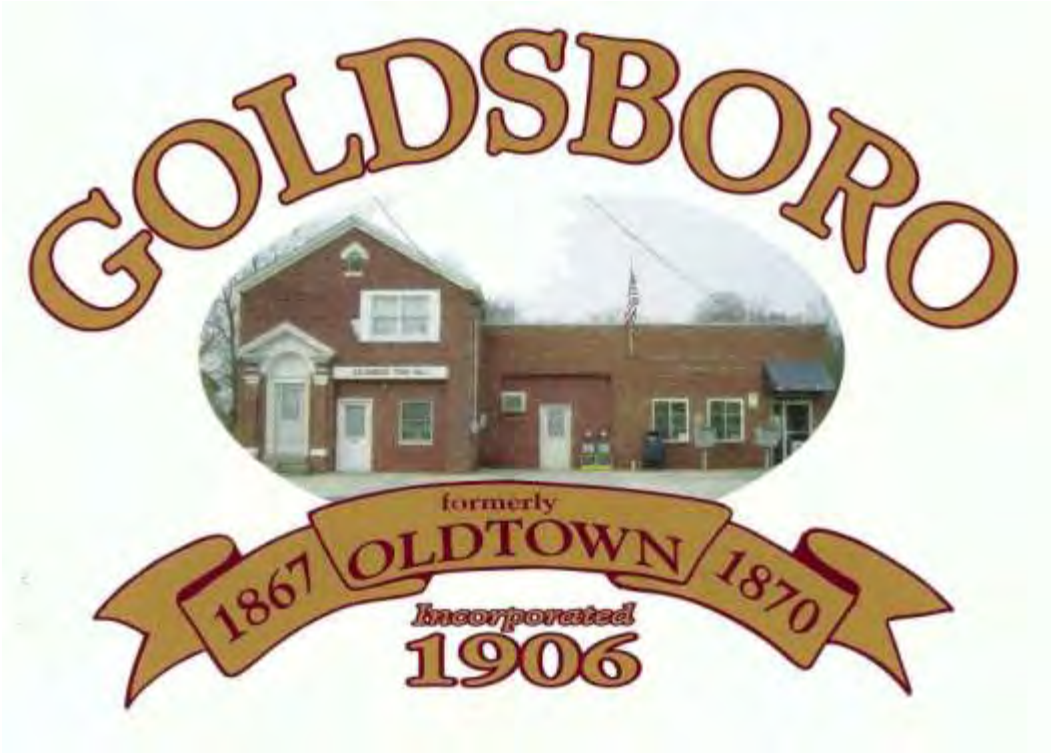

Comprehensive Plan 2009

PREPARED BY GOLDSBORO PLANNING COMMISSION
WITH ASSISTANCE FROM

COMMUNITY PLANNING AND ASSISTANCE
MARYLAND RURAL DEVELOPMENT CORPORATION

TOWN OF GOLDSBORO
RESOLUTION #09-02

COMPREHENSIVE PLAN FOR THE TOWN OF GOLDSBORO

WHEREAS, pursuant to Article 66B § 3.05(b) of the Annotated Code of Maryland, the Goldsboro Planning Commission determined that the Comprehensive Plan for the Town of Goldsboro should be updated and amended; and

WHEREAS, pursuant to Article 66B, as amended by House Bill 1141, 2006, the Town of Goldsboro is required to incorporate two new elements, a Municipal Growth Element and a Water Resource Element prior to October 1, 2009; and

WHEREAS, the Town of Goldsboro Planning Commission has researched issues regarding community needs and has assessed the positive and negative factors relative to growth; and

WHEREAS, the Town of Goldsboro Planning Commission has written a Comprehensive Plan which sets forth a framework that encourages growth while protecting attributes of the existing community; and

WHEREAS, on June 8, 2009 the Goldsboro Town Council held a duly advertised informational public meeting on the proposed draft of the Goldsboro Comprehensive Plan to solicit comments and a discussion of citizen concerns; and

WHEREAS, on September 14, 2009 the Goldsboro Town Commission and Goldsboro Planning Commission held a joint duly advertised public hearing on the proposed adoption of the Goldsboro Comprehensive Plan to solicit further comments and a discussion of citizen concerns; and

WHEREAS, the Town of Goldsboro Planning Commission has recommended to the Goldsboro Town Commission that the Plan as described above be adopted;

NOW, THEREFORE, BE IT RESOLVED by the Town Council of Goldsboro, Maryland, that the attached Comprehensive Plan for Goldsboro, Maryland, dated September 14, 2009 is hereby adopted as the Goldsboro Comprehensive Plan;

AND BE IT FURTHER RESOLVED that this Resolution be affixed to and be made a part of the Goldsboro Comprehensive Plan.

ADOPTED this 14th day of September, 2009.

ATTEST:

Karen Adams
Karen, Adams, Clerk

Robin Cahall
Robin Cahall, Mayor

Emily Shockley
Emily Shockley, Councilperson

Eugene Carver
Eugene Carver, Councilperson

CERTIFICATE OF RECOMMENDED ADOPTION

This Comprehensive Plan has been designed to guide the physical development of the Town of Goldsboro pursuant to the provisions of Article 66B of the Maryland Annotated Code.

By majority vote of the Goldsboro Planning Commission on September 14, 2009, after an advertised informational meeting on June 8, 2009 and a duly advertised public hearing on September 14, 2009, this Plan was recommended to the Town Council of the Town of Goldsboro for adoption.

Goldsboro Planning Commission:
Thomas E. Schaube
Timothy McKee
Rev. Douglas Morley
Eugene Carver
Raymond Coppage

Attested:

Karen Adams

Karen Adams, Town Clerk

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PREFACE

Government plans and creates laws to protect the public health, safety, and welfare. State growth management laws were designed to assist in the preservation of land and resources against rapid and inappropriate development, which endangers our sensitive environment and often creates infrastructure deficits that the public is ultimately required to pay through taxes and other fees.

The *2003 Goldsboro Comprehensive Land Use Plan* (Comprehensive Plan) combined revisions of the *1998 Goldsboro Comprehensive Plan* and abstracts from the *2003 North Caroline County Comprehensive Plan*. The Maryland Department of Planning reviewed the 2003 Goldsboro Comprehensive Plan and stated: *"The town of Goldsboro submitted a complete 2003 Master Plan. It met all of the elements of Article 66 114*
B. Generally, this plan addresses many current issues in the town. First, they are working towards the construction of a wastewater treatment plant to address the current issue of failing septic systems, which also causes water quality problems. Second, the plan does a good job of linking into Caroline County's North County Comprehensive Plan. It also relates its programs to Maryland's Smart Growth program, as well as other programs.

If the wastewater treatment plant is constructed, it seems that the town will look to grow at a much faster pace than what is currently happening. They are looking to annex a farm to the South. This annexation has the potential to more than double the population of the Town of Goldsboro. It is slated to become a planned unit development. This parcel does not appear to have any major environmental constraints. It is along a major road, so road access should not be a huge issue."

The primary change has been in State law due to passage of House Bill 1141 in 2006 that requires Towns to incorporate Municipal Growth Elements and Water Resources Elements into their Comprehensive Plans by October 2009.

VISION STATEMENT

The residents of Goldsboro see themselves as a rural village in a much larger world. As a small community on Maryland's Eastern Shore, Goldsboro has served the surrounding agricultural area as a local service and production center. For much of its history, the residents worked locally and were served by local institutions. Many of the current residents were born in the community and as a result have developed valuable relationships with their neighbors and friends. As the Town grows, the current community wants to maintain its history and local traditions, sharing those values with new residents and businesses. Therefore, the mission and goal of the Comprehensive Plan is to encourage the community to remain a village by promoting growth that is consistent with the traditions and history of Goldsboro:

"To preserve the Village of Goldsboro as an attractive rural community within the broader setting of managed growth in Caroline County, while at the same time, encourage growth and development that is consistent with the "Village of Goldsboro" in scale and scope with existing development."

In order to fulfill the vision statement, the citizens of Goldsboro have developed a set of goals and recommendations to guide and manage the Town in a manner appropriate with their desires for the community. These goals are based on the desire to maintain the economic and environmental health of the community and promote orderly growth. They also are based on the visions for growth management developed by the State of Maryland, which encourages the revitalization of traditional communities such as Goldsboro while encouraging appropriate new development in areas served by public infrastructure.

PURPOSE

The purpose of the Comprehensive Plan is to provide a series of goals and objectives to manage and direct growth and development within Goldsboro. The Comprehensive Plan is the result of Planning Commission and Town Council efforts to understand the current condition of the Town, its historical growth patterns, and recent developments, which have all combined to create its present appearance and conditions. The Comprehensive Plan also reflects the community's desire to maintain the current village atmosphere of Goldsboro while allowing for controlled growth and development.

As a policy outline, the Comprehensive Plan is designed to be a guide used in conjunction with associated implementation documents adopted by the Town. Associated documents include the *Town of Goldsboro Zoning Ordinances, Subdivision Regulations for the Town of Goldsboro*, and the collection of municipal ordinances passed by the Town Council. Locally based guidelines and regulations reflect the laws and regulations of the State of Maryland and its various regulatory agencies. In addition, growth in and near Goldsboro is heavily influenced by decisions made by Caroline County and the general and specific topography and geography of the northern Caroline County region (1st Election District).

ARTICLE 66B – PLANNING & ZONING ENABLING ACT

As the State's planning and zoning enabling law, Article 66B of the Annotated Code of Maryland, requires that county and municipal plans be implemented by laws, ordinances, and regulations consistent with the Planning and Zoning Enabling Act and its "Visions." Each county and municipality within Maryland is required to review and update, as necessary, their comprehensive land use plans and implementing provisions every six years.

The eight overarching "Visions" of the Planning and Zoning Enabling Act include:

1. Development is concentrated in suitable areas;
2. Sensitive areas are protected;
3. In rural areas, growth is directed to existing population centers and resources are protected;
4. Stewardship of the Chesapeake Bay and the land is a universal ethic;
5. Conservation of resources, including a reduction in resource consumption is practiced;
6. Economic growth is encouraged and regulatory mechanisms are streamlined;
7. Adequate public facilities and infrastructure under the control of the county or municipal corporation are available or planned in areas where growth is to occur; and
8. Funding mechanisms are addressed to achieve these "Visions."

These are the guiding visions for all municipal comprehensive plans.

Maryland has procedures to insure that public infrastructure improvements are consistent with the Plan's adopted growth policies. The Planning and Zoning Enabling Act stipulates that a local government may not approve a local construction project involving the use of State funds, grants, loans, loan guaranties, or insurance, unless the project is consistent with the State's "Visions." This Plan accomplishes those purposes.

NEIGHBORHOOD CONSERVATION & SMART GROWTH AREAS ACT 1997

In 1997, the Maryland General Assembly enacted the *Neighborhood Conservation and Smart Growth Areas Act* (Smart Growth). The intent of the legislation is to marshal the State's financial resources to support growth in Maryland's communities and limit development in agricultural and other resource conservation areas.

At the heart of the Smart Growth concept are the "Priority Funding Areas" (PFA's), which represent local growth areas for targeted State funding. PFA's include municipalities, *such as Goldsboro,* rural villages, employment and industrial areas, and planned growth areas to be served by public water and sewerage. The 8th "Vision" of Article 66B creates consistency between the Planning and Zoning Enabling Act and "Smart Growth" by requiring adequate public infrastructure (to qualify for State funding).

Plans must show designated growth areas including areas planned for annexation by municipalities. Lands within local growth boundaries may be designated as a Priority Funding Area (PFA,) provided sewer service is planned in a 10-Year Water and Sewerage Plan and provided such designation is a long-term and planned development policy that promotes efficient land use and public infrastructure. Growth Areas must be consistent with the Plan's long-term policies for managing growth. Adequate public facilities necessary to support anticipated and planned for growth must be addressed as well.

Introduction

The Town of Goldsboro is a small rural community in North Caroline County. With its 2000 population of 216 people, Goldsboro primarily serves as a rural service center for the surrounding agricultural community. However, even though it is small and does not offer all of the services found in larger communities, the citizens of Goldsboro are pleased with the current condition of their community. The residents of Goldsboro choose to remain within their community because they value the social and family relationships that have developed over time and because they see their community as a good place to live and raise a family.

Accordingly, the Town of Goldsboro will ensure that its rural and small town characteristics are maintained. Within that overall goal, the residents would like to see their community prosper and develop into a larger town, playing a greater role in the growth and development of Caroline County as a whole. To achieve that goal, the residents and the government of Goldsboro are committed to working together to develop the infrastructure that will allow growth and

development to occur, fostering a welcoming spirit for new residents, businesses, and industries.

Recent planning initiatives, including the *North Caroline County Comprehensive Plan* and the *North Caroline County 5-Year Water & Sewer Plan*, were designed to assist the Town of Goldsboro with growth management and achieve consistency with Maryland laws. These plans also will assist Goldsboro to develop an effective land use plan to address future growth.

CHAPTER 1 North Caroline County Comprehensive Plan

The *North Caroline County Comprehensive Plan* was completed in the Spring of 2003. North Caroline County, including the municipalities of Goldsboro, Henderson, Marydel, and Templeville, is the study area for the purposes of that Plan, (which provides information to the updated *Caroline County Comprehensive Land Use Plan).* The Plan was designed to allow the County to address State laws, such as Article 66B and Smart Growth, assess regional needs on a more detailed basis, and develop a plan based on broader public participation and support.

The primary land use and growth management goal is to concentrate future development in planned growth areas and preserve the rural character of the North County region. The County's overall land use and growth management objectives to achieve this goal include the following:

- Encouraging future development to locate in designated growth areas where adequate public facilities and services exist or are planned;
- Providing adequate planning and regulatory mechanisms for growth management;
- Maintaining the agricultural land-base to support the County's agricultural economy;
- Preserving valuable natural and man-made resources;
- Promoting economic development, expansion, and employment in suitable areas;
- Discouraging low-density non-agricultural development from locating outside of designated growth areas; and
- Providing appropriate county level facilities and services for North County to support existing and future populations.

Part 1: Existing Land Use

As shown in Table 1 and on the Existing Land Use Map for North Caroline County, land use is predominantly agriculture. Of the total land in the agricultural category, approximately 40% is forested. Some 5,075 acres or about 23% of North County is classified as non-tidal wetlands according to the *National Wetlands Inventory*, as developed by the Maryland Department of Natural Resources. Much of the land in the region is of an environmentally sensitive nature.

North Caroline County – Land Use 2000		
Land Use	Acres	**Percent of Total**
1st Election District	22,878	100%
Incorporated Towns	917	4%
Unincorporated Areas	21,961	96%

Residential	3,601	15.7%
Commercial	511	2.2%
Industrial	43	0.2%
Exempt	843	3.7%
Agriculture	17,879	78.1%
Vacant	1,543	6.7%
Source: MD property View 2007		

Table 1

The four incorporated towns of North County comprise approximately 917 acres or 4% of the total land area in the region. Much of the residential, commercial, and industrial land uses in the region are located in or near the towns. Some low-density residential land uses exist in scattered rural areas away from the towns. As shown in Table 2, Goldsboro has a current population of approximately 216 people.

North County Towns Population			
North County Towns	**1980**	**1990**	**2000**
Goldsboro	**188**	**185**	**216**
Henderson	156	66	118
Marydel	152	143	147
Templeville	96	66	80
Source: US Census 2000			

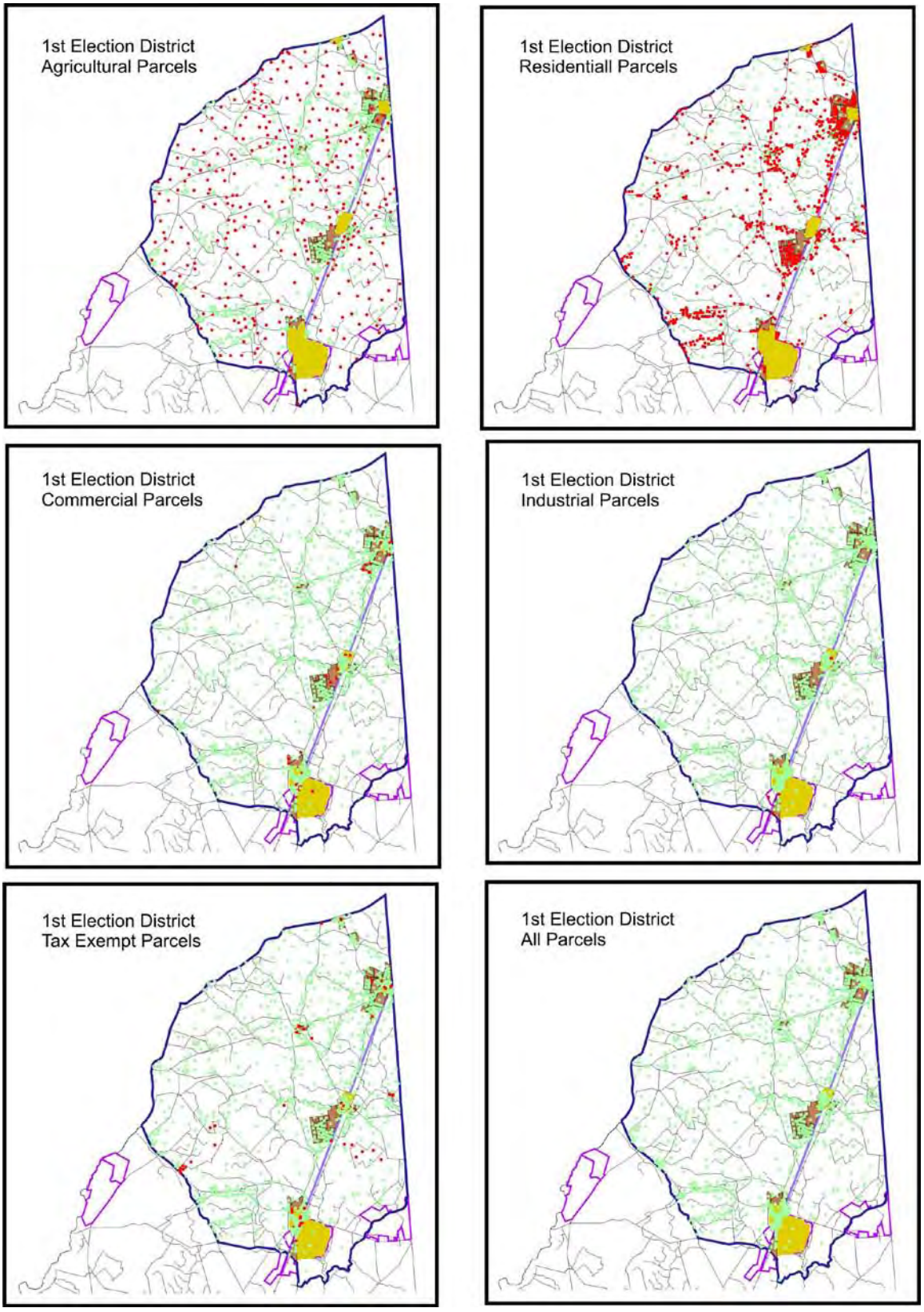
Table 2

Land Use Districts

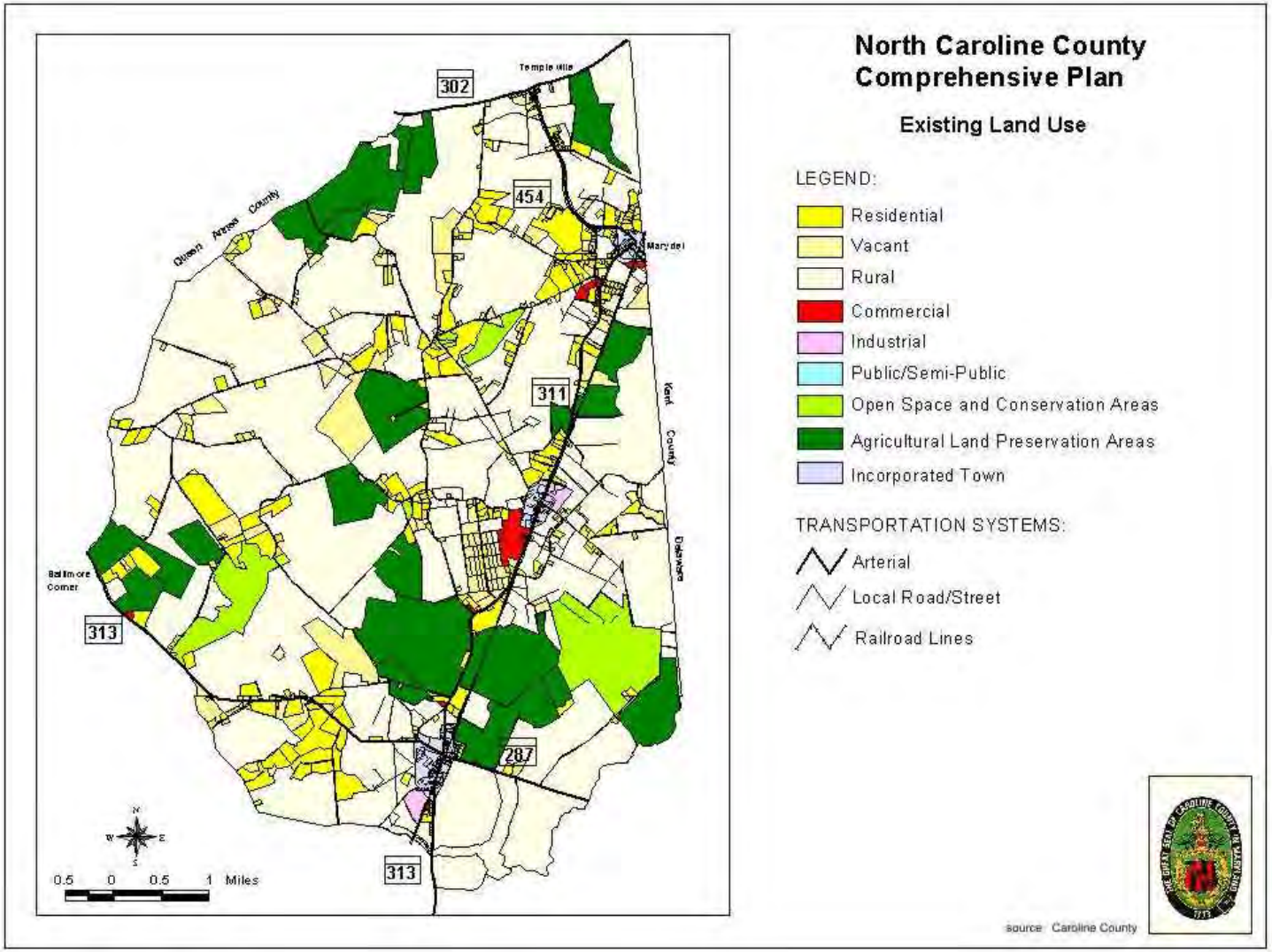
As shown on the following two maps from North County Comprehensive Plan, this Plan continues the growth management policies of former plans, namely concentrating population in the existing town centers and conserving agricultural and natural resources. The Land Use Plan has been refined to reflect proactive policies for preserving the agricultural areas of the North County region. It identifies portions of North County that will be priority areas for coordinated federal, state and local programs to preserve agricultural land and support a healthy agricultural economy.

Agriculture will remain an important and preferred land use throughout the rural North County region. In addition, the Land Use Plan makes provisions for the stability of the existing towns of Goldsboro, Henderson, Marydel, and Templeville. It gives priority to the incorporated towns as centers for future population growth, major capital investments and provides for their reasonable expansion in the future. The Land Use Plan depicted includes consideration for employment and designated growth areas or future "Priority Funding Areas" (PFA's) as noted in Maryland's "Smart Growth" legislation. The following graphics depict the locations of North County land uses.

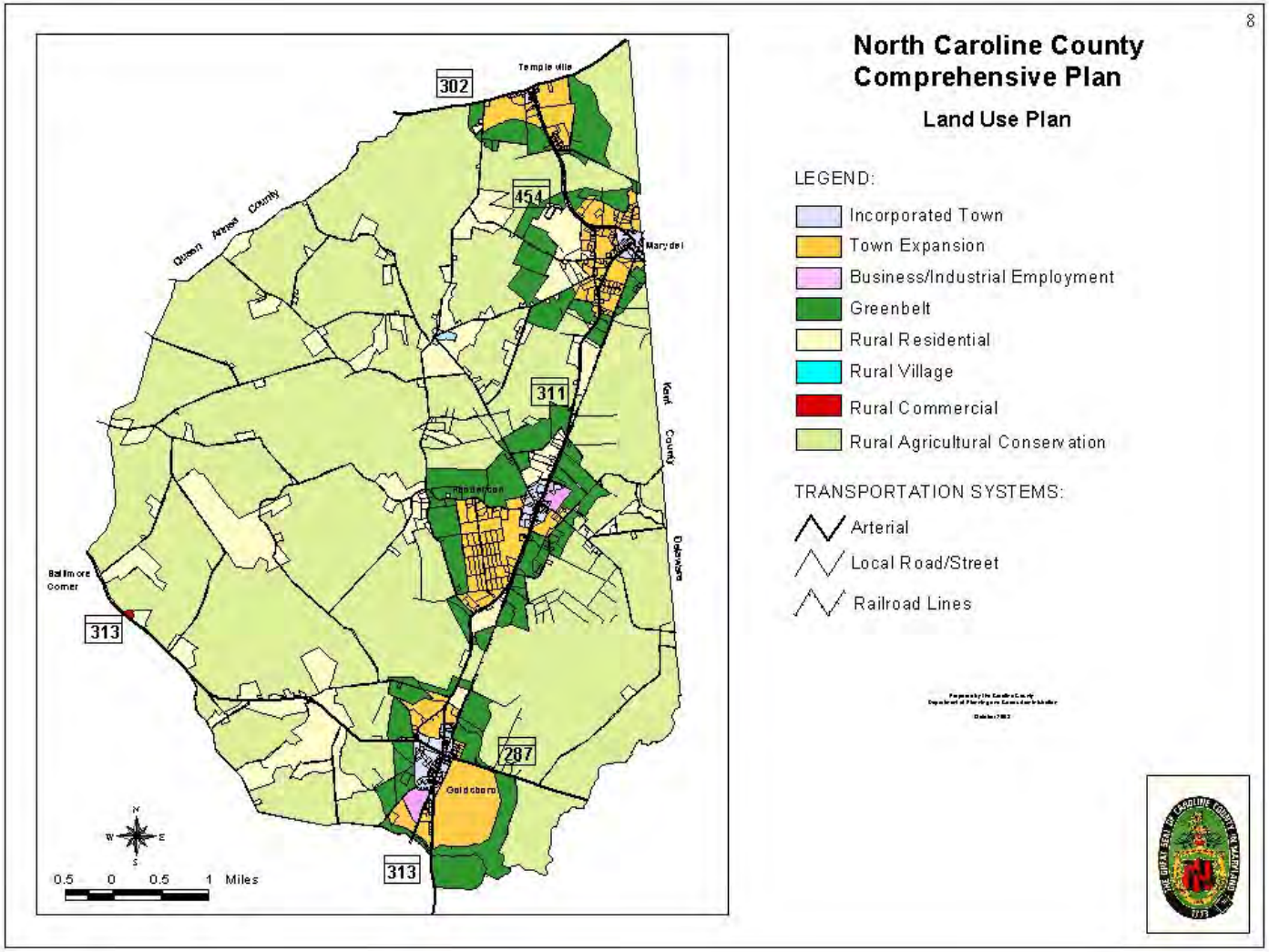
Graphic 1 1st Election District



Map 1 North Caroline County Comprehensive Plan –Existing Land Use



Map 2 North Caroline County Comprehensive Plan – Land Use Plan



The following describes the land use districts of the North County Land Use Plan which are incorporated into the Goldsboro Comprehensive Plan:

Rural Agricultural Conservation

Rural Agricultural Conservation encompasses active agricultural areas, existing agricultural land preservation districts, and land in private conservation easements. The area captures most of the known significant wildlife habitat areas in the 1st election district and closely coincides with the Maryland Green Infrastructure area, as developed by the Maryland Department of Natural Resources (DNR) under the Green Print program. The area is characterized as rural and scenic countryside consisting of farm fields, large forested areas, extensive natural resources, and scattered historic and cultural sites and structures.

The growth management emphasis for the Rural Agricultural Conservation area is to preserve the agricultural land base and protect the natural resources located in the region. It should be the priority area for programs designed to permanently preserve agricultural land, help maintain a viable agricultural industry, and protect natural resources. Low-density rural residential and related land uses should be minimized to avoid conflicts with legitimate agricultural uses and reduce demand for capital investment in infrastructure, such as county roads. The existing scenic, cultural, and historic resources that define the character of the area also should be protected through appropriate programs and regulations.

Designating key growth areas in and near the towns is an important parallel growth management objective. If the towns are desirable places to live, it will help lessen development pressure in rural areas. For the Towns to assume the role of growth centers, basic community quality and infrastructure issues will need to be addressed. A key infrastructure issue is the provision of public water and sewer services. A second key issue is the lack of planning and implementation to improve community quality, including the housing stock, investment in community infrastructure, and visual aesthetics.

Rural Residential

Rural Residential areas consist of existing low-density residential uses located within the Conservation Corridor. These areas are the result of historic development patterns, including more recently, the creation of minor subdivision lots along State and County roads. Any additional rural residential development in the region should be confined to these areas although strict access controls and roadside buffering should be required to protect and enhance the overall scenic rural character. Where possible and where necessary, steps should be taken to enhance the rural scenic character of these areas through the strict application of property maintenance codes.

Rural Commercial

The Rural Commercial district includes small, isolated commercial or business uses that generally serve the surrounding area. They function as modern mini-mart or convenience stores in more remote, rural locations. These uses are often associated with the historic character of the

area and fulfill a basic service need for local residents.

Rural Commercial areas also may include existing service facilities, such as automotive repair facilities, trucking transport services, agricultural support uses, and more intense home-based businesses. In some cases, these businesses have located to service the needs of the agricultural community. New intense commercial uses in rural areas, with the possible exception of those that directly support local agriculture, should be restricted to areas planned for commercial and/or business uses.

Rural Village

The Rural Village category encompasses the historic village of Mount Zion (Melville Crossroads). Mount Zion is a unique traditional crossroad village that includes a historic church and cemetery, a small semi-public park and campground, and two meeting halls. The setting for Mount Zion is very appropriate, being surrounded by a scenic rural landscape. The approaches to the village are framed by views of open fields, forested areas, and the Louis Antal House, an early 19th Century Federal estate. Special areas, like Mount Zion, need to be protected by appropriate programs for local historic, cultural, and scenic preservation. In addition to insuring the setting for this community, resources should be applied that will encourage the rehabilitation and restoration of structures within the village and improve overall aesthetic character.

Greenbelt Area

Greenbelt areas are "green" transitional land use areas located at the edge of the growth area boundaries of the municipalities. These areas include a mix of low density residential and agricultural land uses. The emphasis in this area is on maintaining a distinct rural edge for the designated growth areas characterized by open space, natural resources, and low density residential uses. Coordinated County/Town policies for these areas should address the protection of key visual corridors and gateways to the towns, maintaining appropriate natural buffers, and protecting rural character.

Town Expansion Areas

Town Expansion Areas include the incorporated towns, which constitute the North County region's current "Priority Funding Areas" (PFA's) under the State's 1997 Smart Growth Areas Act. Town Expansion Areas also include existing developed areas adjacent to the towns, including residential, commercial, and industrial, as well as the Maryland Environmental Service (MES) Water and Sewer Service District and proposed municipal expansion areas outside present corporate boundaries. The incorporated towns and the MES Water and Sewer Service District include areas currently planned for major capital improvements and will constitute the future PFA's for the region in compliance with State laws. The Town Expansion areas define a planned, long-range build-out limit for the municipalities. Emphasis in PFAs is on investment in key public infrastructure, increased economic activity, and revitalization of existing neighborhoods. Overall emphasis is on insuring the orderly expansion of the Town and its infrastructure, coordinated County and Town land use policies, and promoting high quality development.

The municipalities play an important role in the County's growth management strategies, thus coordinated County/Town land use policies are necessary. As designated growth centers, the towns are the preferred location for future population growth and economic activity in the region. Assisting the Towns to achieve their respective community development and redevelopment objectives is a key implementation strategy.

Therefore, the Towns have embarked on a joint planning program with Caroline County to begin to address local growth management issues. Continued cooperation between the County and Towns is required to build the community resources necessary to effectively implement growth management and revitalization strategies.

Business and Industrial Employment

Business and Industrial Employment includes land extending from Goldsboro and Henderson into the Town Expansion Area. The Land Use Plan identifies these areas as potential sites for development of employment uses in a business/industrial park setting. The objective of this district is to set aside areas for employment uses that will bolster local economies and provide for jobs in close proximity to housing and in locations consistent with the overall growth management plan for North Caroline County.

Existing Towns

North County includes four small incorporated municipalities: Goldsboro, Henderson, Marydel, and Templeville. The Land Use Plan emphasizes a continuing role for the towns as major population and commercial centers for the region. Concentrating population in the existing municipalities is the most efficient way to provide basic community facilities and services to residents, support historic investment in infrastructure (such as existing streets), and reduce pressure for development in rural areas. It also continues the County's land use tradition, namely compact communities surrounded by rural countryside.

The towns have all undertaken programs to implement appropriate development and redevelopment strategies. Strategic assistance to the towns from the County to address community development and redevelopment issues is important because all residents of the County benefit from having incorporated towns that are desirable places for existing and new residents to live, work, and shop.

CHAPTER 2: North County 5 Year Water and Sewer Strategy

The *North Caroline County 5-Year Water & Sewer Plan* (Water & Sewer Plan) was prepared by the Maryland Environmental Service (MES) in cooperation with the Maryland Department of the Environment (MDE), Caroline County government, and the municipal governments of North Caroline County. The Water and Sewer Plan was adopted in December of 2002 by the Commissioners of Caroline County and the North County Towns of Goldsboro, Henderson, Marydel, and Templeville.

The Water & Sewer Plan designates areas of North Caroline County and the Queen Anne's portion of the Town of Templeville as an MES Water & Sewer Service Region. The Water & Sewer Plan also outlines an effective and economical means of providing water and sewer, outlining:

- Development and Construction of Facilities;
- Acquisition or Improvement of Facilities;
- Potential Expansion; and
- Ownership and Operation of Water Supply and Wastewater Collection systems.

The total estimated capital cost for the construction of the proposed facilities is $15,115,837. This funding will come from a combination of Federal and State grants and loans from private and public lenders. The annual operation and maintenance cost is estimated at $186,515 and will be covered by charges levied against water and sewer service customers.

Capital and O&M Cost Summary		
Facility	**Capital Cost**	**Annual O&M Cost**
Water Supply	$5,686,387	$38,525
Wastewater Collection	$7,975,700	$50,836
Wastewater Treatment	$1,453,750	$97,154
TOTAL	**$15,115,837**	**$186,515**

Table 3

The projected monthly user charge is based on the total number of dwelling units to be connected to the water and sewer system. Based on a county contribution of 553 units, the overall average monthly cost per connection is estimated at $28.11.

Goldsboro intends to solve water and wastewater problems that exist in the Town. Although, the Town supports the concept of a regional system as developed by MES and Caroline County, Goldsboro intends to review all potential alternatives to establishing water and wastewater services. Effective water and wastewater services will nullify the MDE Consent Order and alleviate the Town from its current legal constraints.

The consulting firm, Rummel, Klepper, and Kahl (RKK) was recently retained by Caroline County to update the feasibility study previously prepared for the MES system recommendation in order to reconsider alternatives and take a fresh look at the most cost efficient alternative. That study (update) provides current input to the Water Resources Element.

CHAPTER 3 – Land Use Element

In recent years, due to the huge capital investment that the federal and state government makes in infrastructure related projects, a higher level of local accountability for the management of infrastructure has emerged. In this respect, laws for growth management (planning and zoning) are directly related to the expansion and future management of infrastructure. Article 66B of the Annotated Code of Maryland applies to both Caroline County and the municipalities alike. The Planning & Zoning Enabling Act stipulates that a local government may not approve a construction project involving the use of state funds, grants, loans, loan guaranties, or insurance, unless the project is consistent with the eight "Visions" of the Act. The purpose of Article 66B is to promote the public health, safety, and general welfare of the community.

Regional Context

The Town of Goldsboro is one of a few remaining small crossroad towns on the Upper Eastern Shore that continues to exhibit a "village" character. This fact is noteworthy considering the growth that is occurring in adjacent Kent County, Delaware. Goldsboro is o
nly 20 miles from Dover ,the capital of Delaware and a major metropolitan region.

In 2000, the population of Kent County, Delaware was 126,697. As indicated by the Delaware Population Consortium in the *Kent County, Delaware Comprehensive Plan*, between 1990 and 2000, that County's rate of growth was over 1.3% per year. Kent County's population is projected to continue to grow at a rate of over 1.5% per year through 2020. I t is reasonable to assume that the development pressures in Delaware will impact Caroline County. Goldsboro could be expected to grow, if it were not for the critical lack of adequate water and sewerage services and facilities, however, it should be noted that Goldsboro has grown little over the last several decades. This is due, in part, to natural soil limitations (high water table, slow percolation rates), which preclude the approval of on-site sewage disposal systems and the lack of public water and sewer facilities.

The *Goldsboro Land Use & Growth Management Plan* (NCCP - Land Use Element) includes existing land use (as shown on the Goldsboro Land Use Map) along with information regarding development characteristics. The Land Use Element also incorporates land use classifications as described in the *North County Comprehensive Plan*.

Part 1: Land Use Goals

Goals for land use within the Town of Goldsboro include the following:

GOAL #1: Preserve and enhance the village character of the Town through compatible growth and reinvestment in existing properties.

GOAL #2: Improve existing property values and the climate for new investment and reinvestment in the Town by addressing key infrastructure issues, such as water and sewer, roads and streets, and other capital projects;

GOAL #3: Stabilize property values through the adoption of appropriate building and property maintenance codes and other regulations;

GOAL #4: Expand the tax base of the Town by encouraging appropriate infill and redevelopment of vacant and underutilized properties within the Town, such as the Old Milk Plant site;

GOAL #5: Ensure new development is consistent with the overall growth objectives of the Town by adopting appropriate development codes/standards and ensuring that all new development is appropriate in scale and size for Goldsboro;

GOAL #6: Improve coordination between Goldsboro and Caroline County;

GOAL #7: Protect sensitive environmental areas.

GOAL #8: Encourage the restoration, rehabilitation, and adaptive reuse of existing buildings, especially those that have special historical, architectural, and cultural significance;

GOAL #9: Provide for diversity in land-use for all current and future citizens of Goldsboro, including mixed land uses for new development;

GOAL #10: Ensure that all current and future residents and businesses in Goldsboro have adequate public services necessary to protect their health, safety, and welfare and to promote an attractive environment in which to live and work; and

GOAL #11: Enhance the landscape and visual appeal of Goldsboro through the development of landscape buffers between functional uses or zoning areas.

Part 2: Existing Land Use

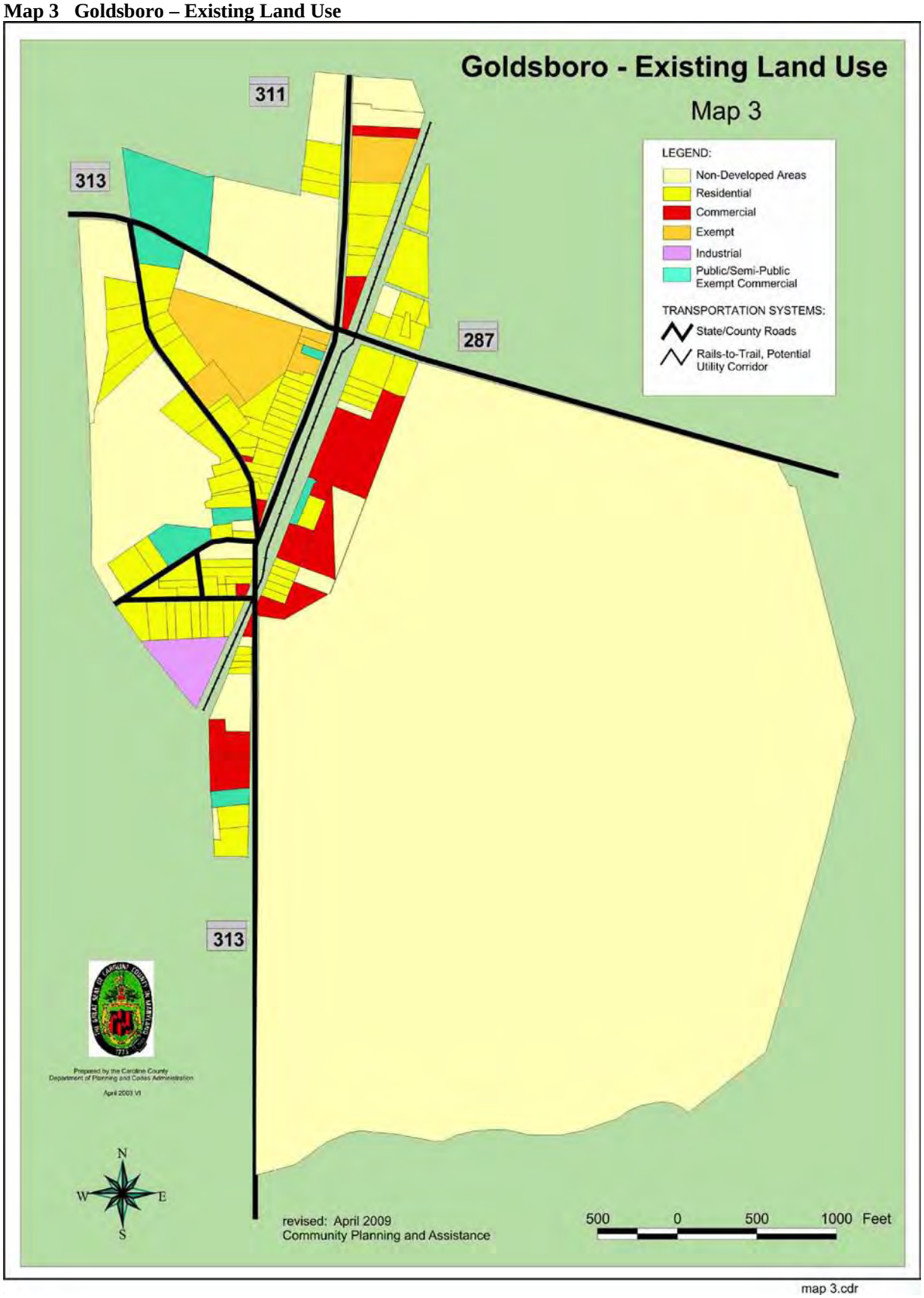
As indicated on Map 1-1, Goldsboro consists of approximately 439 acres, the largest single land use category is classified as commercial at 195 acres. Of that amount, 188 acres is in the East Star holding. The second largest land use category is Residential (at 190 acres). Similarly, 145 acres of that total is due to East Star lands. Agricultural land accounts for 25 acres in Town. Not including East Star properties, Goldsboro's land use breakdown consists of:

Residential land: 45 acres; Industrial uses: 2 acres; commercial uses: 7 acres. The remainder of the land in Goldsboro is devoted to public use 21 acres; streets 12.4 acres; and the railroad 5 acres. These amounts were determined by a review of tax records and GIS calculation. Both the Maryland Office of Planning and the Caroline County Department of Planning and Codes Administration project a modest increase in the population of Goldsboro and the surrounding region. This growth will remain small and modest until water and sewer services are available.

