VISION 2005

A COMPREHENSIVE PLAN FOR FORSYTH COUNTY, NORTH CAROLINA
VISION 2005

A COMPREHENSIVE PLAN FOR
FORSYTH COUNTY, NORTH CAROLINA

Prepared For The Citizens of Forsyth County
By The City-County Planning Board

1 February 1988
# TABLE OF CONTENTS

INTRODUCTION .................................................. 5  
1. TRENDS ......................................................... 11  
2. GROWTH MANAGEMENT ...................................... 21  
3. UTILITIES ..................................................... 31  
4. ENVIRONMENTAL QUALITY .................................. 39  
5. THOROUGHFARE PLAN ....................................... 51  
6. ECONOMIC DIVERSIFICATION .............................. 63  
7. RESIDENTIAL LAND USE .................................... 73  
8. COMMERCIAL LAND USE ................................... 91  
9. OFFICE LAND USE ............................................ 99  
10. INDUSTRIAL LAND USE .................................... 107  
11. OPEN SPACE .................................................. 113  
12. COMMUNITY FACILITIES ................................... 125  
13. HISTORIC PRESERVATION .................................. 135  
14. URBAN DESIGN ............................................... 141  
IMPLEMENTATION PLAN .......................................... 149  
ACKNOWLEDGEMENTS .............................................. 161
### LIST OF MAPS

<table>
<thead>
<tr>
<th>Map Number</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Growth Management Plan</td>
<td>25</td>
</tr>
<tr>
<td>2.2</td>
<td>Regional Context</td>
<td>27</td>
</tr>
<tr>
<td>3.1</td>
<td>Sewer Service</td>
<td>33</td>
</tr>
<tr>
<td>4.1</td>
<td>Salem Lake Watershed</td>
<td>40</td>
</tr>
<tr>
<td>4.2</td>
<td>Yadkin-Pee Dee River Basin</td>
<td>41</td>
</tr>
<tr>
<td>4.3</td>
<td>Hazardous Waste Generators</td>
<td>43</td>
</tr>
<tr>
<td>5.1</td>
<td>Year 2005 Road Capacity Deficiencies</td>
<td>53</td>
</tr>
<tr>
<td>5.2</td>
<td>Thoroughfare Plan</td>
<td>59</td>
</tr>
<tr>
<td>7.1</td>
<td>Single Family Development Activity, 1980-1985</td>
<td>76</td>
</tr>
<tr>
<td>7.2</td>
<td>Multifamily Development Activity, 1980-1985</td>
<td>77</td>
</tr>
<tr>
<td>8.1</td>
<td>Shopping Centers, Forsyth County</td>
<td>95</td>
</tr>
<tr>
<td>9.1</td>
<td>Existing Office Areas</td>
<td>101</td>
</tr>
<tr>
<td>10.1</td>
<td>Major Industrial Sites</td>
<td>109</td>
</tr>
<tr>
<td>11.1</td>
<td>Parks and Recreation</td>
<td>117</td>
</tr>
<tr>
<td>11.2</td>
<td>Proposed Greenway System</td>
<td>119</td>
</tr>
<tr>
<td>12.1</td>
<td>Public Libraries</td>
<td>129</td>
</tr>
<tr>
<td>13.1</td>
<td>Historic Districts</td>
<td>137</td>
</tr>
</tbody>
</table>
Towards the end of the year we came into this neighborhood, and found a 'body of land' which is probably the best left in North Carolina.

— AUGUSTUS GOTTLIEB SPANGENBERG,
8 JANUARY 1753
INTRODUCTION

As the community grows and changes over the next twenty years, this comprehensive plan will serve as a guide to the public officials and citizens who will shape the community's physical and social form. The plan is a culmination of a cooperative effort, pulling together the knowledge and skills of diverse citizens and staff. This plan represents a vision of the cities, towns, villages, and county in 2005 and a statement about how to achieve this vision. The ideas of the plan are a distillation of the community's many desires, tempered by what seems feasible and reasonable. If this plan is respected and followed, the comprehensive plan will illuminate these thousands of daily decisions with a long-term view of the numerous interrelated issues that face Forsyth County.

Forsyth County is a special place with a unique character, culture, and history that distinguishes this community from the thousands of counties across America. This comprehensive plan particularly addresses the preservation and enhancement of these special qualities and that distinctive personality felt by the citizens who live and work here. This sense of uniqueness and pride of place are the guiding forces and strongest motivation for those who have contributed to the realization of this document.

DEFINITIONS AND PURPOSE

A comprehensive plan is an official public document adopted by the City-County Planning Board and the governing bodies in Forsyth County. The plan is a general, long-range policy guide for decisions concerning the overall growth and development of the county.

The plan is comprehensive because the elements cover the entire range of development issues which can be influenced significantly by the City-County Planning Board and the County's governing authorities.

The plan is general because the recommendations are broad, rather than narrowly defining decisions for land use at specific sites.

The plan is long-range because consideration is given to the problems and opportunities which may arise over the next twenty years.

The plan is dynamic because there can be amendments to adapt to new situations and meet new challenges.

Although adopted as an official public document, the comprehensive plan is not a development ordinance. This plan serves as a catalyst and guide to the establishment of or revisions to other ordnances or planning tools. These include the zoning, subdivision, and floodplain ordinances, the capital improvements program, and area plans for subunits of the various jurisdictions. The growth management plan map, included in this plan, serves to illustrate how and where the plan's policies and recommendations will be carried out. This mapped information is general in nature and not appropriate for determining the suitability of specific sites for any specific use.

LEGAL BASIS FOR COMPREHENSIVE PLANNING

The preparation of a comprehensive plan is the legal responsibility of the City-County Planning Board under North Carolina enabling legislation passed by the State Legislature in 1947. Chapter 677, Section 7 says, in part:

In the preparation of the general development plan for the City, the City-County Planning Board shall cause to be made careful and comprehensive surveys and studies of present conditions and future growth of the City, due regard being taken to its relation to neighboring territory. The plan shall be made with the general purpose of guiding and accomplishing a coordinated, adjusted and harmonious development of the City and its environs which will, in accordance with present and future needs, best promote health, safety, morals, order, convenience, prosperity and general welfare, as well as efficiency and economy in the process of development . . . .

Any ordinance pertaining to use of land or the growth and development of the city or county should conform to the goals and policies as they are presented in the comprehensive plan.
townships of Forsyth County. During the late 1960's, work was begun on another comprehensive plan, and zoning regulations were established for the balance of Forsyth County in 1967. These efforts culminated in the completion of The General Development Guide in 1969, which was used as a working document until adoption by the Board of Aldermen and the Board of County Commissioners in 1977. A separate Thoroughfare Plan was prepared during the early 1970's, and adopted in 1975. The Thoroughfare Plan had one update in 1980.

This comprehensive plan is, therefore, the fourth major effort to establish a set of goals and objectives for the county and its municipalities, and contains an updated Thoroughfare Plan as an integral element.

PUBLIC REVIEW

This comprehensive plan, Vision 2005, was prepared with extensive public involvement. Between September 1986 and May 1987, the Planning Board and staff participated in over 80 public meetings about the comprehensive plan, which were attended by over 5,000 people. Nearly two dozen of these meetings were held for the purpose of hearing from a variety of neighborhood and special interest groups. Every effort was made to ensure that those persons and groups interested in providing productive input into the comprehensive planning process were given the opportunity to do so.

During the fall of 1986, Vision 2005 was reviewed by all of the major local government agencies in Forsyth County. Federal and State agencies, such as the Soil Conservation Service and the Department of Natural Resources and Community Development, were also consulted for their input. Governing boards within Forsyth County were briefed, and each added to the process of revision and refinement of the plan's recommendations.

ADDITION

The following table lists the dates of adoption of Vision 2005 by the major elected and advisory boards of Forsyth County:

<table>
<thead>
<tr>
<th>Board</th>
<th>Date of Adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td>City-County Planning Board</td>
<td>2 April 1987</td>
</tr>
<tr>
<td>Kernersville Board of Aldermen</td>
<td>2 June 1987</td>
</tr>
<tr>
<td>Walkertown Town Council</td>
<td>9 June 1987</td>
</tr>
<tr>
<td>Clemmons Village Council</td>
<td>15 June 1987</td>
</tr>
<tr>
<td>Winston-Salem Board of Aldermen</td>
<td>17 Aug. 1987</td>
</tr>
<tr>
<td>Forsyth County Board of Commissioners</td>
<td>24 Aug. 1987</td>
</tr>
<tr>
<td>Rural Hall Town Council</td>
<td>14 Sept. 1987</td>
</tr>
</tbody>
</table>

* Thoroughfare Plan only.

ORGANIZATION OF THIS DOCUMENT

This comprehensive plan is organized into fourteen chapters. These chapters deal with all aspects of land use in Forsyth County, such as open space, residential development, and utilities. Each separate chapter includes an assessment of existing conditions and provides goals and recommendations pertaining to the subject of the chapter.

Following this introduction, Chapter One highlights past trends and future projections of population, housing, and employment to the year 2005. Chapter Two presents the central theme of the report, The Growth Management Plan for designating how, when, and where growth should occur. Chapters Three and Four present detailed analyses of utilities and environmental quality, respectively.

The update of The Countywide Thoroughfare Plan is discussed in Chapter Five. Economic diversification is covered in Chapter Six. Chapters Seven through Ten cover residential, commercial, office and industrial land use, respectively. Chapters Eleven through Fourteen deal with the subjects of open space, community facilities, historic preservation, and urban design.

The Implementation Plan follows Chapter Fourteen. This final section of Vision 2005 details necessary actions, responsibility, and a schedule for implementing the goals and major recommendations of the plan.
Summary

This chapter highlights trends and projections for population, employment, and other demographic characteristics of Forsyth County and its incorporated areas. Projections to the year 2005 set the numerical foundation for the policies presented in this comprehensive land use plan.

Forsyth County’s population increased by 13.6 percent from 1960 to 1970, by 13.3 percent from 1970 to 1980, and by 4.6 percent from 1980 to 1984, to a July 1984 total of 254,880. These growth rates have been less than those of nearby Wake, Durham, and Mecklenburg counties, but greater than Guilford County and the state’s overall average. Within the county, most growth has occurred in the small towns and unincorporated areas, particularly in the western portion. Assuming high levels of public and private investment in the community’s economy and infrastructure, Real Estate Research Corporation projected that Forsyth County’s population would reach 316,661 by the year 2005.

Average household size has tended to decrease slowly over the years from 3.17 persons per household in 1970, to a projected 2.6 persons per household in 1990. Average household income has steadily increased from $9,584 in 1969, to a projected average of $37,543 in 1990 (not in constant dollars).

Employment also has increased steadily in Forsyth County. The labor force has increased from 99,240 in 1970, to 139,541 in 1985. RERC projected that at-place employment in Forsyth County will reach 222,443 by the year 2005. As employment has increased, more people have found jobs in the nonmanufacturing sectors, such as trade, services, finance, insurance, and real estate, relative to the traditional manufacturing sectors, such as textiles and tobacco. The share of total employment in the manufacturing sectors has declined from 44.9 percent in 1970, to 31.7 percent in 1985. This figure is projected to decline further to nearly 25 percent by the year 2005.

The demographics of Forsyth County will change considerably over the next twenty years. These economic and social changes make planning for the future a difficult, yet important, challenge.

INTRODUCTION

This chapter briefly reviews recent trends and projections in demographic and economic variables that characterize Forsyth County. Population and employment projections to 2005 form the basis for recommendations concerning growth management and land needs during this period. Chapter Two explains in detail the concept of growth management and its application to Forsyth County.

POPULATION

Forsyth County experienced significant population growth between 1960 and 1984, averaging about 1.0 percent per year. In July 1984, Forsyth County had a population of 254,880, an increase of 11,197 since 1980. Population data for the major North Carolina urban counties also reveal steady growth (Figure 1.1). Forsyth County’s population generally has grown steadily at about the same rate as the state as a whole. Since 1970, Forsyth County’s growth rate has exceeded that of its eastern neighbor, Guilford County, but the rate has been lower than Durham, Mecklenburg and Wake Counties. Growth in
Forsyth County from 1970 to 1980, accounted for about 28 percent of the growth in the entire Winston-Salem/Greensboro/High Point MSA, which closely approximated the percentage of the MSA's total population living in Forsyth County.

Population changes from 1970 to 1984, in the incorporated areas within the county, have varied (Table 1.1). The population of Winston-Salem actually declined by about 1.3 percent between 1970 and 1980. This trend has changed since 1980. The city's population increased about 2.8 percent, using constant city limits, between 1980 and 1984. The fastest growing county census tracts between 1970 and 1980 were concentrated in the west, southwest, and east. All tracts which lost population were in Winston-Salem (Map 1.1).

Without changes in land use policy, future growth is expected to follow this general pattern, with accelerating growth in eastern Forsyth County due to its proximity to Piedmont Triad International Airport.

Using the Bureau of the Census definition of a household as "all persons, related or not, occupying a housing unit," the number of households in Forsyth County has increased steadily since 1970, compounded by a declining average household size (Table 1.2). In comparison with the state, Forsyth County has fewer persons per household. The changes in per capita and household incomes since 1969 reveal regular increases. However, these figures are not in constant dollars (Figure 1.2). These figures for income consistently exceed the state averages.
Good planning does not begin with an abstract and arbitrary scheme that it seeks to impose on the community: it begins with a knowledge of existing conditions and opportunities.

— LEWIS MUMFORD
POPULATION PROJECTIONS

The market study completed in 1983 by Real Estate Research Corporation (RERC) for Winston-Salem and Forsyth County included three sets of projections for population, number of households, and employment from 1985 to 2005 (Table 1.3 and Figure 1.3). RERC based its projections on those of the State Demographer, but modified the assumptions concerning rates of natural increase and in-migration. RERC also added assumptions concerning local public and private investment and marketing efforts (Figure 1.4). RERC's low or minimal growth projection (I-A) assumes a lower rate of natural increase and a lower rate of in-migration, than the State Demographer, and a lack of a concerted effort to attract new employers to the county. The best, or moderate projection (II-B), also assumes slightly lower rates of natural increase and in-migration than the State's model and includes assumptions concerning a moderate level of investment in local development. Finally, the sustained, or high projections (III-C), assumes a slightly higher rate of natural increase, as well as a higher rate of in-migration due to increased public and private spending and an aggressive marketing campaign to attract new employers to the area. When the Board of Aldermen and the County Commissioners adopted the Winston-Salem/ Forsyth County Growth Strategy, there was a commitment to facilitating the investment assumed for the III-C or sustained growth scenario which projects a population in 2005 of 316,661. The III-C sustained growth scenario is adopted by this report and is the basis for the conclusions and recommendations.

To check which of the three paths of population growth Forsyth County is currently following, the State Demographer's most recent estimate of Forsyth County's population was compared with estimates from RERC. The State Demographer now estimates that Forsyth County's July 1985 population was 258,323, which nearly equals the highest RERC projection for 1985. Thus far, Forsyth County is growing at a rate near the RERC sustained growth projection. Whether the county's population continues to grow at this rate depends on several factors, including the willingness of local residents and organizations to provide funds for the public and private programs needed to continue this rate of growth.
EMPLOYMENT

Except for a few set-backs during major national recessions in 1975 and 1982-1983, total employment and the size of the local labor force have increased since 1970 (Table 1.4). Over the past fifteen years the components of total employment have followed national trends. There has been a declining importance in the economy of most traditional manufacturing sectors and an increase in employment in most nonmanufacturing sectors, such as trade and business services (Figure 1.7).

The sectors of the local economy and their relative shares of the total employment gain from March 1983 to March 1985 show increases in almost every sector (Figure 1.5). Certain sectors, such as construction, trade, and services, contribute more to the total net gain in employment than others, such as government and finance, insurance and real estate. Agriculture, forestry, and fisheries provided the smallest share of the gain in employment. Employment in the tobacco industries, even in the face of an increase in employment in the manufacturing sector as a whole, experienced a decline.

RERC also projected total employment in Forsyth County and employment in each major sector until 2005 (Tables 1.5 and 1.6 and Figure 1.6). According to RERC, most job creation will occur in the nonmanufacturing sectors of the economy, in particular wholesale and retail trade and services and miscellaneous. RERC predicts that employment in the manufacturing sectors will increase only slightly until 1990, and then begin to decline. These projections for at-place employment include people working in the county who do not necessarily live in the county.

