



**TOWN OF STOKESDALE
TOWN COUNCIL WATER FACILITY USE AGREEMENT MEETING
PUBLIC HEARING
8325 Angel Pardue Road
STOKESDALE, NC 27357
MAY 24, 2018**

The purpose of this meeting was for McGill and Associates to present us with the final report documents which explain the results of the approach, methodology and calculations for establishing system development fees in accordance with North Carolina General Statute 162A, Article 8 "System Development Fees". Through House Bill 436 (HB 436), the General Assembly of North Carolina established a uniform approach and associated methodology required for local governmental units to calculate and implement System Development Fees (SDF) for public water and sewer systems. Existing SDF, in place on October 1, 2017, are required to be conformed to HB 436 no later than July 1, 2018. The SDF must be determined by a qualified engineer or financial professional using industry standard practices. A copy of HB 436 is included in with these minutes.

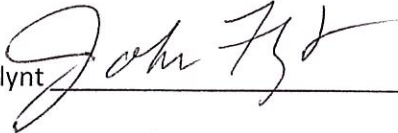
- I. Mayor Flynt called the meeting to order.
- II. Mayor Flynt lead the audience in the Pledge of Allegiance
- III. Mayor Flynt Opened the meeting which is for the sole purpose of McGill and Associates presenting the final report for Council to approve a Resolution to Adopt House Bill 436.

Mayor Flynt introduced Mr. Dale Schepers, from McGill and Associates to present their findings. Mr. Schepers stated the reason he is here tonight is that through a Supreme Court decision the State of North Carolina was determined to not have the authority to impose impact fees. Cities and Towns did not. Counties and Water Districts did but Cities and towns did not. So, as a result of that the State of North Carolina decided it was going to grant the authority to Cities and Towns to charge the impact fees through this House Bill 436. (Please refer to HB436 "Article 8
"System Development Fees." § 162A-200. Short title through 162A-88.)

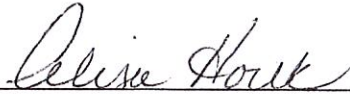
There were some questions and comments from Council and the floor which Mr. Schepers answered. Mayor Flynt thanked everyone for attending. He stated that Council could further review the calculations. He would send a copy to Attorney John Bain for his review and this would be put on the June Council meeting agenda to be voted on.

Mayor Flynt motioned to adjourned the meeting at 9:00PM May 24, 2018, Tim Jones seconded the motion. All voted Aye to adjourn.

Mayor John Flynt

A handwritten signature in cursive script, appearing to read "John Flynt", written over a horizontal line.

Alisa Houk, Interim Town Clerk

A handwritten signature in cursive script, appearing to read "Alisa Houk", written over a horizontal line.

**COST- JUSTIFIED WATER AND WASTEWATER
SYSTEM DEVELOPMENT FEES REPORT**

TOWN OF STOKESDALE

GUILFORD COUNTY, NORTH CAROLINA



**CONSULTING ENGINEERS
HICKORY, NORTH CAROLINA**

**COST- JUSTIFIED WATER AND WASTEWATER
SYSTEM DEVELOPMENT FEES REPORT**

TOWN OF STOKESDALE

GUILFORD COUNTY, NORTH CAROLINA

Andy Lovingood, PE, Vice President
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Dale R. Schepers, Management Services Analyst



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JUNE 2018
PROJECT NO. 17.01122

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House Bill 436

NC Administrative Code 15A NCAC 18C .0409

NC Administrative Code 15A NCAC 02T .0114

Stokesdale 2007 Future Land Use Plan

RS Means Historical Cost Index

EXECUTIVE SUMMARY and PURPOSE STATEMENT

Executive Summary:

The North Carolina General Assembly passed House Bill 436 in July 2017, amending Chapter 162A of the General Statutes by adding "Article 8, System Development Fees." This amendment was enacted as "An Act to Provide for Uniform Authority to Implement System Development Fees for Public Water and Sewer Systems in North Carolina and to Clarify the Applicable Statute of Limitations." in HB436, which requires compliance with designated calculation methodology by July 1, 2018.

In response to House Bill 436, the Town of Stokesdale has retained McGill Associates to complete a system development fee analysis. Based on the Town of Stokesdale's existing system capacity, the water development fee, in accordance with HB 436 rules for an Equivalent Residential Unit (ERU) was calculated to be \$928.00. ERU is defined as the water capacity required to serve the most typical user type, which is a three-bedroom single-family dwelling. The Town of Stokesdale does not have a sanitary sewer system, so there is no calculation included for a wastewater system development fee.

The fee for other types of development can be calculated by applying the calculated cost of capacity per gallon of flow per day to the water demands for various uses as defined by NC Administrative Code 15A NCAC 18C .0409 and 15A NCAC 02T .0114.

Stokesdale System Development Fees: Cost per Gallon per Day Calculation		
Item	Cost-Justified System Development Fee Calculation	Cost of Capacity \$/ GPD
1	Water System	\$ 2.32

Purpose Statement:

This report documents the results of the approach, methodology and calculations for establishing system development fees in accordance with North Carolina General Statute 162A, Article 8 "System Development Fees". Through House Bill 436 (HB 436), the General Assembly of North Carolina established a uniform approach and associated methodology required for local governmental units to calculate and implement System Development Fees (SDF) for public water and sewer systems. Existing SDF, in place on October 1, 2017, are required to be conformed to HB 436 no later than July 1, 2018. The SDF must be determined by a qualified engineer or financial professional using industry standard practices. A copy of HB 436 is included in Appendix A.

The Town of Stokesdale retained McGill Associates (McGill) to review and make recommendations for revisions as necessary to water SDF to conform with HB 436. The approach, methodology and calculations are based on American Water Works Association (AWWA) Manual of Water Supply Practices – M1, Principles of Water Rates, Fees, and Charges, Seventh Edition.

McGill Associates is qualified in engineering disciplines and financial analysis and has the expertise and experience to determine system development fees. The firm has a long history of working with cities, towns, counties and special districts to provide professional advice on the setting of fees, the development of water and wastewater master plans and capital improvement programs, and the development of asset management plans.

Stokesdale has maintained its water capital assets that provide capacity that is, and will be available for new development, and desires to use System Development Fees to recover a portion of the costs associated with providing capacity.

The overall result of this effort will be establishing the maximum cost-justified System Development Fees allowable under HB 436. Stokesdale may elect to implement fees of lesser value; however, any adjustment must be calculated on a cost per unit volume basis, meaning the same cost per gallon adjustment must be applied equally to all customers.

System Development Fees are defined as a charge imposed on each new customer or development that generally offsets the incremental cost of replacing existing and/or constructing new capital assets to provide capacity that will continue to meet the demands placed on the system by each new customer or development. Since water system capacity must exceed customer demands, the major infrastructure components providing this capacity, such as water treatment plants, reservoirs, wells, pump stations, etc., must be planned and constructed well in advance, and in large enough increments to keep pace with anticipated demand on the available system capacity.

AWWA methodology cites legal consideration for determining SDF. A Rational Nexus, or reasonable relationship, must be established between the fee charged and the cost associated with providing capacity to new customers. The Rational Nexus Test consists of three elements and will be addressed by 1) a review of available planning documents to verify general alignment between capacity demands driven by projected development patterns and planned capital improvements that will be needed to create the required capacity 2) a determination of the proportionate share of costs to be borne by new development through appropriate methodology and calculation and 3) establishing a reasonable apportionment of the cost to new development in relation to the benefits the new development will reasonably receive through appropriate methodology and calculations.

The first element of the Rational Nexus test was determined to be satisfactory based on a review of Stokesdale's 2007 Future Land Use Plan, and a review of the capital needs of the system. The Town's existing water system has adequate capacity throughout the planning period; however, a single Capital Improvements Project (CIP) is required to address current water quality regulations and therefore preserve the system's total capacity. This demonstrates a reasonable relationship between the projected demands on the system and the capital projects necessary to provide/preserve the system's overall capacity.

Stokesdale's Future Land Use Plan is included in Appendix A.

The remaining elements of the Rational Nexus Test 2) determining proportionate share of costs to be borne by new development and 3) establishing a reasonable cost to new development in relation to the benefits received by the new development will be determined through appropriate methodology and calculations in the following sections.

Three methods for calculating SDF meet the definition of HB 436 and will satisfy the Rational Nexus Test:

Buy-In Method

The Buy-In Method is used where existing system capacity is available to provide service to new development. New customers essentially "buy" their proportionate share of system capacity from the current customer base ("system owners") at the current cost or value of the existing facilities. HB 436 requires appropriate adjustments to be made to the replacement cost such as "debt credits, grants, and other generally accepted valuation adjustments."

Incremental Cost Method

The Incremental Cost (or Marginal Cost) Method is used to assign new development the incremental cost of capital assets required for future system capacity expansion(s). This method should include supporting details identifying construction costs, scheduling, financing, funding source(s), etc., tied to a capital improvements plan, utilities master plan, and/or other approved planning document(s) that cover a planning horizon of 10 to 20 years. HB 436 requires a revenue credit to be applied "against the projected aggregate cost of water or sewer capital improvements."

Combined Method

The Combined Approach is a combination of the Buy-In and Incremental Cost Methods, and is used where existing assets provide some system capacity to accommodate new development, and applicable capital plan(s) also identify significant capital investment proposed to add infrastructure required to address future growth and capacity needs.

3.0

CALCULATION of SYSTEM DEVELOPMENT FEES

The **Combined Method** is the appropriate approach to calculate Stokesdale's system development fees. Existing system capacity is available to provide service to new customers and is expected to accommodate projected growth through the planning period. The CIP schedule consists of a single project, a tank mixer and ventilation system to address regulatory requirements related to disinfection byproducts. Construction is anticipated for FY2019. Therefore, the Combined Method will be used to calculate the SDF.

3.1 Existing System Capacity Availability

Water system design capacity is determined using average day demands and incorporates appropriate peaking factors that will adequately address maximum flow conditions that occur during high water use conditions. Using historical data, the average day flows for the water system indicates available system capacity as follows:

Table 3.1.1 – Stokesdale Water System Available Capacity

Stokesdale Water System Available Capacity				
Item	System Capacity - Million Gallons Per Day (MGD)	Design Capacity	Average Day	Available Capacity
1	Water System	0.600	0.086	0.514
Design Standards applicable to capacity are based on average day conditions.				
Water System Design Capacity determined using NCAC Rules Governing Public Water Supply Systems				

3.2 Buy-In Calculation - After demonstrating capacity is available, the value per gallon is calculated to determine the cost per gallon that will be applied to reimburse existing customers for constructing and maintaining available capacity in advance.

The preferred AWWA valuation approach is "replacement cost new less depreciation" (RCNLD). This approach is based on the premise that System Development Fees should reflect the value of providing any given amount of new capacity at the cost of constructing the assets at the time the new customer is connected. This fairly compensates existing customers for carrying the costs of constructing and maintaining capacity built into the system in advance of when the new customers connect.