Goldsboro can be characterized as a predominantly low-density residential settlement. Among the public uses of land are a municipal building, town office, post office, fire department, recreational land, two churches, and a cemetery. Caroline County also maintains a road maintenance facility within Goldsboro. The Town includes some convenience commercial and/or business service uses that cater to the surrounding communities. These uses are primarily located along the arterial routes, which serve as "main streets". There is substantial vacant land (approximately 206 acres) within Goldsboro that will provide opportunities for infill development in the future.

The center of Goldsboro is the area along Main Street and old the railroad line between Church Lane and Railroad Avenue. It includes the lower end of Old Town Road. The local convenience store, the feed store, and the town hall/post office are all located within this area. There is some inter-mixture of residential, industrial, and commercial land within Goldsboro; especially along the railroad line and Main Street. This results from a historical pattern of residential ownership by local industry that provides convenient employee housing and commercial uses in private homes. Caroline County has actively encouraged industrial growth at established industrial parks in Denton and Federalsburg. There has been some industrial growth in northern Caroline County in Ridgely and Greensboro.

Map 3 Goldsboro – Existing Land Use



Part 3: Planning Districts and Future Uses

Goldsboro Land Use Districts

As indicated on Map 5, to accomplish the goals of this Comprehensive Plan and the desires of the citizens of Goldsboro, the Town has been divided into three planning districts.

1. The current corporate boundaries of Goldsboro;
2. The Town Center, as a mixed-use area that provides services, commercial and business as well as some residential housing; and
3. The Town Expansion Area, which is land adjacent to the Town that the County has identified as suitable for growth and might be annexed or developed at some future time.

These planning districts are administrative areas that will enable the Planning Commission and the Town Council to develop zoning ordinances and other building regulations and guidelines to properly manage growth within these areas. The Land Use Plan for Goldsboro includes the following land use districts:

Existing Town (Planning District 1): The current corporate boundaries of Goldsboro constitute the 1st Planning District. Goldsboro is a major population and commercial center for the region. It is imperative that Goldsboro undertake programs to implement appropriate development and redevelopment strategies. Within Planning District 1, several land use classifications cited in the North Caroline County Comprehensive Plan are noted:

- Neighborhood Conservation: The Neighborhood Conservation district encompasses existing low-density residential neighborhoods, primarily in detached single-family dwellings with some multi-family dwellings. This district may include some vacant or larger properties that could be candidate sites for infill or redevelopment projects. Historic properties located in these districts may be appropriate for adaptive reuse strategies. Zoning for these areas should address the need to protect existing residential areas from incompatible uses and activities. Design guidelines for appropriate infill projects would be applicable.

- Neighborhood Business: The Neighborhood Business District (applicable only in Goldsboro) includes scattered business and commercial sites located outside of the Town Center. The purpose of this district is to recognize existing land use and/or zoning decisions. In the future these areas should not be allowed to expand and new business and commercial activities should be encouraged to locate in the Town Center District or be part of a planned development.

- Town Growth: The Town Growth district encompasses the East Star Growth Area (classified as a mix of residential and commercial land by DAT– although currently vacant) and a large vacant tract within the corporate limits currently in agricultural use. It also includes individual sites that lend themselves to infill and redevelopment. Altogether, these areas total approximately 206 acres and are important sites for new development, especially if a regional water and sewerage system is constructed. The future land use for these areas varies.

Important development considerations for these areas include:

- Insuring the appropriate extension of existing streets, pedestrian circulation systems, and public utilities;
- Protecting adjacent developed areas from incompatible development;
- Protecting and enhancing community gateways; and
- Insuring the quality of new development complements the existing "small town" character of the Town.

The amount of open space within Goldsboro represents both an opportunity and a challenge to the community. These large parcels of open land are on all sides of Goldsboro. However, the open land within the Town is private and subject to the needs and desires of its owners. If this land should become available for development, it should be for residential use or for public use related to recreation, religion, education, or similar activities. The East Star site is a special case. It is contemplated to be developed as a mixed residential/commercial Planned Unit Development (PUD). However, recognizing the importance of agriculture to the Town and surrounding area, it is essential that the Zoning Ordinance of Goldsboro be modified to identify, protect and support agricultural activities.

Some land lying outside the corporate boundaries of the Town is currently zoned residential by Caroline County (Town Expansion Areas). Classified mainly as R-1 or single-family residential, the minimum proposed lot size is 20,000 square feet. In addition to the residential zones around Goldsboro, some county-controlled land is zoned for light industry, located on the south edge of town and along the railroad tracks (Main Street), and significant acreage is zoned for agricultural use.

While the use of this land as residential is appropriate, the lot size is more common to sprawling suburban development that is not appropriate for the area adjacent to Goldsboro. Minimum lot sizes of that magnitude will require extensive amounts of agricultural land to be converted to housing. Traditional suburban development is not compatible with the village design traditions of Goldsboro. The Town should work with Caroline County to reduce the required lot sizes and setbacks for construction so that any new development that will occur around Goldsboro will be compatible with the older community and not resemble the large tract developments common to more urban and developed areas. However, it is unlikely that any development will occur until and unless public sewer service becomes a reality in Goldsboro.

This district is an appropriate location for light industry since there is already some such activity located within that strip. However, great care should be exercised to ensure that this entrance "gateway" into Goldsboro does not deteriorate into an unattractive strip of junkyards and storage facilities.

When a municipal water and sewer system is installed in Goldsboro, there is every reasonable expectation that the population of the community will increase because new homes could be built. Additionally, if the water and sewer system is constructed, a number of Maryland regulations and policies have been adopted to encourage development in and around existing communities with adequate infrastructure and capacity to support new projects.

Town Center (Planning District 2): The Town Center constitutes the 2nd Planning District and is made up of a mix of land uses, including residential, institutional, commercial, and public (in some cases former industrial sites). Zoning for these areas should recognize the existing mix of land use and permit continuation and expansion. Infill and redevelopment of vacant and underutilized sites should be encouraged, consistent with design standards and guidelines developed to insure compatibility with adjacent land uses and consistency with the existing small crossroads character of the Town. Commercial and light industrial land uses in the Town are fundamental for a prosperous future. Goldsboro's plan identifies approximately 63 acres of land within the Town and extending into the East Star Town Center Area considered appropriate for some mix of business and residential uses.

Town Expansion Areas (Planning District 3): The Town Expansion Area constitutes Planning District 3 and is an area currently outside of the municipal boundaries of Goldsboro that could be annexed at some future date. This planning district is "a district in waiting" because the Town has no authority to determine land use opportunities and policies until annexation. Caroline County has jurisdiction over these areas and has developed its own set of policies and guidelines for land use. However, current state policies and regulations do encourage new growth and development around existing communities. As a result, it is likely that these outlying areas will be incorporated into Goldsboro when municipal water and sewer becomes available. When land is either annexed or proposed for annexation, Goldsboro can develop zoning and land use criteria for new development consistent with this Comprehensive Plan. The "Expansion Area" became the basis for establishing the Goldsboro Growth Area, as conceived by the Municipal Growth Element of the Goldsboro Comprehensive Plan.

The Caroline County Land Use Plan identifies these areas as Town Expansion Areas, which include land around the towns planned for growth in the future. The same development considerations that apply to growth areas within the towns can apply to these areas. Orderly development should be accomplished through the annexation process, whereby, they become part of the Town. Community quality objectives for these growth areas should be clearly stated at the time of annexation and be based on the following design principles:

1. New neighborhoods should accommodate a mix of uses, where appropriate;
2. New neighborhoods should be compact and identifiable with visually discernible boundaries;
3. New neighborhoods streets should extend existing street patterns to enhance views and landmarks;
4. Street blocks should be consistent with existing block patterns and help describe component neighborhoods, suggesting the role of the street as a channel for social interaction;
5. All parking should be accommodated through a mix of on-street and unobtrusive off-street strategies, avoiding large-scale parking lots;
6. New neighborhoods should be visually coherent and establish community character through consistent rules of organization and architecture;
7. Streets in new neighborhoods should be visually bounded with street trees, sidewalks, and front-yard design elements to create visual layers and contribute to the intimacy of

streetscape;

8. Most important, new neighborhoods and their settings should make a positive contribution to the existing town character.

Within Planning District 3, several land use classifications cited in the North Caroline County Comprehensive Plan are noted:

- Business and Employment Growth Areas: This land use classification encompasses adjoining county and town areas located in and around Goldsboro and Henderson that have appropriate size, location, and access characteristics for development of business and/or light industrial uses.

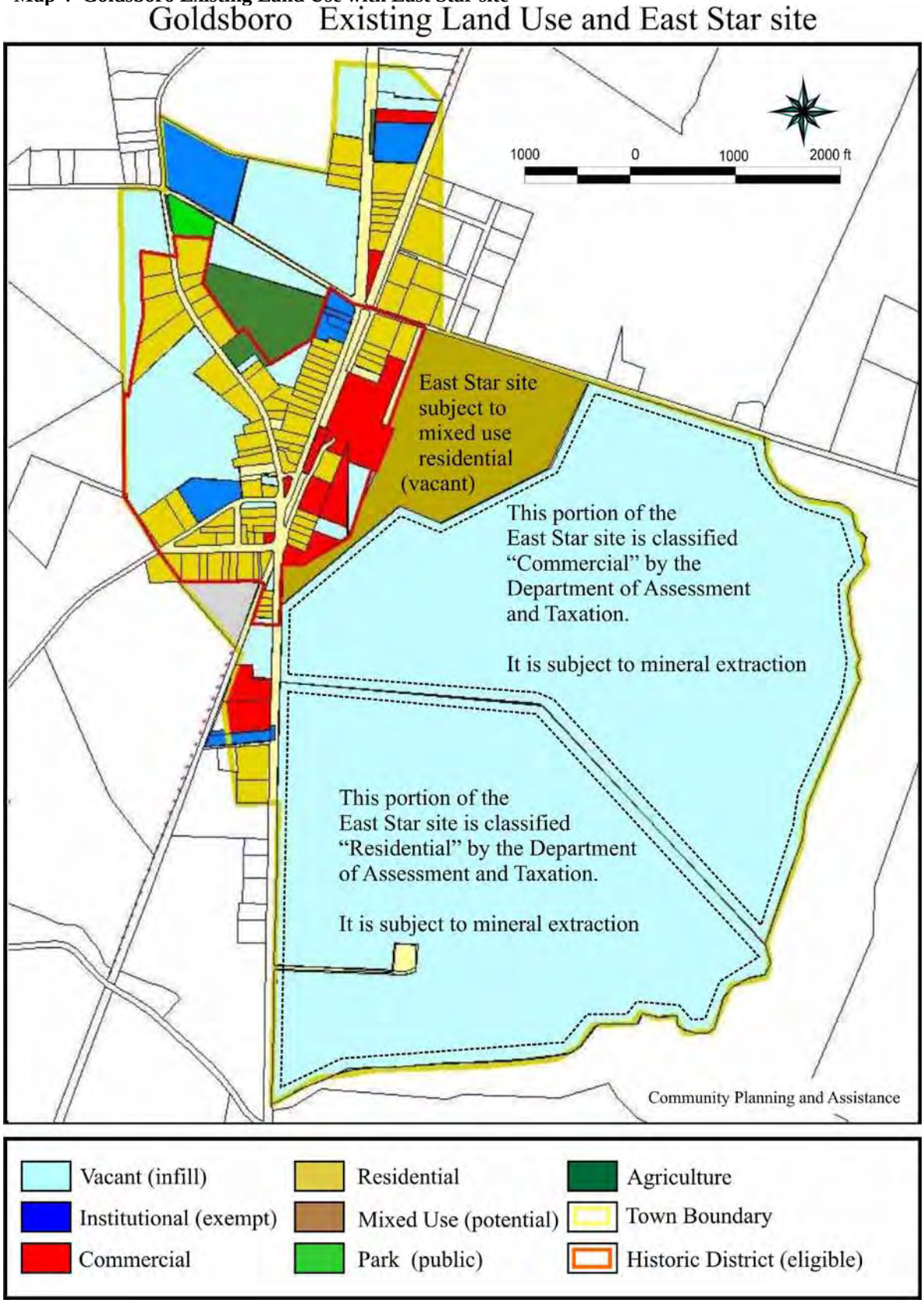
- Greenbelt: The greenbelt concept is a transitional land use area located at the edge of the growth area boundaries of the municipalities intended for low-density residential and agricultural uses. The greenbelt will help create a distinct rural edge for the designated growth areas characterized by open space, natural resources, and low density residential uses.

Goldsboro has approximately 396 acres of undeveloped/unimproved lands including infill and vacant land within the Town areas. At an average of 2 homes per acre, the Town could potentially accommodate 792 new homes and 2,217 new residents (based on an average size of 2.8 persons per household). According to the Town Charter, expansion beyond the present corporate boundaries is limited to 500 acres, requiring an amendment to the Charter for annexation that exceeds 500 acres. However, for practical purposes, growth will be limited to the total sewer allocations credited to Goldsboro by the North County Sewer Allocation Agreement, i.e. 606 equivalent dwelling units (EDU's).

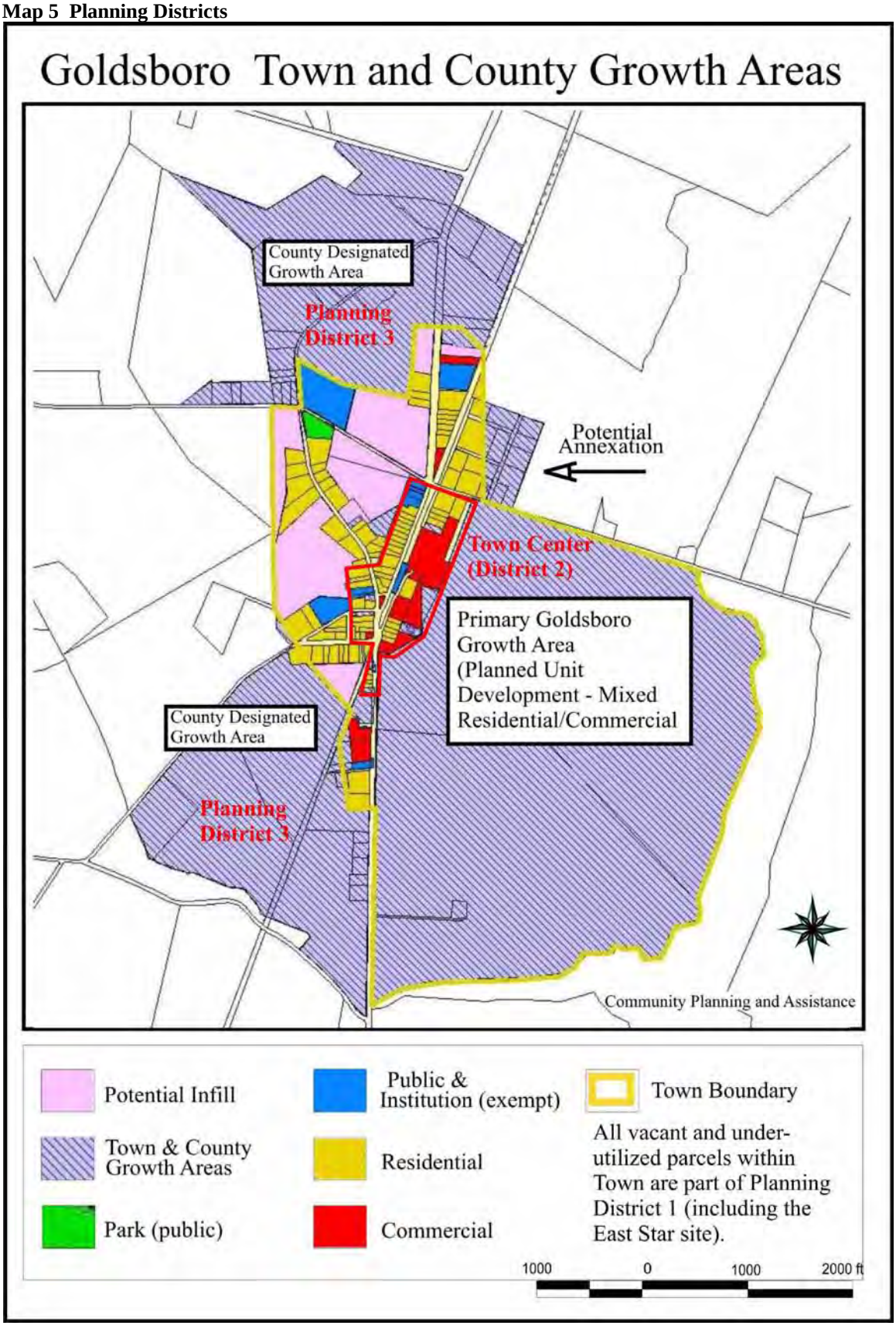
North County Sewer Allocations			
Jurisdiction	Minimum Allocation	Additional Allocation	Total
Goldsboro	131	475	606
Henderson	68	166	234
Marydel	86	69	155
Templeville	47	7	54
Caroline County	414	69	483
Totals	746	768	1532

Table 4

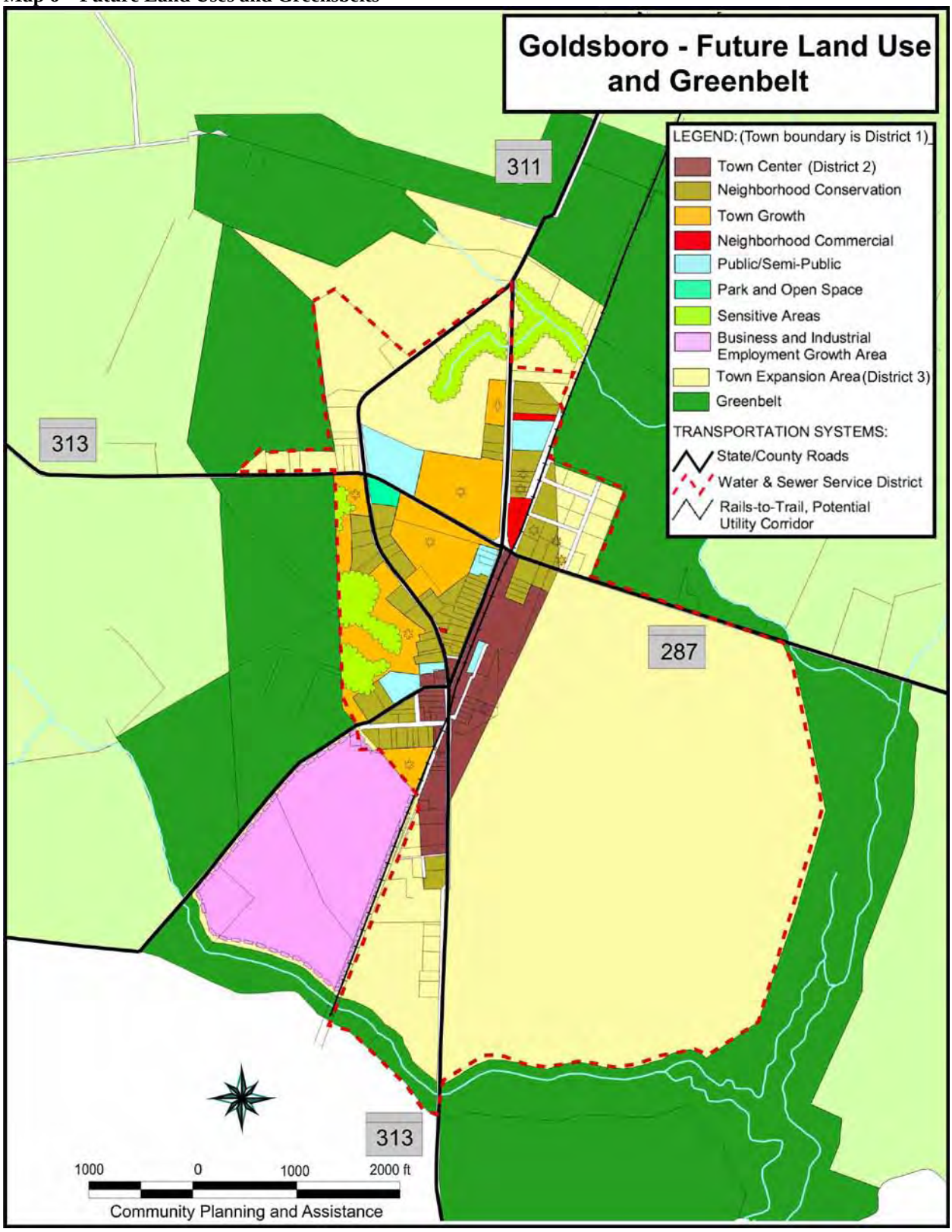
Map 4 Goldsboro Existing Land Use with East Star site



Map 5 Planning Districts



Map 6 Future Land Uses and Greensbelts



Part 4: Implementation Recommendations

RECOMMENDATION #1: Periodically, update the building permit process and development review process to ensure that reviews can be carried out in a timely fashion and ensure appropriate decisions are made with regard to plan review and approvals required for new projects;

RECOMMENDATION #2: Implement a sensitive areas plan and regulations for Goldsboro that ensure adequate protection;

RECOMMENDATION #3: Develop subdivision regulations for new development so new construction is consistent with the existing appearance and character of Goldsboro;

RECOMMENDATION #4: Develop setback and building requirements within the core village of Goldsboro that encourage new development to conform with the rhythm of existing development and discourage new construction not compatible with the surrounding buildings in design and function;

RECOMMENDATION #5: Develop parking requirements and regulations that encourage the use of existing commercial and industrial buildings and discourage the removal of existing buildings for parking areas:

RECOMMENDATION #6: Encourage the revitalization and continued improvement of the Town with a special emphasis on the central core of commercial and industrial buildings in the community. To accomplish this goal, the Town Commission should identify and designate revitalization areas;

RECOMMENDATION #7: Create special planning districts as described by the land use classifications of this Comprehensive Plan;

RECOMMENDATION #8: Develop design standards and guidelines for all new major subdivisions and all commercial and industrial construction and alterations in Goldsboro;

RECOMMENDATION #9: Form a committee with County and State government to develop appropriate code revisions that address Plan implementation. Implementation provisions may include applicable zoning, subdivision, forest conservation, erosion and sediment control, and storm-water management regulations.

RECOMMENDATION #10: Endorse the following basic design principles to be reflected in the development of codes and regulations:

- Neighborhoods are compact, identifiable, and their boundaries are visually discernible;
- Neighborhoods are linear (cross-roads or grid patterned), with variations to enhance views and landmarks;
- Neighborhoods are visually coherent and character is established through consistent rules of

organization and architecture;
- Street corridors are visually bounded and intimate in feeling. Street trees, sidewalks, and front yard design elements create visual layers and contribute to the intimacy of streetscape;
- Street blocks help describe component neighborhoods, suggesting the role of the street as a channel for neighborly interaction;
- Neighborhoods accommodate a mix of uses, even at the "hamlet" scale;
- Parking is accommodated through a mix of on-street and unobtrusive off-street strategies. Large-scale parking lots are avoided, and older lots are redesigned into smaller landscaped segments; and
- Most important, neighborhoods and their setting convey a strong "sense of place."

RECOMMENDATION #11: Contain the costs of future development and growth to ensure that costs do not burden current and future residents and businesses in Goldsboro. Accordingly, new development should be expected to pay for the extension of municipal services and capital improvements resulting of new development;

RECOMMENDATION #12: Develop a close working relationship with the Caroline County Planning Commission and the Government of Caroline County to ensure planned development near Goldsboro is consistent with the goals of the Caroline County Comprehensive Plan and the desire and needs of the citizens of Goldsboro to maintain their identity as a community within northern Caroline County.

RECOMMENDATION #13: Maintain and develop a road network that encourages the separation of pedestrian and bicycle traffic from regular street traffic. In addition, the road system should encourage the separation of heavy commercial and industrial traffic from private vehicle traffic without having a negative impact on existing or potential industrial or commercial development in Goldsboro;

RECOMMENDATION #14: Define projected growth areas through planning and design guidelines.

RECOMMENDATION #15: Revise the zoning ordinance and subdivision regulations to accommodate designated growth areas, reflecting a coordinated long-term annexation policy;

RECOMMENDATION #16: Insure appropriate stormwater management; and

RECOMMENDATION #17: Evaluate the appropriateness of adopting an adequate public facilities ordinance and/or impact fees to address demand on public facilities and services created by new development.

CHAPTER 4: Municipal Growth Element

Part 1: Goals & Objectives

Goals for agriculture and municipal development within the Town of Goldsboro include the following:

GOAL #1: Support County efforts to preserve agricultural land use in outlying areas adjacent to the Town provided there is adequate land for future growth for Goldsboro; and

GOAL #2: Minimize land use conflicts between residential/commercial land use and agriculture.

Capacity Analysis

This analysis was prepared as part of the background studies that evaluated options for and feasibility of extending public sewer service into the defined area of Northern Caroline County. That area has been plagued for many years with the multiple problems of failing septic systems, contaminated wells, and low household incomes. Although several years old, conditions have not materially changed in the study area and the Planning Commission has decided to build on work already completed.. Accordingly, the findings are considered still valid for planning purposes and are incorporated into this Comprehensive Plan.

Study Area

The study area includes all properties located in the proposed North County Water and Sewer Service Area as delineated by the Maryland Environmental Service (MES). The MES Water and Sewer Service Area encompasses the entire corporate limits of Goldsboro (not including the East Star property), Marydel (not including Marydel, Delaware), Henderson, and Templeville (including the Queen Anne's County portion of Templeville) as well as land in Caroline County located in the vicinity of each of the municipalities. The East Star property, which was annexed since the capacity analysis was completed, was analyzed as a separate area due to its importance as a driving factor for regional wastewater solutions and as a catalyst for potential north County growth.

The Goldsboro study area is shown on figure 1.

Definition of Terms and Abbreviations

Equivalent Dwelling Unit (EDU) –. A measure of water and sewer demand based on average water usage for a single family dwelling. Conforming to Maryland Department of the Environment Waste Water Guidelines, an EDU is assumed to be 250 gallons per day (gpd).
Floor Area Ratio – The ratio of the enclosed floor area of a building on a given lot to the total land area of the lot. Floor area ratio is most often employed as an intensity measure for non-residential uses.
Infill - The development of vacant, abandoned, passed over lots of record within built-up

areas located in the MES service area.
GPD – Gallons per day (used in the context of this report to describe water and/or sewer allocations associated with growth policy alternatives).
North County/MES Water and Sewer Service Area – Planned water and sewer service area delineated by the Maryland Environmental Service in the report entitled, *Five Year Plan for the Establishment and Management of a North County Water and Sewer Service District to include the Towns of Goldsboro, Henderson, Marydel, Templeville*, May 23, 2002.
Redevelopment – Construction in previously developed areas of the MES water and sewer service area. Projects tend to be somewhat larger and more complex than infill projects and includes underutilized properties.
Underutilized Property -Parcels or tracts of land that have not been developed to a level at or near the full potential permitted under development regulations in effect or enabled by existing or planned infrastructure and taking into consideration site constraints. For purposes of this analysis, "underutilized" means residential parcels with an improved value less than $10,000.

Assumptions and Methodology

The following assumptions were used in the preparation of the alternative build-out scenarios:

- Site constraints considered include nontidal wetlands, poor soils, 100 year floodplain.
- Liberal land set aside for stormwater management was provided where site and area drainage conditions seemed to warrant.
- EDUs equal 250 gallons per day (gpd) per dwelling unit and mobile home as per Maryland Department of the Environment Waste Water Guidelines.
- Small commercial, business and institutional properties were assigned one EDU per property. Large commercial, business, or industrial properties were assigned EDUs in accordance with the maximum potential floor area in Policy options 3 and 4.

Methodology

Existing Development Patterns

Existing development patterns were derived by first creating a data set of properties classified by the Department of Assessment and Taxation (2005 records) as "residential," with residential improvements described, and valued equal to or greater than $10,000. Average lot size was determined from this data set. In addition, a frequency distribution was calculated to determine the most prevalent lot size. This analysis was conducted for the 1st election district and for each municipality.

Two data sources were used in the analysis of existing improved residential units for the towns. At the County's request, the MES land use data was used for the most accurate count of the number of existing residential units in the defined MES service area. In addition, tax assessment data was used to determine historic lot size patterns which do not always coincide with current zoning standards. The pattern of lot sizes was a consideration in determining the lot characteristics for the scenarios. The combination of these two data sources seemed to lend the most accuracy in the analysis.

Build-Out Scenarios

Build-out scenarios are based on development concept sketches prepared for each infill or redevelopment property, taking into account existing site constraints as derived from best available information. Variations are based on alternative lot sizes reflecting current municipal development patterns or minimum lot standards required under municipal zoning and codes.

Commercial and Industrial Water and Sewer and Demand

Vacant and underutilized commercial and industrial properties were assigned a maximum floor area ratio (FAR) of 0.10 (4,356 square feet per acre). A FAR of 0.10 was derived from an analysis of current average floor area ratios in the towns of Denton and Easton. Average water and sewer demand was calculated at the rate of 200 gallons per day per 1,000 square feet of floor area.

Goldsboro Zoning

The Goldsboro Zoning Ordinance requires a minimum of 7,000 square feet per residential lot in the Neighborhood Conservation, R-1 and Neighborhood Business districts and limits gross density to 6 dwelling units per acre.

Goldsboro and Vicinity: Summary

According to 2005 Maryland Department of Assessment and Taxation records, there were 84 properties classified as "residential" with improvements valued as equal to or greater than $10,000 located in the Town of Goldsboro. The average residential lot size for these properties was 0.48 acres per dwelling unit or an average density of 2.08 dwelling units per acre. Over half of these lots were approximately a third of an acre. Eliminating lots in excess of one acre, the average lot size was 0.35 acres.

The MES study reported 118 improved properties in Goldsboro. This study estimates that there are an additional 18 improved properties in the County portion of the MES service area in the vicinity of Goldsboro.

Including the East Star property and properties located in the County portion of the MES service area, Goldsboro and vicinity has approximately 555 acres of land that can be considered potential infill, redevelopment, or new development sites.

According to the Department of Assessment and Taxation Records, there are approximately 15 improved properties in the Goldsboro vicinity that are classified as commercial, industrial, or institutional (exempt). Each of these properties was allocated one EDU for purposes of computing policy alternative 01 and 02.

Policy alternatives 03 and 04 assumed more intense use of vacant or under utilized commercial or industrial sites. Goldsboro and vicinity has approximately 22 acres of vacant or under utilized

commercial or industrial land. Developed to the maximum extent (FAR 0.10), these properties could support approximately 95,832 square feet of floor area. Water and sewer demand is estimated to be approximately 18,756 gallons per day.

Potential Site Development Constraints

The primary site constraints noted in the analysis are nontidal wetlands, 100 year floodplain and soils with severe limitations. No other sensitive environmental features were noted. Nontidal wetlands were considered a significant constraint. The 100 year floodplain and soils with severe limitation were considered a factor affecting site development (e.g., drainage and stormwater management) and building construction (e.g., flood proof construction) but not factors that precluded development. The location of these factors is shown in Figures 10 – 11.

Growth Scenarios

This analysis examines alternative build-out scenarios based on four water and sewer capacity allocation policies described below. Each alternative development scenario that reflects the particular policy considered is expressed in terms of equivalent dwelling units (EDUs) and estimated gallons per day (gpd) of water and sewer demand.

Variable minimum lot size policies used in this analysis include a low density residential development (15,000 square foot lots) scenario that reflects the existing pattern of residential development in the municipalities (approximately 1/3 acre) and medium density residential development (7,000 to 7,500 square foot average lot sizes) scenario that reflects existing or anticipated zoning density standards in the municipalities.

"Infill" development assumes that each lot of record will be allocated one EDU. "Redevelopment" assumes that new lots will be created wherever minimum development standards can be met and site constraints do not preclude development. The East Star property in Goldsboro is described as "new development" and was allocated 500 EDUs when included in policy alternatives 03 and 04..

Each policy alternative is described as follows:

Policy Alternative 01: Figure 5

Policy alternative 01 describes a scenario wherein the Towns and County would provide water and sewer capacity to serve existing uses and allow some limited infill development. It assumes adequate water and sewer capacity to address existing or potential public health issues by providing water and sewer service to existing uses within the MES service area (County and Town). In addition it assumes limited infill on lots of record located in the MES service area. In summary, for purposes of calculating the minimum capacity required for this policy, it was assumed that the County and municipalities would provide water and sewer capacity adequate to meet the estimated demand from:

• existing residential, commercial, business and institutional uses in the MES area at the rate of 250 gpd per EDU;
• existing mobile home units in the mobile home parks at the rate of 250 gpd per unit; and
• infill development at the rate of one EDU per lot of record in the MES service area.

Estimated Water and Sewer Demand
Policy Alternative 01
Limited Infill Development

	Existing EDU's			New EDU's				
Town	County	Town	Total	County	Town	Total	Total EDU's	Estimated Demand (gpd)
Goldsboro	18	116	134	6	24	30	164	41,000
Henderson	175	53	228	4	15	19	247	61,750
Mardel	170	62	232	12	24	36	268	67,000
Templeville	25	37	62	4	10	14	76	19,000
TOTAL	**388**	**268**	**656**	**26**	**783**	**99**	**755**	**188,750**

Table 5

Policy Alternative 02: Figure 6

Policy alternative 02 examines a limited growth scenario. It assumes adequate water and sewer capacity to address existing or potential public health issues by providing water and sewer service to existing uses within the MES service area (County and Town). In addition policy alternative 02 assumes infill on lots of record located in the MES service area, subdivision of larger parcels (redevelopment) within the municipalities and expansion of the mobile home parks. Like policy alternative 01, this policy does not include allocation of water and sewer capacity for extensive commercial or industrial development. To summarize, for purposes of calculating the minimum capacity required for this policy it was assumed that the County and municipalities would provide water and sewer capacity adequate to meet the estimated demand for:

• existing residential units in the MES area at the rate of 250 gpd per unit;
• infill and redevelopment within the municipalities;
• infill development (expansion) of the existing mobile home parks in compliance with current County standards; and
• existing commercial, business and institutional uses at the rate of one EDU per property.

Estimated Water and Sewer Demand
Policy Alternative 02
Limited Infill and Redevelopment

	Existing EDU's			New EDU's				
Town	County	Town	Total	County	Town	Total	Total EDU's	Estimated Demand (gpd)
Goldsboro	18	116	134	15	142	157	291	72,750
Henderson	175	53	228	121	40	161	389	97,250
Mardel	170	62	232	53	24	77	309	77,250
Templeville	25	37	62	6	15	21	83	20,750
TOTAL	**388**	**268**	**656**	**195**	**221**	**416**	**1,072**	**268,000**

Table 6

Policy Alternative 03: Figure 7

Policy alternative 03 represents a more aggressive growth scenario within the MES service area. It assumes that all properties (County and municipal) with development potential will be developed in some way to the maximum extent possible, including new development on the East Star property in Goldsboro (500 EDUs). Residential properties outside of the municipalities will develop at low densities (average lot size of 15,000 square feet) and commercial and industrial properties will develop to the maximum extent possible (assumed FAR of 0.10). In the policy alternative, commercial and industrial properties that were allocated one EDU per lot of record in Policy options 01 and 02 were included in the separate allocation for commercial and industrial development, consequently the number of existing EDUs was reduced to account for this shift. This policy alternative assumes the existing mobile home parks will be converted to residential subdivisions, developed in a manner similar to other residential developments. In order to enable this policy, it was assumed that the County and municipalities will provide water and sewer capacity adequate to meet the estimated demand associated with the following:

• existing residential units in the MES area at the rate of 250 gpd per unit;
• infill, redevelopment and new development within the municipalities;
• infill and redevelopment in the balance of the MES area based on an average lots size of 15,000 square feet per dwelling unit outside of the municipalities;
• redevelopment of the existing mobile home park properties as residential subdivisions;
• existing commercial, business and institutional uses as follows:
- large properties: 200 gallons per 1,000 square feet of potential floor area;
- small properties: one EDU per property, and
• potential new development on the East Star property in Goldsboro: 500 EDUs.

The results of analysis of Policy Alternative 03 are summarized in Table 3.

Estimated Water and Sewer Demand
Policy Alternative 03
Infill, Redevelopment and New Development
Low Density

	Existing EDU's			New EDU's				
Town	County	Town	Total	County	Town	Total	Total EDU's	Estimated Demand (gpd)
Goldsboro	16	103	19	102	728	830	949	237,250
Henderson	38	44	82	132	114	246	328	82,000
Mardel	62	46	108	280	91	371	479	119,750
Templeville	25	37	62	28	15	49	111	27,750
TOTAL	**141**	**230**	**371**	**542**	**948**	**1,496**	**1,867**	**466,750**

Table 7

Policy Alternative 04: Figures 8

Policy alternative 04 represents the most aggressive growth scenario. It assumes that all properties (County and municipal) with development potential will be developed in some way to maximum extent possible, including new development on the East Star property in Goldsboro (500 EDUs). All residential properties will be developed at moderate densities (average lot size of 7,000 square feet) in accordance with municipal standards. Commercial and industrial properties will develop to the maximum extent possible (assumed FAR of 0.10). This policy alternative assumes the existing mobile home parks will be converted to residential subdivisions and developed in a manner similar to other residential developments. This policy alternative also includes an allocation of 55 EDUs for Marydel, Delaware. In order to enable this policy, it was assumed that the County and municipalities will provide water and sewer capacity adequate to meet the estimated demand associated with the following:

• existing residential units in the MES area at the rate of 250 gpd per unit;
• infill and redevelopment within the municipalities;
• infill and redevelopment in the balance of the MES area based on an average lots size of 7,000 square feet per dwelling unit;
• redevelopment of the existing mobile home park properties as residential subdivisions;
• existing commercial, business and institutional uses as follows:
- large properties: 200 gallons per 1,000 square feet of potential floor area;
- small properties: one EDU per property,
• potential new development on the East Star property in Goldsboro: 500 EDUs: and
• 55 EDUs for Marydel, Delaware.

The results of analysis of Policy Alternative 04 are summarized in Table 4.