![Figure 1.5: Sources of Job Loss or Gain, 1983-1985](image)

**TABLE 1.4**

**Labor Force of Forsyth County: Annual Average Estimates, 1970-1985, by Place of Residence**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Civilian Labor Force</td>
<td>99,240</td>
<td>111,910</td>
<td>126,700</td>
<td>139,541</td>
</tr>
<tr>
<td>Rate of Unemployment</td>
<td>4.4</td>
<td>7.2</td>
<td>5.2</td>
<td>3.9</td>
</tr>
<tr>
<td>Total Employment</td>
<td>94,910</td>
<td>103,890</td>
<td>120,130</td>
<td>133,890</td>
</tr>
<tr>
<td>Agricultural Employment</td>
<td>1,310</td>
<td>1,200</td>
<td>830</td>
<td>na</td>
</tr>
<tr>
<td>Nonagricultural</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wage and Salary</td>
<td>83,300</td>
<td>93,110</td>
<td>108,570</td>
<td>na</td>
</tr>
<tr>
<td>Other Nonagricultural</td>
<td>10,300</td>
<td>9,580</td>
<td>9,580</td>
<td>na</td>
</tr>
</tbody>
</table>

*Includes nonagricultural self-employed, unpaid family workers and domestic workers

Source: Labor Market Information Division, Employment Security Commission
TABLE 1.5
PROJECTIONS OF TOTAL AT-PLACE EMPLOYMENT IN FORSYTH COUNTY: 1980-2005

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal Growth (I-A)</td>
<td>138,370</td>
<td>153,170</td>
<td>170,870</td>
<td>182,522</td>
<td>193,355</td>
<td>204,598</td>
</tr>
<tr>
<td>Percent Growth</td>
<td>10.7</td>
<td>11.6</td>
<td>6.8</td>
<td>5.9</td>
<td>5.8</td>
<td></td>
</tr>
<tr>
<td>Expected Growth (II-B)</td>
<td>138,370</td>
<td>154,272</td>
<td>173,231</td>
<td>186,837</td>
<td>199,745</td>
<td>213,002</td>
</tr>
<tr>
<td>Percent Growth</td>
<td>11.5</td>
<td>12.3</td>
<td>7.9</td>
<td>6.9</td>
<td>6.6</td>
<td></td>
</tr>
<tr>
<td>Sustained Growth (III-C)</td>
<td>138,370</td>
<td>155,740</td>
<td>176,383</td>
<td>192,060</td>
<td>207,088</td>
<td>222,440</td>
</tr>
<tr>
<td>Percent Growth</td>
<td>12.6</td>
<td>13.3</td>
<td>8.9</td>
<td>7.8</td>
<td>7.4</td>
<td></td>
</tr>
</tbody>
</table>

Source: Winston-Salem/Forsyth County Market Assessment Real Estate Research Corporation

TABLE 1.6
PROJECTED AT-PLACE EMPLOYMENT BY INDUSTRY: 1985-2005
FORSYTH COUNTY (III-C PROJECTION)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRICULTURAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MANUFACTURING</td>
<td>47,031</td>
<td>49,555</td>
<td>49,937</td>
<td>49,610</td>
<td>48,647</td>
</tr>
<tr>
<td>Food</td>
<td>2,648</td>
<td>2,646</td>
<td>2,305</td>
<td>2,072</td>
<td>1,557</td>
</tr>
<tr>
<td>Textiles</td>
<td>4,984</td>
<td>4,056</td>
<td>2,689</td>
<td>932</td>
<td>0</td>
</tr>
<tr>
<td>Apparel</td>
<td>1,401</td>
<td>1,587</td>
<td>1,729</td>
<td>2,072</td>
<td>2,224</td>
</tr>
<tr>
<td>Lumber and Wood</td>
<td>623</td>
<td>705</td>
<td>960</td>
<td>1,036</td>
<td>1,112</td>
</tr>
<tr>
<td>Furniture</td>
<td>1,712</td>
<td>1,587</td>
<td>1,345</td>
<td>1,036</td>
<td>667</td>
</tr>
<tr>
<td>Paper</td>
<td>1,596</td>
<td>1,852</td>
<td>1,920</td>
<td>2,072</td>
<td>2,158</td>
</tr>
<tr>
<td>Printing</td>
<td>1,596</td>
<td>1,852</td>
<td>1,920</td>
<td>2,072</td>
<td>2,114</td>
</tr>
<tr>
<td>Stone, Clay, Glass</td>
<td>389</td>
<td>353</td>
<td>383</td>
<td>206</td>
<td>111</td>
</tr>
<tr>
<td>Metals</td>
<td>2,181</td>
<td>2,469</td>
<td>2,689</td>
<td>2,899</td>
<td>2,892</td>
</tr>
<tr>
<td>Nonelectrical Machinery</td>
<td>3,737</td>
<td>4,585</td>
<td>5,377</td>
<td>6,214</td>
<td>6,896</td>
</tr>
<tr>
<td>Other Manufacturing</td>
<td>26,164</td>
<td>27,864</td>
<td>28,618</td>
<td>28,999</td>
<td>28,917</td>
</tr>
<tr>
<td>NONMANUFACTURING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>4,984</td>
<td>5,467</td>
<td>5,762</td>
<td>5,800</td>
<td>6,066</td>
</tr>
<tr>
<td>Trans., Comm., and Utilities</td>
<td>13,082</td>
<td>15,166</td>
<td>16,902</td>
<td>18,642</td>
<td>20,464</td>
</tr>
<tr>
<td>Trade</td>
<td>27,410</td>
<td>32,449</td>
<td>36,877</td>
<td>41,427</td>
<td>46,201</td>
</tr>
<tr>
<td>FIRE</td>
<td>7,475</td>
<td>8,641</td>
<td>9,604</td>
<td>10,357</td>
<td>11,344</td>
</tr>
<tr>
<td>Services and Misc.a</td>
<td>28,344</td>
<td>36,681</td>
<td>44,752</td>
<td>53,441</td>
<td>62,950</td>
</tr>
<tr>
<td>Government</td>
<td>15,574</td>
<td>16,577</td>
<td>16,902</td>
<td>16,985</td>
<td>16,905</td>
</tr>
<tr>
<td>ALL OTHER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NONAGRICULTURAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>4,984</td>
<td>5,467</td>
<td>5,762</td>
<td>5,800</td>
<td>6,066</td>
</tr>
<tr>
<td>Trans., Comm., and Utilities</td>
<td>13,082</td>
<td>15,166</td>
<td>16,902</td>
<td>18,642</td>
<td>20,464</td>
</tr>
<tr>
<td>Trade</td>
<td>27,410</td>
<td>32,449</td>
<td>36,877</td>
<td>41,427</td>
<td>46,201</td>
</tr>
<tr>
<td>FIRE</td>
<td>7,475</td>
<td>8,641</td>
<td>9,604</td>
<td>10,357</td>
<td>11,344</td>
</tr>
<tr>
<td>Services and Misc.a</td>
<td>28,344</td>
<td>36,681</td>
<td>44,752</td>
<td>53,441</td>
<td>62,950</td>
</tr>
<tr>
<td>Government</td>
<td>15,574</td>
<td>16,577</td>
<td>16,902</td>
<td>16,985</td>
<td>16,905</td>
</tr>
<tr>
<td>ALL OTHER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NONAGRICULTURAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>4,984</td>
<td>5,467</td>
<td>5,762</td>
<td>5,800</td>
<td>6,066</td>
</tr>
<tr>
<td>Trans., Comm., and Utilities</td>
<td>13,082</td>
<td>15,166</td>
<td>16,902</td>
<td>18,642</td>
<td>20,464</td>
</tr>
<tr>
<td>Trade</td>
<td>27,410</td>
<td>32,449</td>
<td>36,877</td>
<td>41,427</td>
<td>46,201</td>
</tr>
<tr>
<td>FIRE</td>
<td>7,475</td>
<td>8,641</td>
<td>9,604</td>
<td>10,357</td>
<td>11,344</td>
</tr>
<tr>
<td>Services and Misc.a</td>
<td>28,344</td>
<td>36,681</td>
<td>44,752</td>
<td>53,441</td>
<td>62,950</td>
</tr>
<tr>
<td>Government</td>
<td>15,574</td>
<td>16,577</td>
<td>16,902</td>
<td>16,985</td>
<td>16,905</td>
</tr>
</tbody>
</table>

aIncludes services, except domestic, agricultural services, forestry, and mining
bIncludes nonagricultural self-employed workers, unpaid family workers, domestic workers in private households

Source: North Carolina Employment Security Commission; City-County Planning Board; Real Estate Research Corporation

NOTE: This table was prepared from the "mid-range" table from RERC by increasing all out-year projections by 4.43 percent.
Planned growth is more desirable than uncontrolled growth, and more profitable; Public and private powers can be joined in partnership in a process to realize the plan.

— IAN McHARG
The population growth that has contributed to spreading suburban development in Forsyth County is expected to continue. In 1984, Real Estate Research Corporation (RERC) prepared a series of demographic projections for Winston-Salem and Forsyth County. RERC predicted that the population of the county could increase 30 percent to 316,000 people by the year 2005, given an aggressive local effort to attract new employers to the area. RERC also projected that almost 54,000 new and replacement housing units would be needed during that same period to accommodate the increased population and declining household size. RERC prepared a land market forecast for the 1984-2005 period based on its growth projections. The forecast estimates that land needed for new residential, commercial, office, and industrial development, and the right-of-ways for public and private roads and utilities to support that development could total 14.2 square miles by the year 2005.

**GROWTH MANAGEMENT**

Growth management is an effort by City and County governments to achieve a more compact pattern of future development, in accordance with a comprehensive land use plan for the community. A growth management strategy will guide new residential development to locations where adequate public infrastructure, such as roads, water and sewer, schools, and related facilities, is available or can be provided most efficiently. Commercial, office, and industrial development areas to serve residential development will be identified. Open space and critical areas of environmental protection will be located.

A growth management strategy will allow for costly public facilities, such as water and sewer systems and roads, to be planned more easily and used efficiently. Additional development will be directed into underdeveloped areas where major public facilities are in place. Guided growth will reduce development pressure on natural systems, such as water supply watersheds and agricultural lands. A more compact development form will reduce the use of fuels for transportation and improve the financial condition of public transit.

Managed growth will help maintain a distinction between rural and urban areas of the county. Growth management in this context is not an effort to control the rate or amount of growth, but rather an effort to guide the growth that does occur into a harmonious and efficient pattern.

Growth management is not a new idea to Winston-Salem and Forsyth County. In March 1975, the City-County Planning Board produced a report entitled *Selection of a Future Urban Form for Forsyth County*. A flexible, compact, centralized Urban Services District (USD) was the form of growth recommended in that report. Staging of development within the USD was proposed, subject to periodic review and adjustment as growth occurred. The USD concept became part of the adopted 1976 General Development Guide.

The *Winston-Salem/Forsyth County Growth Strategy*, prepared by CBT/Crane Associates in 1984, further refined the Urban Services District concept. Boundaries of the USD were adjusted to reflect the new era of limited federal funding for sewer provision. Additional urban form principles, such as activity centers and greenbelts, were suggested "...for consideration in the future updating of the Comprehensive Development Guide."

Various methods have been proposed to achieve the objectives of the Urban Services District concept. In April 1975, the City-County Planning Board produced a report entitled *Agricultural Zoning: Proposed R-9 Acreage Zoning and Supplementary Methods For Guiding Development Into An Urban Services District*. That report recommended a number of incentives and regulatory measures for achieving the objectives of the Urban Services District concept. A major recommendation was a two-acre residential zoning district for rural areas of the county and a ten-acre agricultural and residential district for areas of special environmental concern. The agricultural zoning district and most of the proposed supplementary methods were never adopted due to a lack of public support.

The *Winston-Salem/Forsyth County Growth Strategy* offered a framework of growth management policies, private economic incentives, and an agenda for comprehensive zoning modernization to support the urban growth concept chosen by the community.

Efforts to define and implement an urban growth form for the community over the past ten years have not been effective. The spread of low density suburban development and loss of rural areas continue for several reasons. The areas identified for future growth in the 1976 *General Development Guide* totaled 72 square miles. This large area did not constrain development into the desired compact form. Perhaps more importantly, the concept relied almost exclusively for implementation on a single regulatory control: Zoning. Furthermore, local zoning codes were never revised specifically to reinforce the growth management concept.

**GOALS**

The community now has the opportunity to renew efforts to guide the pattern of future development. Given the benefits of guided growth, the goals of this Growth Management Plan are as follows:

- Efficient provision of public utilities, roads, and other services.
- Allowance for urban, suburban, and rural life styles. A limit on suburban sprawl.
- Preservation of farmland and open space.
- Provision for incentives to assist in implementation of the plan.
GROWTH MANAGEMENT CONCEPT

The Urban Services District in the 1976 General Development Guide has a dramatic, single boundary dividing urban from non-urban development. The concept underlying the Growth Management Plan is one of concentric growth outward from existing town centers at the cores. The six areas identified for planning purposes are:

Area 1 - Central Business District
Area 2 - Central Area
Area 3 - Urban Area
Area 4 - Growth Area
Area 5 - Rural Area
Area 6 - Conservation Area

The Central Business District (Area 1), an employment and retail center, is at the core (Figure 2.1). The Central Area (Area 2) consists of older close-in neighborhoods that surround the downtown. Most of Forsyth County's newest housing and commercial development is located in the Urban Area (Area 3), the suburbs which surround Winston-Salem, as well as Kernersville, Walkertown, Rural Hall, Clemmons, and Lewisville.

The Growth Area (Area 4), the area for future development, consists of mostly undeveloped land on the fringes of existing developed areas. The Rural Area (Area 5) is characterized by rural and agricultural land that is not likely to come under development pressure in the near future. The Conservation Area (Area 6) consists of sensitive environmental lands whose future use or development is a public concern.

In terms of intensity of development, the plan calls for gradation from the skyscrapers of the Central Business District, to residential development in Areas 2, 3, and 4 to the rural character of Area 5, and finally the undeveloped conservation area. Each of the areas has distinctive characteristics and, therefore, will be treated as a unit for planning purposes. For example, development activity in the Growth Area (Area 4) will be much different from that in the Central Area (Area 2). Strategies to deal with development in these two areas necessarily will be quite different.

FORSYTH COUNTY GROWTH MANAGEMENT PLAN

In mapping the six growth management areas in Forsyth County, the existing development pattern and physical features of the county have been taken into account. Only Winston-Salem and Kernersville, for example, are large enough to have a true Central Business District. One of the county's controlling physical features is the Muddy Creek basin. This drainage area is located centrally in Forsyth County. The basin contains the county's major sewage collection and treatment facilities, including a new sewage treatment plant and 30 miles of new interceptor line along Muddy Creek. In the Muddy Creek basin, the community has a major sewerage system investment. The Muddy Creek basin is also the area where additional facilities can be provided most efficiently.

Applied to the "real world" development pattern and physical features in Forsyth County, this six area growth management concept is shown in Map 2.1. An accompanying matrix (Figure 2.2) describes the character, attributes, problems, and objectives.
of each of the identified planning areas.

Winston-Salem and Kernersville have Central Business Districts surrounded by Central Areas, which are established older neighborhoods.

The Urban Area consists of the developed land surrounding six incorporated areas or communities within Forsyth County. For Winston-Salem, Kernersville, Walkertown, Rural Hall, and Clemmons, the Urban Area is defined by corporate limits, plus additional areas which are similar in character. In Lewisville, the Urban Area consists of built up areas around the center of the community.

The Growth Area of the conceptual circular diagram has been divided into Short-Range and Long-Range Growth Areas to apply the growth management concept to Forsyth County. The two areas combined constitute a large land mass almost entirely within the Muddy Creek basin, a drainage area that can be served by the existing sewer system. Currently, the area is predominantly rural with linear residential development along the existing secondary roads and with other subdivisions which have been developed on nonfrontage parcels. Agriculture is an important land use in the area, and most of the land is wooded and undeveloped. Since the area now has public sewer or can be served efficiently with public sewer in the future, this area has been identified as an area of expected future growth.

The Short-Range Area consists of 54.6 square miles of land immediately adjacent to existing Urban Areas. The area exceeds by four times Real Estate Research Corporation's projections of a need for 14.2 square miles of undeveloped land to accommodate growth over the next twenty years. Short-range growth will be directed to this area and will require major investments in new roads, sewer collector lines, parks, and other governmental support services. The Long-Range Growth Area is defined generally by the outer boundaries of the sewerable drainage basins and represents the proposed boundaries of long-range urban development in Forsyth County.

The Rural Area consists of areas generally outside the Muddy Creek drainage basin. These lands include residual areas in the Yadkin basin in the west, in the Dan River basin to the northeast, and in the Abbotts Creek basin in the southeast. These areas cannot be served efficiently by the existing sewer system and, therefore, should not experience significant development.