Replacement cost in the RCNLD calculation used the RS Means Historical Cost Index. RS Means has been publishing a construction cost index for over 70 years, collecting data from all facets of the industry to accurately track costs directly related to building and construction. This allows

the present value (replacement cost new) of capital construction projects to be calculated on data provided by a very reliable, long-time industry leader. Depreciation assigned by the Town's fixed asset inventory uses the straight-line method, typically based on a 50-year assignment of useful life, to represent a general decline in value over time.

Replacement Cost New (RCN) is therefore determined by applying the RS Means index to the original cost, then deducting the accumulated depreciation to reach RCNLD.

Assets included in the buy-in valuation are those that provide the available capacity of the system, are "owned" by the ratepayers, and therefore provide a benefit to all customers. Typically, these assets are water supply, treatment, pump stations, storage and mains. Assets contributed by or paid for by developers are deducted from the calculation since these costs were not "paid" by the existing customers. Non-capacity related assets such as vehicles, computers and software are also excluded from the calculation.

Table 3.2.1 – Water System Cost per GPD of Existing Utility Assets Providing Available Capacity

Stokesdale Water System Development Fee Buy-In Valuation				
Item	System Asset Description	RCNLD	Excluded	Amount Eligible
	Water System Assets			
W1	Water Main Infrastructure	\$ 4,344,071	\$ 8,193	\$ 4,335,878
	Subtotal - Water System Assets	\$ 4,344,071	\$ 8,193	\$ 4,335,878
	Less Revenue Credit: Grant			\$ (3,000,000)
	Equals: Net Water System Value			\$ 1,335,878
	Divide by: Water System Capacity (MGD)			0.60
	Equals: Unit Valuation of Water System (\$/MGD)			\$ 2,226,463
	Divide by: 1,000,000 gallons (\$/GPD)			\$ 2.23

3.3 Incremental Cost Calculation - Value of future capacity to be available to new customers through capital construction projects considered in the Town's Capital Improvements Plan (CIP) or similar master planning document.

Assigning value to future capacity-related assets requires a determination of cost in present-day dollars and a clearly defined capacity that the assets will provide. Engineers typically assign project costs and capacity needs developed through a conceptual design process, and adjust costs to the scheduled year of construction in the CIP. Present-day value can therefore be obtained using the same assumptions for inflation and then applied to the incremental cost calculation.

Tables 3.3.1 – Cost per GPD for Incremental (Future) Capacity Related Assets

Stokesdale Water System Capacity-Related Component Incremental Valuation				
CIP Item	System Asset Description	Cost	Capacity Related %	SDF Component Valuation
	Water System Assets			
WI 1	Water Tank Mixer and DBP Stripping	\$ 75,000	100%	\$ 75,000
Valuation Adjustments and Calculation of Cost-Justified Fee				
	Less Revenue Credit: 25% project cost per HB436			\$ (18,750)
	Equals: Proposed Asset Valuation			\$ 56,250
	Divided by: Additional Capacity (MGD)			0.60
	Equals: Adjusted Valuation per MGD			\$ 93,750
	Divided by: 1,000,000 gallons (\$/GPD)			\$ 0.09

3.4 Valuation Adjustments – The above system valuations include applicable credit adjustments for revenues anticipated from existing user charges, donated infrastructure and grants.

HB 436 requires revenue credits to be applied to debt that is issued to construct water and sewer system assets that provide capacity for potential customers, and are repaid by retail water rates and charges. To ensure that repayment for this debt is not collected twice from new customers; once through the SDF and again through retail rates and charges, the remaining outstanding debt principal amount is required to be applied as a credit against the projected aggregate cost of the capital improvements in the SDF calculation.

Contributed capital provided by new development, that exceeds the development's proportionate share of connecting facilities, shall also be credited. Contributed capital is identified as part of fixed asset review and included in the summary of ineligible assets in the above calculation.

3.5 Cost per Unit Volume – Dollar valued that can be applied uniformly to all potential customers.

This measure becomes the starting point for determining the maximum cost-justified water system development fee. Fees for different types of customers are based on this cost of capacity multiplied by the amount of capacity needed to serve each type or class of customer.

McGill Associates has calculated costs for water capacity on a per gallon per day basis for the Town of Stokesdale. This calculation was performed using the Buy-in Method to account for the Town's existing capacity to provide water service to developments. This calculation resulted in a development fee ceiling of \$928.00 for an Equivalent Residential Unit (ERU). ERU is defined as the water capacity required to serve the most typical user type, which is a three-bedroom single-family dwelling. The fee for other types of development can be calculated by applying the calculated the cost of capacity per gallon of flow per day to the water and wastewater demands for various uses as defined by NC Administrative Code 15A NCAC 18C .0409 and 15A NCAC 02T .0114.

Using NC Administrative Code 15A NCAC 18C .0409 and 15A NCAC 02T .0114 ensures that the same standard used to plan, design, construct and finance capital assets is applied as the same cost recovery basis to be applied to new development.

Appendix A

House Bill 436

NC Administrative Code 15A NCAC 18C .0409

NC Administrative Code 15A NCAC 02T .0114

Stokesdale 2007 Future Land Use Plan

RS Means Historical Cost Index

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2017

SESSION LAW 2017-138
HOUSE BILL 436

AN ACT TO PROVIDE FOR UNIFORM AUTHORITY TO IMPLEMENT SYSTEM DEVELOPMENT FEES FOR PUBLIC WATER AND SEWER SYSTEMS IN NORTH CAROLINA AND TO CLARIFY THE APPLICABLE STATUTE OF LIMITATIONS.

The General Assembly of North Carolina enacts:

SECTION 1. Chapter 162A of the General Statutes is amended by adding a new Article to read:

"Article 8.

"System Development Fees.

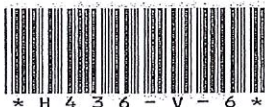
"§ 162A-200. Short title.

This Article shall be known and may be cited as the "Public Water and Sewer System Development Fee Act."

"§ 162A-201. Definitions.

The following definitions apply in this Article:

- (1) Capital improvement. – A planned facility or expansion of capacity of an existing facility other than a capital rehabilitation project necessitated by and attributable to new development.
- (2) Capital rehabilitation project. – Any repair, maintenance, modernization, upgrade, update, replacement, or correction of deficiencies of a facility, including any expansion or other undertaking to increase the preexisting level of service for existing development.
- (3) Existing development. – Land subdivisions, structures, and land uses in existence at the start of the written analysis process required by G.S. 162A-205, no more than one year prior to the adoption of a system development fee.
- (4) Facility. – A water supply, treatment, storage, or distribution facility, or a wastewater collection, treatment, or disposal facility, including for reuse or reclamation of water, owned or operated, or to be owned or operated, by a local governmental unit and land associated with such facility.
- (5) Local governmental unit. – Any political subdivision of the State that owns or operates a facility, including those owned or operated pursuant to local act of the General Assembly or pursuant to Part 2 of Article 2 of Chapter 130A, Article 15 of Chapter 153A, Article 16 of Chapter 160A, or Articles 1, 4, 5, 5A, or 6 of Chapter 162A of the General Statutes.
- (6) New development. – Any of the following occurring after the date a local government begins the written analysis process required by G.S. 162A-205, no more than one year prior to the adoption of a system development fee, which increases the capacity necessary to serve that development:
 - a. The subdivision of land.



- b. The construction, reconstruction, redevelopment, conversion, structural alteration, relocation, or enlargement of any structure which increases the number of service units.
 - c. Any use or extension of the use of land which increases the number of service units.
- (7) Service. – Water or sewer service, or water and sewer service, provided by a local governmental unit.
- (8) Service unit. – A unit of measure, typically an equivalent residential unit, calculated in accordance with generally accepted engineering or planning standards.
- (9) System development fee. – A charge or assessment for service imposed with respect to new development to fund costs of capital improvements necessitated by and attributable to such new development, to recoup costs of existing facilities which serve such new development, or a combination of those costs, as provided in this Article. The term includes amortized charges, lump-sum charges, and any other fee that functions as described by this definition regardless of terminology. The term does not include any of the following:
 - a. A charge or fee to pay the administrative, plan review, or inspection costs associated with permits required for development.
 - b. Tap or hookup charges for the purpose of reimbursing the local governmental unit for the actual cost of connecting the service unit to the system.
 - c. Availability charges.
 - d. Dedication of capital improvements on-site, adjacent, or ancillary to a development absent a written agreement providing for credit or reimbursement to the developer pursuant to G.S. 153A-280, 153A-451, 160A-320, 160A-499 or Part 3A of Article 18, Chapter 153A or Part 3D of Article 19, Chapter 160A of the General Statutes.
 - e. Reimbursement to the local governmental unit for its expenses in constructing or providing for water or sewer utility capital improvements adjacent or ancillary to the development if the owner or developer has agreed to be financially responsible for such expenses; however, such reimbursement shall be credited to any system development fee charged as set forth in G.S. 162A-207(c).
- (10) System development fee analysis. – An analysis meeting the requirements of G.S. 162A-205.

"§ 162A-202. Reserved.

"§ 162A-203. Authorization of system development fee.

(a) A local governmental unit may adopt a system development fee for water or sewer service only in accordance with the conditions and limitations of this Article.

(b) A system development fee adopted by a local governmental unit under any lawful authority other than this Article and in effect on October 1, 2017, shall be conformed to the requirements of this Article not later than July 1, 2018.

"§ 162A-204. Reserved.

"§ 162A-205. Supporting analysis.

A system development fee shall be calculated based on a written analysis, which may constitute or be included in a capital improvements plan, that:

- (1) Is prepared by a financial professional or a licensed professional engineer qualified by experience and training or education to employ generally accepted accounting, engineering, and planning methodologies to calculate system development fees for public water and sewer systems.
- (2) Documents in reasonable detail the facts and data used in the analysis and their sufficiency and reliability.
- (3) Employs generally accepted accounting, engineering, and planning methodologies, including the buy-in, incremental cost or marginal cost, and combined cost methods for each service, setting forth appropriate analysis as to the consideration and selection of a method appropriate to the circumstances and adapted as necessary to satisfy all requirements of this Article.
- (4) Documents and demonstrates the reliable application of the methodologies to the facts and data, including all reasoning, analysis, and interim calculations underlying each identifiable component of the system development fee and the aggregate thereof.
- (5) Identifies all assumptions and limiting conditions affecting the analysis and demonstrates that they do not materially undermine the reliability of conclusions reached.
- (6) Calculates a final system development fee per service unit of new development and includes an equivalency or conversion table for use in determining the fees applicable for various categories of demand.
- (7) Covers a planning horizon of not less than 10 years nor more than 20 years.
- (8) Is adopted by resolution or ordinance of the local governmental unit in accordance with G.S. 162A-209.

"§ 162A-206. Reserved.

"§ 162A-207. Minimum requirements.

(a) Maximum. - A system development fee shall not exceed that calculated based on the system development fee analysis.

(b) Revenue Credit. - In applying the incremental cost or marginal cost, or the combined cost, method to calculate a system development fee with respect to water or sewer capital improvements, the system development fee analysis must include as part of that methodology a credit against the projected aggregate cost of water or sewer capital improvements. That credit shall be determined based upon generally accepted calculations and shall reflect a deduction of either the outstanding debt principal or the present value of projected water and sewer revenues received by the local governmental unit for the capital improvements necessitated by and attributable to such new development, anticipated over the course of the planning horizon. In no case shall the credit be less than twenty-five percent (25%) of the aggregate cost of capital improvements.

