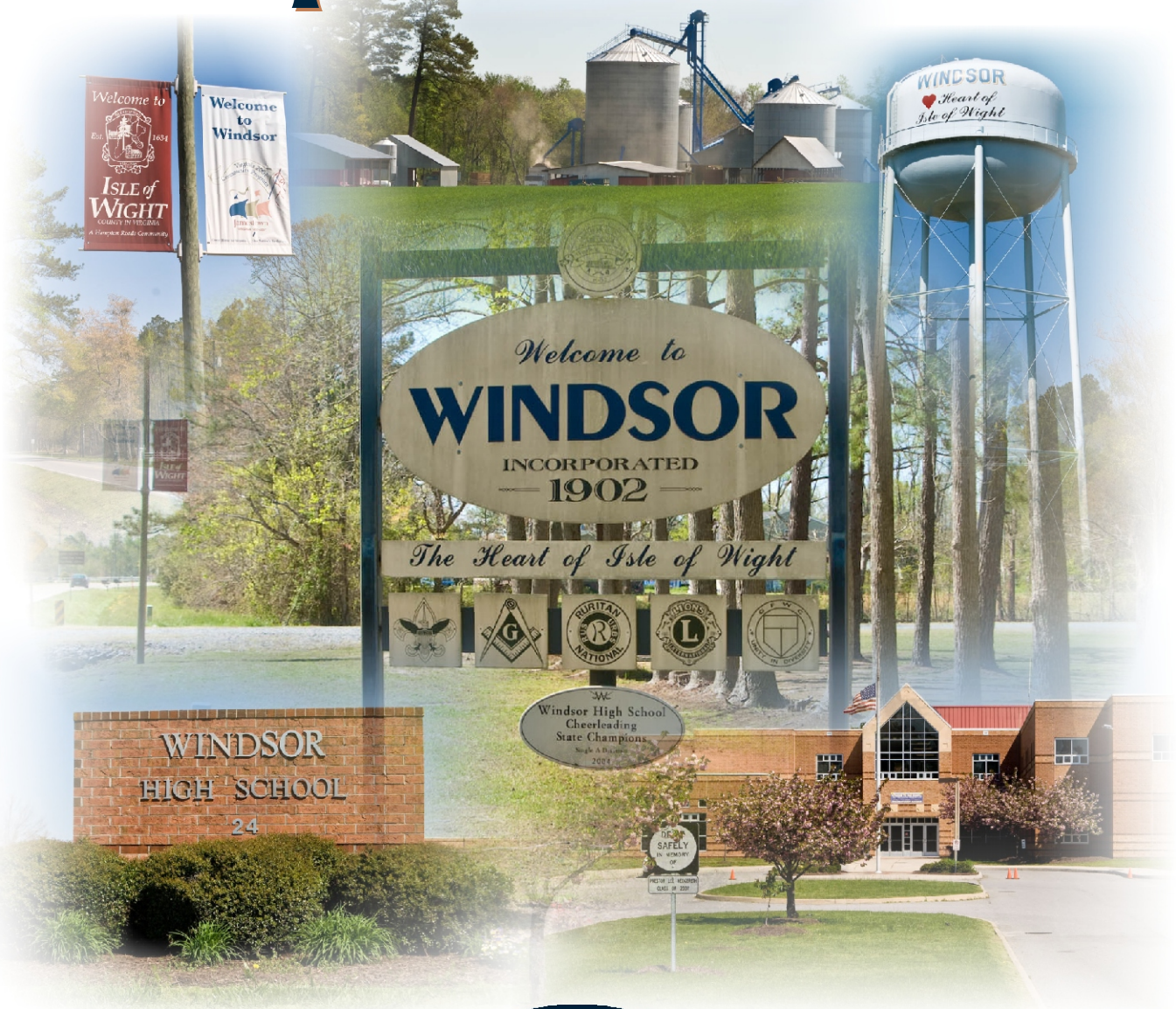


# Town of **Windsor** Comprehensive Plan



**September 2008**

PEP 08-04

## **HAMPTON ROADS PLANNING DISTRICT COMMISSION**

### **CHESAPEAKE**

AMAR DWARKANATH  
WILLIAM E. HARRELL  
CLIFTON E. HAYES, JR  
\* ALAN P. KRASNOFF  
ELLA P. WARD

### **FRANKLIN**

\* JUNE FLEMING  
ROSA M. LAWRENCE

### **GLOUCESTER COUNTY**

ROBERT A. CREWE  
\* BRENDA G. GARTON

### **HAMPTON**

\* RANDALL A. GILLILAND  
JESSE T. WALLACE, JR.  
MOLLY JOSEPH WARD

### **ISLE OF WIGHT COUNTY**

W. DOUGLAS CASKEY  
\* STAN D. CLARK

### **JAMES CITY COUNTY**

\* BRUCE C. GOODSON  
SANFORD B. WANNER

### **NEWPORT NEWS**

\* JOE S. FRANK  
RANDY W. HILDEBRANDT  
SHARON P. SCOTT

### **NORFOLK**

ANTHONY L. BURFOOT  
\* PAUL D. FRAIM  
DR. THERESA W. WHIBLEY  
REGINA V.K. WILLIAMS  
BARCLAY C. WINN

### **POQUOSON**

\* CHARLES W. BURGESS, JR.  
GORDON C. HELSEL, JR.

### **PORTSMOUTH**

KENNETH L. CHANDLER  
\* DOUGLAS L. SMITH

### **SOUTHAMPTON COUNTY**

ANITA T. FELTS  
\* MICHAEL W. JOHNSON

### **SUFFOLK**

\* SELENA CUFFEE-GLENN  
LINDA T. JOHNSON

### **SURRY COUNTY**

\* TYRONE W. FRANKLIN  
JOHN M. SEWARD

### **VIRGINIA BEACH**

HARRY E. DIEZEL  
ROBERT DYER  
BARBARA M. HENLEY  
\* LOUIS R. JONES  
MEYERA E. OBERNDORF  
JAMES K. SPORE  
JOHN E. UHRIN

### **WILLIAMSBURG**

\* JACKSON C. TUTTLE, II  
JEANNE ZEIDLER

### **YORK COUNTY**

\* JAMES O. McREYNOLDS  
THOMAS G. SHEPPERD, JR.

\*EXECUTIVE COMMITTEE MEMBER

## **PROJECT STAFF**

DWIGHT L. FARMER

EXECUTIVE DIRECTOR/SECRETARY

JOHN M. CARLOCK, AICP  
ERIC J. WALBERG, AICP  
CLAIRE JONES, AICP  
SARA J. KIDD, GISP

DEPUTY EXECUTIVE DIRECTOR  
PRINCIPAL PHYSICAL ENVIRONMENTAL PLANNER  
PHYSICAL AND ENVIRONMENTAL PLANNER  
ENVIRONMENTAL GIS PLANNER

FRANCES D. HUGHEY

ADMINISTRATIVE ASSISTANT

ROBERT C. JACOBS  
MICHAEL R. LONG  
CHRISTOPHER W. VAIGNEUR

GENERAL SERVICES MANAGER  
ASSISTANT GENERAL SERVICES MANAGER  
REPROGRAPHIC COORDINATOR

**MEMBERS OF THE WINDSOR  
TOWN COUNCIL**

**2007-2008**

Mr. Marvin A. Crocker, Jr., Mayor  
Mr. William L. Jones, Vice-Mayor  
Mr. Leonard B. Alphin  
Mr. J. Clinton Bryant  
Mr. Wesley F. Garris  
Mr. Kenneth N. Johnson  
Ms. Carita J. Richardson

**2008-2009**

Mr. Marvin A. Crocker, Jr., Mayor  
Mr. William L. Jones, Vice-Mayor  
Mr. J. Clinton Bryant  
Mr. Wesley F. Garris  
Ms. Carita J. Richardson  
Mr. Durwood V. Scott  
Mr. Greg Willis

**MEMBERS OF THE WINDSOR  
PLANNING COMMISSION**

**2007-2008**

Mr. Bennie G. Brown, Chairman  
Mr. Kenneth N. Johnson, Vice  
Chairman  
Ms. Michelle M. Harper  
Mr. Leonard L. Marshall, Jr.  
Mr. Danny Meadows  
Mr. William G. Saunders, IV  
Mr. George L. Stubbs  
Mr. G. Devon Hewitt

**2008-2009**

Mr. Bennie G. Brown, Chairman  
Mr. Leonard L. Marshall, Jr., Vice  
Chairman  
Ms. Michelle M. Harper  
Mr. G. Devon Hewitt  
Ms. Carita J. Richardson  
Mr. William G. Saunders, IV  
Mr. George L. Stubbs

Mr. Kurt A. Falkenstein, Town Manager  
Mr. John L. Rowe, Jr., Interim Town Manager  
Mr. Michael Stallings, Planning and Zoning Administrator

**ACKNOWLEDGEMENTS**

The staff of the Hampton Roads Planning District Commission wishes to acknowledge the cooperation and assistance extended by the officials and staff of the Town of Windsor.

**Cover photos by Sara Kidd, HRPDC**

# **THE TOWN OF WINDSOR COMPREHENSIVE PLAN 2008**

**Adopted by the Windsor Town Council  
September 9, 2008**

**Preparation of this Plan was included in the  
Hampton Roads Planning District Commission  
Unified Planning Work Program for  
FY 2007-2008, approved by the Commission at its  
Executive Committee Meeting of March 21, 2007.**

**Prepared by the staff of the  
Hampton Roads Planning District Commission**

**September 2008**

## TABLE OF CONTENTS

|  |     |
|--|-----|
| INTRODUCTION – The Town of Windsor .....                                     | iv  |
| Location.....  | iv  |
| Scope and Purpose of Plan .....  | v   |
| <br>CHAPTER 1 – POPULATION .....   |     |
| Introduction .....   | 1-1 |
| Population Trends .....  | 1-1 |
| Population Characteristics .....   | 1-2 |
| Households .....   | 1-3 |
| Population Estimates and Projections.....                                    | 1-4 |
| <br>CHAPTER 2 – HOUSING .....  |     |
| Introduction .....   | 2-1 |
| Housing Inventory .....  | 2-1 |
| Housing Conditions and Occupancy .....                                       | 2-2 |
| Rental Housing.....  | 2-3 |
| Housing Distribution and Age.....  | 2-3 |
| Historic Resources .....   | 2-4 |
| Affordable Housing.....  | 2-4 |
| Workforce Housing Units .....  | 2-5 |
| Housing Projections .....  | 2-6 |
| <br>CHAPTER 3 – ECONOMY .....  |     |
| Introduction .....   | 3-1 |
| Labor Force and Employment.....  | 3-3 |
| Private Sector Employment.....   | 3-4 |
| Government Employment .....  | 3-5 |
| Income and Poverty .....   | 3-6 |
| <br>CHAPTER 4 – TRANSPORTATION .....   |     |
| Introduction .....   | 4-1 |
| Existing Roadway System.....   | 4-1 |
| Isle of Wight County Pedestrian and Bicycle Facilities Master Plan .....     | 4-2 |
| Other Transportation Systems .....   | 4-2 |
| Future Conditions and Planned Improvements to the Transportation System..... | 4-3 |
| <br>CHAPTER 5 – COMMUNITY FACILITIES .....                                   |     |
| Introduction .....   | 5-1 |
| Local Government.....  | 5-1 |
| Public Safety .....  | 5-1 |
| Health Care .....  | 5-2 |
| Public Schools.....  | 5-3 |
| Libraries .....  | 5-3 |
| Parks and Recreation.....  | 5-4 |
| Solid Waste Management .....   | 5-4 |
| Water and Wastewater Facilities.....   | 5-4 |
| <br>CHAPTER 6 – ENVIRONMENT .....  |     |
| Introduction .....   | 6-1 |
| Climate .....  | 6-1 |
| Air Quality.....   | 6-2 |

## TABLE OF CONTENTS (Continued)

|   |      |
|---|------|
| Physical Constraints to Development .....                                   | 6-3  |
| Flood Prone Areas and Steep Slopes.....                                     | 6-3  |
| Wetlands and Hydric Soils .....   | 6-4  |
| Existing Wetland Protection Policies.....                                   | 6-5  |
| Public/Private Water Access .....   | 6-5  |
| Highly Erodible/Highly Permeable Soils.....                                 | 6-6  |
| Soil Suitability for Septic Systems.....                                    | 6-6  |
| Forest and Farmland.....  | 6-6  |
| Water Quality .....   | 6-7  |
| Redevelopment.....  | 6-7  |
| Surface Water Resources .....   | 6-8  |
| Ground Water – Protection of Potable Water Supply.....                      | 6-8  |
| Sources of Potable Water .....  | 6-8  |
| Ground Water Framework.....   | 6-9  |
| Ground Water Recharge Areas.....  | 6-11 |
| Topographic Analysis of Localized Ground Water Recharge and Discharge ..... | 6-12 |
| Ground Water Quality .....  | 6-12 |
| Potential Ground Water Pollution Sources.....                               | 6-13 |
| CHAPTER 7 – LAND USE  |      |
| Introduction .....  | 7-1  |
| Isle of Wight County Land Use.....  | 7-1  |
| Land Use in Windsor.....  | 7-2  |
| Future Land Use .....   | 7-4  |
| CHAPTER 8 – GOALS AND IMPLEMENTATION STRATEGIES                             |      |
| Introduction .....  | 8-1  |
| Guide for Land Use Decision Making.....                                     | 8-1  |
| Goals, Objectives, and Implementation Strategies .....                      | 8-3  |
| Environment .....   | 8-3  |
| Land Use.....   | 8-9  |
| Economic Development .....  | 8-11 |
| Transportation .....  | 8-12 |
| Public Facilities .....   | 8-12 |
| Housing and Community Development.....                                      | 8-13 |

## **LIST OF FIGURES**

|  |     |
|--|-----|
| Figure 1-1: Racial Distribution, Western Tidewater Region .....  | 1-3 |
| Figure 1-2: Population Estimates, Western Tidewater Region ..... | 1-4 |
| Figure 1-3: Population Estimates, Town of Windsor .....          | 1-5 |
| Figure 1-4: Projected Population Growth, Town of Windsor .....   | 1-6 |
| Figure 3-1: Annual Percentage Change in Gross Product.....       | 3-1 |
| Figure 3-2: Indexed Employment, Hampton Roads, Virginia .....    | 3-2 |
| Figure 3-3: Per Capita Incomes .....                             | 3-3 |
| Figure 3-4: Labor Force and Employment .....                     | 3-4 |
| Figure 3-5: Median Household Income, 1999 .....                  | 3-6 |

## **LIST OF TABLES**

|  |      |
|--|------|
| Table 1-1: Population Estimates, Western Tidewater Region .....    | 1-2  |
| Table 2-1: Housing Stock.....                                      | 2-1  |
| Table 2-2: Building Permit Activity, Western Tidewater Region..... | 2-4  |
| Table 3-1: Twenty Largest Employers, Isle of Wight County .....    | 3-5  |
| Table 4-1: Daily Traffic Volumes .....                             | 4-1  |
| Table 5-1: Water Supply System .....                               | 5-5  |
| Table 6-1: Hampton Roads Area Ozone Monitors .....                 | 6-2  |
| Table 6-2: Leaking Underground Storage Tanks .....                 | 6-14 |

## **LIST OF MAPS**

|  |      |
|--|------|
| Map 1-1: Total Population (Estimated) in 2000.....                     | 1-7  |
| Map 1-2: Number of Households (Estimated) in 2000 .....                | 1-8  |
| Map 1-3: Estimated Population Change in Hampton Roads, 2000-2030 ..... | 1-9  |
| Map 4-1: Primary Road Network.....                                     | 4-6  |
| Map 4-2: Daily Traffic Volumes .....                                   | 4-7  |
| Map 4-3: Proposed Route 460 Alignment.....                             | 4-8  |
| Map 6-1: Floodplains and Steep Slopes .....                            | 6-15 |
| Map 6-2: Wetlands and Hydric Soils .....                               | 6-16 |
| Map 6-3: Chesapeake Bay Preservation Areas .....                       | 6-17 |
| Map 6-4: Soil Types .....  | 6-18 |
| Map 7-1: Current Land Use .....  | 7-6  |
| Map 7-2: Zoning Districts .....  | 7-7  |
| Map 7-3: Future Land Use .....   | 7-8  |



## INTRODUCTION

### The Town of Windsor

The land that later became known as the Town of Windsor was first conveyed as early as 1681 by land grants from the King of England. The area was surrounded by tributaries from Corrowaugh Swamp, Beaver Dam Swamp, and Ennis Pond. It was known locally as Frog Level because of the abundance of small frogs living in the heavy wet soils found around the area.

The Town of Windsor began its existence in 1852 when Corrowaugh was established as a post office. Mail was brought once a week by courier until 1859 when the contract for mail service was given to the Norfolk & Petersburg Railroad (now Norfolk Southern). Subsequently, the railroad built a depot at Corrowaugh and called it Windsor Station.

Organization by local merchants interested in fair taxation led to the granting of a town charter by the General Assembly on March 15, 1902 and Windsor Station became the Town of Windsor, Virginia. The main road through town is U.S. Route 460, which was opened in 1929.<sup>1</sup>



The Town of Windsor grew slowly over the next century, making public improvements and expanding town government to meet the needs of its citizens. The most significant change to the Town came on July 1, 2001, when the Commonwealth of Virginia approved Windsor's request to annex 2.82 square miles of Isle of Wight County. As a result, the Town expanded in size from 1 square mile to 3.82 square miles and increased the population to over 2,300 people. The Town of Windsor is also modernizing and diversifying its economy. New residents and new economic development projects promise to help the Town continue to evolve in the 21<sup>st</sup> century.

### Location

The Town of Windsor is located in eastern Isle of Wight County, approximately 2.5 miles west of the City of Suffolk and about 30 miles from the center of the Hampton Roads

---

<sup>1</sup> Source: Judith S. Robinson, Town Recorder (Town of Windsor Comprehensive Plan, 2003).



metropolitan area. The Town is located at the crossroads of two major highways: U.S. Route 460 and U.S. Route 258. U.S. 460 provides Windsor with a direct connection to both Hampton Roads and the Richmond-Petersburg metropolitan area, about 60 miles to the west. U.S. 258 links Windsor with Isle of Wight Courthouse and the Town of Smithfield to the north and with the City of Franklin to the south.

## **Scope and Purpose of Plan**

The local planning commission shall prepare and recommend a comprehensive plan for the physical development of the territory within its jurisdiction and every governing body shall adopt a comprehensive plan for the territory under its jurisdiction.

In the preparation of a comprehensive plan the commission shall make careful and comprehensive surveys and studies of the existing conditions and trends of growth, and of the probable future requirements of its territory and inhabitants. The comprehensive plan shall be made with the purpose of guiding and accomplishing a coordinated, adjusted and harmonious development of the territory which will, in accordance with present and probable future needs and resources, best promote the health, safety, morals, order, convenience, prosperity and general welfare of the inhabitants.

The comprehensive plan shall be general in nature, in that it shall designate the general or approximate location, character, and extent of each feature shown on the plan and shall indicate where existing lands or facilities are proposed to be extended, widened, removed, relocated, vacated, narrowed, abandoned, or changed in use as the case may be.

### *Mandatory Review*

At least once every five years the comprehensive plan shall be reviewed by the local planning commission to determine whether it is advisable to amend the plan.

### *Inclusion of Adjacent Territories*

Any municipal plan may include the planning of adjacent unincorporated territory to the extent to which, in the municipal local planning commission's judgment, it is related to the planning of the incorporated territory of the municipality. However, the plan shall not be considered as a comprehensive plan for such unincorporated territory unless recommended by the county commission and approved and adopted by the governing body of the county.

### *Legal Status*

Whenever a local planning commission recommends a comprehensive plan or part thereof for the locality and such plan has been approved and adopted by the governing body, it shall control the general or approximate location, character and extent of each feature shown on the plan. Thereafter, unless a feature is already shown on the adopted master

plan or part thereof or is deemed so under subsection D, no street or connection to an existing street, park or other public area, public building or public structure, public utility facility or public service corporation facility other than railroad facility, whether publicly or privately owned, shall be constructed, established or authorized, unless and until the general location or approximate location, character, and extent thereof has been submitted to and approved by the commission as being substantially in accord with the adopted comprehensive plan or part thereof.<sup>2</sup>

---

<sup>2</sup> Title 15.2, Chapter 22, *Planning, Subdivision of Land and Zoning*, Code of Virginia.

## **CHAPTER 1 - POPULATION**

### **Introduction**

The character and dynamics of a locality's population are often good predictors of future development patterns and can act as valuable planning tools for a community making decisions related to growth. Future land use patterns are based, in part, on the trends seen in the existing community and involve an assessment of the need for housing, infrastructure, and other services.

This chapter examines the most recent population estimates, population growth trends, and household information for the Town of Windsor using data from the U.S. Census Bureau, the Hampton Roads Planning District Commission, and local records. Windsor is a community located in a traditionally rural county at the intersection of two important transportation corridors connecting Hampton Roads with points to the west. The Town is part of the Western Tidewater portion of the Hampton Roads Planning District Commission region, which also includes the cities of Franklin and Suffolk and the counties of Isle of Wight, Southampton, and Surry. The region is generally experiencing significant growth and, in order to understand the dynamics affecting growth and development within the Town of Windsor, this chapter also examines regional population trends.

### **Population Trends**

Most of the localities in the Western Tidewater region experienced significant population growth throughout the period from 1970 to 2000 (Table 1-1). During that time, both Isle of Wight County and the neighboring City of Suffolk saw significant population growth, with increases of 55% and 41%, respectively. In addition, both Surry County and the City of Franklin experienced strong population growth ranging from 16% to 21%. The 2000 Census figures indicate that the Town of Smithfield had the largest population increase in the region, up 133% since 1970. This increase included about 350 residents brought into the Town as part of an annexation of territory from Isle of Wight County in 1998. The only exception to the growth pattern in the region was Southampton County, which lost approximately 6% of its population from 1970 to 2000.

The Town of Windsor is one of two incorporated towns located within fast-growing Isle of Wight County. The other is the Town of Smithfield, which is located in the northeastern part of the County. In addition to the two towns, Isle of Wight County has an unincorporated population center located in its southwestern corner, just to the east of the City of Franklin. The towns of Windsor and Smithfield have each annexed property from the County in recent years, resulting in dramatic population increases for the former. The 2000 Census, which took place before the 2001 annexation of property by the Town of Windsor, reported a total population of 916, a loss of approximately 11% of the 1990 population (1,025). Map 1-1 illustrates the distribution of the total population

for the Town of Windsor and the surrounding area in 2000. The 2001 annexation added approximately 1,430 residents to the Town, an increase of 129% over the 1990 population.

| <b>TABLE 1-1<br/>POPULATION ESTIMATES<br/>WESTERN TIDEWATER REGION</b> |             |             |             |                     |                                     |
|--|-------------|-------------|-------------|---------------------|-------------------------------------|
|  | <b>1970</b> | <b>1980</b> | <b>1990</b> | <b>2000</b>         | <b>Percent Change<br/>1970-2000</b> |
| Town of Windsor  | 685         | 985         | 1,025       | 2,347 <sup>1</sup>  | 242.6%                              |
| Franklin City  | 6,880       | 7,308       | 7,864       | 8,346               | 21.3%                               |
| Isle of Wight County   | 18,285      | 21,603      | 25,053      | 28,298 <sup>2</sup> | 54.8%                               |
| Town of Smithfield   | 2,713       | 3,718       | 4,686       | 6,324               | 133.1%                              |
| Southampton County   | 18,582      | 18,731      | 17,550      | 17,482              | -5.9%                               |
| Suffolk City   | 45,024      | 47,321      | 52,143      | 63,677              | 41.4%                               |
| Surry County   | 5,882       | 6,046       | 6,145       | 6,829               | 16.1%                               |

Source: U.S. Bureau of the Census, 2000 Census of Population and Housing.

1: Includes approximately 1,430 persons annexed from Isle of Wight County in 2001.

2: Excludes approximately 1,430 persons annexed from Isle of Wight County in 2001.

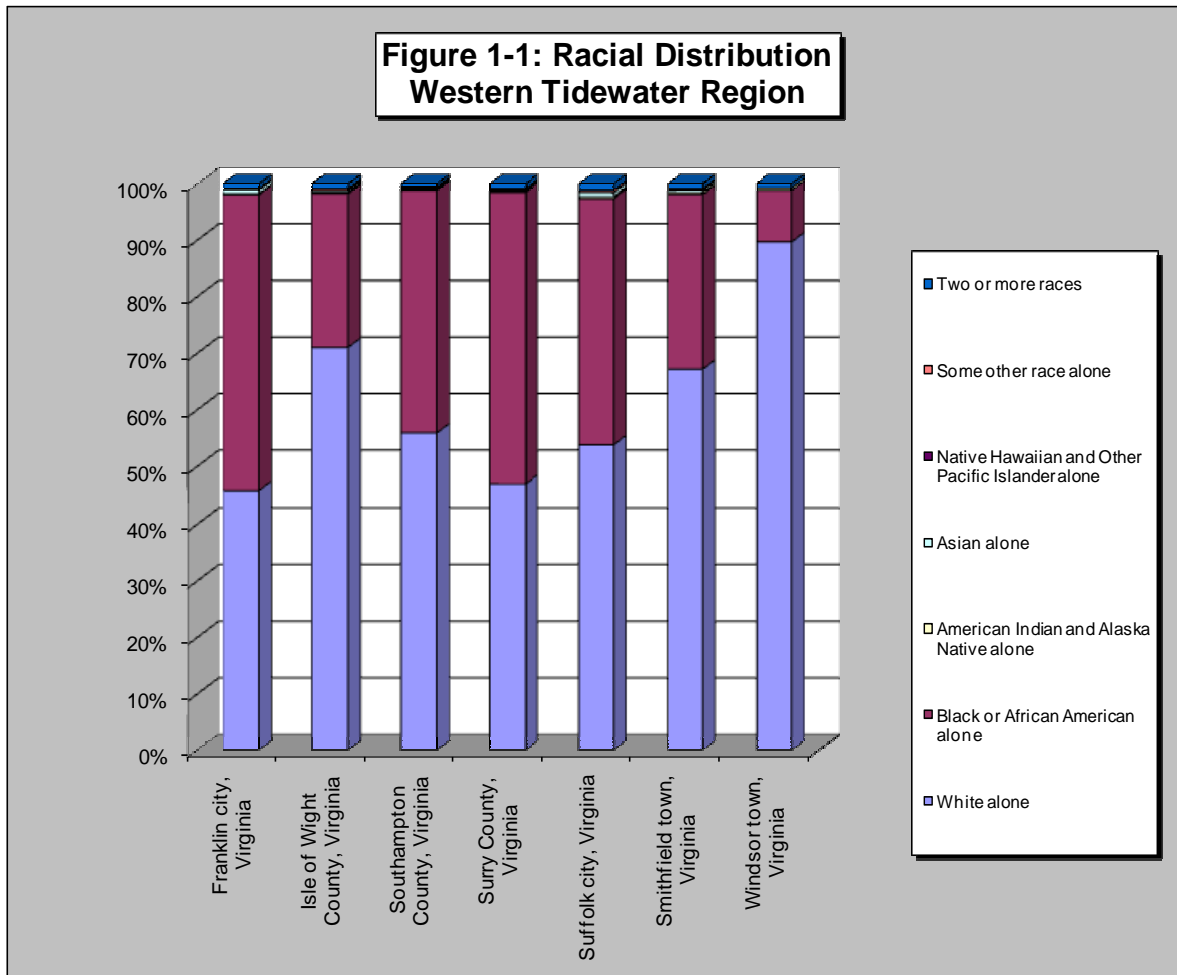
## Population Characteristics

### *Age and Race*

Residents of the Western Tidewater region are older than average when compared to the state and the nation as a whole. The 2000 Census showed that all of the localities in the region had higher median ages than both the state and nation. The median age in the Western Tidewater region in 2000 varied from a low of 36 years in Suffolk to a high of 39.9 years in Franklin. The median age of Windsor residents was 38.0 years in 2000, which is slightly below average for Western Tidewater. By comparison, Virginia residents had a median age of 35.7 years in 2000 while the national median age was 35.3 years.