The Conservation Area consists of three land areas that are significant for environmental protection and aesthetic reasons: the Yadkin River corridor, lands directly surrounding Salem Lake, and the floodplains of major streams in the county. Any development in these sensitive areas should be of concern to the community.
## Figure 2.2
### Growth Management Areas

<table>
<thead>
<tr>
<th>Area</th>
<th>Character</th>
<th>Attributes</th>
<th>Problems</th>
</tr>
</thead>
</table>
| Central Business District | Core area and focal point of the community  
Most intensive land uses  
Downtown office/business district  
Concentration of prime architectural resources, with more variety in age and type of built environment | Major employment center  
Focus of national image for county  
Prime hotels and convention center  
Positive image from arts/cultural/tourist activity  
Location is major attraction for businesses  
Solid market for office space | Loss of retail magnets and daily shopping facilities  
Negative perception of some major employment centers  
Perception of lack of prime hotels and convention centers  
In competition with suburbs for office space  
Loss of population in surrounding neighborhoods |
| Central Area | First ring of older neighborhoods surrounding downtown  
Predominantly residential with some mixed use  
High concentration of historically and architecturally significant homes  
High concentration of community institutions and visitor/local points  
Within walking distance of CBD | Close proximity to CBD attractions (theatre, galleries, restaurants, events, etc.)  
Recent interest in inner city housing (new and rehab)  
Small lot residential areas more conducive to social interaction (due to existence of sidewalks, narrow streets, etc.) | Loss of population  
Aging population  
Residential structures in need of repair or rehabilitation  
Lack of neighborhood commercial services  
Conflicts with infill development |
| Urban Area   | Contains major commercial, industrial, and office employment centers  
Has large undeveloped tracts of land adjacent to existing neighborhoods  
Includes city limits and adjacent urbanized areas | Stable residential areas  
Convenient retail services  
Increasing property values  
Has employment centers  
Significant vacant land remains  
Attractive area for retail and office centers | Rapid growth and development  
Congested road system  
Conflicting land uses due to mix of zoning types |
| Growth Area  | Predominantly rural area with some subdivisions adjacent to farms  
Most land is undeveloped  
Lies within drainage basins that can be sewered efficiently  
Predominance of undisturbed natural environment | Directly adjacent to existing developed areas and services  
With proper planning contains prerequisites to accommodate future growth (roads, sewer interceptors, large vacant tracts) | Inadequate rural roads to accommodate future development  
Large investment needed for sewers, parks, etc. to serve expected growth  
Lacks retail services  
Minimal employment opportunities |
| Rural        | Rural with little or no development  
Major land use is scattered low-density residential along secondary roads  
Farming a major activity  
Undisturbed natural environment | Prime farm lands  
Rural life style  
Attractive natural environment | Cannot be efficiently served with sewer  
Development will cause loss of prime farmland and contribution of agricultural economy  
Development would cause erosion of rural lifestyle |
REGIONAL CONTEXT

Planning for Forsyth County cannot be done in a vacuum. The county is part of the larger urbanizing Piedmont Triad area. Winston-Salem, Greensboro, and High Point form a metropolitan complex with over 850,000 people. The western city limits of High Point are at the Forsyth County line. King is located on the northern border of the county, adjacent to the new R. J. Reynolds Tobacco Company Tobaccoville Plant. The Growth Management Plan needs to take into account these nearby growth areas and their potential effect on development in Forsyth County.

Natural drainage basins, the logical units in which to provide gravity public sewer systems, do not respect county boundaries. In Forsyth County, the Muddy Creek basin is largely within the county but does extend into Stokes County east of King, and south into Davidson County near US 52 (Map 2.2). Presently, sewage collected by the King system must be pumped to the consolidated City-County sewer system in the Muddy Creek basin. Development of King eastward into the upper end of the Muddy Creek basin will allow the development of a more economical gravity sewer flow system.

South in the Muddy Creek basin in Davidson County, the City/County Utility Commission is the logical provider of sewer service. Service to this area could be provided by the South Fork Creek interceptor. The missing section of this interceptor is expected to be constructed in the near future.

MAP 2.2
REGIONAL CONTEXT

1. KING
   • Connected to consolidated City-County sewer system
   • Sewer system is outside Muddy Creek Basin
   • Logical for King to expand southwest where gravity sewer can be provided

2. HIGH POINT
   • City Limits currently at Forsyth County line
   • High Point is able to provide sewer in the Deep River and Abbotts Creek Basins east of N.C. 66

3. WINSTON-SALEM
   • Muddy Creek Basin extends into Davidson County
   • City Limits currently about one mile from Davidson County line
   • Logical long-range growth area would be to the south

- Ridge Lines
- Development Pressure
As already noted, the present western High Point city limit is at the county line in southeastern Forsyth County. Logically, High Point can provide sewer service east of NC 66 in Forsyth County in the Deep River basin and to a small portion of the Abbotts Creek basin near the intersection of NC 66 and US 311. Discussions with High Point planners resulted in the identification of this section of Forsyth County as a long-range growth area for High Point in the Growth Management Plan (Map 2.1).

SATELLITE COMMUNITIES AND ACTIVITY CENTERS

Downtown Winston-Salem is located strategically in Forsyth County and will continue to be the focus of the community’s most intense urban development under the Growth Management Plan. Other existing incorporated and unincorporated areas will also experience significant growth and expansion at their fringes. Employment, housing, service, and recreational opportunities will be encouraged in these communities.

Additionally, the Growth Management Plan promotes the concept of activity centers. These are areas of concentrated mixed use development away from established town centers. They have employment and services at their core. They are places where people can live, work, shop, attend school, and obtain health care. The kinds of employment in activity centers will vary. Some may be office oriented while others may be concentrations of light industry and warehousing. Madison Park and its surrounding development is an example of an emerging activity center. Much of the future higher density development will be encouraged to locate at activity centers.

Activity centers are categorized as either existing or potential. Existing activity centers have some of the attributes necessary to be considered activity centers with potential for further development. Proposed activity centers lack some of the requirements, often major roads or significant current employment concentrations, to qualify as existing. Twelve activity centers are identified in the Growth Management Plan: Six are identified as existing activity centers: (1) Coliseum/Fairgrounds, (2) North Point, (3) Madison Park, (4) Baptist Hospital, (5) Hanes Mall Boulevard/Forsyth Hospital, and (6) WSSU/I-40 Industrial Park. Additional development is encouraged in this plan for these areas. Potential new activity centers include: (7) N.C. 66/New I-40, (8) U.S. 52 South, (9) US 311/New I-40, (10) East Winston/Reynolds Airport, (11) Walkertown/U.S. 311/Northern Beltway, and (12) Northern Beltway.

Other chapters of this document assess future growth, especially in terms of need for multifamily residential use and office and commercial space. Based on this assessment and a set of locational criteria, these and other activity centers will be targeted for future development.

Achievement of the proposed future growth form will not be easy. The use of a number of implementing measures, including planning, persuasion, and incentives, to conserve land and to guide development to designated locations, will be required.

New and innovative measures, such as transfer of development rights, impact fees, agricultural districts, and real estate transfer taxes, should be investigated as additional tools for preserving rural areas and guiding development to desirable locations.

RECOMMENDATIONS

The Growth Management Plan (GMP) is designed to conserve public and private investments in the urban structure, to protect natural systems, and to assure alternative living styles: Urban, suburban, and rural. The GMP should be applied by all Forsyth County governing bodies to land use decisions.

- New and innovative measures emphasizing the use of incentives should be developed to achieve the desired growth pattern.
- A comprehensive list of development guidance methods should be adopted and periodically evaluated.

The principal criteria applied in evaluating each implementation measure should be effectiveness in accomplishing the objectives of the Growth Management Plan, governmental costs in relation to benefits, local acceptability, and administrative simplicity.
CHAPTER 3

UTILITIES

Cities are the power stations of our technical mass civilization.

— E.A. GUTKIND
ville connected to the City-County system. A 24-inch line was constructed from the current terminus of the City-County system on West Mountain Street, and a 20-inch line was constructed from there to a new one-million gallon water storage tank in Kernersville. A pumping station is located near East Forsyth Senior High School on West Mountain Street.

A second major new piping loop was constructed in 1984 to serve the new RJR cigarette manufacturing plant at Tobaccoville. A 24-inch main was constructed north along Bethabara Road and terminated in a two million gallon storage tank between King Road and US 52 at the Forsyth County line. The return portion of the loop runs along Tobaccoville Road, Shore Road, Ziglar Road, Hanes Mill Road, and University Parkway.

Historical information on population served and water used for the City-County system since 1975 is available (Table 3.1). In 1985, the estimated population served was 196,000 and the average daily consumption was 34.8 MGD with a maximum one-day consumption of 45.1 MGD.

Parts of the county receive water service from smaller water suppliers. Rural Hall and Walkertown have their own water systems supplied from deep wells. Water is pumped without treatment to customers. At present, there are no plans for either of these towns to connect to the City-County system.

Water use is a function of both population served and per capita water consumption. The 1982 Pitometer Engineering Study looked at historical water use patterns and projected water demand for the City-County system through the year 1997 (Table 3.2).

In 1997, the population served is projected to be 252,000, and average daily consumption is expected to be almost 50 MGD. The Pitometer study did not assume connection of the City-County system to Kernersville.

Water use projections are available for the Kernersville system as well as for the other incorporated areas in the county (Table 3.3).

### Issues

The consolidated City-County water system has a total available water supply of 116 MGD and expansion capacity in its two water plants to treat 99 MGD. These reserves give the system sufficient capacity to meet the projected 1997 demand of 50 MGD and to serve the county beyond the year 2000.

Given increased national concern in recent years over the quality of public drinking water and mounting scientific evidence of a relationship between water pollution and disease, local governments must be careful to protect their water resources and drainage basins from pollution. Siltation and the resulting sedimentation are two of our most pressing water quality problems.

### TABLE 3.2
PROJECTED WATER DEMAND, CITY-COUNTY WATER SYSTEM

<table>
<thead>
<tr>
<th>YEAR</th>
<th>POPULATION SERVED</th>
<th>GALLONS PER CAPITA PER DAY</th>
<th>AVERAGE DAILY CONSUMPTION MGD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>188,000</td>
<td>170</td>
<td>31.0</td>
</tr>
<tr>
<td>1987</td>
<td>209,000</td>
<td>177</td>
<td>37.0</td>
</tr>
<tr>
<td>1992</td>
<td>230,000</td>
<td>186</td>
<td>42.8</td>
</tr>
<tr>
<td>1997</td>
<td>252,000</td>
<td>197</td>
<td>49.6</td>
</tr>
</tbody>
</table>


### TABLE 3.3
PROJECTED WATER DEMAND, KERNERSVILLE, RURAL HALL, AND WALKERTOWN

<table>
<thead>
<tr>
<th>YEAR</th>
<th>POPULATION SERVED</th>
<th>GALLONS PER CAPITA PER DAY</th>
<th>AVERAGE DAILY CONSUMPTION MGD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kernersville 1975</td>
<td>6,000</td>
<td>165</td>
<td>.990</td>
</tr>
<tr>
<td>1980</td>
<td>7,000</td>
<td>170</td>
<td>1.190</td>
</tr>
<tr>
<td>1990</td>
<td>9,000</td>
<td>180</td>
<td>1.620</td>
</tr>
<tr>
<td>Rural Hall and Walkertown 1975</td>
<td>3,800</td>
<td>43</td>
<td>.159</td>
</tr>
<tr>
<td>1980</td>
<td>4,000</td>
<td>45</td>
<td>.180</td>
</tr>
<tr>
<td>1990</td>
<td>4,600</td>
<td>50</td>
<td>.233</td>
</tr>
</tbody>
</table>

Only the most lightly settled fringe areas of the county are not served by public water. Some areas with water service are outside of the area that can be efficiently served by central sewer. When public water is made available, water consumption normally increases, which puts additional wastewater loads on ground absorbing septic systems that can cause system failure. There are approximately 3,250 acres of vacant land in nonmunicipal areas fully served by public water and sewer. Opportunities exist for added service efficiencies and capital cost savings by directing future development to these served areas.

SEWERAGE SYSTEM

Existing Situation

Centralized wastewater collection and treatment is provided by three utility systems in Forsyth County: City-County consolidated system, Kernersville, and Rural Hall. Winston-Salem and Forsyth County combined wastewater treatment facilities in July 1976, and the consolidated system is governed by the City/County Utility Commission.

MAP 3.1
SEWER SERVICE

- Treatment Plants
- Package Treatment Plants Operated by Utility Comm.
- Pump Stations
- Metering Stations
- Force Main
- Central Collection Lines
- Sewer Line Pending
- Muddy Creek Basin

Note: See Map 2.1 for key to Growth Management Areas.
Centralized wastewater collection systems are normally constructed with the natural drainage of the land to allow for gravity drainage of wastewater and to avoid the expense of pumping. The major drainage area in Forsyth County is the Muddy Creek basin which occupies about 50 percent of central Forsyth County and also drains small areas in Stokes and Davidson Counties (Map 2.2). The Muddy Creek basin includes Winston-Salem, parts of Rural Hall, Kernersville, and Walkertown, and most of the county’s population. The major stream in the basin is Muddy Creek which flows south in the western portion of the basin with Mill Creek, Silas Creek, Little Creek, Salem Creek, and South Fork Creek as tributaries, draining southwest.

The City-County consolidated system has an extensive piping network in the Muddy Creek basin, connecting to two wastewater treatment plants, the Archie Elledge Plant and the Lower Muddy Creek Plant (Map 3.1). The twenty-seven year old Elledge Plant is located on lower Salem Creek and has a capacity to treat 30 million gallons per day (MGD) of sewage and until recently was treating 25 MGD. Treated wastewater is discharged into Salem Creek at West Clemmonsville Road. Because of the location of the Elledge Plant in Salem Creek basin, much of the sewage in the past had to be pumped from populated areas in adjoining drainage basins to the Salem Creek basin where it could then flow by gravity to the Elledge Plant.

In January 1986, a new 15 MGD wastewater treatment plant, Lower Muddy Creek, began operation. The plant is located in southern Forsyth County near the confluence of Muddy and South Fork Creeks. The Lower Muddy Creek Plant has a current capacity of 15 MGD and will be upgraded to 20 MGD sometime early in the 1990’s.

In conjunction with the construction of the new plant, thirty miles of new interceptor line were constructed north along Muddy Creek to serve the new RJR plant in Tobaccoville and the Town of King. The Muddy Creek interceptor can carry 50 MGD. In terms of future development of the county, construction of this major new interceptor was a very significant action because a large area of western Forsyth County is open now for development. Lateral have been constructed from this interceptor to the existing sewer network in the Little Creek, Silas Creek, and Mill Creek basins, diverting sewage from the Elledge Plant to the Muddy Creek Plant. As a result, the new Muddy Creek Plant is currently treating 7-8 MGD of sewage.

Another new interceptor is planned along South Fork Creek from the Muddy Creek treatment plant to an existing sewer interceptor near Salisbury Road (Map 3.1). When this section of the South Fork Creek interceptor is completed, sewage from Kernersville and the South Fork Creek basin will flow to the Muddy Creek Plant rather than the Elledge Plant where it is now treated.

Kernersville connected to the City-County sewer system in 1984, and has contracted with the City/County Utility Commission to treat a maximum of 1.3 MGD of its sewage. When the new section of the South Fork Creek interceptor is on-line, Kernersville’s contracted amount of treatment capacity will increase to 2.04 MGD. Kernersville sewage is metered at two points, on Abbotts Creek and Kerner’s Mill Creek. Above these metering points, Kernersville controls sewer hook-ups and, therefore, the development pattern on its western edge.

Kernersville continues to operate the Abbotts Creek Wastewater Treatment Plant, which discharges 0.2 MGD of effluent into Abbotts Creek, a major tributary to the Lexington-Thomasville water supply reservoir. The Reedy Fork Plant, which is located 1.5 miles east of Kernersville in Guilford County, no longer treats wastewater but is used as a pumping station to transfer wastewater from the Reedy Fork basin into the Salem Creek basin.

Rural Hall connected to the City-County sewer system in June 1986. The City/County Utility Commission placed an 18-inch interceptor in Grassy Creek to a metering station immediately south of U.S. 52. Rural Hall constructed an additional 0.75 mile interceptor to its existing wastewater treatment plant which is no longer operational. Rural Hall has been allocated 1 MGD of treatment capacity and is responsible for sewer hook-ups above the US 52 metering station.

The Muddy Creek and Elledge Treatment Plants have a combined capacity of 45 MGD and a current flow of 25 MGD (Table 3.4). Because

<p>| TABLE 3.4 |</p>
<table>
<thead>
<tr>
<th>SEWAGE TREATMENT CAPACITY AND CURRENT FLOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>WASTEWATER TREATMENT PLANT</td>
</tr>
<tr>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>Elledge</td>
</tr>
<tr>
<td>Lower Muddy Creek</td>
</tr>
<tr>
<td>(Future Reserved)</td>
</tr>
<tr>
<td>RJR</td>
</tr>
<tr>
<td>Kernersville</td>
</tr>
<tr>
<td>Rural Hall</td>
</tr>
<tr>
<td>King</td>
</tr>
</tbody>
</table>

Source: City-County Utility Commission.
sewage from several subbasins has been diverted to the Muddy Creek Plant since it opened last year and some of the remaining capacity of the Muddy Creek plant has been committed, most of this unused capacity of 20 MGD is at the Elledge Plant and in the Salem Creek basin.

The City/County Utility Commission plans to expand the sewer system over the next five years. Projects include the design and construction of major sewer interceptors in Mill Creek, Fiddler Creek, Lower Muddy Creek, and South Fork Creek, and several smaller projects to reduce the overloading threat at pump stations. Bonds approved in 1976 will be used to finance Winston-Salem's portion of this project through fiscal year 1986-1987. The budget for the project assumes that capital reserves will finance the remainder of the project. Future annexations by Winston-Salem may also require expansion of the sewer system to residential and commercial customers in newly annexed areas.