(c) Construction or Contributions Credit. In calculating the system development fee with respect to new development, the local governmental unit shall credit the value of costs in excess of the development's proportionate share of connecting facilities required to be oversized for use of others outside of the development. No credit shall be applied, however, for water or sewer capital improvements on-site or to connect new development to water or sewer facilities.

"§ 162A-208. Reserved.

"§ 162A-209. Adoption and periodic review.

(a) For not less than 45 days prior to considering the adoption of a system development fee analysis, the local governmental unit shall post the analysis on its Web site and solicit and furnish a means to submit written comments, which shall be considered by the preparer of the analysis for possible modifications or revisions.

(b) After expiration of the period for posting, the governing body of the local governmental unit shall conduct a public hearing prior to considering adoption of the analysis with any modifications or revisions.

(c) The local governmental unit shall publish the system development fee in its annual budget or rate plan or ordinance. The local governmental unit shall update the system development fee analysis at least every five years.

"§ 162A-210. Reserved.

"§ 162A-211. Use and administration of revenue.

(a) Revenue from system development fees calculated using the incremental cost method or marginal cost method, exclusively or as part of the combined cost method, shall be expended only to pay:

(1) Costs of constructing capital improvements including, and limited to, any of the following:

a. Construction contract prices.

b. Surveying and engineering fees.

c. Land acquisition cost.

d. Principal and interest on bonds, notes, or other obligations issued by or on behalf of the local governmental unit to finance any costs for an item listed in sub-subdivisions a. through c. of this subdivision.

(2) Professional fees incurred by the local governmental unit for preparation of the system development fee analysis.

(3) If no capital improvements are planned for construction within five years or the foregoing costs are otherwise paid or provided for, then principal and interest on bonds, notes, or other obligations issued by or on behalf of a local governmental unit to finance the construction or acquisition of existing capital improvements.

(b) Revenue from system development fees calculated using the buy-in method may be expended for previously completed capital improvements for which capacity exists and for capital rehabilitation projects. The basis for the buy-in calculation for previously completed capital improvements shall be determined by using a generally accepted method of valuing the actual or replacement costs of the capital improvement for which the buy-in fee is being collected less depreciation, debt credits, grants, and other generally accepted valuation adjustments.

(c) A local governmental unit may pledge a system development fee as security for the payment of debt service on a bond, note, or other obligation subject to compliance with the foregoing limitations.

(d) System development fee revenues shall be accounted for by means of a capital reserve fund established pursuant to Part 2 of Article 3 of Chapter 159 of the General Statutes and limited as to expenditure of funds in accordance with this section.

"§ 162A-212. Reserved.

"§ 162A-213. Time for collection of system development fees.

For new development involving the subdivision of land, the system development fee shall be collected by a local governmental unit either at the time of plat recordation or when water or sewer service for the subdivision or other development is committed by the local governmental unit. For all other new development, the local governmental unit shall collect the system development fee at the time of application for connection of the individual unit of development to the service or facilities.

"§ 162A-214. Reserved.

"§ 162A-215. Narrow construction.

Notwithstanding G.S. 153A-4 and G.S. 160A-4, in any judicial action interpreting this Article, all powers conferred by this Article shall be narrowly construed to ensure that system development fees do not unduly burden new development."

SECTION 2. G.S. 130A-64 reads as rewritten:

"§ 130A-64. Service charges and rates.

(a) A sanitary district board shall apply service charges and rates based upon the exact benefits derived. These service charges and rates shall be sufficient to provide funds for the maintenance, adequate depreciation and operation of the work of the district. If reasonable, the service charges and rates may include an amount sufficient to pay the principal and interest maturing on the outstanding bonds and, to the extent not otherwise provided for, bond anticipation notes of the district. Any surplus from operating revenues shall be set aside as a separate fund to be applied to the payment of interest on or to the retirement of bonds or bond anticipation notes. The sanitary district board may modify and adjust these service charges and rates.

(b) The district board may require system development fees only in accordance with Article 8 of Chapter 162A of the General Statutes."

SECTION 3. G.S. 153A-277 reads as rewritten:

"§ 153A-277. Authority to fix and enforce rates.

(a) A county may establish and revise from time to time schedules of rents, rates, fees, charges, and penalties for the use of or the services furnished or to be furnished by a public enterprise. Schedules of rents, rates, fees, charges, and penalties may vary for the same class of service in different areas of the county and may vary according to classes of service, and different schedules may be adopted for services provided outside of the county. A county may include a fee relating to subsurface discharge wastewater management systems and services on the property tax bill for the real property where the system for which the fee is imposed is located.

...

(a2) A county may require system development fees only in accordance with Article 8 of Chapter 162A of the General Statutes.

...."

SECTION 4.(a) G.S. 160A-314 reads as rewritten:

"§ 160A-314. Authority to fix and enforce rates.

(a) A city may establish and revise from time to time schedules of rents, rates, fees, charges, and penalties for the use of or the services furnished or to be furnished by any public enterprise. Schedules of rents, rates, fees, charges, and penalties may vary according to classes of service, and different schedules may be adopted for services provided outside the corporate limits of the city.

...

(e) A city may require system development fees only in accordance with Article 8 of Chapter 162A of the General Statutes."

SECTION 4.(b) G.S. 160A-317 is amended by adding a new subsection to read:

"(a4) System Development Fees. – A city may require system development fees only in accordance with Article 8 of Chapter 162A of the General Statutes."

SECTION 5.(a) G.S. 162A-6(a) is amended by adding a new subdivision to read:

"(9a) To impose and require system development fees only in accordance with Article 8 of this Chapter."

SECTION 5.(b) G.S. 162A-9 is amended by adding a new subsection to read:

"(a5) An authority may require system development fees only in accordance with Article 8 of this Chapter."

SECTION 6.(a) G.S. 162A-36(a) is amended by adding a new subdivision to read:

"(8a) To impose and require system development fees only in accordance with Article 8 of this Chapter."

SECTION 6.(b) G.S. 162A-49 reads as rewritten:

"§ 162A-49. Rates and charges for services.

(a) The district board may fix, and may revise from time to time, rents, rates, fees and other charges for the use of land for the services furnished or to be furnished by any water system or sewerage system or both. Such rents, rates, fees and charges shall not be subject to supervision or regulation by any bureau, board, commission, or other agency of the State or of any political subdivision. Any such rents, rates, fees and charges pledged to the payment of revenue bonds of the district shall be fixed and revised so that the revenues of the water system or sewerage system or both, together with any other available funds, shall be sufficient at all times to pay the cost of maintaining, repairing and operating the water system or the sewerage system or both, the revenues of which are pledged to the payment of such revenue bonds, including reserves for such purposes, and to pay the interest on and the principal of such revenue bonds as the same shall become due and payable and to provide reserves therefor. If any such rents, rates, fees and charges are pledged to the payment of any general obligation bonds issued under this Article, such rents, rates, fees and charges shall be fixed and revised so as to comply with the requirements of such pledge. The district board may provide methods for collection of such rents, rates, fees and charges and measures for enforcement of collection thereof, including penalties and the denial or discontinuance of service.

(b) The district board may require system development fees only in accordance with Article 8 of this Chapter."

SECTION 7.(a) G.S. 162A-69 is amended by adding a new subdivision to read:

"(8a) To impose and require system development fees only in accordance with Article 8 of this Chapter."

SECTION 7.(b) G.S. 162A-72 reads as rewritten:

"§ 162A-72. Rates and charges for services.

(a) The district board may fix, and may revise from time to time, rents, rates, fees and other charges for the use of and for the services furnished or to be furnished by any sewerage system. Such rents, rates, fees and charges shall not be subject to supervision or regulation by any bureau, board, commission, or other agency of the State or of any political subdivision. Any such rents, rates, fees and charges pledged to the payment of revenue bonds of the district shall be fixed and revised so that the revenues of the sewerage system, together with any other available funds, shall be sufficient at all times to pay the cost of maintaining, repairing and operating the sewerage system the revenues of which are pledged to the payment of such revenue bonds, including reserves for such purposes, and to pay the interest on and the principal of such revenue bonds as the same shall become due and payable and to provide reserves therefor. If any such rents, rates, fees and charges are pledged to the payment of any general obligation bonds issued under this Article, such rents, rates, fees and charges shall be fixed and revised so as to comply with the requirements of such pledge. The district board may provide methods for collection of such rents, rates, fees and charges and measures for enforcement of collection thereof, including penalties and the denial or discontinuance of service.

(b) The district board may require system development fees only in accordance with Article 8 of this Chapter."

SECTION 8. G.S. 162A-85.13 is amended by adding a new subsection to read:

"(a1) The district board may require system development fees only in accordance with Article 8 of this Chapter."

SECTION 9. G.S. 162A-88 reads as rewritten:

"§ 162A-88. District is a municipal corporation.

(a) The inhabitants of a county water and sewer district created pursuant to this Article are a body corporate and politic by the name specified by the board of commissioners. Under that name they are vested with all the property and rights of property belonging to the corporation; have perpetual succession; may sue and be sued; may contract and be contracted with; may acquire and hold any property, real and personal, devised, sold, or in any manner conveyed, dedicated to, or otherwise acquired by them, and from time to time may hold, invest, sell, or dispose of the same; may have a common seal and alter and renew it at will; may establish, revise and collect rates, fees or other charges and penalties for the use of or the services furnished or to be furnished by any sanitary sewer system, water system or sanitary sewer and water system of the district; and may exercise those powers conferred on them by this Article.

(b) The district board may require system development fees only in accordance with Article 8 of this Chapter."

SECTION 10.(a) G.S. 1-52(15) reads as rewritten:

"(15) For the recovery of taxes paid as provided in ~~G.S. 105-381~~ G.S. 105-381 or for the recovery of an unlawful fee, charge, or exaction collected by a county, municipality, or other unit of local government for water or sewer service or water and sewer service."

SECTION 10.(b) This section is to clarify and not alter G.S. 1-52.

SECTION 11. Sections 1 through 9 of this act become effective October 1, 2017, and apply to system development fees imposed on or after that date. Section 10 of this act, being a clarifying amendment, has retroactive effect and applies to claims accrued or pending prior to and after the date that section becomes law. Nothing in this act provides retroactive authority for any system development fee, or any similar fee for water or sewer services to be furnished, collected by a local governmental unit prior to October 1, 2017. The remainder of this act is effective when it becomes law and applies to claims accrued or pending prior to and after that date.

In the General Assembly read three times and ratified this the 29th day of June, 2017.

s/ Daniel J. Forest
President of the Senate

s/ Tim Moore
Speaker of the House of Representatives

s/ Roy Cooper
Governor

Approved 4:13 p.m. this 20th day of July, 2017

15A NCAC 18C .0409 SERVICE CONNECTIONS

(a) Local Water Supply Plan. Units of local government which are operating under a local water supply plan in accordance with G.S. 143-355(l) shall not be limited in the number of service connections.