U.S. Census Bureau data indicated that the Town of Windsor had a less racially diverse population than other localities in Western Tidewater. The population of Windsor was 89% white according to the 2000 Census, while other populations in the region showed significantly greater racial diversity with white populations ranging from only 46% in Franklin to 71% in Isle of Wight County as a whole (including Windsor). Minority populations in both the Town and region consisted primarily of African American residents, with all areas reporting small numbers of

Asian, American Indian, and other minority groups. Figure 1-1 illustrates the racial distribution of populations in the Western Tidewater region in 2000.



### *Marital Status and Families*

The 2000 Census indicated that 58% of Windsor residents 15 years old and older were married, excluding those who were separated from their spouses. The percentage of married residents in Western Tidewater varied from 48% of the population in Franklin to 61% in Isle of Wight County. Never married residents 15 years and older accounted for about 19% of the population in Windsor, the lowest percentage in the region. Widowed residents accounted for about 10% of the population.

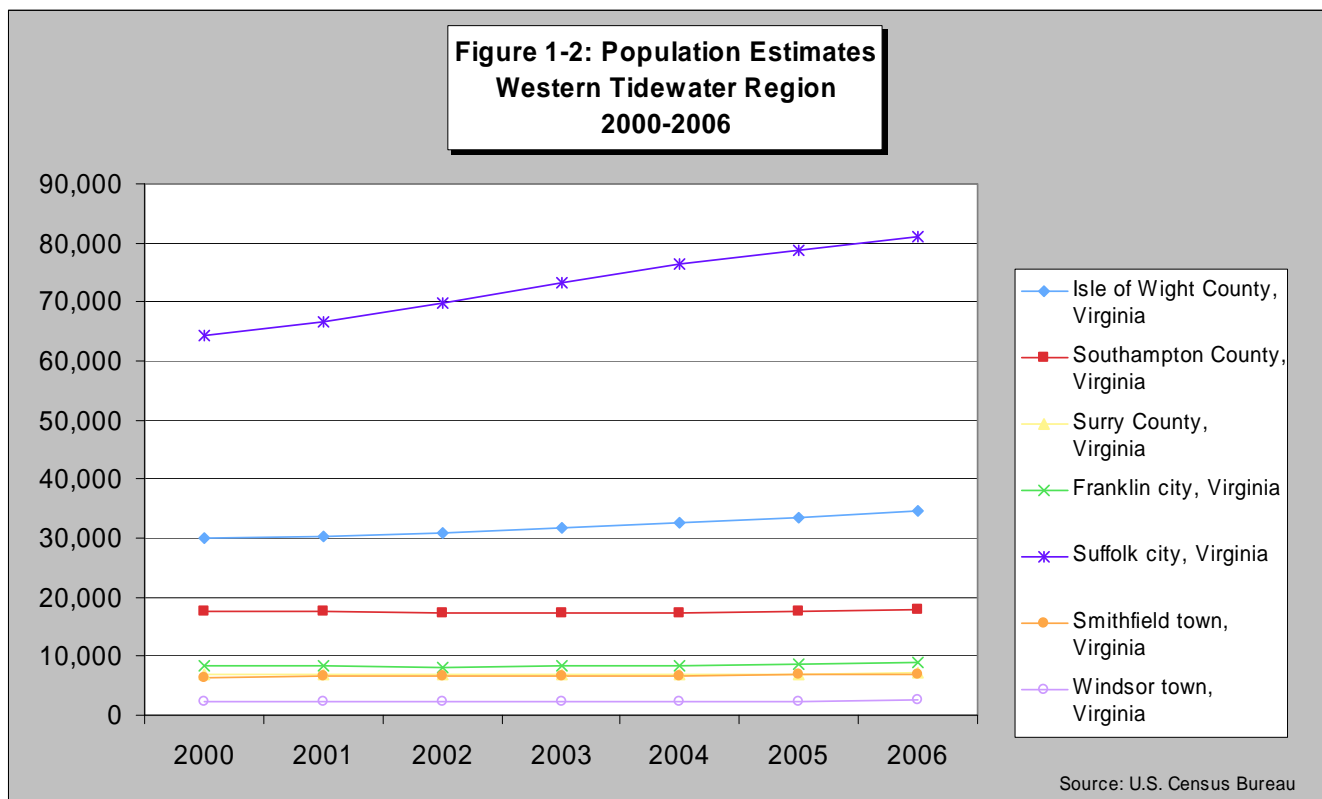
### **Households**

According to the 2000 Census, there were 389 households in the Town of Windsor with an average household size of 2.35 persons – the smallest in the region. Family households accounted for an average of approximately 73% of all households in the Western Tidewater region in 2000, and approximately 69% of

all households in the Town of Windsor. Traditional married couple families accounted for 76% of all family households in the Town while single-parent households accounted for approximately 14% of all family households. Households made up of single adults living alone made up about 28% of the total households in the Town and an average of 24% of all the households in the region. Map 1-2 illustrates the distribution of households in the Town of Windsor and the surrounding area in 2000.

## Population Estimates and Projections

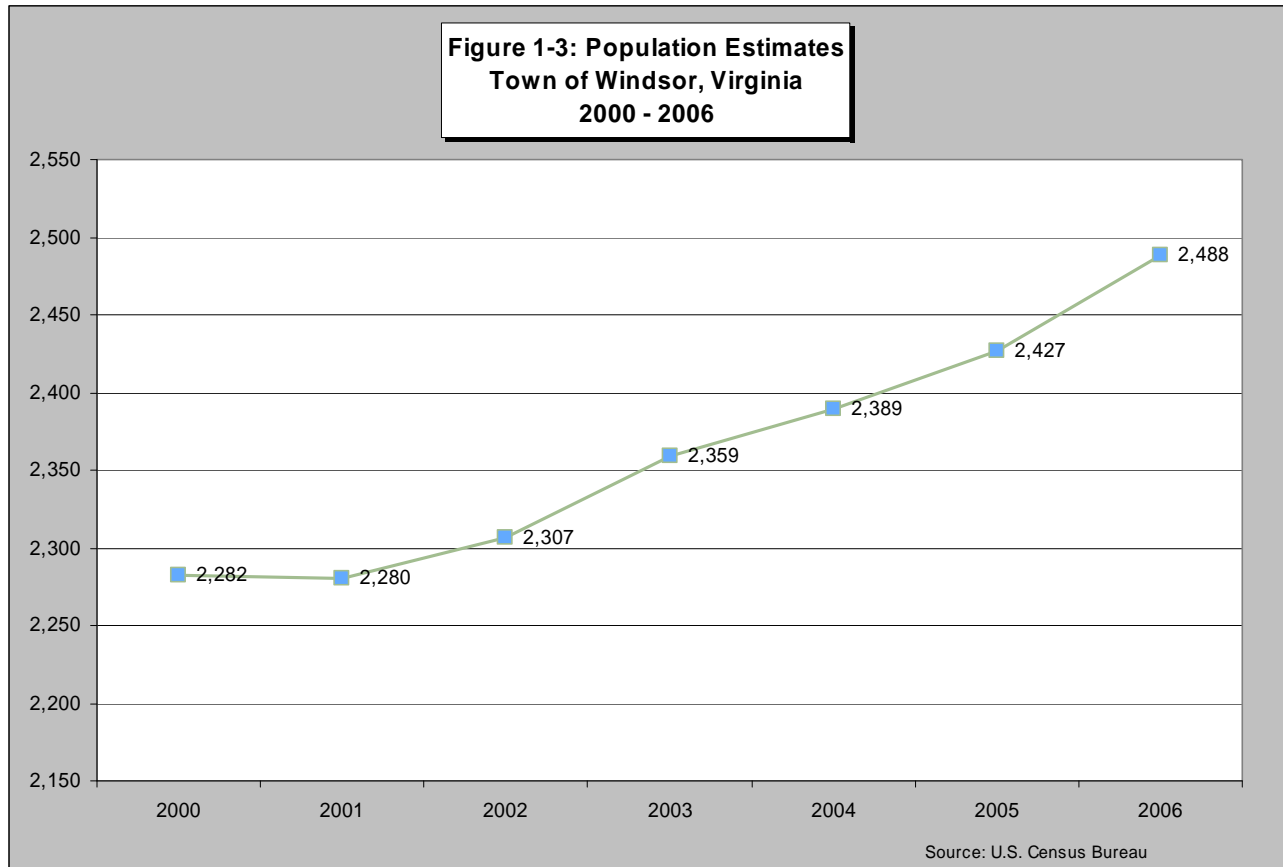
According to estimates from the U.S. Census Bureau, the majority of the Western Tidewater region has shown a pattern of steady and sometimes significant growth over the period from 2000 to 2006 (Figure 1-2). The largest population increase is estimated to be in the fast-growing City of Suffolk while Isle of Wight County also shows significant growth, primarily in the northern areas of the County that are in closer proximity to the Hampton Roads metropolitan area. Map 1-3 illustrates projected population growth for the entire Hampton Roads region from 2000 to 2030.



As previously noted, the Town of Windsor reported a loss of population in the 2000 Census, but more than doubled in size as a result of the annexation of county land in 2001. Estimates provided by the U.S. Census Bureau indicate that Windsor's population increased by another 9% between 2000 and 2006, based



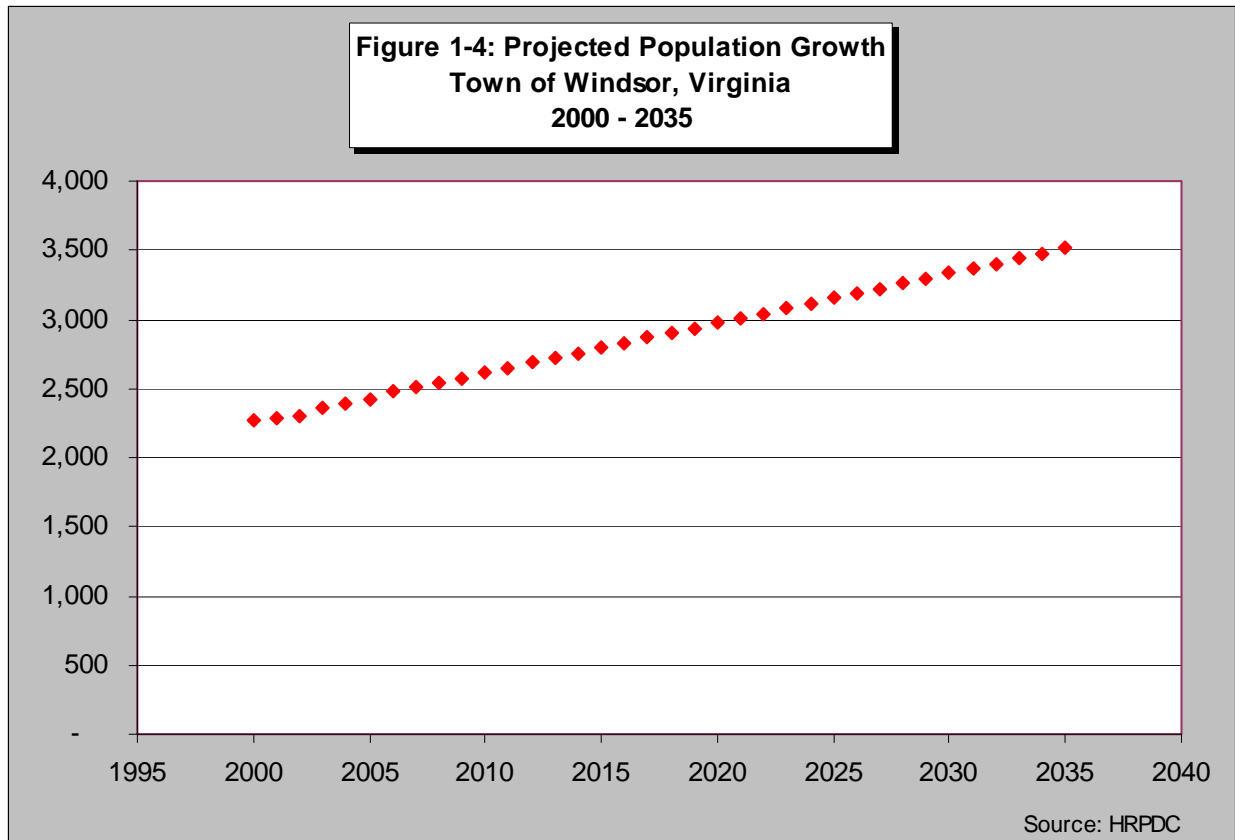
on an adjusted 2000 population of 2,282 (Figure 1-3). Some population fluctuation is shown as part of the Census estimates, but overall growth appears to be steady in the Town. If this pattern continues, the Town population is projected to reach 2,600 by 2010.



The staff of the Hampton Roads Planning District Commission has developed population projections for the Town of Windsor through 2035 using both straight line and ratio methods. The straight-line projection, which is based on previous population data, indicates a gradual upward trend in population growth through 2035 (Figure 1-4). Using this method, total population is projected to increase by approximately 54% by 2035. This would result in a Town population of about 3,500 at that time, an increase of over 1,200 people from the adjusted 2000 population of 2,277 assumed by the HRPDC projections.

A ratio method based on the Town's relationship with Hampton Roads was also applied to Town population projections. Using the expected ratio of Windsor's population to that of Hampton Roads for each year, this method used Regional Economic Models, Inc. (REMI) projections of the future population of Hampton Roads to calculate the Town's future population. This method resulted in a

projected 2035 population of 3,906, an increase of 71.5% over the 2000 population.



Town of Windsor  
Comprehensive Plan

# Total Population (Estimated) in 2000

## Legend

 Town of Windsor Boundary

## Population by Census Block

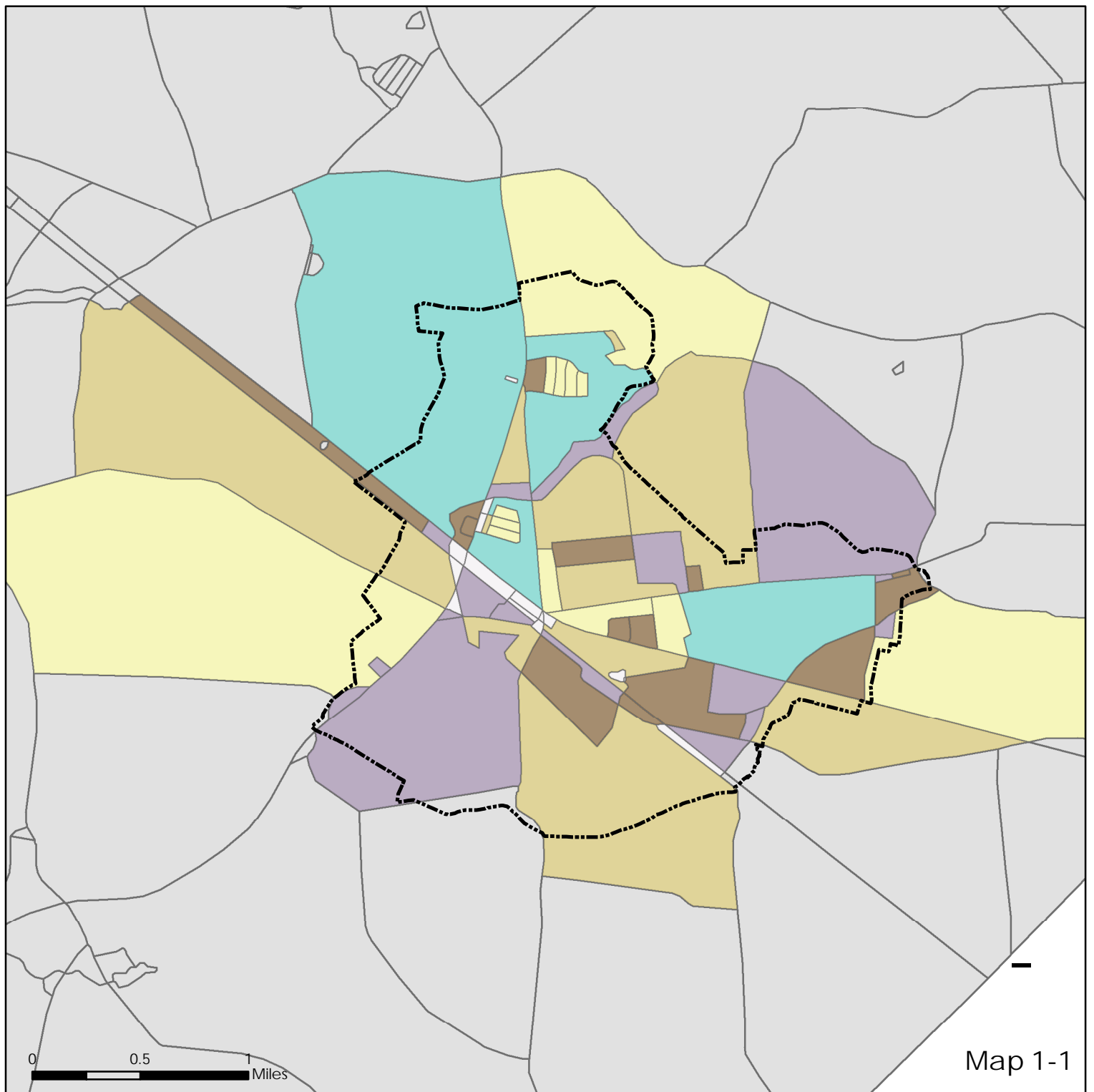
-  0 people
-  1-10 people
-  11 - 30 people
-  31 - 50 people
-  51 - 100 people
-  Over 100 people
-  Census Blocks

Note: Since the Town's boundary changed in 2001, after the 2000 census was taken, this is only an estimation of population within the current town limits.



Source: U.S. Census Bureau, 2000

Map Created by the Hampton Roads Planning  
District Commission GIS Staff, June 2008



Map 1-1

Town of Windsor  
Comprehensive Plan


# Number of Households (Estimated) in 2000


## Legend


 Town of Windsor Boundary


### Population by Census Block

 0 households

 1 - 10 households

 11 - 15 households

 16 - 25 households

 26 - 35 households

 Over 35 households

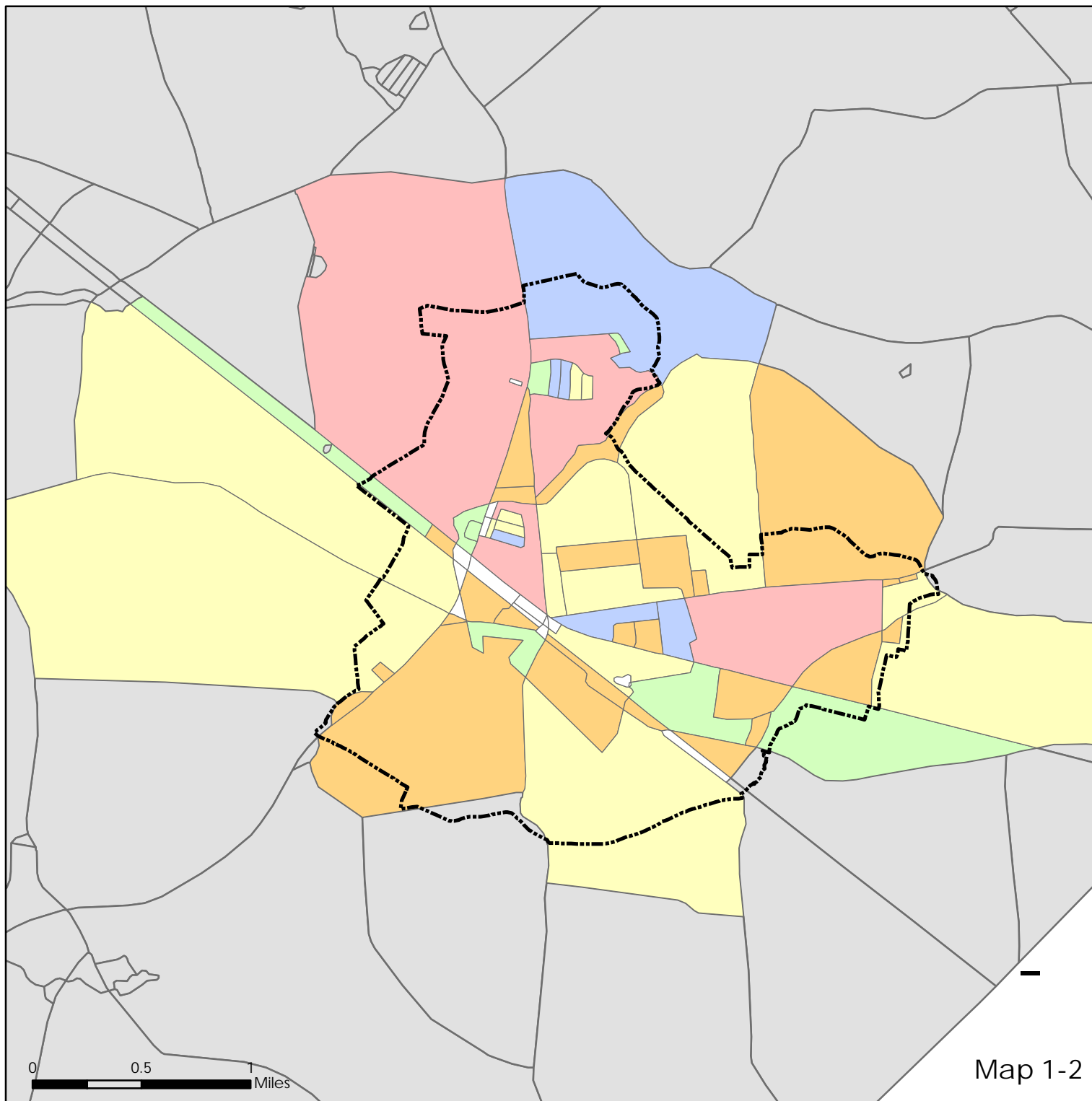
 Census Blocks

Note: Since the Town's boundary changed in 2001, after the 2000 census was taken, this is only an estimation of households within the current town limits.



Source: U.S. Census Bureau, 2000

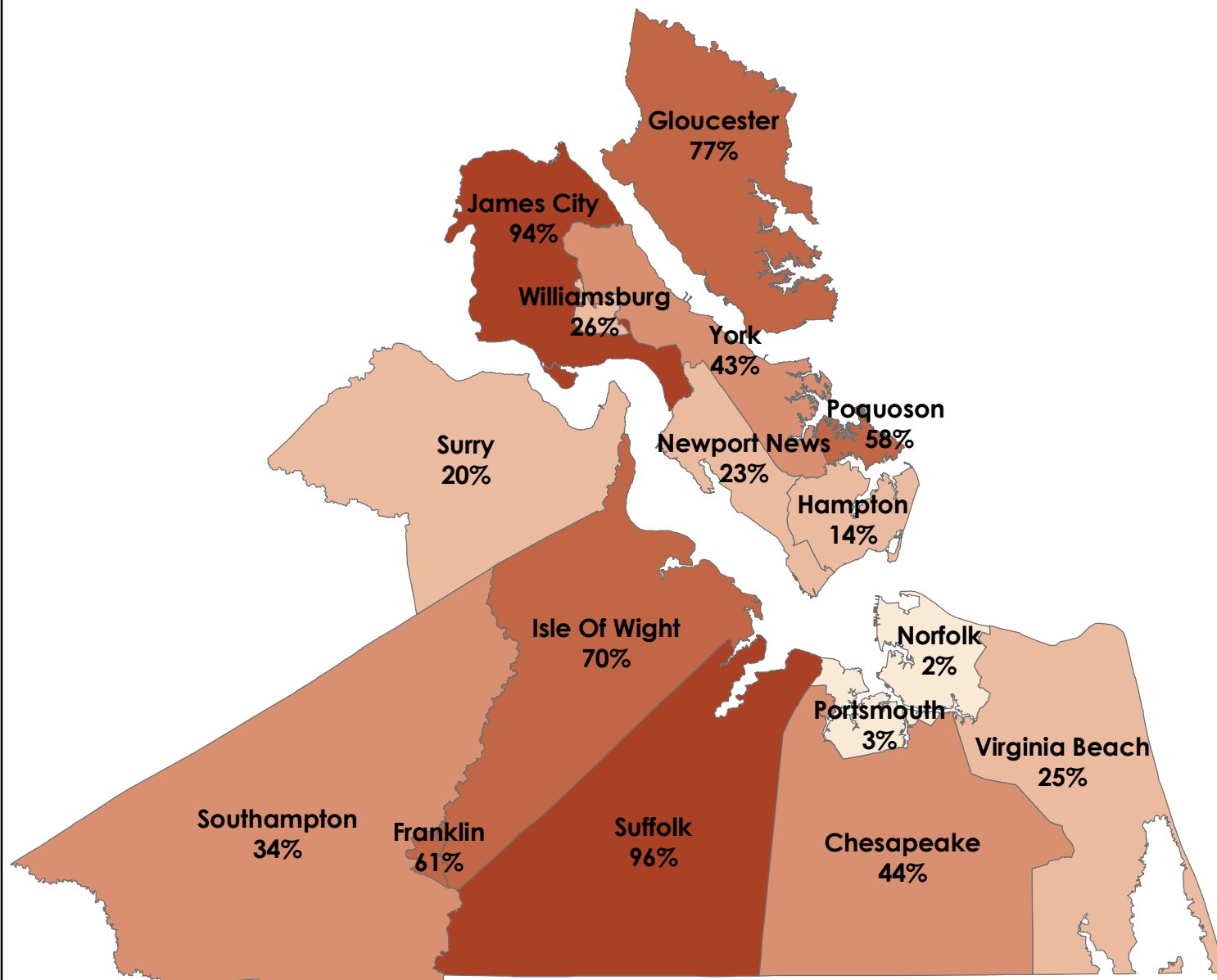
Map Created by the Hampton Roads Planning  
District Commission GIS Staff, June 2008



Map 1-2

**Town of Windsor  
Comprehensive Plan**

**Estimated  
Population Change  
in Hampton Roads  
2000 - 2030**



Source: Hampton Roads Planning District  
Commission, 2030 Regional Forecast

Map Created by the Hampton Roads Planning  
District Commission GIS Staff, June 2008

0 7.5 15  
Miles



**Map 1-3**

## CHAPTER 2 - HOUSING

### Introduction

Single-family homes represent the majority of the housing market in the Town of Windsor and in the surrounding Western Tidewater region. However, since rural communities with large areas of undeveloped land frequently offer more plentiful affordable home building sites than their urban or suburban neighbors, the mobile home has become more common in the region over the past twenty-five years.