Estimated Water and Sewer Demand
Policy Alternative 04
Infill, Redevelopment and New Development Moderate Density

	Existing EDU's			New EDU's				
Town	County	Town	Total	County	Town	Total	Total EDU's	Estimated Demand (gpd)
Goldsboro	16	103	119	180	728	908	1,027	256,750
Henderson	44	38	82	242	116	358	440	110,000
Mardel	62	101	163	473	103	576	739	184,750
Templeville	25	37	62	52	15	67	129	32,250
TOTAL	**147**	**279**	**426**	**947**	**962**	**1,909**	**2,335**	**583,750**

Table 8

Figure 1 North County Build-out Study, Goldsboro and Vicinity

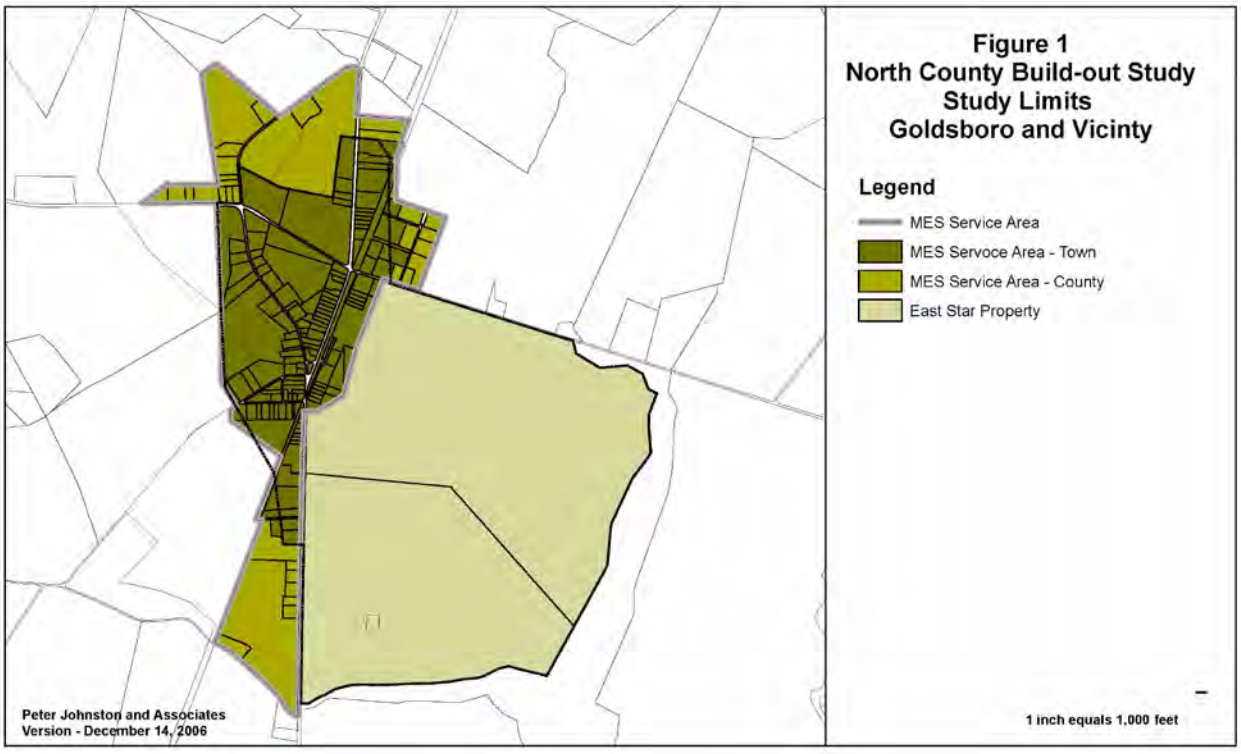


Figure 2 Goldsboro and Vicinity Potential Infill and Redevelopment Properties

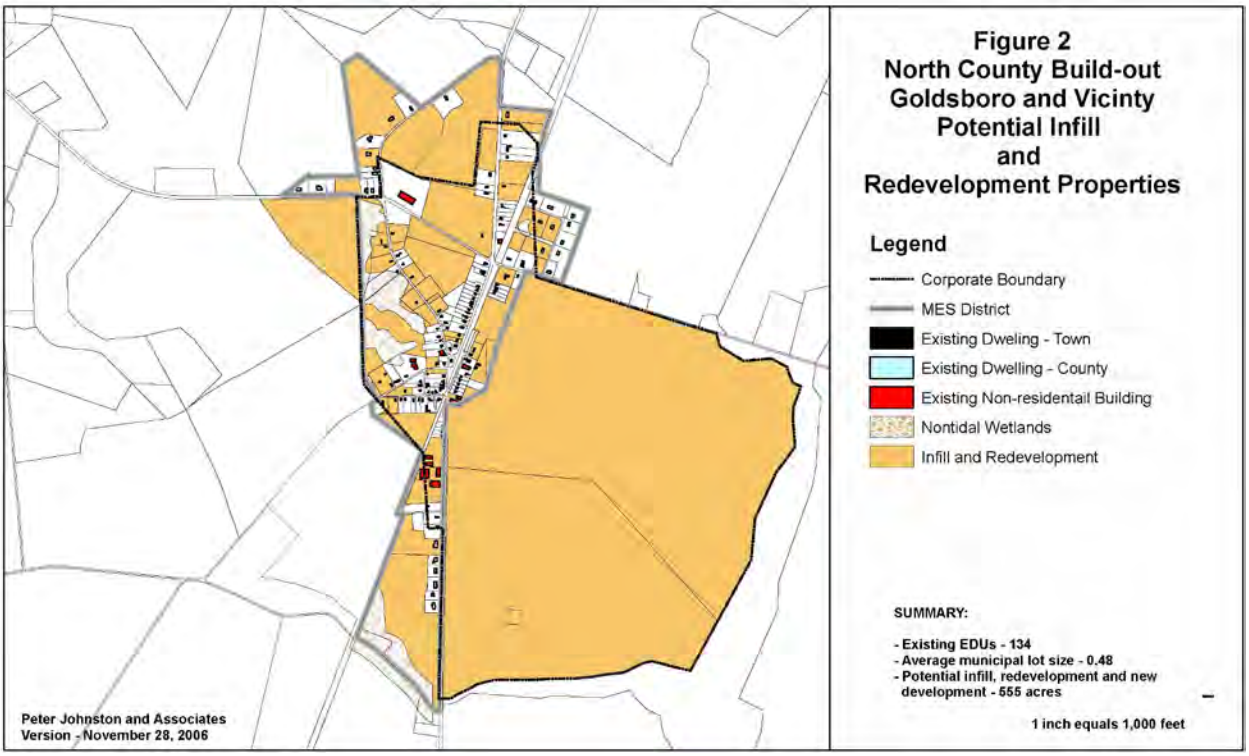


Figure 3 Goldsboro and Vicinity Commercial/Industrial Properties

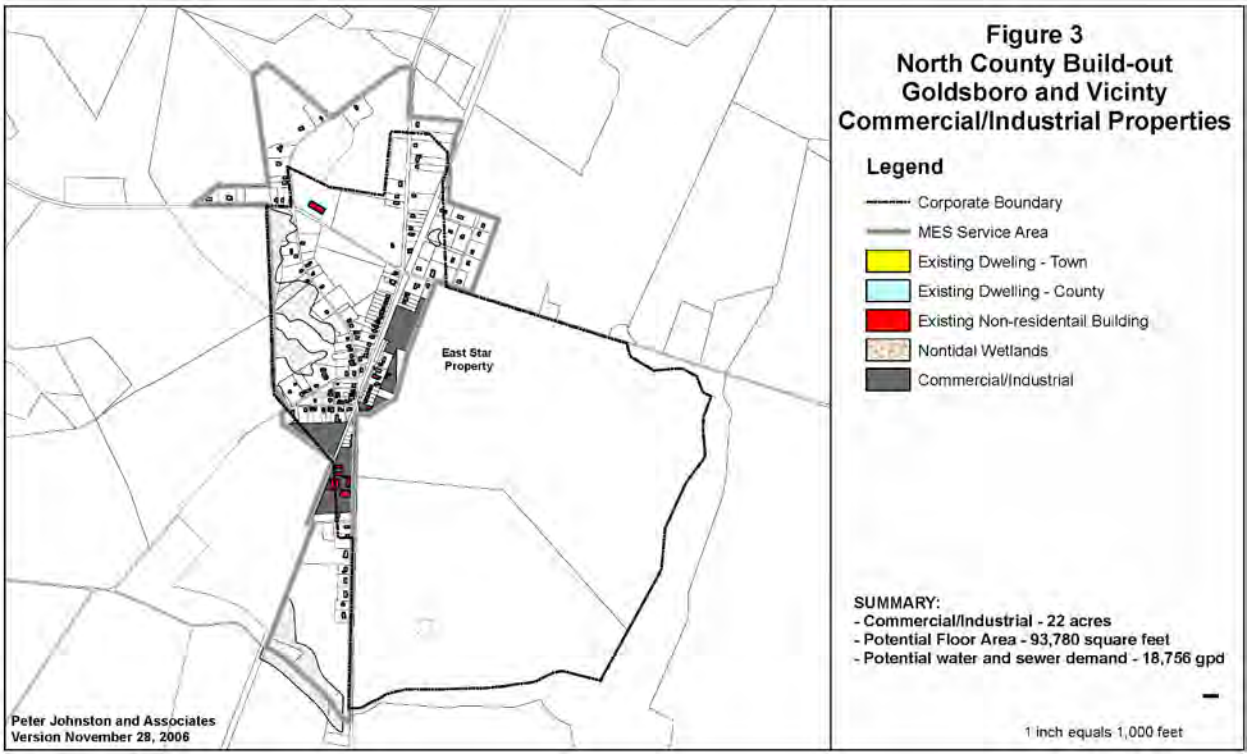


Figure 4 Goldsboro and Vicinity Potential Development Constraints

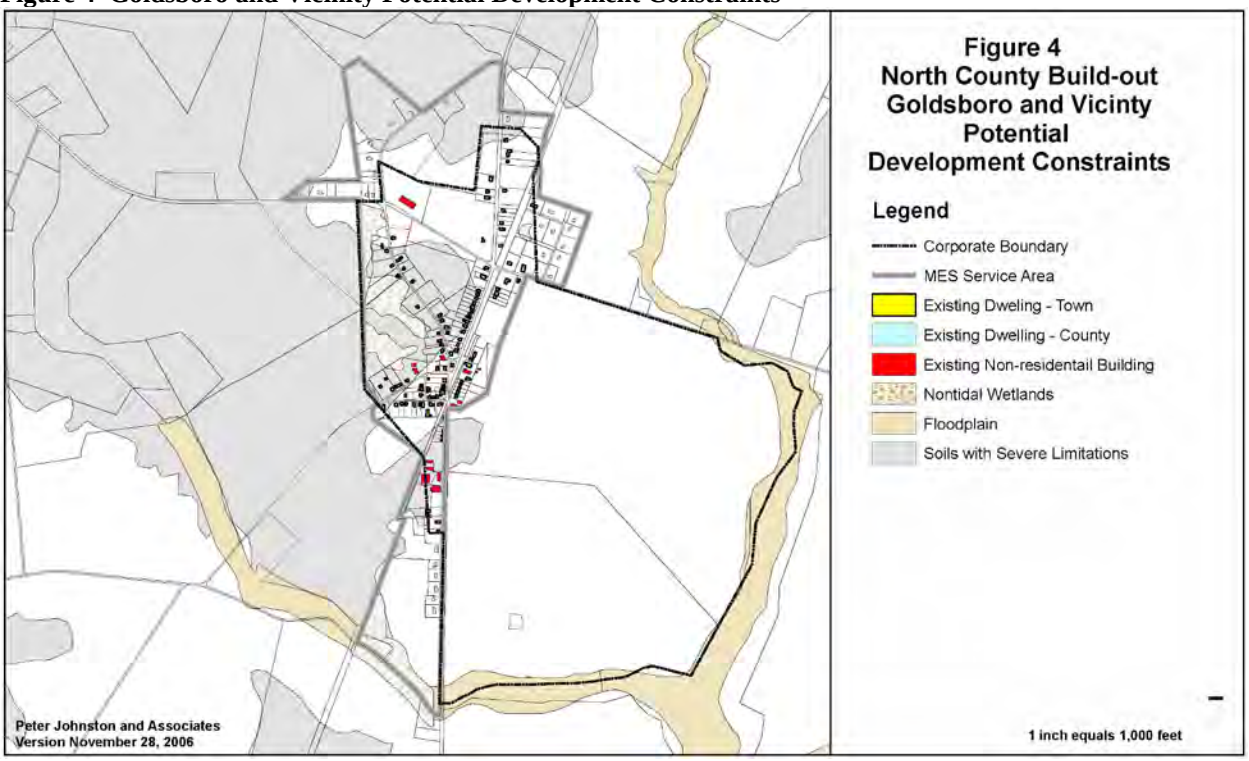


Figure 5 Goldsboro and Vicinity Policy 01, Limited Infill

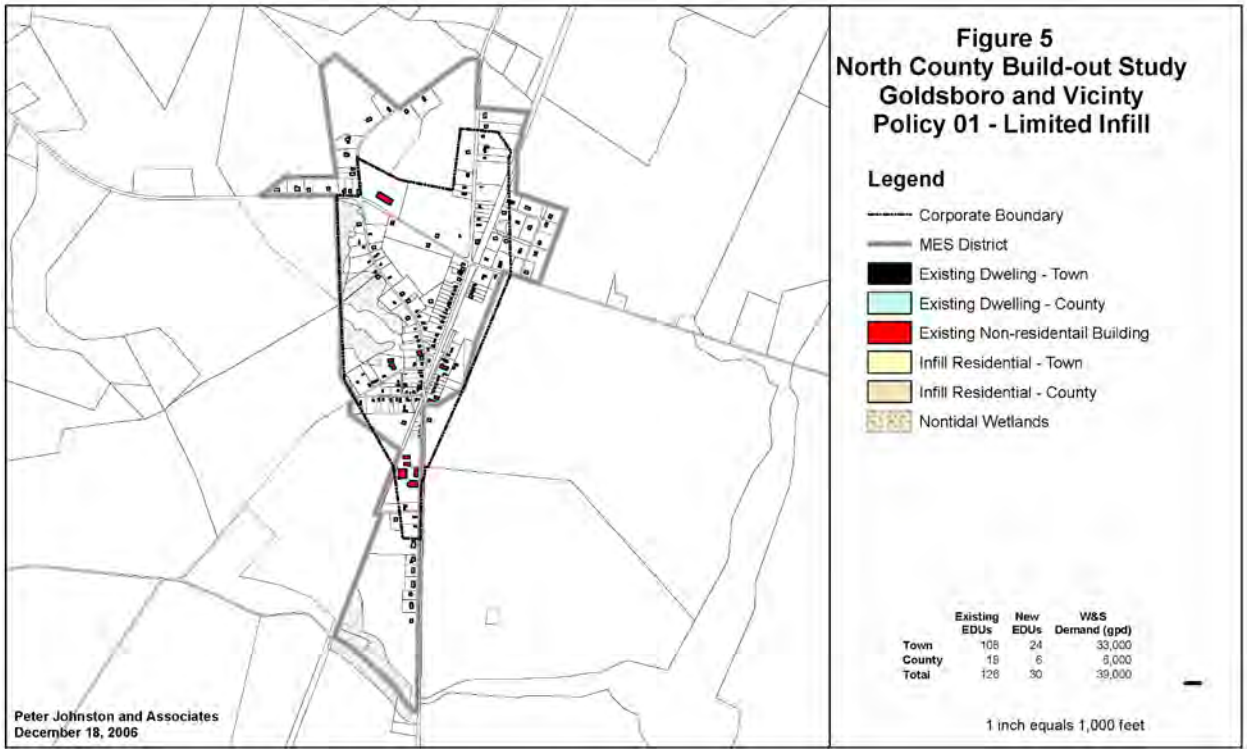


Figure 6 Goldsboro and Vicinity Policy 2, Municipal Infill and Redevelopment

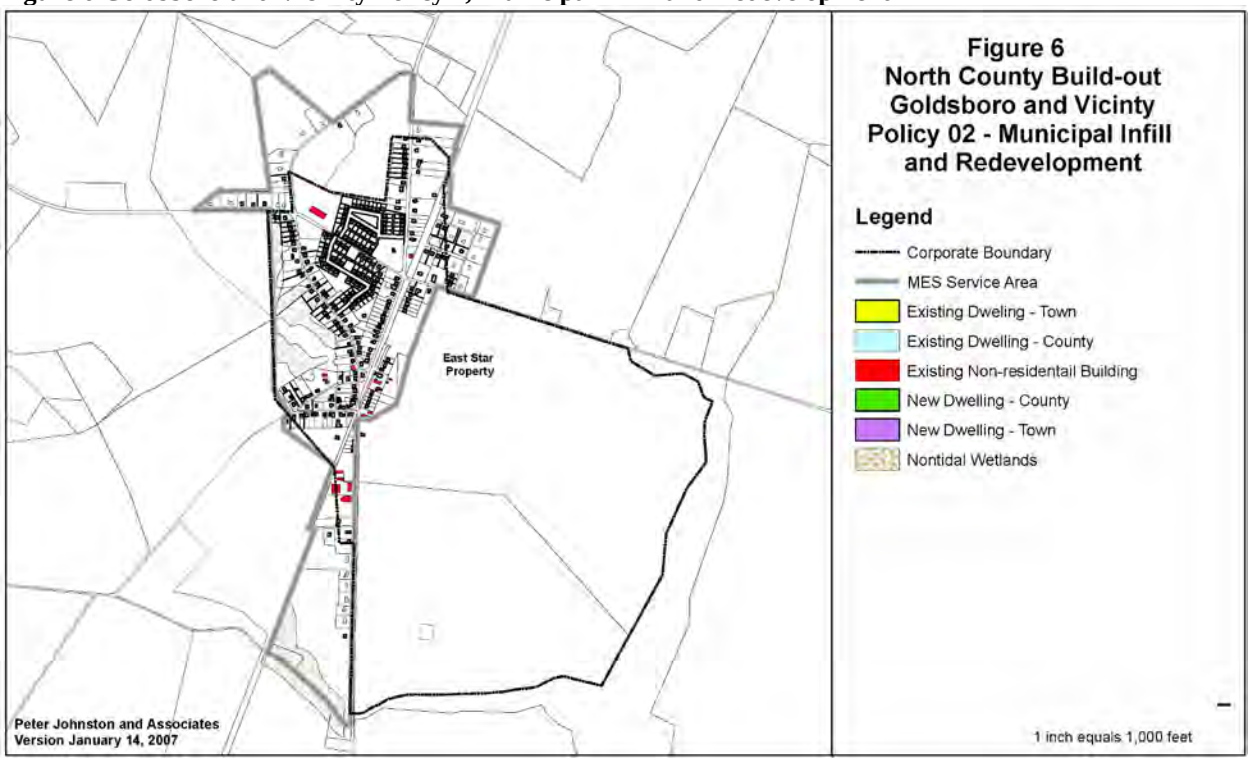


Figure 7 Goldsboro and Vicinity Policy 3, District Infill and Redevelopment

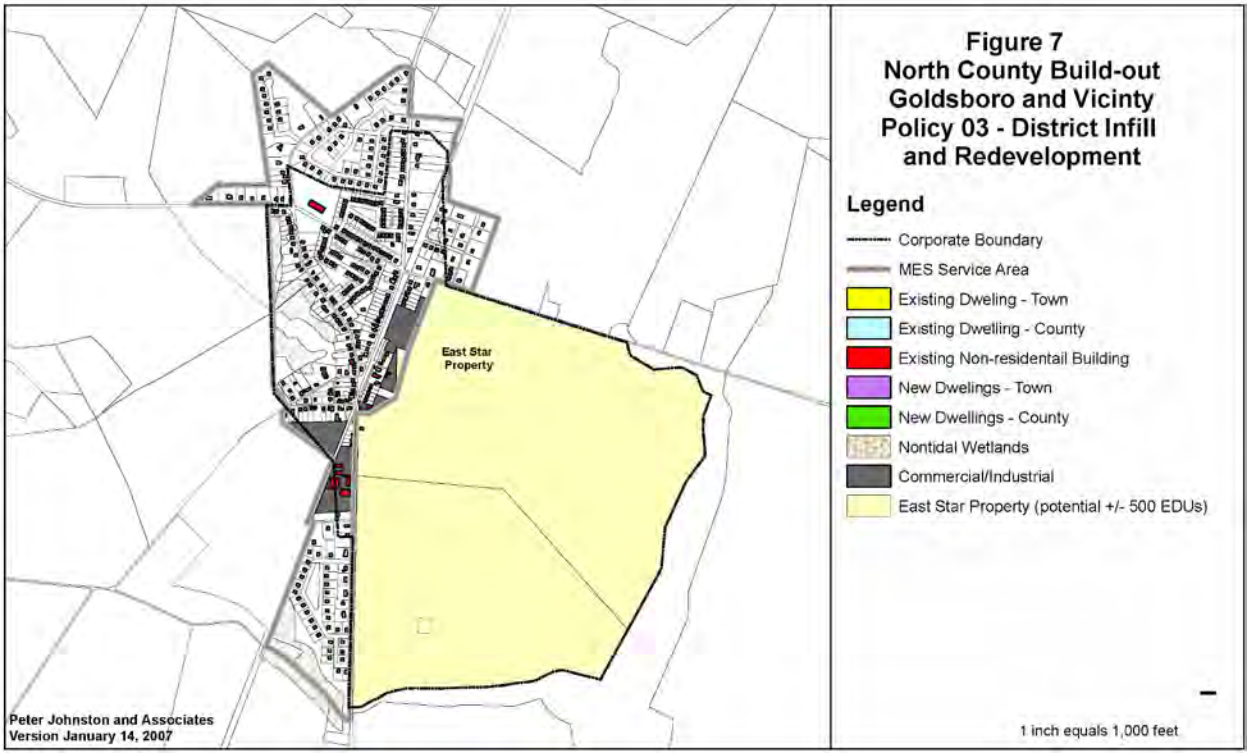
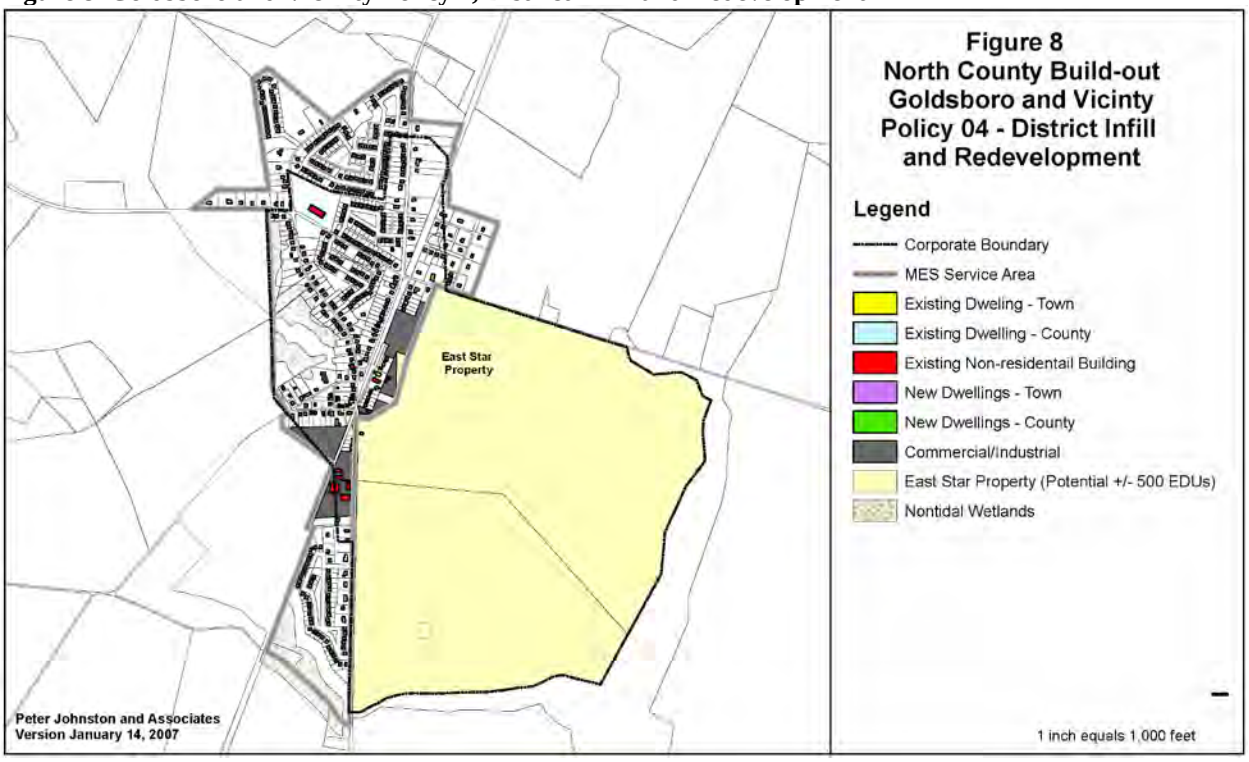
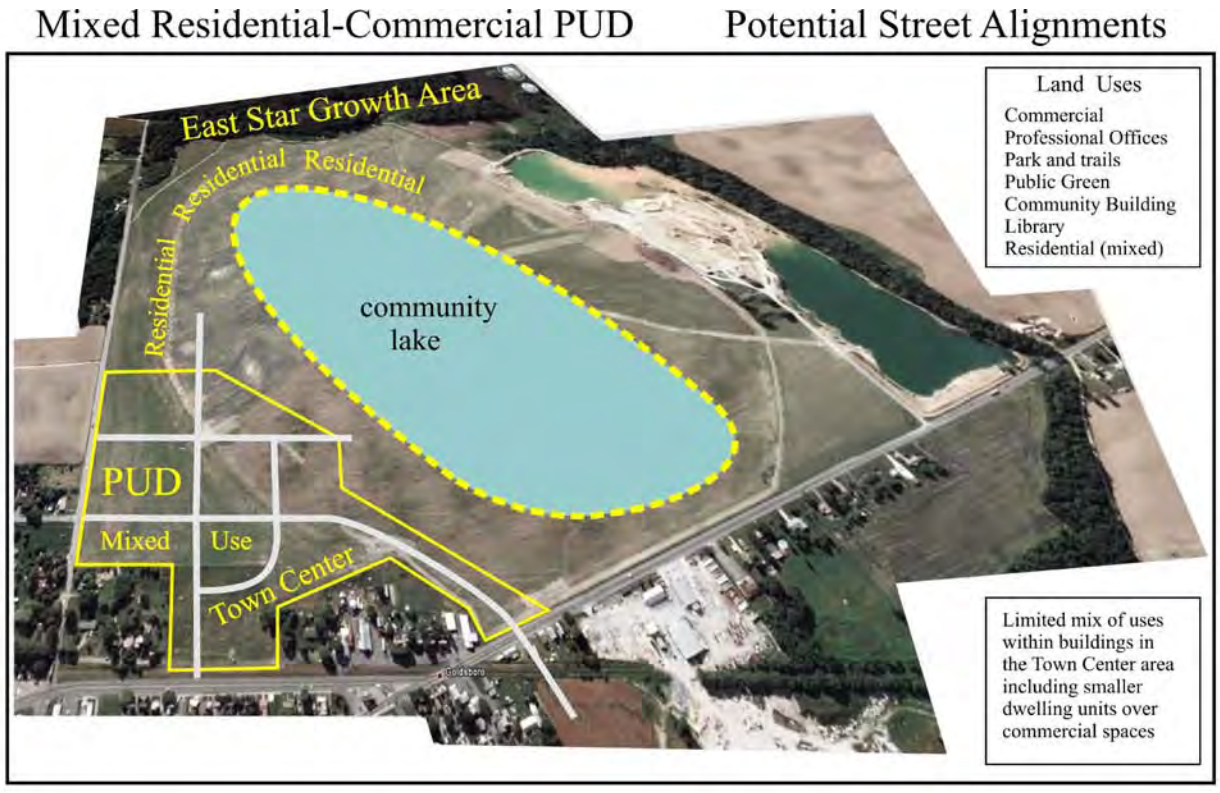


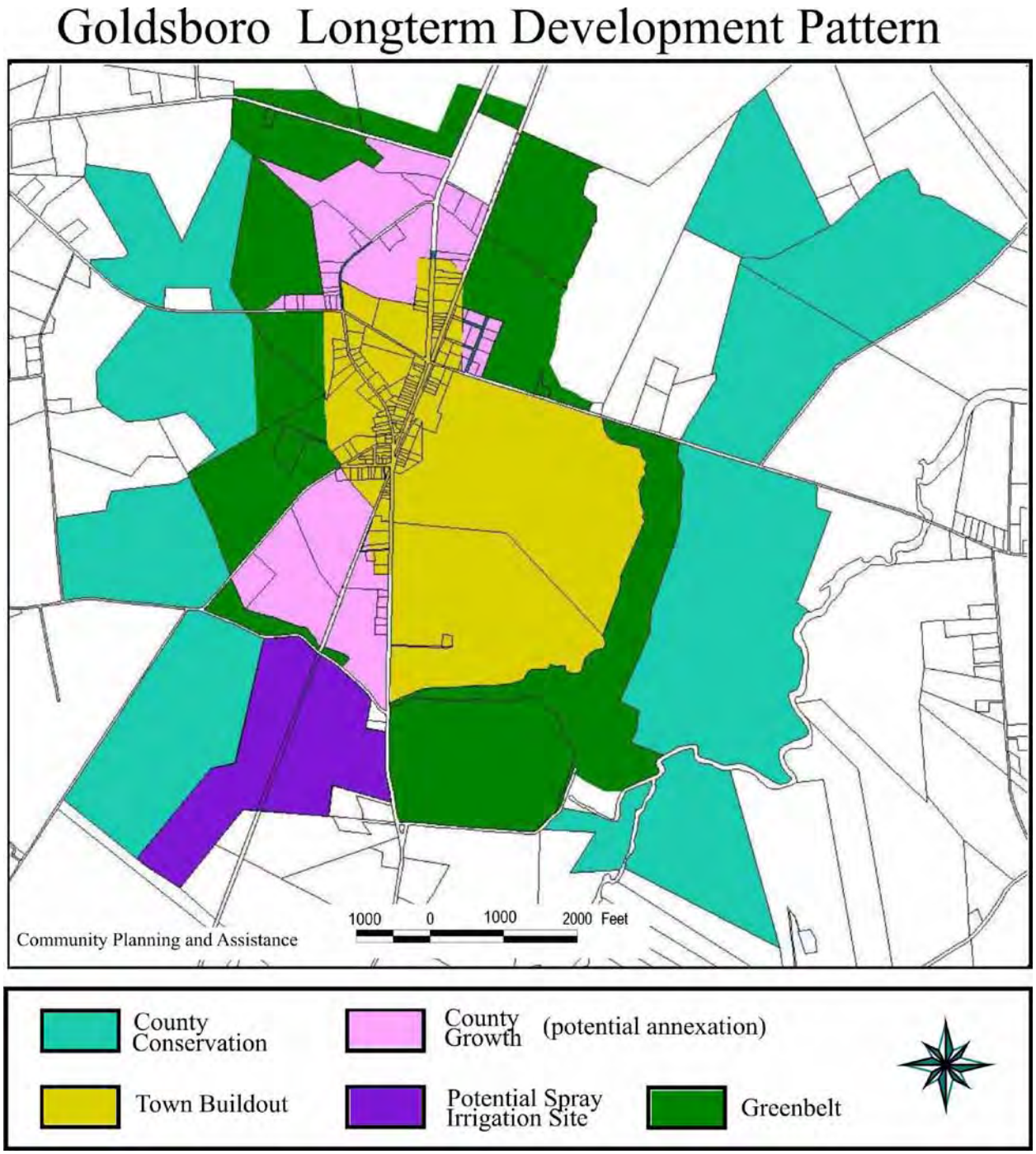
Figure 8 Goldsboro and Vicinity Policy 4, District Infill and Redevelopment



Graphic 2 East Star Generalized Concept



Map 7 Goldsboro Long Term Growth and Development Pattern



Summary

The analysis of build-out based on the four policy alternatives described earlier resulted in estimates of water and sewer demand ranging from slightly less than 186,000 gpd to nearly 652,000 gpd.

Discussion

The following discussions points have been prepared by County staff and the consultant, to provide a point of departure for discussing the study results. They are intended to highlight variables that be used to construct new policy alternatives or modify the policies analyzed in this report.

• Maryland Department of the Environment has indicated a willingness to permit a point discharge of up 270,000 gallons per day. This amount is barely adequate to meet the demand associated with Policy Alternatives 01 and 02, neither of which include capacity allocations for Marydel, Delaware or the East Star property.

• Because policy alternatives 01 and 02 include limited growth (i.e., limited new construction and population growth), they likely represent scenarios with the largest disparity between water and sewer construction and operation costs, the value of land and improvements, and the ability of users to pay based on income.
Substantial public (Federal and State grants) and/or private funding will likely be required to make these policy options financially feasible.

• The policy alternatives reviewed in this report focus on potential demand and various allocation strategies. Financial feasibility is a critical consideration not addressed in this report. How the construction and operation of public water and sewer facilities will be accomplished, including potential public and/or private funding sources is critical to the consideration of any final policy strategy.

• "Town expansion" or growth areas for the municipalities shown in the North County Comprehensive Plan and the Goldsboro Comprehensive Plan are equal to or exceed the MES service area. Policy alternatives 03 and 04, and the water and sewer demand associated with them, best reflect the long range growth plans of the municipalities. The implications are that in order for the municipalities to realize their long range growth plans, water and sewer capacity in excess of 660,000 gpd will be needed.

• New sewer treatment facilities with planned capacity in excess of 0.5 million gpd are required to achieve biological nutrient removal (BNR) standards which may affect cost and treatment strategies.

• Policy alternatives 03 and 04 (growth scenarios) have major infrastructure implications in addition to water and sewer capacity, e.g., streets, parks, government buildings and services that must be considered.

Graphic 3 Aerial Photo of Goldsboro

The aerial photo, courtesy of Google Earth, is generally instructive with regard to existing land cover and is included for general reference.

Part 2: Agriculture and Municipal Development Plan

Almost half of the land in Goldsboro is open space or used for agricultural purposes. Ownership of the land allows determination of use. However, a proportionate share of design and construction cost for the infrastructure adjacent to farmland must be paid by the owner if connection to that service is to occur anytime in the future. As water and sewer services are planned, the owners of large tracts of land must be afforded the option of paying to reserve the potential for residential or commercial use of their land. However, if the owner chooses not to pay the cost of services and opts to maintain agricultural use, there can be no assurance of development in the future.

Part 3: Implementation Recommendations

RECOMMENDATION #1: Support County efforts to identify priority agricultural land preservation areas, development programs and scenarios, and connected regulatory mechanisms that are consistent with Goldsboro's growth plan and federal, state, and local conservation objectives;

RECOMMENDATION #2: Allow owners of agricultural land within Goldsboro to participate in Town meetings and discuss options for access to water and sewer services or waiver of development rights (should landowners opt not to access such services, a waiver will be declared in the ordinance and indicated on official maps).

CHAPTER 5 Water Resources Element

In 1985, the General Assembly passed Senate Joint Resolution No. 25 mandating the development of a Comprehensive Ground Water Protection Strategy for the State of Maryland. The General Assembly charged the Department of the Environment (MDE), the Department of Agriculture (MDA) and the Department of Natural Resources (DNR) with responsibility for ground water protection in Maryland. MDE was designated as the lead agency for ground water protection. The three agencies formed a steering committee and produced Maryland's Comprehensive Ground Water Protection Strategy in 1986. The Strategy described the State's existing ground water protection programs, established ground water protection goals and made recommendations for improving ground water protection efforts.

Geologic conditions vary widely across the State, and produce significant variations in the quantity and quality of ground water. Aquifers in Maryland fall into two major types – unconsolidated Coastal Plain aquifers found east of the Fall Line (a geologic divide that generally coincides with the Interstate 95 corridor), and hard rock aquifers found in the western part of the State. Coastal Plain aquifers, composed primarily of sand and gravel with layers of silt and clay, are productive and generally of good quality. Hard rock aquifers are composed of consolidated sedimentary and crystalline rock, and water availability is low to moderate.

Ground water levels in unconfined aquifers undergo seasonal fluctuation and are principally recharged by precipitation during the fall and winter months. Confined aquifers are found in Southern Maryland and the Eastern Shore, and are the primary source of drinking water in those areas.

The Aquia aquifer in Queen Anne’s County show long-term steady declines. Increased water demands from a growing population place new and additional stresses on the State’s aquifers, and additional analysis of the State’s ground water resources is still needed in order to assess the long-term viability of many of the State’s aquifers in the face of increasing demands.

The unconfined Coastal Plain aquifers are vulnerable to nonpoint source contamination. Nonpoint sources include livestock waste, onsite sewage disposal, application of fertilizers and pesticides, infiltration of urban runoff and road salt application. Nonpoint sources usually do not cause excessive contamination at specific well locations but often represent the largest loadings of pollutants to ground water over large areas. Because ground water contributes a significant percentage of water to surface water flow, delivery and reduction of nutrients via ground water is a significant issue for Maryland and has a major impact on water quality in the Chesapeake Bay.

Various aquifers also contain naturally occurring substances that affect the quality of water supplies, independently of quantity issues. The Magothy and Potomac Group aquifers in the Coastal Plain (primarily in Anne Arundel County) are subject to high levels of radium. Levels of naturally-occurring arsenic above the federal drinking water standard are not uncommon in the Aquia and Piney Point aquifers in Southern Maryland and the central Eastern Shore. This issue has been noted in wells supplying the Town of Centreville.

Declining water level trends in some areas of Southern Maryland have raised questions about the long-term sustainability of ground water withdrawals. On the Eastern Shore, increases in agricultural irrigation and the growth of towns and residential areas are expected to place greater demands on ground water supplies. The uncertain degree to which ground water moves between different aquifers in the Coastal Plain is a major obstacle to reliable modeling of their sustained yields in both Southern Maryland and the Eastern Shore.

In some areas, water quality concerns can limit the quantity of water available for withdrawal. For example, the threat of brackish water intrusion into the Aquia aquifer beneath Kent Island has precluded its full development as a water source; in other instances, ground water contamination due to human activity has affected water withdrawals on a more localized scale at numerous sites. Overall, estimating the sustainable yield of the State's aquifers will be the single most important step in assessing the risks to the adequacy of Maryland's ground water.

Need for Better Information

The 2003 Advisory Committee on the Management and Protection of the State's Water Resources identified the need for a comprehensive assessment of ground water resources in the Maryland Coastal Plain, where population is expected to grow by 44 percent between the years 2002 and 2030. Withdrawals from the confined aquifers of the Coastal Plain in Southern Maryland and the Eastern Shore have caused water levels in some aquifers to decline by tens to hundreds of feet from their original levels, and the rate of decline is expected to increase as the population in these areas grows. A more comprehensive understanding of the confined aquifer systems and how much water is available in these systems is needed in order to make sound management decisions and appropriately evaluate water withdrawal requests. The first phase of a three-phase Regional Coastal Plain Assessment began in 2006.

In 2007, the U.S. Geological Survey (USGS), Maryland Geological Survey (MGS), and MDE continued their Phase I work (2006-2008) on the Regional Coastal Plain Assessment of the Maryland Coastal Plain. Activities included developing a "beta" version of an aquifer information system (a prototype of which was delivered to the Maryland Department of the Environment) and documenting the hydrogeologic characteristics of the aquifer system. Future assessment activities will include conducting detailed studies of the regional ground water flow system and water budget, improving documentation of patterns of water quality in the aquifers, enhancing ground water level, streamflow, and water quality monitoring networks, and developing tools to facilitate scientifically sound management of the ground water resources in the Maryland Coastal Plain. Phase I activities are being jointly supported by funds and services from MDE, MGS, and USGS. Phases II and III will require significant additional investment from current and new funding partners from 2008 to 2013.

Phase I work continued on the Regional Coastal Plain Assessment of the Maryland Coastal Plain. Activities included developing a "beta" version of an aquifer information system (a prototype of which was delivered to the Maryland Department of the Environment) and documenting the hydrogeologic characteristics of the aquifer system. The study is expected to be completed in 2013, and will facilitate scientifically sound management of the ground water resources in the Maryland Coastal Plain

Septic Systems

Estimates of nutrient loads from septic fields vary greatly, and should be viewed as "ballpark" estimates. The amount of the total nitrogen removed within the septic tank, in the drain field, and in the soil buffer is site specific. Other questions include how much nitrogen is removed by plant uptake, or is transported to deeper aquifers. There are some estimates as much as 30% of the nitrogen in Maryland groundwater in coastal zones comes from OSDS, others have tended to minimize septic fields as a major source within the basin. For example, the Chesapeake Bay Program, using census data and standardized estimates of nutrient loading, estimates that 7.7 million pounds of nitrogen enter the Chesapeake Bay from OSDS each year. This represented about 6% of Maryland's nitrogen load in 1996.

According to these estimates, OSDS loadings in Maryland's tributary basins range from 3% in the Choptank and Lower Eastern Shore to 19% in the Lower Western Shore. Failing OSDS pose an additional set of threats to water quality. The average life of a septic system is 12 to 20 years, and many older systems are no longer functioning properly. Lack of maintenance and improper installation often contribute to early septic system failure. When OSDS become clogged, they block the flow of discharge to the drain field . Raw sewage backs up onto the surface of a yard or into a home, posing a direct threat to public health, as well as to surface and groundwater. In Maryland there are nearly 30,000 households with acknowledged failing OSDS. This does not include the many older OSDS that while not hydraulically failing, do not provide adequate nutrient reduction treatment.

The rate of growth in conventional OSDS is also a concern. The Maryland Office of Planning has stated that current trends will mean an additional 100,000 new OSDS in place by the year 2020. Conventional OSDS are associated with low density, sprawl development because they require large lots to accommodate the drain field and a future replacement field. According to the Maryland Office of Planning, in 1990, residential parcels served by OSDS accounted for only 19% of all households in Maryland but more than 65% of residential land. This low density development increases the need for new roads and other public services, increases vehicle miles traveled, and speeds the loss of natural areas and valuable cropland.