(b) No local water supply plan. A public water system which does not have a local water supply plan as stated in Paragraph (a) shall limit its number of service connections as follows:

(1) A public water system shall meet the daily flow requirements specified in Table 1:

Table 1: Daily Flow Requirements

Type of Service Connection	Daily Flow for Design
Residential	400 gallon/connection
Mobile Home Parks	250 gallon/connection
Campgrounds and Travel Trailer Parks	100 gallon/space
Marina	10 gallon/boat slip
Marina with bathhouse	30 gallon/boat slip
Rest Homes and Nursing Homes	
with laundry	120 gallon/bed
without laundry	60 gallon/bed
Schools	15 gallon/student
Day Care Facilities	15 gallon/student
Construction, work, or summer camps	60 gallon/person
Business, office, factory (exclusive of industrial use)	
without showers	25 gallon/person/shift
with showers	35 gallon/person/shift
Hospitals	300 gallon/bed

or;

(2) A public water system serving different types of service connections shall meet the maximum daily demand calculated as follows:

(A) Where records of the previous year are available that reflect daily usage, the average of the two highest consecutive days of record of the water treated shall be the value used to determine if there is capacity to serve additional service connections (unusual events such as massive line breaks or line flushings shall not be considered).

(B) Where complete daily records of water treated are not available, the public water system shall multiply the daily average use based on the amount of water treated during the previous year of record by the appropriate factor to determine maximum daily demand, as follows:

(i) A system serving a population of 10,000 or less shall multiply the daily average use by 2.5; or

(ii) A system serving a population greater than 10,000 shall multiply the daily average use by 2.0.

*History Note: Authority G.S. 130A-315; 103A-317; P.L. 93-523;
Eff. July 1, 1994.*

15A NCAC 02T .0114 WASTEWATER DESIGN FLOW RATES

(a) This Rule shall be used to determine wastewater flow rates for all systems covered by this Subchapter unless alternate criteria are provided by a program specific rule and for flow used for the purposes of 15A NCAC 02H .0105. These are minimum design daily flow rates for normal use and occupancy situations. Higher flow rates may be required where usage and occupancy are atypical, including, those in Paragraph (e) of this Rule. Wastewater flow calculations must take hours of operation and anticipated maximum occupancies/usage into account when calculating peak flows for design.

(b) In determining the volume of sewage from dwelling units, the flow rate shall be 120 gallons per day per bedroom. The minimum volume of sewage from each dwelling unit shall be 240 gallons per day and each additional bedroom above two bedrooms shall increase the volume by 120 gallons per day. Each bedroom or any other room or addition that can reasonably be expected to function as a bedroom shall be considered a bedroom for design purposes. When the occupancy of a dwelling unit exceeds two persons per bedroom, the volume of sewage shall be determined by the maximum occupancy at a rate of 60 gallons per person per day.

(c) The following table shall be used to determine the minimum allowable design daily flow of wastewater facilities. Design flow rates for establishments not identified below shall be determined using available flow data, water-using fixtures, occupancy or operation patterns, and other measured data.

Type of Establishments	Daily Flow For Design
Barber and beauty shops	
Barber Shops	50 gal/chair
Beauty Shops	125 gal/booth or bowl
Businesses, offices and factories	
General business and office facilities	25 gal/employee/shift
Factories, excluding industrial waste	25 gal/employee/shift
Factories or businesses with showers or food preparation	35 gal/employee/shift
Warehouse	100 gal/loading bay
Warehouse – self storage (not including caretaker residence)	1 gal/unit
Churches	
Churches without kitchens, day care or camps	3 gal/seat
Churches with kitchen	5 gal/seat
Churches providing day care or camps	25 gal/person (child & employee)
Fire, rescue and emergency response facilities	
Fire or rescue stations without on site staff	25 gal/person
Fire or rescue stations with on-site staff	50 gal/person/shift
Food and drink facilities	
Banquet, dining hall	30 gal/seat
Bars, cocktail lounges	20 gal/seat
Caterers	50 gal/100 sq ft floor space
Restaurant, full Service	40 gal/seat
Restaurant, single service articles	20 gal/seat
Restaurant, drive-in	50 gal/car space
Restaurant, carry out only	50 gal/100 sq ft floor space
Institutions, dining halls	5 gal/meal
Deli	40 gal/100 sq ft floor space
Bakery	10 gal/100 sq ft floor space
Meat department, butcher shop or fish market	75 gal/100 sq ft floor space
Specialty food stand or kiosk	50 gal/100 sq ft floor space
Hotels and Motels	
Hotels, motels and bed & breakfast facilities, without in-room cooking facilities	120 gal/room
Hotels and motels, with in-room cooking facilities	175 gal/room
Resort hotels	200 gal/room
Cottages, cabins	200 gal/unit
Self service laundry facilities	500 gal/machine
Medical, dental, veterinary facilities	
Medical or dental offices	250 gal/practitioner/shift

Veterinary offices (not including boarding)	250 gal/practitioner/shift
Veterinary hospitals, kennels, animal boarding facilities	20 gal/pen, cage, kennel or stall
Hospitals, medical	300 gal/bed
Hospitals, mental	150 gal/bed
Convalescent, nursing, rest homes without laundry facilities	60 gal/bed
Convalescent, nursing, rest homes with laundry facilities	120 gal/bed
Residential care facilities	60 gal/person
Parks, recreation, camp grounds, R-V parks and other outdoor activity facilities	
Campgrounds with comfort station, without water or sewer hookups	75 gal/campsite
Campgrounds with water and sewer hookups	100 gal/campsite
Campground dump station facility	50 gal/space
Construction, hunting or work camps with flush toilets	60 gal/person
Construction, hunting or work camps with chemical or portable toilets	40 gal/person
Parks with restroom facilities	250 gal/plumbing fixture
Summer camps without food preparation or laundry facilities	30 gal/person
Summer camps with food preparation and laundry facilities	60 gal/person
Swimming pools, bathhouses and spas	10 gal/person
Public access restrooms	325 gal/plumbing fixture
Schools, preschools and day care	
Day care and preschool facilities	25 gal/person (child & employee)
Schools with cafeteria, gym and showers	15 gal/student
Schools with cafeteria	12 gal/student
Schools without cafeteria, gym or showers	10 gal/student
Boarding schools	60 gal/person (student & employee)
Service stations, car wash facilities	
Service stations, gas stations	250 gal/plumbing fixture
Car wash facilities (if recycling water see Rule .0235)	1200 gal/bay
Sports centers	
Bowling center	50 gal/lane
Fitness, exercise, karate or dance center	50 gal/100 sq ft
Tennis, racquet ball	50 gal/court
Gymnasium	50 gal/100 sq ft
Golf course with only minimal food service	250 gal/plumbing fixture
Country clubs	60 gal/member or patron
Mini golf, putt-putt	250 gal/plumbing fixture
Go-kart, motocross	250 gal/plumbing fixture
Batting cages, driving ranges	250 gal/plumbing fixture
Marinas without bathhouse	10 gal/slip
Marinas with bathhouse	30 gal/slip
Video game arcades, pool halls	250 gal/plumbing fixture
Stadiums, auditoriums, theaters, community centers	5 gal/seat
Stores, shopping centers, malls and flea markets	
Auto, boat, recreational vehicle dealerships/showrooms with restrooms	125 gal/plumbing fixture
Convenience stores, with food preparation	60 gal/100 sq ft
Convenience stores, without food preparation	250 gal/plumbing fixture
Flea markets	30 gal/stall
Shopping centers and malls with food service	130 gal/1000 sq ft
Stores and shopping centers without food service	100 gal/1000 sq ft
Transportation terminals – air, bus, train, ferry, port and dock	5 gal/passenger

(d) Design daily flow rates for proposed non-residential developments where the types of use and occupancy are not known shall be designed for a minimum of 880 gallons per acre or the applicant shall specify an anticipated flow based upon anticipated or potential uses.

(e) Conditions applicable to the use of the above design daily flow rates:

- (1) For restaurants, convenience stores, service stations and public access restroom facilities, higher design daily flow rates shall be required based on higher expected usage where use is increased because of its proximity to highways, malls, beaches, or other similar high use areas.
- (2) Residential property on barrier islands and similar communities located south or east of the Atlantic Intracoastal Waterway used as vacation rental as defined in G.S. 42A-4 shall use 120 gallons per day per habitable room. Habitable room shall mean a room or enclosed floor space used or intended to be used for living or sleeping, excluding kitchens and dining areas, bathrooms, shower rooms, water closet compartments, laundries, pantries, foyers, connecting corridors, closets, and storage spaces.

(f) An adjusted daily sewage flow design rate shall be granted for permitted but not yet tributary connections and future connections tributary to the system upon showing that a sewage system is adequate to meet actual daily wastewater flows from a facility included in Paragraph (b) or (c) of this Rule without causing flow violations at the receiving wastewater treatment plant or capacity related sanitary sewer overflows within the collection system as follows:

- (1) Documented, representative data from that facility or a comparable facility shall be submitted by an authorized signing official in accordance with Rule .0106 of this Section to the Division as follows for all flow reduction request:
 - (A) Dates of flow meter calibrations during the time frame evaluated and indication if any adjustments were necessary.
 - (B) A breakdown of the type of connections (e.g. two bedroom units, three bedroom units) and number of customers for each month of submitted data as applicable. Identification of any non-residential connections including subdivision clubhouses/pools, restaurants, schools, churches and businesses. For each non-residential connection, information as identified in Paragraph (c) of this Rule (e.g. 200 seat church, 40 seat restaurant, 35 person pool bathhouse).
 - (C) Owner of the collection system.
 - (D) Age of the collection system.
 - (E) Analysis of inflow and infiltration within the collection system or receiving treatment plant; as applicable.
 - (F) Where a dedicated wastewater treatment plant serves the specific area and is representative of the residential wastewater usage, at least the 12 most recent consecutive monthly average wastewater flow readings and the daily total wastewater flow readings for the highest average wastewater flow month per customers as reported to the Division.
 - (G) Where daily data from a wastewater treatment plant cannot be utilized or is not representative of the project area: at least 12 months worth of monthly average wastewater flows from the receiving treatment plant shall be evaluated to determine the peak sewage month. Daily wastewater flows shall then be taken from a flow meter installed at the most downstream point of the collection area for the peak month selected that is representative of the project area. Justification for the selected placement of the flow meter shall also be provided.
 - (H) An estimated minimum design daily sewage flow rate shall be taken by calculating the numerical average of the top three daily readings for the highest average flow month. The calculations shall also account for seasonal variations, excessive inflow and infiltration, age and suspected meter reading/recording errors.
- (2) The Division shall evaluate all data submitted but shall also consider other factors in granting, with or without adjustment, or denying a flow reduction request including: applicable weather conditions during the data period (i.e. rainy or drought), other historical monitoring data for the particular facility or other similar facilities available to the Division, the general accuracy of monitoring reports and flow meter readings, and facility usage (i.e., resort area).
- (3) Flow increases shall be required if the calculations in Subparagraph (f)(1) of this Rule yield design flows higher than that specified in Paragraphs (b) or (c) of this Rule.
- (4) The applicant/owner shall retain the letter of any approved adjusted daily design flow rate for the life of the facility and shall transfer such letter to any new system owner.