Because it possesses the amenities of a town and proximity to major transportation routes, Windsor can offer a greater variety of housing than surrounding rural areas. Accordingly, Windsor is home to several trailer parks as well as duplex and multi-family developments. As the Town grows and housing demographics shift, a number of factors affecting housing availability and quality in the Town should be considered. These include housing supply, housing condition, and home values.

### Housing Inventory

Housing patterns in Windsor are typical of small towns that developed around railroad lines in the early twentieth century. Most of the Town's older housing stock is located near the commercial areas, which are centered on the railroad line and along the main roads. Subsequent housing development spread primarily north and east of the major transportation routes and consisted mainly of single-family homes and mobile homes. The Town approached build-out in the 1980s and 1990s, but the 2001 annexation of land from Isle of Wight County more than doubled the size of the Town and provided it with additional room to grow.

| <b>TABLE 2-1<br/>Housing Stock<br/>Town of Windsor, Virginia</b> |             |          |             |          |
|--|-------------|----------|-------------|----------|
|  | <b>1990</b> |          | <b>2000</b> |          |
|  | <b>#</b>    | <b>%</b> | <b>#</b>    | <b>%</b> |
| 1, detached  | 268         | 60.0%    | 240         | 56.6%    |
| 1, attached  | 3           | 0.7%     | 0           | 0%       |
| Duplex   | 13          | 2.9%     | 11          | 2.6%     |
| 3 or 4 family units  | 0           | 0%       | 0           | 0%       |
| 5 to 9 family units  | 0           | 0%       | 1           | 0.2%     |
| 10 to 19 family units  | 0           | 0%       | 0           | 0%       |
| 20 to 49 family units  | 0           | 0%       | 0           | 0%       |
| 50 or more   | 0           | 0%       | 0           | 0%       |
| Mobile home or trailer   | 159         | 35.6%    | 172         | 40.6%    |
| Other  | 4           | 0.9%     | 0           | 0%       |
| Total  | 447         | -        | 424         | -        |

Source: U.S. Bureau of Census, Census of Population and Housing, 1990 & 2000.



The distribution of Windsor's housing stock changed little from 1990 to 2000, as illustrated in Table 2-1. Single-family homes remained the dominant housing type in the Town, although they accounted for only about 57% of the total housing stock in 2000. There were 28 fewer single-family detached housing units in 2000 than in 1990, when single-family homes accounted for 60% of the total housing stock. No single-family attached dwellings were reported in 2000 (there were 3 in 1990), and there were two fewer duplexes than in 1990. The only new multi-family unit reported in 2000 is one 5-9 unit dwelling, which represents .2% of the Town's housing stock. However, the annexation in 2001 brought an additional 64-unit apartment complex and a large trailer park into the town limits.

Because mobile homes are less expensive than site built homes, they often represent affordable alternatives to traditional single-family housing. A mobile home also offers the benefit of ownership and is a more popular alternative than multi-family housing in Western Tidewater. Data from the U. S. Bureau of the Census indicates that mobile homes accounted for nearly 41% of the housing stock in the Town of Windsor in 2000, as compared with 36% in 1990. Conversely, mobile homes accounted for only about 10% of the housing stock in the Western Tidewater region as a whole and about 3% of the housing stock in both Hampton Roads and the state of Virginia. Abundant land and future population growth, along with the need for affordable housing, may contribute to the continued growth of the mobile home market in Western Tidewater.

There are four separate mobile home parks located within Windsor's boundaries, primarily along North Prince Boulevard (Route 258). In total, approximately 330 mobile homes exist in the Town's mobile home parks. The largest of these parks is Twin Ponds, which was acquired as part of the 2001 annexation and contains about 150 units. Since Windsor has traditionally restricted mobile home developments to mobile home parks, there is limited potential for additional growth in this market within the town limits. Subsequently, only three permits for new mobile homes have been issued in the last five years.

## **Housing Conditions and Occupancy**

Despite changes in the composition of Windsor's housing stock, housing values rose from 1990 to 2000. Data from the 2000 Census sample data indicated that the median value of owner-occupied housing units was \$100,300, an increase of 36% over the median value of owner-occupied units in 1990 (\$73,800). High occupancy rates coupled with low rates of substandard dwellings likely helped to contribute to this rise in home values. In 2000, occupied housing units accounted for 404, or 95%, of all housing units in the Town. In addition, only four substandard dwelling units (those lacking plumbing or kitchen facilities) were reported in 2000, accounting for less than 1% of the total housing stock.

In the period between 2000 and 2005, a nationwide real estate boom affected home prices throughout the country. According to data compiled by the HRPDC, housing prices in the Mid-Atlantic and throughout the United States rose steadily from 1997 to 2005. In mid-2003, Hampton Roads began to outpace both markets as local home prices soared. By 2005, the average price for all existing homes sold in Hampton Roads was \$231,769, up 22% over 2004. However, the median price of all existing homes sold in Hampton Roads in

2005 was \$165,900, 23% below the current national median price of \$215,000.<sup>1</sup> Recent stagnation in the housing market, both locally and nationally, may also affect home prices in the Town and surrounding region.

## **Rental Housing**

Eighty-four percent (84%) of the occupied housing units located in the Town of Windsor were owner-occupied in 2000, while 16% of the units were renter-occupied. This is a significantly lower rate than that of the Hampton Roads region as a whole, where renters inhabit 37.2% of the occupied housing stock. Median gross monthly rent in Windsor also compared favorably with the Hampton Roads region as a whole in 2000, although rents were higher than in the immediate region. The Town reported a median rate of \$479 per month, compared to a median rent of \$462 in the Western Tidewater region and a median rate of \$615 for Hampton Roads as a whole. However, Isle of Wight County's median gross rent increased 74% in 2000 as compared with the median rent of \$275 reported in 1990.

## **Housing Distribution and Age**

Building permit data compiled by the Hampton Roads Planning District Commission helps to illustrate regional growth patterns in Western Tidewater (Table 2-2). The majority of development occurring in the region between 2000 and 2006 occurred in the City of Suffolk, which began absorbing some of the development pressure from larger Hampton Roads cities immediately adjacent to it. Isle of Wight County also showed relatively steady growth in building activity through 2004, although the number of permits issued declined in 2005 and 2006. The remainder of the region saw some yearly fluctuations in the number of permits issued, generally without clear patterns.

Of the 424 housing units located in Windsor in 2000, approximately 14% (58 units) had been built since 1990 and approximately 69% of the housing units (293) were built prior to 1980. However, the distribution of housing in the Town has changed and continues to evolve following the 2001 annexation. Zoning permit data provided by the Town staff indicates that development in Windsor over the last five years has centered on single-family housing located in subdivisions in the annexed portions of town. From 2002 to 2007, the Town issued 102 permits for new home construction. Of those, only three were issued for mobile homes and three were issued for modular homes. The majority of the permits, about 60%, were issued for single-family home construction in the Windsor Woods subdivision in 2005.

---

<sup>1</sup> Residential DataBank, New Home Market Report: Annual Report 2006, (Virginia Beach: Residential DataBank, Inc. 2007) 4.

**TABLE 2-2**  
**Building Permit Activity, 2000-2006**  
**Western Tidewater Region**

|                                   | 2000                    |              | 2001                    |              | 2002                    |              | 2003                    |              | 2004                    |              | 2005                    |              | 2006                    |              |
|-----------------------------------|-------------------------|--------------|-------------------------|--------------|-------------------------|--------------|-------------------------|--------------|-------------------------|--------------|-------------------------|--------------|-------------------------|--------------|
|                                   | Single and Multi Family | Mobile Homes | Single and Multi Family | Mobile Homes | Single and Multi Family | Mobile Homes | Single and Multi Family | Mobile Homes | Single and Multi Family | Mobile Homes | Single and Multi Family | Mobile Homes | Single and Multi Family | Mobile Homes |
| Franklin City                     | 56                      | 0            | 23                      | 0            | 16                      | 0            | 32                      | 0            | 41                      | 0            | 59                      | 0            | 70                      | 0            |
| Isle of Wight County <sup>1</sup> | 229                     | 119          | 260                     | 70           | 336                     | 66           | 370                     | 56           | 633                     | 93           | 534                     | 49           | 432                     | 57           |
| Southampton County                | 50                      | 76           | 51                      | 65           | 81                      | 82           | 83                      | 47           | 114                     | 69           | 166                     | 53           | 143                     | 37           |
| Suffolk City                      | 826                     | 36           | 1,344                   | 26           | 1,068                   | 38           | 1,127                   | 4            | 1,009                   | 1            | 1,090                   | 0            | 847                     | 14           |
| Surry County <sup>2</sup>         | 60                      | 14           | 47                      | 13           | 50                      | 13           | 73                      | 13           | 72                      | 12           | 79                      | 6            | --                      | 12           |

Source: Hampton Roads Planning District Commission, Hampton Roads Data Book, May 2007

1. Includes the Town of Windsor

2. Double wide mobile homes in Surry County are recorded as single family dwelling units. 2006 permit data unavailable at time of publication.

## Historic Resources

The Code of Virginia provides local governments with a number of tools that support the preservation of historic sites and structures. Included among them are the ability to designate historic districts and the authority to adopt local ordinances that govern the treatment of historic resources. In addition, the Code of Virginia requires that historic areas be surveyed and studied in the preparation of the comprehensive plan. Section 15.2-2224 states that if a locality chooses not to survey and study historic areas, then the locality must include historic areas in the comprehensive plan if they are identified and surveyed by the Department of Historic Resources. The Code also states that zoning ordinances shall be designed to give reasonable consideration to protection against destruction of or encroachment upon historic areas.

There are no sites in the Town of Windsor currently listed on the National Register of Historic Places or the Virginia Landmarks Register. However, there are properties within the town limits that meet the criteria for inclusion on the registers and may be added at a future date.

## Affordable Housing

Increasing housing costs throughout the Western Tidewater region have helped make the lack of affordable housing an issue for both the Town of Windsor and Isle of Wight County as a whole. Many rural residents are low-wage earners who moved to the area to escape higher housing costs in metropolitan Hampton Roads. While land has traditionally been less expensive and more plentiful in the Western Tidewater area, land costs have also increased in recent years. Moreover, the region lacks the variety of housing available in urban areas. Increasingly, lower and fixed income residents must rely on mobile homes and manufactured homes to meet their housing needs.

As previously noted, mobile homes account for a significant portion of Windsor's affordable

housing stock. In addition, a 64-unit subsidized apartment complex became part of the Town in 2001. The apartments are part of the Section 515 Rural Rental Housing Loans program, which provides direct, competitive mortgage loans for very low-income, low-income, and moderate-income families, the elderly, and persons with disabilities.

## **Workforce Housing Units**

In recent years, rising housing prices have made it impossible for much of the workforce in Isle of Wight County to live within the county boundaries. A study completed by the County in April 2007 indicated that its place in the regional economy and housing market, coupled with prevalent low-density zoning, resulted in new housing construction that targeted high-income exurbanites and retirees to the general exclusion of county residents. One of the key recommendations resulting from this study was that the county and towns should enact mandatory Workforce Housing Unit (WHU) ordinances as authorized by Virginia Code Section 15.2-2305. Approximately 17 percent of any development of 30 units or more would be required to be affordable and would be accompanied by a 30 percent increase in density.

The Final Report of the Isle of Wight County Task Force on Workforce Housing provided the following definition of affordability for a homebuyer:

the *maximum* house price a family with good credit can afford is calculated as:

- \* 32% of gross monthly income;
- \* minus extraordinary expenses such as very high medical costs, real estate taxes, homeowners' insurance, and homeowner association (HOA) or condominium fees;
- \* multiplied by the interest rate factor current at the time;
- \* plus down payment;
- \* minus closing costs to the buyer;
- \* equals the house price.

In 2006, the Area Median Income (AMI) for the Hampton Roads region was \$60,300 for a four-person household. Isle of Wight median income was undoubtedly somewhat higher since the county's median family income was seven percent above the regional median in Census 2000. However, the US Department of Housing and Urban Development (HUD) surveys only entire metropolitan areas in calculating AMI on an annual basis.

Although the Town of Windsor did not participate directly in the Isle of Wight County study, the Town does support the goal to provide workforce housing within its boundaries. The Town should consider implementing the techniques promoted by the Urban Land Institute (ULI) in its study, Developing Housing for the Workforce: A Toolkit. The ULI suggests creating a workforce housing strategy following these steps:

1. Inventory the current housing supply. This includes assessing the condition of the

housing supply and evaluating potential for higher cost redevelopment.

2. Inventory public lands and structures. This focuses on identifying publicly owned surplus land.
3. Inventory privately held vacant and abandoned properties.
4. Assess workforce housing needs. A full understanding of workforce housing demand may include analysis of regional employment generation and surveys of the workforce in the community.
5. Assess current workforce housing programs and policies. This includes examination of long-range planning and zoning efforts.
6. Assess the barriers to workforce housing production. This includes examination of community opposition and regulatory barriers.
7. Set workforce housing production goals. This is based on the housing needs assessment.
8. Build a workforce housing coalition. Advocates will address concerns about traffic congestion, school overcrowding, and loss of open space.
9. Organize for action. This should include contributions from local government, developers, employers, and the target market.
10. Identify viable workforce housing tools.
11. Create a flexible, multifaceted housing strategy. This may include land acquisition and assembly, planning and regulations, and financing programs.
12. Assess what is working and revise what is not.

The Town of Windsor has addressed some of these items through its comprehensive planning process and has a commitment to provide workforce housing. Further action to implement this strategy should include assembly of support from the community and regulatory changes to support the Town's goals.

## **Housing Projections**

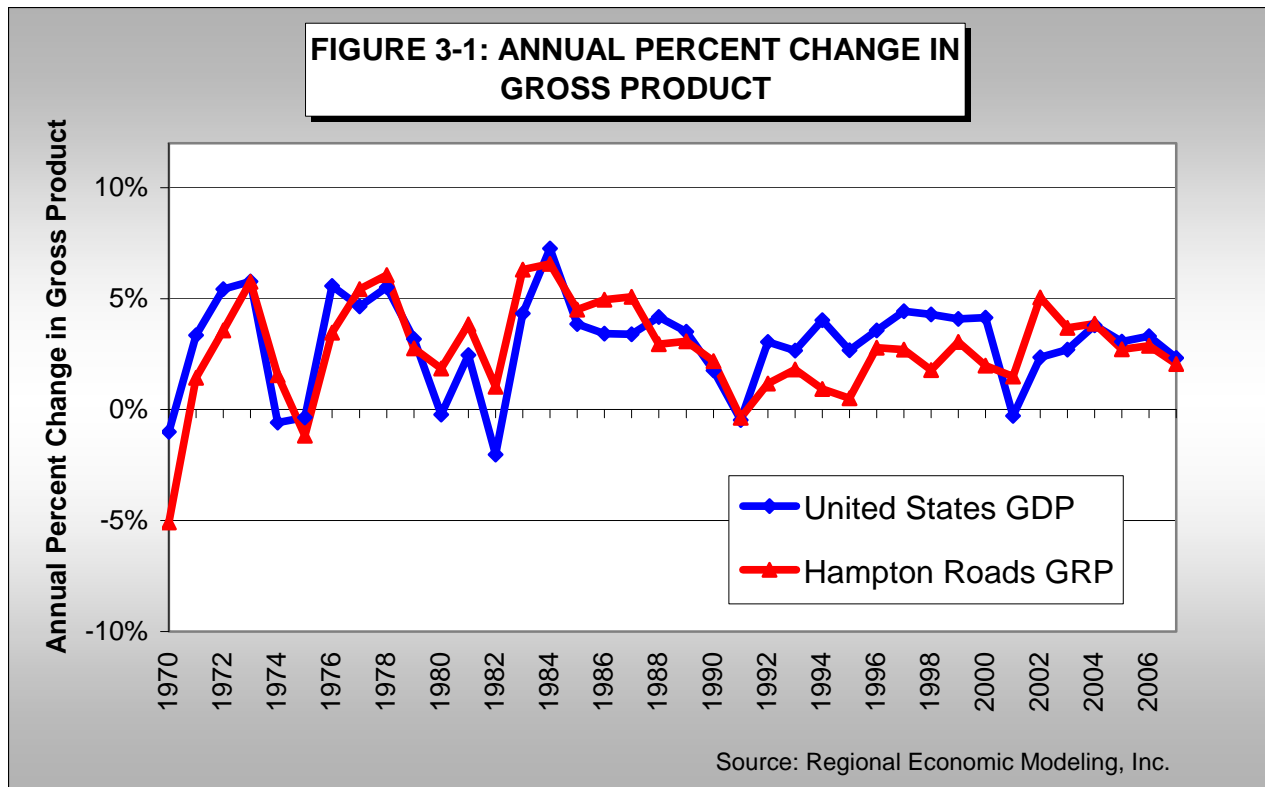
Population projections prepared by the Hampton Roads Planning District Commission indicate that an additional 1,200 people will live in the Town of Windsor by 2030. Given the current average household size of 2.35, another 520 dwelling units will be required to house the population. Consideration of the need for affordable housing for the Town's workforce will also influence the character of this future development.

## CHAPTER 3 - ECONOMY

### Introduction

To understand the economy in the Town of Windsor, it is necessary to consider economic activity in both the Town and in the surrounding region. Each component of the local economy must be considered: production, development, and management of material wealth. By developing a general understanding of the local economy, one may better comprehend the fiscal impact of planning decisions and, conversely, the impact that the economy might have on planning for the Town's future. Consequently, understanding the dynamics of the local economy is a vital part of the planning process.

Many of the same factors that impact on the national economy, such as interest rates, consumer confidence, and inflation, also affect the local economy. By comparing trends, the relationship between the regional economy and the national business cycle can be identified.

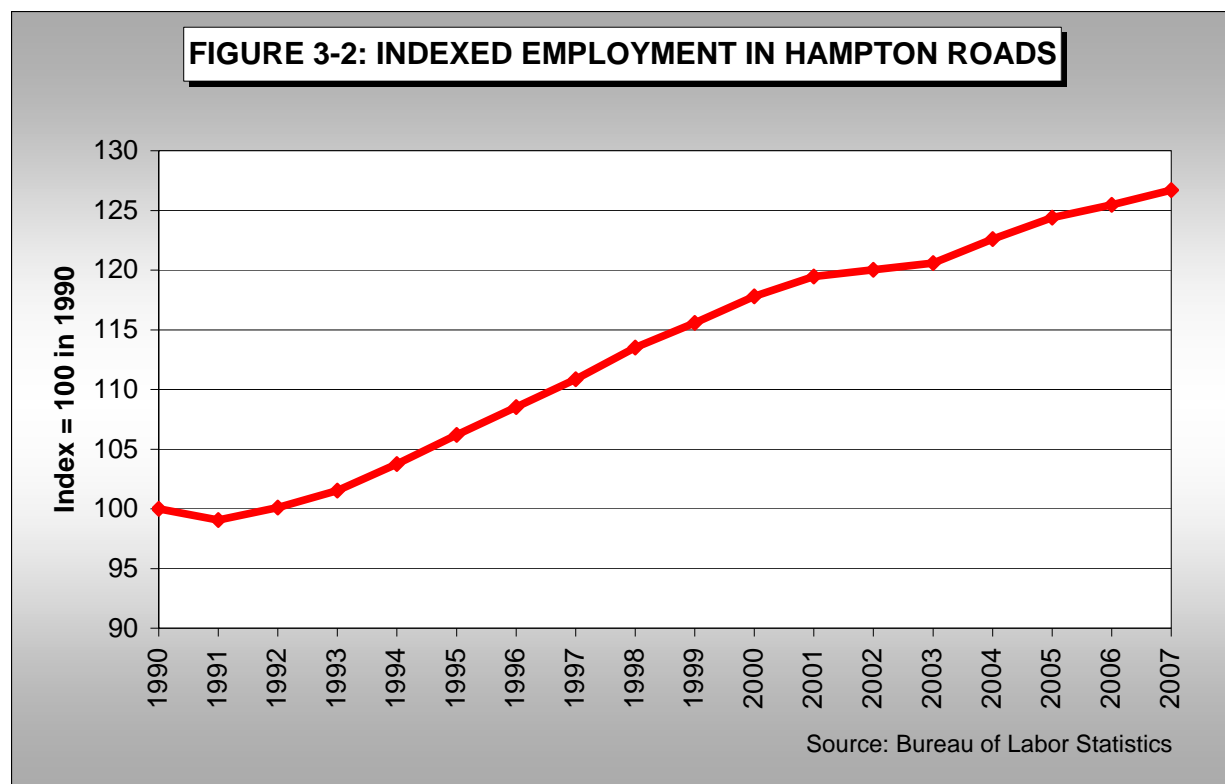


The relationship between the economy in Hampton Roads and the national economy is illustrated in Figure 3-1. As is evident in the chart, the regional economy tends to track the national cycle.

Just as the national economy is reflected in the regional economy, the well being of the regional economy plays an important role in Windsor. The Hampton Roads' economy has been expanding since 1991. The region was able to push through the national recession in



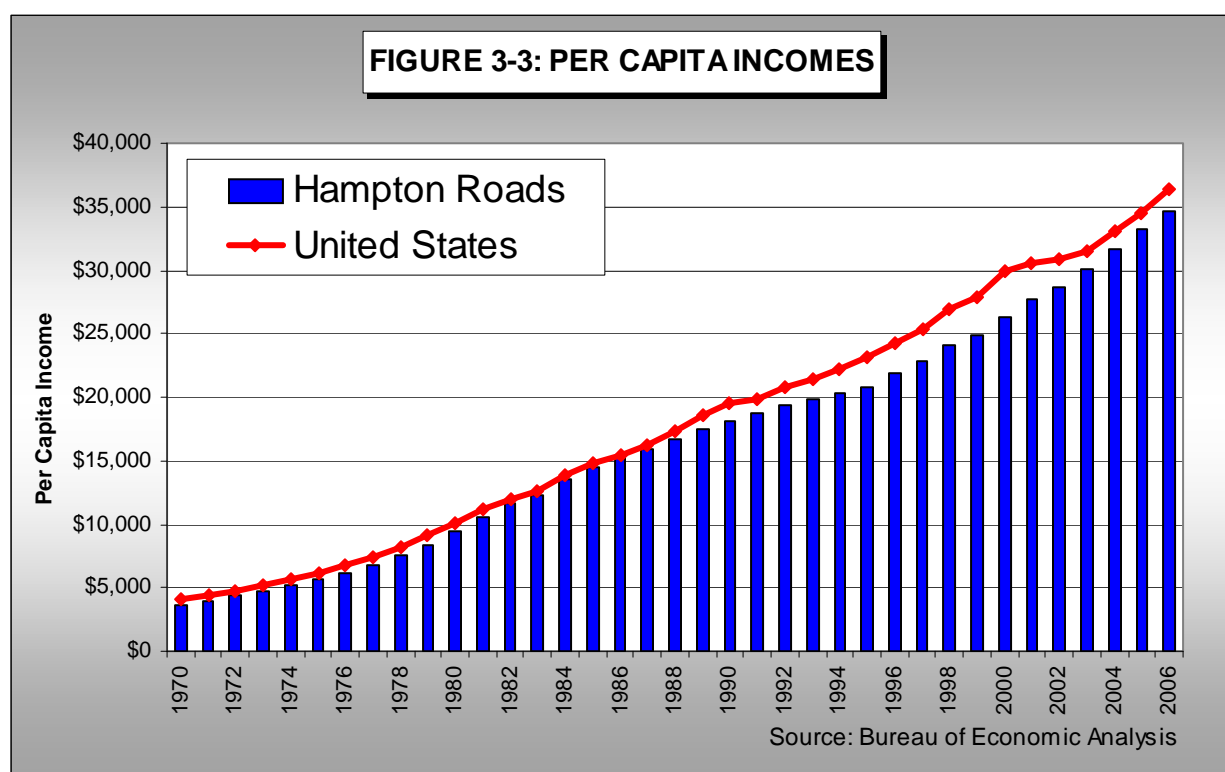
2001, growing the Hampton Roads' economy at an annualized average rate of 2.98% per year over the past decade. A variety of factors including strong sector employment, low unemployment rates, and recent increases in military spending have helped to sustain this growth. Indexed employment in Hampton Roads is illustrated in Figure 3-2.



One of the most important employment sectors in the Hampton Roads economy is the military. Hampton Roads boasts the second largest concentration of military personnel in the United States. Department of Defense expenditures generate approximately 30% of gross product in the Tidewater region and are directly responsible for one out of every nine jobs. Tourism also plays an important role in the regional economy. Hampton Roads has multiple attractions that draw hundreds of thousands of tourists to the region each year. The travel industry generates significant state and local tax revenues, provides abundant employment opportunities, and contributes billions of dollars to the gross regional product.

Hampton Roads is also home to one of the nation's premier ports. In 2006, over 37 million short tons flowed through the Port of Hampton Roads, making it the nation's 11<sup>th</sup> largest port. Over the past decade general cargo in Hampton Roads has grown at an annual average rate of over 5%. The success of the local port has stimulated other industries in the region, such as transportation and warehousing. Port expansion may also act as a catalyst to future economic development in Isle of Wight County, which is planning an intermodal park – a regional facility where distribution centers would be located along with ancillary businesses related to the movement of imported cargo – for the U.S. 460 corridor just to the east of Windsor.

Where employment and industry are often used to describe the general health of an economy, incomes are used to describe the wealth of an economy. Incomes in Hampton Roads have historically been below the national average. Since 1970, per capita income has averaged over 7% less than national per capita income, as is shown in Figure 3-3. The positive aspect of having low incomes is that the area has the competitive advantage of cheap labor. Economic developers cite the region's low wages when attempting to attract new business to the area. Favorable labor costs may be beneficial for business interests; however, below average incomes restrict the wealth of Hampton Roads residents and provide an incentive for mobile job seekers to look for employment outside of the community. In the past, low wages were somewhat offset by the below average cost of living. However, the recent boom in housing prices has significantly increased the region's cost of living above the national average, according to 2007 Annual Average Data contained in the ACCRA Cost of Living Index.