MDE is developing a program to label certain areas as "Areas of Special Concern." MDE will need to provide guidance to and work with local jurisdictions for identifying and designating Areas of Special Concern through the water and sewer planning process, and provide a time line to ensure that these are designated in a timely manner. MDE will also need to identify how it will assure that these important areas are protected consistently throughout the state. MDE guidance should include narrative guidelines and specific numeric criteria for local jurisdictions to use in designating these areas. The narrative guidelines would require the protection of specific, previously identified categories for protection while the numeric criteria (e.g. groundwater with measured concentrations greater than 10 mg/l nitrate -- the maximum contaminant level for drinking water in Maryland) would provide "triggers" for local jurisdictions to use during the designation process.

Goldsboro is anxious to work with MDE and MES to resolve the environmental and public health threats associated with widespread septic system failure and related needs that require

immediate attention. Henderson stipulates that septic failures have created a public health and an environmental threat and that local OSDS have been identified as significant contributors of nutrients and other pollutants to groundwater and drinking water aquifers.

The four small towns of Goldsboro, Henderson, Marydel and Templeville are separated from each other by two to three miles but have much in common when it comes to failing OSDS, polluted wells and wet soils. These unsanitary conditions frustrate even the modest community development and economic activity appropriate to a rural village.

Over the years, studies to solve the wastewater problems of one town or another were done, but the projects were too expensive to build or maintain. It is especially important to have a system with economical long-term operation and maintenance (O&M) costs as this is a low income area. Grants and loans may be available to help build a system, but there is no funding to support O&M costs.

The Consulting firm: Rummel, Klepper, and Kahl (RKK) in partnership with Green Stone Engineering are currently revising a feasibility study previously prepared for MES that looked at alternatives for providing public sewer service to the North County Water and Sewer Service Area. As time passes, costs continue to rise. Preliminary indications for the most cost effective solution among the numerous combinations of options evaluated now hover around $18 million. The longer the State postpones provision of design and construction monies the higher the cost will continue to escalate.

Public Sewer Alternatives

RKK evaluated the following options for a wastewater treatment plant pursuant to MDE and County input: Location Options for New WWTPs

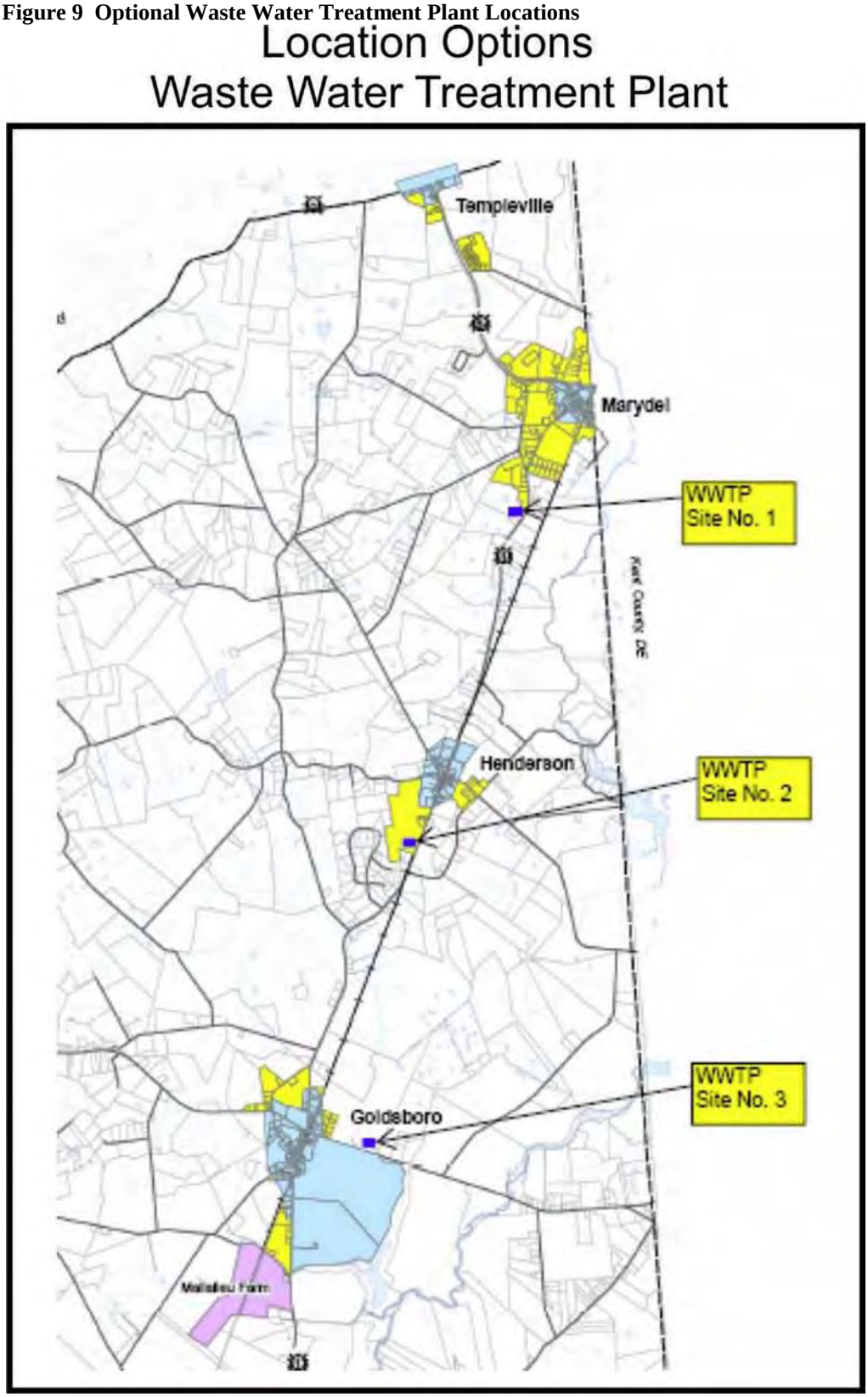
- Location 1
- Near Marydel and Cedar MHP
- Reuse Cedar MHP WWTP outfall

- Location 2
- At or adjacent to existing Caroline Acres WWTP
- Reuse existing lagoons
- Convey to spray and surface discharge sites

- Location 3
- Near Goldsboro
- Surface water discharge possibly to Choptank River
- Potential land application sites nearby

The following graphic provides geographic context for these locations:

Figure 9 Optional Waste Water Treatment Plant Locations



The alternatives included: Four Single Plant Options; One Two Plant Option; and One Four Plant Option. Land applications alternatives considered five site size scenarios:

Alt. #1: 97,000 GPD – North or South Min Allocation
(Target 32 Acres Sprayable)

Alt. #2: 133,250 GPD – North Max Allocation
(Target 43 Acres Sprayable)

Alt. #3: 186,500 GPD – Total Min Allocation
(Target 60 Acres Sprayable)

Alt. #4: 250,000 GPD – South Max Allocation
(Target 81 Acres Sprayable)

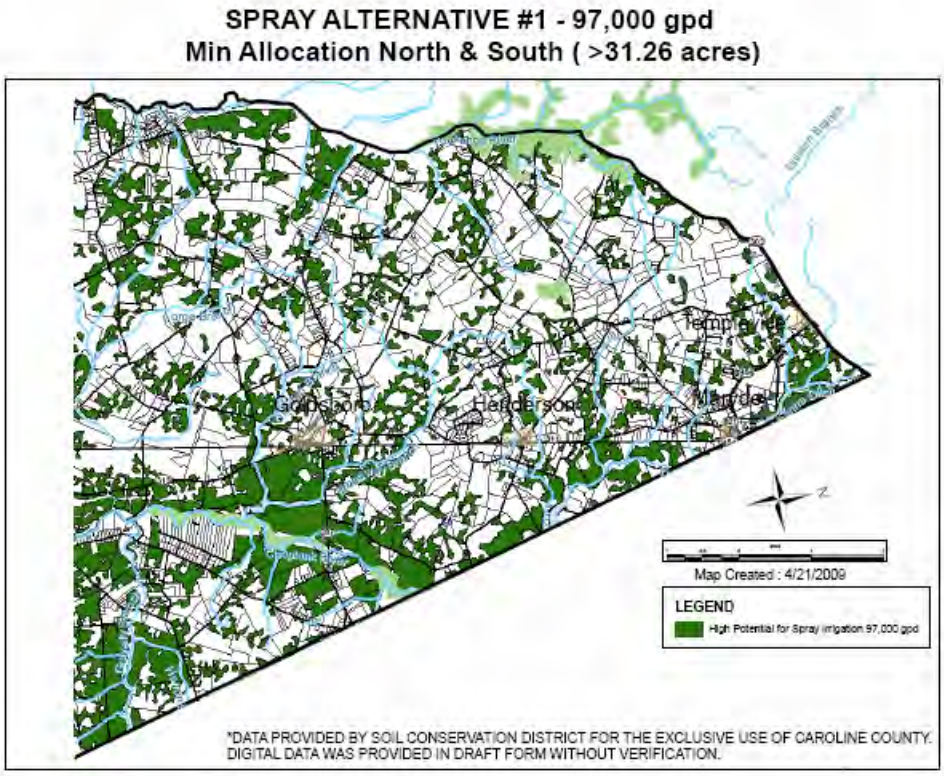
Alt. #5: 383,000 GPD – Total Max Allocation
(Target 124 Acres Sprayable

These scenarios were based on soil evaluations that identified the best probable locations. MDE has been requested to provide surface water discharge limits for a new WWTP in one of the configurations described below

Anticipated **Surface Water** Discharge Effluent Limits depend on # of Septics taken off-line
Total Nitrogen = 3.9-4.3 mg/l
Total Phosphorus = 0.17-0.4 mg/l

Anticipated **Spray Irrigation** Discharge Effluent Limits (Class II)
Total Nitrogen = 6-8 mg/l
Total Phosphorus = n/a
Fecal Coliform = 3 MPN/100 ml

Figure 10 Spray Field Alternatives #1 and #2



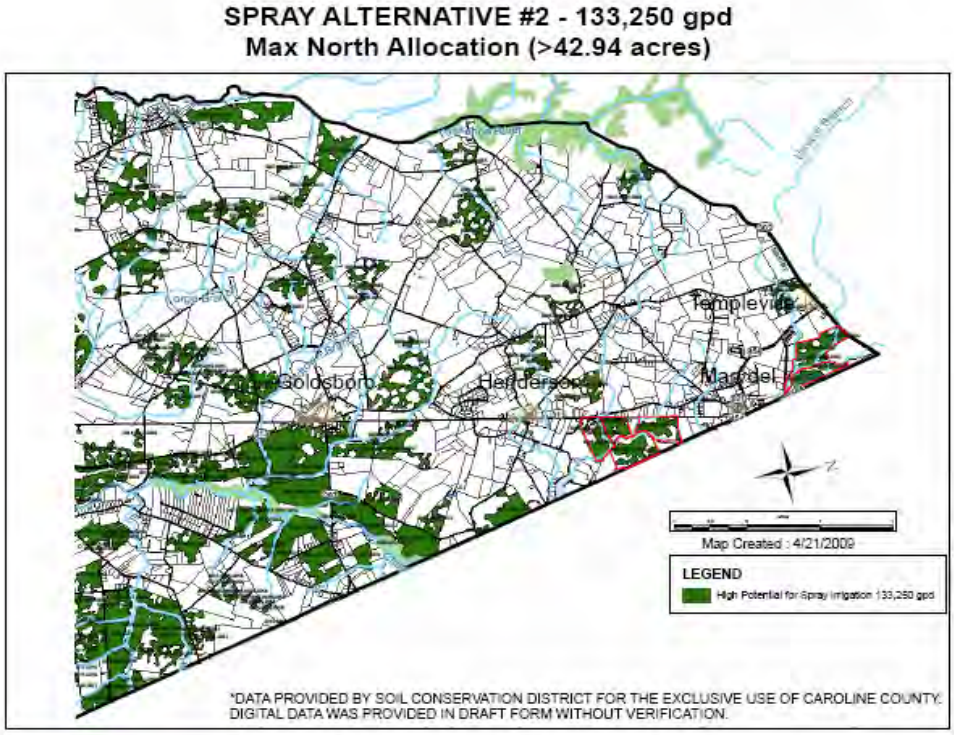
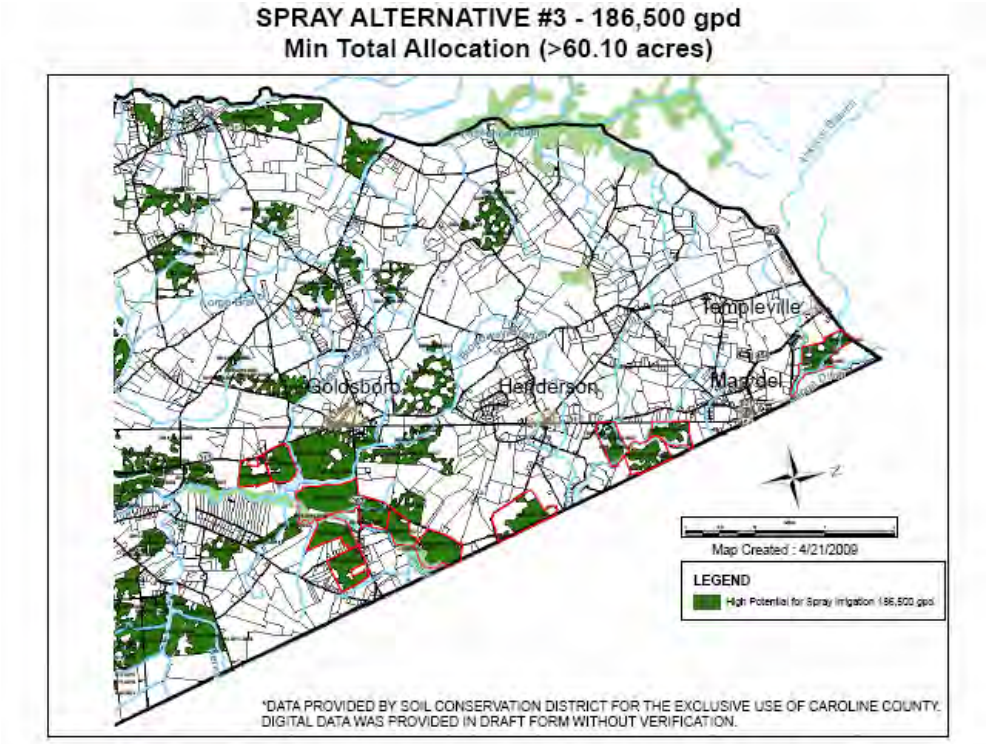


Figure 11 Spray Field Alternatives #3 and #4



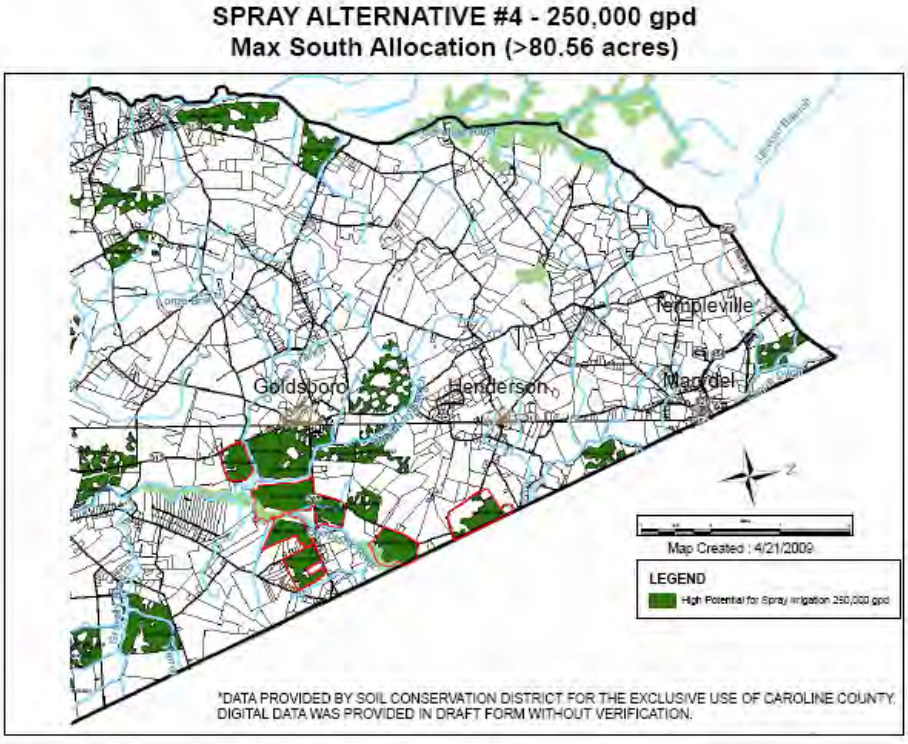
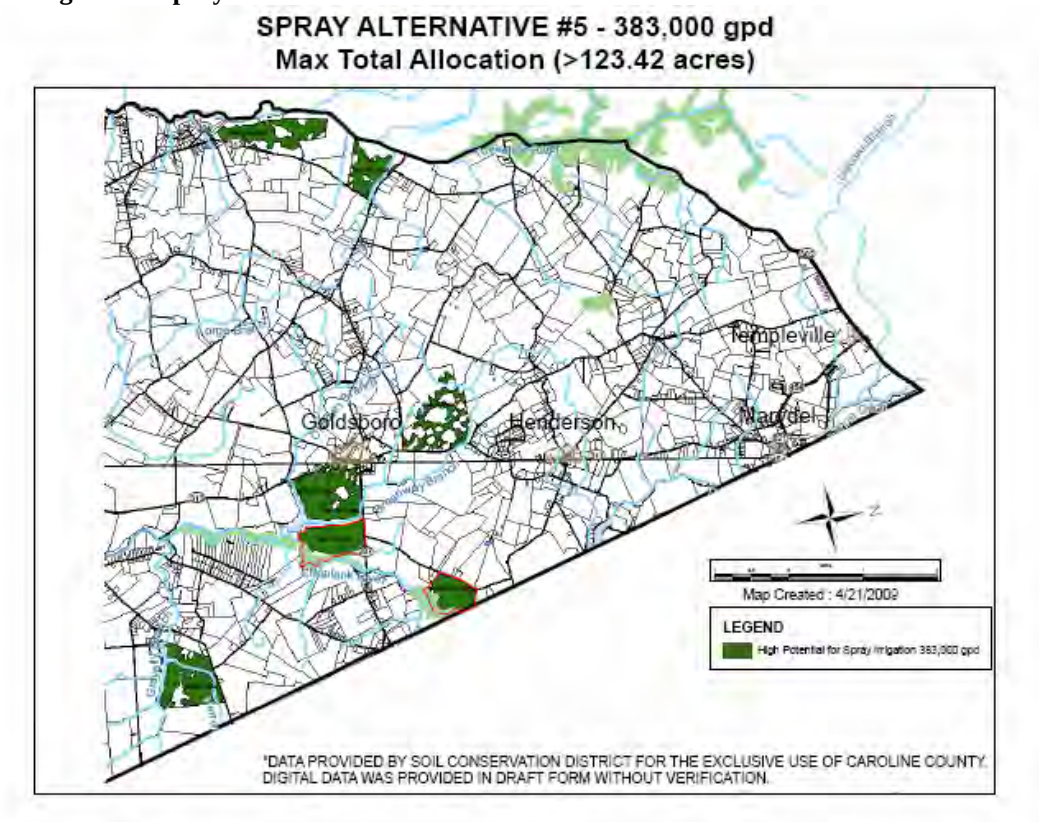


Figure 12 Spray Field Alternative #5



Costs were evaluated for the following options:

One Plant -

- Oxidation Ditch
- Biolac
- SBR

- Two Plants –
- SBR
- Biolac
- MBR

- Four Plants –
- SBR
- MBR
- Filters for surface discharge plants/Storage lagoons for hybrid and spray discharge facilities

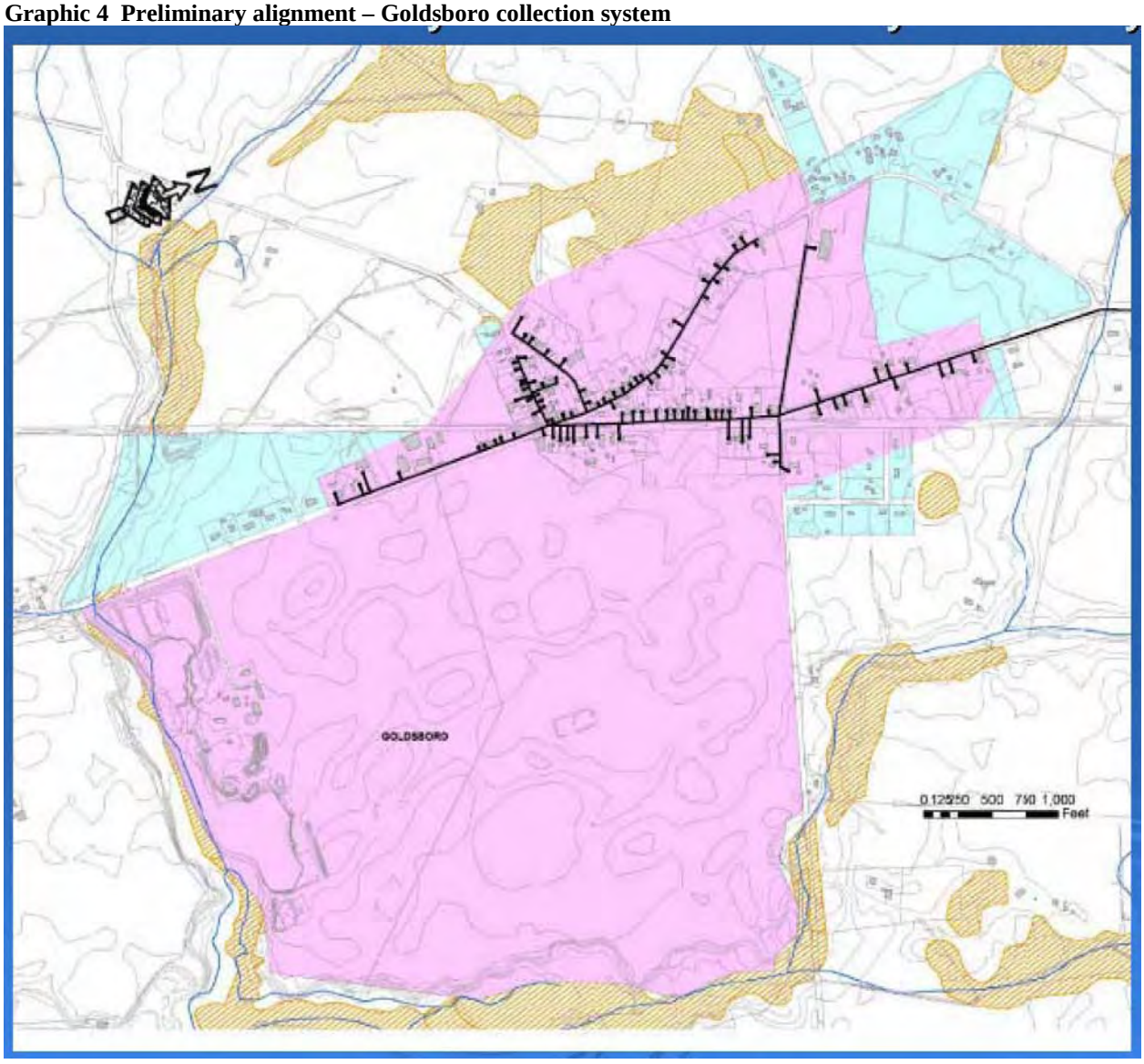
One Plant Alternatives

- Alt. 1 – Surface Discharge/Future Hybrid - $7.8-9.8 M Initially; $1.3 M Future
- Alt. 2 – Spray Discharge - $9.9-12.0 M
- Alt. 3 – Hybrid Discharge - $7.2-9.3 M
- Alt. 4 – Hybrid Discharge @ Caroline Acres – $6.6 – 8.7 M
- Two Plant Alternative
- One Surface/One Spray - $12.0–16.1 M

Gravity, Vacuum, and Low Pressure collection systems were considered, and a one or two plant SBR wwtp with low pressure (grinder pump) collection has been recommended by the consultant team.

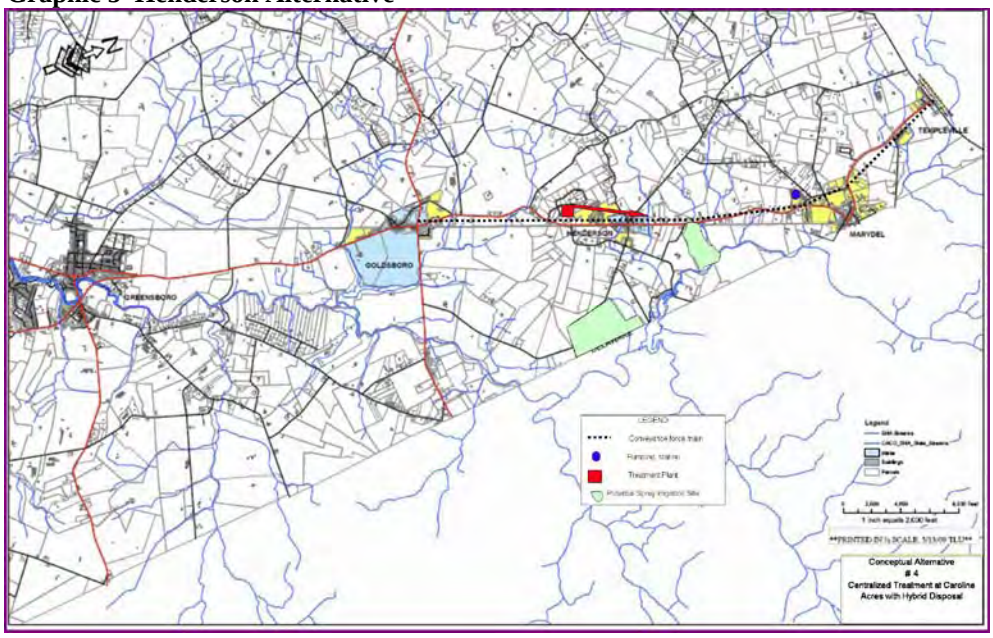
The collection system would be composed of 1.25" to 4" diameter pressure sewers with one grinder (pump station) for each house. It would become the Authority's responsibility to maintain the pumps. Confirmation of existing individual dwelling unit electrical system adequacy remains to be completed and the possible need for additional primary pumping stations is dependent upon the eventual WWTP location. (Pumping from Templeville and Marydel to a Goldsboro location would require a supplemental pumping station.
The following graphic suggests a preliminary alignment for the Goldsboro collection system:

Graphic 4 Preliminary alignment – Goldsboro collection system



A final recommendation is pending additional cost comparisons. However, the following alternative favors a Henderson location and is included to aid further planning and discussion.

Graphic 5 Henderson Alternative



RKK has provided the anticipated initial and future flows for the various subareas of the North County Water and Sewer Service Area:

Area	EDU's in Initial Area Served	Future EDU's	Total EDU's	Initial Average Flows (gpd)	Future Average Flows (gpd)
Goldsboro & County Area	168	475	643	42,000	160,750
Henderson &County Area	77	166	24	19,250	60,750
Marydel &County Area	187	138	325	46,750	81,250
Templeville &County Area	78	7	85	19,500	21,250
Total for new Collection Systems	510	786	1,296	127,500	324,000
Caroline AcresMobile Homes	113	0	113	28,250	28,250
CedarMobile Homes	123	0	123	30,750	30,750
Total for new Treatment Systems	746	786	1,532	186,500	383,000

Table 9

Collection Systems - Preliminary Comparative Costs

	New Collection and Conveyance System in Public R/W Does not include costs on private property					Private Property Improvements		
	Templeville	Marydel	Henderson	Goldsboro	Total	New Laterals @$3,000 ea.	Electric Serv. Upgr. @1,500 ea.	Total Costs Public + Private
INITIAL								
EDU	78	187	77	168	510	510	510	
Construction cost								
Vacuum	$1,812,000	$1,920,000	$1,740,000	$3,312,000	$8,784,000	$1,530,000	$0	$10,314,000
Gravity	$2,436,000	$2,112,000	$1,944,000	$4,116,000	$10,608,000	$1,530,000	$0	$12,138,000
Low Pressure	See Note 1	$2,940,000	$852,000	$1,632,000	$5,424,000	$1,530,000	$765,000	$7,719,000
FUTURE								
EDU - Additional	7	138	166	0	311	311	311	
Future Construction Cost								
Vacuum	$456,000	$1,668,000	$948,000	See Note 2	$3,072,000	$933,000	$0	$4,005,000
Gravity	$96,000	$3,648,000	$780,000	See Note 2	$4,524,000	$933,000	$0	$5,457,000
Low Pressure	See Note 1	$1,092,000	$1,380,000	See Note 2	$2,472,000	$933,000	$466,500	$3,871,500
TOTAL								
EDU	85	325	243	168	821	821	821	
Construction Cost								
Vacuum	$2,268,000	$3,588,000	$2,688,000	$3,312,000	$11,856,000	$2,463,000	$0	$14,319,000
Gravity	$2,532,000	$5,760,000	$2,724,000	$4,116,000	$15,132,000	$2,463,000	$0	$17,595,000
Low Pressure	See Note 1	$4,032,000	$2,232,000	$1,632,000	$7,896,000	$2,463,000	$1,231,500	$11,590,500
O&M - Annual								
Vacuum								
Manhours	428	525	428	507	1888			
Total cost	$16,200	$25,900	$20,000	$33,600	$95,700			
Gravity								
Manhours	80	160	80	160	480			
Total cost	$15,000	$30,000	$15,000	$30,000	$90,000			
Low Pressure								
Manhours								
Total cost	See Note 1	$20,500	$12,150	$32,150	$64,800			
PS & FM								
Manhours								
Total cost								

Notes
(1) Templeville costs included with Marydel. Includes costs for conveyance to WWTP at Marydel
(2) Costs to be borne by developer

Table 10

North County Septic Loads		
	# Dwellings 2009	Existing N load
Goldsboro	84	766 lbs/year
Henderson	48	438 lbs/year
Marydel	52	474 lbs/year
Templeville (part)	15	137 lbs/year

Table 11

2000 Census: 2.4 persons per household. septic load rate formula: 9.5 lbs nitrogen/person/year x average number persons per household x 0.4 (transport factor).
Total existing pounds per year of nonpoint Nitrogen pollution eliminated with the proposed North County Water and Sewer System equals 1815 lbs. from municipal sources. Nearly half of that load is attributable to Goldsboro septic systems. Additional county septic systems that will be removed from ground discharge are addressed in the 2010 Caroline County Comprehensive Plan.

Graphic 6 Choptank Watershed Perspective

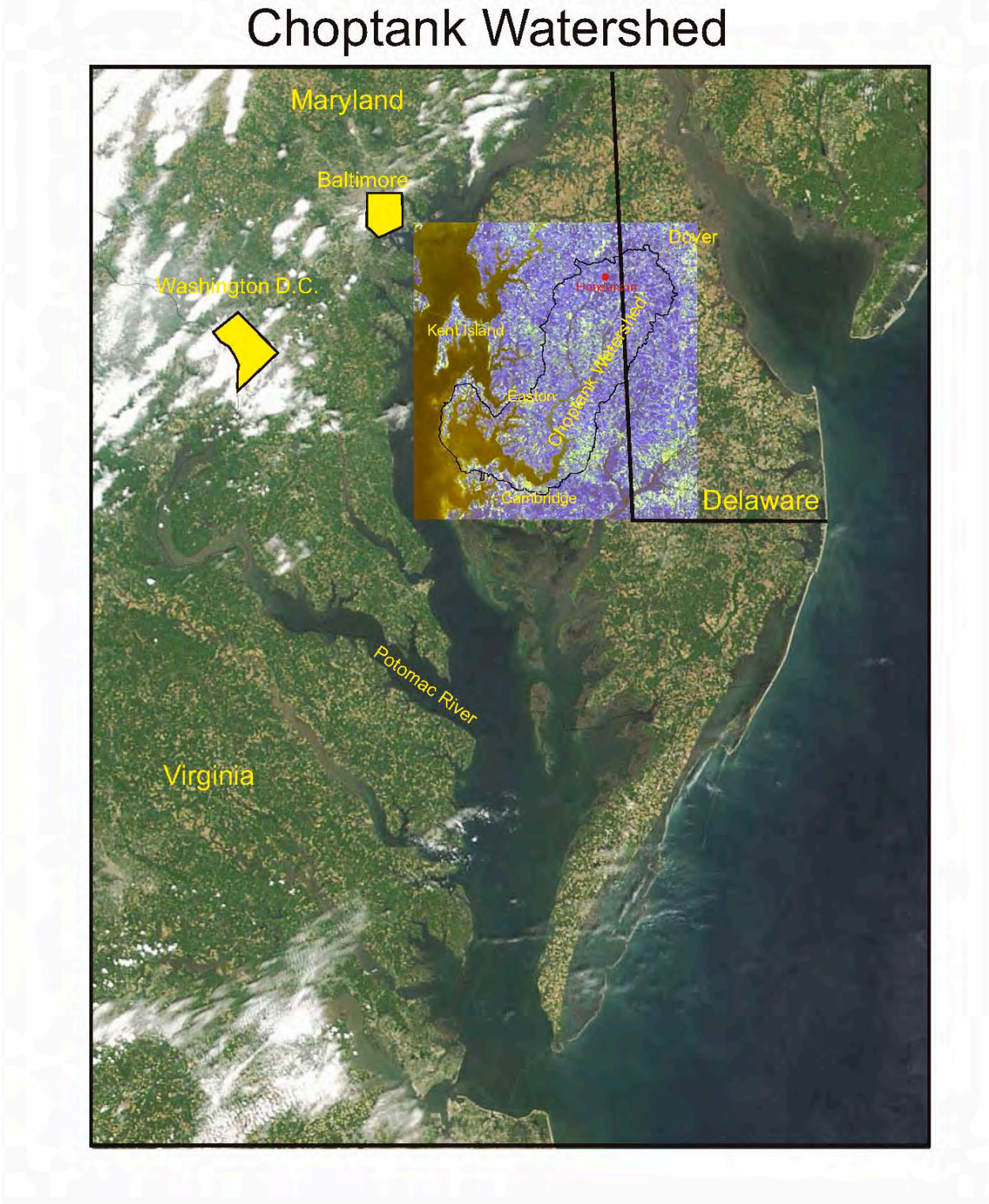


Figure 13 Choptank River Watershed

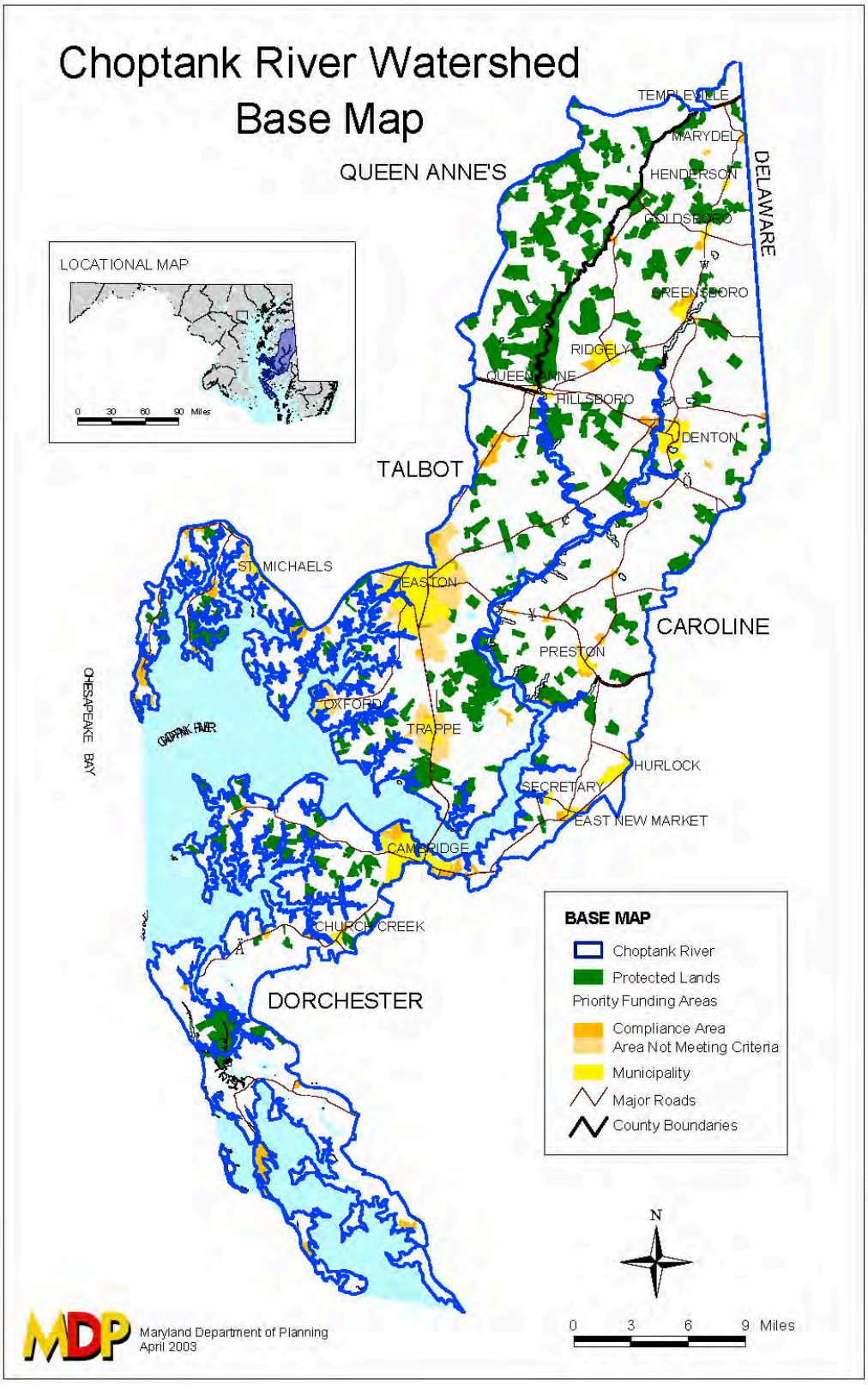
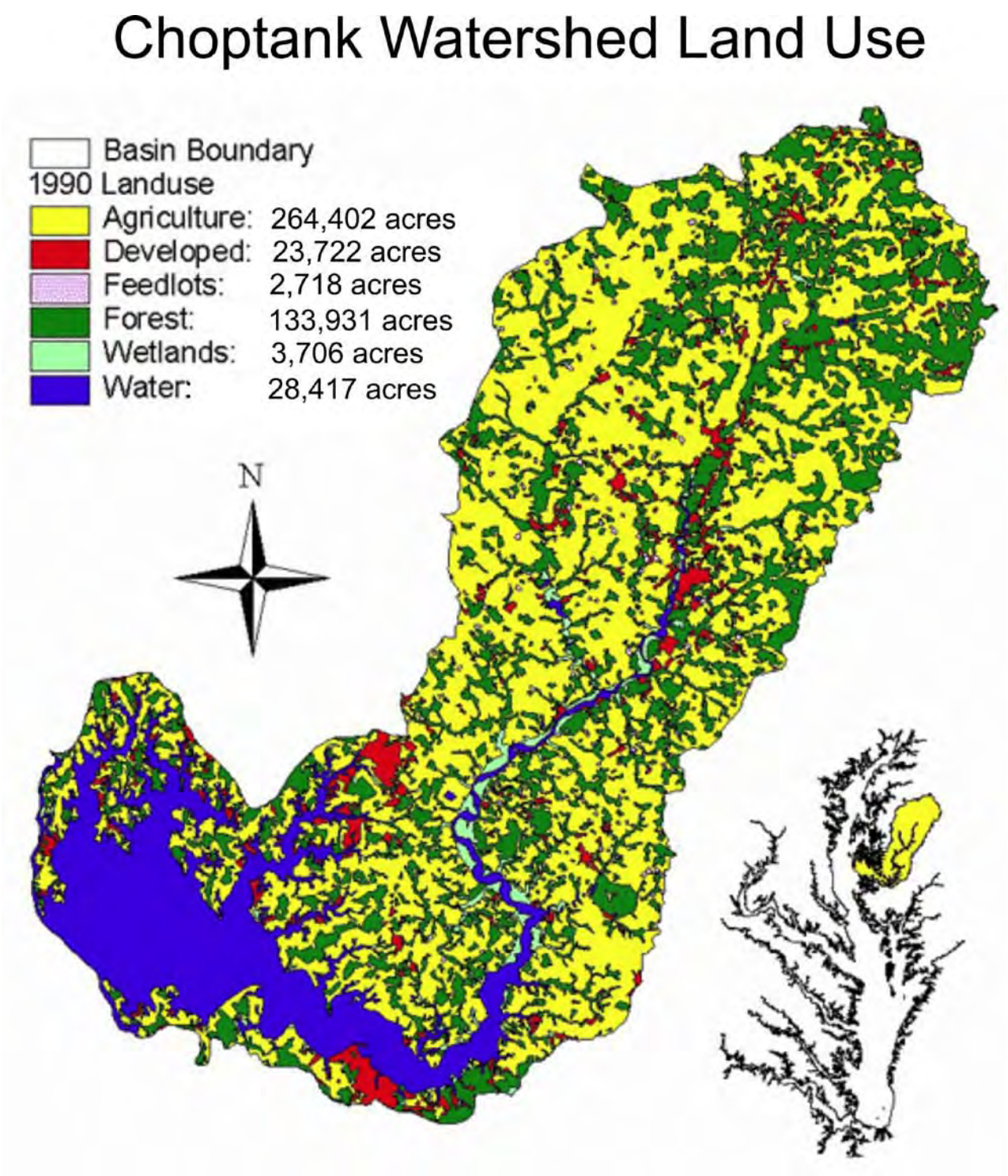