*History Note: Authority G.S. 143-215.1; 143-215.3(a)(1);
Eff. September 1, 2006.*

Town of Stokesdale



FUTURE LAND USE PLAN

Adopted by the Stokesdale Town Council
October 18, 2007

VISION STATEMENT

Stokesdale should be a town that is *quiet and attractive* that promotes the “*small town*” nature of the community. Effort should be made to *preserve, maintain, and enhance the rural character, natural habitat, and beauty* of the community. There should be a sense of community through both *formal and informal association*. Residential development should enhance the community through appropriate *neighborhood design, connectivity, and environmental protection* of the town’s natural resources. The *historic nature* of the town, especially its downtown, should be *preserved and maintained* through the addition of *businesses and services* that *cater to the citizens* and are in *harmony with existing development*. Effort should be made to create and enhance the sense of a *vibrant community* that is *safe and convenient* for all citizens. The town should promote *alternative modes of transportation, including pedestrian, bicycle, and equestrian* movement throughout the community.

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PREFACE

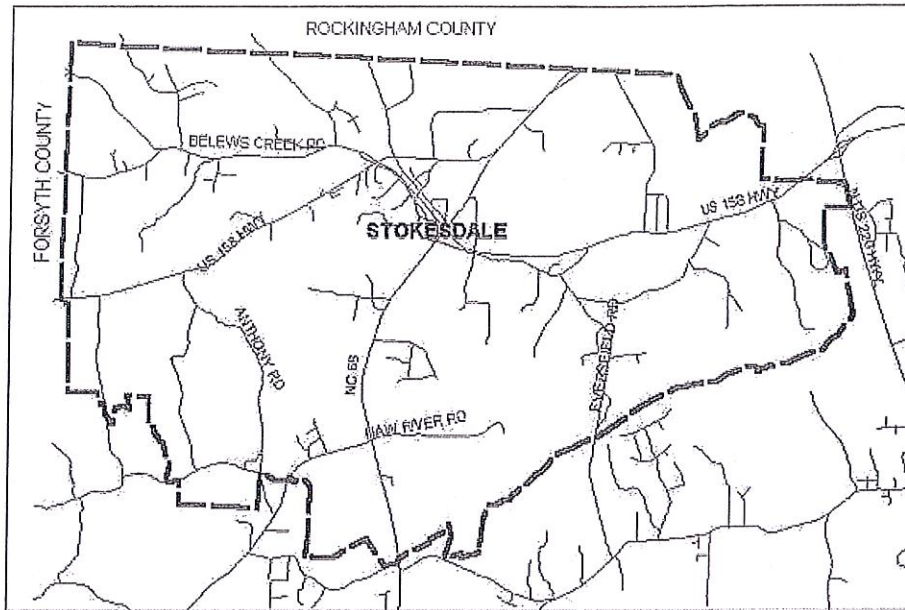
Stokesdale was incorporated in 1989. In 1998, the Stokesdale Town Council adopted the Northwest Area Plan, and began to implement and enforce a town Development Ordinance. It became evident that the town needed to adopt a land use plan that was specifically tailored to local issues and concerns. In keeping with this, the Town Council appointed the first Land Use Plan Committee to develop the Stokesdale Future Land Use Plan. The Future Land Use Plan was completed by the Committee and adopted by the Stokesdale Town Council in September, 2001. With six years of growth and development, the Town Council decided that the Land Use Plan should be reviewed and revised to reflect the changes that occurred since the original Plan was developed. Thus a second committee was formed in 2007 to produce this version of the Stokesdale Land Use Plan.

INTRODUCTION

Location & Geography

Stokesdale is located in the rolling upland of Northwest Guilford County, North Carolina. It encompasses approximately 12,000 acres (21 square miles) most of which is agricultural and low density residential in character. The majority of the developed land is located along US Highway 158, Highway 68, Haw River Road and in the town center. There are numerous small streams that have created a generally rolling topography that increases as one travels from east to west, with the most significant topography in the southwestern corner of town.

The town limits follow the Guilford County portion of the Stokesdale Fire District. This area is bounded by Rockingham County to the north, US 220 to the east, the Haw River to the south, and Forsyth County to the west. (See map below)

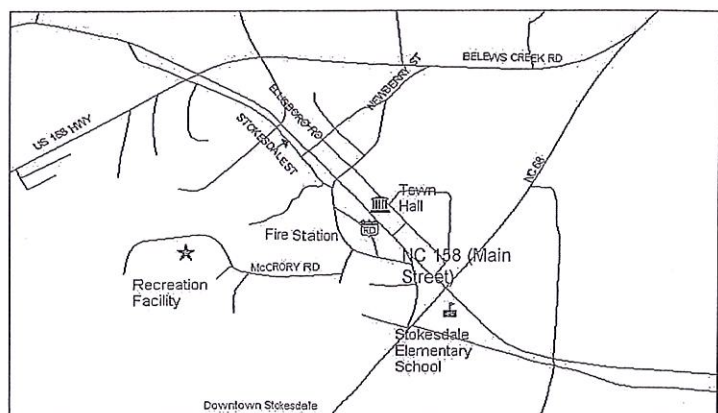


Stokesdale Town Boundaries

Three major highways intersect the town: US Highway 158, Highway 68, and NC Highway 65. Part of the town borders a fourth major highway, US Highway 220 (future I-73). With this network of roads, Stokesdale citizens are within a short drive of Greensboro, High Point, Winston-Salem, and Reidsville.

Historically, the center of town was the railroad depot (site of the current Stokesdale fire station), located on Main Street in the Town Core. The historic town center includes a mix of late nineteenth-century commercial and residential structures, post WW II neighborhoods, and more recently built commercial buildings at the major intersections.

United States Highway 158 is an important thoroughfare running through Stokesdale. This road carries a significant amount of traffic from US 220, on the eastern edge of town, to High Point and Winston-Salem. There is a concentration of industrial development along the eastern portion of US 158 including Culp Ticking, Lowes Home Improvement Warehouse, and Vulcan Materials Quarry. North Carolina Highway 68 is the main north-south thoroughfare through the town. A significant portion of this route has been developed with new residential neighborhoods.



The northwestern portion of Guilford County, including Stokesdale, has become a popular place to live. Population figures for Stokesdale between 1990 and 2000 reveal an increase of fifty-three percent (53%) from 2,134 to 3,267 residents. This is significant when compared to the twenty-one percent (21%) increase for all of Guilford County in the same decade. A comparison of more recent population figures from the North Carolina Office of Budget & Management, State Demographer, (October 2006) shows that Stokesdale has grown over eight percent (8.4%) since the 2000 census. Guilford County, as a whole, has experienced an increased growth rate of less than five percent (5%). Due to the popularity of Northwest Guilford County, the population of Stokesdale is expected to continue increasing at a more rapid rate than the county as a whole.

Town History

Stokesdale was originally settled as the community of "Green Pond" or later "Pond" and named for a swampy pond located near the present day intersection of Ellisboro Road and NC Highway 65. In 1865, a post office opened in the local general store to serve the rural community. The Cape Fear and Yadkin Railroad was built through the community in 1886. As with many transportation projects, the opening of the train depot in Stokesdale encouraged residential settlement in the community and industrial development near the rail line. It was also at this time that the name was changed from "Pond" to Stokesdale. The name was in honor of a man named Stokes, who was either an executive of the railroad, a conductor on the train, or the surveyor who surveyed the area for the railroad, depending on who you ask.

The town first incorporated in 1907. The Town went bankrupt during the Great Depression and became inactive in the 1930's. The State revoked its charter in 1971. The town was re-incorporated on November 9, 1989.

LAND USE PLAN REQUEST

A land use plan is a method for the town to accommodate future growth of the community. It provides the community a "roadmap" to guide growth so that it occurs in a rational, predictable manner, to best suit the needs of current and future citizens. The plan consists of the following elements: existing land use, environmental constraints, transportation systems, historic preservation, public utilities, community facilities, open space and recreation, and future land use. Specific goals were created from these elements that have been "voiced" in the Vision Statement.

Stokesdale is poised for growth in the 21st Century. Once an isolated farming community, it is now located at the intersection of several major highways that provide easy access to the growing cities of the Piedmont Triad. The town has installed Phase I of a public water supply system. This, along with its scenic beauty, good schools, and high quality of life, will promote continued residential and commercial growth in the community.

With this understanding, the Stokesdale Town Council, on February 15, 2007, appointed a Land Use Plan Review Committee to review and revise the current plan which was adopted September 20, 2001.

Plan Study Committee

The Stokesdale Town Council adopted the Guilford County Northwest Area Plan in April 1998 as a land use-planning tool. The Northwest Area Plan covered the entire northwest area of the county, including the areas now incorporated as the Towns of Stokesdale, Summerfield, and Oak Ridge, along with the Colfax community. Town Council requested a more specific plan be developed to aid in land use decisions for their town, one tailored to the specific interests, opportunities, and constraints of their community.

In February 1999, the Stokesdale Town Council reviewed the applications of citizens that had expressed a desire to serve on the Land Use Planning Committee and subsequently appointed eleven applicants to serve on the first land use committee. When it was determined that an updated revision of the Land Use was necessary, Council appointed the following citizens to serve on the Land Use Plan Review Committee on February 15, 2007:

Mr. John Flynt
Mrs. Mickie Holbrook
Mr. Tony Hommel
Mrs. Carolyn Joyner
Dr. Scott Lawrence
Mr. Richard Millard
Dr. Robert Wurz

With the exception of Ms. Joyner, all were members of the original Land Use Plan Committee. The current group includes two Council members, two Planning Board members, along with three other members of the community.

Guilford County Planning & Development staff provided technical assistance in revising the Land Use Plan. Trevor Nuttal, Guilford County Planner, and Les Eger, AICP, Senior Planner, served as advisory staff. Curtis Short, GIS Mapping Technician, provided support in developing the various maps and statistics used in the development of the plan.

Plan Development Process

The committee reviewed and revised each part of the plan over a series of meetings. The committee revised the plan considering recent trends and events that have transpired in the development of Stokesdale with the intent of maintaining the Town Vision. After the completion of the process the revised plan was presented to the Town Council for consideration.

Public Participation

A draft of the revision of the Future Land Use Plan was presented to the Stokesdale Planning Board on August 2, 2007. Comments were made by the Planning Board and some changes were suggested. The Board voted 5 to 0 to recommend the adoption of the Revised Future Land Use Plan to Town Council.

The Stokesdale Town Council and the Planning Board held a joint Public Hearing on the Plan on August 18, 2007. A number of citizens voiced their concerns at the meeting and written comments were also submitted. Town Council made revisions to the proposed Future Land Use Plan and adopted the Plan as revised on October 18, 2007.

PLAN ELEMENTS

Land Use Plans are comprised of a number of specific elements, or sections, that provide the basic building blocks for a future land use plan. These elements include existing land use, community facilities, historic structures, environment, and transportation.