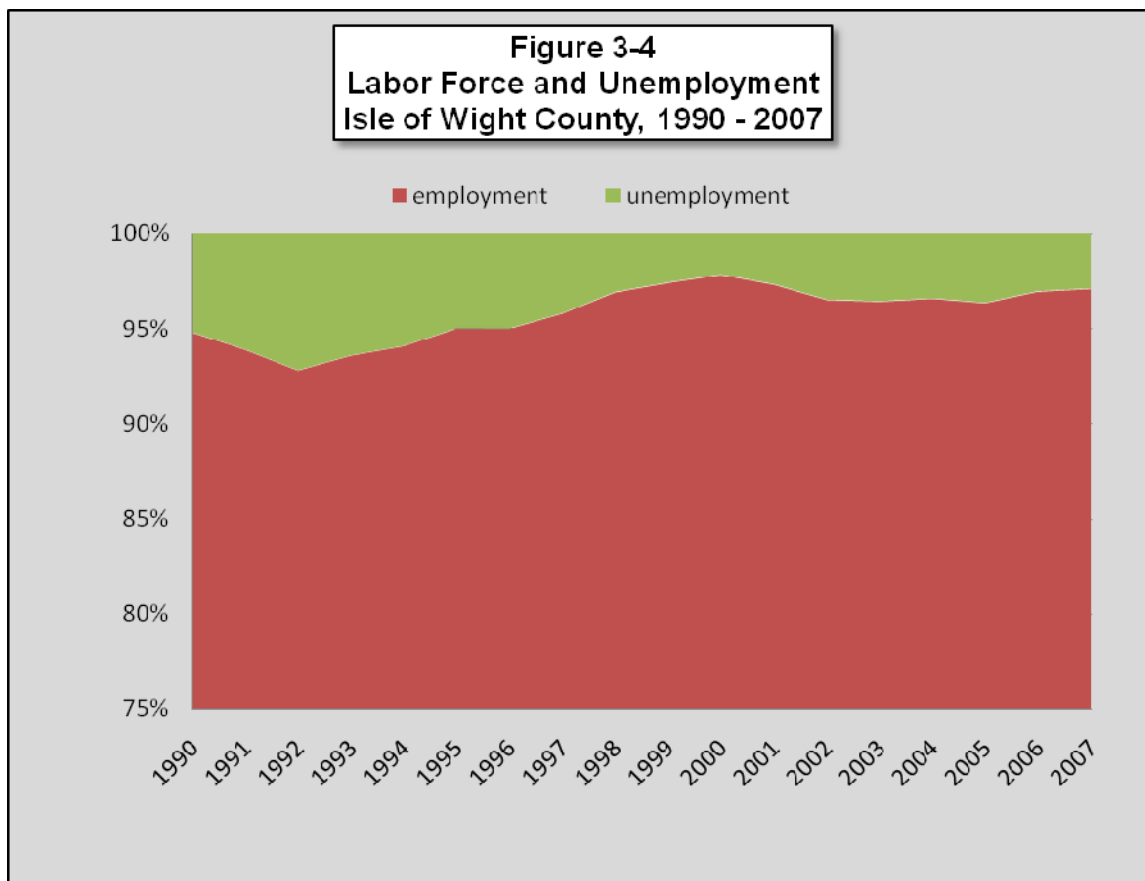


## Labor Force and Unemployment

According to the Virginia Employment Commission, Hampton Roads had a Civilian Labor Force of 826,411 in March 2008. The unemployment rate at that time was 4.1%. Unemployment rates in the Hampton Roads region are traditionally lower than the national unemployment rate, and this holds true in the Western Tidewater region as well. While much of the area is still dominated by agriculture, Isle of Wight County boasts a more diverse economy anchored by a number of major industrial and retail employers that play a prominent role in the region's job market. Although the job market is shifting to some degree, manufacturing currently accounts for 42% of all jobs in Isle of Wight County. In

addition, the retail trade and government serve as major sources of employment in the County. The County has also had a consistently low unemployment rate over the past twenty years (Figure 3-4).

The Town of Windsor offers limited employment opportunities, and the majority of its residents travel to work elsewhere. According to the U.S. Census, about 19% of residents lived and worked in the Town in 2000. The remainder of the Town's workforce commuted to other localities for employment. Approximately 36% of those commuters traveled thirty minutes or more to work.



Source: Bureau of Labor Statistics

### Private Sector Employment

Because the job market in Windsor is limited, Town residents depend largely on the surrounding region for employment. Three of the largest private sector employers in the Western Tidewater region – companies with over 1,000 employees – are located in Isle of Wight County. The twenty largest employers in the County are listed in Table 3-1. The largest employer in the Town of Windsor is Tandem Health Care, which employs 96 full-time equivalents according to Virginia Health Information. Other major employers in the Town include Food Lion and the Community Electric Cooperative.

| TABLE 3-1<br>TWENTY LARGEST EMPLOYERS<br>ISLE OF WIGHT COUNTY |                                     |
|---|-------------------------------------|
| No.   | Employer                            |
| 1   | Gwaltney of Smithfield              |
| 2   | International Paper Company         |
| 3   | Isle of Wight County School Board   |
| 4   | Isle of Wight County                |
| 5   | Cost Plus, Inc.                     |
| 6   | Food Lion                           |
| 7   | Atc Panels, Inc.                    |
| 8   | Farm Fresh                          |
| 9   | Riverside Regional Medical Center   |
| 10  | Smithfield Foods                    |
| 11  | Alphastaff, Inc.                    |
| 12  | Franklin Equipment Company          |
| 13  | Isle of Wight Academy               |
| 14  | Peninsula Metropolitan YMCA         |
| 15  | Virginia State Department of Health |
| 16  | Town of Smithfield                  |
| 17  | Zuni Presbyterian Center            |
| 18  | Smithfield Station                  |
| 19  | East West Partners of VA, Inc.      |
| 20  | U.S. Postal Service                 |

Source: Virginia Employment Commission

As the regional economy continues to diversify, Isle of Wight County anticipates attracting distribution and logistics businesses related to the proposed expansion of the Port of Virginia. The Shirley T. Holland Industrial Park, which is located just outside of the Town of Windsor, is situated adjacent to land with access to both rail and highway transportation corridors. In July 2007, Moffatt & Nichol completed analysis of expansion options for the park and development options for the neighboring properties. The report, *Isle of Wight Intermodal Park Concept*, recommends that the County pursue development of an intermodal park that would include three properties with about 2,200 acres and 20 million square feet of space. The study further indicates that the intermodal park could generate employment for up to 25,000. Because of the proposed park's proximity to the Town, there is great potential for significant impacts to Windsor. The development of the intermodal park is also tied to the proposed expansion and realignment of U.S. 460, which will offer additional commercial development opportunities to the Town.

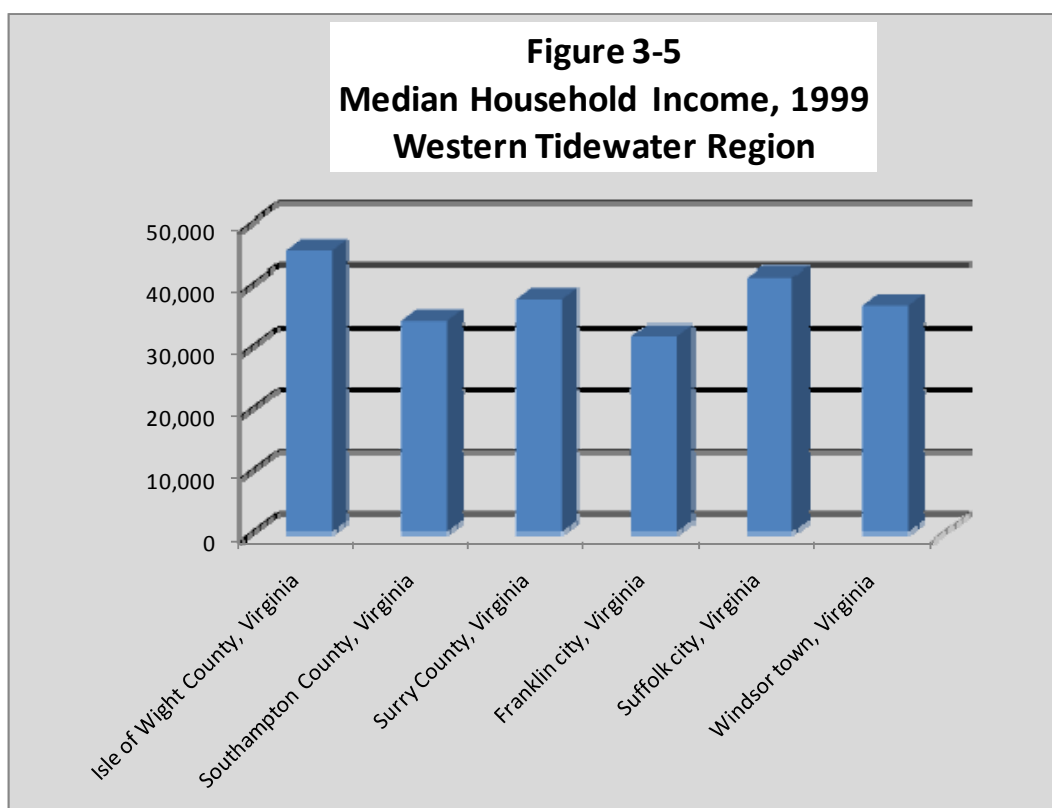
### Government Employment

According to data from the Virginia Employment Commission, government jobs are also a major source of employment available to residents of the Town of Windsor and the

surrounding region. In Isle of Wight County, 28 governmental establishments employed approximately 1,204 persons in the third quarter of 2007. This is approximately 10% of the County's total employment. The majority of these jobs, 964 or 80%, were provided by local government. Another 240 jobs, or 20% of all government employment, were found at the state and federal levels. By comparison, much of the rest of the Western Tidewater region is more heavily dependent on government sources of employment. In neighboring Suffolk, all levels of government provided a combined 5,632 jobs (23% of all jobs) in the third quarter of 2007. In Southampton, government provided 44% of all jobs in the same quarter.

## Income and Poverty

According to the 2000 Census, the Town of Windsor had a median household income of \$36,528 (in 1999 dollars). Figure 3-5 illustrates the median Town income as compared to the other localities in the Western Tidewater region. The highest median income in the region was \$45,387 in Isle of Wight County. Windsor's median income ranked slightly below average, behind Isle of Wight, Suffolk, and Surry, but ahead of Franklin and Southampton County.



Source: U.S. Census, 2000

In 2000, Windsor had a per capita personal income of \$20,999. The Town's per capita income was approximately 4% above the per capita income in Hampton Roads as a whole (\$20,273), but about 12% below the State per capita income of \$23,966.

In 1999, there were 82 people reported to be living below the poverty level in the Town of

Windsor. The Town's poverty rate of 8.8% is lower than the state average of 9.8% and the national average of 12.3%. Adults 18 years and over accounted for 66% of those living in poverty, while adults age 65 and over accounted for approximately 10% of the total. Approximately 34% of impoverished town residents are 17 or younger. Many factors contribute to poverty, including under-employment, limited access to employment, poor wages, and lack of opportunity.



## CHAPTER 4 - TRANSPORTATION

### Introduction

The Town of Windsor's transportation system depends heavily upon its highway and road network. The Town is located along the vital U.S. 460 corridor connecting the Hampton Roads region to major north-south highways to the west. The main rail line carrying Norfolk Southern coal and freight trains passes through the Town, and provides a primary rail link to both rural mining areas as well as major inland container shipping origins and destinations. While freight is moved on both road and rail, the availability of public transportation for Town residents is limited. There is no passenger rail service in Windsor and the closest commercial airports are located in Newport News, Norfolk, and Richmond.

### Existing Roadway System

The existing roadway system in the Town of Windsor includes one primary arterial route (U.S. 460), one U.S. primary route (U.S. 258), and a system of secondary roads serving the remainder of the Town. Important primary and secondary roads are shown on Map 4-1. U.S. 460 is currently a four-lane road that links Windsor to metropolitan Hampton Roads in the east and to Interstate Highways 85, 95, and 295 in the west. U.S. 258 connects the area with State Route 10 and U.S. 17 to the north and with U.S. 58 and North Carolina to the south. The Virginia Department of Transportation (VDOT) conducts traffic counts using sensors along streets and highways in order to determine daily traffic volumes on specific road segments. The resulting two-day averages provide an illustration of demand on particular stretches of road. Table 4-1 provides a listing of the highest daily volumes for streets within the Town, along with the length of the segment studied. Included are those with 1,000 or more vehicles per day.

**Table 4-1**  
**Daily Traffic Volumes, 1999-2005**  
**Town of Windsor, Virginia**

| ROUTE<br>NUMBER | LOCATION            | SEGMENT FROM           | SEGMENT TO             | 1999<br>WEEKDAY<br>VOLUME | 2002<br>WEEKDAY<br>VOLUME | 2005<br>WEEKDAY<br>VOLUME | PERCENT<br>CHANGE |
|-----------------|---------------------|------------------------|------------------------|---------------------------|---------------------------|---------------------------|-------------------|
| 258             | Prince Blvd S       | WCL Windsor            | US 460 Windsor Blvd    | 4,743                     | 4,579                     | 5,247                     | 10.6%             |
| 258             | Prince Blvd N       | US 460 Windsor Blvd    | NCL Windsor            | 5,473                     | 4,898                     | 5,532                     | 1.1%              |
| 603             |                     | WCL Windsor            | US 460 Windsor Blvd    | 1,921                     | 2,232                     | 2,184                     | 13.7%             |
| 603             |                     | US 460 Windsor Blvd    | 46-1805 Roberts Ave    | 4,718                     | 2,369                     | 2,550                     | -46.0%            |
| 603             | Church St           | 46-1805                | ECL Windsor            | 1,957                     | 1,583                     | 1,739                     | -11.1%            |
| 610             | Court Street        | SCL Windsor            | 46-1802 West; N & W St | 992                       | 962                       | 980                       | -1.2%             |
| 610             | Court Street        | 46-1802 West; N & W St | US 460 Windsor Blvd    | 1,335                     | 1,089                     | 1,113                     | -16.6%            |
| 460             |                     | US 258                 | 46-610                 | 12,735                    | 13,097                    | 14,666                    | 15.2%             |
| 610             | Court Street North  | US 460 Windsor Blvd    | NCL Windsor            | 817                       | --                        | 1271                      | 55.6%             |
| 636             | Griffin Street West | 46-603 Bank Street     | 46-610 Court St South  | 612                       | --                        | 1024                      | 67.3%             |
| 1812            | Duke St             | 46-603                 | 46-1824                | 350                       | --                        | 1086                      | 210.3%            |

Source: Virginia Department of Transportation

As shown on Map 4-2, the busiest road segments in the Town are located on U.S. 460, followed by U.S. 258. The roads that showed the greatest increases in daily traffic volume from 1999 to 2005 are West Griffin Street, North Court Street and Duke Street.

While many areas saw increases in traffic volumes, some saw decreases in volumes between 1999 and 2005, particularly on State Route 603 between U.S. 460 and Roberts Avenue.

## **Isle of Wight County Pedestrian and Bicycle Facilities Master Plan**

Pedestrian facilities in the Town of Windsor generally consist of sidewalks in the older parts of Town and in the new Windsor Woods development. Currently, there are no bicycle facilities in the Town.

In July 2006, the County completed the Isle of Wight County Pedestrian and Bicycle Facilities Master Plan, which addresses these needs in the Town. The study describes existing conditions in the Town and addresses barriers to walking and bicycling that should be addressed. These include the lack of sidewalks in some areas and the lack of separation between sidewalks and the high-speed, high-volume traffic on U.S. 460. Numerous curb cuts also create conflicts with pedestrians.

The County recommends a number of improvements to pedestrian and bicycle facilities in the Town. These include:

- ❑ The North Windsor/Heritage Park Pedestrian and Bicycle Pathway to provide a connection between U.S. 460 and the park. This project could also include a multi-use path near Windsor Middle School and one along the side of U.S. 258.
- ❑ A five-foot sidewalk on the east side of U.S. 460 between Holland Drive and Lovers Lane.
- ❑ Sidewalks on the east side of U.S. 258 between U.S. 460 and VA 610 and completion of sidewalks on both sides of the road along VA 610 between U.S. 258 and U.S. 460.
- ❑ U.S. 258 and U.S. 460 crossing improvements.
- ❑ U.S. 258 and Heritage Park access crossing improvements.

## **Other Transportation Systems**

### *Rail Service*

Norfolk Southern Corporation offers freight service to the Town, which is particularly important for supporting local industry. There is no passenger rail service offered in the Town or in Isle of Wight County. Amtrak offers passenger rail access from the City of Newport News, approximately 30 miles to the northeast.

### *Air Service*

Air service is available in several locations within an hour's drive of Isle of Wight County and the Town of Windsor. Norfolk International Airport is located approximately 40 miles from the County, and offers passenger service on seven major airlines. Newport News-Williamsburg International Airport is also located approximately 40 miles to the

northeast in the city of Newport News. The airport offers regular passenger service on three major airlines. Also nearby is Richmond International Airport, which is located approximately 70 miles away in Henrico County and offers regular passenger service on eight major airlines. Airfreight service is available at the Norfolk and Richmond airports.

In addition to the commercial airports, several general aviation airports are located near the Town. The closest of these is John Beverly Rose Airport, which is located approximately 16 miles away in southern Isle of Wight County. The airport offers a paved and lighted runway, three T-hangars, and four large aircraft hangars. Slightly farther away are the Suffolk Executive Airport, which is located about 18 miles from Windsor on U.S. 13, and the Hampton Roads Executive Airport, which is located about 20 miles from Windsor on U.S. 58 in the City of Chesapeake. All three facilities offer fuel and maintenance services. Also easily accessible is the Wakefield Municipal Airport, which is located about 19 miles to the west near the Town of Wakefield and offers fuel and aircraft tie downs. There are also two private airfields located in Isle of Wight County: Orbit Air Strip and Aberdeen Field Airport.

### *Bus Service*

There is no commercial bus service in Windsor or Isle of Wight County, although Greyhound Bus Lines does provide service to several nearby cities in Hampton Roads. No public bus system currently exists in the Town.

## **Future Conditions and Planned Improvements to the Transportation System**

### *Hampton Roads 2030 Long Range Transportation Plan*

The Hampton Roads 2030 Long Range Transportation Plan contains projections of traffic volumes for U.S. 258 and U.S. 460 in Isle of Wight County and the Town of Windsor for the year 2030. These projections indicate that for the most part congestion on these roads will be in the low to moderate range. The segment of U.S. 258 between U.S. 460 and the Windsor Town boundary is projected to experience moderate congestion. Traffic counts on this segment are projected to increase from 5,500 trips per day in 2005 to approximately 16,000 trips per day in 2030. It is important to note that these projections assume the construction of the U.S. 460 realignment project by the year 2030.

### *U.S. 460 Location Study*

VDOT and the Federal Highway Administration are involved in an extensive study of the realignment of U.S. 460. A draft Environmental Impact Statement has been completed and in 2005 the Commonwealth Transportation Board adopted a resolution selecting Candidate Build Alternative (CBA) 1 as the preferred alignment for the project. CBA 1 is depicted in Map 4-3. This alignment will pass through the southwest quadrant of the Town of Windsor. Funding for the project and the timing of project construction are currently in fluctuation. Obviously this project has the potential for a dramatic impact on

development and traffic patterns in and around the Town of Windsor. This project is one of the six priority projects in the Hampton Roads Long Range Plan.

#### *VDOT Six-Year Plan*

The Virginia Department of Transportation's Six-Year Improvement Program for the period 2008-2013 contains two projects in the Town of Windsor. The first project (UPC 52303) involves the construction of turn lanes on U.S. 460 at the intersection with U.S. 258. The Plan indicates that preliminary engineering is currently underway and construction is scheduled to begin in 2014. The project is currently funded at \$485,000 with an additional \$10,402,000 required after 2013. The second project (UPC 81472) involves the installation of emergency signals in the Town of Windsor. Total funding for the project of \$297,000 has already been allocated. The Six-Year Plan does not contain any scheduling information for this project.

Information from town staff and the Windsor Planning Commission indicates that the emergency signal project included in the Six-Year Plan has been completed; however, installation of battery backup for these signals is still planned.

#### *Isle of Wight County Transportation Planning Issues*

The Isle of Wight County 2006 Draft Comprehensive Plan provides an overview of the County's land use and transportation priorities. The Windsor Development Service District Land Use Plan, contained in Chapter 4 of the draft plan, identifies a Business and Employment corridor on the west side of Windsor and an extensive Planned Industrial zone on the southeastern edge of the Town. The remainder of the area surrounding the Town is identified for Suburban Estate and Conservation Development. This land use plan will bring a mix of commercial, industrial and residential uses to the lands surrounding Windsor. Over time this development pattern will increase traffic volumes in and around the Town. To deal with this increase in traffic volume, the Isle of Wight Transportation Chapter identifies the following transportation planning principles for the County:

1. The capacity of the major arterials is key to growth management of the County and should be carefully conserved. This implies strict access control and residential and nonresidential design standards that emphasize internalization of circulation systems.
2. Within the designated growth areas, pre-planned expansion of the highway system is required to ensure that the function and viability of the growth centers do not impact negatively on the quality of life.
3. Increasingly, the private sector will have to be part of the solution of transportation issues, including financing and other transportation system modifications.

The Implementation section of the Transportation Chapter identifies several priority projects for the County including the preparation of a County Transportation Plan and the construction of realignments and improvements for U.S. 258 identified in a 1994 VDOT study. It is essential that the Town of Windsor continue to coordinate the planning and implementation of transportation projects with the County.

The Town of Windsor is most concerned with addressing the 6-way intersection of U.S. 460, VA 610, and VA 603, which has blind corners and lacks a center turn lane. Intersection improvements are needed to improve visibility and safety at this intersection and will be a priority for the Town until upgrades are made. In addition, a traffic light with dedicated turn signals is desired for the intersection of U.S. 460 and Roberts Avenue.



#### *Richmond/Hampton Roads Passenger Rail Project*

The Virginia Department of Rail and Public Transportation is currently studying a set of options for enhanced passenger rail service between Richmond and Hampton Roads. One option under consideration is establishment of high-speed passenger rail service in the Norfolk Southern corridor that parallels U.S. 460 between Petersburg and Hampton Roads. Funding for the project has not been identified, and a construction schedule has not been established.

Town of Windsor  
Comprehensive Plan

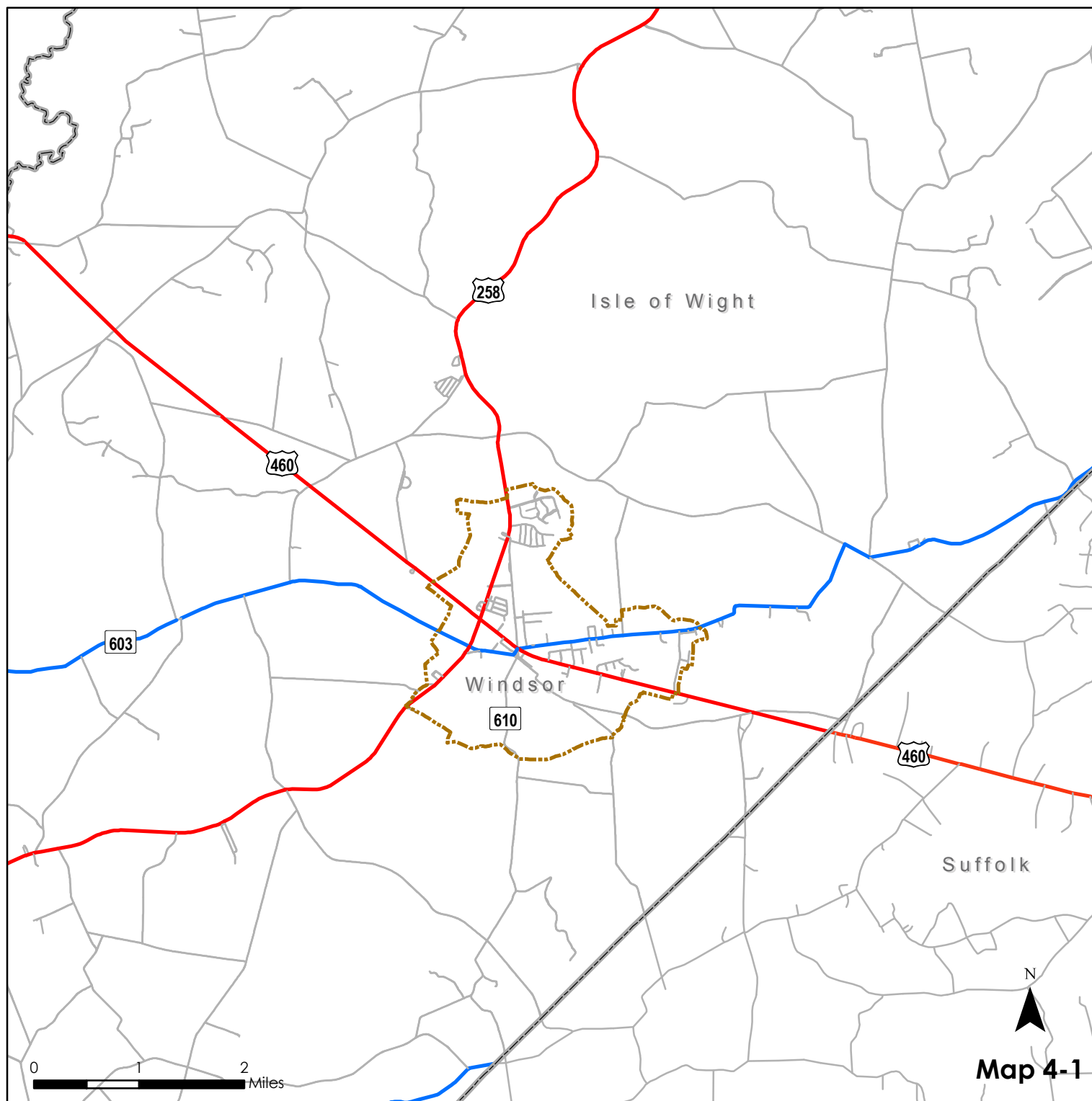
# Primary Road Network

## Legend

-  Town of Windsor Boundary
-  County Boundary
-  US Highway
-  Virginia Secondary
-  Local Roads



Source: Virginia Department of Transportation  
Map Created by the Hampton Roads Planning  
District Commission GIS Staff, June 2008