Figure 14 Comptank Watershed Land Use



Source: USDA-Agricultural Research Service (CEAP) 2007

Figure 15 Watershed Restoration Strategy Area

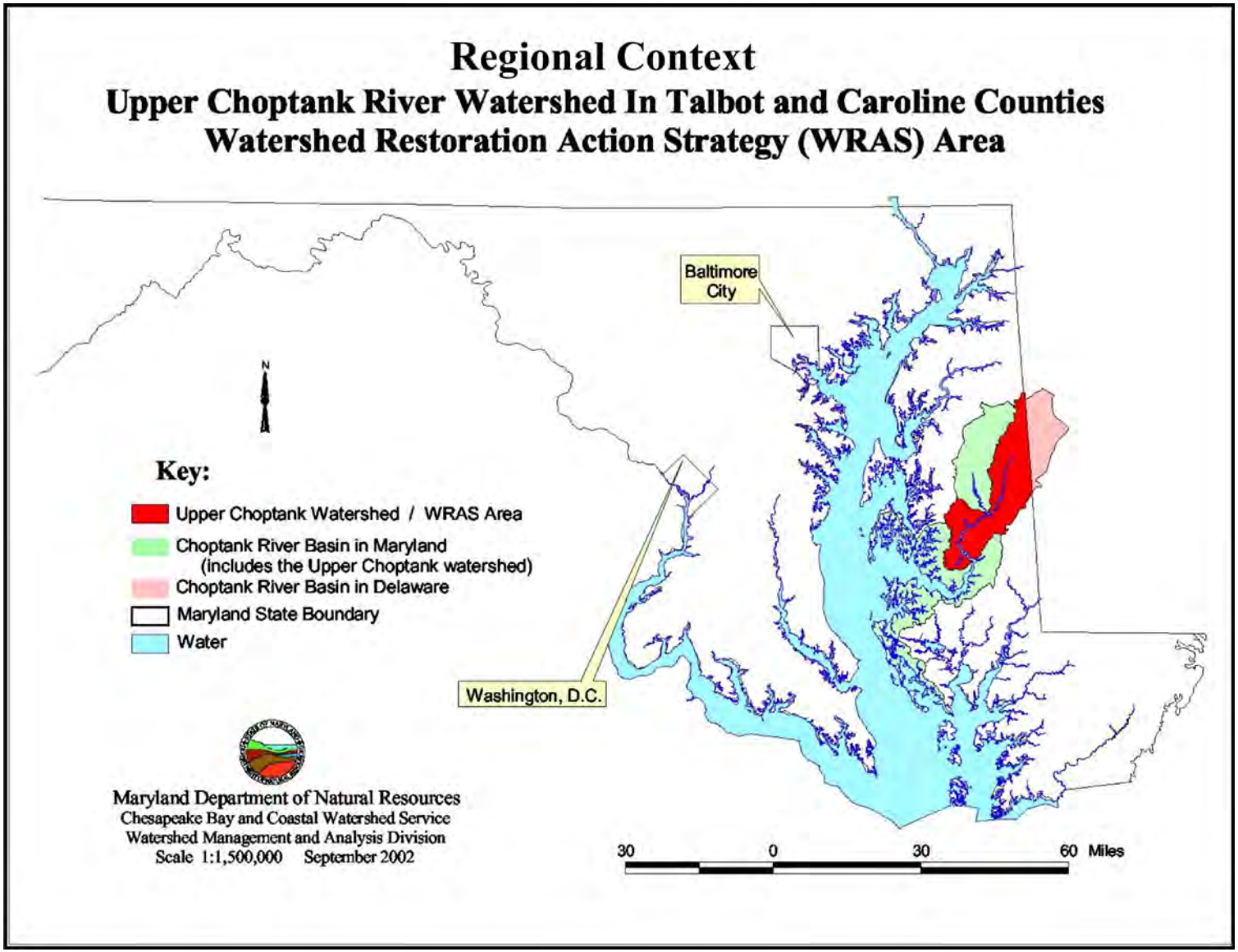


Figure 16 Upper Choptank WRAS

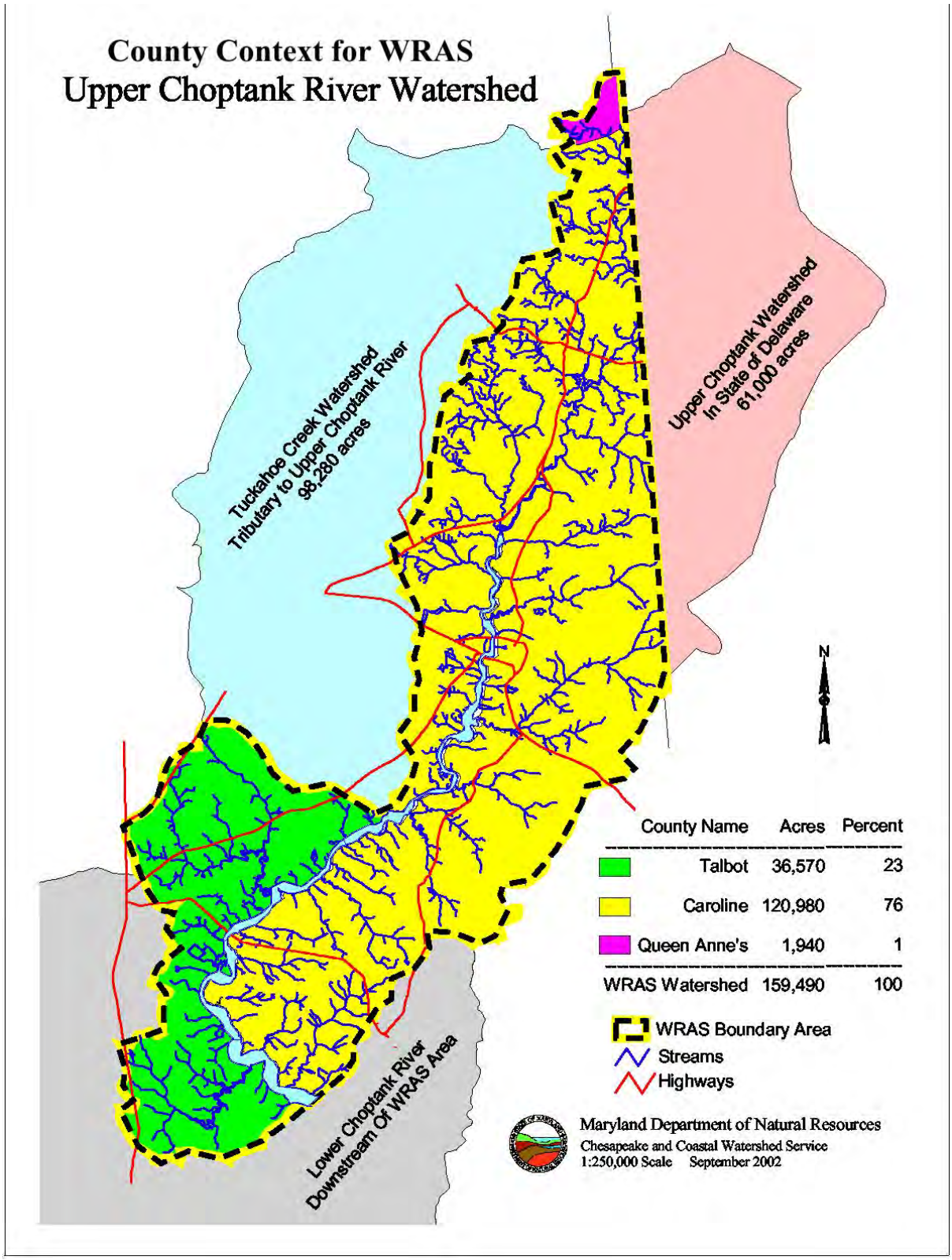


Figure 17 Talbot / Caroline WRAS Project Area

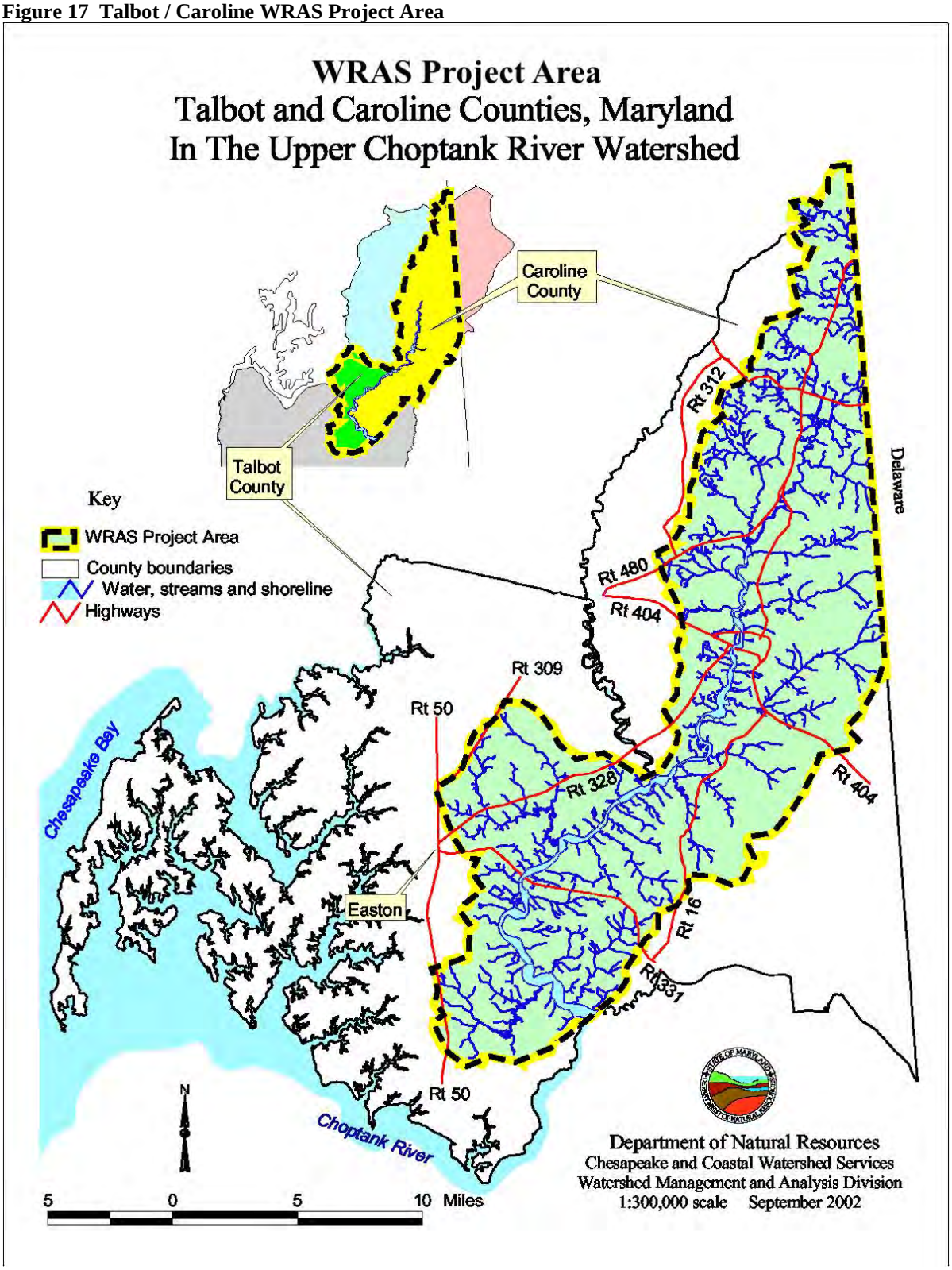


Figure 18 Streams and Subwatersheds

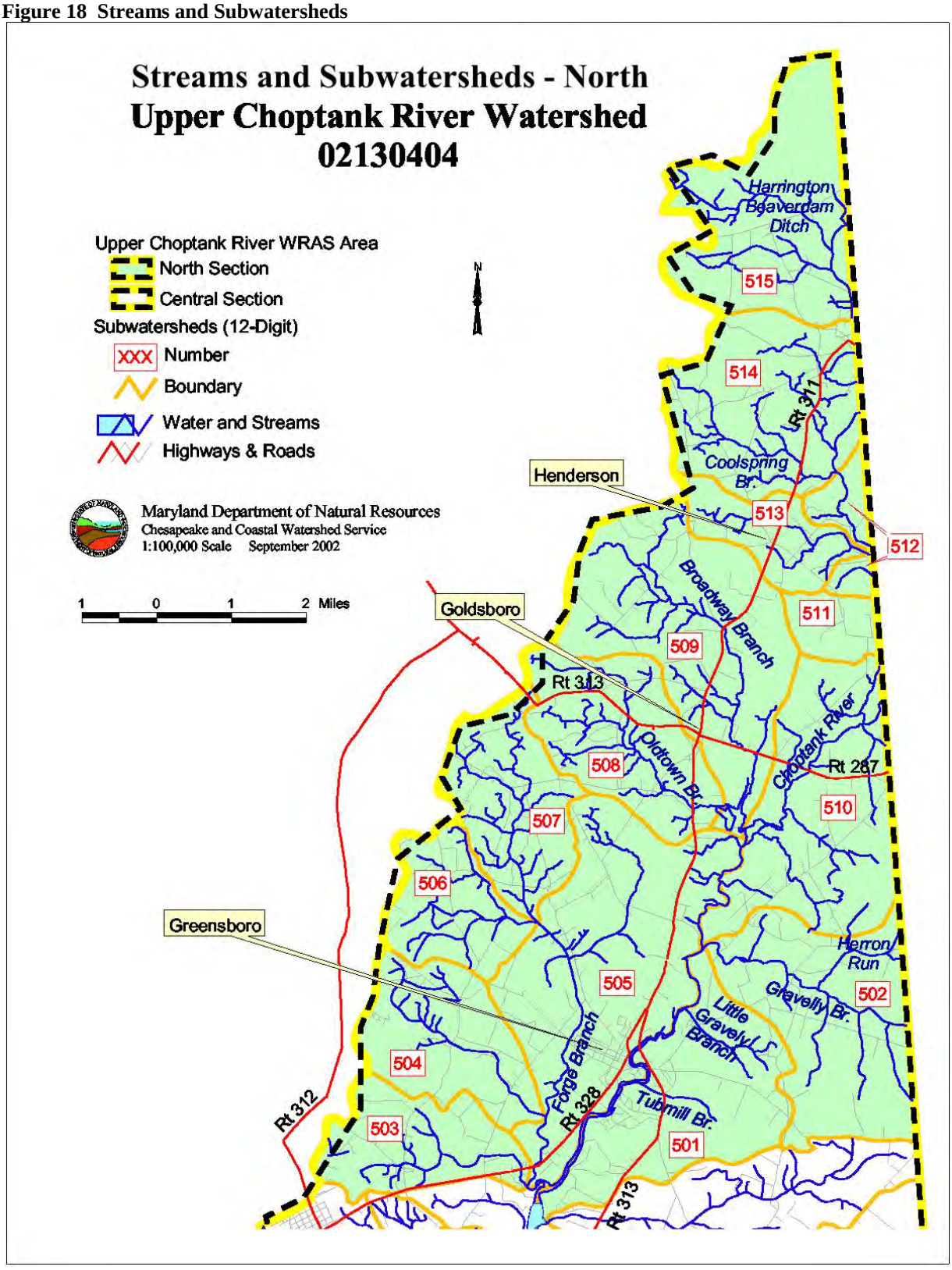
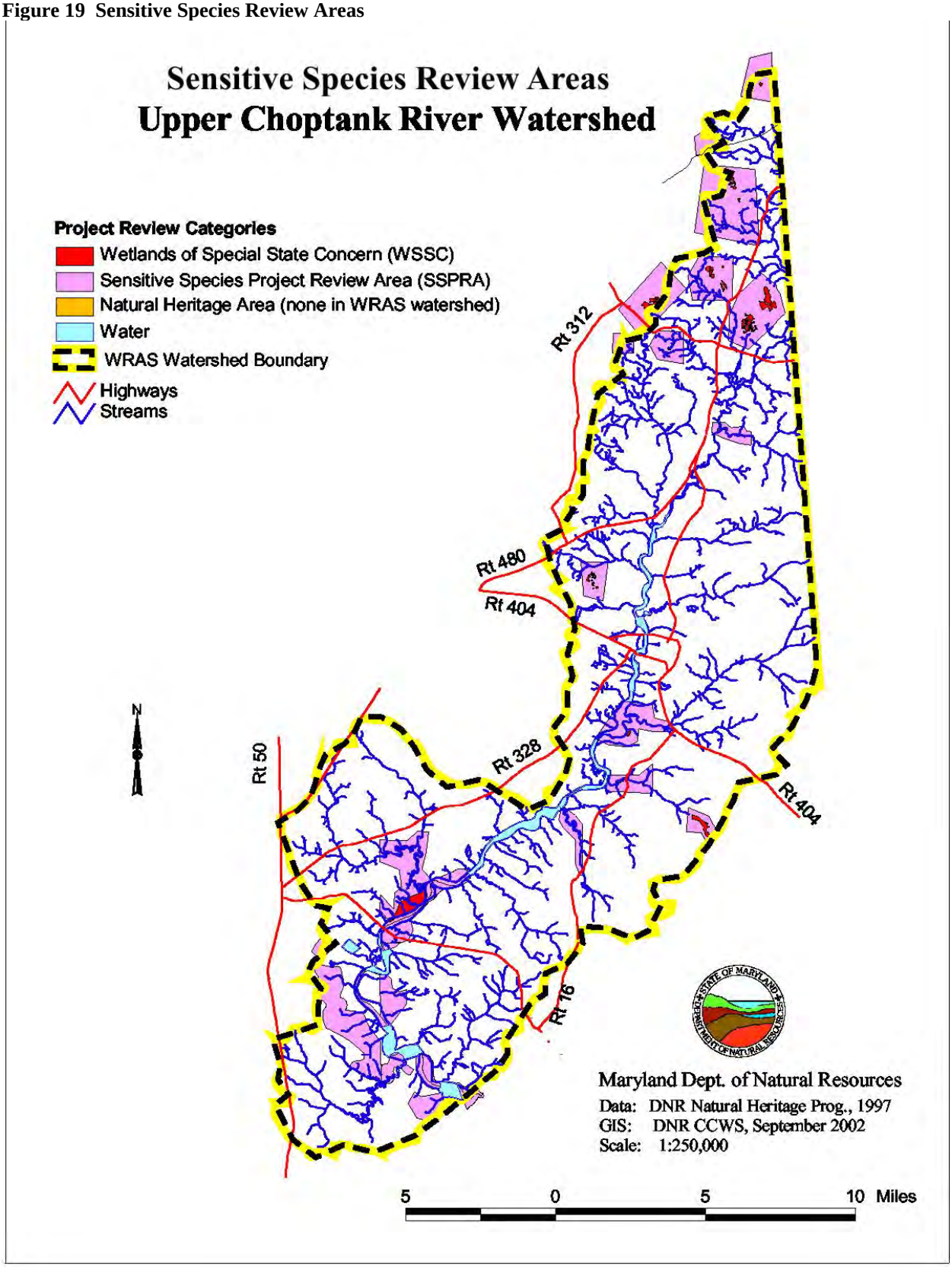


Figure 19 Sensitive Species Review Areas



Sensitive Species Protection Areas in the Upper Choptank River Watershed

Sensitive Species Project Review Area (SSPRA)

At least 18 SSPRAs are identified in the Upper Choptank River watershed. Each SSPRA contains one or more sensitive species habitats. However, the entire SSPRA is not considered sensitive habitat. The SSPRA is an envelope identified for review purposes to help ensure that applications for permit or approval in or near sensitive areas receive adequate attention and safeguards for the sensitive species / habitat they contain.

Natural Heritage Area (NHA)

No NHAs are located in the Upper Choptank River watershed. NHAs are rare ecological communities that encompass sensitive species habitat. They are designated in State regulation COMAR 08.03.08.10. For any proposed project that requires a State permit or approval that may affect an NHA, recommendations and/or requirements are placed in the permit or approval that are specifically aimed at protecting the NHA. To help ensure that proposed projects that may effect an NHA are adequately reviewed, an SSPRA is always designated to encompass each NHA and the area surrounding it.

Wetlands of Special State Concern (WSSC)

Numerous small WSSCs are designated in the Upper Choptank River watershed. These wetlands are associated with one or more sensitive species habitats that are in or near the wetland. For any proposed project that requires a wetland permit, these selected wetlands have additional regulatory requirements beyond the permitting requirements that apply to wetlands generally. To help ensure that proposed projects that may affect a WSSC are adequately reviewed, an SSPRA is always designated to encompass each WSSC and the area surrounding it. For a listing of designated sites see COMAR 26.23.06.01 at www.dsd.state.md.us

Stream Buffer Restoration

Benefits and General Recommendations

Natural vegetation in stream riparian zones act as stream buffers that can provide numerous valuable environmental benefits:
– Reducing surface runoff
– Preventing erosion and sediment movement
– Using nutrients for vegetative growth and moderating nutrient entry into the stream
– Moderating temperature, particularly reducing warm season water temperature
– Providing organic material (decomposing leaves) that are the foundation of natural food webs in stream systems
– Providing overhead and in-stream cover and habitat
– Promoting high quality aquatic habitat and diverse populations of aquatic species.

To realize these environmental benefits, DNR generally recommends that forested stream buffers be at least 100 feet wide , i.e. natural vegetation 50 feet wide on either side of the stream. Therefore, DNR is promoting this type of stream buffer for local jurisdictions and land owners who are willing to go beyond the minimum buffer standards. The DNR Watershed Restoration Division and other programs like CREP are available to assist land owners who volunteer to explore these opportunities.

Land Use and Stream Buffers

One factor that affects the ability of stream buffers to intercept nonpoint source pollutants is adjacent land use. Nutrient and sediment loads from different land uses can vary significantly. The loading rates shown in the table here were calculated for the Lower Potomac River Tributary Basin from the model of the Chesapeake Bay Watershed Model.

In general, restoration of stream buffers has been an agricultural Best Management Practice (BMP), with less applicability in urban areas. By identifying land uses in riparian areas with inadequate stream buffers, like crop land adjacent to streams, the potential to reduce nutrient and sediment loads can be improved.

The land use / land cover information focuses on the land use within 50 feet of a stream. This view, supplemented with the land use pollution loading rates, suggests potential buffer restoration opportunities that could minimize nutrient and sediment loads. (Note: DNR is encouraging naturally vegetated stream buffers 50 feet wide on each side of the stream, which is significantly greater than minimum buffer requirement, to enhance nutrient and habitat benefits beyond minimum buffer requirements.)

Annual Nonpoint Source Pollution Load Rates By Land Use
Chesapeake Bay Watershed Model (2000)

Land Use	Nitrogen (lbs/ac)	Phosphorous (lbs/ac)	Sediment (tons/acre
Urban	7.5	0.7	0.09
Crops	17.11	1.21	0.74
Pasture	8.40	1.15	0.30
Forest	1.42	0.00	0.03

Table 12

Nutrient Uptake from Hydric Soils in Stream Buffers

In general, the nutrient nitrogen moves from the land into streams in surface water runoff and in groundwater. In watersheds like the Upper Choptank, a significant percentage of nitrogen enters streams in groundwater. Stream buffers can be used to capture nitrogen moving in groundwater if buffer restoration projects have several key attributes:
– Plant with roots deep enough to intercept groundwater as it moves toward the stream
– Plants with high nitrogen uptake capability, and
– Targeting buffer restoration projects to maximize groundwater interception by buffer plants.

Hydric soils in stream riparian areas can be used as one factor to help select stream buffer restoration sites. Siting buffer restoration on hydric soils would offer several benefits:
– Plant roots are more likely to be in contact with groundwater for longer periods of time
– Hydric soils tend to be marginal for many agricultural and urban land uses
– Natural vegetation in wet areas often offers greater potential for habitat.

Wetland Associations

Wetlands and adjacent natural uplands form complex habitats that offer a range of habitat opportunities for many species. These "habitat complexes" tend to offer greater species diversity and other ecological values that are greater than the values that the wetland or uplands could offer independently. Therefore, restoring stream buffers adjacent to or near existing wetlands tends to offer greater habitat benefits than the restoration project could otherwise produce. Restoration projects in these areas may offer opportunities to enhance and expand wetland habitat in addition to providing other desirable buffer functions.

Optimizing Water Quality Benefits by Combining Priorities

Strategic targeting of stream buffer restoration projects may promote many different potential benefits. To maximize multiple benefits, site selection and project design need to incorporate numerous factors. For example, finding a site with a mix of attributes like those in the following list could result in the greatest control of nonpoint source pollution and enhancement to living resources:
– land owner willingness / incentives
– marginal land use in the riparian zone
– headwater stream
– hydric soils
– selecting appropriate woody/grass species
– adjacent to existing wetlands / habitat

Additionally, selecting restoration projects that are likely to produce measurable success is an important consideration in prioritizing projects for implementation. In the early stages of a watershed restoration program, measurable water quality improvement can be one of the strongest ways to demonstrate project success.

In general, targeting restoration projects to one or a few selected tributaries or small watersheds will tend to offer the greatest probability of producing measurable water quality improvement. By selecting small areas like a small first order stream for restoration, there is greater likelihood that water quality problems arise locally and that they can be corrected by limited investment in carefully selected local restoration projects.

In the Upper Choptank River watershed, available water quality data reinforces the premise that targeting restoration projects to locally generated problems is an important consideration. Because significant inputs to water quality in the Choptank River arise from multiple states and counties, it be will difficult for local projects to demonstrate water quality improvements in the river mainstem.

However, if watershed restoration projects are targeted to selected tributary streams, improvement in in-stream water quality are more likely to be measurable in terms of water quality parameters, benthos populations or other parameters. Water quality improvements achieved in the tributary will also inevitably contribute to improving the river mainstem.

Watershed: Choptank River
Basin: Chesapeake Bay
Watershed Description:
Drainage Area: 61,000 acres
Total Stream Length: 160.5 miles
Mainstem Length: 10.0 miles
Land Use:
Summary:

Agriculture: 50%
Urban Residential: 3%
Forest: 45%
Other: 2%

The Choptank River watershed is located in the west - central portion of Kent County. It is bounded on the west by the Maryland state line, on the southeast by the Nanticoke and Murderkill River watersheds, on the northeast by the St. Jones River watershed and on the north by the Chesapeake Drainage watershed. The area of land in this watershed is approximately 61,000 acres. The Choptank River is 2.7 miles long within Delaware. It is formed by the confluence of Culbreth Marsh Ditch, 10.7 miles long and Tappahanna Ditch, 10.6 miles long. Cow Marsh Creek, 17.4 miles long, is another water course. Major tributaries, that merge with the Choptank in Maryland, include Heron Run, White Marsh Branch and Sangston Prong, which combine to form Gravelly Branch. The major tributary of Cow March Creek is Meredith Branch. All streams flow generally in a westerly direction.

There are no tidal areas located in this segment. The streams are rather slow and turbid. During dry periods some segments are ephemeral. The watershed is level to gently sloping and poorly drained. Concerns in the watershed include high bacteria counts and low dissolved oxygen levels. Pathogens (as indicated by elevated Enterococcus levels), nutrients, physical habitat condition, and water supply are the main concerns in watershed.

Nonpoint Source Activities:

Following is a listing of activities in the watershed that have a potential to contaminate ground and/or surface waters. Included are assessments of the susceptibility of ground and/or surface waters to nonpoint source pollution according to soil types found in the watershed.

Agriculture

50 % of total watershed acreage is agricultural land.
Susceptibility according to soils: Low
Activities: Concentrations of animal production considered low; corn-soybean-small grain production likely

Overall concern rating: Low

Silviculture

45 % of total watershed acreage is forested.
Susceptibility according to soils: Low
Overall concern rating: Moderate
ConstructionlUrban Runoff
Development expected: Low to Moderate
Percent impervious area: 1 %; considered Low

Land Disposal (On-Site Wastewater Treatment Systems)

Total residential area: 1,936 acres
Residential area not sewered: 1,936 acres, by comparison with other watersheds; considered Moderate
Susceptibility according to soils: Moderately High
Overall concern rating: Moderate
Hydromodification

Area drained by tax ditches:

Existing 55,909 acres (90% of total watershed acreage)
Petitioned 245 acres (4 % of total watershed acreage)
Overall concern rating: High
Soils/Slopes:

The soils include predominantly Pocomoke-Fallsington-Sassafras soil association described by the Natural Resources Conservation as "very poorly drained, poorly drained and well drained soils that have a moderately permeable subsoil of clay loam to sandy loam" and Fallsington-SassafrasWoodstown association described as "poorly drained to well drained soils that have a moderately permeable subsoil of sandy loam to sandy clay loam".

The soils are predominantly level with some gentle slopes.

CHAPTER 6 Stormwater Management and Non-point Runoff

MDE developed the **2000 Maryland Stormwater Design Manual** (Manual) to address three goals:
(1) Protect the waters of the State from the adverse impacts urban stormwater;
(2) Provide design guidance on effective structural and nonstructural best management practices (BMPs) for new development sites; and
(3) Improve the quality of BMPs that are constructed in Maryland.

The Manual recognizes an evolving, more comprehensive approach to stormwater management. Included in this approach is better guidance and incentives for environmentally sustainable or "green" development techniques. The projected outcome of this new approach will be site designs that more closely mimic natural processes and reduce reliance on the use of structural management techniques. It is difficult to accommodate the full spectrum of water resource protection principles into each project. However, the importance of these principles should be recognized and their use encouraged during project planning. This supplement provides options that can be used in local stormwater management ordinances to shift focus from the structural management of runoff to mimicking natural processes as part of total site design.

Henderson will coordinate with Caroline County in the regional management of stormwater and stormwater control measures that may be required as a condition of large scale development.

The following nonstructural stormwater management practices shall be applied according to the Design Manual to minimize increases in new development runoff:
(a) Natural area conservation;
(b) Disconnection of rooftop runoff;
(c) Disconnection of non-rooftop runoff;
(d) Sheet flow to buffers;
(e) Grass channels; and
(f) Environmentally sensitive development.
(4) The minimum control requirements listed in Section 4.1 of this Ordinance may be reduced when nonstructural stormwater management practices are incorporated into site designs according to the Design Manual.

The following structural stormwater management practices shall be designed according to the Design Manual:
(a) Stormwater management ponds;
(b) Stormwater management wetlands;
(c) Stormwater management infiltration;
(d) Stormwater management filtering systems; and
(e) Stormwater management open channel systems.
(3) The performance criteria specified in the Design Manual with regard to general feasibility, conveyance, pretreatment, treatment and geometry, environment and landscaping, and maintenance shall be considered when selecting structural stormwater management practices.
(4) Structural stormwater management practices shall be selected to accommodate the unique hydrologic or geologic regions of the Henderson area.

Public Ditches

The total acres involved in land drainage on the Eastern Shore is substantial. In addition to the 821 miles of channelized streams administered by the more than 100 public drainage associations established by law for agricultural purposes[1], there are hundreds of miles of roadside ditches to facilitate transportation. Beyond public land drainage systems is a myriad of farm ditches on private land. Finally, there are new drainage systems built by commercial developers for the purpose of stormwater management. All of these systems functionally overlap and interact in a bewildering network with one ultimate purpose, *i.e.*, to move water quickly from the land.

Summary of Public Drainage Associations (PDAs) and Public Watershed Associations (PWAs) on the MD Eastern Shore

County	PDAs/PWAs	Total Miles	Total Acres
Caroline	68	368	70,137
Somerset	4	42	13,258
Wicomico	13	176	38,903
Worcester	18	235	60,707

Table 13

History of Land Drainage

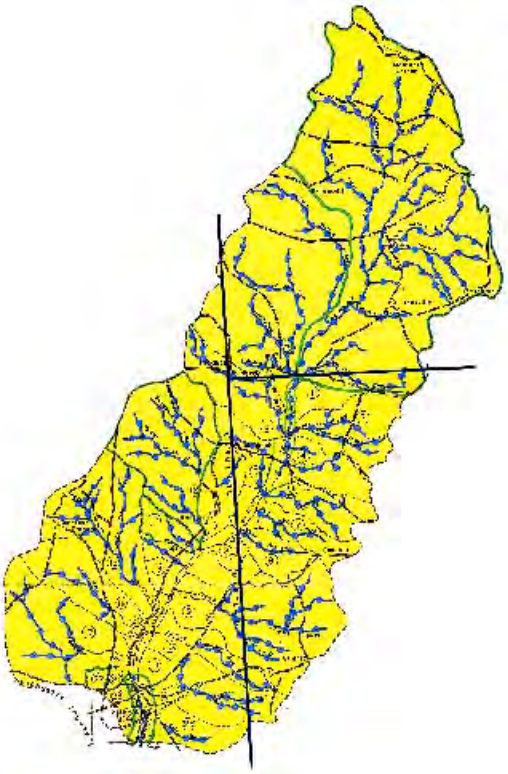
Land drainage has been closely associated with agricultural use of the landscape. The Task Force learned that identifying the land affected by agricultural drainage would highlight most of Delmarva's arable land. Drainage systems for transportation, housing and municipal development, and stormwater management have been connected to or superimposed upon the original agricultural network and purpose on Delmarva. As cropland accounts for approximately 50% of the land use on the Delmarva Peninsula, many of these ditch networks continue to support activities for which they were originally constructed.

The Depression is a benchmark of sorts for agriculture on the Delmarva Peninsula. Much of the land clearing was completed prior to this period; extensive efforts to drain this land were undertaken shortly thereafter. With no recourse to replanting or alternative crops, and already living under near-poverty conditions, Eastern Shore farmers faced financial ruin if a year's crop were lost to flooding after heavy rain. Urgent need coupled with available engineering and labor through the Works Progress Administration (Civilian Conservation Corps, CCC) resulted in the re-engineering of many older ditch networks that were no longer functioning. The CCC was widely praised for these efforts. **"…**I wish to commend the work which your camp has done on the digging of Broadway Ditch. I own a farm north of Goldsboro, which this ditch runs thru [sic], and I have been bothered with flooded land after every rain until this ditch was re-dug. Since that time the water runs off rapidly and clears both my land and my tile lines. I have also seen the results of this ditch on farms above me where there were several farms practically water logged which have shown a tremendous improvement in drainage conditions since this ditch was dug…"

Graphic 7 Public Drainage Ditc

Public drainage in Caroline County, MD, and neighboring Delaware.

Above: The Long Marsh project, authorized in 1789, is the-oldest on record. Original ditch was dug by slaves using hand tools. The photo shows the main ditch as it exists today as part of the Longmarsh Public Drainage Association. Dotted blue lines on the "locator graphic" show the channelized streams, totaling 260 miles and draining 104,798 acres (from Fincher, 1977).



Although certain provisions can be traced back through much earlier legislation (Lewis, 1995), the law that currently regulates Public Drainage Associations (PDAs) was established in 1957

under Article 25 (County Commissioners), sections 52-95 of the Annotated Code of Maryland. The statute was last amended in 1994. Public Watershed Associations (PWA) were authorized by broadening MD drainage law in 1958 to include watershed development for a variety of purposes: ". . . constructing, operating, maintaining and carrying out works of improvement for watershed protection, flood prevention, recreation, soil conservation, drainage and/or the conservation, development, storage, utilization and disposal of water for all beneficial purposes in watershed or subwatershed areas . . . ." (Article 25, section 169). As a result of amendments made in 1994, the PDA and PWA laws closely resemble one another. There are 101 active PDAs and 4 active PWAs on the MD Eastern Shore.

Article 25 establishes PDAs as political entities with authority ". . . to locate and establish ditches, drains, or canals, and to cause to be constructed, straightened, widened or deepened any ditch, drain, or watercourse for the purpose of establishing and maintaining watershed drainage systems..." (Article 25, section 52). They may levy taxes on landowners whose property borders a PDA ditch or is located on a PWA watershed for the purpose of construction and maintenance. Further, they shall "…have and possess such rights-of-way and easements as are necessary for the construction and maintenance of the drainage improvements and for the disposition of excavated material…" (Article 25, section 88). PDA/PWAs administer drainage ditches on lands acquired by easement from the original landowners. These ditches function as water conveyance outlets for the farm ditches constructed by landowners on their private holdings.
Funding for ditch construction and maintenance was initially provided by taxing the beneficiaries, the source for the widespread name "tax ditches." After 1951, some financial support was provided by local county governments, especially when county road and PDA drainage needs came together. A major resource was created under Public Law 566, the federal Watershed Protection and Flood Prevention Act of 1954. This statute authorized the Soil Conservation Service (SCS, now the Natural Resource Conservation Service) to assist Soil Conservation Districts in planning and carrying out a wide variety of watershed projects. Through the SCS, the federal government provided approximately 75% cost-share funding for PDA construction; coupled with an additional 12.5% from MD and county funds, extramural support could cover as much as 87.5% of project costs.

This program was largely responsible for underwriting 40 of the 103 currently active PDAs on the Eastern Shore. West Henderson PDA, completed in 1985, was the last to be constructed with Federal Public Law (PL) 566 funds.

PL 566, now called the Small Watershed Program administered by the federal government, still assists local governments in dealing with natural resource and related economic problems on specific watersheds smaller than 250,000 acres in size. But because the U.S. Army Corps of Engineers is no longer issuing permits for new ditch construction, establishment of new PDAs through the Small Watershed Program would now be highly improbable.

Under MD law, only the Maryland Department of Agriculture (MDA) has the authority to provide cost-share funding for maintenance of PDA/PWA drainage (Article 8, Section 602). Cost-share began in 1978 and ended with budget reductions in 1995. It has not been reinstated for routine ditch maintenance, leaving PDA/PWAs dependent on tax assessments and county funds for this activity.

Ditch Maintenance

PDA/PWA easements have a minimum 20-ft. right of way to provide for maintenance of ditch function *(Fig. 4)*. In these systems the process itself begins in the fall or winter with a walking inventory conducted by PDA managers, MDA personnel, landowners, and maintenance contractor s. A report describing any problems is prepared with copies to the PDA Chair and MDA; the problems are discussed at the PDA Coordinator's annual meeting with managers. The result is a 1- or 2-year Operation and Maintenance Plan.

The Plan is sent to MDA which forwards copies to MDE, DNR, and if operations require permitting, to the U.S. Army Corps of Engineers. After a 60-day comment period the MDA Secretary notifies the PDA Coordinator and managers of plan approval/denial. The loss of state (MDA) matching support after 1995 has seriously restricted maintenance efforts. For the most part, revenues provided through ditch taxes and county support are largely exhausted through routine practices that target woody growth (less than 4" diameter) removal by mowing and spraying with herbicides. These practices occur on approximately 2- to 5-year intervals. The routine of cleaning out a ditch prism through mechanical removal of sediments and debris – "dipping" – takes place at much longer intervals, at least 15 to 20 years.

This rigorous operation and maintenance process is "working well" according to the MDA although some agencies, organizations, and concerned citizens feel that the emphasis is strictly on ditch structure and function at the expense of environmental considerations. The inter-agency framework, however, can permit the development, evaluation, and implementation of large-scale, environmentally sensitive projects within the ditch maintenance context.

Benefits and Beneficiaries of Land Drainage

Article 25 of the Annotated Code of Maryland begins by stating, ". . . It is hereby declared that [land] drainage shall be considered a public benefit and conducive to public health, convenience, and welfare." That drainage constitutes a "public benefit" has been reaffirmed by subsequent legislative findings. However, the functional benefits of land drainage have evolved with changing land use. For example, the original intention of lowering water table levels to make rich bottomland soils accessible as farmland has been supplanted. Drainage today increases the predictability of agriculture (*e.g.*, more timely application of fertilizer and cropping at time of maximum yield) and increases the likelihood that there will in fact be a harvest each year.

The beneficiaries of "public benefit" change, directly or indirectly, as drainage extends beyond its original agricultural domain. Drainage allows for expanded residential and commercial development. A lower water table enhances the function of private septic systems while the original ditching network is often incorporated into a municipality's stormwater management system. As transportation needs of Eastern Shore residents and, especially, the several hundred thousand visitors who would reach the coastal resorts, have increased, so has the network of drainage ditches dug to make county and state roads passable and safe. Although flood control is considered a benefit of ditching, with few exceptions it is in fact incidental to the 1 inch per day design of good agricultural drainage. Also somewhat incidentally, farmland abandonment

followed by ecological succession has turned former farmland ditches into woodland ditches and increased the yield of loblolly pine harvests and other forest industry products

The evolving uses of land drainage on the Eastern Shore largely have been superimposed on the original agricultural design. When developers build private homes as well as fences and outbuildings next to former agricultural ditches, access for maintenance is often lost *(Fig. 5).* Brush, sediments, and trash accumulate. At best, this creates an eyesore that can reduce the enjoyment and value of property.