Existing Land Use

Stokesdale is a predominantly rural community. There is a historic central downtown, recently built low-density residential neighborhoods scattered throughout, and industrial areas located mostly in the eastern area of town. The following tables provide a detailed breakdown of the different existing land uses and comparable zoning district classifications, by number of acres and percentage of total area:

<i>Land Use</i>	<i>Area (Acres)</i>	<i>Percent</i>
Agricultural/Vacant	9,609	76.72%
Commercial	39.5	0.32%
Office	11.7	0.09%
Industrial	335	2.67%
Public/ Institutional	329.6	2.63%
Residential	1,510.6	12.06%
Multi-Family	38.3	0.31%
*Other	650.5	5.19%
Total	12,524.2	100.00%
*Note: LCID Landfills, and the buffer area around LNG Facility		

Data compiled by Staff March 2000

	2000		2000 2007	2007
<i>Zoning District</i>	<i>Area(Acres)</i>	<i>Percent</i>	<i>Area (Acres)</i>	<i>Percent</i>
Agricultural	9,583.81	76.52%	8,593.83	68.80%
Commercial	77.43	0.62%	113.53	.91%
*Office	58.9	0.47%	73.02	.58%
Industrial	370.87	2.96%	365.31	2.92%
Public/ Institutional	15.0	0.12%	15.52	.12%
Residential	2416.33	19.29%	3,274.44	26.21%
Residential/Mixed Use			55.64	.005%
Total	12,524.2	100.00%	12491.29	100.00
*Note: This includes the Retirement Community				

Data provided by Guilford County Planning & Development GIS Section March 2007

Agricultural/Vacant

The predominant land use within Stokesdale is in the agriculture/vacant category. This is clear by reviewing both the existing land use and current zoning designations. Over 75% of the land is classified as agricultural/vacant or zoned agricultural. The Pine Needles Liquid Natural Gas facility, which is located in south central Stokesdale, has a significant buffer area, which must remain undeveloped to protect the community in case of a catastrophic emergency. The buffer area makes up approximately 4% of the land area of the town and must remain in permanent open space.

Commercial/Office

The majority of land being used for commercial development is located in and around the Town Core area. This includes the intersections of US 158 and NC 68, US 158 and NC 65, and along Main Street (US 158). There has been an increase in commercial development along US 158 east of Downtown Stokesdale, interspersed among industrial developments. There has been an increase in slightly over 36 acres of property that has been changed to the commercial zoning district since 2000. Less than 1% of the total land area is being used for commercial development. Commercial development has seen a surge in growth in the last five years.

Industrial

Stokesdale has approximately 3% of its land area being used or zoned for industrial development. These areas are located along US 158 in the eastern portion of town with large companies such as Culp Ticking, Vulcan Materials Quarry, APAC Carolina and RMC Carolina. It should be noted that there is a significant amount of land zoned for industrial use in the town, and ample opportunities for industrial development to remain in existing industrial areas. The Stokesdale Business Center (Formerly Four Seasons Apparel), which is located in the Town Core along Ellisboro Street, is zoned for industrial use, has been converted into a business office complex with various occupants. Lowes Home Improvement Warehouse occupies the former Burlington Industries Building on US Hwy 158. A new business park has been established on B&G Court next to Culp Ticking and businesses such as Terminix, Mini-Storage Warehouses, and other warehouse facilities are locating there.

Public/Institutional

This designation includes public buildings, places of worship, recreation areas, both public and private. Approximately 2.5% of the town falls within this designation. The largest areas are the community parks located on McCrory Road and the Dawn Acres Golf Course located along NC 68. Institutional uses, i.e. churches, the fire station, and post office, often serve dual purposes by offering various forms of recreation and community focus beyond their primary function. Oak Springs Baptist Church has purchased approximately 50 acres which was rezoned as a PDM district with a variety of uses being planned for the parcel including a church facility, recreational areas, retirement center, a library and educational buildings. The Town of Stokesdale has

purchased 25 acres of land and plans to develop a town hall complex and a park area with recreational areas with playgrounds, soccer fields, and a walking track.

Residential

Residential development makes up approximately 12% of the land area. The majority of this is low-density, single-family residents. One exception is the Countryside Village Retirement Community located on US 158. The majority of the residentially used and zoned property is located along the NC 68 corridor, in the Town Core Area, and along Athens Road and Southard Road. Major residential subdivisions have been added along Haw River Road, Ellison Road, Angel Pardue Road, and Belews Creek Road.

Except in the town core, homes are on large lots that cover an acre or more. This is because there is no public sewer service available and significant area must be available for septic drain fields on each lot.

Community Facilities

Schools

Children in Stokesdale attend a number of public and private schools in the Northwest part of the county. Stokesdale Elementary located in the southeast corner of the US 158 and NC 68 intersection is the only public school located within the corporate limits of Stokesdale. Students attend Northwest Middle and Northwest High School for their secondary education, located in unincorporated Guilford County.

There are no private schools located within Stokesdale; however, there are a number of private schools located in the Northwest and in Greensboro that children in Stokesdale attend. It is unknown how many children attend these schools.

There are also a number of small day care centers that provide services for working families with young children.

Public Safety

The Stokesdale Fire Department is a volunteer company of 30+ volunteers operating out of a new fire station located in downtown Stokesdale across from Town Hall. This station serves not only incorporated Stokesdale, but also the Stokesdale Fire District, which includes areas in, and Rockingham Counties.

Guilford County Sheriff's Department provides police protection to the town through an intergovernmental agreement. This includes a full-time deputy assigned to Stokesdale. Within the past year, the town has purchased a radar gun to facilitate traffic enforcement.

Stokesdale and the American Red Cross have established a plan for an emergency shelter for the community. The location is at the Stokesdale United Methodist in the Town Core. When needed, local Red Cross volunteers operate the emergency shelter.

Places of Worship

Area churches include denominations of Baptist, United Methodist, and Disciples of Christ as well as other denominations and faiths both within Stokesdale and beyond the borders of the town that serve the needs of the community through a variety of services and clubs.

Recreation

One Community Park, two walking tracks, and the school grounds that are used for recreation serve the town. The Community Park is located on 20 acres of land on McCrory Road in the West Fall Development. A paved walking track is available at the Stokesdale Elementary School; the other is located on the Vulcan Materials, Inc. property. Dawn Acres Golf Course is a private facility located at the intersection of NC 68 and Haw River Road.

While not located within Stokesdale, Belews Lake is located just west of town. Owned by Duke Power, Inc., this site is very popular during the summer for many forms of recreation, including boating, fishing, and swimming. Many visitors to Belews Lake travel through Stokesdale on their way to and from the lake.

Historic Structures

Originally founded as a small farming community, there are old farmhouses, tobacco barns, and other farm structures that still exist throughout the rural areas of the town although their numbers are rapidly declining over time. In 1994, the Historic Architecture Inventory for Guilford County was completed. A full listing of historic structures in Stokesdale is provided in Appendix A. Stokesdale is fortunate to have numerous examples of late nineteenth century and early twentieth century commercial and residential structures. These structures provide a visual connection between the past and present. The Plan recognizes the importance of these structures and encourages property owners to protect these historic buildings through preservation and rehabilitation.

The business development of Stokesdale creates a small, well-defined commercial core along Main Street (US 158). These structures provide a classic example of small town commercial architecture. The majority of the buildings are built of red brick with little ornamentation, yet with the classic design of 19th Century commercial buildings. While some of the buildings are in various states of disrepair, redevelopment projects are underway.

Downtown also has a significant number of historic residential structures, mainly located along Stokesdale Street, Main Street, and Ellisboro Road. Structures range from Queen Anne Victorian "gingerbread" houses to the more restrained locally adapted arts and

crafts bungalows. A number of these structures are under renovation by owners interested in preservation. Both the commercial and residential structures provide a link to the past, one in which businesses and residences were in close proximity to one another and where businesses provided services and employment to the community.

Environment

Sewage Disposal

Stokesdale does not have a public sewerage treatment system. For this reason, development is limited by the need for individual on-site sewer disposal systems (septic systems). The current ordinance requires all lots not served by public water and sewer to be at least 30,000 square feet. This requirement makes three-quarter to one-acre lot sizes to be the norm in Stokesdale. Some new residential developments have used community well systems, but none have used community septic systems. Guilford County Health Department can approve the small disposal systems; the State Department of Environment & Natural Resources must approve the larger ones.

Due to the limitations of septic systems, soil types are important when determining suitable locations for development. The USDA Soil Conservation Service developed a countywide soils map in 1977. This study provided staff the information necessary to classify the general soil types by the ability to percolate for septic fields. There are no soils in Stokesdale that are classified as "good" for septic fields. A significant portion of the town does have "moderate" soils. There are also a number of areas that are considered "severe" for septic systems. These include areas along the floodplains and creeks of the town and areas of high clay content. Many of these soils are located in the southwest corner of the town.

Article 1.

Water System

Currently, all residents and commercial developments have private or community well systems or use the municipal water system that was completed in July, 2003 after Stokesdale received a three million-dollar grant from North Carolina Department of Environmental Health and Natural Resources (NCDENR). Winston-Salem is providing a maximum of 300,000 gallons of water per day through an inter-basin transfer allowance agreement. Approximately 250 households and businesses are currently being served with public water. The waterlines follow US Hwy 158 from the Forsyth County line through downtown Stokesdale to Patricia Drive on the eastern side of the Town. The system also extends to the north and south on NC 68 from the US 158 intersection with numerous waterlines reaching homes and businesses that are located on roads along the route.

Groundwater Contamination

An Stokesdale Environmental Constraints survey indicated that there are eight contaminated well sites along the old railroad bed and US 158. Leaking underground gasoline storage tanks and (Ethylidibromide) EDB caused the contamination. In all cases, the County and State Environmental Health Departments have investigated and worked with the owners on remediation efforts. The drilling of new wells within 1,500 feet of contamination sites requires County Health Department approval. Due to this contamination, Stokesdale sought and received the grant to develop a public water system.

Watershed

Stokesdale does not have its own watershed requiring protection for a public water system. A portion of Stokesdale, however, drains into two public water systems, the Dan River and Troublesome Creek watersheds. Almost 30% of the land area of Stokesdale (3,600 acres) is located within these two watersheds. The Environmental Constraints Map in the original land use plan shows the location of the watersheds along the northern border of the town. The Development Ordinance regulations (National Storm Discharge Elimination System and the Water Supply Watershed) require either a low density option of 2 dwelling units per one acre or less with 0 -- 24% built-upon area or a high density option of 2 dwelling uniter per one acre with a 24.01 – 50% built-upon area.

Floodplain

Three perennial streams in the town have mapped 100-year floodplains. A floodplain is the channel and the relatively flat area adjoining the channel of a stream or river that periodically floods. The three mapped floodplains are found on King's Creek (western area of town), Troublesome Creek (northeastern area & Reidsville Watershed), and the Haw River (southeastern border of town). These floodplains make up approximately 5% of the total land area of the town. Construction within the floodplain can obstruct stream flows during flooding and increase flood damage. Preserving the floodplains and limiting activities to those with the least negative impacts, such as recreation, parking, and garden areas, can reduce potential flood plain damage. For this reason, the Stokesdale Development Ordinance requires the dedication of floodplain, as public open space, as development occurs. For many years, Guilford County and Stokesdale's intent has been to link these dedicated areas to create a system of greenways.