Map 4-1

Town of Windsor  
Comprehensive Plan






## Daily Traffic Volumes

Greater than 1000  
vehicles per day

### Legend

-  Town of Windsor Boundary
-  County Boundary
-  Roads

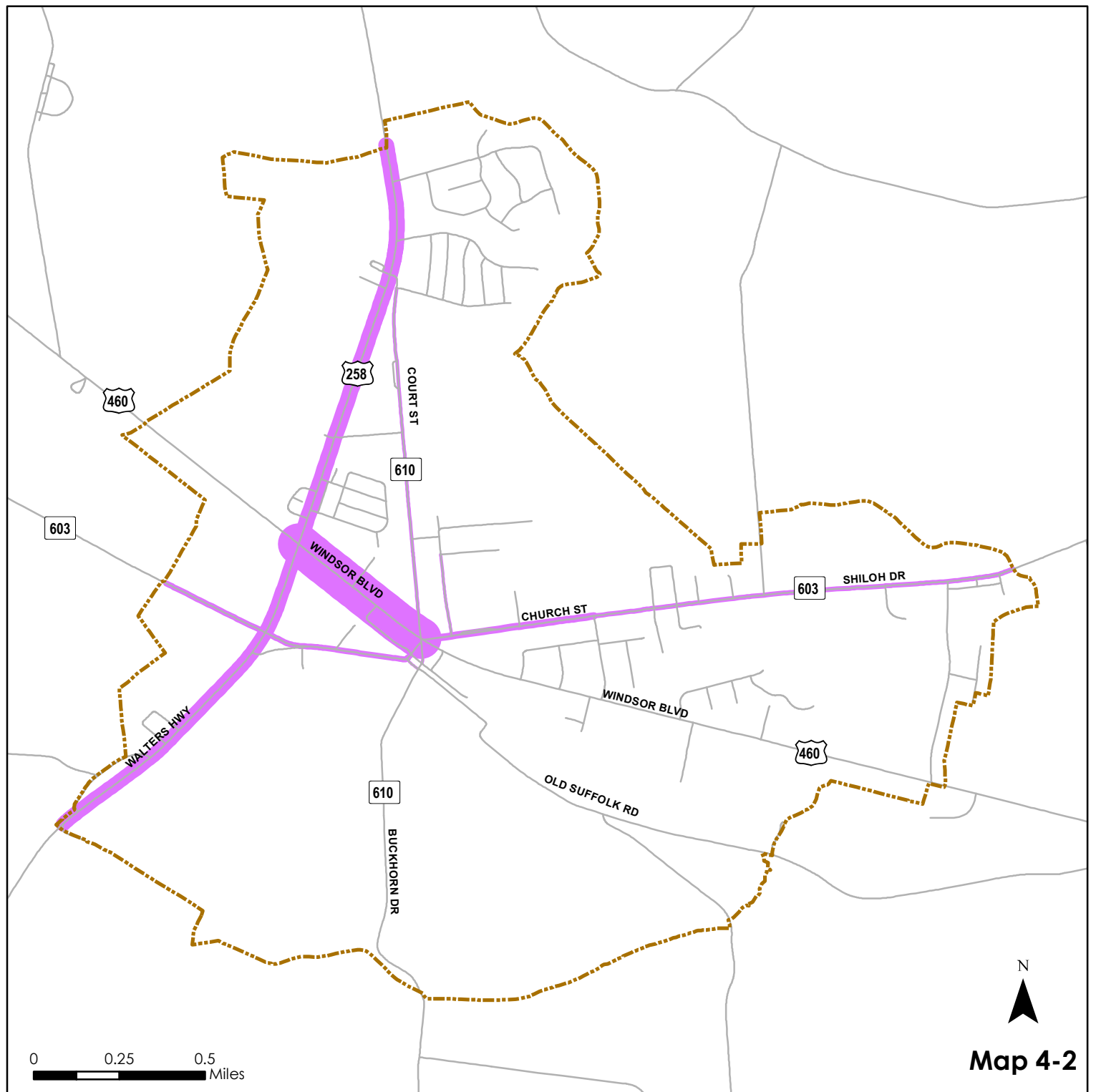
### Daily Traffic Volumes (2005)

-  1,000
-  2,500
-  5,000
-  7,500
-  10,000



Source: Virginia Department of Transportation

Map Created by the Hampton Roads Planning  
District Commission GIS Staff, June 2008








Town of Windsor  
Comprehensive Plan

# Route 460 Realignment (Proposed)

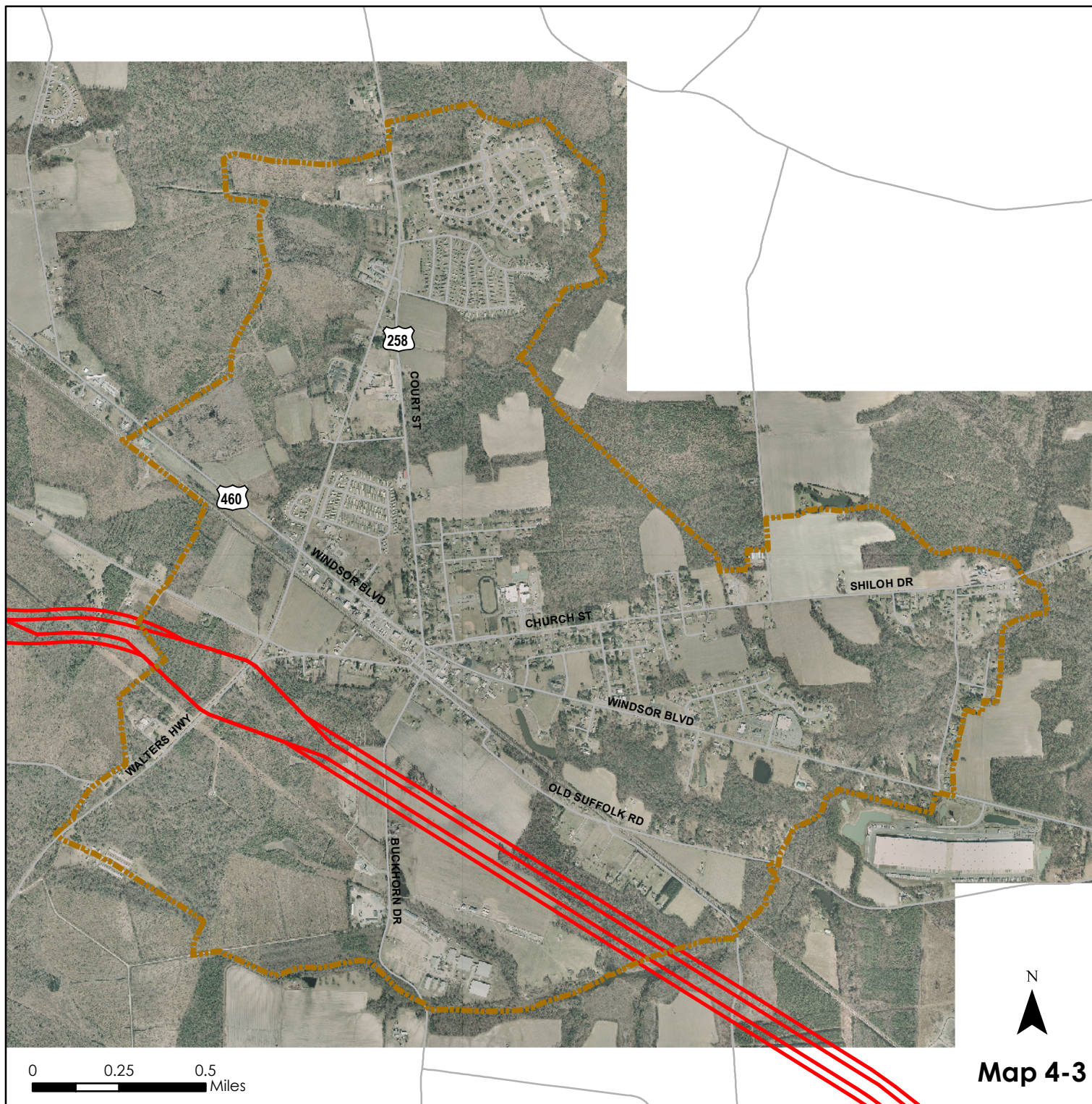
## Legend

-  Town of Windsor Boundary
-  Proposed Route 460
-  Roads



Sources: Aerial Photography (c) 2007 Commonwealth of Virginia; Virginia Department of Transportation

Map Created by the Hampton Roads Planning District Commission GIS Staff, June 2008



Map 4-3



## **CHAPTER 5 - COMMUNITY FACILITIES**

### **Introduction**

The Town of Windsor provides its citizens with a variety of services through local government and public safety agencies. Additional services are provided by Isle of Wight County, regional authorities and providers, and state agencies.

### **Local Government**

The Town of Windsor is governed by a seven-member Town Council, which includes an elected Mayor and a Vice-Mayor selected by Council members. The Council is responsible for levying taxes and setting policies and procedures for the citizens of Windsor. The Town Manager serves at the pleasure of the Council and is responsible for daily operation of the Town government. The Town has also established a Planning Commission and a Board of Zoning Appeals (BZA).

The Town's administrative departments are located in the Municipal Building, a small brick structure located on U.S. 460 near the intersection of VA 610 and VA 603. The building was remodeled in 1996 to provide space for council chambers and additional offices; however, the existing facility is not large enough to accommodate the current town staff of twelve and space for public meetings and records storage in the building is limited. In addition to the Municipal Building, the Town has a small maintenance shop on Duke Street across from Windsor High School. A new shop is planned and funding has been set aside for its construction, but the location has not been determined.

Windsor employees include the Town Manager, Town Clerk/Treasurer, Assistant Clerk, Deputy Clerk, Police Chief, Planning and Zoning Administrator, Maintenance Supervisor, four police officers and a general maintenance person. The duties of Town staff include billing and maintenance of the municipal water system, collection of local taxes and licensing fees, and other municipal tasks as directed by Council. Building permits for town projects are issued by the Isle of Wight County Building Official, and the County also handles enforcement of erosion and sediment (E&S) control. The Virginia Department of Transportation provides maintenance crews to maintain the Town's streets and storm drainage system. The town remains responsible for upkeep of streetlights, sidewalks, and other functions.

### **Public Safety**

#### *Police*

The Windsor Police Department was authorized by an ordinance enacted by the Town Council on March 13, 1990, and was formally established with the appointment of the first Chief of Police in 2001. The department now includes four sworn officers who are housed in the Municipal Building along with the Chief. However, because the building also houses

town staff and has limited space, the police department will require additional space to accommodate its needs.

Additional law enforcement services are provided by the Isle of Wight Sheriff's Department and the Virginia State Police. The Sheriff's Office is located at the Isle of Wight Courthouse complex and consists of 36 full time sworn officers, seven full time civilian appointees, and an auxiliary division of 10 members. Two (2) state police officers are also assigned to the Windsor area.

Isle of Wight County operates an Emergency 911 (E-911) system, which includes a central dispatch center that handles calls for county deputies, the Windsor Police Department, the Windsor Volunteer Fire Department, and the Windsor Rescue Squad. The system is overseen by an intergovernmental committee that includes the Windsor Town Manager and Chief of Police. The Emergency Communications Center consists of sixteen full time dispatchers, several part time dispatchers, and one dispatch supervisor.

### *Fire and Rescue*

The Town and surrounding area are served by the 50-member Windsor Volunteer Fire Department (VFD). The Windsor VFD is responsible for the County's largest service district, which stretches south from the Courthouse area to the Carrsville fire district (VA 611). The Windsor VFD is headquartered in a 6-bay facility built in 1993 and centrally located on U.S. 460.

Emergency medical care and hospital transportation is provided by the Windsor Rescue Squad, which is responsible for the southern portion of Isle of Wight County stretching from Isle of Wight Courthouse south to Franklin. The Windsor Rescue Squad is staffed by four paid personnel and approximately 35 volunteers. Like the VFD, the Windsor Rescue Squad is housed in a building located on U.S. 460.

Public safety services may see future service demands increase as the local population grows. In addition, the proposed U.S. 460 Bypass would include an interchange on U.S. 258 in Windsor and the eastern portion of the limited access roadway would be served by emergency services in the Town.

### **Health Care**

Health care services are available to Town residents at Sentara Obici Hospital, a 138-bed facility located in Suffolk, and at Southampton Memorial Hospital, a 221-bed facility located in Franklin. Both facilities provide 24-hour emergency care and offer a full range of services. Additional health care facilities include the 114-bed Consulate (formerly Tandem) Health Care of Windsor, a nursing home that opened in 2001, and Southside Physical Therapy. Nearby retirement communities with continuing care capabilities include The Village at Woods Edge, a senior living community sponsored by Southampton Memorial Hospital, and Lake Prince Woods, a private community located in Suffolk.

## **Public Schools**

The Town of Windsor is served by the Isle of Wight County Public School System, which enrolled approximately 5,400 students in grades K-12 in 2007. The school system offers advanced placement classes, alternative education, pre-school, and vocational classes.

School enrollment projections provided by the Weldon Cooper Center for Public Service at the University of Virginia indicate that Isle of Wight County should see a 20% increase in the number of students it serves through the 2011-2012 academic year. Students in Windsor schools currently account for approximately 28% of the total enrollment for the school system.

### *Windsor Elementary*

Windsor Elementary School opened in 1998 on Courthouse Highway, approximately five miles north of town. The school is one of the newest in the county school system and is well-equipped with technological resources. The school serves children in grades PreK-5 and reported a 2007 enrollment of 633 students.

### *Windsor Middle School*

The Windsor Middle School, located on North Court Street, opened in August 2001. The school is the former Windsor Elementary School and now houses students in grades 6-8. The school reported an enrollment of 363 in 2007. The Isle of Wight County Public Schools Strategic Plan for 2004 - 2010 recommended development of a plan to upgrade the exterior and site work at Windsor Middle School in 2005-2006. In addition, the Isle of Wight County FY 2009-13 Capital Improvement Plan includes requests to replace the facility. Funding for this project is allocated beginning in 2011-2012.

### *Windsor High School*

Windsor High School was built in 1994 and reported a 2007 enrollment of 514 students in grades 9-12. The high school is located on Church Street and provides both students and the community with a variety of well-maintained recreation fields and outdoor sports facilities.

## **Libraries**

The town opened its first public library in 1995 at 18 Duke Street. The Windsor Branch of the Blackwater Regional Library is located on town-owned land adjoining Community Park. The Windsor Branch contains approximately 31,255 volumes, media items, newspapers, and periodicals.

## **Parks and Recreation**

There are three small parks located within the Town limits: Robinson Park on Duke Street, Centennial Park on Church Street, and a Gazebo/Community Park on Duke Street. These parks are 1/3 acre or less in size and provide space for passive recreation and special events. In addition, there is playground equipment at Robinson Park.

In addition to these parks, a variety of recreational facilities and activities are offered at the two public schools located in town. The general public can use most school facilities after hours, including the gymnasiums. Both the County Recreation Authority and the Windsor Athletic Association offer a range of organized activities at the schools. Currently, Windsor Middle School provides 2 baseball/softball fields, 1 permanent soccer field, a multi-use asphalt area that can accommodate basketball, and miscellaneous playground equipment. Windsor High School offers 4 lighted tennis courts, 4 basketball courts, 2 softball/baseball fields, and 1 multi-use field. A large auditorium is also contained within the high school complex. Additionally, the Windsor Athletic Association has developed a ballfield complex located two miles north of Windsor on Courthouse Highway.

## **Solid Waste Management**

The Town of Windsor provides curbside trash collection on a weekly basis, as well as a twice yearly cleanup day that allows residents to dispose of large items and yard waste. Additionally, residents may dispose of solid waste at the Windsor Transfer Station located on U.S. 460. The station accepts appliances, used motor oil, recyclables, and yard debris. Household hazardous waste may be disposed of free of charge at the Isle of Wight Transfer Station in Smithfield on a monthly basis. Ultimate disposal of solid waste from both facilities is managed by the Southeastern Public Service Authority (SPSA), which operates a regional landfill in Suffolk, or by private contractors.

## **Water and Wastewater Facilities**

The Town of Windsor operates its own water system, which currently consists of five (5) wells, a 150,000-gallon elevated water storage tank, a 300,000-gallon storage tank, and approximately 20.5 miles of distribution piping. The water system is certified at a capacity of 280,000 gallons per day (GPD) by the State Health Department. Because of its location in a state-designated Groundwater Management Area, Windsor also has a permit from the Virginia Department of Environmental Quality (DEQ) authorizing a maximum withdrawal of 390,000 GPD from its wells. Neither permitting agency requires the Town to treat its groundwater prior to distribution. Fluoride levels and other water quality tests have consistently met permit requirements issued by the Health Department. In addition to the public water system, approximately 30 homes along

Griffin Street, Old Suffolk Road, and Tyler Road are served by a private water system with two wells<sup>1</sup>.



Table 5-1 describes the location and capacity of Windsor's wells. The Town recently completed installation of Well Number 5 on Griffin Street, which serves the majority of the Town's current water needs. According to a study done by R. Kenneth Weeks Engineers, Wells 2 - 4 are old and have low capacities (Well No. 2 is currently out of service). In addition, Well Number 3 has been observed to be pumping sand, which indicates partial collapse and necessitates replacement. The Preliminary Engineering Report includes a proposal to install a new well, Number 6, to be located on the same property as the 300,000-gallon storage tank. Well capacity is expected to 300 GPM. In addition, the well project would include retrofit of the existing elevated tanks to allow filling from the top, as well as capacity building to allow chlorination of drinking water as necessary. The report also recommends public water connections for the homes currently served by the private system.

In order to comply with state water supply planning requirements, the Town of Windsor is participating in the Hampton Roads water supply planning effort being conducted through the Hampton Roads Planning District Commission. When complete, the plan will evaluate existing water supply resources and uses, assess future water needs, and address water demand management.

| Table 5-1<br>Water Supply System |                     |                      |
|----------------------------------|---------------------|----------------------|
| Well No.                         | Location            | Rated Capacity (GPM) |
| 1                                | 14 Duke Street      | 175                  |
| 2                                | 102 S. Court Street | 34                   |
| 3                                | 42 Duke Street      | 87                   |
| 4                                | 63 N. Court Street  | 72                   |
| 5                                | Griffin Street      | 400                  |

Source: R. Kenneth Weeks Engineers, LLC, 2008

<sup>1</sup> R. Kenneth Weeks Engineers, *Town of Windsor Water System Improvements: Preliminary Engineering Report*, February 2008.

In 1988, Isle of Wight County and the Town of Windsor reached an agreement in which the Town would sell bulk water to the County to support development of areas near the Town. The agreement includes service to the Shirley T. Holland Commerce Park and will allow expansion of the park to include the proposed Intermodal Park. Service to Phase II of the Intermodal Park is expected to be provided by the Western Tidewater Water Authority.

In 1997, Isle of Wight County developed plans for a vacuum wastewater system to serve the Town and adjacent County areas. Construction of the sewer system was completed in the year 2000 by Isle of Wight County. At completion, the system served approximately 785 residential connections, including three mobile home parks, as well as several commercial uses and the Isle of Wight Commerce Park. Now fully operational, the Windsor area sewer system is comprised of two collector stations and a combination of gravity and vacuum collection lines. The collection lines discharge into a 20" force main on U.S. 460 that is owned by the Hampton Roads Sanitation District (HRSD). All effluent collected by the County lines is transported by force main for treatment at HRSD's Nansemond regional plant in Suffolk.

## **CHAPTER 6 - ENVIRONMENT**

### **Introduction**

The Town of Windsor is located in the rural Western Tidewater region of Hampton Roads, just to the west of the City of Suffolk. The Town lies near the eastern boundary of Isle of Wight County in an area that straddles the line between the Chesapeake Bay Watershed and the Chowan River Basin, which drains to North Carolina. The majority of the Town is located in the Chesapeake Bay Watershed and drains primarily to the Nansemond River Basin. The area to the west of the Town contains a tributary to Antioch Swamp and drains to the Blackwater River.

Overall, there is very little topographic relief within the Town. Most existing development is concentrated on broad, upland flats ranging from 75 to 85 feet in elevation. In most sections of Town, the flat topography has been developed in a traditional grid system of lots and streets. In outlying areas of Windsor, steeper grades are found adjacent to several small streams and drainageways. Elevations here range from 40 feet at the stream's edge to 80 feet on the adjacent upland terraces. Typically, the narrow banks of the drainageways blend into gently sloping areas of well-drained soils. Over the years, this rolling terrain has been favored for low-density homes and small subdivisions. Scattered to the south and west of Windsor are poorly drained upland swamps called pocosins. These outlying areas have remained mostly rural in character.

### **Climate**

With its proximity to the Atlantic Ocean, the Town of Windsor typically enjoys a temperate climate with mild winters and warm, humid summers. The nearest National Weather Service Station for which data is available is located at Holland (station Holland 1 E) in the city of Suffolk. Data from this station indicates that the average annual temperature is 57.8 degrees, with summer temperatures that average 75.1 degrees and winter temperatures that average 39.8 degrees. The frost-free growing season extends from about April 25th to October 10th, providing a growing season of approximately 177 days. Windsor receives an average annual rainfall of 49.07 inches and an average annual snowfall of 7.2 inches. Winds prevail from a southwesterly direction and are of low velocity. According to the National Climatic Data Center (NCDC), hurricanes are not common in the region while thunderstorms, severe lightning, and high winds occur more regularly.

In addition to summer thunderstorms, major producers of rainfall in Windsor include northeasters and tropical storms. According to the NCDC, the most frequently reported severe weather events in the area are thunderstorms, severe lightning, high winds, and flash flooding. Hurricanes occasionally bring heavy rain, high winds, and flooding. The most significant weather event in recent years

was Hurricane Isabel, which struck on September 18, 2003. The storm caused flooding and extensive damage throughout the Hampton Roads region.

## **Air Quality**

The Virginia Department of Environmental Quality (DEQ) monitors air quality at a number of sites in the Hampton Roads region. As indicated in DEQ's 2006 Virginia Ambient Air Monitoring Report, all stations in the Tidewater Monitoring Network met the U.S. Environmental Protection Agency's (EPA's) National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter. The closest air monitoring station to Isle of Wight County is located at Holland in the City of Suffolk (station 183-F) and only monitors for ozone.

Isle of Wight County was part of the Hampton Roads Marginal Ozone Non-Attainment Area, which was designated in June 2004 and required attainment by 2007. In response to this designation, the Hampton Roads region developed a Maintenance Plan for the relevant NAAQS in the area and drafted a request to the EPA for redesignation as an attainment area. On June 1, 2007, the EPA redesignated Hampton Roads as an attainment area for ozone. Technically, the region is considered a maintenance area. This designation is given to an area that was originally designated a non-attainment area for a pollutant that later met the federal standard for the pollutant, and for which the EPA has approved an air quality maintenance plan that shows how the area will remain in attainment through 2018.

| <b>Table 6-1</b>   |             |             |             |                |
|--|-------------|-------------|-------------|----------------|
| <b>Hampton Roads Area Fourth Highest 8-Hour Average Values</b> |             |             |             |                |
| <b>Hampton Roads Ozone Monitors, 2004 - 2006</b>               |             |             |             |                |
| <b>Parts per Million (ppm)</b>                                 |             |             |             |                |
| <b>Monitor</b>   | <b>2004</b> | <b>2005</b> | <b>2006</b> | <b>Average</b> |
| Hampton  | 0.074       | 0.078       | 0.076       | 0.076          |
| Suffolk - TCC  | 0.074       | 0.077       | 0.077       | 0.076          |
| Suffolk - Holland  | 0.075       | 0.078       | 0.071       | 0.074          |

Source: Virginia Department of Environmental Quality

The ozone standard is attained if the fourth highest daily maximum 8-hour average for each of the three most recent years are averaged, yielding an average less than 0.085 ppm. Table 6-1 indicates the fourth-highest 8-hour average values for selected stations in Hampton Roads for the years 2004 to 2006. All stations met the standard required by the EPA during that time period.



## **PHYSICAL CONSTRAINTS TO DEVELOPMENT**

The regulations of the Chesapeake Bay Preservation Act (CBPA) and the Department of Conservation and Recreation – Division of Chesapeake Bay Local Assistance (DCBLA) Checklist for Evaluation of Comprehensive Plans require that local comprehensive plans address existing natural limitations of the land that can act as physical constraints to development. These may include flood prone areas, highly erodible soils, highly permeable soils, wetlands, steep slopes, hydric soils, seasonally high water table, groundwater recharge areas, significant wildlife habitat areas, prime agricultural lands, and protected lands. An assessment of soils for septic tank suitability is also required. Physical constraints that are not applicable to Windsor are not addressed here.

The physical constraints identified by the DCBLA checklist that are applicable to long-term planning in the Town of Windsor are addressed below. These are considered to be important physical constraints to development in the Town. They include flood prone areas, steep slopes, wetlands, hydric soils, and highly erodible/permeable soils.

### **Flood Prone Areas and Steep Slopes**

Flood prone areas are those sites that are predictably subject to overflows from nearby water bodies. Development in flood prone areas is potentially costly and hazardous. Several factors can affect the potential for damage caused by flooding, such as topography, rate of water rise, depth and duration of flooding, geographic orientation of the shoreline, and the location of threatened development. Development in flood prone areas can worsen flooding by increasing the amount of impervious cover, which prevents the natural infiltration and absorption of water into the soil. DCBLA notes that the benefits of preserving floodplains include enhancing water quality, allowing recharge of groundwater aquifers, reducing flooding, providing fisheries and wildlife habitat, providing recreational opportunities, and protecting historic lands (1989). The Town's floodplain management effort will continue to focus on the identification, reduction, and mitigation of flood hazards within developed areas.

The Federal Emergency Management Agency (FEMA) identified flood prone areas in the Town of Windsor on the September 4, 2002, Flood Insurance Rate Maps (FIRM). Elevations in the Town range from 40 to 80 feet above mean sea level. The 100-year flood plain is generally restricted to properties that border streams draining to Ennis Pond. All structures within these areas are required to be built with their finished floors above the 100-year flood levels indicated on the maps. These are also the areas of Town with slopes greater than 15%. Map 6-1 illustrates floodplains and steep slopes in and adjacent to the Town.

The topography in the Windsor vicinity is nearly level and areas of steep slopes are rare. The only notable relief is found along the deeply incised drainageways

in peripheral areas of Windsor (Map 6-1). Data from the Natural Resources Conservation Service's soil survey of Isle of Wight County indicates that Nevarc and Remlik soils are the only soil types found in the Town of Windsor that are associated with slopes over 15%. These soils comprise less than 2% of the planning area's total acreage.

At present, the only built-up areas of Town subject to serious flooding are in the Lovers Lane/Shiloh Drive area. In order for property owners to qualify for flood insurance, localities must administer ordinances that regulate development practices within the 100-year floodplain. Currently, the Town's Flood Insurance Program is administered by the Isle of Wight County building official, and is in compliance with FEMA (Federal Emergency Management Agency) regulations. However, the majority of residential and commercial development is located on sufficiently high ground to avoid any potential flood hazard.

### **Wetlands and Hydric Soils**

Nontidal wetlands are inland, freshwater areas not subject to tidal influence. They are typically areas where the water table is at or near the surface or where the land is covered by shallow water. Nontidal wetlands encompass a variety of environments such as marshes and swamps, bottomland hardwood forests, wet meadows, inland bogs and the shallow fringe areas of lakes and ponds. Nontidal wetlands possess many of the same physical and biological characteristics as tidal wetlands. They perform similar valuable ecological functions, including providing wildlife habitat, erosion control, water quality improvement, stormwater/flood control, ground water recharge, and recreational opportunities.

Map 6-2 indicates the locations of wetlands and hydric soils in the Town of Windsor. Wetlands information is based on National Wetland Inventory (NWI) maps produced by the U.S. Fish & Wildlife Service. NWI data is reasonable for use in general planning activities, but not for site-specific planning and design. Because of aerial photography limitations, NWI maps often omit small wetlands (less than 3 acres) or exclude others with ambiguous vegetative cover. Many wetlands in the Windsor vicinity are shrub-scrub emergent wetlands that are difficult to identify from the air. In all cases, on-site wetland delineations should be completed before development takes place. In cases where wetlands are present, state or federal permits will probably be needed before development can take place.