Outside of sewered areas, the alternatives for wastewater disposal are ground absorbing systems and discharging systems. Discharging systems empty treated wastewater directly into streams and came under regulation with enactment of the federal Water Pollution Control Act of 1972. Discharges are controlled through a permit program, the National Pollutant Discharge Elimination System (NPDES), administered by the Division of Environmental Management of the Department of Natural Resources and Community Development. Approximately 110 NPDES permits have been issued in Forsyth County.

Package treatment plants are one type of discharging system. Operating as scaled down versions of municipal wastewater treatment plants, these are available in various treatment capacities and treatment levels. These systems are transported to a site in modules and can serve multifamily, commercial, and industrial complexes. The City/County Utility Commission operates three of these package treatment plants: (1) the Gravely Tractor Company, located south of Clemmons; (2) the Westinghouse Company, on US 52 north; and, (3) a package treatment plant in Tanglewood, treating waste from several private developments in the Clemmons area (Map 3.1). The remaining discharging waste treatment systems are privately operated and maintained.

**Issues**

The availability of public sewers and the location of major new roads are major determinants of urban growth patterns. Without public sewer, land can only be developed at low densities for residential use, since large sites are required to accommodate ground absorption septic systems. The maximum density allowed on septic systems in Forsyth County is approximately two units per acre. Most commercial, office, and industrial uses are uneconomical in unsewered areas because sophisticated and expensive private treatment systems are necessary. The extension of sewer interceptors to a new area, such as Muddy Creek, presents the possibility for development at densities as high as 17.4 units per acre under current Winston-Salem zoning regulations. Because public sewers are such an important factor in development patterns, the adoption of the Growth Management Plan by the City/County Utility Commission will be crucial.

Discharging sewer treatment systems are a problem for several reasons. Their availability allows major developments to occur in rural areas distant from public sewer systems. Permits for these systems are issued by the State on technical standards with no regard for local land use plans. Maintenance is sometimes lacking, resulting in malfunctioning systems and public health threats. Ongoing problems with these systems can result in requests for the public sector to intervene and operate them.

**Goal**

- Sewerage to serve development and protect water quality should be provided within an identified urban development area.
SOLID WASTE COLLECTION

Existing Situation

Residential and commercial solid waste collection is provided within Winston-Salem and Kernersville. Industrial operations in both jurisdictions must provide their own collection services. The remainder of the county, including Rural Hall and Walkertown, is not served by a public collection system. Residents, businesses, and industries which need collection services must contract with private haulers who are franchised by Forsyth County.

In Forsyth County, all solid wastes are disposed in landfills. Winston-Salem operates one general purpose landfill, the recently expanded, 140 acre Hanes Mill Road landfill in northwestern Winston-Salem. This landfill is expected to be full sometime in the mid to late 1990’s.

Kernersville operates a landfill on a 65 acre site in northeastern Forsyth County. The landfill receives refuse from town collections, industries, and authorized private haulers who serve areas outside the corporate limits. This landfill has sufficient capacity to serve Kernersville for several more years. Kernersville is currently looking for another disposal site.

Neither the County, Rural Hall, nor Walkertown operate solid waste disposal sites. Private hauling firms serving people within these three areas can dispose of solid waste at the Winston-Salem or Kernersville sites by agreement with the county.

Issues

Solid wastes are produced in Forsyth County at a rate of about one ton per capita per year. As the population increases, the amount of wastes for collection and disposal will increase. Landfill disposal is the most cost-effective of the many common disposal methods for the county. However, sites with suitable characteristics for landfills are scarce and neighborhood objections to the siting of a nearby landfill may make even suitable sites politically unacceptable.

Kernersville will need a new landfill site in the next several years. Winston-Salem will need a new landfill site in the 1990’s. Because haul costs are a significant part of the total cost of waste disposal, location of future landfill sites in the quadrants of Winston-Salem has been advocated. Implementation of such a plan will require two new sites of 100 acres each in the near future, one in the southeast and one in the southwest sections of the city. A third site in the northeast will be required by the mid 1990’s. The possibility of constructing a transfer station in south Winston-Salem by 1991 is being investigated. Transfer operations will reduce costs of hauling refuse to the Hanes Mill Road landfill. The City and County jointly own a 177 acre potential landfill site on Balsom Road in northwestern Forsyth County; however, this site is remote from sources of waste.

Goal

- Solid waste disposal must be done in a safe and economical way with emphasis on recycling and monitoring of new waste disposal technology alternatives.

RECOMMENDATIONS

Water Supply System

- Water purveyors should provide an adequate supply of high quality water for county residents.

Sewerage Systems

- Utility Commission policy on the extension of the sewerage system should fully support the Growth Management Plan.
- Units of government within Forsyth County should coordinate with the State concerning the permitting of package treatment plants, including their location, operation and maintenance.

Solid Waste Disposal

- The City should identify sites for future landfills.
- Reuse of solid wastes through recycling should be emphasized to lessen the load on local landfills, thus saving natural resources and promoting a cleaner environment.
- Units of government in Forsyth County should investigate new waste disposal technologies as alternatives to landfill disposal.
INTRODUCTION

From 1970 to 1984, the population of Forsyth County increased from 215,000 to 255,000 people. By the year 2005, an estimated 316,000 people will live in the county, an addition of 101,000 over the thirty-five year period. The impact of growth and development on environmental quality in Forsyth County is an issue of increasing public concern. The effects of increased population manifest themselves on the environment in several ways. More land is being cleared and graded for development; trees and other vegetation are being removed to make way for parking lots; increased numbers of cars are adding to congestion and air pollution levels; development pressures threaten water quality in a public reservoir; and the volume of solid waste and sewage continues to grow.

Environmental deterioration is not an inevitable consequence of population growth. The development of new homes, businesses, schools, and roads necessary to accommodate a growing population can occur without threatening the county's environmental quality. Growth is not undesirable. Furthermore, an arbitrary population cap to slow or to limit the addition of new residents is not prudent. However, future growth must be accommodated in an environmentally sensitive manner.

AIR QUALITY

Existing Situation

The Forsyth County Department of Environmental Affairs administers a well established air monitoring system. Air pollution data are collected for six pollutants, as required by State and federal regulations. In 1984, carbon monoxide levels exceeded permissible levels twice. In 1985, no exceedances of federal and State air pollution standards were recorded. In 1986, carbon monoxide levels again exceeded permissible levels twice
Air quality management in Forsyth County is conducted with a strong emphasis on problem anticipation, and action plans are developed which identify potential local involvement and coordination with State and federal requirements. Air quality objectives are designed to avoid designation of the county as a "Non-Attainment Area," a designation which could have negative effects on industrial growth and also result in federally mandated programs, such as required automobile pollution system inspections.

**Issues**

Federal air pollution standards were exceeded in two of the last three years. Although air pollution standards were met in 1985, concentrations of carbon monoxide and ozone were close to maximum permissible levels. Because variations in weather patterns can strongly influence pollutant concentrations from year-to-year, future problems with carbon monoxide and ozone levels are possible. Proposed federal regulations for inhalable particulates and air toxic pollution may require additional monitoring responsibilities on the part of the Department of Environmental Affairs.

**WATER QUALITY**

**Existing Situation**

Forsyth County is fortunate to have an abundant supply of good quality water for its public water systems. Surface sources are Salem Lake and the Yadkin River. However, the county is becoming increasingly urban, and uncontrolled urban development in watersheds can have a serious effect on water quality. Only if water supply sources are protected from pollution can a future supply to accommodate growth be assured.

**Issues**

Salem Lake Watershed: The water quality of Salem Lake is considered to be very good. Raw water taken directly from the lake currently meets all federal and State standards for treated water. As the county has grown, however, the lake's capacity and water quality have been threatened by increased development activity in the Salem Lake watershed. Portions of the 25 square mile watershed, which includes all land which drains into Salem Lake, are located within the jurisdictions of Forsyth County, Kernelsville, Walkertown, and Winston-Salem (Map 4.1). In 1985, the four jurisdictions adopted an interim ordinance to protect the lake until a comprehensive watershed protection plan could be prepared. The Salem Lake Watershed Area Plan has been completed and adopted by Winston-Salem. The plan recommends land acquisition around the lake, limits development densities, and specifies performance standards for development. The plan also addresses agricultural runoff, hazardous wastes, impacts of new roads, and water quality monitoring. The interim ordinance remains in effect in Forsyth County; however, Kernelsville and Walkertown have rescinded the ordinance due to the inflexibility of some standards it contains.

A recent reclassification of water supply sources by the N.C. Division of Environmental Management has designated all of the major streams which feed into Salem Lake, including Lowery Mill Creek, Kernels Mill Creek, and Martin Mill Creek, as WS-III water supply sources. Point-source discharges are permitted under the WS-III classification. Salem Lake water quality could be threatened if additional wastewater effluent is
...we can manage the earth so as to create environments...favorable to the continued growth of civilization.

— RENÉ DUBOS
SOLID WASTE MANAGEMENT

Existing Situation
A majority of Forsyth County's solid waste is subject to public or private collection; however, some residents in the county do not take advantage of private collection services, resulting in improper disposal and potential health problems.

Issues
The Forsyth County Department of Environmental Affairs recently determined that a minimum of 21 percent of county residents dispose of their garbage through illegal open dumping. Last year, more than 200 illegal dump sites were closed.

Illegal dumping is an environmental problem that can threaten health due to rat or mosquito infestation and can cause pollution of streams and groundwater supplies. The Department of Environmental Affairs is responsible for enforcement of the County Code which prohibits improper disposal of vehicles and other solid waste. Limited resources constrain the illegal dumping program to a response effort. Citizen complaints initiate actions to identify violators and cleanup operations.

Several potential causes for illegal dumping problems in Forsyth County exist. The Winston-Salem landfill is located in northern Forsyth County where the driving distance for southern residents is considerable. The generally poor condition of the landfill's access road and drop-off areas is a disincentive to proper disposal by residents using their vehicles. Municipal and private collection services do not provide for large items, such as appliances or furniture, items frequently placed in illegal dumps. The chance of being caught for illegal dumping is slight, and penalties for violation are minimal.

FLOODPLAIN PROTECTION

Existing Situation
The zoning ordinances of Winston-Salem and Forsyth County contain floodway and floodway fringe regulations. These regulations have been structured to meet the eligibility requirements of the National Flood Insurance Program, which is administered by the Federal Emergency Management Agency (FEMA). Ordinance provisions prohibit development within the floodway of a water channel; however, development is permitted within the floodway fringe, if the floodplain is filled to an elevation of at least one foot above the level of a 100 year flood (Figure 4.1).

Issues
FEMA requirements address the direct aspects of potential damage that can occur if new development takes place in areas subject to flooding. To qualify for flood insurance, floodway development is prohibited, and floodway areas are, therefore, well protected. Although FEMA does not prohibit construction in the floodway fringe, development is not encouraged. Floodplain filling and development can result in a major loss in the storage capacity of flood waters, alter drainage patterns, and cause an increased velocity and volume of runoff. While development located on the filled floodplain is reasonably safe from flooding, areas downstream may experience increased flood heights and greater channel water velocity.

In Winston-Salem, residents along lower Silas Creek have experienced increased flooding and stream bank erosion which they attributed to upstream development. The Country Club/Jonestown Area Plan recommends no further development on the floodway fringe of lower Silas Creek, as a result of their concerns.

HAZARDOUS MATERIALS

Existing Situation
In a recent study of all one hundred North Carolina counties, Forsyth County was ranked fourth in the number of establishments likely to use hazardous materials, twelfth in hazardous wastes produced by large generators, and fourteenth in reported hazardous materials spills.

There are no hazardous waste disposal sites in Forsyth County, and no hazardous waste landfills exist in North Carolina. Most waste is incinerated or recycled at facilities located elsewhere in North Carolina.

---

FIGURE 4.1 FLOODPLAIN DIAGRAM

---
Currently, forty large and over thirty-five small hazardous wastes generators exist in Forsyth County (Map 4.3).

Because of widespread use of hazardous materials, many federal, State, and local agencies are responsible for administration of related regulations.

**Issues**

Extensive regulatory involvement on the part of many federal and State agencies tends to inhibit local actions addressing hazardous materials. Problems occur due to complicated layers of regulation, the feeling that “the federal and State governments are handling it,” or fear on the part of local governments that local action will be preempted. Hence, an explicit and comprehensive hazardous materials program does not exist in Forsyth County.

As the result of recent federal legislation, all local governments are required to pay special attention to emergency planning and response efforts. The new law mandates the establishment of a Local Emergency Planning Committee in Forsyth County by August 1987. The Committee is then required to develop an Emergency Response Plan by October 1988.

The use of hazardous materials in the Salem Lake watershed is of special concern. At the present time, hazardous materials are being used by an industry located close to the lake, and hazardous materials are transported directly across the lake via the Business I-40 bridge. These situations pose strong threats to this public drinking water reservoir.
Several North Carolina local governments, including Raleigh, Durham, and Guilford County, have established programs that promote local involvement and address issues important to specific community situations.

**LAND RESOURCES**

**Existing Situation**

Increased development activity is one of the most prominent growth indicators in Forsyth County. New construction activity is a commonplace occurrence, especially residential development. During 1984 and 1985, the City-County Inspections Division issued building permits for 7,689 housing units. Given favorable interest rates and projected population growth, the rate of home construction should continue at similar levels in the foreseeable future. Other types of development will also occur in response to the needs of increasing numbers of residents.

Building codes, zoning, and development regulations were established to protect public health and safety and to maintain compatibility among land uses. Some of these devices indirectly address environmental concerns. Two recent development regulations have been implemented in explicit recognition of ecological processes and environmental problems: Floodway Zoning Regulations and the Erosion and Sedimentation Control Ordinance.

A third regulatory mechanism was approved and awaits implementation. The Salem Lake Watershed Area Plan contains recommended land use, land use density, and site design controls in response to potential watershed development hazards. Protection of natural site functions is considered a key element in this plan for reservoir maintenance.

**Issues**

Land development has a profound influence on the quality and character of Forsyth County’s environment.

Current development regulations are not environmentally comprehensive. Construction occurs which ignores and disrupts natural site processes.

The following sequence represents a typical development scenario. A site is cleared of trees and other vegetation. The site is graded as level as possible. The site may remain untreated for several months before additional construction activity takes place. Structural elements are built, and impervious surfaces, such as parking lots, roads, and walkways, are installed. Plantings, such as groundcover, shrubs, and sometimes a few trees, are added for aesthetics.

Such an approach often occurs regardless of potentially vulnerable site characteristics. Environmental problems emerge primarily as soil loss and stormwater runoff alterations.

Specific causal relationships and corresponding problems include the following: Grading activities fill in drainageways and alter site drainage patterns, creating unanticipated site runoff problems for neighboring properties. Newly introduced impervious surfaces reduce a site’s ability to absorb water, thereby contributing to increased stormwater runoff velocity and volumes (Figure 4.2).

Contaminants, such as oil or grease, are commonly deposited on impervious surfaces. Impervious surface runoff has been identified as a major component of non-point source water pollution. Heavy construction equipment causes soil compaction, eventually resulting in decreased soil infiltration, poor planting conditions, and increased site runoff.

The value of trees and other vegetation is underestimated. Vegeta-
tion loss adversely affects site characteristics, such as soil stability, on-site runoff capture, noise levels, air pollution removal, and microclimate, as well as the accepted visual effect of site denudation (Figure 4.3).

GOALS

Forsyth County is in need of an explicit set of environmental quality goals which can guide the establishment of local action programs for specific issues. The goals would serve three major purposes: First, to provide an opportunity to temper growth objectives in recognition of potential environmental consequences. Population growth is often equated with a healthy local economy. However, growth encouragement based primarily on economic justification poses threats to the county’s environmental quality. The attitude that “all growth is good growth” is being challenged more frequently as the environmental consequences are recognized.

The environmental goals would explicitly recognize the cycle of “cause and effect” associated with growth and environmental quality. This conceptual basis functions as an important public education tool.

Second, to be an overview instrument providing general guidance for individual issues and programs and addressing the county’s environmental quality in a comprehensive manner. Environmental programs in Forsyth County currently are fragmented due to the diversity of specific issues and to different levels of federal, State, and local governmental involvement.

Third, to be a general guidance tool based on the recognition of natural processes and how they are manipulated and altered for human benefit.

The goals that are developed are based on three concepts. The first concept is that all residents play an important role in the balance of Forsyth County’s environmental system. As the county grows, susceptibility to system imbalance and environmental damage increases.

Forsyth County is part of a changing system of resource renewal and waste recycling. The ambient air absorbs car exhaust and other pollutants; surface waters provide drinking water and also receive sewer and stormwater discharges; and the land surface receives garbage, hazardous wastes, and radioactive materials. Growth will place an increasing burden on the recycling ecosystem, and the natural environment will become more vulnerable to damage. Attitudes commonly referred to as “out of sight is out of mind” and “not in my backyard” serve only to delay appropriate environmental action until the consequences become critical.

Secondly, limits exist to the amount of growth and development that Forsyth County can absorb without threatening environmental quality and resource supplies. According to the concept of “carrying capacity,” Forsyth County is equipped with a finite supply of natural resources which can support a limited number of people. If its carrying capacity is exceeded, serious environmental degradation will occur, and solutions will be costly. Forsyth County may not reach its threshold for many years, but the influence of our present activities on the county’s ability to grow and improve must be recognized.