Critical Habitats

A joint report of Guilford County and the North Carolina Natural Heritage Foundation has identified three critical habitat areas of general importance to the community. The largest is the King's Creek Slopes located along King's Creek near Belews Lake. This is a mixed hardwood forest with American Shinleaf, Showy Orchids, and the regionally rare Waterleaf. The other sites, Pearman's Quarry Woods and Anthony Road Holler are both located in western Stokesdale. These two sites include Dry-Mesic and Mesic mixed hardwood forests and American Shinleaf. (See Appendix B)

Transportation

Existing and future land uses within Stokesdale have been, and will continue to be, impacted by its road network. By following the town's thoroughfare plan, adopted in 1998, and carefully guiding connections as development occurs, the road network will be able to accommodate the level of service required for existing and future travel needs within and across its jurisdiction.

Road Classification & Current Transportation Improvement Program Plans

Stokesdale Transportation Network consists of four street classifications:

- 1) Freeway: **Proposed US 220/ NC 68 Connector (I-73)**. Adjacent to the town's eastern boundary, this facility will function to serve regional needs by connecting the Piedmont Triad with Southern Virginia. This facility will have significant land use impacts along existing US 220 at its intersection with US 158.

Freeways are usually limited access, divided highways. Their over-all function is to move traffic on a regional basis.

- 2) Thoroughfares: **US 158, NC 68, NC 65, and Haw River Road**.

Proposed US 158 bypass. This proposed project would provide safer, more efficient east-west travel around downtown Stokesdale. The project is proposed to begin east of downtown Stokesdale and connect with the existing US 158 west of downtown. The project is not yet scheduled for construction with the State Transportation Improvement Program (TIP). The bypass route is currently under study by NC Department of Transportation.

Thoroughfares connect freeways to collector streets and provide for movement of high volumes of traffic by limiting access to adjoining properties.

- 3) Collector Streets: **Eversfield Road, Anthony Road**.

Collectors carry traffic from local roads and provide access to thoroughfares.

- 4) Local Streets: These streets carry all local traffic to collector routes. This includes roads not classified on one of the higher systems. They are usually shorter segments found in residential subdivisions as cul-de-sacs, loop streets, and streets serving less than one hundred dwelling units.

Hazardous Intersections

Stokesdale currently has two recognizable hazardous intersections that were identified in the Future Land Use Plan. The first was located at Ellisboro Road and NC 65; the second was at the intersection of NC 65 and NC 68. NCDOT has installed stoplights at both locations in an effort to improve traffic safety at these locations.

VISION STATEMENT

Stokesdale should be a town that is *quiet and attractive* that promotes the “*small town*” *nature* of the community. Effort should be made to *preserve, maintain, and enhance the rural character, natural habitat, and beauty* of the community. There should be a sense of community through both *formal and informal association*. Residential development should enhance the community through appropriate *neighborhood design, connectivity, and environmental protection* of the town’s natural resources. The *historic nature* of the town, especially its downtown, should be *preserved and maintained* through the addition of *businesses and services* that *cater to the citizens* and are in *harmony with existing development*. Effort should be made to create and enhance the sense of a *vibrant community* that is *safe and convenient* for all citizens. The town should promote *alternative modes of transportation*, including *pedestrian, bicycle, and equestrian* movement throughout the community.

LAND USE PLAN

Stokesdale will achieve this vision through the recognition and enhancement of existing land uses along with the implementation of the recommended future land use pattern. These areas are recognized as the Town Core, Professional/Manufacturing Corridor, and Residential Area. Additionally, the implementation of Scenic Corridors and proposed Open Space/Trail Network, and Transportation System improvements will further advance this vision (see Appendix C Stokesdale Future Land Use Map). A Future Land Use Plan Implementation Schedule identifies objectives and a timeframe for accomplishing them is included (Appendix D). In developing the plan, the following considerations were made:

- Provide enough viable space for future growth of businesses and services.
- Minimize sprawl of commercial development and ensure new commercial development maintains the Land Use Plan Vision.
- Minimize the visual impact of large residential developments.
- It is the goal of the Town of Stokesdale to promote the rural character of the Town including along the NC 68 corridor and US Hwy 158. However, this goal will not in any way prohibit commercial/retail development in these areas by landowners who wish to seek same pursuant to applicable state laws and city ordinances.

Town Core

Town Vision: Stokesdale should be a town...that promotes the "*small town*" nature...Sense of community through both *formal* and *informal* association...Historic nature of the town, especially its downtown...*Preserved* and *maintained*...addition of *businesses* and *services* that *cater to the citizens* and are in *harmony with existing development*...*Safe* and *convenient*...

The Town Core is defined as the area bordered by Highways NC 68, NC 65 and NC 158; area within the Scenic Corridor south of NC 158 between NC 68 and NC 65; certain additional areas bordering NC 65 and NC 158 as shown on the land use map.

The Plan recognizes the Town Core as a center of commerce and social activity that will continue to serve the demands of Stokesdale's growing population while maintaining its historical small town appeal. The Plan accommodates this through a mixture of commercial, business, institutional, and residential uses accompanied by public open spaces. It is important to have space for businesses within Stokesdale and also to limit the sprawl of such businesses. To encourage this, the Plan recognizes and recommends the following within the Town Core:

- Development of retail businesses and professional office space.
- Provide innovative housing types, such as second floor apartments;
- Reduce and/or share parking to the side or rear of structures;
- Match setbacks for new structures to prevailing setbacks;

- Promote walkability through the construction of sidewalks connecting residential, commercial, and public open space areas;
- Improve aesthetics through the use of monument or awning signs, flower box plantings, parking buffers, and street tree plantings;
- Calm traffic through street tree plantings, crosswalks, and speed limit reductions; (Appendix E)
- Provide public open space areas through the development of a linear Town Park and a trail for equestrian, pedestrian, and bicycle uses connecting into surrounding neighborhoods and trails;
- Pass ordinances enabling the condemnation and removal of unsafe and nuisance structures.
- Encourage the preservation and restoration of historic structures and investigate the feasibility of establishing a Historic District.
- Development of the Town Hall and community park at the site near the Stokesdale Elementary School.
- Planned Unit Development – Residential: Revise the ordinances to discourage single family detached homes and review the requirements for attached housing to make sure they fit the Vision.
- Amend watershed regulations as advised by County to allow more built upon area (BUA) in town core.

Professional/Manufacturing Corridor

Town Vision: Effort should be made to create and enhance the sense of a *vibrant community* that is *safe* and *convenient* for all citizens.

The Professional/Manufacturing corridor is planned to provide an area for the growth of office space and light manufacturing services that is consistent with current uses. This corridor would start at the eastern edge of the Town Core on US Hwy 158, follow US Hwy 158 east and terminate at the intersection of US Hwy 158 and US 220. The northern and southern borders of the Professional/Manufacturing corridor are identical to the borders of the scenic corridor. Currently this portion of US Hwy 158 contains industrial, highway business, office, residential and agricultural areas. No new industrial areas are proposed due to the number of areas currently zoned but undeveloped.

The Plan recommends that the Town extend its eastern city limits to the intersection of US Hwy 158 and US 220. This expansion will allow consistent development within this area.

Residential Development Area

Town Vision: Effort should be made to *preserve, maintain, and enhance* the *rural character, natural habitat, and beauty*...With a sense

of community through both *formal* and *informal* association... Residential development should enhance the community through appropriate *neighborhood design*, *connectivity*, and *environmental protection*...Sense of a *vibrant community*...*Safe* and *convenient* for all citizens...

Within the Residential area, the Plan recommends preserving Stokesdale's rural setting by establishing a uniform residential density. To achieve this, the following standards are recommended:

- Minimum lot size of forty thousand square feet.
- Increase natural buffers along perimeter roads and entrances into major developments. Increase buffers and protection along creeks and waterways.
- Plan for interconnected residential development through street and trail links
- Eliminate the use of Planned Unit Development – Residential (PDR) outside the Town Core.

Open Space/Trail System

Town Vision: Effort should be made to *preserve*, *maintain*, and *enhance* the *rural character*, *natural habitat*, and *beauty*...Sense of community through *formal* and *informal* association...Sense of a *vibrant community*...*Safe* and *convenient* for all citizens...Promote *alternative modes of transportation*, including *pedestrian*, *bicycle*, and *equestrian* movement throughout the community.

With growth, Stokesdale will lose some of its rural character and open space areas. The Plan recommends providing additional recreational opportunities in the form of community parks and trails, to supplement existing resources. As shown on the Future Land Use Map, a linear park is proposed along Stokesdale Street. This park will serve to improve main street aesthetics and provide a connection within the proposed town trail system. Throughout the Town Core, efforts should be made to provide connections to this park.

The Community Park and Town Hall is adjacent to Stokesdale Elementary School. This Community Park will serve both the town and the school by providing areas for active and passive recreation. As shown on the future land use map, proposed trail systems are recommended to connect with this park. The Plan recommends that the town develop this park with all possible speed.

The Town should actively plan and prepare funding for further park purchases in cooperation with the State, County or non-profit entities.

In order to interconnect the town, encouragement of pedestrian/bicycle activity and allow for safe equestrian-movement, trails are recommended throughout the town. For the most part, these trails will follow floodplain areas or abandoned railway alignments. In order to achieve north-south connections, the Plan proposes two trails outside these areas. Development of this system will be through either voluntary or required dedication during the development of new residential or commercial properties. Finally, the Plan

recommends protecting areas considered "Critical Habitats" from any future development. These sites are located in the western and southwestern areas of the town. Should growth occur in these areas, habitat protection strategies should be included in the development proposals.

The Town should partner with Guilford County to identify and preserve open space parcels in Stokesdale.

Transportation

Town Vision: Stokesdale should be a town that promotes the "*small town*" nature of the community...Residential development should enhance the community through appropriate...*connectivity*...that is *safe* and *convenient* for all citizens...

Existing and future land uses within Stokesdale will continue to be impacted by its road network. The town's thoroughfare plan was adopted in 1998 and may no longer map a road network that will be able to accommodate the level of service required for safe and efficient travel within and across the jurisdiction. The major recommendations of the LUP transportation plan are as follows:

- The Town should help develop and adopt a street connector plan to guide future growth. The Town should re-evaluate the current Thoroughfare Plan.
- The Town should monitor and influence the DOT's US 158 bypass study and make necessary planning decisions to minimize its impact on landowners and homeowners.
- The Town should support the construction of I-73.

Scenic Corridors

Town Vision: Stokesdale should be a town that is *quiet* and *attractive* that promotes the "*small town*" nature...Effort should be made to *preserve, maintain, and enhance* the *rural character, natural habitat, and beauty*...The historic nature of the town...should be *preserved and maintained*...in harmony with existing development...*Safe* and *convenient* for all citizens...

The Town must enforce strict compliance to the scenic corridor ordinance to maintain and enhance the aesthetic quality of the town as viewed from its major thoroughfares. These corridors extend 900 feet on either side of the town's major highways and apply only to development that can be seen from the public thoroughfares. The ordinance applies only to construction of new commercial buildings, and large residential subdivisions. The proposed improvements to the scenic corridor ordinance are as follows:

- Non-residential buildings should not have sheet or corrugated metal exterior walls.