A large portion of the undeveloped land in and around Windsor consists of hydric soils. Hydric soil is one of the three basic indicators of wetlands, since when sufficiently wet they support the growth and regeneration of hydrophytic vegetation. The hydric soils in the Windsor area can be categorized into two basic types; those associated with drainageways and those associated with Upland/Myatt soils. The hydric soils fringing the local drainageways have a high probability of containing extensive jurisdictional wetlands. The Upland/Myatt grouping of hydric soils are somewhat less likely to contain jurisdictional

wetlands, particularly if these areas have been drained, filled or hydrologically altered over the years. In most cases, a soil scientist or hydrologist will be needed to determine the presence and extent of wetlands in areas of Myatt soils, based on study of on-site vegetation.

Prior converted croplands, as defined by the U.S. Army Corps of Engineers, have been generally exempt from federal permitting requirements and can potentially be developed for urban purposes. These areas are defined as hydric soil areas whose wetland hydrology was permanently altered prior to December 23, 1985. Sites not altered before that date are subject to wetlands regulations that may limit the potential for development.

### **Existing Wetland Protection Policies**

The Virginia Nontidal Wetlands Act of 2000 governs activities affecting non-tidal wetlands within the state, and includes the following items:

- Requires permittees first to avoid, then minimize and, if wetlands must be destroyed, to replace their acreage and function.
- Adopts the scientifically accepted definition of wetlands currently used by the federal government and the State Water Control Board.
- Requires permits and mitigation by those proposing to drain, dredge, excavate, ditch, flood or impound, fill or discharge into nontidal wetlands.
- Requires the state to seek a Corps of Engineers' State Programmatic General Permit for most activities, thereby streamlining the permitting process.
- Exempts normal agricultural and silvicultural activities and homeowner landscaping and maintenance.
- Requires general permits for a variety of activities, including sand, coal and gas mining activities, linear easements for public utilities and transportation projects, and activities affecting less than one-half acre.

In addition to these measures, nontidal wetlands are protected under the Town's Chesapeake Bay Preservation Ordinance by designation as Resource Management Areas. Map 6-3 depicts Chesapeake Bay Preservation Areas in the Town of Windsor.

### **Public/Private Water Access**

No navigable waterbodies exist within the Windsor Town boundaries. Discussion of potential recreational water access is contained in the Community Facilities chapter.

## **Highly Erodible/Highly Permeable Soils**

Highly erodible soils, if improperly disturbed or exposed, can contribute to water quality degradation through sedimentation and siltation. In addition, nutrients and toxics may be attached to soil particles that can be transported and released to the aquatic environment through erosion. In the Town of Windsor, Nevarc and Remlic soils as well as some types of Slagle soils have been identified as having high erosion hazard characteristics. These soils are generally confined to small areas near streams or wetlands where steep slopes are present. Only two areas of town show severely eroded soils, both classified as Slagle sandy loam with 2 to 6% slopes. The largest of these is located in a wooded area to the west of Mathews Drive; the other is located in an undeveloped area to the north of the Norfolk Southern rail line. Map 6-4 illustrates soils in the Windsor area.

Highly permeable soils transmit water at such a rate that there is potential for surface pollutants to infiltrate undegraded into the nearby surface water and groundwater. A more technical analysis of both highly erodible and highly permeable soils was conducted as part of the Virginia Geographic Information System (VIRGIS) mapping project initiated by the Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation in 1985. A review of these sources reveals the most significant areas of concern to be associated with the base and sides of the slopes surrounding Ennis Pond. These areas are generally confined to the northern and eastern periphery of the Town.

## **Soil Suitability for Septic Systems**

The majority of soil classifications in the Windsor area have severe limitations for septic system use. Because of slow soil permeability and a high water table, most drainfields in the area perform poorly in treating septic waste. Essentially, local topsoil horizons are too clayey, poorly drained and saturated to permit sufficient filtering of drainfield effluent. This situation can pose a potential health hazard since inadequately treated waste can seep into groundwater and potable water supplies.

The Windsor area now offers public sewer service and most septic systems have been abandoned as local customers connect to the sewer collection system completed in 2000. New development in the Town is required to connect to the public sewer system and no new septic systems are being approved.

## **Forest and Farmland**

The majority of undeveloped land within Windsor consists of cropland and forest. Natural forestland serves important functions in maintaining the land and supporting development by stabilizing the soil, preventing erosion, increasing soil permeability, and decreasing stormwater runoff. Forestland also serves as a buffer for adjacent land uses, lessens the impact of noise, wind and heat,

improves air quality, and provides habitat for wildlife. Pockets of forestlands are located primarily along streams and wetlands, with some larger tracts along the southern and eastern edges of the Town.

The presence of cropland within the Town of Windsor contributes greatly to its rural character. There are scattered tracts of cropland in Windsor that are still being actively farmed, particularly in areas south of the railway. Active lumber operations are mostly confined to forestland outside of Windsor.

## **Water Quality**

Activities on the land invariably impact upon the utilization and quality of water resources. Potential impacts include increased nutrient, sediment, and pesticides carried in urban runoff and increased flows, which can cause streambank erosion. In a developing locality, through the comprehensive planning process, local governments have the opportunity to direct conflicting land and water uses from sensitive natural resources.

Ecologically, forestland helps to maintain water quality in a number of important ways. The existing woodlands throughout Windsor help to anchor the soil through their root systems and by acting as a natural windbreak, provide habitat for a variety of plants and animals, and help filter sheet runoff from adjacent impervious areas.

While there are water quality impacts associated with urbanization, there are also a number of recognizable water quality problems associated with agricultural land uses. Pesticides, sediments and fertilizers characteristic of agricultural runoff may contribute to water quality pollution and uncontrolled animal waste can contaminate ground and surface water with nitrates and bacteria.

In existing developments, state programs do not provide the means to address water quality issues. However, development of local stormwater management programs can begin to address water quality impacts arising from previously developed areas. The Town of Windsor will undertake the creation of a local program to address these issues and protect its water quality as the Town continues to grow.

## **Redevelopment**

Runoff from developed areas, due to increased imperviousness, can potentially degrade local water quality. Paved areas cannot absorb rainwater and the resultant runoff can transport pollutants and toxic substances into local waterways. Some of the older areas of the Town were developed prior to the enactment of environmental regulations that require water quality protection measures in their design. In this situation, redevelopment provides the primary means of making significant water quality improvements. During redevelopment

of these older areas, water quality improvement measures such as stormwater best management practices (BMPs) can be incorporated. Redevelopment activities must also comply with impervious area limitations and should preserve existing vegetation.

## **Surface Water Resources**

The majority of the Town of Windsor is located within the Ennis Pond watershed. Ennis Pond is a multi-branched freshwater swamp with no definable channel. The major branches of Ennis Pond bisect Windsor to the north and south. Generally, these branches consist of forested bands of swampland varying from 200-400 feet in width. These natural areas often taper sufficiently in width to allow bridge and roadway crossings.

Ennis Pond is a tributary to Lake Prince Reservoir, which straddles the Isle of Wight County/Suffolk City line. Constructed in the 1920s, Lake Prince Reservoir is part of the water supply system for the City of Norfolk. Raw water from the reservoir is pumped to a municipal treatment plant prior to distribution. The Town is also the location of the transfer point of water from the Lake Gaston pipeline to the Lake Prince reservoir. Since the reservoir lies five miles east of Windsor, there has been some concern that septic leachate and surface runoff may be impacting this water supply. Although this effect has not been documented, the recent availability of centralized sewer service in the Windsor area has helped alleviate these concerns.

## **GROUND WATER**

### **Protection of Potable Water Supply**

The Potable Water Supply element of a comprehensive plan describes the uses and distribution of local water resources. Present water use patterns are a product of local geography, water needs, transportation patterns and requirements, social and economic forces, and residential development preferences, past and future. It is important to view the present use since water is a finite resource. Water resources are critical to the physical and economic health of the community as well as the natural environment. Many practices have the potential to severely degrade the water quality and quantity.

### **Sources of Potable Water**

Groundwater is the only source of potable water supply for the Windsor area. Alternative sources, such as surface impoundments or direct withdrawals, are presently not utilized in Windsor or in central Isle of Wight County. Although three large reservoirs lie just east of town, these facilities primarily serve the City of Norfolk. Most residents in Windsor are served by a municipal water system owned and operated by the Town. Small industries and residents in the outlying

area continue to utilize individual wells for production or domestic use. Most domestic wells in the Windsor area are shallow in depth and tap into upper aquifers. This water supply can be characterized as a hard, sodium-calcium bicarbonate type generally of good quality. The Town's municipal wells tap into deeper, confined aquifers (Middle and Upper Potomac Aquifers) where the water varies from a soft to very hard sodium bicarbonate type, with moderately high chloride levels.

Because the Windsor area does not support any large water-intensive industry, it has not experienced significant declines in water levels due to major ground water pumping. Unlike the more industrialized northern and southern sections of the County, Windsor's water demands are primarily generated by domestic, commercial, and agricultural users. However, industries and municipal water systems in the surrounding area do make large water withdrawals, some resulting in localized depression of ground water resources. In addition, demand for water in the Town is likely to change as a result of centralized sewer service availability in the Windsor area. Depending on the permitted withdrawals for the Isle of Wight County commerce park and other future industrial operations, water-dependant types of industry may be increasingly drawn to the area.

### **Ground Water Framework**

The Town of Windsor is located within the Virginia Coastal Plain Physiographic Province, which extends from the Fall Line in the west to the Atlantic Ocean in the east, to the Maryland border in the north, and to the North Carolina border in the south. The surface of the Virginia Coastal Plain consists of a series of broad gently sloping, highly dissected north-south trending terraces bounded by seaward facing, ocean cut escarpments. The subsurface is characterized by wedge shaped unconsolidated sedimentary deposits that, in general, slope (dip), and thicken towards the east. These deposits consist of clay, silt, sand, and gravel, with variable amounts of shell material. In some localized areas, cementation of shell beds can form thin lithified (rock) strata. The unconsolidated sediments overlie a crystalline bedrock basement that also slopes gently to the east.

Many different depositional environments existed during the formation of the Virginia Coastal Plain deposits. In general, the stratigraphic section (vertical profile) consists of a thick sequence of nonmarine (riverine and alluvial) sedimentary deposits overlain by a thinner sequence of marine (near shore beach, estuarine, and delta) sedimentary deposits.

The ground water flow system in the Coastal Plain of Virginia is a multiaquifer system as mentioned above. Studies have identified at least nine major water bearing hydrogeologic units (aquifers) in the Virginia Coastal Plain (Hamilton and Larson, 1988; Laczniaak and Meng, 1988; Harsh and Laczniaak, 1990). Over the years, the USGS has continued to collect data to refine the geologic framework

and improve upon the understating of the Coastal Plain Aquifer System. The most recent discovery is the Chesapeake Bay Impact Structure (CBIC). The CBIC was formed over 35 million years ago when a bolide (meteor or asteroid) hit the earth near modern day Cape Charles, Virginia. The impact of the bolide obliterated the deepest three aquifers beneath the Chesapeake Bay, the Eastern Shore, and portions of the Lower and Middle Peninsula. The impact crater filled with a mixture of various depositional materials (breccia). The USGS is also in the process of building a new Coastal Plain ground water flow model to be used to assist state regulators and local water utilities to manage the ground water resources.

The ground water framework beneath the Town of Windsor is comprised of one unconfined aquifer and two major confined aquifers. The three deeper Potomac aquifers and the Aquia aquifer are truncated by the breccia within the Chesapeake Impact Crater. The confined aquifers are separated from aquifers above and below by confining beds. The following paragraphs provide a general description of the aquifers identified beneath the Town from youngest to oldest (top to bottom):

#### Columbia Aquifer

The Columbia Aquifer is the uppermost aquifer and is unconfined throughout its extent. The Columbia Aquifer consists of the sandy surficial deposits above the Yorktown Confining Unit. This aquifer is characterized by interbedded very coarse gravel channel deposits that fine upwards into silts and clays. The Columbia aquifer is used primarily for domestic water supplies (drinking water and irrigation), especially in the eastern region of the Virginia Coastal Plain.

#### Yorktown-Eastover Aquifer

The sediments of the Yorktown-Eastover Aquifer are characterized by interlayered, thick to massively-bedded shelly sands separated by thinner clay beds. The Yorktown-Eastover Aquifer is separated from the Columbia aquifer by the Yorktown Confining Unit. In cross section, the Yorktown-Eastover Aquifer is wedge shaped sloping (dipping) and thickening to the east.

Numerous wells penetrate the Yorktown-Eastover Aquifer throughout the Virginia Coastal Plain. Some light industries and many domestic users use this water-supply source. Well yields have been reported ranging from 20 to 250 gallon per minute (gpm) (Harsh and Lacznia, 1990).

#### Chickahominy-Piney Point Aquifer

The Chickahominy-Piney Point Aquifer is characterized by black and white sands containing glauconite, shells, and dark silty clay interspersed throughout the



sands (Meng and Harsh, 1988). The Calvert Confining Unit overlies the Chickahominy-Piney Point Aquifer.

Numerous wells penetrate the Chickahominy-Piney Point Aquifer in the Virginia Coastal Plain. Many light industries, small municipalities, and domestic users use this water-supply source. Reported well yields for the Chickahominy-Piney Point Aquifer range from 20 to 250 gpm (Harsh and Lacznia, 1990).

### The Aquia and Potomac Aquifers

The Potomac Formation of Cretaceous age is overlain by the Aquia Formation of late Paleocene age. Within the Potomac Formation, dark organic clay is interbedded with lighter sand and gravel and laterally truncated by incised channel sand. The lower part of the Aquia Formation includes two distinct intervals of reworked Potomac Formation sediments that are overlain by wholly marine glauconitic sand (McFarland and Bruce, 2006).

The Potomac aquifer is the largest, deepest, and most heavily used source of ground water in the Virginia Coastal Plain (McFarland and Bruce, 2006). The Potomac aquifer extends across the entire Virginia Coastal Plain except for the inner part of the Chesapeake Bay impact crater and supplies major industries, many towns and cities, and low-density residential developments in rural areas. Increased development of the Potomac aquifer in conjunction with desalinization is expected during the coming decade and beyond as a means of addressing growing water demands in the metropolitan area to the east (McFarland and Bruce, 2006). Because the Potomac Aquifer is the primary water source for the Town, increased withdrawals may impact future water supplies as well as water quality.

### **Ground Water Recharge Areas**

Ground water recharge occurs when rainwater that percolates into the ground enters the unconfined (water table) aquifer. In the Town of Windsor, the unconfined aquifer is the Columbia Aquifer. In the context of potable drinking water supplies, the Columbia Aquifer is not the aquifer of choice due to relatively low yields, poor water quality, and the propensity for ground water contamination. Some older homes, however, may still rely on the Columbia aquifer for consumptive use. Ground water contained in the upper confined aquifers is a much better choice for drinking water than the Columbia Aquifer. However, the surficial aquifer provides mostly domestic water supplies and also serves as the primary entryway for recharge to the entire ground-water system.

Research also suggests that there are some areas of the Coastal Plain where ground water recharge occurs between aquifers (Meng, A.A. III, and Harsh, J.F., 1988). This occurs when the hydraulic pressure of ground water in one aquifer forces water through a leaky confining unit into an adjacent aquifer. This

movement can be either up or down based on the hydraulic properties of the aquifers. The location and magnitude of recharge between the aquifers, however, has not been well documented. Groundwater discharge areas are located in low-lying areas and are characterized by rivers, seeps, springs, streams, and wetlands. Discharge areas for the confined aquifers may occur off the coast beneath the Atlantic Ocean or beneath the Chesapeake Bay.

### **Topographic Analysis of Localized Ground Water Recharge and Discharge**

Ground water flow in unconfined aquifers tends to reflect surface water flow. Ground water flows from areas of relatively high elevation to adjacent areas of relatively low elevation. Ground water recharge can occur across almost any upland surface. Land surfaces with a steep slope are less effective ground water recharge areas than broad and relatively flat grassy uplands. Ground water is discharged at the land surface in topographic low areas that intersect the water table. Springs, seeps, swamps and river channels are examples of ground water discharge areas.

Pocosin, or swamp, is one of the hydrologic terms used for a ground water discharge area. Southern and western areas of the Town contain pocosins, which may function as discharge areas. Elevations in Windsor range from 40 to 80 feet. In general, places of higher elevation are the areas of ground water recharge and swampy low-lying regions are the areas of ground water discharge.

### **Ground Water Quality**

The unconfined Columbia aquifer is susceptible to localized ground water contamination. Seven high priority threats to ground water in Southeastern Virginia have been identified. These are (1) inefficient septic systems; (2) leaky underground storage tanks; (3) spills and improper disposal of hazardous materials; (4) leaky surface waste impoundments; (5) leaky landfills; (6) improper pesticide and fertilizer applications; and (7) pumping induced saltwater encroachment. These threats may impact individual wells in the Town of Windsor, which generally draw water from the surficial aquifer.

#### *Local Ground Water Protection*

The potential for pollution is a known problem in ground water, but there is no sampling program in place to determine the extent or nature of contamination. However, there are a number of tools available to local governments to assist them in addressing ground water quality. These may include the preparation of a ground water management plan. The Ground Water Protection Handbook for Southeastern Virginia (1990), prepared by the Hampton Roads Planning District Commission (formerly the Southeastern Virginia Planning District Commission), provides local guidance for developing a ground water management plan.

The Town's Chesapeake Bay Preservation Area Ordinance is another tool for protecting the quality of the ground water. Windsor has designated the entire Chesapeake Bay watershed for pollution protection under the Chesapeake Bay Act. Mitigation measures available under this program include best management practices, vegetative buffers, protection of sensitive environmental resources, and limitations on impervious cover. These measures help to protect both surface and ground water from pollution and also better enable water to percolate through the soil to ground water.

### *Regional Ground Water Programs*

The Town of Windsor also benefits from various regional programs that have been identified and developed by Regional Advisory Committees to the HRPDC, which are comprised of staff from member localities, HRPDC, state agencies, and the private sector. Current regional ground water projects include:

- ❑ Cooperative Regional Ground Water Management Program - Continuing Studies: A cooperative, cost sharing agreement with the USGS to continue to develop and refine the regional ground water model and related ground water data base for Eastern Virginia.
- ❑ Regional Ground Water Management Program - Mitigation Administration and Technical Assistance: The sixteen member localities have provided funding for the HRPDC to support a geologist/planner with ground water hydrology and computer modeling expertise to provide ground water technical support to the member localities.
- ❑ Hampton Roads Planning District Commission's Source Water Assessment Program (SWAP): The HRPDC, under contract to the VDH, evaluated surface water sources of drinking water and potential land-use related threats to the quality of those sources in the Hampton Roads area. This database will be updated as needed and will be used to prioritize surface water and ground water protection activities in the Hampton Roads area.

### **Potential Groundwater Pollution Sources**

#### Leaking Underground Storage Tanks

Leaking above and underground storage tanks can be a significant issue in areas dependent on ground water such as Windsor. These storage tanks contain hazardous substances, such as petroleum, gasoline, diesel fuel, acetone, or kerosene. Over time, underground storage tanks can corrode and begin to leak. If a storage tank is leaking, the surrounding soil can become contaminated. In addition, the shallow ground water aquifer may become contaminated. Once

contaminants enter the shallow ground water aquifer, they can be transported into local waterways.

The Department of Environmental Quality is charged with regulating underground storage tanks in Virginia. DEQ annually receives federal funds to clean up Leaking Underground Storage Tanks (LUSTs). To prevent leaks from developing in the future, LUST regulations required that after December 22, 1998, all new tanks be made of non-corrodible materials and be equipped with overfill and spill prevention devices. Tanks in existence prior to that date were required to be replaced or retrofitted to meet the new standards by that deadline. Tanks are also required to possess leak prevention devices and monitoring equipment to help detect leaks. Underground storage tank regulations do not apply to residential underground storage tanks.

| <b>TABLE 6-2</b><br><b>LEAKING UNDERGROUND STORAGE TANKS</b><br><b>TOWN OF WINDSOR, 1989 - 2005</b> |                      |                         |               |
|---|----------------------|-------------------------|---------------|
| <b>Site Name</b>  | <b>Location</b>      | <b>Release Reported</b> | <b>Status</b> |
| Walters Grain and Supply Incorporated   | 31 W Windsor Blvd    | 20-Jun-05               | Closed        |
| Eley Mary Residence   | 22507 Courthouse Hwy | 25-Nov-03               | Closed        |
| Windsor High School   | 24 Church Street     | 17-Jan-01               | Closed        |
| Wright Dredging Co., Inc.   | 9584 Beartrap Cir    | 1-Oct-98                | Closed        |
| Dixie Guano   | 37 Windsor Blvd      | 18-Sep-98               | Closed        |
| Windsor Area HQ   | 25146 Buckhorn Drive | 3-Mar-98                | Closed        |
| Sentry Food Mart #10  | 60 W. Windsor Blvd   | 25-Nov-96               | Closed        |
| So. States Tidewater Petro Coop   | 9242 Windsor Blvd    | 20-Nov-95               | Closed        |
| Windsor High School   | 24 Church Street     | 14-Nov-94               | Closed        |
| Sentry Food Mart #10  | 60 W. Windsor Blvd   | 4-Oct-94                | Closed        |
| Southern Food Store #2  | 1 E. Windsor Blvd    | 6-Nov-92                | Closed        |
| Sentry Food Mart #52  | 24 W. Windsor Blvd   | 7-Jun-89                | Closed        |

Source: Virginia Department of Environmental Quality

Leaking Underground Storage Tank data for the Town of Windsor was obtained from the Department of Environmental Quality. There are twenty-five (25) registered underground storage tank sites in Windsor. According to DEQ records, twelve releases have been reported since 1989. Table 6-2 lists the reported releases along with the date of the incident and the status of the case.





### *Defective Septic Systems*

As previously noted, the Town of Windsor now has a public sanitary sewer system. Until all of residences are connected to public sewer, Town staff will continue to ensure that residents comply with the 5-year pump-out schedule required by the Virginia Chesapeake Bay Preservation Act and local ordinance.

Town of Windsor  
Comprehensive Plan

# Floodplains & Steep Slopes

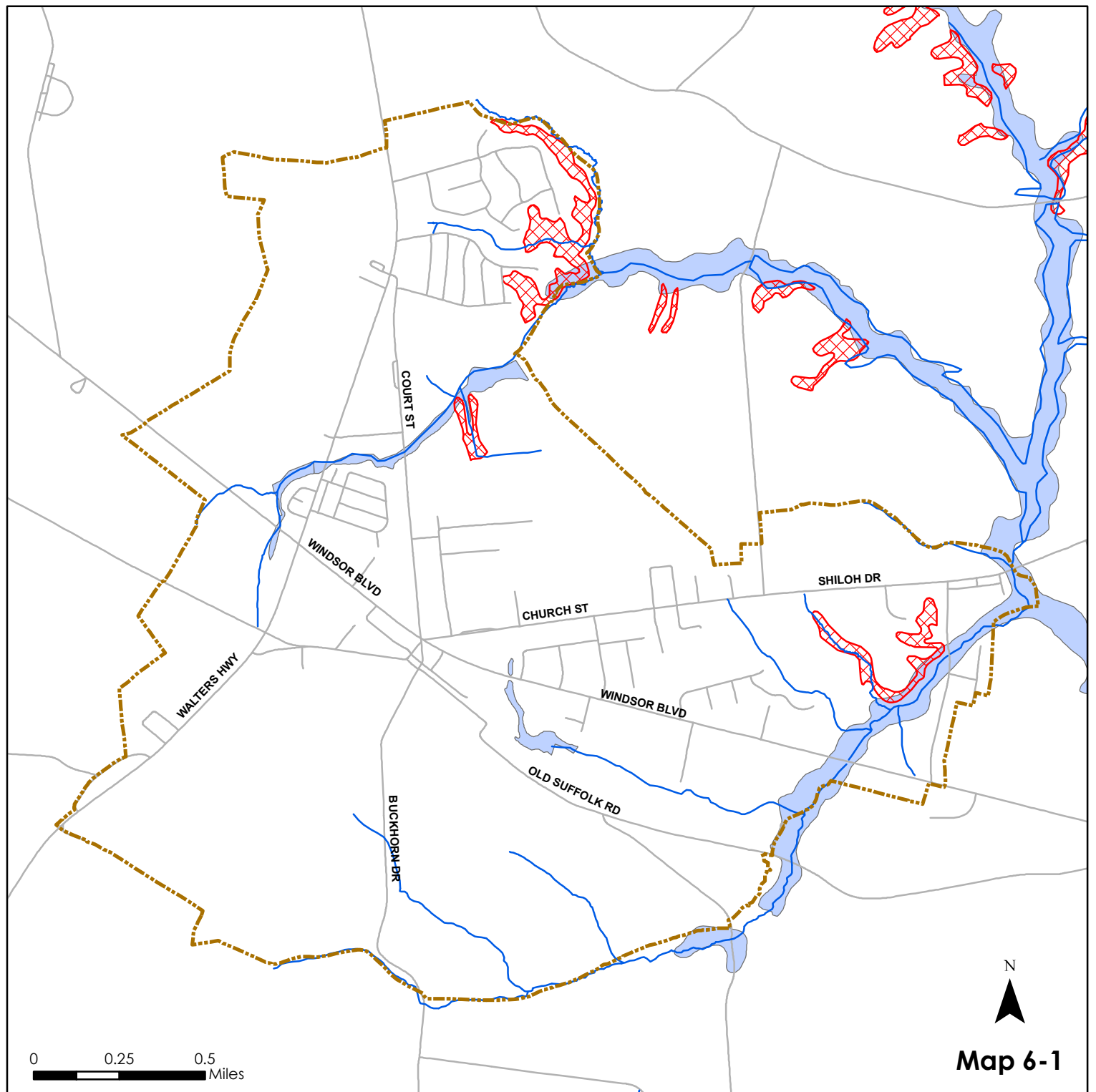
## Legend

-  Town of Windsor Boundary
-  Streams
-  Slopes greater than 15%
-  100-year flood zone



Sources: FEMA Flood Insurance Rate Map, 2002  
& USDA Natural Resources Conservation Service 1995

Map Created by the Hampton Roads Planning  
District Commission GIS Staff, June 2008