At worst, stormwater backs up and floods property upstream with similar consequences. Developers do not view the improvement of drainage at downstream locations away from their holdings as their responsibility. Municipalities are forced to perform what maintenance they can where ditches and public roads intersect. The economic benefits of land drainage are difficult to assess. Benefits are viewed as considerable by farmers, forest products industries, and residents who view drainage as "the bread and butter of the Eastern Shore". Against these benefits must be weighed costs ranging from taxes levied on the adjacent and/or benefitted properties for maintenance by PDA/PWAs to a share of the multi-million dollar annual expenses being imposed to reduce nutrient and sediment loads into Chesapeake Bay (USEPA 1999). Economist Dr. Douglas Parker (Task Force presentation 1/19/2000) observed that "The economic value of drainage is capitalized into the market price of the affected land itself." That value accrues to the owner at the time of improvement – drained land brings higher rents and a higher selling price. The next owners pay the higher price for the land, and inherit the costs of maintenance. Further, the economic value is based primarily on the certainty of expectations about management options and about yields for drained as opposed to undrained land.

The inability to maintain adequate drainage for effective stormwater management, for example, results in more frequent flooding that lowers land values. When formerly drained lands are allowed to become wet once again they can lose a portion of their enhanced economic value. If this is done deliberately through, *e.g.*, a wetland creation project, the affected landowners can expect financial compensation.

Environmental Considerations for Best Management Practices

Agricultural ditches have been constructed according to the "C-curve" engineering guideline designed to move a maximum of 1.5 inches per day of rainfall off the land. To the extent that land drainage strictly adheres to this guideline, it is viewed as functioning counter to MD's commitment to nutrient and sediment load reductions, wetland protection, and watershed management made under the Chesapeake Bay and Coastal Bays Programs and reaffirmed in *Chesapeake 2000.*

The research literature on land drainage is both diverse and sparse, especially with reference to the Delmarva Peninsula. Ditch behavior relative to nutrient and sediment transport is heavily dependent not only on the landscape itself but on the underlying hydrology. As many Delmarva ditches are at least 70 years old and have a history of re-engineering as well as periodic maintenance, each functions at least in part as an unique system. In short, best drainage

management is likely to be a site-specific endeavor that will rely on technical information at a level of considerable detail.

Guidelines for BMP development.

Increased nutrient loads are not a consequence of land drainage, but are derived from activities on the land that are permitted by drainage.

The perspective that ditches are conduits between land and receiving coastal waters would have no consequence if the land were not enriched with nutrients. In the case of agriculture, there has been a major increase in the use of chemical fertilizers and animal manure on drained landscapes. To the extent that applications exceed crop needs, ditches become a means of conveying the excesses to receiving waters. Even so, internal processing can significantly reduce the amounts of nutrients reaching the receiving waters relative to inputs at the field edge. In addition to controlling nutrient loads at the source, BMPs need to be implemented that promote "internal processing" as much as possible.

Sediment loads are low and episodic in properly constructed drainage.

Sediment loads increase dramatically during the 10-20 years following ditch construction. But in established ditches, 90% of the sediment loss is restricted to a few significant rainfall events per year. While these loads are not inconsequential for receiving waters, most drainage systems are not engineered to accommodate such episodic events on the landscape. BMPs should reduce the vulnerability of ditches to erosion and increase their ability to retain sediments as much as possible within the system following episodic rainfall events.

Surficial (shallow) aquifers beneath agricultural land are enriched in nitrogen relative to background concentrations in deeper aquifers, and this enrichment finds its way into drainage ditches.

Drainage may promote the movement of water and dissolved chemicals into surficial groundwater because it increases percolation through the soil and reduces surface runoff. Drainage is also put in place to rapidly remove excess surface flow water where infiltration rates are slow. In the Chesapeake Bay coastal plain where topography is flat and percolation increased, groundwater contributes 60-70% of the total annual stream. Although this groundwater has a residence time of 6-12 years, most drainage projects have been around long enough to have their ditches enriched with nitrogen compounds.

Graphic 8 Ditch examples

This ditch on private land near Denton, MD, partially reconstructed in Feb. 2000, demonstrates what can happen when rigorous Operation and Maintenance procedures are not part of the process. In this specific case, a 1:1 ditch bank slope *(upper left)* proves inappropriate for the local soil profile. A 2" 24-hr rainfall event in March 2000 was sufficient to cause significant bank erosion *(upper right)*. The increased sediment loads under these conditions *(lower left)* renders bottom habitat unsuitable for indigenous aquatic life. Although there can be undercutting at times of high flow, vegetated banks remaining after a proper dip-out only a few hundred yards downstream on the same system demonstrate one best management practice that can significantly reduce bank erosion problems *(lower right)*. Established Operations and Maintenance procedures provide an important means of benefitting from past experiences and current knowledge for land drainage. These benefits are readily available to the PDAs and PWAs, but land drainage on the Eastern Shore involves a much wider scope of players. Private landowners are especially important. They need to have better access to the most current information and professional assistance if they are to maximize their benefits from land drainage.

Effective BMPs are needed to address both the source of nitrogen and the internal processing necessary to reduce its load to receiving waters.

Public Drainage Ditch Best Management Practices

Engineering Changes

In-Channel Sediment Traps - Structures that expand dimensional characteristics of a channel, for the purpose of slowing current velocities and providing storage for transported matter including, but not limited to, clay, silt, sand, and detritus.

Stage-Width Channels - Channels that are constructed to stimulate flood plain functions by using a series of widened terraces at various elevations. The terraces provide expanded areas and increased conveyance for selected flood discharges.

Weir Installation - Construction of dams within channels that partially or fully block outlet delivery and force elevated water release. Design may cause out of bank flow for wetland enhancement or retention of water for assimilation and treatment within watershed.

Water Control and Water Diversion Structures - Structures that force or divert water from one area to other areas for use, treatment or safe removal. Weirs, channels, dams, and valves may function in this way individually or in various combinations.
Irrigation Design Modifications - A planned system in which all necessary water control structures are installed for the efficient distribution of water derived from precipitation, reservoirs, wells, groundwater, etc.

Watercourse Habitat Enhancement

Tolerance of Bottom Roughness and Meandering - Maximize levels of bottom roughness and channel meandering while still achieving acceptable drainage efficiency. Increased channel roughness and sinuousity produce lower channel flows and provide variations in flow velocities that promote in-stream habitat diversity.

Strategic Placement of Logs, Rocks, Brush - Specifically designed habitat conditions achieved through installation of logs, rocks, brush, pools, runs, rapids, riffle, and ripple areas, cover, sand bars, organic deposits, and silt or mud zones.

Shaded Riffles and Pools - Vegetation including trees, shrubs, and herbaceous plants along with topographic variations in bank heights may provide shade source, lowering temperatures and favorably altering flora and fauna communities.

Bank and Contiguous Habitat Enhancement

Woody Growth for Bank Stabilization - Trees, shrubs, and some grasses and herbaceous plants are persistent due to hard fibrous structure, i.e. wood. Usually woody growth has more substantial habitat value for cover, and provides niches for greater species diversity.

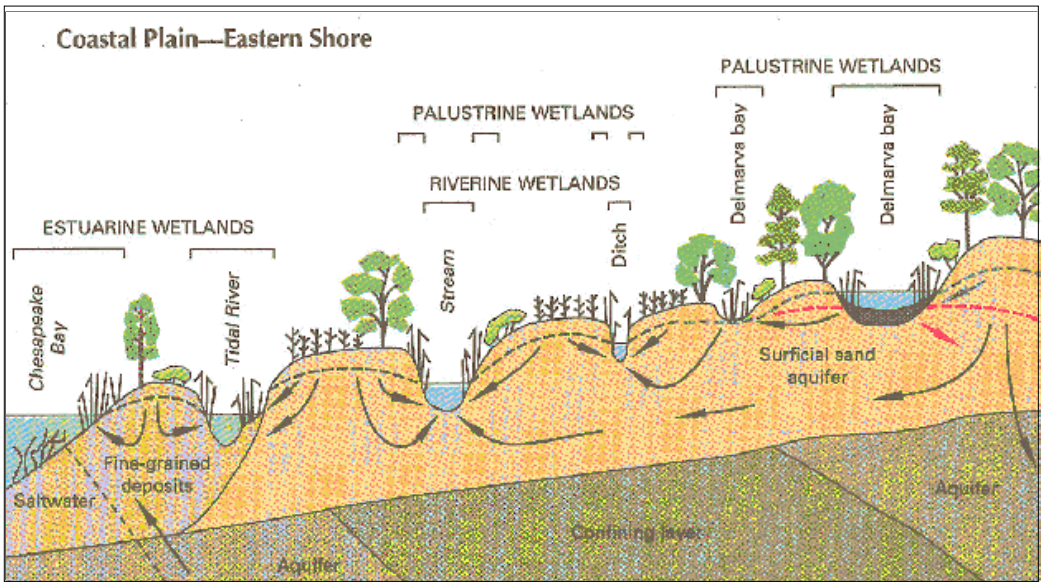
1-Sided Ditch Maintenance - Allow one side of the channel to go through natural succession processes while performing maintenance practices from the other side. Maintenance practices include mowing, herbicide application, tree cutting, and excavation.

Weed-Wiper Bar Technology - Herbicide application can be directed at specific plant types or communities based upon height or location. Extended bar has wick or other contact applicator.

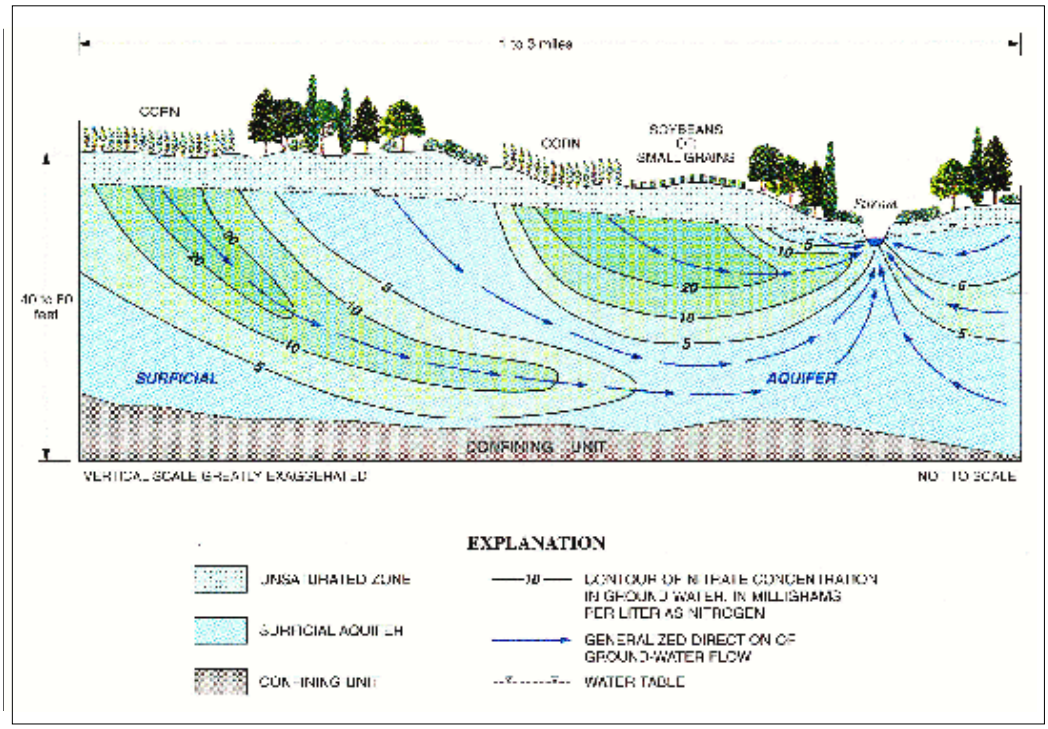
Forest Buffers - An area of predominantly trees and/or shrubs located to interrupt the movement of water, nutrients, pesticides, and dust and mitigate the effects of odors, noise and undesirable flow water where infiltration rates are slow.

Excess phosphorus in agricultural soils of the Eastern Shore contributes to elevated phosphorus concentrations in drainage ditches.
Because phosphorous tends to bind to soil particles under oxidizing conditions, leaching of phosphorous into shallow groundwater is minimal and phosphorous movement from fields occurs predominantly in surface runoff (Staver and Brinsfield, 1994). Repeated fertilization with phosphorous-enriched animal manure has increased soil phosphorous to levels well in excess of those needed for maximum crop production in many regions of the Maryland Coastal Plain. This increases the potential for export of soluable phosphorous into the drainage system. Because it may take decades to eliminate excess soil phosphorus, and because there are additional sources of phosphorus from groundwater sources, BMPs are needed to promote internal retention of this compound within the drainage network.

There are fundamental differences in nutrient movement between drainage systems that handle surface runoff and those designed to lower the water table.
Systems that have been constructed simply to move water off the land include farm ditches, road ditches, and stormwater management conveyances. They do not interact directly with the underlying surficial aquifer and are instead most strongly influenced by seasonal and episodic rainfall events. Systems engineered to drain the land, such as the Pocomoke drainage network, actually lower the water table and therefore directly interact with the underlying aquifer. Nutrient loads in these systems are most strongly governed by base flow. They exhibit less seasonal pattern and may be responsible for as much as 50-70% of nutrient loads to receiving waters, especially in winter when soils are recharging and there is less surface runnoff. This base flow will be extremely difficult to address through BMPs; at best, perhaps a 50% reduction in nutrient loads could be realistically expected. This still exceeds the 40% load reduction committed under the Chesapeake Bay Program and is sufficient to expect measurable improvement in the quality of receiving waters.



Graphic 9 Coastal Plain cross-section
Geohydrologic processes on the Delmarva Peninsula. *Upper:* Schematic diagram of the geohydrologic setting of wetlands and streams showing how the latter function as "sinks" to which groundwater flows (from Hayes, undated).



Graphic 10 Nitrate Concentrations in Groundwater
Relationship between land use and nitrate concentrations in groundwater. Streams, and ditches that intersect the surficial aquifer, show elevated nitrate concentrations as the result of processes shown in the diagram (from Shedlock *et al.*, 1999).

Practices designed to slow the transport of water across a drained watershed will allow natural processes to take effect that can reduce nutrient and sediment loadings to the receiving waters. BMPs that slow the transport of water *(Fig. 8)* can reduce the volume of water discharged as a result of evaporation and uptake and transpiration by plants. Sediments tend to settle out as water movement slows. During the growing season plants take up and sequester nutrients; rotting vegetation in the sediments consumes dissolved oxygen and creates conditions favorable for nitrogen loss to the atmosphere through denitrification.

Retention of sediments will also tend to retain particle-bound phosphorus, although phosphorus release is favored in the absence of oxygen. Even the vegetation present in the ditch prism can slow water movement, sequester nutrients, and reduce sediment loss during the warm months.

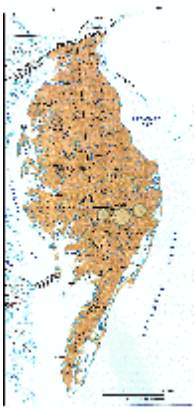
While adoption of BMPs can reduce nutrient and sediment loads delivered by a land drainage, far greater reductions will be realized by practices that keep nutrients and sediments from entering the ditches in the first place.

Successful implementation of agricultural BMPs and compliance with the MD Water Quality Improvement Act of 1998 can be expected to reduce nutrient and sediment loads that drainage systems can potentially transport to coastal waters.

Exclusive focus on routine maintenance by mowing, spraying, and woody growth removal prevents the recovery of stream habitats on drained lands.

More than 60% of MD headwater streams are impacted by habitat degradation and show parallel declines in fish community biodiversity. Stream habitat improvement includes an increased presence of woody debris, bottom structure, and shading.

BMPs that include one-sided mowing and an increased tolerance for the presence of woody growth along PDA/PWA easements could be beneficial changes in routine. Such BMPs appear to have a far more immediate effect on stream habitat improvement than attempts to reduce nutrient loads (Primrose *et al.*, 1995).



Graphic 11 Examples of best management practices (BMP's)
Lack of dipping permits luxurious growth of vegetation in ditch itself, which slows water transport and allows additional time for sedimentation and internal nutrient processing. Example *(upper left)* is the Aydelotte PDA main . Salisbury, MD, has used public lands *(upper right)* to construct retention ponds that expand to hold more water during heavy rainfall as part of improved stormwater management (locator map middle circle). On Birch Branch PDA *(middle right,)* a series of weirs have been constructed to reestablish grade and slow water movement. DE has purchased innovative weed-wiper bar equipment *(lower left, right)* that selectively applies herbicides to control woody plant growth without broadly disturbing other bank-protecting plants. Another BMP practice, 1-sided ditch maintenance, is illustrated in the top photograph.

A watershed perspective is absolutely necessary.

Local "C-curve" drainage need not apply at the scale of the entire watershed. It may be possible to slow transport through parts of the system by diverting water or allowing it to spread out without significantly affecting necessary drainage upstream. At the present time, limited funding contributes to this lack of perspective and encourages the installation of isolated BMP structures.

Concluding Observations

Drainage has been and continues to be closely associated with land use by human society. On the Delmarva Peninsula, that use has been primarily, but not exclusively, for agriculture. The relationship is such that changes in the extent of drainage can be expected to cause or reflect changes in land use. As an example, Denmark, where approximately half of the country's 39,000 miles have been channelized since at least 1800, has embarked on a massive program of stream restoration. But agriculture now employs less than 5% of the Danish workforce. Efforts to preserve farming as a way of life on the Eastern Shore must recognize the significance of land drainage to this endeavor.

Outside of the agricultural community, few citizens actually understand the origins, purpose, and significance of land drainage.

The environmental consequences of drainage, plus the overtaking of agricultural ditches by development and stormwater management, argue that land drainage can no longer be considered the responsibility of a single state agency. PD Task Force members would go further: "land drainage is the concern of all who benefit from or who are adversely affected by it." The Task Force itself has provided the first opportunity for representatives from many of these groups to engage in constructive dialogue outside of the regulatory process.

Recommendations

Recommendation #1.

Policy makers should acknowledge the need to protect the economic well-being of people who depend on effective land drainage while at the same time protecting and enhancing the environment that is affected by public ditches. The objectives to be balanced are efficient drainage of land for farming, forestry, development use, and public transportation, while also as much as possible reducing nutrient and sediment export and enhancing stream and riparian habitat for living resources.

The Task Force believed it is possible to maintain functional drainage at the level of the farm field or local development while reducing net nutrient and sediment export through BMPs elsewhere in the same watershed system. This large-scale perspective is as important to each of the following recommendations as it is to Recommendation #1. Without calling for specific changes in the authority or responsibility of the PDAs, MDA, or the NRCS as defined by State and federal law with reference to drainage management and assistance, the Task Force is convinced that a watershed perspective is already altering the way ditching is managed on

Maryland's Eastern Shore and that this change will continue with the implementation of its recommendations. Goldsboro fully supports ongoing efforts to fund ditch maintenance.

Recommendation #2.

The "on-the-ground" balance of objectives should reflect site-specific conditions as well as overall watershed management goals. Site-specific conditions involve physical, biological, and economic factors. There is need to identify, site-by-site, opportunities for slowing the rate of water flow and improving habitat in and near public drainage ditches without creating uncompensated costs for landowners who depend on public drainage.

The guiding principle is, where possible, to reduce "C-curve" drainage by retaining water on the landscape for longer periods of time overall. This promotes nutrient transformation and retention through chemical and biological processes, sediment deposition as opposed to transport, and increased water loss to the atmosphere through evapotranspiration.

Goldsboro is especially interested in the potential of using water control structures, not just for water table management, but also for the diversion of water from ditches into neighboring habitat to create, restore, or expand existing wetlands. This is a form of drainage water remediation that can remove excess P by chemical precipitation, promote denitrification and N uptake by plants, and reduce water volume by transpiration and increased groundwater recharge.

Engineering changes such as these can help reduce nutrient loadings from ditched landscapes as called for by commitments made under the Chesapeake Bay and Maryland Coastal Bays Programs. Watercourse and bank and contiguous habitat actions also support the state's Green Infrastructure initiative in which critical habitat hubs are connected by bio-corridors that can be comprised, in part, by ditch rights-of-way. Such watershed scale endeavors require an inventory of ditching relative to habitat infrastructure, a task best carried out through GIS analysis. In most cases, landowners would have to sacrifice some productive land for the sake of habitat improvement. No such endeavors must be undertaken without appropriate cost-sharing or other form of compensation.

Recommendation #3.

Implementation of the recommended objectives should involve the application of best management practices (BMPs) that are based on the most recent results of scientific research. Continual research on drainage design and maintenance methods is essential to further management improvement of public drainage. Therefore, such research and technical assistance to apply research results should receive active support from the State of Maryland. BMPs should incorporate the best achievable methods to reduce nutrient export and increase habitat quality.

Goldsboro calls for more research on nutrient reduction, sediment transport, and aquatic habitat improvement on ditched Delmarva landscapes. Research is necessary both to understand the site-specific behavior of individual ditched watersheds as well as to identify principles that could guide BMP implementation on a majority of systems on the Delmarva Peninsula. The "Maintenance" subgroup of the Ditch Task Force noted the importance of adopting BMPs

designed to minimize nutrient and sediment transport and called for field-testing to prove their effectiveness. Studies are also needed on improved ditch design and strategies to prevent stormwater overloading as a result of development. With research generating improved practices, appropriate staff support for the technical agencies will be necessary to educate landowners and local government officials on their implementation. Broader public education efforts are also recommended to inform all landowners about the local and downstream effects of ditch maintenance.

Finally, as BMP adoption will incur added costs to landowners and may take agricultural land out of production, research is needed to estimate the funds necessary to underwrite appropriate long-term assistance programs including, but not limited to, cost sharing, tax credits, and tax incentives.

Recommendation #4.

The State should create an interagency public drainage coordinating group, to be chaired by a designee of the Secretary of the Department of Agriculture with representatives from Public Drainage Associations (PDAs) and Public Watershed Associations (PWAs) and from each of the Governor's Chesapeake Bay Cabinet agencies. The mission of this group will be to promote and encourage the following:
a) Review existing state guidelines and practices to ensure consistency with recommendations made by the Public Drainage Task Force;
b) Identify needed research, development, demonstration, funding, and technical assistance related to the general implementation of BMPs for public drainage;
c) Establish guidelines which incorporate BMPs for use in the redesign and maintenance of public drainage systems;
d) Cooperate with federal agencies to support State of Maryland objectives; and
e) Coordinate, across State of Maryland and federal agencies, the effective and timely review of permits for drainage redesign and maintenance efforts.

Goldsboro notes that there is no inherent provision for formal, recurrent dialogue about public drainage among state agencies, landowners, and other affected parties. The current procedure for PDA Operation and Maintenance Plan review involves some agencies only at the stage of final approval. A watershed approach to BMPs requires a dialogue that extends beyond the traditional purview of PDA/PWA and local jurisdictional management and involves all pertinent agencies as collaborative partners. The recommended public drainage interagency coordinating group would provide for such dialogue in matters such as identification of projects where BMP adoption would have maximum potential effectiveness and public benefit, procurement and prioritization of financial assistance for BMP implementation, and technical review of recent research for its potential in advancing existing BMPs for maintenance habitat improvement on ditched land.

Recommendation #5.

In recognition of the potential public benefits of reliable maintenance efforts that are based on BMPs, State and federal funds should be provided to augment local revenue for maintenance for

Public Drainage Association (PDA) and Public Watershed Association (PWA) ditches, to incorporate into their maintenance and redesign efforts progressive outcomes such as reducing nutrient transport, reducing flow, and habitat improvement.
In FY 1999, NPS-319 funds were available for limited ditch operation and maintenance with the understanding that the monies would only be available for BMP implementation. Recommendation #5 fully supports this MDA initiative but goes further by including other potential sources of State and federal funding regardless of agency source. Prioritization of projects, identification of funding sources, and recommendations for implementation will be the responsibility of the interagency public drainage coordinating group (Recommendation #4).

Funding can range from matching of revenues raised by PDAs/PWAs and local jurisdictions to complete project support. The "Relationships" Group recommended that a sliding scale be developed that relates the proportion of State support to the scope of citizen benefit anticipated to result from any given project.

Recommendation #6.

In keeping with the State of Maryland vision for Smart Growth and in compliance with existing laws and regulations, the State should place the burden of costs required for altering public drainage, such as increased costs of maintenance, on to the developers of property to be drained. Alterations would include up-stream and downstream stormwater features (structural and non-structural) to accommodate development, and mitigate expenses.

Although the implementation of practices in accordance with Maryland's new *Stormwater Manual* will increase local water retention times and promote groundwater recharge as opposed to surface runoff, the fact remains that the cumulative effects of development on a given watershed have the capacity to overload a pre-existing system originally designed for agricultural drainage. The "Design" subgroup strongly recommended that developers be held financially accountable for the implementation of downstream BMPs (*e.g.,* multi-stage channel design modifications) necessary to accommodate any increased stormwater discharge rates. It is most desirable, of course, to ensure that a new development project with plans to discharge into a public drainage system adopt stormwater management that retains the original (pre-development) discharge rates. If either of these requirements cannot be met, the development should not be approved.

Recommendation #7.

Watershed management goals must be consistent with the goals of non-point source nutrient load reduction efforts. The State of Maryland should maintain, and, as feasible, enhance and expand current efforts to control nutrient losses from source areas, both public and private lands, before the nutrients reach public drainage ditches.

The Task Force recognized that the prevention of nutrient introduction into public drainage ditches is of critical importance in reducing nutrient loads to Maryland's waters. This problem is being addressed in considerable detail by many other programs, including Total Maximum Daily Loads (TMDLs) under the federal Clean Water Act and the Maryland Water Quality

Improvement Act of 1998. To the extent that nutrients do enter ditches by runoff or through interaction with surficial aquifers, maintenance BMPs may also enhance water quality. Ditch maintenance and redesign BMPs should be taken into account when prioritizing the allocation of funds not normally associated with public drainage programs, including Nutrient Management, Wetland Reserve, Conservation Reserve Enhancement Program (CREP), Environmental Quality Improvement Program (EQIP), and land preservation.

The citizens of Goldsboro understand the importance of healthy buffer in slowing down water, taking up nutrients, and holding sediment, we also recognize the need for proper drainage of our land to ensure that farms and roads remain drained and septic systems work properly. Regardless of how, why, or who helped implement the public drainage systems, the reality is that we now rely on these systems for a variety of purposes. In Caroline County alone hundreds of miles of public drainage systems, which could also be considered "blue-line" streams, are presently being maintained to move water from our land to larger sub-tributaries.

CHAPTER 7 Sensitive Areas Element

The Planning & Zoning Enabling Act requires the Town of Goldsboro to adopt measures to protect environmentally sensitive areas, which include:

- Streams and Stream Buffers;
- Steep Slopes;
- 100 Year Floodplain;
- Habitat of Threatened and Endangered Species; and
- Wetlands.

Part 1: Goals & Objectives

Goals for the protection of sensitive areas within the Town of Goldsboro include the following:

GOAL #1: Insure that environmentally sensitive areas within the Town of Goldsboro are protected through adequate Town policies and regulations; and

GOAL #2: Insure that environmentally sensitive areas within annexation areas are protected through adequate Town policies and regulations.

Part 2: Sensitive Areas Plan

Sensitive areas protection is required along an intermittent stream running through northern Goldsboro as well as for a large non-tidal wetland area located on the western edge of the Town; extending from MD 313 nearly to Church Street. Any new development should be reviewed for sensitive areas to ensure adequate protection

Streams and Stream Buffers
The Maryland Chesapeake Bay Critical Area Program, as administered by Caroline County, protects tributary streams located within 1000 feet of tidal waters. Under Caroline County's Critical Area Program, tidal rivers and streams are protected by a 100 foot shoreline buffer, within which no new development is permitted. There are no main tributary streams located in Goldsboro that impact tidal waters, although, appropriate measures should be enacted to provide buffer protection for perennial and intermittent streams located within the Town.

Steep Slopes
Only 1% of soils within Caroline County have been identified as having steep slopes of 15% or greater. A majority of steep slopes occur within the critical area and are protected by existing regulations. Although not within the critical area, some steep slopes have been cited near the Town of Goldsboro along stream corridors that connect with Lake Bonnie and the Upper Choptank River. Steep slopes occur on the East Star parcel, a proposed annexation and development site, which is a designated as a "Town Expansion Area" in the North Caroline County Comprehensive Plan, requiring adequate regulatory protection.

100-Year Floodplain

The existing Town of Goldsboro is not located within the 100-Year Floodplain. However, stream corridors located on the East Star development site and lands to the south and south-west of Goldsboro are impacted by the 100-Year Floodplain (see Map 1-III). Floodplain protection regulations will be required within the Town's zoning ordinance/subdivision regulations for future annexation areas, as indicated on the Sensitive Areas Map for Goldsboro.

Habitats of Threatened and Endangered Species

No identified areas of threatened and endangered species are located within the Town of Goldsboro. In addition , no identified areas of threatened and endangered species are located within Town Expansion Areas (areas slated for future annexation).

Wetlands

Wetlands are defined and protected by both State and Federal laws and regulations. The existing regulations are sufficient to protect wetland areas. However, some non-tidal wetlands are located within the western and north-eastern portions of the existing Town of Goldsboro. Non-tidal wetlands also are located on the East Star development site and will require review and determination during the development process. The Town will provide any available information on wetlands within the Town to the public.

Part 3: Implementation Recommendations

RECOMMENDATION #1: Develop Town policies and regulations to protect areas within the 100-Year Floodplain;

RECOMMENDATION #2: Require a 100 foot buffer on each side of perennial and intermittent streams within the Town's municipal boundaries;

RECOMMENDATION #3: Require a 100 foot buffer on each side of perennial and intermittent streams for annexation areas;

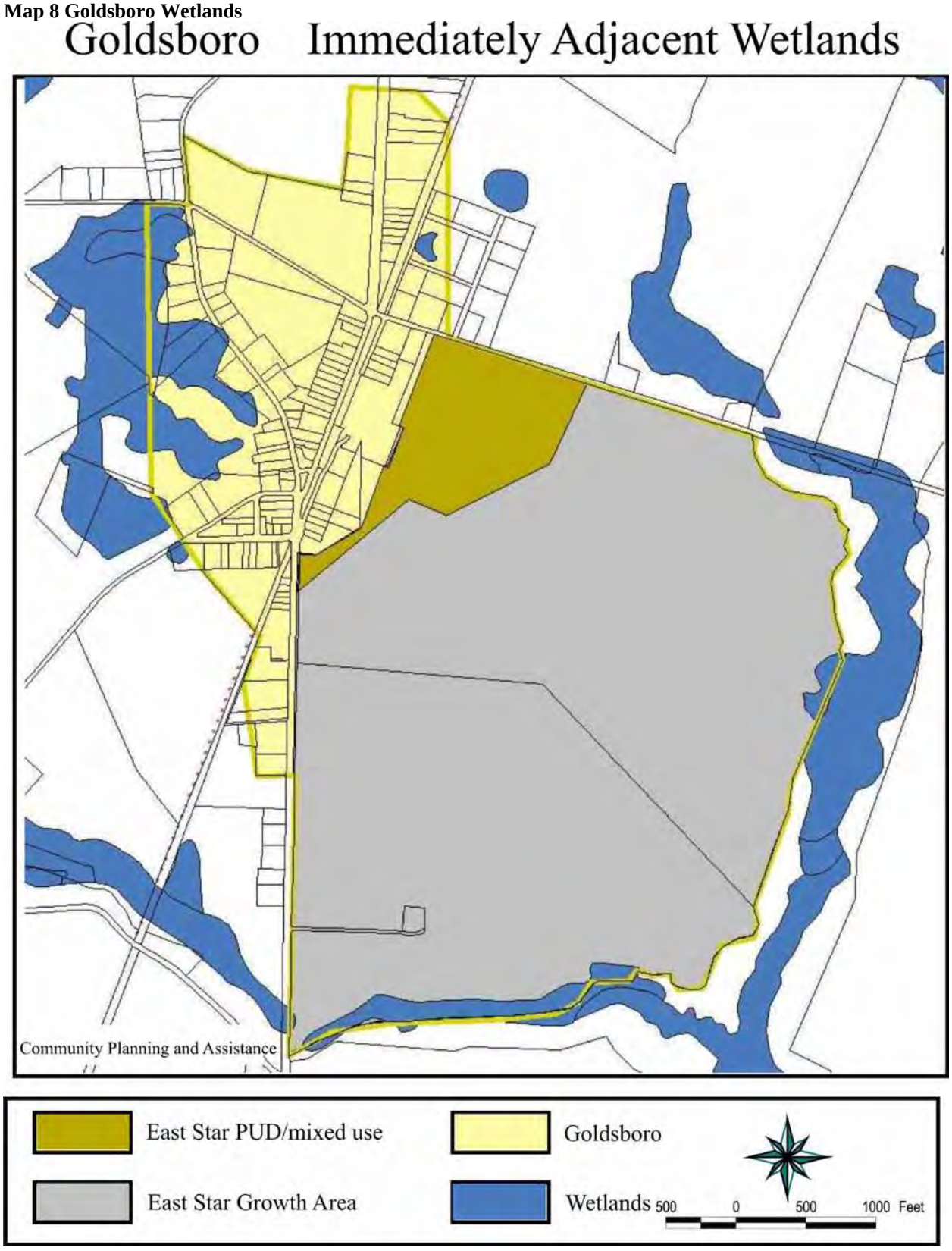
RECOMMENDATION #4: Restrict buildable area on slopes of 15% or greater;

RECOMMENDATION #5: Require that wetlands and their buffers be shown on major subdivision plats;

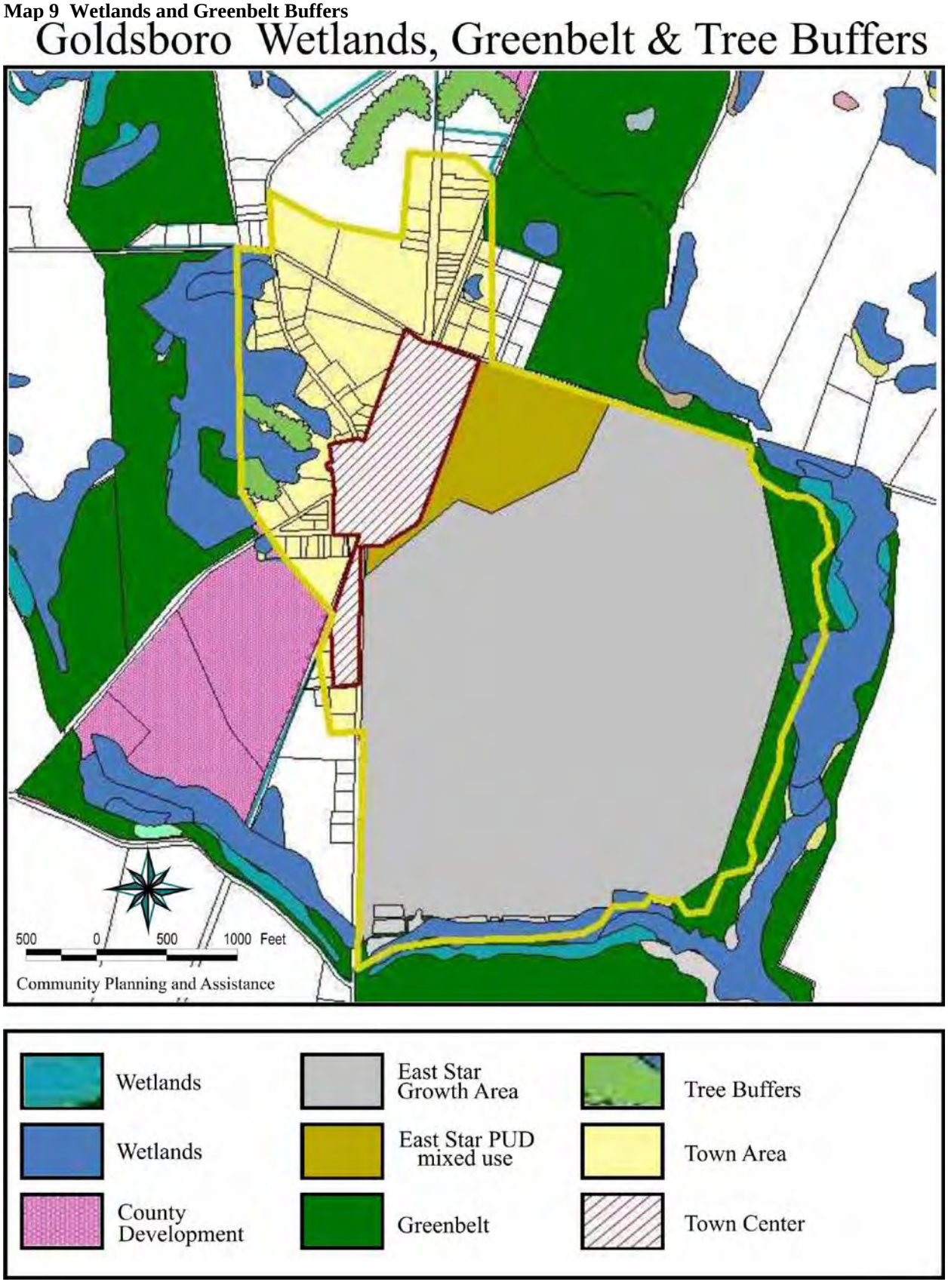
RECOMMENDATION #6: Encourage property owners to be knowledgeable about the presence of wetlands on their property; and

RECOMMENDATION #7: Coordinate environmental review with appropriate local, state, and federal agencies and entities.

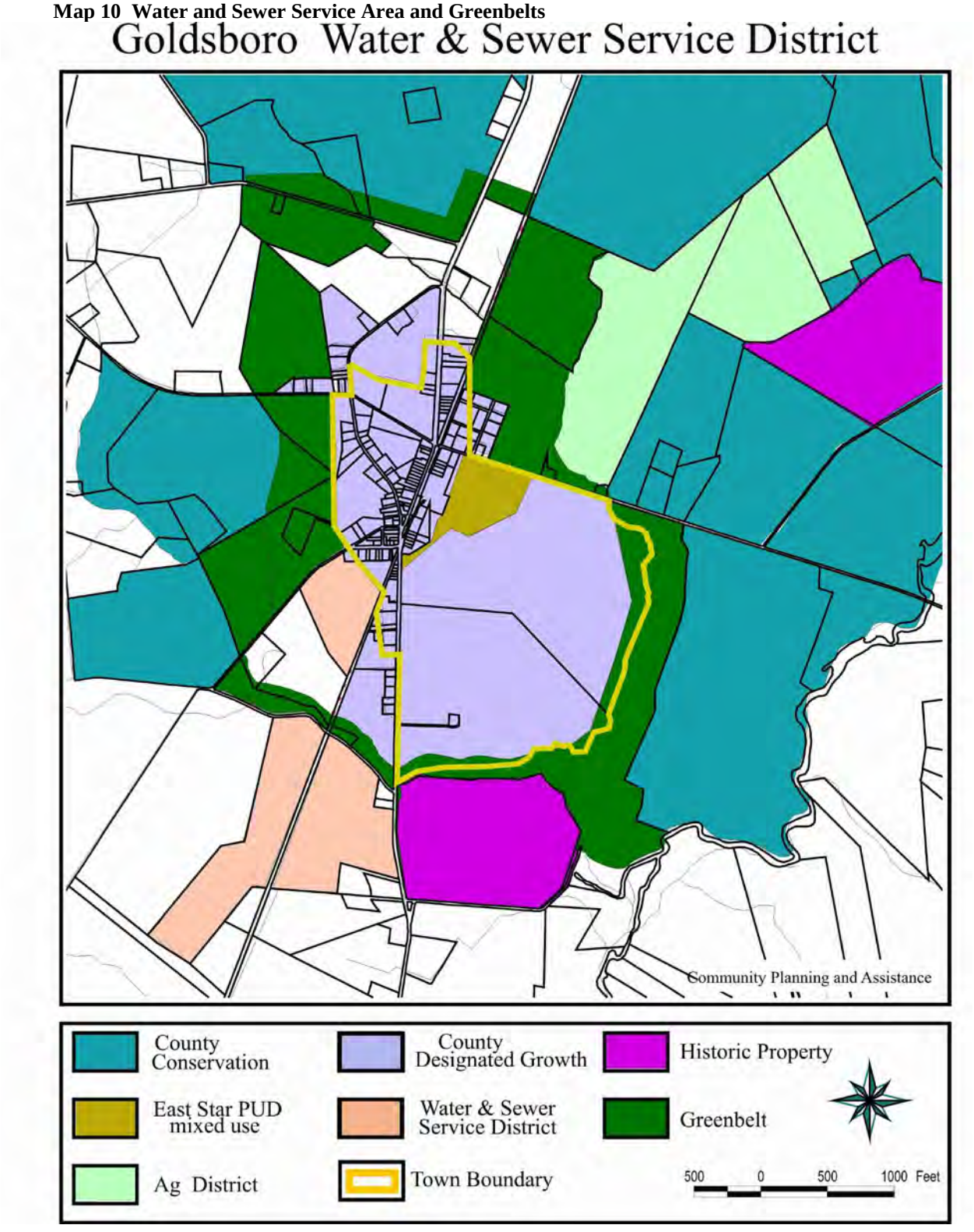
Map 8 Goldsboro Wetlands



Map 9 Wetlands and Greenbelt Buffers



Map 10 Water and Sewer Service Area and Greenbelts



CHAPTER 8 Mineral Resources Element

The Mineral Resource Plan is one element of the Goldsboro Comprehensive Plan. It has been prepared in accordance with Article 66B of the Annotated Code of Maryland and in consideration of the Natural Resources Article 7-6A. Article 66B provides for:

1. Identifying undeveloped land that should be kept in its undeveloped state until such land can be used to provide or assist in providing a continuous supply of minerals, as defined in Sec. 7-6A-01 (i) of the Natural Resources Article;

2. Identifying appropriate post-excavation uses for such land that are consistent with the Town's land planning process; and

3. Incorporating land use policies and recommendations for regulations, which prevent the preemption of mineral resource extraction by other land uses.