The third concept is that the natural capacity of Forsyth County to absorb growth is not fixed and can be improved significantly through protective environmental intervention.
Given that Forsyth County is a complementary part of an environmentally balanced system with a finite resource base, a reexamination of existing land use practices and activity patterns will decide the necessary adjustments to increase the county's "carrying capacity." Intervention is justified for maintaining long-term growth options and significant economic advantages can be realized on a short-term basis. The cost of resource reclamation is far greater than that of intervention and protection. If the consequences of environmentally damaging activities are left unbridled, the loss of a resource must be accepted, or payment must be made collectively by taxpayers to address the problem.

As an example, Winston Lake, once a source of drinking water, was lost due to sedimentation resulting from construction activity. The taxpayers have committed $640,000 to restore the lake to its former condition.

The following are the goals for environmental quality:
- Public health and safety should be insured for both present residents and future generations.
- Environmental resources should be protected on behalf of the economic well-being of the general public with regard to both individual property interests and collective taxpayer investments.
- Environmental features strongly influence the "quality of life," and the condition of the environment should be evaluated in terms of potential impact upon the daily activities and the standard of living of the general public.
- Resource protection is more desirable than resource reclamation. Anticipation of a potential hazard makes much more sense than does reaction to damage which has already occurred and may prove to be less costly.
- Local government involvement should be stressed to address the specific needs of Forsyth County. This is of particular importance given the sometimes complicated layers of federal and State requirements which must be considered.

RECOMMENDATIONS

Air Quality
- Continue involvement with the Winston-Salem Technical Coordinating Committee to control transportation related carbon monoxide and ozone concentrations.
- Assess air quality impact of new and proposed developments that generate heavy automobile activity, such as parking decks, shopping centers, and new highways. The impact of "fugitive dust," or airborne particles caused by site construction activities, should also be assessed.
- Continue monitoring of residential wood combustion as a potential source of carbon monoxide.
- Reduce hydrocarbon emissions from stationary sources to control ozone concentrations.

Salem Lake Water Quality
- The Salem Lake Watershed Area Plan should be implemented fully by Winston-Salem to protect the section of the watershed closest to Salem Lake.
- Kernersville, Walkertown, and Forsyth County, which have jurisdiction over parts of Salem Lake watershed, should adopt and implement recommendations for water quality protection contained in The Salem Lake Watershed Area Plan.
- A new State watershed protection program is presently being explored. This program should be used to protect Salem Lake watershed by submitting a petition to the N. C. Environmental Management Commission to designate Salem Lake watershed as a "Critical Water Supply Watershed." This program will enable Forsyth County to receive technical assistance during plan implementation. The Environmental Management Commission will have the authority to ensure compliance with plan requirements.
- All streams which are classified as WS-III waters that feed into Salem Lake should be reclassified as WS-II waters, as recommended in The Salem Lake Watershed Area Plan.

![FIGURE 4.4 SLOPE-DENSITY REGULATION CONCEPT](image-url)
The reclassification from WS-III to WS-II will improve significantly the level of Salem Lake water quality protection by limiting point source pollution and managing non-point source pollution. The Utility Commission is presently involved in this reclassification process.

Yadkin River Water Quality

Long-term maintenance of the Yadkin River as a viable water supply source can be aided by the following local actions:

- Forsyth County should support the development of a regional river basin management plan which addresses non-point source pollution problems and reexamines State policies toward NPDES permit violations.
- Yadkin River water quality should be given special attention by the Utility Commission, including the preparation of an annual report that addresses any noticeable change in monitoring information. Such a report should be submitted to the N.C. Department of Human Resources, the Division of Environmental Management of the N.C. Department of Natural Resources and Community Development, and local public officials and agencies.
- Reasons for the "poor" quality rating given several streams that pass through Forsyth County and feed into the Yadkin River should be examined and steps taken to improve their water quality characteristics. If good quality water can be expected from upriver, Forsyth County's impact on downriver users needs special attention.

Solid Waste Management

- A more intensive prevention program should be adopted which provides more incentives for proper solid waste disposal. A potential improvement that should be investigated would involve the convenient location of satellite solid waste collection sites throughout the county.
- Stiffer penalties for open dumping violations should be imposed. Rather than considering fines, violators should be required to participate in community service programs.

- The Department of Environmental Affairs should expand its enforcement program to include public education seminars, increased enforcement, and further problem analyses.
- The Department of Environmental Affairs has also requested funding to provide for residential pick ups of large items. These and other measures should be implemented to establish an effective solid waste management program.

Floodplain Protection

- The policy toward floodplain filling and development should be reexamined. Winston-Salem and Forsyth County should amend floodplain development regulations through provisions which are intended to preserve the natural water storage capacity of floodplain areas and to allow density transfer and other incentives and flexibility through negotiation of site plan elements.
- Density transfer from floodway areas to other areas of a site should not be permitted unless floodway fringe areas are left undisturbed.
- The use of floodway fringe areas for recreational, other nonstructural uses, or for greenway dedication should be encouraged.

Hazardous Materials

- A Forsyth County Hazardous Materials Task Force should be formed to address the issue of hazardous materials. The task force should include representatives of State and local governments, transportation planners, environmental technicians, local industrial leaders, and concerned citizens. Topics which should be addressed include the following: Examination of coordination and comprehensiveness of local regulations, emergency preparedness, and development of a local action program to address specific issues and augment State regulatory activities.
- The Forsyth County Emergency Planning Committee, mandated by federal legislation, should focus upon emergency preparedness and function

---

**FIGURE 4.5**

**CLUSTER ADVANTAGES**

**GRID DEVELOPMENT**

- MORE OPEN SPACE
- LESS PAVEMENT
- MORE TREES SAVED
- EASIER DRAINAGE CONTROL
- SENSITIVE AREAS PRESERVED

**CLUSTER DEVELOPMENT**
as a subcommittee of the Hazardous Materials Task Force to assure coordination and avoid duplication of efforts.

**Land Resources**

The following regulatory concepts should be considered for environmental value and in conjunction with related urban design and community appearance objectives:

- **Mining and other extractive industries** are important to the Forsyth County economy. However, these industries are potential nuisances and can impact adversely surrounding land uses. Forsyth County is predominantly an urban county, and extractive industries should be located where they have minimal adverse effects on established neighborhoods, as well as rural areas. Extractive industries should not be concentrated in any geographical area where the cumulative impacts could harm the area. Guidelines for locating extractive industries and environmental and appearance performance standards need to be incorporated into the development ordinances.

- **Performance controls** are recommended to permit design flexibility and to adapt specific regulations to variable site characteristics. New environmentally sensitive development regulations are needed which recognize and protect natural site functions. Vulnerable aspects of county land attributable to its Piedmont location, such as erosion-prone clay soils, steeply sloped areas, and an extensive stream subbasin system, should be explicitly protected.

- **Open space requirements** should be put into effect. The extent to which a site can be covered by impervious surfaces should be limited. Requirements should specify minimum areas that must remain undisturbed and available for stormwater infiltration and site vegetation.

- **No net change in runoff** should be allowed at development sites. Drainage techniques normally channel stormwater runoff away from structures and off the site. The volume and velocity of stormwater runoff leaving a developed site should be no greater than predevelopment levels, primarily for adjacent property protection and non-point source pollution control.

- **Natural vegetation** should be preserved during development. Site clear-cutting should be expressly prohibited. Mature trees should be protected. A minimum amount of vegetation should be required which corresponds with open space requirements. If tree removal is unavoidable, replacement in lieu of removal should be permitted. Where vegetation is removed, temporary grass seeding should be required for erosion control, if the site remains untreated for more than two months.

- **Slope density regulations** should be enacted. A steeply sloped site cannot support the same development density as a flat site without severe disturbance. Permitted density should decrease as site slope increases. Grading activities should be limited in proportion to slope vulnerability (Figure 4.4).

- **There should be incentives to promote cluster development.** Cluster development makes wise use of land resources and is environmentally sensitive (Figure 4.5). The City and County zoning ordinances should be reexamined to provide greater incentives for clustering.
Our future patterns of land use will be based on that of our growing highway system as surely as the human body is molded about its skeleton.

— Paul B. Sears
EXISTING SITUATION

The current Winston-Salem Urbanized Area Thoroughfare Plan was adopted in 1980. This plan emphasizes the street and highway network, with secondary attention on ridesharing, including transit. A separate plan adopted in 1984 covers the Kernersville area. Thoroughfare Plan recommendations contained in this chapter are intended to update those plans and expand their scope to the entire county.

Traffic patterns arise from people travelling from home to work or shopping areas, from commercial deliveries, and from travellers passing through the community. Currently, many local streets and highways have serious capacity deficiencies. They are carrying more traffic than they are designed to handle. The result is traffic congestion and unsafe conditions in many locations. Examples of roads with sections currently carrying more traffic than they were designed for include: Business I-40 through downtown Winston-Salem, Stratford Road, Country Club Road, Jones-town Road, Ebert Street, West Clemmonsvoice Road, Robinhood Road, Bethabara Road, Walkertown Road, NC 150, and NC 66. The listing does not include all county roads with existing or future problems.

A thoroughfare plan is, in part, an identification of the streets where traffic is currently congested or is expected to increase to unacceptable levels. The plan proposes solutions to those identified traffic problems, including the identification of general corridors where new roads need to be built. The plan is used as a long-range guide for protecting those corridors, pending more detailed studies. A thoroughfare plan does not attempt to identify specific alignments or property requirements for roadway needs. Before such authoritative information is available, environmental impact statements and engineering studies are required generally. The results of those studies may be that a new road should not be built as proposed in a thoroughfare plan.

FUTURE TRAVEL DEMAND

Projecting travel demand to the year 2005 to determine thoroughfare needs involves forecasting the size and demographic characteristics of the future population, land use patterns, travel characteristics, and travel modes.

The projection of future conditions identified in the preparation of the Thoroughfare Plan was based on standard transportation modeling procedures consisting of the following steps: (1) socio-economic projections; (2) trip generation; (3) trip distribution; (4) traffic assignment; (5) identification of system deficiencies; and, (6) evaluation of alternatives.

Based on the Winston-Salem/Forsyth County Growth Strategy, Central Area Action Plan, area plans, and other adopted guides, predictions can be made about where people will live, shop, and work. From these predictions, the number of trips per day to and from various parts of the county can be computed. This prediction process is based on a cross-classification table. For instance, the typical five person household in the middle income bracket makes one shopping trip per day. This table is based on an actual survey of households in the Winston-Salem area. To verify its accuracy, data for 1985 were obtained for population, number of households, income (assessed housing values were used as an indicator), and number of jobs in five categories. This information was compiled for each traffic zone. Substituting the 1985 figures in the cross-classification tables, the number of trips and their origins and destinations were predicted and were found to be within 98 percent of the actual 1985 traffic volumes.

After this verification, the figures for population, number of households, income (housing values), and jobs were projected to 2005. As before, these numbers were used to project traffic volumes and locations, this time for 2005. Adjustments were made for expected increases in carpooling and transit use, and for various other changes.

The next step was to compare these projected traffic volumes with the traffic carrying capacity of the streets now in existence or committed for construction. This comparison revealed serious capacity deficiencies in the local road system by 2005 (Map 5.1).

Streets which will not be able to handle the projected increases were
studied for various alternate solutions. These alternatives included widening the existing street, building a new road to divert some of the traffic, etc. As a parallel step, there are several proposed streets which are probably unreasonable to build in their currently proposed locations. These streets, too, were studied for possible alternatives. Each of the alternatives was tested in a computer model to see if the proposed road would solve capacity deficiency problems. Preliminary field studies were made to determine the feasibility of each alternative, and construction and right-of-way costs were estimated.

ISSUES

The three main transportation issues in Forsyth County are: (1) existing and forecasted street deficiencies; (2) reduced State and federal funding levels; and, (3) lack of coordination between community goals and highway plans.

Serious street deficiencies are forecasted. Many streets are currently carrying more traffic than their design capacity, and the situation will worsen by 2005. Although there was much highway construction activity in the 1950's and 1960's in Forsyth County, there was a relative lull in the 1970's and early 1980's. As a result, much upgrading and new construction work need to be done.

State and federal funding is more difficult to obtain. Major realignments of intergovernmental financial responsibilities are underway now in highway finance. Federal highway priorities are shifting rapidly toward construction of new primary roads.

MAP 5.1
YEAR 2005 ROAD CAPACITY DEFICIENCIES

- Roads where traffic will increase to unacceptable levels
only and toward maintenance of the existing system. New federally financed roads for urban areas will be constructed only if they happen to meet one of these criteria or are a holdover from programs, such as interstate construction, which are ending. Urban transportation problems will no longer be federal problems.

Concurrent with the federal belt tightening is a State list of highway needs which is seriously underfunded. The North Carolina Board of Transportation annually adopts a Transportation Improvement Program (TIP) to allocate federal and State highway construction funds. The 1987-1995 TIP covers half of the time frame of this comprehensive plan. In ideal circumstances, the TIP would contain funds for solving the first half of existing county highway needs. In reality, the TIP fully funds only six projects and partially funds three more.

No significant improvements can be expected in the State's financial situation. The statewide Transportation Task Force reported in 1985 that a $200 million program was needed as a stopgap measure to meet the State's highway needs. Only about two-thirds of the package was approved by the General Assembly. In the 1987 legislative session, a consolidated bill was adopted to broaden municipal and county authority to protect right-of-way. However, attached to that bill was a controversial restriction on municipalities' financial contributions to any State highway project. One of the outcomes of that law has been that the State must cut back on the number of road projects it undertakes.

As a result, specific proposals will be made in a local Right-of-Way Protection Plan for more effective right-of-way protection, alternate sources of construction (private developers, impact fees, etc.), and additional tax dollars.

The transportation planning process now in place is reasonably able to deal with these budgetary stresses.

Transportation planning is 85-90 percent funded by State and federal funds, depending on whether the focus is on highway or transit needs. While the total amount of planning funding has been reduced, funding levels show the heavy commitment to cooperative, comprehensive, and continuing efforts by local, State, and federal governments to ensure well planned use of construction and operations funding. This planning process is carried out in Forsyth County by City-County Planning Board staff and is overseen by the Transportation Advisory Committee, whose members include representatives from the Forsyth County Board of Commissioners and from each of the governing bodies of the five incorporated municipalities.

Community goals and needs have not always been well coordinated with street and highway plans. Transportation has been a major issue in almost every area plan undertaken in Forsyth County. People frequently seek solutions to excessive traffic near their homes and businesses and often want to move proposed roads elsewhere. Both desires stem from legitimate values. Too often, however, people fail to recognize the equally legitimate community goals of reducing traffic congestion, enabling the whole community to grow and prosper, and eliminating safety problems. The prime reason for producing Vision 2005 and the Thoroughfare Plan is to find a way to balance those conflicting goals from a communitywide perspective. Perhaps the most important decision to be made from this comprehensive plan is where to channel the traffic resulting from expected development through the year 2005.

GOALS

State and federal laws require cities of Winston-Salem's size to maintain up-to-date thoroughfare plans. In conjunction with the comprehensive plan, the Thoroughfare Plan for Forsyth County has been prepared. The following are the goals of that plan:

• Adequate service to growth areas in Forsyth County.

The economic development sought for Forsyth County will not occur spontaneously. Part of this area's weakness is the shortage of sites with public facilities, including roads, already in place. Also needed is careful attention to the transportation requirements of the faster growing areas in western Winston-Salem.

All transportation plan recommendations have been cross-checked with area plan recommendations, both plans which have been adopted and those which are underway. Changes in projected traffic may necessitate area plan amendments.

• Reduction of existing traffic congestion and safety problems.

The complete correction of all congestion and safety problems is an unrealistic goal because of costs and neighborhood conflicts; however, to focus attention solely on future problems at the expense of current ones is unreasonable.

Small construction improvements to existing roads, such as turn lanes, better signalization, etc., should be considered before major roads are constructed.

• Balance by mode of travel and by geographic location of improvements.

Highway travel by personal automobile is likely to remain the primary means of transportation in the county for the foreseeable future. However, many congestion problems, particularly in the morning and afternoon peaks, are easily addressed by more transit use and car/van pooling. In comparison to similar cities, Winston-Salem residents have shown more than average willingness to ride buses and to carpool. This inclination should be encouraged and stimulated by good transit service and other ridesharing programs.

Bicycle and pedestrian needs should be considered in the design of all projects.
studied for various alternate solutions. These alternatives included widening the existing street, building a new road to divert some of the traffic, etc. As a parallel step, there are several proposed streets which are probably unreasonable to build in their currently proposed locations. These streets, too, were studied for possible alternatives. Each of the alternatives was tested in a computer model to see if the proposed road would solve capacity deficiency problems. Preliminary field studies were made to determine the feasibility of each alternative, and construction and right-of-way costs were estimated.

**ISSUES**

The three main transportation issues in Forsyth County are: (1) existing and forecasted street deficiencies; (2) reduced State and federal funding levels; and, (3) lack of coordination between community goals and highway plans.