N  
  
**Map 6-1**

Town of Windsor  
Comprehensive Plan

# Wetlands & Hydric Soils

## Legend

 Town of Windsor Boundary

 Wetlands

## Hydric Soils

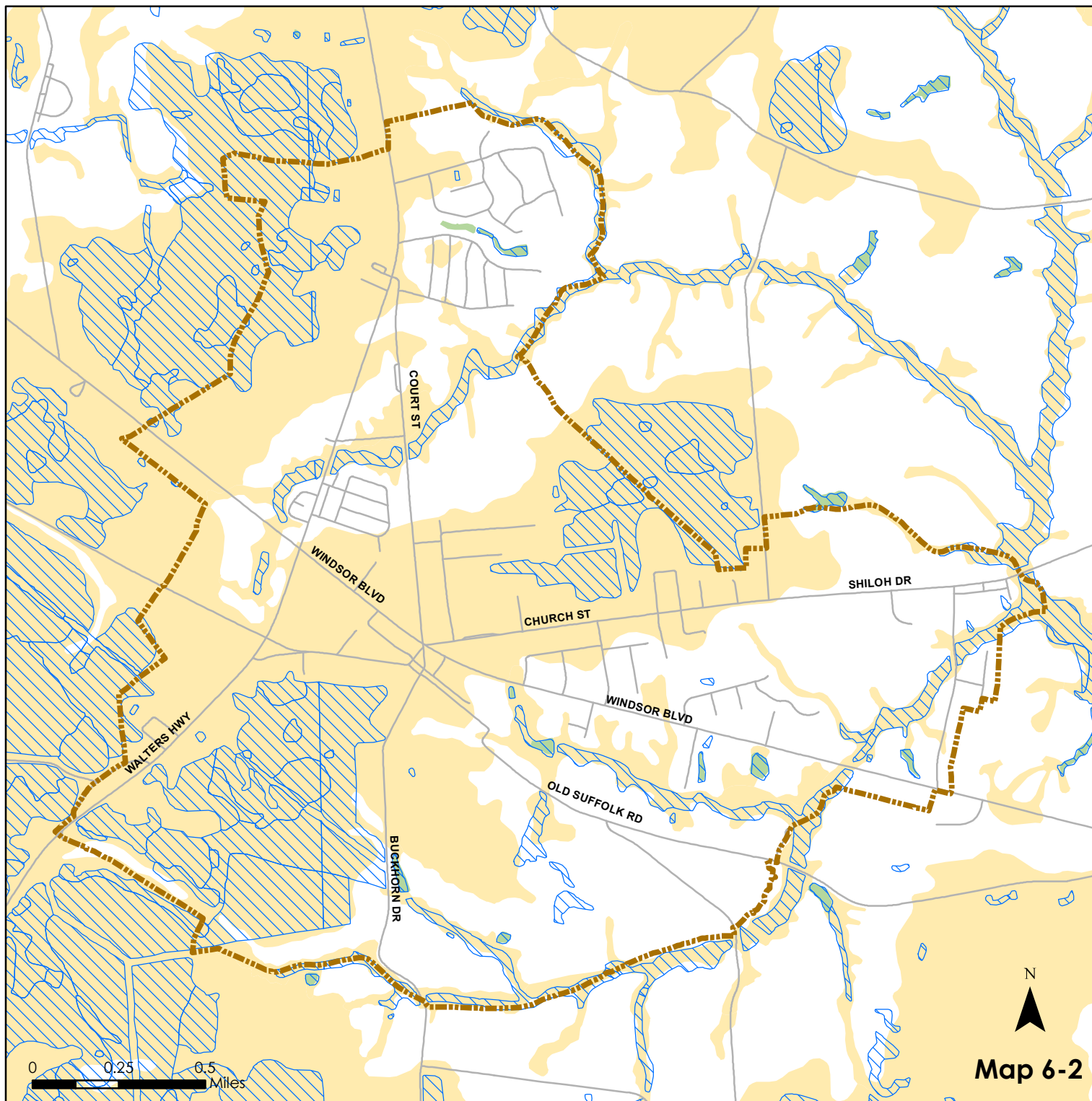
 Yes

 Unranked



Sources: National Wetlands Inventory  
& USDA Natural Resources Conservation Service 1995

Map Created by the Hampton Roads Planning  
District Commission GIS Staff, June 2008








Map 6-2

Town of Windsor  
Comprehensive Plan

# Chesapeake Bay Preservation Areas

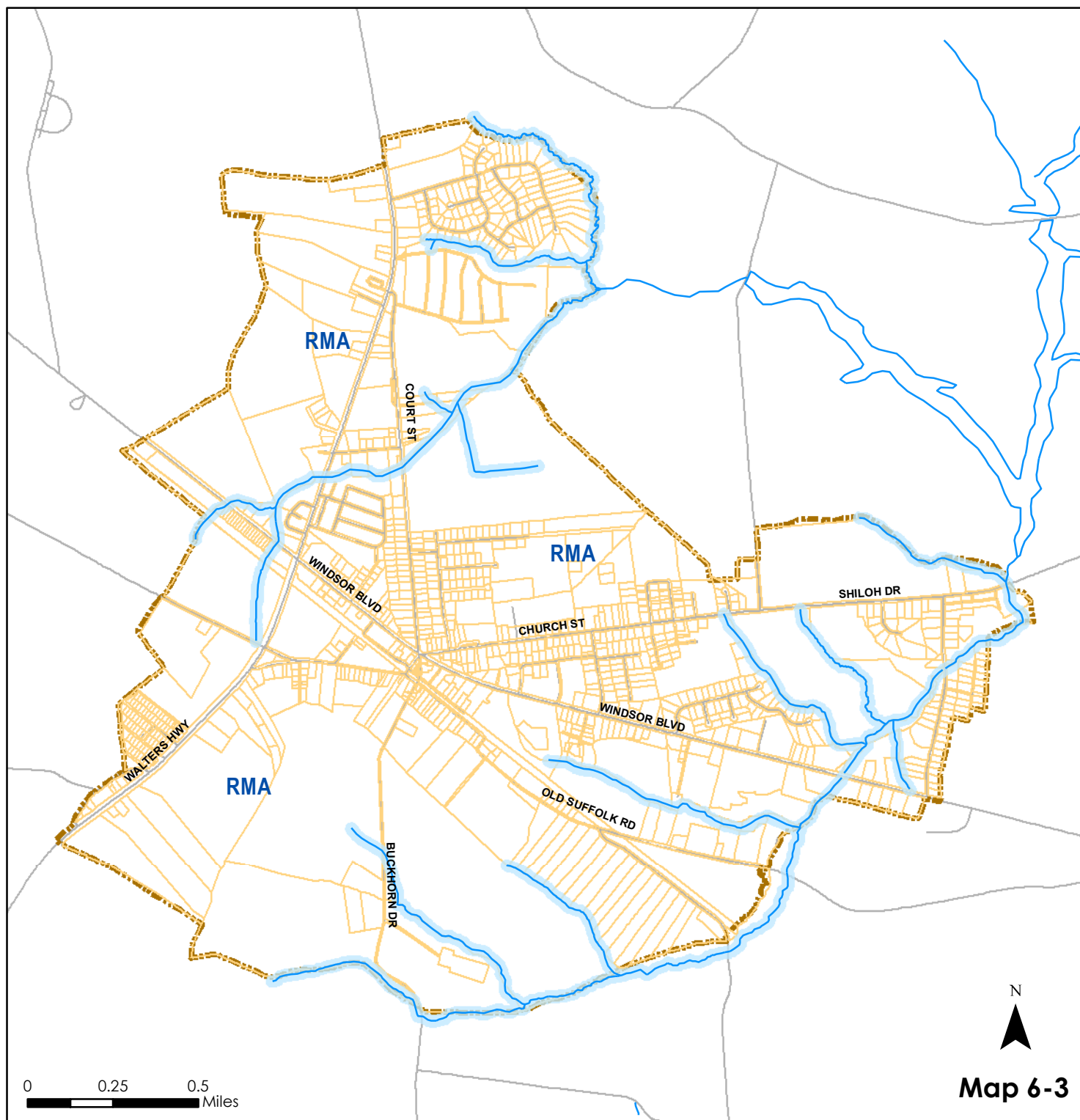
## Legend

-  Streams
-  Resource Protection Areas (RPA)
-  Parcels
-  Town of Windsor Boundary
-  Roads
- RMA** Resource Management Area (RMA)  
All areas inside the corporate limits are considered RMA unless designated as RPA.



Sources: Town of Windsor; Commonwealth of Virginia,  
Virginia Base Mapping Project

Map Created by the Hampton Roads Planning  
District Commission GIS Staff, June 2008



N  
  
**Map 6-3**



# Town of Windsor Comprehensive Plan

## Soil Types

### Legend



Town of Windsor Boundary



Roads

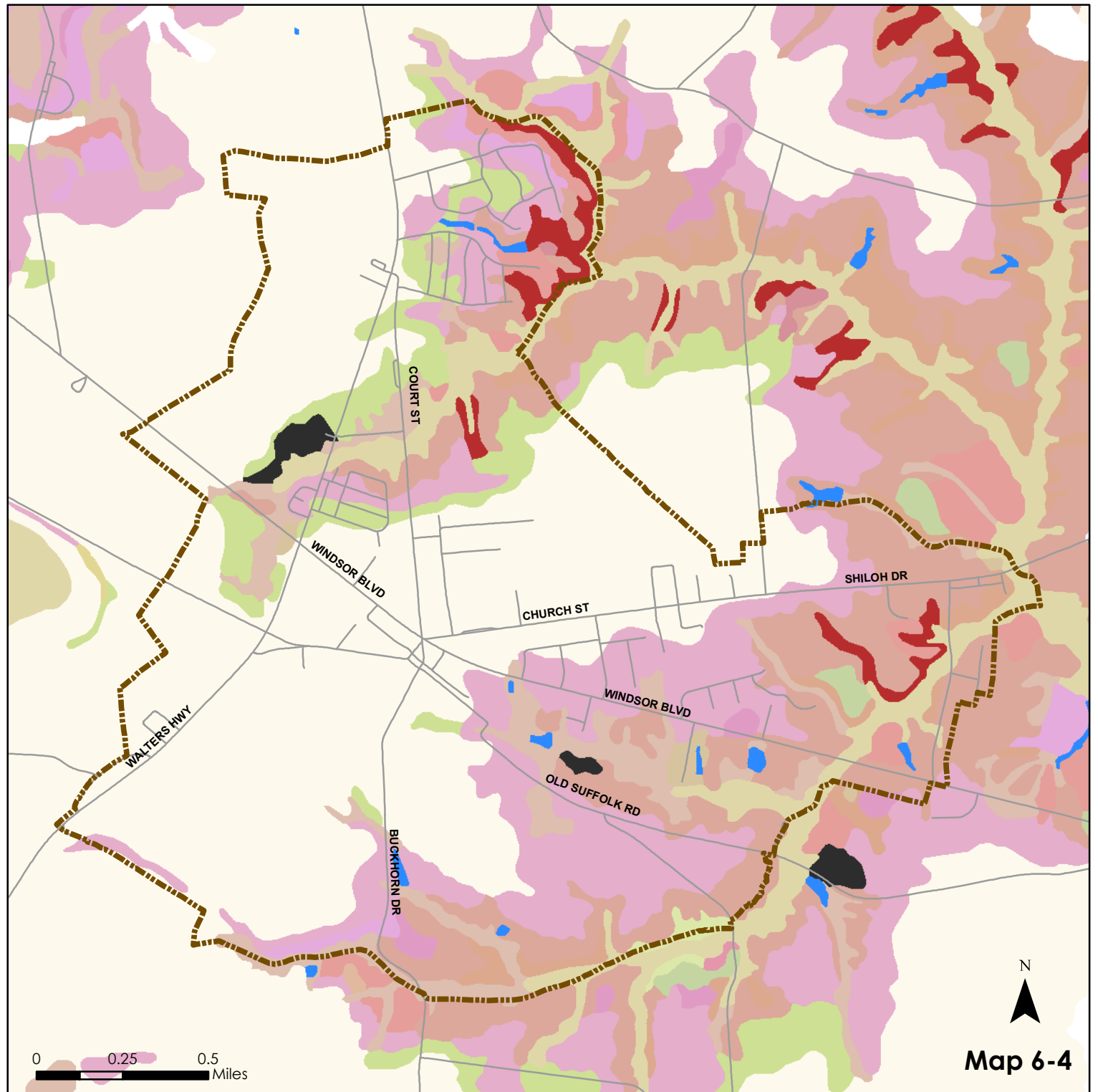
### Soil Types

- Emporia fine sandy loam, 0 to 2 % slopes
- Emporia fine sandy loam, 2 to 6 % slopes
- Kenansville loamy sand
- Kinston loam
- Myatt fine sandy loam
- Nawney loam
- Nevarc and Remlik soils, 15 to 35 % slopes
- Peawick silt loam, 2 to 6 % slopes
- Peawick silt loam, 6 to 10 % slopes
- Rumford loamy sand
- Slagle fine sandy loam, 0 to 2 % slopes
- Slagle fine sandy loam, 2 to 6 % slopes
- Slagle fine sandy loam, 6 to 10 % slopes
- Slagle sandy loam, 2 to 6 % slopes, severely eroded
- Uchee loamy sand, 0 to 2 % slopes
- Uchee loamy sand, 2 to 6 % slopes
- Uchee loamy sand, 6 to 10 % slopes
- Udorthents, loamy
- Yemassee fine sandy loam
- Water



Source: USDA Natural Resources Conservation  
Service 1995

Map Created by the Hampton Roads Planning  
District Commission GIS Staff, June 2008



N  
Map 6-4



## **CHAPTER 7- LAND USE**

### **Introduction**

The United States of America recently reached a population milestone of 300 million people, and the country grows by an additional 3 million people each year. Since the 1950s, development patterns have largely been dominated by suburban styles dependent upon the automobile and largely separated from the established infrastructure and transportation routes available in central cities. Additionally, this expansion has required vast resources to meet the growing demands associated with housing, education services, employment, utilities and transportation.

Although the U. S. population has continued to grow, this growth has not been uniform throughout the country. Many regions, especially in the South and West, have seen tremendous increases in population while many areas in the Midwest and Northeast have seen population stagnation or decline. Overall, the Commonwealth of Virginia increased its population by 14% from 1990 to 2000 and has continued to grow. In part to accommodate this growth, over 63,000 new residential units were constructed in Virginia in 2004. The Hampton Roads region has also experienced growth and development during this time period, largely tied to the extensive military presence, economic activity associated with the Port of Virginia, and an influx of retirees and new residents from other states. To accommodate the expanding population, housing construction has steadily moved into the outer areas of the region, which includes Isle of Wight County and the Town of Windsor.

### **Isle of Wight County Land Use**

To address the high growth rate experienced over the last 30 years and anticipated in coming years, Isle of Wight County has designated strategic areas as Development Service Districts (DSDs). These areas are targeted for growth and are generally located along major transportation corridors in the County. These areas also include water and sewer services or plans to provide them. The Town of Windsor DSD is one of three such districts designated in the Draft 2006 Isle of Wight Comprehensive Plan. The Town is also noted as a traditional County Activity Center and is expected to function as such.

Most of the areas surrounding the Town are designated as a Town Growth Area on Isle of Wight County's Growth Management Plan Map. Much of projected residential growth in the area is expected to be absorbed by the Town since the 2001 annexation provided Windsor with vacant land that can accommodate that growth. In addition to population growth and residential development, the Shirley T. Holland Commerce Park just to the east of Windsor is identified as an area for expanded commercial and industrial activities. The area adjacent to the existing park has also been identified as the potential location for a 2,200 acre intermodal

park development, which is described in greater detail in Chapter 3. The remaining areas surrounding the Town are designated as Conservation Development, which will limit the density of residential growth in those areas.

## **Land Use in Windsor**

Existing land use patterns in the Town of Windsor have been influenced largely by the presence of major transportation corridors. Most of the localities surrounding Windsor saw increases in development activity during the first part of the 21<sup>st</sup> century, and annexation more than doubled the population of the Town itself. Commercial areas are centered around the main rail line and U.S. 460, with residential and other types of development radiating outward from those areas. The remaining land in the Town is primarily devoted to agriculture, although there are pockets of land being used for industrial and public purposes. Map 7-1 depicts current land use in the Town of Windsor.

Land use decisions are very important because they determine what activities may occur in a particular area. Some uses, including commercial and industrial, can create different planning challenges than others. Minimizing the conflicts between differing uses to ensure the health, safety, and general well being of a community is paramount in creating and sustaining viable communities. With this statement as a general goal, specific categories have been created to better educate the public as to the needs and demands associated with a particular use and the interaction among the uses.

Land uses are classified as one of the designations listed below. While land use classifications do not represent zoning districts, they do help provide the framework on which future zoning applications may be considered and discussed. Current zoning classifications in the Town of Windsor are shown on Map 7-2.

### **Residential**

This category encompasses single-family detached structures, and is the predominant residential use pattern found in the Town. Residential development can present many challenges, including the provision of adequate roads and transportation, preservation of the natural environment, utility service provisions, and the interaction between new development and existing development.

### **Multi-Family Residential**

This use is comprised of higher density development and includes apartment buildings, duplexes, townhomes, and condominiums. This use also includes mobile homes, which are the most prevalent form of residential housing found in the Town aside from single-family homes. Mobile homes are generally confined to three mobile home parks located within town boundaries. Future uses in this

category should concentrate on the development of high-quality alternatives to single-family housing, primarily in the form of townhomes and condominiums that mirror the character and architecture of the historic core of the Town.

### Rural Residential

This classification provides locations for low-density residential housing outside of subdivisions. The primary use of the land in these areas is single-family residential.

### Transitional Residential

These areas are intended to allow for the development of professional offices in structures that were originally designed for residential use.

### Workforce Housing

Areas devoted to workforce housing would include single-family detached homes that working families can afford to purchase. The U.S. Department of Housing and Urban Development (HUD) defines affordable housing as any that requires no more than 30% of household income to pay for Principal, Interest, Taxes, and Insurance (PITI). This type of housing is an alternative to the multi-family housing options that may also be affordable for working families. It is intended to attract police officers, teachers, nurses, and other members of the workforce that may have difficulty purchasing market-rate houses. The Town should work with developers to identify opportunities to accommodate workforce housing in future projects.

### Commercial

This classification represents existing business and projected locations that may be suitable for future development. U.S. Route 460 provides the primary transportation corridor that helps attract new business development in the Town. Much of recent commercial development has been located along this corridor in the annexed areas near the eastern corporate limits of the Town. As more businesses locate along U.S. 460, the need for access management should be considered.

### Industrial

These uses provide significant employment opportunities for people in the county. Location requirements can be very critical and can vary based upon the specific proposed use. The close proximity of major highways, railroads, and airports as well as adequate public utilities must be considered when projecting future industrial locations. Sensitivity to adjoining properties and the ability to mitigate potential adverse effects associated with industrial use is a major factor

in appropriate site design guidelines. Industrial development is limited in Windsor, but new industrial prospects may choose to locate at the Shirley T. Holland Commerce Park or the proposed intermodal park just to the east of town.

### Public Facilities

This classification includes government owned buildings, utility systems, schools, churches, parks, refuse collection sites, public safety institutions and other uses that serve the public. The ability to provide these services and facilities is contingent upon sound planning practices to help make certain that the demand for these facilities and services does not exceed the ability of the government or its entities to provide them. Future investments in these facilities should be a high priority for the public sector in addressing the future needs of the Town of Windsor.

### Agriculture/Forest

The majority of undeveloped land within Windsor consists of cropland and forest. Both types of land uses contribute greatly to the Town's rural character. Some cropland in Windsor is still being actively farmed, particularly in areas south of the railway.

### Conservation

These areas include properties where development should not occur due to factors such as flood zones, sensitive wetlands, and soil types that cannot support development. Areas adjacent to these features should be given special consideration to ensure that proposed development does not adversely impact the landscape. Conservation areas in the Town are generally limited to three stream valleys, some of which also serve as drainage basins for regional water supply sources. Critical attention should be paid to preserving these areas in order to assist in habitat management and preservation of high water quality. Establishing these areas as conservation corridors is one of the strategies identified to reduce the fragmentation of these features. Establishing and developing partnerships with other governmental agencies, the private sector, and civic organizations is also a key element for the future preservation of these areas and the benefits they provide.

## **Future Land Use**

The purpose of creating a future land use plan is to help guide the progression of land use toward the goals and objectives of the Town of Windsor. Through implementation of the future land use plan, the Town is able to encourage the efficient delivery of public services and assist in establishing a framework that guides future land use decisions in a manner that promotes the general well being of all people.

As described in previous chapters, the total population of Windsor is projected to increase by approximately 54% by 2035. This would result in a Town population of about 3,500, an increase of about 1,200 people from the 2000 population. This projection would require an additional 520 homes to be built to accommodate population growth. Maintaining the small town character of Windsor, expanding economic opportunities, and preserving the natural environment are some of the considerations that may accompany future growth. The full listing of goals and corresponding implementation strategies are discussed in detail in the next chapter. These goals help shape the overall policy of land development in the Town, and their influence is reflected in land use decisions.

The future land use map contains many significant features designed to reinforce the principles and goals of managing land use for the protection of the health, security, and general well being of the public. The purpose of projecting future land use is to define areas in the Town that are best suited for specific uses, including agriculture, residences, public facilities, commercial, industrial, and conservation.

The inclusion of a future land use map in the comprehensive plan does not change existing zoning classifications, nor is it intended to do so. The Town of Windsor's Future Land Use Map (Map 7-3) provides a basis for helping determine if a proposed application for a change in zoning is in accordance with the projected use envisioned by the Town. While every effort is made to promote sound long range planning principles through creation of the future land use map, there may be circumstances in which a projected use may need to be revised. Any amendments to the future land use map are subject to a public hearing and should be reviewed carefully to ensure that the modified plan is consistent with the overall goals of the Town.

**Town of Windsor  
Comprehensive Plan**

# Current Land Use

## Legend

 Town of Windsor Boundary

 Roads

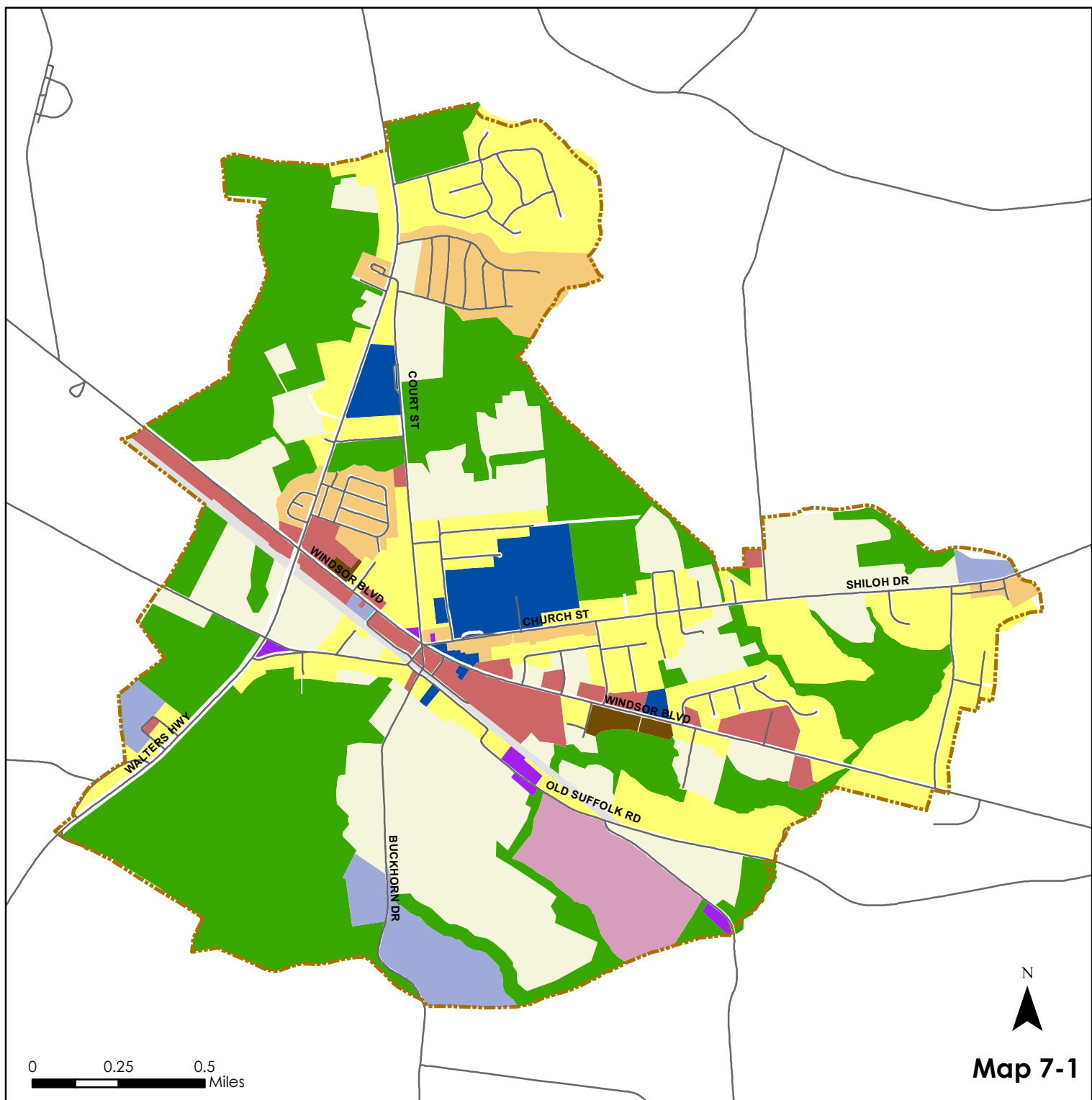
## Current Land Use

-  Single Family Residential
-  Multi Family Residential
-  Transitional Residential
-  Rural Residential
-  General Commercial
-  Neighborhood Commercial
-  Light Industrial
-  Institutional
-  Public
-  Forestry
-  Agriculture
-  Railroad Right of Way



Sources: Town of Windsor

Map Created by the Hampton Roads Planning  
District Commission GIS Staff, June 2008