Part 1: Goals & Objectives

Goals for the mineral resource conservation within the Town of Goldsboro include the following:

GOAL #1: Protect, conserve, and reserve from preemptive land uses, certain mineral resources of current and future economic importance to ensure their availability for recovery;

GOAL #2: Minimize the adverse impacts of mineral resource recovery activities on surrounding land uses and the physical environment;

GOAL #3: Provide a rational mechanism for the permitting and regulation of mineral resource recovery operations; and

GOAL #4: Assure the reclamation of land disturbed or excavated for mineral resource recovery to an environmentally sensitive, aesthetically pleasing condition in a manner consistent with the land use element this Comprehensive Plan and the implementation ordinances of the Town of Goldsboro.

Note: Mineral resource goals and objectives were developed to provide long-term direction and vision. For mineral resource planning, the following goals were adopted to permit mineral resource recovery and processing to continue while protecting the surrounding citizenry and the physical environment.

Part 2: Policy Objectives

It is the policy of the Town of Goldsboro to provide for the effective management of the Town's mineral resources, support acquisition and development of additional mining sites, and alleviate land use conflicts between urban development and mining operations.

Local/State Coordination

The State has broad responsibilities under the Natural Resources Article for the permitting of mineral recovery operations. However, the lead responsibility for coordinating different aspects of the permit and regulatory process should rest with that jurisdiction in the best position to accomplish the intent of both the State and the local regulations. For example, the geology, hydrogeology, and environmental investigations, as well as regulating the day-to-day operations of the mining industry, are primarily State responsibilities. Decisions, which are land use in nature such as set-backs, landscaping, transportation issues, and placement of processing operations, are more appropriately in the Town's charge.

To facilitate the permitting of mineral resource recovery operations, it is important for the State, Caroline County, and the Town to work together in a coordinated review and permitting process. Mineral resource recovery and processing has the potential of adversely impacting an area's physical environment as well as the existing agricultural and residential communities. A thorough review by State, County, and Town technical personnel, with opportunities for public review and citizen input, will assure that all concerns are addressed. Concurrent reviews for the Town site plan permit and the State permits should result in a timely, comprehensive review. The State, County, and Town should also meet to coordinate review of the reclamation plan so as to share information and perspectives.

Intent and Disclaimer

Goldsboro will develop standards and regulations including siting requirements, control of truck traffic, and visual screening requirements, in order to make mining operations more compatible with adjacent non-mining uses. Maintenance of a safe and secure site shall be the joint and equal responsibility of the landowner and the mining operator. The Town recognizes the potential hazards inherent in extraction activities and may require the operator to provide measures to ensure public safety. However, this in no way limits the liability of an operator to ensure a safe and secure operation nor extends any liability to the Town administration for having approved or issued a permit for any activity in conjunction with the extraction of minerals or the subsequent reclamation.

The Town has the authority, under Article 66B of the Annotate Code, to prepare a comprehensive plan and make zoning text and map amendments for implementation. The Mineral Resource Plan and implementation elements will provide for the placement of a Mineral Resource Overlay (MRO) designation in selected areas and a mechanism for a landowner to petition an "MRO" be placed on their property. The MRO also contains a provision for notification of surrounding property owners within a distance of one-quarter (¼) mile of any parcel boundary proposed for MRO designation. Notification areas will be shown on the Town's Official Zoning Map and designated as a Mineral Resource Extraction Notification Region (MRENR). All subdivision plans, site plans, record plats, and building permits dealing with land in the MRENR shall contain notations identifying the property as lying within a quarter mile of a MRO zone where mineral resource recovery operations are currently occurring or may occur in the future.

As shown on Map 4-1, known Viable Resource Areas (VRA) are located and subject to potential application of the MRO zone. Residential building lots created after the effective date of the creation of the MRO zone shall only be located on portions of a parcel not designated a "VRA" unless mineral resources have been extracted and the site reclaimed in accordance with an approved reclamation plan.

A parcel is required to have a zoning designation, which permits mineral resource recovery and processing before local and State permitting eligibility. The Town will not issue the final zoning certificate for a mineral resource recovery operation until the State permitting process is complete and the applicant provides the Goldsboro Town Council with a copy of the permits and/or letters of certification from each State agency tasked to review, prepare, and issue permits.

An applicant for mineral resource recovery permits should meet with Town and County officials as well as State agencies before preparing the permit application and supporting documents to assure that all requirements and aspects of the permitting process are understood and followed. It is important for applicants to understand that the State, County, and Town need to agree and approve the details of any site reclamation plan prior to the issuance of any permits or the beginning of any resource extraction activities.

The rationale for the initial step of mapping the resource, using the Maryland Geological Surveys Mineral Resource Quadrangle Maps, is the availability of published information, plus the fact that there must be an identified resource. The first step also allows for modifications if other reliable information is available.

Development standards applicable to the MRO, including where the MRO can be located, should insure existing and future residential neighborhoods are protected from excessive noise, dust, and general nuisances associated with mineral extraction. Substantial buffers and other impact attenuation techniques should be required. Buffers should not be just rows of trees planted along the highway and property edges, but should be designed so as to enhance aesthetic values inherent with the historic settings in the Town center. Proper buffering and screening of mining activities is critical and lessens the intrusion upon residential areas and detraction from visual gateways. In addition, mining operations will increase truck traffic along State and County highways and roads, which must be considered in the review process. Highway and road maintenance is important to insure the future viability of transportation routes.

Site Plans for Extraction Activities

Site Plans related to proposed mineral resource extraction activities shall be accompanied by supporting documentation from a registered mining engineer that addresses how sediment and storm water runoff will be managed and controlled. All State, County, and Town regulations must be met for all aspects of the mining operation. The slope of any borrow pit shall be approved by the State and shall be shallow enough to promote easy egress by people and/or animals. Ground water resources shall be protected at all times, and any dewatering of the site shall require a discharge permit:

- Parking: Parking should be placed behind the principal structure to the extent possible and screened from road view with vegetation.

- Outdoor Storage: Outdoor storage, except that associated with agricultural activities, should be screened from public ways and adjacent residential uses by vegetation or walls. The outdoor storage of hazardous materials must be disclosed to State, County, and Town agencies and officials and meet all applicable regulations.

- Forest Cover: Clearing of forest vegetation should be limited to areas needed for excavation, structures, unloading areas, access roads, and paved parking areas. Local forest conservation policies an regulations must be considered.

- Setbacks: Setback from public road rights-of-way should conform to State requirements or 100 feet, whichever is more restrictive, and left in forest cover or used to meet forestation requirements, as needed.

- Fences: Security fences may be required to minimize danger to people and animals, which reside in or visit Goldsboro.

Appropriate Land Uses

In a Mineral Resource Overlay area, all uses, which are or may be permitted in the underlying zone, are prohibited except the following:

1. Mineral resource recovery operations; and
2. Agriculture.

Following site reclamation, appropriate uses include mixed intensity residential including single family detached, single family attached, townhouses, and multifamily condominiums, and apartments. Community recreational uses and facilities are also appropriate. However, responsibility for operation and maintenance, including public liability, must be clearly identified, and appropriate instruments recorded, to ensure the Town of Goldsboro is not liable for nor responsible to administer or maintain such common recreational facilities or areas.

Any subsequent residential development of reclaimed lands shall be designed and platted to enhance and blend with the existing character and layout of Goldsboro. New development should become clearly a part of Town, and it should not be viewed as separate from or "in addition to" existing parts of Goldsboro.

Part 3: Implementation Recommendations

RECOMMENDATION #1: Develop standards and regulations including siting requirements, control of truck traffic, and visual screening requirements, in order to make mining operations more compatible with adjacent non-mining uses;

RECOMMENDATION #2: Provide for the placement of a Mineral Resource Overlay (MRO) designation in selected areas;

RECOMMENDATION #3: Develop a mechanism for a landowner to petition an "MRO" be placed on their property; and

RECOMMENDATION #4: Indicate known Viable Resource Areas (VRA) subject to potential application of the MRO zone on the official maps for the Town of Goldsboro.

CHAPTER 9: Historic Preservation Element

Goldsboro has many sites and structures that are of historic importance. Important resources near Goldsboro, such as Castle Hall, which is listed on the National register of Historic Places, provide a context for the historical and cultural development of the Town. The railroad also played a key role in the formation of Goldsboro.

Part 1: Goals & Objectives

Goals for historical and cultural preservation within the Town of Goldsboro include the following:

GOAL #1: Preserve Goldsboro's historic sites, structures, and cultural heritage;

GOAL #2: Improve Goldsboro's inventory of historic resources to assist in development review;

GOAL #3: Encourage and support historic preservation through planning and regulatory mechanisms;

GOAL #4: Coordinate strategies and regulatory provisions between Goldsboro and Caroline County to achieve mutual historic preservation goals;

Part 2: The History of Goldsboro

Much of the historic and cultural legacy of the North County region is steeped in traditional agriculture and the railroad industry. Goldsboro has histories related to the expansion of the railroad. The Town of Goldsboro is located near one of Caroline County's most historic colonial estates, Castle Hall. Located between the Towns of Henderson and Greensboro, Goldsboro was ideally situated to take advantage of regional railroad transportation corridors. Goldsboro flourished through the exportation of agricultural goods to the North via the railroad. In 1873, a cannery was constructed. By 1889, Goldsboro had grown considerably and included a country store. By 1907, the population had grown to over 200 people.

Goldsboro is one of the railroad towns that were created by the establishment of the Delaware and Chesapeake Railroad in 1867. Owned by the Pennsylvania Railroad, the line was designed to provide shipping for goods and products from the Eastern Shore to communities, farmers, and markets in Philadelphia and other cities. In addition, the Railroad encouraged the development of communities at rail stops to ensure that there would be natural market points for local products.

Towns, such as Goldsboro, Ridgely, and Hillsboro in Caroline County were laid out by speculators who sold house lots and some commercial and industrial lots within each community. Within a short time of its creation, the community at Goldsboro, originally known as "Old Town" was a small prosperous town with a village core, residential buildings, and several small industrial and canning operations. The Town's name was changed to Goldsborough about 1870 to honor Dr. G.W. Goldsborough, the owner of most of the land around the town. Eventually the name was shortened to Goldsboro.

Goldsboro remained a small rural village throughout the end of the nineteenth century and into the twentieth century. The railroad provided access to markets. Several small nearby canneries provided employment and a processing facility for local fruits and vegetables. As the town prospered, roads were built to connect Goldsboro with other regional centers. Route. 287 or Sandtown Road was built in 1871 as Sandy Island Road. This road connected Goldsboro with Dover and central Delaware. In 1919, a bridge was built over the Choptank River on the Sandtown Road to provide a better connection with Delaware highways.

The railroad faded as a source for transport with the introduction of paved and all-weather highways, along with larger and more powerful trucks, food processing could be conducted at larger more centralized plants that provided an opportunity for companies to cut costs and to be nearer their markets. Although this did not occur overnight, by the middle of the 1960s, both the vegetable packing plant and the milk plant had closed. The milk plant closed over the 1961 and 1962 calendar years.
Section

Part 3: Historic and Cultural Preservation

Historic and cultural sites and locations should be considered as sensitive areas and incorporated into development planning process. The Town of Goldsboro should encourage new development to include investigations of potential archeological sites that might be disturbed during construction. Because some new development may occur outside Town limits, Goldsboro officials should encourage Caroline County to undertake the archeological investigation. Additionally, preliminary evaluations should be undertaken before any potential historic property is removed by development or removed for revitalization within the limits of Goldsboro.

If any development project is proposed for the Town of Goldsboro, either in its present limits or expanded through annexation, and it is determined that any sensitive area will be impacted, the Planning Commission and the property owner should take steps to minimize the impacts. Because of the limited technical and financial resources of Goldsboro to participate in such reviews, the Town expects that property owners that propose development provide appropriate studies and plans to identify sensitive areas and to mitigate impacts. Sufficient resources should be included in the various fees charged to the property owner to ensure development adequacy.

There are several important elements to the development of an effective program for the protection of historic resources. First is the inventory of historic sites and structures. The second element involves a designation of the most significant historic sites and structures for listing on a Federal, State, or County register of historic places. Educating the public on the benefits of historic preservation and forming partnerships with organizations involved in historic preservation activities is necessary. The third element involves specific regulatory actions to protect historic resources.

According to *Article 66B of the Annotated Code of Maryland* (Planning & Zoning Enabling Act), Sections 8.01 to 8.17, "Historic Area Zoning," local jurisdictions may designate "boundaries for sites, structures, or districts, which are deemed to be of historic, archeological, or architectural significance." Local historic preservation planning allows property owners in designated historic

preservation districts to access significant tax credits, low-interest loans, and grants to repair and renovate important historic properties, thus preserving our valuable heritage.

Structures, such as Castle Hall, have tremendous importance for Maryland's colonial history. The Goldsboro area has many sites and structures of historical importance yet to be catalogued and identified. Although Town sites and structures are not listed on the Maryland Historical Trust's catalogue of important places, these buildings are a testament to local history and pride. A Town historic preservation plan and regulations for the establishment a historic district can aid in acquiring grants and loans for historic preservation, community enhancement, and overall aesthetic improvements.

Part 4: Implementation Recommendations

RECOMMENDATION #1: Partner with the Maryland Historical Trust (MHT) to develop historic preservation plan and ordinance for the Town of Goldsboro that permits the establishment of a "voluntary" historic preservation district;

RECOMMENDATION #2: Participate in the Maryland Heritage Areas and Tourism Development Program as a means of expanding tourist economies, increasing private historic preservation investment, and stimulating the adaptive reuse of historic structures.

RECOMMENDATION #3: Encourage the County to prepare a historic preservation plan and adopt a historic preservation ordinance.

CHAPTER 10 Transportation Element

Major highway access routes through Goldsboro include MD Routes 313 and 287 (designated scenic rural highways) and MD Routes 311. The existing State highway system provides easy connections to higher order roads that access metropolitan areas in Maryland and Delaware, including MD Routes 404 and 454 (Del. Route 8) as well as US Routes 50, 301, and US Route 13. North County towns are within easy driving distance of major metropolitan centers in Delaware and on the western shore of Maryland.

The closest regional cities include Dover and Wilmington, Delaware; Philadelphia, Pennsylvania; Annapolis and Baltimore, Maryland; and Washington D.C., located within 2 hours driving time. For example, it is a 25 minute drive from the Town of Goldsboro to Dover, Delaware.

Part 1: Goals & Objectives

Goals for transportation within the Town of Goldsboro include the following:

GOAL #1: Provide for the safe and efficient movement of people and goods;

GOAL #2: Preserve the Clayton-Denton-Easton railroad right-of-way;

GOAL #3: Coordinate with State and County agencies and entities to insure that transportation improvements within Goldsboro are appropriately managed;

GOAL #4: Minimize the need for extensive capital investment in upgrading Town streets;

GOAL #5: Insure the development of appropriate vehicle and pedestrian circulation systems to serve designated growth areas when needed;

GOAL #6: Encourage the location of jobs close to population centers in order to reduce vehicle miles of travel; and

GOAL #7: Provide for alternative modes of travel within the designated growth areas, such as pedestrian and bicycle routes.

Part 2: Transportation Plan

Goldsboro is well served by State highways MD Routes 313, 287, and 311. These highways link the Town with other areas of the Upper Eastern Shore and Delaware. Gateway corridors into the Town, MD Routes 313 and 287, are designated scenic highways as part of the "Underground Railroad Tour." The Chesapeake rail line passes through the Town and presents an opportunity for the development of pedestrian trails under Maryland's "Rails-to-Trails" program as well as providing a possible location for utility lines. The rail corridor is a straight access route to the three towns of Goldsboro, Henderson, and Marydel, creating an affordable way of locating infrastructure lines. Goldsboro currently is working with the State Highway Administration

(SHA) to plan streetscape improvements along State routes. If properly planned and executed, these improvements could help improve mobility in the community as well as enhance the general appearance of the Town. In addition, SHA could help improve overall visual character by installing appropriate buffer screening at its local maintenance and equipment yard located in Goldsboro and County Storage Area.

The arterial system in region is composed of State roads that serve as intra-county connectors to Queen Anne's County, Maryland and Kent County, Delaware. The arterial system operates at acceptable levels of service.

The collector system is composed of County roads and town streets that meet the vehicular travel needs of residents. It is in the opinion of the Town of Goldsboro that as County roads are essential for travel in and around Goldsboro, maintenance and repair of these roads is a primary concern to the Town's citizens and its government. The inadequacy of the County road system is worthy of condemnation when bridges are abandoned rather than repaired and roads essential to commuters remain unpaved and neglected.

All roads within Caroline County are classified according to intended use and potential traffic capacity requirements. The functional classification of roads is as follows:

Arterial Road: a major road carrying heavy traffic between major communities, towns, and counties.

Major Collector Road: a road providing access to properties, collecting and distributing moderate traffic between neighborhoods, major development areas, or intra-county circulation, and serving not more than 50 units in a subdivision.

Minor Collector Road: a road providing access to properties, collecting and distributing light traffic from larger capacity roads, and serving not more than 50 units in a subdivision.

Local Road: a road serving and providing access to abutting residential and agricultural properties, carrying no through traffic, and serving not more than 25 units in a subdivision.

Commercial/Industrial Road: a road providing access to and within a commercial or industrial area.

Major transportation issues identified in Goldsboro are as follows:

- Bridge crossing at Tidy Island Creek on River Bridge Road;
- Status of improvements to paved and unpaved County roads in the Caroline County Road Improvement Program;
- Coordination of potential streetscape improvements along State routes in Goldsboro with potential construction of water and sewer infrastructure;
- Future of railroad right-of-way; and

- Local highway flooding problems and the lack of maintenance of some local stormwater drainage systems.
- Access control, such as excessive curb cuts and strip development along roads;
- Lack of appropriate transportation design standards and specifications for the Towns and designated growth areas;
- Poor control of visual impacts for gateway corridors, such as non-appropriate road-side buffers; and
- Lack of appropriate visual controls along scenic rural routes.

Part 3: Implementation Recommendations

RECOMMENDATION #1: Require appropriate pedestrian circulation systems in new development and require new pedestrian systems to connect to existing systems;

RECOMMENDATION #2: Insure that the cost of making major road improvements, necessitated by new development, is borne by the developer. This should be made clear in any annexation proposal or developer agreements. The design and location of new and improved roads should provide for the efficient circulation of people, goods, and services within the designated growth area and to the extent possible channel long distance trips to the State highway system;

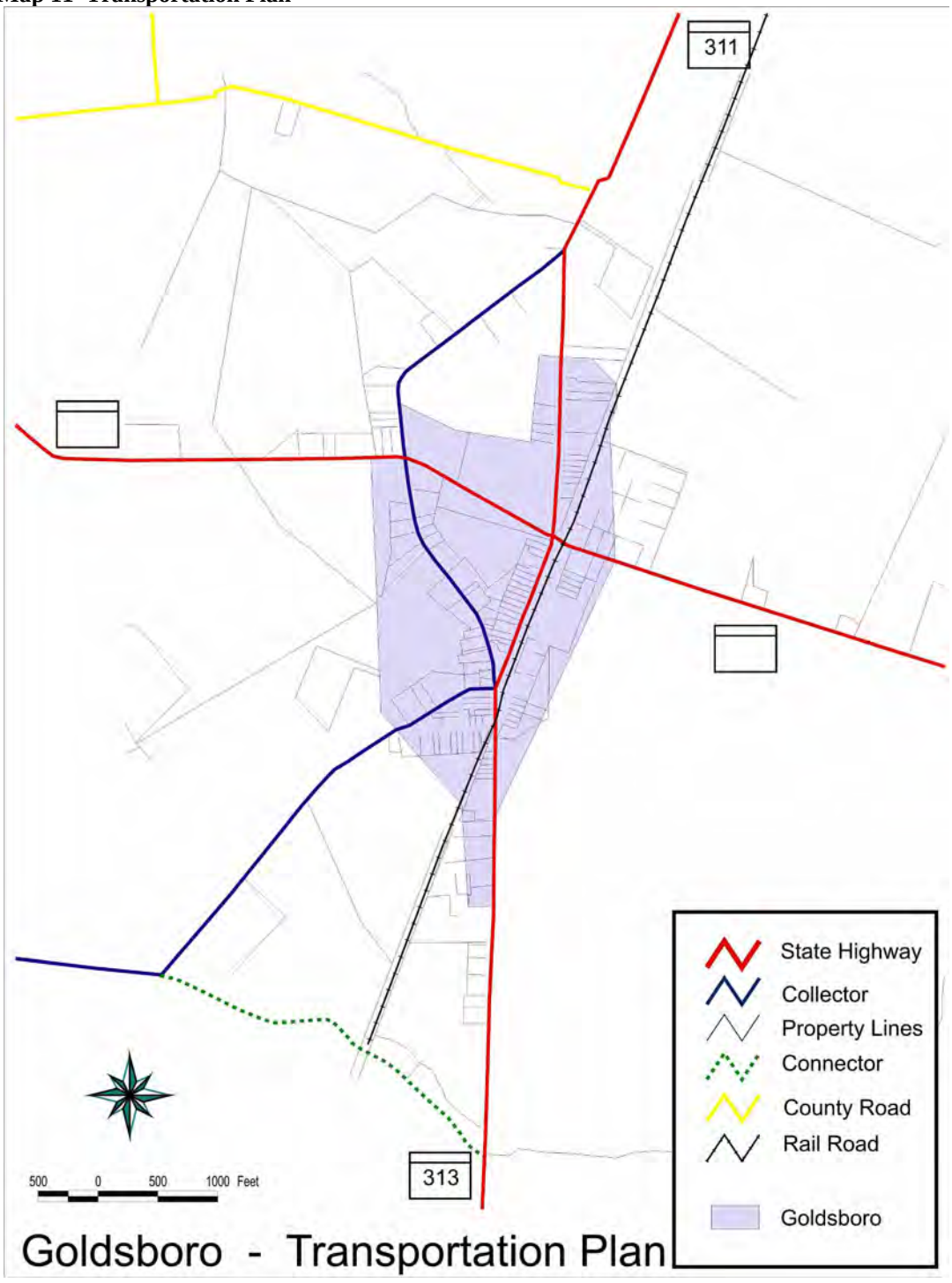
When existing County roads are proposed to serve as collector streets within a town system, they should be included in the annexation process and the developer should be responsible for upgrading the road to Town standards;

RECOMMENDATION #3: Develop transportation design guidelines, standards, and specifications appropriate for Goldsboro's settings. Prepare design guidelines that include the following principles:

- The street lay-out should be simple and have a logical pattern to insure legibility;
- The street lay-out should respect natural features and topography;
- The street lay-out should present an attractive streetscape;
- Proposed new streets should provide for the appropriate extension of existing streets;
- Every lot should be afforded a reasonable means of ingress and egress for emergency vehicles;
- No direct driveway access should be provided onto an existing or planned major collector street from a residential lot;
- Vehicles should be able to enter and exit without posing any substantial danger to themselves, pedestrians, or vehicles traveling on abutting streets, or interfere with the free and convenient flow with traffic on abutting or surrounding streets;
- Residential streets should be designed to manage the speed and volume of traffic in residential neighborhoods using "traffic calming" methods that encourage speeds of 25 mph or less;

- Streets should be related appropriately to the topography and designed to facilitate appropriate storm water management;
- Street rights-of-way should be adequate to serve all functions to carry motor vehicle, bicycle and pedestrian traffic, allow on-street parking, and serve as a link in the town's drainage system.

Map 11 Transportation Plan



CHAPTER 11 Community Facilities Element

The primary need in Goldsboro is community water supply and wastewater treatment facilities, due to serious health concerns associated with failing on-site septic systems and contamination of groundwater supplies. Failing septic systems also are contributing factors to surface water quality issues in the region. The creation of affordable and adequate municipal public infrastructure in Goldsboro (water and sewer) is required.

Part 1: Goals & Objectives

Goals for community facilities within the Town of Goldsboro include the following:

GOAL #1: Insure adequate park and open space land and facilities;

GOAL #2: Support the continued presence of the Goldsboro Post Office and other related rural services;

GOAL #3: Encourage the development of educational facilities and services within the Town of Goldsboro to meet projected public school demands within the North County region;

GOAL #4: Encourage more adequate State and County level public services, such as educational facilities, law enforcement, and public works for highways and roads;

GOAL #5: Encourage investment from businesses and industries that provide community facilities and services, such as grocery stores, restaurants, and health services; and

GOAL #6: Provide water and sewer facilities and services to current and future residents of Goldsboro.

Part 2: Parks, Park Facilities, and Open Space

The Town of Goldsboro has one community park. The Goldsboro Community Park located across from the fire house on Old Line Road, the park contains a tennis court, playground equipment, picnic tables, and basketball court.

The Town of Goldsboro owns the Municipal Building that houses the Town Hall and U.S. Post Office. The Town Hall is located near the center of town and next to the Post Office. The Municipal Building provides adequate meeting and workspace for town activities.

Greenways and park lands are amenities and improve the attractiveness of towns and surrounding rural areas. They also improve the local quality of life by offering recreational activities and services to County residents, enhancing the local economy through the creation of attractive environments for circulation, development, eco-tourism, and heritage tourism. The designation of green-belts in and around existing population areas can assist in creating an improved sense of community and identity.

Part 3: Public Sites and Services

Meeting places have a public social, political, and economic function. Public sites and services include community meeting areas (such as town halls and community halls), fire stations, and police stations. Town and community halls are places where local government can meet with the public and make decisions regarding their communities. Fire stations and police stations offer valuable public services for the health, safety, and welfare of the region. The table below provides an inventory of existing public sites and services.

The Town of Goldsboro owns several buildings. The first is the Municipal Building that houses the Town Hall and U.S. Post Office. Small rural post offices are critical to Towns such as Goldsboro. The second is the Old Municipal Building. The Town Hall is located near the center of town and next to the Post Office. The Municipal Building provides adequate meeting and workspace for town activities.

Public sites and services are critical for creating a safe environment in Goldsboro. Top priorities for safety include fire protection, law enforcement, and basic government services.

Public Sites and Services		
Public Entity	**Location**	**Function**
Goldsboro Commissioners	Goldsboro	Town Hall/Post Office
Goldsboro Vol. Fire Co.	Goldsboro	Fire Station
Caroline Health Services	Goldsboro	Medical Office
Caroline County Public Works	Goldsboro	Stock pile/equipment storage
Source: Caroline County Planning & Codes Administration		

Table 14

Part 4: Educational Facilities

Greensboro Elementary School serves a population much larger than recommended by national standards and is likely to grow even larger as residences are built in the Goldsboro area. The unique population needs of the north county citizenry (large Spanish speaking population) further argue the need for a school in this area north of Greensboro. The 6-Year planning cycle makes initiation of school planning an emergency requirement for this approaching crisis. It is noted that a suitable location for an elementary school has been offered by the East Star owner and another land owner identified in Marydel.

Part 5: Public Safety and Emergency Services

Police protection in Goldsboro is provided the Caroline County Sheriff's Department and by the Maryland State Police. The Goldsboro Volunteer Fire Company, Inc. is housed in a relatively new building on Old Line Road. This company provides fire and ambulance service to Goldsboro and to the surrounding countryside.

Part 6: Water & Sewer

The people in Goldsboro rely on private wells for water and in-ground septic systems for

wastewater disposal. Goldsboro has serious health and environmental problems associated with failing on-site septic systems and contamination of surface groundwater supplies. Goldsboro has been cited as a failing septic system area since 1975. In August of 1996, the Maryland Department of the Environment (MDE) issued a "Consent Order" to the Town to resolve the problem of failing septic systems and resulting pollution. The Caroline County Health Department is concerned that improperly treated septic system effluent is contaminating groundwater in the area. Due to environmental constraints and a high water table, groundwater contamination is suspected. The Caroline County Health Department has reported concerns that individuals are withdrawing contaminated groundwater from wells that have less than the required 100 foot separation from septic systems.

Water and wastewater infrastructure are of tremendous importance for growth and growth management in Goldsboro. The new 8th Vision, included in the 2000 Amendments to *Article 66B of the Annotated Code of Maryland, Land Use* (Planning & Zoning Enabling Act), states that adequate public facilities and infrastructure shall be available or planned in areas where growth is to occur. The adoption of the 8th Vision achieves consistency between the Planning & Zoning Enabling Act and the 1997 Smart Growth Areas Act, which funnels state funding to "Priority Funding Areas" (areas for major State capital improvement and investment).

To address water and wastewater problems, Caroline County, Goldsboro, and the Maryland Environmental Service (MES) have developed a regional water and sewer service area. As a State affiliated agency, MES will establish a Water and Sewer Service District for Goldsboro. The future water and sewer system is intended to correct all present deficiencies in the Service District, eliminating the use of septic systems and private wells. It will fill community needs for the next 20 to 40 years.

Adequate public infrastructure is important to the healthy functioning of Goldsboro. As a major goal of the MES 5-Year Water and Sewer Plan, improved coordination is recommended between the County and Goldsboro to provide both water and sewer. The regional water/wastewater system will begin to address pollution problems in Caroline and Queen Anne's, Counties, Maryland as well as areas in Kent County, Delaware, by offering services and improving the overall health of the Upper Choptank River Watershed.

The present *Caroline County Master Water and Sewerage Plan* supports the formation of the MES Service District because it addresses long-term solutions. Assisting in the formation of water and sewer for municipalities discourages County operation of such facilities. Caroline County has stated that it lacks adequate funding to operate and maintain water and wastewater systems.

On December 17, 2002, the County Commissioners of Caroline County Commissioners passed "Resolution #2002-024" endorsing the regional water and wastewater system concept, including Goldsboro, and adopting the MES 5-Year Water and Sewer Plan. In addition, Goldsboro has passed a resolution to support and adopt the regional water and sewer system concept. If, however, the MES water and sewer system cannot acquire adequate funding to construct a regional system, then alternatives should be re-evaluated, such as the feasibility of extending sewer lines to the Town of Greensboro's wastewater treatment plant or pursuing individual

options for the Town.

Several major issues were discussed in a series of community meetings held from late February to July 2002 by Caroline County for the *North County Comprehensive Plan*. These meetings were held to discuss community issues, opportunities, and constraints and sought to educate Town officials regarding planning and zoning. Several major community facilities issues emerged from the public meetings, including:

- Lack of Adequate Public Services;
- Lack of Safety and Law Enforcement (no municipal police force or State/County police station);
- Lack of adequate school facilities, located close to North County Towns; and
- Lack of Public Water and Sewer Infrastructure

Improved community facilities and services, in Goldsboro are critical to advancing the growth management, infrastructure enhancement, resource protection, and community conservation objectives of this Comprehensive Plan.

With the exception of water and sewerage facilities, several key community facilities are available to residents. For example, the Goldsboro Volunteer Fire Department provides fire and emergency assistance in the area. Medical assistance is available at Choptank Community Health Systems, Inc. Goldsboro has a community park and Lake Bonnie/Holiday Park serve as commercial campgrounds located near the Town. The Town's administrative offices are housed in the Town Hall.

With the prospect of a municipal water and sewer system being installed in the near future, Goldsboro is anxious to take advantage and participate in the variety of Smart Growth Incentives being developed by the State of Maryland. Chief among them is that new growth and development should be directed toward existing communities. This will help reduce costs for new development by taking advantage of existing municipal systems and by reducing the need to convert active and valuable farmland into residential or commercial and industrial sites.

Part 7: Implementation Recommendations

RECOMMENDATION #1: Complete the planning for the municipal water and sewer system and ensure it is installed and operational as soon as possible. This also will require that all town residents be connected to system and all private wells and septic systems be abandoned and properly contained;

RECOMMENDATION #2: Maintain public ownership of the existing Chesapeake Railroad right-of-way for use as a potential utilities corridor and consider using the existing railroad right-of-way corridor as a local pedestrian trail facility in the future.

RECOMMENDATION #3: Develop recreational and educational opportunities for all ages and population groups in Goldsboro with a special emphasis on the community's youth and senior citizens;

RECOMMENDATION #4: Evaluate the appropriateness of adopting an adequate public facilities ordinance and/or impact fees to address demand on public facilities and services created by new development.

RECOMMENDATION #5: Participate in County-wide planning programs for important community improvements, e.g., school facilities, water and sewer, park and open space to insure town issues are adequately presented to decision makers.

CHAPTER 12 Housing Element

Goldsboro suffers from a lack of new growth and development. New growth is largely prohibited by the lack of water and sewer facilities and services. Upgrades to the existing housing stock also are limited due to Health Department regulations. Much of the housing goals of the Town of Goldsboro are contingent upon adequate water and sewer.

Part 1: Goals & Objectives

Goals for housing within the Town of Goldsboro include the following:

GOAL #1: Provide sufficient land and infrastructure to support development;

GOAL #2: Encourage the re-development and re-use of existing housing stock; and

GOAL #3: Increase the supply of affordable housing.

Part 2: Housing Plan

In 2000, the median value of homes in the region was $77,000, as compared to the median value of Caroline County homes at $101,600, representing a $24,600 difference. Tax assessment records for 2000 describe the quality of over 99% of all housing in the region as being “fair” or “below average.” “Fair” quality homes are defined as units meeting minimal building codes, typically mass produced and exhibiting an overall quality range from average to below average. Over a third of the housing units were described as being “low quality construction.”

Another part of the housing problem can be attributed to the lack of adequate water and sewer facilities to serve towns, such as Goldsboro. The critical lack of these facilities not only impedes construction of new housing, but also discourages investment in the existing housing stock. The need for affordable housing is apparent, but the lack of infrastructure that thwarts private investment in new housing also limits the ability of public and private agencies to effectively utilize existing programs to address the problem.

The 216 people of Goldsboro live in 66 households. Of those, almost 1/3 are family households and the remainder are occupied by individuals living alone. Within the family households, one-in-five were reported to consist of a husband and wife. The other nine households consisted of three with a male as head of household and six with a female as head of household. There are no group-living quarters in Goldsboro.

This very stable pattern also reflected in the high level of home ownership in Goldsboro; almost 90% of the 66 households are owner occupied. Also, except for two reported mobile homes in Goldsboro, all of the housing units were in single-unit or single-family buildings. One reason for this high percentage of home ownership is that the value of the homes in Goldsboro is somewhat lower than average. Almost half of all of the owner-occupied houses were worth less than $50,000 and almost all of the other half were worth between $50,000 and $99,00.

There is considerable infill development potential where new housing could be developed, if adequate public facilities were available. Goldsboro has nearly 50 acres of land within the corporate limits that could be candidate sites for infill residential development.

In 2001, the Town of Goldsboro adopted the *International Building Code*, initiated a rental property inspection program and hired a codes administrator to inspect and enforce regulations. Structures that have obvious and major defects are noted and the property owners is given a written listing of the deficiencies and given an appropriate time limit within which to make the necessary repairs. If a property is too far gone and is so deteriorated that it causes a danger to the health and safety of the community and a hazard to the residents, the Town does initiate condemnation proceedings against the property owner as provided in the building codes and by Maryland law and civil procedure.

Housing quality is an important issue in the region. Continuing deterioration of the housing stock in the growth centers creates a cycle of decreasing housing values and lack of reinvestment in existing dwelling units. This in turn, adversely impacts the overall quality of the communities and may even result in large-scale property abandonment. Like so many of the issues in the region addressing the housing problem is dependent on developing public water and sewer facilities to correct existing health problems

Part 3: Implementation Recommendations

RECOMMENDATION #1: Encourage stable property values and the maintenance of single-family housing and discourage incompatible uses throughout single-family residential areas;

RECOMMENDATION #2: Designate appropriate growth areas and design standards for new development;

RECOMMENDATION #3: Continue to implement building codes, rental housing codes, and property maintenance codes;

RECOMMENDATION #4: Encourage town and private sector initiatives to address housing affordability; and

RECOMMENDATION #5: Utilize appropriate State and Federal housing programs and County assistance to address housing affordability issues.

CHAPTER 13 Economic Development Element

Municipalities are inseparably linked to neighboring political entities and benefit or suffer from the policies of those entities. This is most certainly true of economic policies. Goldsboro's economic health is determined by the economic health and vitality of Caroline County and the State of Maryland.

Part 1: Goals & Objectives

Goals for economic development within the Town of Goldsboro include the following:

GOAL #1: Improve economic development and employment opportunities for the residents of Goldsboro;

GOAL #2: Encourage economic development that addresses the identified needs of residents;

GOAL #3: Insure adequate land zoned for commercial and industrial uses in appropriate locations; and

GOAL #4: Locate employment centers close to population centers to reduce work trips.

Part 2: Economic Development Plan

Caroline County mainly serves as a service community for wealthier counties in the Upper Eastern Shore Region, such as Queen Anne's and Talbot Counties. Job growth and economic development in Caroline County are directly related to job growth and economic development in Queen Anne's and Talbot Counties. Job growth in Caroline County also is affected by growth in the Delaware Counties of Kent and Sussex. This is especially true of the region surrounding Goldsboro.

Caroline County income levels are below State and national averages. Goldsboro has the highest income levels for the 1st Election District, which is close to the average in Caroline County (see Table 9-1). A recent income survey performed by the Maryland Rural Development Corporation (MRDC) and the University of Maryland Inter-Governmental Services (IGS), indicated a substantial degree of poverty in the region. During Community Focus Meetings, conducted by IGS, constraining factors, such as low income levels, a poor tax base, low property values, substandard housing, and a lack of adequate public infrastructure were cited. These factors directly contribute to the inability of the region to attract new growth and economic development. Low property values and lack of adequate public infrastructure are cited as the most prominent constraint.

Median Household Income			
	Caroline County	**Goldsboro**	**1st Election District**
Median Household Income	$38,832	$39,500	$32,554

Table 15

Approximately one-in ten of the Town's workforce are employed in Goldsboro. Within the

occupational specialties of Goldsboro residents, the largest number were employed in precision production activities. Only a few of Goldsboro's residents have professional or managerial positions. The remainder traveled an average of 31.93 minutes to get to work. This would seem to indicate that most Goldsboro residents probably drove to Easton or toward Kent Island for employment or traveled to the industrial parks in Denton or Federalsburg or to Dover, Delaware. In fact, employment opportunities are limited within Goldsboro. For the most part, the only employers of any consequence are the Town of Goldsboro and the Post Office, the Caroline Health Services Center, C&D, and the Goldsboro Mill. These stores supply basic household needs and products. However, the area does not have a large or mid-sized grocery store, with the nearest located in Greensboro

Recent studies indicate that the most prevalent economic development constraints facing the Goldsboro area include:

- A lack of adequate infrastructure necessary for serving new businesses;
- Poorly defined growth management policies and a lack of policy implementation;
- Low average incomes;
- Low and declining property values;
- Limited tax base;
- Rental housing issues; and
- Lack of basic housing and building code enforcement

Part 3: Implementation Recommendations

RECOMMENDATION #1: Encourage existing businesses to remain and expand in Goldsboro and encourage new businesses to locate in Goldsboro;

RECOMMENDATION #2: Provide for the use of home-based professional businesses and occupations within the residential areas of Goldsboro;

RECOMMENDATION #3: Cooperate with federal, state, and local agencies and organizations, such as the Chamber of Commerce, Maryland Department of Business and Economic Development, One Maryland Program, and the Mid-Shore Regional Council to promote Goldsboro as a positive place for business and industrial development;

RECOMMENDATION #4: Encourage the allocation of land in appropriate locations for new commercial and industrial uses; and

RECOMMENDATION #5: Encourage the redevelopment of underutilized commercial and industrial sites in Goldsboro, such as the Old Milk Plant site.

CHAPTER 14 Plan Implementation

The most important part of any comprehensive plan is ensuring that goals and objectives are implemented by municipal government and supported by residents. Accordingly, significant attention and activity should be devoted to reviewing the various land use regulations in Goldsboro. In light of possible new development in Goldsboro, or the area just outside of its municipal limits, there is a particular reason to ensure that actual regulations will guide development and determine how it is integrated with the Town.

Beyond the need to effectively manage new growth and development outside of the existing village of Goldsboro, there is a need to manage the use of existing buildings in Goldsboro, including buildable lots within the existing village. Presently, most of the community consists of older single-family homes. The architectural and landscape character of Goldsboro is an important and valuable asset. Therefore, this Comprehensive Plan is designed to encourage the preservation of the older community and village scale of Goldsboro. Accordingly, this plan will be used by the Town Commission, the Planning Commission, private property owners, developers, and citizens to ensure that expressed values and goals are used to guide municipal actions and control growth.