Serious street deficiencies are forecasted. Many streets are currently carrying more traffic than their design capacity, and the situation will worsen by 2005. Although there was much highway construction activity in the 1950's and 1960's in Forsyth County, there was a relative lull in the 1970's and early 1980's. As a result, much upgrading and new construction work need to be done.

State and federal funding is more difficult to obtain. Major realignments of intergovernmental financial responsibilities are underway now in highway finance. Federal highway priorities are shifting rapidly toward construction of new primary roads.

---

**MAP 5.1**

**YEAR 2005 ROAD CAPACITY DEFICIENCIES**

- Roads where traffic will increase to unacceptable levels
only and toward maintenance of the existing system. New federally financed roads for urban areas will be constructed only if they happen to meet one of these criteria or are a holdover from programs, such as interstate construction, which are ending. Urban transportation problems will no longer be federal problems.

Concurrent with the federal belt-tightening is a State list of highway needs which is seriously underfunded. The North Carolina Board of Transportation annually adopts a Transportation Improvement Program (TIP) to allocate federal and State highway construction funds. The 1987-1995 TIP covers half of the time frame of this comprehensive plan. In ideal circumstances, the TIP would contain funds for solving the first half of existing county highway needs. In reality, the TIP fully funds only six projects and partially funds three more.

No significant improvements can be expected in the State's financial situation. The statewide Transportation Task Force reported in 1985 that a $200 million program was needed as a stopgap measure to meet the State's highway needs. Only about two-thirds of the package was approved by the General Assembly. In the 1987 legislative session, a consolidated bill was adopted to broaden municipal and county authority to protect right-of-way. However, attached to that bill was a controversial restriction on municipalities' financial contributions to any State highway project. One of the outcomes of that law has been that the State must cut back on the number of road projects it undertakes.

As a result, specific proposals will be made in a local Right-of-Way Protection Plan for more effective right-of-way protection, alternate sources of construction (private developers, impact fees, etc.), and additional tax dollars.

The transportation planning process now in place is reasonably able to deal with these budgetary stresses. Transportation planning is 85-90 percent funded by State and federal funds, depending on whether the focus is on highway or transit needs. While the total amount of planning funding has been reduced, funding levels show the heavy commitment to cooperative, comprehensive, and continuing efforts by local, State, and federal governments to ensure well planned use of construction and operations funding. This planning process is carried out in Forsyth County by City-County Planning Board staff and is overseen by the Transportation Advisory Committee, whose members include representatives from the Forsyth County Board of Commissioners and from each of the governing bodies of the five incorporated municipalities.

Community goals and needs have not always been well coordinated with street and highway plans. Transportation has been a major issue in almost every area plan undertaken in Forsyth County. People frequently seek solutions to excessive traffic near their homes and businesses and often want to move proposed roads elsewhere. Both desires stem from legitimate values. Too often, however, people fail to recognize the equally legitimate community goals of reducing traffic congestion, enabling the whole community to grow and prosper, and eliminating safety problems. The prime reason for producing Vision 2005 and the Thoroughfare Plan is to find a way to balance those conflicting goals from a communitywide perspective. Perhaps the most important decision to be made from this comprehensive plan is where to channel the traffic resulting from expected development through the year 2005.

GOALS

State and federal laws require cities of Winston-Salem's size to maintain up-to-date thoroughfare plans. In conjunction with the comprehensive plan, the Thoroughfare Plan for Forsyth County has been prepared. The following are the goals of that plan:

- Adequate service to growth areas in Forsyth County.

The economic development sought for Forsyth County will not occur spontaneously. Part of this area's weakness is the shortage of sites with public facilities, including roads, already in place. Also needed is careful attention to the transportation requirements of the faster growing areas in western Winston-Salem.

All transportation plan recommendations have been cross-checked with area plan recommendations, both plans which have been adopted and those which are underway. Changes in projected traffic may necessitate area plan amendments.

- Reduction of existing traffic congestion and safety problems.

The complete correction of all congestion and safety problems is an unrealistic goal because of costs and neighborhood conflicts; however, to focus attention solely on future problems at the expense of current ones is unreasonable.

Small construction improvements to existing roads, such as turn lanes, better signalization, etc., should be considered before major roads are constructed.

- Balance by mode of travel and by geographic location of improvements.

Highway travel by personal automobile is likely to remain the primary means of transportation in the county for the foreseeable future. However, many congestion problems, particularly in the morning and afternoon peaks, are easily addressed by more transit use and car/van pooling. In comparison to similar cities, Winston-Salem residents have shown more than average willingness to ride buses and to carpool. This inclination should be encouraged and stimulated by good transit service and other ridesharing programs.

Bicycle and pedestrian needs should be considered in the design of all projects.
Problems exist throughout the community. Road project priority decisions must be made to provide needed benefits to all parts of the community. Equity in decision making is one key to community acceptance of needed facilities.

- Protection of existing neighborhoods and the environment.

Residential streets should not carry excessive traffic, either inadvertently or purposefully. While residential development might be appropriate on collector streets and even for higher level streets in some limited circumstances, excessive cut through traffic should be prevented. This can be accomplished by the provision of better routes around neighborhoods or by provision of more through streets which disperse traffic in the neighborhoods. Attention to general circulation needs is important.

Careful consideration must be given also to the land use changes which are likely to be induced, either by new roads or by the lack of improvements to existing ones.

There are documented increases in carbon monoxide levels which seem to be resulting from automobile use (Figure 5.1). Travel patterns which help reduce air pollution should be promoted through reduction of traffic congestion and the use of alternative means of transportation. Such actions should assist in forestalling federal requirements and sanctions, as well as work with any such orders if and when issued.

- Proposals which are buildable and maintainable.

A great number of road improvements to solve all traffic problems would be the traditional way to handle traffic congestion, but unless the resources to implement these projects are available, such a plan would be worse than no plan at all. Schedule and funding commitments from the State for improvements which are its responsibility are not necessary or possible to have. On the other hand, funds for urban improvements are highly unlikely ever to be available to build roads at the level proposed in past thoroughfare plans. This new plan must seek to scale both City and State responsibilities to reasonable, achievable levels. To reach this balance, a greater responsibility must be borne through local revenues and by developers, residents, tenants, and other users of new developments. Service districts and assessments to raise funds for on and off site improvements will become more frequent. Right-of-way protection measures will also become more common, beginning with earlier location of the specific parcels needed, continuing through various negotiation techniques and provision of incentives, and ending eventually in some cases with advance purchase of land.

Designs for roads which will actually be built must be reduced to the minimum acceptable level, but not to the point where safety and effectiveness are impaired. Provisions for future expansion should be included.

Public transportation services rely heavily on federal financial assistance. Funding may not continue to be available at current levels for many more years. Significant cuts in transit service could bring about increases in traffic. On a number of marginally sufficient streets, these traffic increases could necessitate significant road improvements. Proposals for long-term transportation funding must include provisions for transit and other ridesharing needs.
EVALUATION OF ALTERNATIVES

Several major corridors were identified in the draft comprehensive plan for detailed analysis of alternative solutions. Those corridors were the eastern and western sections of the Northern Belt, East Winston Parkway, and a Southern Loop. The Southern Loop was later dropped from that list since additional study of capacity deficiencies showed little need for such a road in any location.

In addition, the 1980 Thoroughfare Plan was studied to determine which parts of the plan were still valid.

During public review of the Thoroughfare Plan, several other roads or corridors drew attention. The staff studied those proposals as well. Included in this list are the US 311 Connector, the Franklin Road Extension, and the Kernersville Connector.

Three criteria were used in evaluating the various alternatives under consideration: (Figure 5.2).

- Does the alternative solve the traffic problem?
- Does the alternative promote the Growth Management Plan?
- Does the alternative help accomplish Thoroughfare Plan goals?

Current Thoroughfare Plans and Logical Extensions

The first sets of alternatives evaluated were the road networks proposed in the current thoroughfare plans for Winston-Salem and Kernersville. Perhaps the main advantages of these plans are their familiarity and the fact that a number of current public and private development plans have been based on them. Since this is the first time that the nonurban areas of Forsyth County have been studied in detail, some standard solutions were also proposed for those areas as part of this set of alternatives.

Western Segment of the Northern Beltway

Traffic problems on the northern and western sides of Winston-Salem need much attention in the new Thoroughfare Plan because rapid development in these areas has both created problems and prevented easy solutions.

For the purposes of the Thoroughfare Plan, the Beltway was divided into eastern and western sections at US 52. The sections were examined as independent alternatives. The Muddy Creek alignment, an alignment based on upgrading existing roads, and the Lewisville alignment were the primary options studied for the western half of the Northern Beltway. Traffic projections did not reveal a strong demand for travel across the entire facility from I-40, in the vicinity of Muddy Creek, north to Reynolda Road, east to US 311 North, and south back to the Business I-40.

Eastern Segment of the Northern Beltway

The current alignment for the eastern segment of the Northern Beltway cuts through the middle of the Piney Grove neighborhood, runs parallel to and north of Motor Road, and affects much of the Carver School Road area. The social and physical costs of constructing a highway in this alignment are now considered unreasonable. As a result, three major options were studied for this section: A new road in the vicinity of Mill Creek, connecting to Business I-40 in one of three locations; widening NC 66 from US 52 to West Mountain Street with a new connector, Kernersville's West Loop to Business I-40; and, an alignment farther out which would pass north of Kernersville and connect to the Piedmont Triad International Airport. This last alternative would require construction of its extension in Guilford County.

East Winston Parkway

The East Winston Parkway, also known as the Winston Lake Road Connector, has been proposed to provide some needed circulation for the eastern and northeastern parts of Winston-Salem. The parkway would also continue a loop facility around Winston-Salem, connecting with Indiana Avenue, North Point Boulevard, and Silas Creek Parkway. A highly desirable feature of the East Winston Parkway would be a connection south across Business I-40, along the proposed US 311 connector, tying into the interchange of new US 311 and new I-40. Two alignments are considered here. The alignment in the Thoroughfare Plan ties into Business I-40 at Linville Road. Another alignment under study connects at Reidsville Road.

US 311 Connector

The US 311 Connector was first proposed in the 1968 Thoroughfare Plan to link the interchange of the new US 311 and Corporation Freeway to the interchange of Business I-40 and US 158, completing a loop around Winston-Salem. Because of legal restrictions on the City's ability to protect right-of-way, the Shalimar neighborhood expanded into the proposed alignment. Several other residential areas are near the alignment. Because of this potential for neighborhood disruption, an alignment farther east near Linville Road was examined, as well as the option of widening US 52, Stadium Drive, and possibly Reynolds Park Road.

Franklin Road Connector

To ease the increasing traffic congestion on Robinhood Road, Peace Haven Road, and Country Club Road, a new east-west road was proposed. The road would link Franklin Road at Lewisville-Vienna Road, cross Brookberry Farm and Meadowlark Drive, and connect to a new interchange on the Northern Beltway, presumably near Muddy Creek. The local streets in the new Sherwood Forest area would also be connected across Muddy Creek to that same interchange.

Kernersville Connector

Town officials in Walkertown and Kernersville felt that the eastern half
of the Northern Beltway was too far away from their towns to spur needed development. As a result, they proposed a new road linking the Beltway from south of Old Walkertown Road to NC 66 at the proposed Linville Springs Extension. Area residents asked for another alignment farther away from Cash Elementary School, several churches, and existing neighborhoods. That alignment would run roughly parallel to and north of the original alignment, intersecting NC 66 at Old Valley School Road.

THOROUGHFARE PLAN

The Thoroughfare Plan adopted by the City-County Planning Board, each municipality, Forsyth County, the Transportation Advisory Committee, and the NC Department of Transportation is shown on Map 5.2 and contains the following elements:

The Thoroughfare Plan follows the west side of Muddy Creek from I-40 to Country Club Road. Between that point and Pfafftown, the beltway widens to about a half mile corridor. North of Pfafftown, the beltway narrows back and again generally follows the west side of the creek to Bethania-Tobaccoville Road. From there, the beltway roughly goes east-northeast to the US 52/NC 66 interchange.

The eastern half of the Northern beltway starts at the US 52 interchange with NC 66, widening the existing NC 66 Connector to four lanes east to Broad Street. The beltway then follows a new alignment south of Temora Lakes, across Germantown Road. From there, the road turns south to cross NC 66 and follows Mill Creek to Old Walkertown Road. After crossing Old Walkertown Road, the beltway goes south to the intersection of US 158 at Old Greensboro Road.

The East Winston Parkway holds to the original alignment from US 52 to Business I-40. Because of the opposing difficulties of using some of the Winston Lake Park land versus constructing a five legged interchange on Business I-40 at US 158, more detailed work will need to be done, probably in an Environmental Impact Statement.

The US 311 Connector will also generally stay to the original alignment. A minor shift to the west can be made to avoid the northern section of the Shalimar neighborhood.

The Franklin Road Extension was eliminated from the plan.

The northern alignment for the Kernersville Connector was chosen, pending further design studies.

A loop around the west side of Rural Hall was added to relieve pressure on Broad Street. It would provide the major crossing of Grassy Fork Creek in the rapidly developing southern end of the town.

The specific improvements adopted for existing street segments are not being published as part of this comprehensive plan. They have been published and distributed separately and will also be included as part of the Technical Report accompanying the official Thoroughfare Plan map.

RECOMMENDATIONS

The following programmatic actions will also be needed to provide an effective means for implementing the Thoroughfare Plan.

- Create a higher level of funding for local road improvements. As noted in the discussion of issues, State and federal funding is more difficult to obtain for road improvements. Consequently, funds from a variety of local sources will be needed to fill the gap. Rather than rely on a single source, such as general obligation bonds, a variety of sources is likely to be seen as a fairer and more palatable way to raise money. User fees, developer participation, and impact fees are promising methods. County financial assistance may eventually be allowed.

- Adopt a right-of-way protection
plan. The forthcoming Right-of-Way Protection Plan for Forsyth County will outline specific County and City of Winston-Salem actions to have some of the needed roads built. Right-of-way protection is crucial because of the lag time between the adoption of the Thoroughfare Plan and construction of new roads. The Right-of-Way Protection Plan will recommend the following: (1) Changes in zoning ordinances and subdivision regulations requiring needed right-of-way to be set aside as appropriate; (2) suitable areas for impact fees to finance roadway construction; (3) a list of roads where environmental impact statements or other studies are needed to clarify roadway alignments and right-of-way; and, (4) estimated funds needed for advance right-of-way purchase.

- Promote more car pooling, van pooling, and transit ridership. As noted earlier in this chapter, both the number and proportion of persons who car pool, van pool, and ride the bus are expected to increase in the next 20 years. This assumption will not become a reality without continuing efforts to improve services offered by the Winston-Salem Transit Authority and others. The future of federal financial assistance now available to WSTA is even more uncertain than is the future for highway finance. Perhaps the only safe working assumption is that federal assistance will be more difficult to obtain, and State funding will be minimal at best. In response to these changes which are already underway, WSTA has already instituted long-term cost saving measures, such as the substitution of carpools and vanpools for express bus service. Privatization of other services, such as contracting out of paratransit services, is being given close attention in the Ride-sharing Development Program now underway. Privatization holds some promise for the continued provision of services at lower cost. However, in the case of major community goals, such as downtown revitalization, substantial funding will be required for transit service. Again, the most likely source of these funds will be local government.

- Adopt a Collector Street Plan. As important as the major streets are in the development of this community, local and collector streets also deserve attention. The forthcoming Collector Street Plan will identify the location and type of improvements needed for these lower classification streets. Much of the collector street system is constructed by private developers at little cost to local governments. Perhaps the major public cost is in "oversizing," that is, requiring a developer to construct a collector type street where normally only a local type street would be constructed. To have a clear picture of where oversizing is needed, the thoroughfare plan process needs to be carried down to this level as well. Many of the problems found in "cut through" traffic in residential neighborhoods and other areas can be eliminated or managed more effectively through this process.
## Figure 5.2
**Evaluation of Thoroughfare Plan Options**

<table>
<thead>
<tr>
<th></th>
<th>Are Traffic Problems Solved?</th>
<th>Do Options Promote Growth Concept?</th>
<th>In Accordance with Thoroughfare Goals?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Thoroughfare Plan</strong></td>
<td>• Traffic problems along Silas Creek Parkway, Robinhood Road, Business 1-46, Country Club Road, Stratford Road not addressed</td>
<td>• Most proposals for road widening and new road locations are in Areas 1, 2, 3, and 4A and promote the Growth Management Plan</td>
<td>• Inadequate provision for growth in northern and western areas; Traffic congestion in areas and may be too close to major traffic generators.</td>
</tr>
<tr>
<td><strong>Northern Beltway West</strong></td>
<td>• Muddy Creek option most efficient as it is close to major traffic generators</td>
<td>• Existing facilities that would be improved are in Areas 3 and 4A</td>
<td>• Muddy Creek option too far west to serve traffic needs; Disrupts neighborhoods due to some increase in noise and hazardous conditions.</td>
</tr>
<tr>
<td><strong>Northern Beltway East</strong></td>
<td>• Mill Creek and NC 66 options solve traffic problems</td>
<td>• Mill Creek option is entirely within Urban and Growth Areas</td>
<td>• Mill Creek option provides service between Winston-Salem and Peace Harbor; builds new roads in rural areas</td>
</tr>
<tr>
<td><strong>East Winston Parkway</strong></td>
<td>• Reidville Road option provides slightly better service than Linville Road option</td>
<td>• Both options within Urban or Growth areas</td>
<td>• Two options within growth areas; Buildability of NC 66 is better.</td>
</tr>
<tr>
<td><strong>US 311 Connector</strong></td>
<td>• Alignment in 1980 Thoroughfare Plan solves problem most effectively; widening existing roads can be adequate; alignments farther east not effective</td>
<td>• All locations either in Area 3 or 4A</td>
<td>• Alignment in Industrial Park already has some value; Existing road is adequate; No disruption to development of industrial park and no new roads are needed.</td>
</tr>
<tr>
<td><strong>Kernersville Connector</strong></td>
<td>• Traffic could be handled adequately with and without Connector; congestion on NC 66</td>
<td>• Connector is in Area 4B</td>
<td>• Connector would provide a route to分流 traffic and activity from US 311.</td>
</tr>
</tbody>
</table>
...diversity offers an area some measure of invulnerability to the effects of many unforeseen events and decisions...