N  
  
**Map 7-1**

# Town of Windsor Comprehensive Plan

## Zoning Districts

### Legend

 Town of Windsor Boundary

 Conditional Zoning

 A-1


 B-1

 B-2

 M-1

 PUBLIC

 R-1

 R-1MHP

 R-2

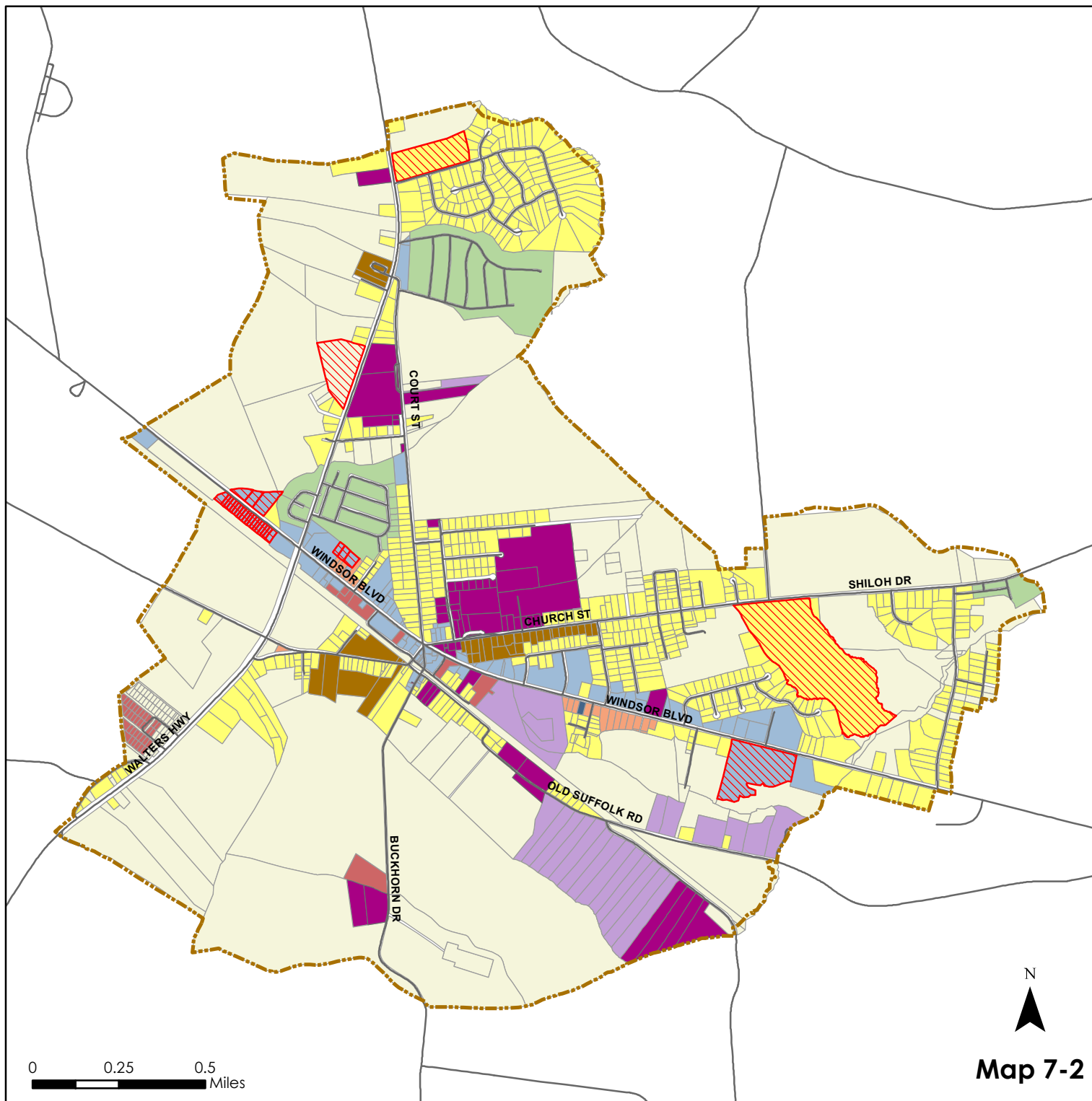
 R-3

 R-4



Source: Town of Windsor




Map Created by the Hampton Roads Planning  
District Commission GIS Staff, June 2008



# Town of Windsor Comprehensive Plan

## Future Land Use

### Legend

-  Town of Windsor Boundary
-  Roads
-  Proposed Route 460 Alignment

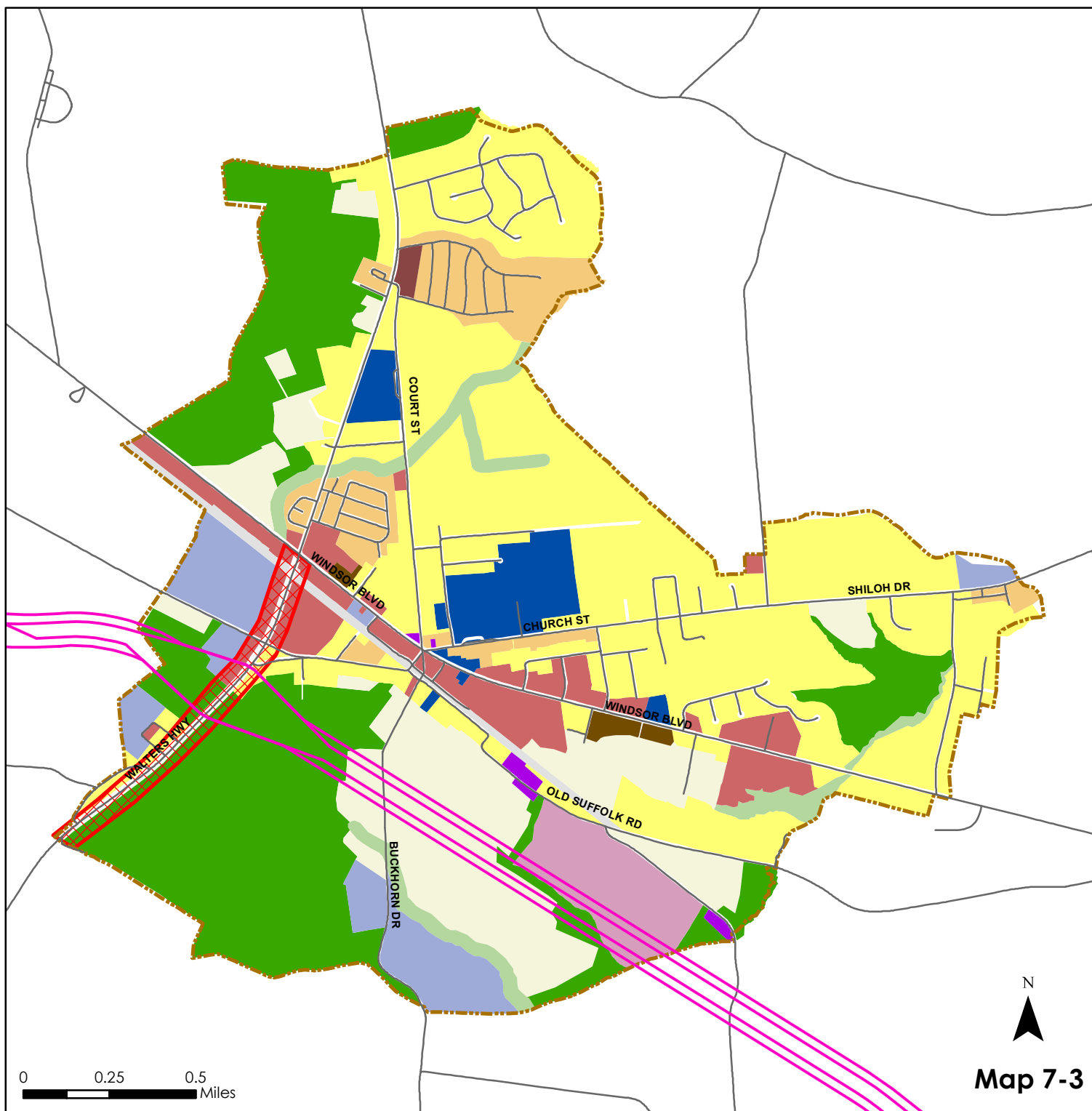
### Future Land Use

-  Single Family Residential
-  Multi Family Residential
-  Transitional Residential
-  Rural Residential
-  General Commercial
-  Neighborhood Commercial
-  Light Industrial
-  Institutional
-  Public
-  Forestry
-  Agriculture
-  Conservation
-  Railroad Right of Way
-  Potential Commercial Development Corridor



Sources: Town of Windsor

Map Created by the Hampton Roads Planning  
District Commission GIS Staff, June 2008



N  
Map 7-3



## **CHAPTER 8 - GOALS AND IMPLEMENTATION STRATEGIES**

### **Introduction**

Together with the Land Use chapter, this chapter serves as the most important part of the comprehensive plan because it states the Town of Windsor's vision for future land use patterns, its goals and objectives, and its strategy and action plan for implementing policies. This chapter describes the role of the comprehensive plan as a guide to land use decision making and the status of the plan's goals and objectives in Windsor's land use and development decisions.

### **Guide for Land Use Decision Making**

As a guide for land use decision-making, the comprehensive plan should be used by the Town's elected and appointed officials and the community as a guide in making decisions that affect land use and development. It is generally accepted that the goals and objectives and the future land use map are decision-making guides and that they do not have the force of law. However, in considering the roles and status of the plan, the Town must remain mindful that the policies and map contained in the plan may be used to support land use decisions at the local, state, and federal level. This may include the denial of permits for areas not slated for development in the comprehensive plan.

The plan and its goals and objectives serve short-term purposes. The plan is used by various sectors. Developers and/or others seeking Town review or intervention may consult the policies to formulate a request that is consistent with the policies, thereby increasing the chances of approval. Town staff will review requests in light of policies, pointing out those policies: (1) that support the request; (2) that are in conflict; and (3) that carry the most weight, thereby shaping the overall staff response. Planning Commission members can make individual determinations as to the consistency of the request with the policies. They may consider staff recommendations, but may choose to give different weights to the policies. The general public can reference the policies when speaking in favor of or against a petition. The Town Council can take into account and weigh the policy interpretations by the petitioner, the staff, the Planning Commission, and residents, as well as its own interpretations and priorities in making its decision.

The plan also serves important long-term functions. It gives guidance to new development management tools and to major adjustments of existing tools. The plan may be used in the development of plans for major capital facilities. And finally, it may guide the development of plans for projects that support implementation of the plan.

The comprehensive plan's function with respect to zoning is to serve as a guide to future review and amendment of the Town's subdivision and zoning

ordinances. Once reviewed and amended, proper administration of subdivision and zoning ordinances should require any review of a proposed text or map amendment – whether by the staff, the Planning Commission, or Town Council – to be based on consideration of whether the proposed amendment is consistent with the comprehensive plan and otherwise advances the public health, safety, and general welfare.

Because the comprehensive plan's standards are wide ranging but explicit, it should be the principal guide to the Planning Commission's discussions and actions concerning land use management and development, particularly zoning ordinance amendments. The Commission, however, should also look beyond the plan and consider whether proposed developments or requests for amendments to zoning or other ordinances, even if consistent with the plan, advance the best interests of public health, safety, and general welfare. This very general criterion calls for consideration of a wide range of issues, including, but not limited to the potential impact of a development or a proposed ordinance amendment on:

- The natural environment: How a proposed development or development allowed by an amendment might affect air quality, water quality, flooding, erosion, important natural areas, etc.;
- Important natural resources: How a proposed development or the development allowed by an amendment might threaten or enhance the continued availability and efficient use of finite natural resources for agriculture or forestry;
- The transportation system: Whether any additional traffic generated by a proposed development or a development allowed by an amendment can be safely and efficiently accommodated by existing transportation facilities;
- The provision of utilities and services: Whether any additional demands for water supply, electricity, refuse collection, fire and police protection, education, health care, recreation, and other services generated by a proposed development or development allowed by an amendment can be safely and efficiently accommodated by public, community, or private utility and service systems;
- The economy: How a proposed development or development allowed by an amendment might affect employment opportunities and the general health of the Windsor economy;
- Important historical, architectural, archeological, and cultural resources: How a proposed development or development allowed by an amendment might threaten or enhance the continued existence and integrity of resources of architectural, archeological, or cultural significance;
- Neighboring development: How a proposed development or development allowed by an amendment might affect living or working conditions in neighboring areas, including whether development might

- deter or enhance the appropriate development or conservation of neighboring property;
- Community function, character, and attractiveness: How a proposed development or development allowed by an amendment might enhance the attractiveness and functional mix of land uses needed to meet the needs of future populations and avoid adverse impacts; and,
- The provision of affordable and convenient housing: How a proposed development or development allowed by an amendment might affect people's ability to find affordable housing reasonably accessible to their place of employment.

## **Goals, Objectives, and Implementation Strategies**

The goals, objectives, and implementation strategies contained in the Comprehensive Plan are to be integrated into the Town's planning process to help enhance desirable development practices for future growth. Inclusion of these elements in the Comprehensive Plan will also help to determine the future prosperity and general well being of the citizens of the Town of Windsor. It is critical that goals reflect the perceived needs and desires of the citizens based on past and current situations in the Town and projections of future conditions and needs. The failure to implement well-conceived goals is a prime cause of many problems faced by localities today.

The Comprehensive Plan's implementation strategies will be more specific than its goals and objectives. They will delineate the steps to achieve County goals. These planning concepts are essential components of this Comprehensive Plan.

Six issue areas have been identified in this plan: Environment, land use, economic development, transportation, public facilities, and housing and community development. The goals and objectives for each of the issue areas follow, as well as some implementation strategies.

### **ENVIRONMENT**

#### **GOAL: (PHYSICAL CONSTRAINTS TO DEVELOPMENT)**

Promote land use patterns which protect and enhance local water quality and which reflect the physical limitations to development.

#### **Objectives:**

- Direct future growth and development away from all identified wetlands, floodplains, drainageway and creek embankments, steep topography, highly permeable and erodible soils, and other environmentally sensitive areas of the Town.

- Encourage compact, efficient patterns of development that will minimize consumption of land, and help preserve the Windsor area's rural character.

### **Strategies:**

1. Consider establishing a Resource Conservation District in the Town Zoning Ordinance, consistent with district definitions used in Isle of Wight County. Limit future development within the Resource Conservation Area to passive park and recreation uses, resource-related research and activities, and other water dependent uses.
2. Encourage continued agricultural use and limited residential development (rural density) within the corporate area where prime agricultural lands, hydric soils, high water table or subsurface drainage problems are prevalent.
3. Consider clustering and planned unit development (PUD) concepts in areas which can accommodate higher density development, while retaining on-site open space and natural features. Consider establishing a PUD Overlay District in the Town Zoning Ordinance to encourage such forms of development.
4. Encourage the donation of permanent open spaces, wooded areas and parks and environmentally sensitive areas to the Town or non-profit organizations for tax credits or other development benefits.
5. Conserve, protect or provide tree cover on developed or developing sites.
6. Promote, where practicable, the use of pervious materials in land development.
7. Prohibit and/or discourage land uses that generate unnecessary air, land, water, noise and solid waste pollution.
8. Apply fairly and consistently Windsor's adopted Chesapeake Bay Preservation Area Ordinance to all new development and redevelopment occurring in the Town.
9. Encourage stronger cooperation between the Town and the County in sharing environmental information and staff expertise, and in coordinating environmental review of projects and proposals impacting both jurisdictions.
10. Educate the citizenry and local officials on the interrelationship of land use, water quality and sustainable economic development.

## **GOAL: (PROTECTION OF POTABLE WATER SUPPLY)**

Conserve and protect the surface and ground water resources found in Windsor and the surrounding region.

### **Objectives:**

- Ensure potable water supplies are reasonably protected from both natural and man-made contaminants.
- Promote conservation of regional water resources and make efforts to reduce or minimize local water demand.
- Encourage public awareness of the impacts on water resources from unnecessary, wasteful, or outmoded practices.
- In cooperation with agencies having regulatory oversight over point and non-point source pollution, manage such sources to minimize and reduce, where possible, existing sources of pollution.

### **Strategies:**

1. Through local zoning enforcement and site plan reviews, manage land use and monitor development practices in or proximate to surface water features, such as creeks, swamps, drainageways and wetlands.
2. Apply the Town's Bay Act performance criteria and best management practices to all development proposals within Resource Protection Areas (RPAs) and Resource Management Areas (RMAs) to the extent that it is reasonably practicable.
3. Ensure adequate enforcement of the County's Erosion and Sediment (E&S) Control Ordinance and Floodplain Management Ordinance. Restrict development or disturbance activities within the Town's 100-year floodplain.
4. Forward all applicable site plans and land use applications which may impact surface or ground water resources to the appropriate County, State and Federal regulatory agencies for review and comment.
5. In cooperation with the Department of Environmental Quality (DEQ) and the Hampton Roads Planning District Commission (HRPDC), participate in the ongoing study, planning and management of regional groundwater resources.

6. Monitor the State Department of Health's Septic and Well Permits and the Department of Environmental Quality Water Division's Notice(s) of Violations, when such activities may involve sites in or near the Town.
7. Working with the County and the HRPDC, participate in HR WET, a public education program which promotes water conservation practices through use of native, low-maintenance landscaping, low-flow toilet and showerhead fixtures, and other methods that reduce domestic water consumption.
8. In cooperation with the Department of Health, work to ensure that the Town's municipal water system fully complies with the appropriate drinking water standards.
9. Evaluate, based on ongoing regional water studies, the need for and appropriateness of establishing a wellhead protection program.
10. Pending completion of that evaluation, reconsider Town zoning boundaries, and downzone where appropriate to establish wellhead protection zones around existing and planned municipal wells. Incorporate other wellhead protection methods as needed into local land use ordinances.
11. Continue working with the HRPDC to develop and implement a stormwater program to manage stormwater quantity and quality and meet evolving state regulations.
12. Working with the County and the HRPDC, participate in HR STORM, the regional stormwater education program, which also addresses good housekeeping at town facilities.
13. Continue participating with the region's other localities and the HRPDC to develop and refine stormwater programs in accord with the Hampton Roads Regional Stormwater Program Memorandum of Agreement.
14. In cooperation with the region's other local governments, continue working through the HRPDC to develop a regional water supply plan.

**GOAL: (STREAMBANK EROSION CONTROL)**

Identify erosion-prone areas throughout the Town and develop feasible methods and programs to mitigate erosion problems.

## **Objectives:**

- Prohibit development in areas with critically eroding streambanks. In more stable streambank areas, mitigate potential erosion problems through best management practices, including the effective use of silt fences, landscape fabrics, hydroseeding and other soil stabilization measures.
- Ensure adequate enforcement of the County's Erosion and Sediment (E&S) Control Ordinance and monitor enforcement procedures as new technology and practices become available.
- In conjunction with the County and possible funding agencies, investigate the feasibility of constructing a unified storm drainage system to correct major ponding and runoff problems in the Town.
- In conjunction with the Peanut Soil and Water Conservation District, assist agricultural landowners in and near the Town to prepare and implement Soil and Water Conservation Plans as required by the CBPA Ordinance.

## **Strategies:**

1. As funding for stormwater management becomes available, limit use of curb and gutter and subsurface conveyances to the most urbanized portions of Town. In low-density residential areas, retain roadside drainage ditches and grass swales to promote natural infiltration of stormwater.
2. Obtain copies of County E&S Plans for all major construction projects occurring within the Town, and monitor compliance with those plans throughout the duration of construction activity.
3. Publicize and advocate local participation in the USDA's "Agricultural Conservation Program", which may provide agricultural landowners with cost share assistance to implement best management practices. Encourage participating landowners to fully implement agricultural conservation plans upon their completion.
4. In erosion-prone areas undergoing development, promote the use of deep-rooted plant species that can become quickly established and help anchor the soil. In such applications, use plant varieties (grasses, groundcovers and shrubs) recommended in the Vegetative Practices Guide, produced by the HRPDC.
5. Continue working with the HRPDC to develop and implement a stormwater program to manage stormwater quantity issues that may cause erosion.

6. Working with the County and the HRPDC, participate in HR STORM, the regional stormwater education program, which addresses methods for addressing stormwater runoff.
7. Continue participating with the region's other localities and the HRPDC to develop and refine stormwater management programs in accord with the Hampton Roads Regional Stormwater Program Memorandum of Agreement.

### **GOAL: (WATER QUALITY & REDEVELOPMENT ISSUES)**

Ensure that water quality concerns will be considered and addressed as public and private redevelopment efforts occur within the Town.

#### **Objectives:**

- Identify and legally dispose of all hazardous waste materials found at redevelopment sites prior to demolition/site clearance.
- Encourage the reduction of impervious surfaces, reintroduction of landscaping and water quality BMPs, and the dedication of open space upon site redevelopment.
- Provide incentives to reduce lot coverage, particularly in commercial districts, by amending provisions in the Town zoning ordinance.

#### **Strategies:**

1. Monitor all demolition activity occurring within the Town and notify the County building official as to any hazardous waste observed at unpermitted sites (e.g. underground storage tanks, aboveground oil tanks and barrels, asbestos materials, lead paint, other potential hazards).
2. Ensure that all publicly-financed redevelopment projects fully comply with existing state and federal laws governing asbestos inspections and removal, solid waste disposal, landfill regulations, and hazardous waste disposal.
3. In coordination with County review officials, establish procedures to protect and enhance water quality during the review of development and redevelopment proposals.
4. In conjunction with the County, submit grant applications for the Indoor Plumbing Program and the Virginia Water Project, so as to provide adequate indoor plumbing, properly abandon private wells and privies,



and underwrite sewer hook-ups fees for low-to-moderate income residents.

5. Encourage, where practical and feasible, the retrofitting of water quality BMPs, into sites where major building alterations, additions or substantial reconstruction is planned.
6. Through use of local funds or available grants, institute an incentive program aimed at reintroducing on-site landscaping, water quality BMPs, and open space, particularly in downtown commercial and semi-public areas undergoing revitalization or redevelopment.
7. Re-evaluate density, height/setback, and parking standards in commercial zoning districts of Town. Eliminate or amend provisions which work at cross-purposes with water quality. Where appropriate, add incentives to reduce lot coverage, encourage landscaped setbacks, and limit surface parking to actual day-to-day needs.
8. Require landscaped islands and tree plantings in all surface parking lots, by amending the Town zoning ordinance.
9. Expand public (municipal/county) ownership of open spaces, greenways, and parkland within the Town.

## **LAND USE**

### **GOAL:**

Encourage harmonious and wise use of the land in all future development decisions.

### **Objectives:**

- Provide adequate governmental services including public utilities to meet the needs of Windsor's citizens.
- Encourage new development in Windsor to be consistent with and complement the existing built environment of the Town.
- Reserve sufficient land for various purposes to meet the needs of the year 2035 population.

### **Strategies:**

1. Coordinate development with the provision of public utilities and services.

2. Coordinate land use planning and site selection with adjacent County plans and policies.
3. Concentrate development in appropriate locations by encouraging more efficient site design, sharing of access, parking and utility services.
4. Plan for the location of shopping and employment centers, offices, needed service facilities and industries in a manner compatible with other land uses in the Town.
5. Encourage planning for land use both within and outside the Town on a cooperative basis with Isle of Wight County.

#### Residential

- a. Encourage the development of a variety of housing types and densities consistent with existing neighborhoods.
- b. Coordinate residential development with the provision of public utilities and services.
- c. Prevent conflicting land uses from encroaching upon existing viable neighborhoods.
- d. Encourage use of multifamily areas as a transition area between single-family dwelling areas and more intensive land uses in commercial and industrial zones.
- e. Encourage development of master-planned communities or developments which incorporate traditional neighborhood design (TND) concepts. Such concepts typically include smaller front yards, grid street patterns with a clearly defined streetscape, emphasis on pedestrian circulation, open space areas and other features which together foster a sense of community.
- f. Create a flexible, multifaceted housing strategy. Encourage the development of workforce housing as part of new developments located in the Town.

#### Commercial

- a. Encourage commercial uses to locate in or near the existing commercial centers.
- b. Promote compact rather than strip commercial development

- c. Encourage the rehabilitation and adaptive use of vacant commercial buildings in the old commercial sector
- d. Improve the quality of future development and redevelopment through improved site planning, landscaping, and other amenities which contribute to neighborhood and community character.
- e. Consider providing for new commercial development related to the proposed alignment of the U.S. 460 bypass.

#### Industrial

- a. Select and plan future industrial sites as near as possible to major transportation and utility lines.
- b. Develop a more diversified economic base by attracting more industries to the Windsor/central Isle of Wight County area.
- c. Coordinate industrial development with Isle of Wight County, and support local efforts to further develop Shirley T. Holland Commerce Park.
- d. Provide for adequate buffering and screening of industrial uses to minimize any adverse impact on surrounding properties.
- e. Coordinate with Isle of Wight County to promote development of an intermodal park to serve the expanding Port of Virginia.

### **ECONOMIC DEVELOPMENT**

#### **GOAL:**

Enhance the Town of Windsor's role as a regional center for retail and professional services, as well as cultural and recreational activities.

#### **Objective:**

Encourage a more diversified employment base that is more reliant on a well-rounded service/retail/light manufacturing economy.

#### **Strategies:**

1. Market and promote the redevelopment of vacant and underutilized properties in the Town. Emphasize state and federal assistance available.

2. Encourage and promote the start-up and growth of new businesses in town, including feature articles on business openings in the town newsletter.
3. Promote local Chamber of Commerce activities and maintain close contact with existing industries and employers in the Windsor area.
4. Form Economic Development Committee to address business opportunities in the Town and to foster cooperation with the Isle of Wight Department of Economic Development.

## **TRANSPORTATION**

### **GOAL:**

Enhance the Town of Windsor's transportation network to ensure high levels of service for residents, business, and industry.

### **Objective:**

Ensure that the Town's major thoroughfares form a system that efficiently serves to connect the various elements of the town's land use pattern, including centers of residence, employment, education and recreation.

### **Strategies:**

1. Local streets should be designed to discourage through traffic and should provide for no more pavement than is necessary for local traffic.
2. Promote a wider range of transportation modes throughout the Town, such as sidewalks, pedestrian pathways and bike trails.
3. Encourage citizen participation in landscaping and street maintenance programs to improve roadway appearances.
4. Investigate and adapt as appropriate highway corridor overlay zoning concepts presently utilized by neighboring jurisdictions to manage the scenic qualities of their highway corridors and community entranceways.

## **PUBLIC FACILITIES**

### **GOAL:**

Provide an adequate level of public services to all people of the Town as efficiently and as economically as reasonably possible.

**Strategies:**

1. Make best use of existing facilities, either through operational improvement or physical expansion.
2. Work cooperatively with Isle of Wight County to provide and improve regional services and facilities collectively serving town and county residents; such as fire and rescue, schools, parks and recreation, transportation and utility infrastructure.
3. Provide facilities adequate in size to meet long-term estimated population needs.
4. Provide adequate for town staff, public functions, and the town police department. Cooperate with the County to provide a town community center.
5. Provide community facilities and utilities to developing areas designated for growth in the land use plan. Prioritize areas with major septic system failures for expansion of water and sewer facilities.
6. Continue improvements in town services to areas recently incorporated into the Town's boundaries. Complete upgrades, including retrofitting water tanks for easier filling and extension of water to all residents.
7. Ensure that required improvements in streetlights, trash and recycling services, street and sidewalk improvements, and extension of water service are adequately supported during the budgeting process.
8. Working with the County and the HRPDC, participate in HR Clean, a program that promotes litter control and recycling.

**HOUSING AND COMMUNITY DEVELOPMENT****GOAL:**

Encourage the provision of decent, safe and sanitary housing in a suitable living environment for all of the town's citizens regardless of race, gender, age or income level.

**Objectives:**

- Encourage infill and traditional neighborhood development concepts.
- Encourage the construction of retirement housing, assisted living centers and other housing geared to the elderly and disabled.

- Encourage and support the strengthening of neighborhoods; encourage organization, action and self-sufficiency among neighborhood groups.

**Strategies:**

1. Maintain and improve housing throughout the Town through housing code enforcement and use of state and federal housing programs, including Community Development Block Grants (CDBG), Virginia Indoor Plumbing Rehabilitation (IPR) Program, and local weatherization programs.
2. Provide opportunities for diversity of housing types including apartments, townhouses, duplexes as well as small- and large-lot single family.
3. Demolish and clear abandoned, blighted structures that constitute a public safety hazard, through code enforcement, redevelopment actions and other means as provided by law.