Length x Minimum 10' wide between targets. Roped clear space on sides of range minimum 30', clear space behind targets minimum of 90'x45' with bunker. | Archer facing north = or – 45 degrees. | 1 per 50,000 | 30 minutes travel time | Part of regional or metro park complex. |

| ACTIVITY/ FACILITY | RECOMMENDED SPACE REQUIREMENTS | RECOMMENDED SIZE AND DIMENSIONS | RECOMMENDED ORIENTATION | NO. OF UNITS PER POPULATION | SERVICE RADIUS | LOCATION NOTES |
|---|---|---|---|---|---|---|
| **Combination Skeet and Trap Field (8 Stations)** | Minimum 30 A | All walks and structures occur within an area approximately 130' wide by 115' deep. Minimum cleared area is contained within 2 superimposed segments with 100-yard radii (4 acres). Shot-fall danger zone is contained within 2 superimposed segments with 300-yard radii (36 acres). | Center line of length runs northeast-southwest with shooter facing northeast. | 1 per 50,000 | 30 minutes travel time | Part of regional/metro park complex |
| **Golf**<br>**1. Par 3 18- hole**<br>**2. 9-hole standard**<br>**3. 18-hole standard** | 50-60 A<br>Minimum 50 A<br>Minimum 110 A | Average lengths vary 600-2700 yd.<br>Average length – 2250 yards<br>Average length 6500 yards | Majority of holes on north-south axis | 1/25,000<br>1/50,000 | ½ to 1 hour travel time | 9-hole course can accommodate 350 people/day.<br>18-hole course can accommodate 500-550 people/day.<br>Course may be located in community or district park, but should not be over 20 miles from population center. |
| **Swimming Pools** | Varies on size of pool and amenities. Usually ½ to 2 A site. | *Teaching*- minimum of 25 yards x 45' even depth of 3 to 4 ft.<br>*Competitive* – minimum of 25 m x 16 m. Minimum of 27 square feet of water surface per swimmer. Ratios of 2:1 deck vs. water. | None-although care must be taken in sitting of lifeguard stations in relation to afternoon sun. | 1 per 20,000<br>(Pools should accommodate 3 to 5percent of total population at a time.) | 15 to 30 minutes travel time | Pools for general community use should be planned for teaching, competitive and recreational purposes with enough depth (3.4m) to accommodate 1m and 3m diving boards. Located in community park or school site. |
| **Beach Areas** | N/A | Beach area should have 50 sq. ft. of land and 50 sq. ft. of water per user. Turnover rate is 3. There should be 3-4 A supporting land per A of beach. | N/A | N/A | N/A | Should have sand bottom with slope maximum of 5 percent (flat preferable). Boating areas completely segregated from swimming areas. |

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