Part 1: Implementation Actions

Specific implementation actions are listed below. These implementation actions were designed to supply a policy direction to the Goldsboro Planning Commission and Town Commission in order to fulfill the goals and objectives of this Comprehensive Plan.

Open Space and Farmland

Although Goldsboro is a well-established community, there are significant amounts of open space and farmland within its municipal boundaries. The Goldsboro Planning Commission and the Town Commissioners expect, at some point, the available open land and farmland will be converted to buildable lots for residential development. The timing of that conversion will be dependent on the availability of water and sewer and the market demand for housing in northern Caroline County.

Water and Sewer

If a municipal water and sewer system is installed in Goldsboro, there is every reasonable expectation that the population of the community will increase because new homes could be built. Additionally, if the water and sewer system is constructed, a number of Maryland regulations and policies have been adopted to encourage development in and around existing communities with adequate infrastructure and the capacity to support new projects. A water and sewer system would enable the Town to grow and develop as new land is annexed into the community.

Adequate Facilities Provisions

When a municipal water and sewer system is completed in Goldsboro, there is every reasonable expectation that new development will occur in and around the Town. When this happens, the Town should ensure that there is adequate water and sewer capacity for the development and for the existing town. It should also ensure that there are sufficient roads and other infrastructure needs available for the new development. If the Town determines that it does not have adequate facilities for new development, it should explore methods to acquire the needed facilities. Chief among the options available to the Town is to require that the owners of the proposed development provide sufficient funds to build the required facilities.

Annexation Areas

It is appropriate that present annexation land is zoned residential in Caroline County, however, the current lot size is more common to sprawling suburban development and is not appropriate for the area around Goldsboro under its present County classification.

Minimum lot sizes of that magnitude will require extensive amounts of agricultural land to be converted to housing. Traditional suburban development is not compatible with the village design traditions of Goldsboro. The Town should work with Caroline County to reduce the required lot sizes and setbacks for construction so that any new development that occurs around Goldsboro will be compatible with the older community and not resemble the large tract developments common to more urban and developed areas.

New Development

The appropriate design of new development projects is important, whether development is located in "growth areas" or occurs as infill or redevelopment projects. It is critical to insuring that new neighborhoods fit well with existing community character. Goldsboro should establish basic design principles that set forth the community expectations for the qualities of new development. Strip forms of development should be discouraged and new development should be responsible for the cost of any off-site improvements to town streets and County roads necessitated by the proposed development. This includes the cost of upgrading County roads that may become part of the town street system.

Agricultural Preservation

The Town of Goldsboro developed without an overall master plan. Development occurred as land was needed for residential, commercial, and industrial use. Development within the Town of Goldsboro was driven by the development of the railroad and influenced by the municipal boundaries that stretch along the railroad tracks. Industries that operate within the community are oriented toward the processing and resale of local crops to distant markets. Recognizing the importance of agriculture to the Town and surrounding area, it is essential that the Zoning Ordinance of Goldsboro be modified to identify and support agricultural activities. Recognizing the importance of agriculture to the Town and surrounding area, it is essential that the Zoning Ordinance of Goldsboro be modified to identify and support agricultural activities.

Industrial and Commercial Uses

The Town of Goldsboro should develop design standards and guidelines for all new commercial and industrial development. These should include the design of the building, landscaping, parking requirements, and signage. All such new buildings should be compatible with the scale and character of Goldsboro. Great care should be exercised to ensure that the entrance into Goldsboro does not deteriorate into an unattractive strip of junkyards and storage facilities.

Zoning Regulations

The current zoning regulations reflect efforts to layout zoning designations to match conditions when they were established in years past. These regulations should be reviewed and revised to ensure that compatible uses are created and ensure that growth and development is properly channeled into appropriate areas. The specific zoning regulations that deal with lot size and setbacks should be examined to ensure that they encourage the type of village development appropriate to Goldsboro; rather than encouraging suburban-type sprawl development. This will also ensure that property owners of existing buildings rebuild on small lots common to the older sections of Goldsboro and not be hampered by excessive setback requirements.

Subdivision Regulations

The Town of Goldsboro should review the current subdivision regulations for their impact on the rural character of the existing community. The current subdivision regulations do not adequately prepare the Town for growth, which would have a direct impact on the proposed municipal water and sewer system.

In addition to infrastructure requirements, any new and large scale development should not follow a "sprawling suburban development pattern." Therefore, the Goldsboro subdivision regulations should encourage and award density bonuses for developments that are extensions of Goldsboro and not developments that do not match the scale and character of Goldsboro.
An essential part of the subdivision regulations should be that the owners and developers of all new subdivisions be required to post bonds for the proper and timely construction of all water and sewer systems, fire protection systems, all roads and sidewalks, and all other necessary and required improvements. Bonds should also be posted for the appropriate completion of any other public feature or amenity that might be proposed by the developers. This might include such things as recreational facilities, community halls, street lighting, and street furniture. The developers should also be required to post bonds for the successful and timely completion of all buildings started in a development.

Building and Appearance Codes

The Town of Goldsboro adopted the *2000 International Building Code* and has employed a contractor to provide enforcement. As part of the enforcement of building codes, the Town's building inspector views the exterior of each property and develops a list of those properties that require remediation. Those that have obvious and major defects are noted and their property owners are given a written listing of deficiencies. The property owners are given an appropriate

time limit within which to make the necessary repairs or legal action is initiated. If a property is too deteriorated that it causes a danger to the health and safety of the community and a hazard of residents, the Town initiates condemnation proceedings against the property owner as provided in the building codes and by Maryland law and civil procedure.

Revitalization Strategies

In addition to participating in state and federal programs for the revitalization of buildings and property in Goldsboro, the Town should develop a revitalization strategy of its own that dovetails and supports those of other government efforts. Heritage preservation and various historical and cultural strategies could assist revitalization efforts.

Capital Improvements

The Town of Goldsboro should prepare a five and ten-year plan for capital improvements that might be needed by various administrative departments of the Town government or for the general benefit of the community. This plan should identify needs, provide a justification for purchase or construction, and identify the sources of funds that will be used to pay for the project or item. The capital improvement plan should allow for alteration of the plan to meet changing needs.

Administration and Enforcement

The ability of a municipal government to develop comprehensive plans and land-use regulations and policies are based on the laws of the State of Maryland and on the charter and ordinances passed by the Town Council. This Comprehensive Plan provides a guide for the management of Goldsboro and should be followed by the Town government. The Goldsboro Planning Commission, appointed by the Town Council is charged with ensuring that this plan is followed. The Goldsboro Planning Commission also advises the Town Council on changes that might need to be made to the Comprehensive Plan and its implementing regulations over the Plan's life. The Comprehensive Plan is not a document that should remain "on the shelf." Copies should be provided to all members of the Planning Commission and the Town Commission; as well as all employees and consultants that have responsibilities governed by the Comprehensive Plan. The Planning Commission should also review the Plan every year as part of its yearly report to the Town Council. The Comprehensive Plan should be reviewed on six-year intervals to ensure that it still reflects and satisfies the needs of the Town Council and the citizens of Goldsboro. The yearly review and the six-year review should be done as part of regular Planning Commission meetings and as part of a public hearing on the Comprehensive Plan to ensure that appropriate citizen input is provided to the Planning Commission.

Because the central role of the Planning Commission is guiding growth, development, revitalization, and the preservation of Goldsboro, it is important that it be composed of residents of the community. The Planning Commission should be kept at full strength at all times and the Town Council should ensure that they remain current with changing state laws and policies, with Caroline County's laws and regulations, and with the management of Goldsboro, providing the proper advice and guidance.

In addition, the Planning Commission should have at least the following responsibilities:

- Maintain a current and accurate Comprehensive Plan and enforcement regulations for the Town of Goldsboro;
- Review all decisions made by both Goldsboro and other agencies that might affect the Town of Goldsboro, the Comprehensive Plan, zoning regulations, subdivision ordinances, land-use regulations and guidance, and the future direction of the Town of Goldsboro and its government and governance;
- Submit a yearly report on its activities to the Town Council;
- Review and act on all requests for subdivision and other land-use change requests;
- Review and recommend changes on all revisions to the Goldsboro Zoning Ordinance and associated maps;
- Assist the Town Council in the development of a Capital Improvements Plan;
- Activate and participate in all programs and recommendations in the Comprehensive Plan and in other regulations, ordinances, and resolutions that fall into areas of responsibility;
- Complete other tasks and responsibilities that might be assigned to it by the Town Council; and
- Recommend changes, as needed, to the Comprehensive Plan, zoning regulations, subdivision ordinances, and other land-use policies, regulations, and guidance.

APPENDIX: Water Quality Analysis

Water Quality Analysis Summary for Choptank River

Watershed: Choptank River					Basin: Chesapeake Bay														
Segment	WBS Code	Size	Unit	Station	Assessed Parameters														
					DO (mg/l)		pH (SU)		Temp. ((C)		Bact. (# /100 ml)		TN (mg/l)	TP (mg/l)	Chl-a (ug/l)	Toxics	Fish Advisory	Biology	Habitat
					10%	25%	10%	90%	Max	90%	G.M.	90%	Avg.	Avg.	Avg.			% BCI *	% HCI **
Tappahanna Ditch	DE 110-001	36.28	Miles	207081 B021 B030 B031 B105 B107 B359 B377 B394 B410 B420 B457 B966 B998	5.1	5.5	5.8	7.2	19.0	19.0	344	2000	1.70	0.242	8.29	--	--	20	27
Culbreth Marsh Ditch	DE 110-002	34.34	Miles	207091 B032 B094 B101 B356 B357 B456 B489 B492 B519	4.8	5.3	5.7	6.6	20.0	20.0	415	2000	2.25	0.319	29.86	--	--	20	44

Table 16

APPENDIX : Water & Sewerage Summary

Section 1: Background

The *5-Year Water and Sewerage Plan for Henderson* (MES Water and Sewer Plan) was prepared by Maryland Environmental Service (MES) and was adopted in December of2002 by the Commissioners of Caroline County and the North County Towns of Goldsboro, Henderson, Marydel, and Templeville. The MES Water and Sewer Plan was incorporated into the *Caroline County Master Water & Sewerage Plan* and its production will coincide with the adoption of the *Henderson Comprehensive Plan.*

The MES Water and Sewer Plan details the history of water and wastewater problems and initiatives in the North County region. It also defines a water and sewer service district and addresses costs for a regional water/wastewater system for the four towns of Goldsboro, Henderson, Marydel, and Templeville and outlying areas. Service will be offered to the Marydel side of Delaware (Kent County, DE) but will be rendered under contractual agreement.

Section 2: Water & Sewer Plan Summary

MES has designated areas in Caroline and Queen Anne's Counties as the water and sewer service district, in accordance with the Maryland Environmental Service Act, Annotated Code of Maryland Natural Resources Article, Section 3-101. As a State affiliated agency, MES was created by the Maryland General Assembly to provide dependable, effective, and efficient water supply and wastewater collection and treatment services to the public and private sectors.

In response to problems caused by failing septic systems in the communities of North County, the Commissioners of Caroline County initiated a region-wide study in 1998 to determine the County level of costs to address water and sewer issues. The study was conducted by the engineering firm of George, Miles, and Buhr, Inc. (GMB). The study recommended a regional water and wastewater system to replace failing septic systems in the area. In 2000, as a response to the recommendations of the GMB Study, the County Commissioners of Caroline County passed a resolution authorizing MES to prepare a 5-Year Water and Sewerage Plan for North County to establish a MES water and sewer service district.

The MES Water and Sewer Plan outlines an effective and economical means of providing water supply and wastewater collection and treatment service. It also outlines development and construction of facilities; acquisition or improvement of facilities; potential expansion; ownership and operation of the water supply and wastewater collection and treatment facilities. Implementation of the MES Water and Sewer Plan by the MES Board of Directors is expected when funding for the project materializes.

Upon adoption and funding, the service district will be established and construction of the water and wastewater facilities will commence. Facilities include water supply and storage and distribution systems for the Towns of Goldsboro, Marydel, and Templeville and outlying area. The existing public water system for the Town of Henderson will be integrated into the service

district. A gravity sewer system to collect domestic wastewater from the Towns and outlying area will be constructed, conveying effluent to a central treatment plant near Goldsboro.

Section 3: Cost Estimates for the North County Water & Sewer System

As shown in the Water Resources Element, the estimated total cost for the construction of the proposed facilities has increased by about $3 million dollars over the last six or seven years. The annual operation and maintenance cost was estimated to be about $186,515 and will also have increased commensurately. At present, potential debt service is anticipated to be covered by charges levied against the water and sewer customers.

The monthly estimated cost per customer per month in 2002 for water and sewer services in the North County Water and Sewer Service District is $28.11 or $84.33 per quarter and $337.32 annually. Due to the expansion of the water and sewer service area during the planning stage of the MES 5-Year Water and Sewer Plan, monthly costs per customer were reduced to a more affordable level than identified in the 1998 GMB Study.

Section 4: Conclusion

The people in North County rely on private wells for water and in-ground septic systems for wastewater disposal. Serious health and environmental problems associated with failing on-site septic systems and contamination of surface groundwater supplies have been documented in the region. The Town of Goldsboro has been cited as a failing septic system area since 1975. In August of 1996, the Maryland Department of the Environment (MDE) issued a "Consent Order" to the Town to resolve the problem of failing septic systems and resulting pollution. The Caroline County Health Department is concerned that improperly treated septic system effluent is contaminating groundwater in the area. Due to environmental constraints and a high water table, groundwater contamination is suspected. The Caroline County Health Department has reported concerns that individuals are withdrawing contaminated groundwater from wells that have less than the required 100 feet separation from septic systems.

Water and wastewater infrastructure are of tremendous importance for growth and growth management. The new 8th Vision, included in the 2000 Amendments to *Article 66B of the Annotated Code of Maryland, Land Use* (Planning & Zoning Enabling Act), states that adequate public facilities and infrastructure shall be available or planned in areas where growth is to occur. The adoption of the 8th Vision achieves consistency between the Planning & Zoning Enabling Act and the 1997 Smart Growth Areas Act, which funnels state funding to "Priority Funding Areas" (areas for major State capital improvement and investment).

Adequate public infrastructure is important to the healthy functioning of Caroline County. To address water and wastewater problems specific to North County, the MES Water and Sewer Plan was developed. The future water and sewer system is intended to correct all present deficiencies in the Service District, eliminating the use of septic systems and private wells. It will fill community needs for the next 20 to 40 years. The regional water/wastewater system also will begin to address pollution problems in the Queen Anne's County portion of the Town of

Templeville, by offering services, which will improve the overall health of the Upper Choptank River Watershed.

The present *Caroline County Master Water and Sewerage Plan* supports the formation of the MES Service District because it addresses long-term solutions for the region. Assisting in the formation of water and sewer for municipalities discourages County operation of such facilities. Caroline County has stated that it lacks adequate funding to operate and maintain water and wastewater systems.

APPENDIX : State Housing & Community Development Programs

Section 1: Background

During the 2002 session of the Maryland General Assembly, Senators Richard Colburn and Walter Baker introduced Senate Bills 189, 190, and 191 to grant the Towns of Goldsboro, Henderson, and Marydel the authority for urban renewal and slum clearance. These bills prohibit the taking of any land or property without just compensation, declares that any land taken shall be for public use, imposes requirements for urban renewal, and allows the Towns to issue bonds for urban renewal under certain circumstances.

Section 2: Current Housing Programs

As federal housing and other related programs have disappeared, cities and counties have sought to aid the would-be homeowner. Maryland mounted an ambitious housing program in 1986 in response to federal cutbacks. Most of the state housing programs are administered by the State of Maryland's Community Development Administration which offers a variety of housing programs that fall under the general categories of home ownership, rental housing, special loans and housing subsidy programs. The current programs are briefly described below:

Current Home Ownership Programs

Maryland Mortgage Program (MMP) - The purpose of the MMP is to enable low- and moderate-income households to purchase homes by providing below-market interest rate mortgage financing through private lending institutions. The MMP, which targets first-time home buyers, is available to individuals and households with incomes at or below 85 percent of the State median income.

Maryland Home Financing Program - Home Purchase (MHFP- PIRL) - The purpose of MHFP is to provide low-interest rate mortgages for lower-income households. The MHFP, which targets first-time home buyers, is available to individuals and households with incomes at or below 55 percent of the State median income.

Maryland Home Financing Program - Reverse Equity Mortgage Program (MHFP-REMP) –The purpose of the MHFP-REMP is to enable the elderly of limited income to access part of their accumulated equity in order to pay for housing and other personal expenses to continue to occupy the home. For eligible applicants and properties, the Community Development Administration (CDA) will establish a line of credit up to a program maximum of $50,000 from which funds may be requested on a monthly basis. No repayment of loans is required until the death of the last surviving borrower, after the borrower voluntarily moves out, or after the sale or transfer of the property.

Settlement Expenses Loan Program (SELP) - SELP provides financial assistance in the form of low interest loans to pay settlement expenses.

Rental Housing Programs

Multi-Family Bond Program (MBP) - This program is designed to increase the construction and rehabilitation of multi-family rental housing for families with limited incomes. Tax exempt bonds and notes provide below-market rate construction and permanent financing to profit and nonprofit developers. A certain percentage of units in the project must be made available to low-income persons and households.

Rental Housing Production Program (RHPP) - The purpose of the RHPP is to increase the supply of rental housing for low-income families by providing below-market rate and deferred payment loans to developers. The program is designed to be used in conjunction with tax-exempt, private, local and federal loans.

Elderly Rental Housing Program (ERHP) - The purpose of the ERHP is to increase the supply of rental housing for low-income elderly households by providing below-market rate and deferred payment loans to developers. The program is designed to be used in conjunction with tax-exempt, private, local and federal loans.

Nonprofit Rehabilitation Program (NRP) - The purpose of the NRP is to provide low-interest mortgage loans to nonprofit organizations and local governments to rehabilitate housing for low-income households.

Partnership Rental Housing Program (PRHP) - The PRHP is intended to expand the supply of affordable housing for poor families through State and local government partnerships. Eligible projects include new construction and acquisition or rehabilitation of rental housing.

Maryland Housing Rehabilitation Program - Multi-Family (MHRP-MF) - The purpose of the Multi-Family Program is to provide loans to assist owners in bringing their multi-family units up to applicable building codes and standards.

Multi-Family Home and Energy Loan Program (HELP-MF) - The purpose of the HELP is to finance rehabilitation and energy conservation of existing Multi-Family properties using the proceeds of tax-exempt bonds.

Construction Loan Program (CLP) - The CLP provides low-interest, construction financing loans to nonprofit and local governments to acquire, rehabilitate, or construct certain types of housing and for bridge loans to profit motivated developers.

Transitional Housing and Emergency Shelter Program (THESP) - The THESP provides grants to improve or create transitional housing and emergency shelters for the purpose of reducing homelessness in the State.

Special Loan Programs

Maryland Housing Rehabilitation Program - Single Family (MHRP SF) - The purpose of the program is to preserve and improve existing small residential properties by bringing the properties up to applicable codes and standards. In 1990 this program was merged with the

Livability Code Rehabilitation Program.

Accessory, Shared and Sheltered Housing Program (ACCESS) - The purpose of ACCESS is to expand low cost housing opportunities for low-income households and low-income elderly, handicapped or disabled persons by financing the creation of accessory, shared, and sheltered housing facilities.

Indoor Plumbing Program (lPP) - The purpose of the IPP is to provide indoor plumbing in residential properties. Loans are made to income eligible households in owner-occupied single family units.

Residential Lead Paint Abatement Program (RELAP) - Loans are provided through the RELAP to reduce instances of lead poisoning of children by financing the abatement of lead paint in residential buildings.

Group Home Financing Program (GHFP) - The purpose of this loan program is to assist individuals and nonprofit organizations to construct or acquire and modify existing housing to serve as group homes or temporary and emergency shelter for income-eligible persons and households with special housing needs.

Special Housing Opportunities Program (SHOP) - The purpose of the Special Housing Opportunities Program (SHOP) is to assist non-profit organizations and local development agencies construct and acquire and modify existing housing to provide shelter and service individuals with special housing needs.

Special Targeted Area Rehabilitation Program (STAR) - The purpose of the STAR program is to preserve and improve single family properties. STAR was designed to bring properties up to applicable building codes and standards or a minimum housing quality standard.

Housing Subsidy Programs

Rental Allowance Program (RAP) - This program provides grants to local governments to provide flat rent subsidies to low-income families who are homeless or have emergency housing needs. The purpose of the program is to help these families to move from temporary housing to permanent housing and self sufficiency.

Section 8 Existing CertificateNoucher Program - A U.S. Department of Housing and Urban Development Program (HUD), Section 8 Existing is a rental assistance program which subsidizes the rent of low income families through the use of federal grants. This program is administered through the Maryland Community Development Administration and the Maryland

Rural Development Corporation by the Caroline County Department of Planning and Codes Administration.

Low Income Housing Tax Credit Program

The Federal Low-Income Housing Tax Credit, created by the Tax Reform Act of 1986 and extended by the Revenue Reconciliation Act of 1989, is designed to encourage private sector investment in the construction and rehabilitation of housing for low- and moderate-income families. The law gives states annual tax credit allocation based on population. CDA is the agency which allocates the state's tax credits on a competitive basis.

Infrastructure Program

The purpose of this program is to provide an efficient and economical means of access to capital markets in order to finance infrastructure projects to local governments. This program is administered through the Maryland CDA.

APPENDIX – Excerpt Goldsboro Zoning Ordinance

TABLE OF DIMENSIONAL REQUIREMENTS FOR PRINCIPAL AND ACCESSORY USES

ZONING DISTRICT	MINIMUM DEPTH OF FRONT YARD	MINIMUM WIDTH OF SIDE YARDS	MAXIMUM HEIGHT	GROSS DENSITY UNITS PER ACRE	MINIMUM LOT AREA	MINIMUM WIDTH OF LOT	MINIMUM PTH OF LOT
Neighborhood Conservation	20 feet	4.5 feet*	feet 3 stories	6	)00 square feet	50 feet	75 feet
R-1 Residential							
- Detached Single Family Dwelling	20 feet	5/10 feet*	feet 3 stories	6	)00 square feet	50 feet	75 feet
- Two-family dwelling	20 feet	5/10 feet*	feet 3 stories	6	000 square feet	100 feet	75 feet
Planned Unit Development (PUD)	Dimensional requirements for principle and accessory uses shall be as established in the approved development master plan.						
Neighborhood Business							
- Non-Residential Use	50 feet	15 feet*	feet 3 stories	2	000 square feet	100 feet	125 feet
- Detached Single Family Dwelling	20 feet	4.5 feet*	feet 3 stories	6	)00 square feet	50 feet	75 feet
- Two Family Dwelling	20 feet	4.5 feet*	feet 3 stories	6	000 square feet	100 feet	75 feet
I-1 Light Industrial	50 feet	25 feet*	50 feet 4 stories	1	43,560 square feet (1 acre)	200 feet	200 feet

* Two required. A total of 15 feet is required, with no one side yard less than 5 feet in width.

Table 17

APPENDIX: Population Projections

Goldsboro - Population Projections	Census 1970	Census 1980	Census 1990	Census 2000	Proj 2005	Proj 2010	Proj 2015	Proj 2020	Proj 2025	Proj 2030
Constant Share Method	231	188	185	216	227	247	270	292	313	334
Lowest Naïve Method (linear regression)	231	188	185	216	193	197	202	206	209	210
Highest Naïve Method (share of growth)	231	188	185	216	235	288	307	344	380	414
Avg All Naïve Methods	231	188	185	216	224	244	267	289	310	330
Avg All Naïve Methods (w/o High&Low)	231	188	185	216	228	249	272	295	316	337
Lowest Devp Pressure Method (00_05, .125 miles)	231	188	185	216	227	248	271	295	317	340
Highest Devp Pressure Method (97_05, .5 miles)	231	188	185	216	227	248	274	299	325	352
Avg Devp Pressure Methods	231	188	185	216	227	248	272	297	321	346
Avg Devp Pressure Methods (w/o High & Low)	231	188	185	216	227	248	272	297	321	348

Goldsboro - Household Projections	Census 1970	Census 1980	Census 1990	Census 2000	Proj 2005	Proj 2010	Proj 2015	Proj 2020	Proj 2025	Proj 2030
Constant Share Method	81	78	66	77	82	91	100	110	119	128
Lowest Naïve Method (linear regression)	81	78	66	77	70	72	75	77	79	81
Highest Naïve Method (share of growth)	81	78	66	77	85	96	114	129	144	159
Avg All Naïve Methods	81	78	66	77	81	90	99	108	118	127
Avg All Naïve Methods (w/o High&Low)	81	78	66	77	82	91	101	111	120	129
Lowest Devp Pressure Method (00_05, .125 miles)	81	78	66	77	82	91	101	111	121	130
Highest Devp Pressure Method (97_05, .5 miles)	81	78	66	77	82	91	102	112	124	135
Avg Devp Pressure Methods	81	78	66	77	82	91	101	111	122	133
Avg Devp Pressure Methods (w/o High & Low)	81	78	66	77	82	91	101	111	122	133

Source: Maryland Department of Planning

Table 18

APPENDIX: MDP Review Comments

Review Comments from the Maryland Department of Planning Draft Comprehensive Plan 2009 Update Town of Goldsboro

Overview

The Maryland Department of Planning (MDP) reviewed the draft Comprehensive Plan Update for the Town of Goldsboro dated July 2009. The draft plan was submitted for 60-day review in accordance with Article 66B of the Code of Maryland Regulations and was received by MDP on July 3, 2009. The 60-day review period ended on August 29, 2009. The Town has scheduled a public hearing on the draft plan for September 14, 2009 in accordance with §3.07(b)(1) of Article 66B.

MDP also reviewed the draft Plan for adequacy of the Water Resources Element (WRE) and Municipal Growth Element (MGE) in accordance with the requirements of House Bill (HB) 1141. The following are review comments from the Maryland Department of Planning.

General Comments on the Draft Comprehensive Plan

The annexation of the East Star tracts more than doubled the size of the Town of Goldsboro, however the draft Plan provides very little information on the background or planned future use of the site. Please provide more information so that a reader can clearly understand what is anticipated at this site.

The Town of Goldsboro has new or additional water and sewer service areas that were recently created through amendment to the North Caroline County Comprehensive Plan mainly to address public health concerns due to failing septic systems. The boundaries of these service areas incorporate the Town's municipal areas and surrounding County lands. The service areas outside of the Town limits coordinate with the Town's future growth areas, however the county lands that these new service areas include are not State certified Priority Funding Areas (PF A) but do include existing community sewerage systems and known areas of failing septic systems. There is additional County land that is vacant and not certified PF A. These areas are not eligible for water or sewer service from State funded infrastructure projects that increased capacities as of January 1, 1997. This funding restriction should be made clear in the Town's final Plan as reimbursement issues may affect local budgets. It has been discussed with the County that the County land inside of the service area limits will be designated as "receiving areas" within the County's TDR program.

A locator map early in the document indicating the location of the Town of Goldsboro within Caroline County would enhance the document for readers.

The maps on pages 32-36 and pages 46-48 are small and therefore unclear to the reader. Please consider enlarging these maps in the final Plan.

Inconsistent formatting throughout the draft Plan is distracting and interferes with the reader's ability to fully absorb the information presented.

MDP would suggest inclusion of a glossary of all relevant terms at the beginning of the document instead

of within the Municipal Growth Element chapter alone.

While the plan has included a detail analysis of potential impacts of the growth area on water and sewer capacities, the plan has not adequately addressed the implications this growth may have on other community facilities, such as police, fire, libraries, and schools. These should be addressed in the plan.

The "Existing Towns" discussion (page 11) might be better served appearing earlier in the "Land Use Plan" section (beginning on page 9) to provide the reader with a clear understanding of Towns discussed throughout the section.

The table on page 50 of the draft Plan highlights data from Henderson and County Area.

It appears that editing notes may have been left in the draft document on pages 51 and

Comments on the Municipal Growth Element

MDP has reviewed the Town's Municipal Growth Element and determined that, although some of the requirements of HB 1141 have been sufficiently addressed, the draft Plan in its current state does not meet all of the requirements of this legislation. The following comments identify revisions that should be considered for the final Plan in order to comply with this legislation.

The draft plan does not currently include population projections for the Town. HB1141 requires municipalities to include this information into their plans. This will be helpful in determining if there is the proper balance between land supply and population demand.

MDP understands that the Town's future growth is limited by water and sewer capacity, which is the basis for the four future growth scenarios presented. The draft plan states that the Town believes future water and sewer capacities planned for the Town are inefficient to accommodate the future growth area. It is difficult to determine the disparity between projected growth and the sewer and water allocations without a population projection for the Town.

While the plan has included a detail analysis of potential impacts of the growth area on water and sewer capacities, the plan has not adequately addressed the implications this growth may have on other community facilities, such as police, fire, libraries, and schools. These should be addressed in the plan.
Comments on the Development Capacity Analysis & Population Projections

The Town has done a good job including a capacity analysis for the corporate limits of the Town. However it is difficult to determine the overall impacts of the future growth areas. While the draft plan does provide estimated EDUs based on the four growth scenarios, these are for all land use types and include incorporated and unincorporated portions of the Town. The plan should include the total household capacity for the Growth Areas. It would be helpful if this information were presented in a chart prior to the discussion on the scenarios, this could include: the existing units in town and in the growth area and capacity in Town and for the growth area. It would also be helpful if the total acres of the growth area were included in the plan.

The plan states that scenario 3 or 4 (page 38) would represent a more realistic future for the Town; however, it is unclear how these scenarios relate to population projections. Including a population projection will allow the Town to determine the actual land needs for the horizon year of this plan. The

final Plan should identify the Town's preferred growth scenario. In the context of planning it is important to ensure there is a balance between land supply and demand.

- If a balance does not exist between land supply and demand then two scenarios will exists:

Provide too little land for development (be it greenfields, redevelopment, or infill), and the land cost will become too high or development may spill over to adjacent areas.

Provide too much land for development and it will tend to be used inefficiently. In addition, plans and growth controls will be marginalized· because there are an abundance of locational options for each new development.

Comments on the Water Resources Element

The Town of Goldsboro has met the majority of the WRE requirements ofHB1141; however, the WRE is incomplete. By addressing the following comments, the WRE will conform to the requirements of HB 1141. The most important comments to address are in **bold.** Those comments in bold must be adequately addressed for full compliance with State Law and the provisions to re-zone accordingly. The WRE does not yet effectively address the following purposes of the law and/or State guidance, as follows :

Identify suitable receiving waters and land areas to meet the stormwater management and wastewater treatment and disposal needs of existing and future development proposed in the land use element of the plan, considering available data provided by MDE (Section 1.03(iii), Article 66B).

The WRE should identify strategies to protect current and future water sources from pollution (MDP M&G 26, page 27).

The WRE should for each watershed, calculate the total forecasted nutrient load, which includes nutrient loads from current and future WWTP discharge, septic tanks, and stormwater runoff (MDP M&G 26, page 13).

The WRE should describe the alternative future development options for which nonpoint source and point source loading estimates were performed? Does the WRE make general findings for alternative land use options (MDP M&G 26, pages 39-40).

The WRE should include nonpoint source loading analyses that provide a preliminary assessment of potential changes in nonpoint source loads due to land use planning decisions (MDP M&G 26, pages 39-40).

General WRE comments:

• It would be helpful if the WRE made reference to the water and sewer quality and infrastructure discussion in the Community Facilities section (pages 101-104).

Comments on the Proposed Methods for Protecting Source Water

The WRE does not include proposed methods for protecting the Town's source water. This information must be added to the plan.

Comments on the Sewer Demand Analysis

The final Plan should note that the Caroline County Water and Sewer Plan has not been amended appropriately to date. The County is preparing the needed service area timing categories and service policies for amendment to the County's WSP to address the limits and restrictions within the service areas.

The WRE briefly mentions the use of spray irrigation (page 45). In order to determine the feasibility, the plan should also discuss the amount of storage lagoon capacity needed as well as the amount of land needed for the spray irrigation to occur.

There is an error in the sewer demand table on page 50. The figure in the "Total EDU's" column for the Henderson & County Area row is not the sum of the "EDU's in Initial Area Served" and the "Future EDU's" columns. Please clarify and correct this error.

On page 20 of the plan, it states that growth in Goldsboro will be limited to the total sewer allocation credited to the Town from the North County Sewer Allocation Agreement. However, growth scenarios 3 and 4 both have over 606 EDUs. Similarly, the table of initial and projected EDUs to be served by sewer on page 50 indicates that over 606 EDUs will need to be served. Please clarify how these scenarios will be possible since the projected demand is in excess of the allocation limits.

Please clarify whether the demand figures in the table on page 50 include both residential and non-residential demand.

Comments on Identifying Suitable Receiving Waters

The plan does not yet discuss the suitability of the receiving waters. Since TMDLs have not yet been established for the Upper Choptank Creek Watershed to date, the WRE should state that since TMDLs have not yet been set, it is not possible to discuss the suitability given the lack of information at this time. Please add this discussion to the plan.

The plan does not yet include a current or projected non-point source pollution forecast. Please add this to the plan.

The WRE should evaluate the forecasted pollution impacts (point and non-point source pollution combined). In this evaluation, at least two land use plan options (including growth areas) should be evaluated to determine which land use plan would have the least impact on receiving waters.

The plan mentions adding the calculated septic loads that will ultimately be removed when the WWTP comes on line (page 51). Please ensure that this data is in fact added to the WRE before adoption of the plan.

The Town should be commended for its thorough discussion of stormwater management. However, the plan makes reference to MDE's 2000 Stormwater Design Manual when in fact there are more recent, updated versions of this manual. Please update the plan to reflect the latest version of the manual.

Comments on the Transportation Element

As the Town grows, the need for public transportation may increase. The Town should include a transportation goal supporting public transportation. Perhaps, the Town should modify Goal 7 to include language supporting public transportation.

Many of the identified transportation issues are not addressed by Part 3Implementation Recommendations, e.g., the bridge crossing Tidy Island Creek, coordination with SHA on a potential streetscape improvement, the future status of the Chesapeake rail line, access management along state highways, and discouragement of strip developments. Specific recommendations addressing these issues should be included in Part 3.

As shown on the future town growth maps, several large areas adjacent to the Town are planned for growth. It is good that Recommendation # 2 addresses the need for ensuring adequate local and county transportation facilities are in place to support planned growth. Please note that such a large scale growth planned by the town will also affect state roads as well. We suggest the Town consider requiring developers to assess the impact of development on state routes as part of a traffic impact study and work with the State Highway Administration to address any improvement needed for accommodating development. Recommendation # 2 should address the need and responsibility for improving state routes to support planned development.

Comments on the Education Element

_. The Town's Comprehensive Plan is generally consistent with Caroline County's 2009 Educational Facilities Master Plan. Students living in the Town of Goldsboro attend Greensboro Elementary, Lockerman Middle and North Caroline High Schools. These schools are located outside of the Town's boundary area.

On page 100 of the Chapter 11: Communities Facilities section of the Comp Plan it reads "the primary need in the North County region is community water supply and wastewater treatment facilities." The Town's continued collaboration with the North County Water and Sewer Authority will be essential to ensure that a timeline for the construction of a sewage treatment facility is developed and implemented.

The 2009 EFMP indicates that when a new sewage treatment facility is built and development occurs, a new school will be needed to accommodate the anticipated overcrowded conditions at Greensboro Elementary School. We would encourage representatives from the North County area to begin working with their County's Local Educational Agency to "land bank" a school site.

Town officials are encouraged to review MDP publications, Smart *Growth, Community Planning and Public School Construction Models and Guidelines,* and consider adopting measures that promote:

- o "Land Banking" for school sites that are community-centered and sized to fit that community;
- o Ability to maximize walking and biking to the school
- o Schools located in close distance to potential parks, libraries, museums and other public facilities that offer opportunities for co-location and shared use of school facilities;
- o An estimate of future transportation costs associated with the school site;
- o The proximity of residential development and village centers to the school site that encourages walking and biking;
- o Completeness of the local sidewalks, biking routes and/or trail network that will serve the school and reduce Vehicle Miles Traveled (VMT) as well as promote student health arid fitness.

APPENDIX: Response to MDP Comments

Town of Goldsboro:
Proposed responses to State review comment

General Comment: All State comments suggesting that the Town has not fulfilled HB 1141 are merely opinions that lack substantive facts, data, or policy reasons in support of the opinions. On the other hand, the Town's WRE and MGE provide facts, data, and policy reasons that support the conclusions and recommendations of each element.

State comments also ignore the obvious consequences of not following thru with the MGE and WRE as drafted: that is, if growth is not accommodated in Town, the alternative is growth on well and septic in the County, which will have severe land use and environmental consequences.

State comments also ignore the long history of common understanding between Caroline and Goldsboro as to future land uses and pubic services in and around the Town. Also ignored is the fundamental reality that there are existing intergovernmental agreements that required years to adopt that lay out the future process and limits on growth and growth management in Northern Caroline County, irrespective of models and guidelines prepared by State agencies to assist jurisdictions that required help in addressing intense growth pressures evident in the State's urbanized western shore counties.

The Town's Burden of Proof: HB 1141 requires that the Town prepare two new Elements. It is the Town's responsibility to determine the content and direction of these new elements. The Town may not be arbitrary or capricious, but the Town is not bound by the burden to follow unsubstantiated State opinions, nor is the Town required to follow even substantiated opinions as long as the issue at hand is at least "fairly debatable." The fairly debatable standard requires that the Town at least have some evidence to support it decisions. The Town has plenty of facts and policy bases in the draft elements to support Town approval and adoption of the elements, consistent with HB 1141.

The Municipal Growth Element only requires that eleven topics "be considered." The Town's MGE has a full discussion of each topic and thus, the burden of "consideration" has been met. Note that HB 1141 says nothing about how each of the 11 considerations should be evaluated or assessed. HB114 does not provide any special definitions or criteria or standards for any of the 11 considerations. Using "population growth" as an example, the draft MGE discusses past trends, future projections, and makes a rational decision to try to capture more growth. Numerous policy reasons are also given. Nothing in HB1141 (or found in the land use planning profession) says that the future must abide by past trends. If the past determines the future, then the exercise of planning for a more robust future is useless.

The State commented that the Growth Area is too big. Again, no facts are given as to the problem or evil associated with being too big, or as to the appropriate size. The State thinks that

having too much land for growth is just as bad as not having enough land. But in fact, a local government that does not have enough land for growth has failed in its primary duty and is guilty of misfeasance. A local government that has too much land is, at worst, creating a possibility for more difficult land management, and at best is acting strategically. In other words, having not enough is far worse than having too much. The draft MGE gives several facts and policy reasons for the size of the Growth Area, and the State comments offer no facts that explain why "too much land" is a problem. The Town has several tools for managing growth in a large growth area including the "consistency" rule, adequate facility standards, functional planning, zoning powers, and permit processes.

The problem with trying to determine the right size of the growth area is that the right size can easily become the wrong size for a number of reasons:

- Caroline County could, in the future, adopt a non-growth policy.
- Caroline could enact moratoria on growth for a number of reasons
- The land owners slated by the Town for growth may simply decide that they don't want to develop in the time frame required to accommodate growth (this is why its wise to have a healthy supply of possible growth sites)
- The MD Court of Appeals frowns on using the police power on the basis of a lack of economic need. The Court recognizes the value of competiveness and the dangers of vesting windfalls to just a few properties.
- The draft MGE takes the rational position of having a supply-to-demand ratio that is on par with Caroline County in order to create a degree of competitiveness (again, the more growth accommodated in Town, the less potential for adverse impacts on land resources and water quality).

Population projections have been added. They were prepared by the Maryland Department of Planning, were considered and discussed during the drafting of the Plan, and discarded as not adding meaningful content to the Plan. The projections prepared by the Maryland Department of Planning are based on a variety of formulas that yield very little difference and as a result, any of them could be chosen as a "target" projection. However, due to the very small numbers involved, statistical robustness inevitably comes into question, and one could argue that one number is as good as any other number. Accordingly, Goldsboro selects the Average Development Pressure method.

Article 66b indicates that population projections shall be "considered" as one of eleven topics during the preparation of a Municipal Growth Element. Goldsboro sees no requirement to pick some theoretical projection and then base it entire Plan around that target number. Population projections for Goldsboro (and the other small towns of northern Caroline County) are problematic at best and almost meaningless for practical purposes. Growth will either occur or not occur based upon whether public sewer service is provided or not. No additional development will be approved by Caroline County Health Department on individual septic systems within the Town of Goldsboro. The amount of *potential* growth in North Caroline County has already been allocated to each jurisdiction based upon the North County Water and Sewer Authority allocation agreement.

Based on the sewer allocation agreement, Goldsboro can expect 606 edu's which would result in a population cap of 1,448 persons assuming 2.39 persons per dwelling unit (using MDP's projected 2030 household size).

The probability of Goldsboro growing to that degree over the next twenty years is dependant upon forces beyond the Tow's control: The national, State, and local economies; the speed with which Chaney Enterprises determines to extract mineral resources (and rehabilitate their site with residential development); and the ultimate decisions with regard to provision of public sewer services.

These issues have been adequately addressed in this Comprehensive Plan and are subject to review and revision based on new and additional information that will be developed in the coming years. In any regard, the ongoing comprehensive planning process requires a comprehensive review of the Plan every six years. Accordingly, Goldsboro defers the discussion of "population projections" until such time as better information is available and realistic projections are more feasible.