— NORTON E. LONG
alternatives and possibilities.

The purpose of this chapter of the comprehensive plan is to broaden the scope of the Winston-Salem/Forsyth County Growth Strategy to encompass other methods of promoting economic development and job creation.

Partially due to the recent economic cycle of the boom years of the late 1970's, followed by the stagnant years of the early 1980's, local governments and organizations increasingly have become interested in promoting policies and programs which stimulate local economic development. Unfortunately, local governments do not have much control over many of the factors which affect a local economy. For example, a local government has little control over federal policies affecting interest rates, the existence of certain natural resources, the topography of the land, or over the location of a state university. However, these factors can affect strongly the composition and health of a local economy.

Fortunately, local governments do have control over other factors, such as the local educational system, the existence of serviced industrial sites, and the efficient provision of local services. Also, local governments can promote most effectively the formation, survival, and expansion of local businesses by reducing the costs of doing business and by correcting market imperfections which inhibit disproportionately new or small businesses. Economic development programs should emphasize these types of variables.

The promotion of traded sectors, or exported goods and services, in the economy, as well as a decrease in imports into the local economy, merit special attention in a local economic development program. Imports of products or services from other areas cause a leakage of money from the local economy. The multiplier effect of that money then employs individuals elsewhere rather than locally. Alternatively, an increase in exports, including both services and manufactured products, brings money from elsewhere into the local economy and increases local employment, both directly and indirectly.

The three basic sources of job creation are as follows: (1) retention and expansion of existing businesses; (2) recruitment of new business; and, (3) formation of new businesses.

Local policies need to address adequately each of these methods of job creation to provide a balanced and diverse approach to local economic diversification.

Historically, however, these sources have not added jobs equally to the local economy. For example, between 1980 and 1982, expansions of existing industries created 48 percent of the new jobs in the MSA, with births of new businesses creating the other 52 percent. Contractions of existing industries accounted for about 41 percent of all jobs lost.

However, when the size of the business is considered, firms with fewer than 100 employees had a net increase in employment in spite of a net decrease in total employment between 1980 and 1982. On the other hand, businesses with more than 500 employees suffered a net loss of employment. Hence, the smaller, existing businesses created jobs that replaced those lost by the larger businesses.

Forsyth County has not fared well in the regional competition to attract

![Figure 6.1: Forsyth County Employment by Sector, 1970-2005](image_url)

Source: County Business Patterns (1970)  
new businesses. David Birch of MIT has shown that of the jobs created in the nation between 1969 and 1976, the relocation of businesses lagged far behind the birth of new businesses and the expansion of small businesses as a source of new employment. The recruitment of new businesses to the area has not provided a significant increase in local employment.

THE LOCAL ECONOMY

Forsyth County ranks fourth among North Carolina counties in both population and total employment. In July 1984, 5.3 percent of the state's population resided in Forsyth County, and 4.1 percent of all employed persons in the state worked in Forsyth County. Forsyth County, as part of the central North Carolina Piedmont Triad region which includes Greensboro, High Point, and Kernersville, acts as a service, transportation, and retail center for the region. Interstate-40 bisects the county and forms a major east and west transportation route. Piedmont Triad International Airport links the area to the southeastern United States and the rest of the nation with numerous flights each day. Local offices of national and regional banks, accounting firms, and law firms are found in the Triad.

The manufacturing sector of the county remains somewhat undiversified. The tobacco industry, with only seven establishments, accounts for 30 percent of all manufacturing employment. There is a lesser, yet still strong, dependence on the manufacture of electric and electronic machinery which employs about 25 percent of those working in the manufacturing sector in fourteen establishments. Textiles account for about 13 percent of all manufacturing employment. The economy as a whole, however, is continuing a trend of greater diversification, as employment in the trade and service sectors increases and decreases in other sectors (Figure 6.1).

The national headquarters for R.J. Reynolds Tobacco Company, Wachovia Bank, Piedmont Airlines, and the Hanes Group are located in Winston-Salem. AT&T, Westinghouse Electric Corporation, Stroh Brewing Company, and The Bahnson Company have major manufacturing plants in Forsyth County. North Carolina Baptist Hospital/Bowman Gray School of Medicine and Forsyth Memorial Hospital strongly anchor the local economy in the growing area of health services and medical research and development (Table 6.1).

The local service sector includes the home or regional offices of First Home Federal Savings and Loan, Booke and Company, several major law firms, many consultants, and offices of several of the Big Eight accounting firms, as well as offices of regional accounting and law firms. Tourism, now the third largest industry in the state, brought approximately $213 million dollars to Forsyth County in 1984, and contributed to the employment of nearly 11,000 local workers (NC Department of Commerce). These service companies also form an important component of local exports, or traded sectors, and should not be ignored.

The area's strengths include an established manufacturing base, a

### TABLE 6.1

**MAJOR EMPLOYERS IN FORSYTH COUNTY**

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>PRODUCT</th>
<th>APPROXIMATE NUMBER OF EMPLOYEES</th>
</tr>
</thead>
<tbody>
<tr>
<td>RJR Nabisco</td>
<td>Tobacco, foods, petroleum, aluminum, and containers</td>
<td>10,000</td>
</tr>
<tr>
<td>AT&amp;T Technologies</td>
<td>Telecommunications equipment</td>
<td>5,500</td>
</tr>
<tr>
<td>NC Baptist Hospital/ Bowman Gray</td>
<td>Medical services</td>
<td>5,000</td>
</tr>
<tr>
<td>The Hanes Group</td>
<td>Apparel</td>
<td>4,500</td>
</tr>
<tr>
<td>Piedmont Aviation</td>
<td>Aviation</td>
<td>3,000</td>
</tr>
<tr>
<td>Wachovia Corporation</td>
<td>Banking, real estate, and insurance</td>
<td>3,000</td>
</tr>
<tr>
<td>Forsyth Memorial Hospital</td>
<td>Medical</td>
<td>2,500</td>
</tr>
<tr>
<td>AMP, Inc.</td>
<td>Electrical connecting devices</td>
<td>1,200</td>
</tr>
<tr>
<td>Pilot Freight Carriers</td>
<td>Trucking</td>
<td>1,200</td>
</tr>
<tr>
<td>Stroh Brewing Co.</td>
<td>Beer</td>
<td>1,050</td>
</tr>
<tr>
<td>Westinghouse Electric</td>
<td>Turbine components</td>
<td>850</td>
</tr>
<tr>
<td>Adams-Millis Corp.</td>
<td>Women's and children's socks</td>
<td>700</td>
</tr>
<tr>
<td>The Bahnson Co.</td>
<td>Industrial air quality equipment</td>
<td>600</td>
</tr>
<tr>
<td>Fairchild Industries</td>
<td>Airplane seats, industrial controls, power transmission equipment</td>
<td>600</td>
</tr>
<tr>
<td>Thomasville Furniture</td>
<td>Furniture</td>
<td>450</td>
</tr>
</tbody>
</table>

Source: Individual companies and the Greater Winston-Salem Chamber of Commerce
skilled labor force, and growing service and medical sectors. The medical strength of the local economy may become particularly important as the population of the Triad ages, thus increasing the demand for medical care of all types.

**ISSUES**

In the future, the economy of Forsyth County is likely to change considerably. The Real Estate Research Corporation predicted an increase in total employment from 155,740 in 1985 to 222,440 in 2005. Furthermore, the relative representation of different sectors of employment will change drastically over the next twenty years, as some sectors suffer a decrease while others increase (Table 1.6 in Chapter 1). However, large increases in employment are expected in the sectors of wholesale and retail trade, finance, insurance and real estate, and services. Manufacturing employment is declining, as these jobs move to other countries with lower wage scales, as automation in factories increases, and as American manufactured goods decline in competitiveness with those of other countries. Meanwhile, increasing personal incomes and leisure time continue to increase the buying power of the local consumer. Also, as more people live and more businesses grow in an area, the demand for business and personal services increases. These employers tend to be labor intensive and do not generally benefit from the economies of scale that characterize more capital intensive manufacturing industries, so employment will continue to increase as demand increases.

These changes in employment composition likely will have an impact on the wages of local workers. The average weekly wage in March 1985 for each major employment category reveals that the sector with the second largest share of the total gain in employment was construction, which had the third smallest average weekly wage (Table 6.2).

**JOB CREATION: ROLE OF SMALL BUSINESSES**

The United States Small Business Administration (SBA) has been collecting information about changes in employment by establishments of different sizes since 1976. An establishment is defined as a single business location. The SBA has collected these data, using the files of Dunn and Bradstreet, for the Winston-Salem/Greensboro/High Point MSA since 1976. These data shed significant light on the local economy and those portions that are creating or losing jobs. To identify those portions of the local economy that are gaining in strength and those that are static or losing ground, it is important to consider these components of job creation rather than just the net change.

Tables 6.3, 6.4, and 6.5 are derived from data collected by the SBA between 1980 and 1982. These data are unique and very important because they track employment changes in different sizes and types of establishments. Overall, from 1980 to 1982, the net change in employment was a negative 4.2 percent due to a net loss of 15,101 jobs in the MSA. Unfortunately, the data available only cover the recession years of 1980 to 1982, which are somewhat unrepresentative of the decade.

The net employment change among four size classes of businesses in the Winston-Salem/Greensboro/High Point MSA between 1980 and 1982 indicates that only businesses with fewer than twenty employees showed

---

**TABLE 6.2**

**EMPLOYMENT CHANGE AND AVERAGE WEEKLY WAGES IN FORSYTH COUNTY, MARCH 1983 TO MARCH 1985**

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>NUMBER OF JOBS GAINED OR LOST</th>
<th>PERCENT OF TOTAL INCREASE</th>
<th>AVERAGE WEEKLY WAGE MARCH 1985</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Forestry,</td>
<td>92</td>
<td>0.7</td>
<td>$190.34</td>
</tr>
<tr>
<td>and Fisheries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>2,818</td>
<td>22.6</td>
<td>286.79</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>1,527</td>
<td>3.6</td>
<td>474.73</td>
</tr>
<tr>
<td>Tobacco</td>
<td>-1,194</td>
<td>n/a</td>
<td>622.30</td>
</tr>
<tr>
<td>Apparel</td>
<td>61</td>
<td>n/a</td>
<td>332.96</td>
</tr>
<tr>
<td>Textiles</td>
<td>-129</td>
<td>n/a</td>
<td>350.81</td>
</tr>
<tr>
<td>Transportation, Communication</td>
<td>689</td>
<td>5.5</td>
<td>473.25</td>
</tr>
<tr>
<td>and Utilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade</td>
<td>4,086</td>
<td>32.8</td>
<td>236.65</td>
</tr>
<tr>
<td>Finance, Insurance, and</td>
<td>800</td>
<td>6.4</td>
<td>409.90</td>
</tr>
<tr>
<td>Real Estate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Services</td>
<td>2,534</td>
<td>20.4</td>
<td>306.29</td>
</tr>
</tbody>
</table>

Source: North Carolina Employment Security Commission
a net employment gain for those two years (Table 6.3). All categories of larger establishments showed a net decline in employment. Net job changes among establishments of different sizes and of different types indicate that all sectors of the smallest employers showed an increase in jobs, except for services (Table 6.4). In the size category of 20-99 employees, only manufacturing and transportation, communication, and utilities showed a net increase in employment. All categories in the 100-499 category showed a net decline in employment from 1980 to 1982. Only finance, insurance, and real estate showed a net increase in the largest size category. Therefore, even though the economy suffered a net decline in employment, parts of the economy showed net gains in employment. These job creating establishments should receive continued support.

Finally, the apportionment of employment change among births of new companies and the closings, contractions, and expansions of existing companies reveals some interesting trends (Table 6.5). For example, in manufacturing, births of new companies of any size caused a 12.5 percent employment gain, whereas births of small companies with fewer

---

**TABLE 6.3**

<table>
<thead>
<tr>
<th>NET EMPLOYMENT CHANGE BY ESTABLISHMENT SIZE, WINSTON-SALEM/GREENSBORO/HIGH POINT, 1980-1982</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESTABLISHMENT SIZE (NUMBER OF EMPLOYEES)</td>
</tr>
<tr>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>1 - 19</td>
</tr>
<tr>
<td>20 - 99</td>
</tr>
<tr>
<td>100 - 499</td>
</tr>
<tr>
<td>500 +</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Source: USEEM, Longitudinal Weighted Data  
U.S. Small Business Administration

---

**TABLE 6.4**

<table>
<thead>
<tr>
<th>COMPONENTS OF EMPLOYMENT CHANGE BY ESTABLISHMENT SIZE AND INDUSTRY CATEGORY, 1980-1982, GREENSBORO/WINSTON-SALEM/HIGH POINT MSA.</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDUSTRIAL CATEGORY</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Manufacturing</td>
</tr>
<tr>
<td>Construction</td>
</tr>
<tr>
<td>Transportation,</td>
</tr>
<tr>
<td>Communication,</td>
</tr>
<tr>
<td>and Utilities</td>
</tr>
<tr>
<td>Wholesale Trade</td>
</tr>
<tr>
<td>Retail Trade</td>
</tr>
<tr>
<td>Finance, Insurance, and Real Estate</td>
</tr>
<tr>
<td>Services</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Source: USEEM, Longitudinal Weighted Data  
U.S. Small Business Administration

---

**TABLE 6.5**

<table>
<thead>
<tr>
<th>COMPONENTS OF EMPLOYMENT CHANGE IN THE GREENSBORO/WINSTON-SALEM/HIGH POINT MSA, 1980-1982</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIRTHS CLOSINGS EXPANSIONS CONTRACTIONS NET CHANGE</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>Total (Percent)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Construction</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Transportation, Communication, and Utilities</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Wholesale Trade</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Retail Trade</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Finance, Insurance, and Real Estate</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Services</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>a Top number is percent change for all businesses</td>
</tr>
<tr>
<td>b Bottom number is for businesses with fewer than 100 employees.</td>
</tr>
</tbody>
</table>

Source: USEEM, Longitudinal Weighted Data  
U.S. Small Business Administration
than 100 employees caused an 11.2 percent employment increase. Likewise, in retail trade, employment declined by 21.8 percent due to closings of companies of all sizes, but small retail trade companies suffered only a 17.7 percent loss. These data also support the conclusion that small companies generally are net creators of jobs and tend to fare better than large companies.

An even distribution tends to exist between births and expansions for job creation. Of the 66,088 jobs created between 1980 and 1982, 54 percent were from openings of new businesses and 46 percent from expansions of existing businesses. Of the 81,188 jobs lost in that same time period, 59 percent resulted from closings and 41 percent from contractions of existing businesses. Overall, births of new companies caused a 9.9 percent increase in employment between 1980 and 1982, accompanied by an increase of 8.5 percent due to expansions (Figure 6.2). However, closings of businesses resulted in a decrease of 13.4 percent in employment, as well as 9.3 percent decline resulting from contractions. These figures indicate a net decline of 4.2 percent between 1980 and 1982.

One final note about another benefit of small businesses other than job creation. The number of innovations per million employees of large and small firms reveal that among all increasing and decreasing employment industries, small businesses with fewer than 500 employees provide more innovations per employee (Figure 6.3). This figure is particularly important as innovations often lead to improved products, new products, and increased competitive ability which play a crucial role in an increasingly competitive economy.

Small and new businesses also have disadvantages, such as relatively high rates of failure. Studies have shown that most small businesses fail due to poor management or a lack of sufficient capital. Small businesses often provide lower wage and lower skilled jobs. But, small businesses can occasionally grow into large businesses which pay higher wages and benefits to their employees. By reinforcing the job creation potential of new and small businesses, as well as correcting some of their shortcomings, public policies can strongly affect the diversification of the local economy.

**GOAL**

- The goal of an economic development program should be an improved and diversified economy which continues to provide jobs, as well as maintains or enhances the environment. However, this goal needs expansion and clarification to be implemented. Local goals for economic diversification should be extended to consider the type and quality of jobs desired in the economy, such as provision of family wage jobs and an emphasis on nonpolluting industries which do not threaten aspects of a valued quality of life. Job creation programs also must address the issue of equity in the provision of employment opportunities and promote the efficient use of human resources. Decision makers considering alternative uses of public resources should always consider the impacts of those alternatives on the standard and quality of living of the residents.