- The placement of trailers, sea-tainers and temporary storage units within view of thoroughfares should be restricted to a specified and limited time interval.
- The planting yard requirements for screening chainlink or similar fencing should be significantly increased to make these fences less noticeable immediately after construction.
- Architectural design elements should be revised and strengthened to reflect the desired character of the community. Standards should address such things as, building style, colors, materials, signage, etc.

Appendix A

Stokesdale Historic Properties

<u>Inventory Number</u>	<u>Significant Property</u>	<u>Property Address</u>
181	Bethel Methodist Church	8424 Haw River Rd.
184	Lowe Memorial Holiness Church	8600 Haw River Rd.
343	Daniel Arthur Jones House	7845 NC Hwy 68 N.
695	David Lester House	8201 Clintwood Dr.
699	Dr. Taylor-Edwards House	8512 Main St.
700	D. A. Jones House Stokesdale	8624 Main St.
701	Commercial District	Main St.
702	Rumley House #2	9000 Fulp Rd.
703	John Fulp House	9056 Fulp Rd.
704	D. P. Lemmons House	8306 Newberry St.
705	Log House	8306 Newberry St.
707	Knight House #3	8301 Stokesdale St.
708	Knight House #2	8303 Stokesdale St.
709	Knight House #1	8305 Stokesdale St.
710	Stokesdale Methodist Parsonage	8401 Stokesdale St.
711	Vaughn House (Bernice Jones)	8407 Stokesdale St.
712	Dr. Hilton House	8306 Strand Dr.
713	Dr. Hilton Office	8306 Strand Dr.
714	Flat Rock Methodist Church	6790 C. US Hwy 158
715	Vernon House	6838 C. US Hwy 158
716	T. A. Wilson House	6900 US Hwy 158
717	(Phyllis Green House)	7950 US Hwy 158
5252	Stokesdale United Methodist Church	8305 Loyola Dr.
5253	Pearman Rock Quarry	Pearman Quarry Rd.

Appendix B

Critical Habitats

<u>Site Name</u>	<u>Features</u>	<u>Rank</u>
Pearman's Quarry Woods	Dry-Mesic and Mesic mixed hardwood forest on publicly-owned land	County General
Anthony Road Holler	High integrity dry-Mesic oak hickory forest. American Shinleaf present	County General
King's Creek Slopes	Mixed hardwood forest with American Shinleaf, Showy Orchids, and regionally rare Waterleaf	County General

Appendix C
Future Land Use Map

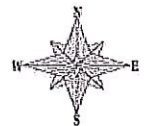
Town of Stokesdale



Future
Land Use
Update
2007

Legend

- Town Core (TC)
- Prof./Manufacturing Corridor (PMC)
- Residential
- Pine Needles Buffer Zone
- Recreation outside of TCFMC
- Non-Res Zoning outside of TCFMC
- Quarry
- Floodplain
- Scenic Corridors
- Proposed US-158 Connector
- Proposed Trails
- County Boundary
- Stokesdale Town Limits



C

Appendix D

Land Use Plan Implementation Schedule

The identified vision and objectives, as outlined in the Land Use Plan, is as important a process as document preparation. Without clear articulation of how the vision and objectives are to come for accomplishment, and a responsible party charged with execution, the plan will fail to recommend the following actions to ensure realization of the community benefits envisioned

OBJECTIVES	TIMEFRAME			COST	FACILITATORS	STRATEGY
	Short (1-2 Years)	Medium (2-5 Years)	Long (6-8 Years)			
				\$, \$\$, \$\$\$		
Amend watershed regulations	X			\$	Town Council	Town to allow more BUA in town core in order to accommodate business growth
Linear Town Park & Trail	X	X	X	\$\$	Parks Committee	Establish Parks committee. Apply for matching grant funds from NCDOT for pedestrian master plan
Ordinances: Condemnation & RPD	X			0	Ordinance Committee	Ordinance committee to draft ordinance changes.
Historic District	X	X		\$	Historic Committee	Establish Committee. Research and propose possible Historic district to preserve and enhance Town Core.
Construct sidewalks & traffic calming items	X	X		\$\$\$	Town Council	1. Apply for matching grant funds from NCDOT for construction based on pedestrian master plan.

D

Land Use Plan Implementation Schedule

(Continued)

OBJECTIVES	TIMEFRAME			COST	FACILITATORS	STRATEGY
	Short (1-2 Years)	Medium (2-5 Years)	Long (6-8 Years)			
				\$, \$\$, \$\$\$		
Extend eastern city limits along US 220	X			\$	Town Council	Work with property owners to petition for inclusion
One acre lot size outside of town core	X			0	Ordinance Committee	Ordinance committee to draft ordinance changes.
Eliminate the use PDR	X			0	Ordinance Committee	Ordinance committee to draft ordinance changes.
Increase natural buffers	X			0	Ordinance Committee	Amend ordinance to increase natural buffers for major residential developments
Identify future park & trail areas	X	X	X	\$	Parks Committee	Prepare park land acquisition strategy. Work with State and County to fund land purchase
Develop and adopt a street connector plan	X				Planning Dept	
Enhance Scenic Corridor ordinances	X				Ordinance Committee	Ordinance committee to draft ordinance changes.

E

Appendix E

Traffic Calming

“Traffic Calming” is a term used to describe a series of methods and techniques used to slow and control traffic making it more compatible with other uses and activities, including pedestrian and bicycles. It has been used extensively in Europe and Australia, and is now gaining popularity in the United States.

The concept behind traffic calming is that a street is more than just a place for automobiles. In neighborhoods children use streets as play areas and adults walk and ride bicycles along them. Social interaction between neighbors takes place, and in some cases, street or block parties are held. Along roads with commercial development streets provide parking, sidewalks for pedestrian movement, and social interaction between people.

Traffic calming is a compilation of tools that work together to slow and manage traffic. These include everything from traffic lights and stop signs, to narrowing lanes and speed bumps. It also involves making the driver aware that they are entering an area where speed limits have been reduced and to expect other forms of traffic.

The Stokesdale Land Use Plan Committee has recommended that attempts be made to “calm” traffic in the Town Core Area. The most important of these efforts is the construction of the 158 by-pass to remove the heavy truck traffic from the Downtown. However, this is a long-term effort that may take a decade or more to be realized. Short-term efforts that can be implemented over the next few years include the following:

Create a feeling of “narrowing” for Main Street (US 158) from NC 68 to NC 65 through:

- Planting street trees and the creating of a linear park along the abandoned railroad right-of-way.
- Instituting parallel parking along US 158 as commercial development and redevelopment occurs.
- Reducing setbacks for new buildings to create a “visual narrowing” or “enclosure” of the view from the vehicle.

Provide safe pedestrian crossing areas through:

- Upgrading of crosswalks at important intersections to clearly define their locations by the use of special pavers and/or markings, and signalized pedestrian crossings.

Alert drivers that they are entering Downtown through:

- Signage posted before the two major intersections alerting drivers to fact that they are entering an area of more intense pedestrian activity. This can include flashing lights, “gateways,” or other attractive signage.

Historical Cost Indexes

The table below lists both the RSMeans® historical cost index based on Jan. 1, 1993 = 100 as well as the computed value of an index based on Jan. 1, 2018 costs. Since the Jan. 1, 2018 figure is estimated, space is left to write in the actual index figures as they become available through quarterly RSMeans Construction Cost Indexes.

To compute the actual index based on Jan. 1, 2018 = 100, divide the historical cost index for a particular year by the actual Jan. 1, 2018 construction cost index. Space has been left to advance the index figures as the year progresses.

Year	Historical Cost Index Jan. 1, 1993 = 100		Current Index Based on Jan. 1, 2018 = 100		Year	Historical Cost Index Jan. 1, 1993 = 100		Current Index Based on Jan. 1, 2018 = 100		Year	Historical Cost Index Jan. 1, 1993 = 100		Current Index Based on Jan. 1, 2018 = 100	
	Est.	Actual	Est.	Actual		Actual		Est.	Actual		Actual		Est.	Actual
Oct 2018*					July 2003	132.0	61.2			July 1985	82.6	38.3		
July 2018*					2002	128.7	59.6			1984	82.0	38.0		
April 2018*					2001	125.1	58.0			1983	80.2	37.1		
Jan 2018*	215.8		100.0	100.0	2000	120.9	56.0			1982	76.1	35.3		
July 2017		213.6	99.0		1999	117.6	54.5			1981	70.0	32.4		
2016		207.3	96.1		1998	115.1	53.3			1980	62.9	29.1		
2015		206.2	95.6		1997	112.8	52.3			1979	57.8	26.8		
2014		204.9	94.9		1996	110.2	51.1			1978	53.5	24.8		
2013		201.2	93.2		1995	107.6	49.9			1977	49.5	22.9		
2012		194.6	90.2		1994	104.4	48.4			1976	46.9	21.7		
2011		191.2	88.6		1993	101.7	47.1			1975	44.8	20.8		
2010		183.5	85.0		1992	99.4	46.1			1974	41.4	19.2		
2009		180.1	83.5		1991	96.8	44.9			1973	37.7	17.5		
2008		180.4	83.6		1990	94.3	43.7			1972	34.8	16.1		
2007		169.4	78.5		1989	92.1	42.7			1971	32.1	14.9		
2006		162.0	75.1		1988	89.9	41.6			1970	28.7	13.3		
2005		151.6	70.3		1987	87.7	40.6			1969	26.9	12.5		
2004		143.7	66.6		1986	84.2	39.0			1968	24.9	11.5		

Adjustments to Costs

The "Historical Cost Index" can be used to convert national average building costs at a particular time to the approximate building costs for some other time.

Time Adjustment Using the Historical Cost Indexes:

$$\frac{\text{Index for Year A}}{\text{Index for Year B}} \times \text{Cost in Year B} = \text{Cost in Year A}$$

Example:

Estimate and compare construction costs for different years in the same city.

Estimate the national average construction cost of a building in 1970, knowing that it cost \$900,000 in 2018:

$$\text{DEX in 1970} = 28.7$$

$$\text{DEX in 2018} = 215.8$$

$$\frac{\text{INDEX 1970}}{\text{INDEX 2018}} \times \text{Cost 2018} = \text{Cost 1970}$$

$$\frac{28.7}{215.8} \times \$900,000 = .133 \times \$900,000 = \$119,694$$

The construction cost of the building in 1970 was \$119,694.

Note: The city cost indexes for Canada can be used to convert U.S. national averages to local costs in Canadian dollars.

Example:

Estimate and compare the cost of a building in Toronto, ON in 2018 with the own cost of \$600,000 (US\$) in New York, NY in 2018:

$$\text{DEX Toronto} = 110.8$$

$$\text{DEX New York} = 134.6$$

$$\frac{\text{DEX Toronto}}{\text{DEX New York}} \times \text{Cost New York} = \text{Cost Toronto}$$

$$\frac{110.8}{134.6} \times \$600,000 = .823 \times \$600,000 = \$493,908$$

The construction cost of the building in Toronto is \$493,908 (CN\$).

Historical Cost Index updates and other resources are provided on the following website:
<http://info.thegordiangroup.com/RSMeans.html>