Implicit in these goals and recommendations is the premise that neither economic growth per se nor industrial development itself is desirable. Rather, the improved welfare of the residents of the area, measured by changes in unemployment, real incomes, and environmental quality, is the ultimate goal of economic development efforts. Simple aggregate growth or industrial expansion is acceptable only when consistent with these goals and objectives.

**RECOMMENDATIONS**

**General Recommendations**

Recommendations listed here are relevant to all sectors of the economy. Recommendations specific to each category of job creation are presented after these general recommendations.

- Provide and maintain an efficient infrastructure.
- Provide a high quality public education system.
- Demonstrate a positive interest in existing and new industries, especially those providing above average wages and an increased variety of job opportunities.
- Use the existing comparative advantages of location and quality labor force to attract new employers.
- Emphasize businesses that maintain and enhance the valued quality of life, including environmental quality.
- Promote an increased linkage among new and existing businesses by promoting the local purchase of goods and services.
- Provide well-serviced and properly located industrial sites that can be developed quickly.
- Preserve those large sites particularly suited for campus type light and medium manufacturing uses from other less efficient uses.
- Continue to emphasize and promote tourism as a clean, exporting industry. Develop a data system for establishing the precise economic impact of tourism in Forsyth County, which can also be used to track and project tourism impacts.

- Assist and encourage all businesses to locate new export markets.
- Encourage the continuation of career preparation and employment orientation for area residents by the community’s educational institutions and businesses.
- Encourage economic activities which strengthen the area’s position as a regional distribution, trade, health, and service center.
- Continue efforts to improve the central business district of Winston-Salem as a thriving center.
- Encourage compatibility between industrially zoned lands and adjacent areas.
- Encourage a mix of office, commercial, and industrial uses under conditions that promote compatibility.
- Continue to strengthen and protect important aspects of the area’s quality of life, such as public parks, quality secondary education, and good water supply.
- Encourage local elected officials, local economic development policy officials, and community development groups to work more closely to coordinate their policies and activities, thereby increasing efficiency and minimizing potential policy conflicts.

Business Recruitment

Decisions concerning business relocation or expansion to new locations are made primarily by professionals. Local recruiters need to supply these professionals with information and full serviced sites. The market tends to serve these types of companies well.

North Carolina has tended to attract low wage and low skill manufacturing jobs through the State’s efforts at industrial recruitment. Often these industries have not been in the growth sectors. Recruitment needs to take these factors into consideration, targeting recruitment efforts to those industries that will provide family-wage jobs and require skill levels commensurate with those existing in the population.

- Continue to work with the local Chamber of Commerce in a cooperative spirit in its efforts to attract new industry to Forsyth County.
- Target recruitment efforts to growth industries which will become major exporters.
- Emphasize industries which can provide needed supplies to existing industries and thus replace imports.
- Develop information packets and marketing brochures which provide the information that businesses interested in this area need for their decision making processes.
- Recruit businesses that complement the strengths of the local economy.

Expansion of Existing Businesses

As indicated by the data on job creation from the expansion of existing businesses, this important sector of the economy needs support. The following policies and programs can be applied to these businesses:

- Help existing businesses to find new export markets.
- Encourage existing businesses to develop new products to reduce imports.
• Provide existing businesses with opportunities to expand, using available incentives for financing, provision of land, and other factors.

Formation of New Businesses and Survival of Small Businesses

In the past several years, the entrepreneur and small business person have been elevated to a prominent position in economic development policies at all levels of government. As already shown, small and new businesses have tended to provide most of the employment growth in the area, and they tend to produce more innovations than large companies. New and small companies are often interested in growth and expansion, while existing large companies need to pay attention to maintaining their size and dominance in their respective markets. Finally, small businesses tend to suffer disproportionately from the imperfections of the marketplace. Small businesses are often faced with a more difficult or expensive process when obtaining the products, supplies, and information they need to survive and grow. For these reasons, referred to as market imperfections, the promotion of new business formation and small business survival is a good place for the use of public resources.

• Form a Coordinating Committee to coordinate and market the various small and new business programs available in Forsyth County.

• Locate, outfit, and staff an office for the coordination of information about programs for small and new businesses.

• Continue to support the Winston-Salem Business and Technology Center.

• Support and encourage the entrepreneurial spirit.

• Develop programs to assist small businesses with marketing their products outside the area, the state, and the nation.

• Increase the availability of seed and start-up capital to local new and small businesses.

• Help small businesses find new local markets for their products through an import substitution program.

• Provide small and new businesses with the necessary professional advice and guidance to facilitate success.

• Promote the activities of the Piedmont Entrepreneur's Network.
CHAPTER 7
RESIDENTIAL LAND USE

You say the word 'house' and it means so many different things to different people. One thinks of a farm; another of a cliff dwelling in the urban landscape.

— MOSHE SAFDIE
EXISTING SITUATION

Housing Demand

Growth in the economy depends upon an ability to provide jobs and housing for an increasing population, a projected 72,978 more people by 2005. Under Real Estate Research Corporation's (RERC) “Sustained Growth” Policy III-C, by 2005, an estimated 54,129 new housing units must be constructed, which represents an increase of more than 53 percent over the 1980 housing stock (Table 7.1).

The large number of new units is needed not only to serve population growth, but also to accommodate smaller households. As household size declines from 2.7 persons per household in 1980, to 2.3 persons per household in 2005, the same number of housing units serves fewer people. The estimate of new housing units needed also includes replacements of housing lost to age and deterioration and other causes, and provision for reasonable mobility through a higher vacancy rate than presently exists.

In 1980, Forsyth County had 95,771 housing units, which represented a 36 percent increase from 70,592 units in 1970. From 1980 to 1985, a 17 percent increase has resulted from the construction of 16,261 new units, not including manufacturing housing (Table 7.2).

A key indicator of development activity is the number of housing units for which building permits are granted. The number of building permits issued for 1979 was 2,530, while the number of permits for the past six years from 1980 through 1985 averaged 3,131 units per year, or a 26 percent average increase per year (Table 7.3). The most dramatic change in activity occurred between 1981 and 1984, when the number of permits increased 76 percent, from 2,197 units to 3,871 units.

Of the 18,929 units needed by 1990, and the 54,129 units needed by 2005, the additional 16,261 new units meets RERC’s projected housing demand by 86 percent and 32 percent, respectively.

In 1980, 77,032 single family detached housing units were predominant in Forsyth County and comprised 80 percent of all housing units. There were 14,543 multifamily units and 4,196 manufactured housing units. Between 1970 and 1980, the number of manufactured housing units grew by 50 percent, the greatest percentage increase in housing stock; however, in absolute numbers, manufactured housing units comprised only 5 percent of the total housing stock.

Of the 16,261 housing units, not including manufactured housing, which were built between 1980 and 1985, 40 percent, 6,504, were single family, and 60 percent, 9,757, were multifamily. There has been a 20 percent decrease in single family construction since 1980, and a 45 percent increase in multifamily construction.

Between 1980 and 1985, 1,140 permits were issued for manufactured housing units. Assuming that each permit issued is an addition to the housing inventory, the 1,140 units added to the county’s housing stock represents a 27 percent increase from the 1980 manufactured housing units count of 4,196.

If the 1980-1985 manufactured housing units count, 1,140, is added...
to the 16,261 single and multifamily units constructed during that same period, a total of 17,401 units were added to the county's housing stock. The 17,401 additional housing units then represents 93.8 percent of the 1990 housing demand. Therefore, unless there is a sharp increase in mortgage interest rates, a reduction in building incentives due to tax reform, or other negative economic factors, the Forsyth County housing construction rate will continue to exceed the projections (Table 7.3).

Housing types being constructed are changing. With a demand for more affordable housing types and for smaller units for older home buyers, RERC has projected that the single family unit sector of the market will decrease from 80 percent in 1980, to 63 percent in 2005. In 2005, the number of multifamily units will increase and comprise 27 percent of the market. The manufactured housing share of the market will increase from 5 percent in 1980, to 10 percent in 2005.

**Housing Tenure**

In 1980, 94 percent of year-round housing units were occupied, which represented a 6 percent vacancy rate. This rate is slightly higher than the vacancy rate reported in the previous two censuses. Also in 1980, 59 percent of the occupied housing were owner-occupied, and 41 percent were renter-occupied. The proportion of owner-occupied housing has shown a 6 percent decrease since 1970.

The median value of owner-occupied, noncondominium housing has nearly quadrupled from $10,700 in 1960, to $42,000 in 1980. Contract rent for rental units has also increased substantially over the past twenty years, but not at as rapid a rate. The median contract rent of $154/month in 1980 was three times the rent in 1960, and has doubled since 1970. The numbers of housing units characterized as overcrowded has declined since 1960. Only 3 percent, or 2,660 units, were considered overcrowded in 1980, as compared to 12.8 percent, 6,945 units, in 1960, and 7.4 percent, 4,980 units, in 1970.

**Location of Recent Residential Development**

The residential development rate in Forsyth County has exceeded projections made by the Winston-Salem Forsyth County Growth Strategy (1984) and RERC, with 93 percent of single and multifamily housing needed by 1990 having been built.

The locational pattern of residential development from 1980 to 1985 differs with relation to new single and multifamily housing. According to subdivision approval information, the majority of single family development has occurred in the western and eastern unincorporated areas. An increase in single family development has occurred in the western and southwestern sectors of Winston-Salem and in the area immediately west of Kernersville (Map 7.1).

Unlike recent single family development, the majority of multifamily development has occurred within incorporated areas, with very little development in the county. This development pattern is due to the availability of public services and to the existence of land currently zoned for multifamily use. Multifamily housing which has been built in the county is located in the southeast sector, just outside the city limits of Winston-Salem, south of the Town of Rural Hall, and in southwestern Forsyth County near Lewisville and Clemmons (Map 7.2).

This residential development pattern has resulted in the construction of 16,261 new single and multifamily units. These units are distributed among the county's sixteen fastest growing census tracts.

Eight of the sixteen fastest growing census tracts have experienced an increase of 20 percent or more in the number of housing units. Of these eight census tracts, the increase in the

---

### TABLE 7.2
**NEW HOUSING NEED, FORSYTH COUNTY**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16,261 additional units (86 percent of 1990 need)</td>
<td>18,929</td>
<td>10,600</td>
<td>21,700</td>
<td></td>
</tr>
<tr>
<td>(32 percent of 2005 need)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Winston-Salem Forsyth County Market Assessment, Real Estate Research Corporation, 1984. City-County Planning Board

### TABLE 7.3
**BUILDING PERMITS ISSUED IN FORSYTH COUNTY — 1980-1985***

<table>
<thead>
<tr>
<th>HOUSING TYPE</th>
<th>1980-1985</th>
<th>NUMBER OF PERMITS</th>
<th>PERCENT OF TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family Housing</td>
<td>7,219</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>Multifamily Housing</td>
<td>10,915</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td>Manufactured Housing</td>
<td>1,140</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>19,274</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Source: Winston-Salem Forsyth County Market Assessment, Real Estate Research Corporation, 1984. City-County Planning Board

*Note: Not all applicants of building permits exercise the right to construct housing.
housing count in six census tracts (Tracts 27, 34, 35, 38.01, 39.01, 39.02) has occurred due to multifamily development. The housing count increase in three of the eight census tracts (Tracts 33.04, 39.02, 40.03) has occurred due to single family development.

The greatest percentage increase, 91 percent, in residential development occurred due to the multifamily construction in Census Tract 27 which is in Winston-Salem and is bounded on the west by Reynolda Road, on the east by Germanton Road, on the north by Shattalon Drive, and on the south by Polo Road.

Single family unit construction in Census Tract 33.04 resulted in a 58 percent unit increase. Census Tract 33.04 is located in the eastern portion of the county, just southwest of Kernersville between I-40, Linville Road, Union Cross Road, and Glenn High Road.

Future Residential Land and Density Requirements

Based on countywide average dwelling units per acre population, RERC estimates that by 2005, 5,744 acres of land will be needed for the expected 54,129 new housing units.

The acreage distribution for 2005, between the central area and city limits of Winston-Salem and the remainder of Forsyth County, was estimated. The projection assumed a high end average density of about 20 units/acre for the incorporated limits of Winston-Salem, and of higher than 20 units/acre for the central area. The projection assumed an average density of about 6 units/acre.
for the remainder of the county. The distribution of acres of land needed for housing in these three areas is shown in Table 7.4.

The housing market's potential density shift offers the opportunity to bring new forms of housing to different types of site context: Sites integrated with commercial/institutional activity centers; infill for existing neighborhoods; and, better design and social balances for new single family development areas.

**Household Purchasing Demand**

Housing demand is only partly a product of population growth and family size. In the marketplace, housing demand must be backed by purchasing power for dwellings to be sold or rented. To address issues related to Forsyth County's future housing market, an assessment of the financial ability of consumers to acquire housing is essential.

Household income levels are divided into five income categories (Table 7.5). HUD definitions of low and moderate income limits are used and are based on the 1980 median income for the Greensboro/High Point/Winston-Salem MSA of $16,060.

The greatest demand for new owner units during 1980-1985 was in the lowest price range. To secure homes for less than $15,000, low income families will continue to turn to single-wide manufactured housing units, existing small homes, or to federal subsidy programs. At the other end of the homebuying market, the demand for homes priced $50,000...
and over is almost as high. This demand is a strong market force which will probably continue to increase during the 1985-2005 period (Table 7.6).

Households in the $15,000-$25,599 price range will find few homes. Instead, this segment will enter the manufactured housing market, perhaps buying factory built or modular units. These households will also be candidates for any remaining homeowner assistance programs that are available from HUD, FMHA, or other sources.

The rental demand analysis shows the greatest demand in the lowest income range, corresponding to rents of less than $100/month (Table 7.7). These low income renters will require subsidies to secure standard housing. If not, these individuals will be forced into the low cost existing rental market which has relatively few vacancies. This market also represents the majority of substandard conditions in the community. In extreme cases, many of these families will become homeless, unless more low income housing becomes available.

Federal subsidy programs are currently limited. Section 8 has limited funding, and additional funding for this program is not anticipated. The demand for subsidized housing is difficult to measure; however, the fact that there are 3,400 households on the waiting list for public or assisted housing is indicative of the need for low income units.

The demand in the $100-$174 rent range is also strong. Although there are more existing units in this range, rising construction costs have made building new units to be offered for less than $175/month nearly impossible.

Most likely subsidies will be needed to provide housing for this sector of the housing market.

The combined low and moderate income demand between 1975 and 1980 was 3,491 rental units, which was 53 percent of the total rental demand for the period. During the 1980-1985 period, the low and moderate income demand declined to 47 percent of the total. Because of the overall increase in rental demand, the numerical need was 4,204 households.

A strong demand in the $260-$374 rental range was experienced between 1980-1985, and is expected from 1985-2005 (Table 7.7). In fact, this market range and the $375 and over market range will have the strongest growth in the latter period. This income range of renters has the purchasing power to generate considerable, marketable apartment development over the next ten years.

ISSUES

Several important problems and issues relate to Forsyth County's residential land use and housing.

Residential Land Use

Inefficiencies of land use. In planning for an efficient urban form, the allocation of as much new development as possible to infilling areas already served or soon to be served with public water supply and sewerage, schools, parks, and other public facilities is reasonable. From the lack of a structured growth management plan and due to an outdated zoning ordinance, development has not been guided to encourage appropriate, efficient residential land use and intensity on a countywide scale.

### TABLE 7.4

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Central Area</th>
<th>Remainder</th>
<th>Remainder</th>
<th>Total Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Winston-Salem</td>
<td>Winston-Salem</td>
<td>County</td>
<td></td>
</tr>
<tr>
<td>1980-1990</td>
<td>38</td>
<td>459</td>
<td>2,282</td>
<td>2,779</td>
</tr>
<tr>
<td>1990-1995</td>
<td>30</td>
<td>226</td>
<td>1,173</td>
<td>1,429</td>
</tr>
<tr>
<td>1995-2005</td>
<td>52</td>
<td>302</td>
<td>1,182</td>
<td>1,536</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total</td>
<td>5,744</td>
</tr>
</tbody>
</table>


City-County Planning Board

### TABLE 7.5

<table>
<thead>
<tr>
<th>YEAR</th>
<th>VERY LOW INCOME BELOW 50 PERCENT OF MEDIAN</th>
<th>LOW TO MODERATE 50-60 PERCENT OF MEDIAN</th>
<th>MIDDLE INCOME 60-100 PERCENT OF MEDIAN</th>
<th>UPPER INCOME 100-150 PERCENT OF MEDIAN</th>
<th>HIGH INCOME OVER 150 PERCENT OF MEDIAN</th>
<th>TOTAL HOUSEHOLDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>17,128</td>
<td>18,029</td>
<td>14,424</td>
<td>24,339</td>
<td>16,226</td>
<td>90,146</td>
</tr>
<tr>
<td>1985</td>
<td>18,070</td>
<td>19,020</td>
<td>15,220</td>
<td>25,680</td>
<td>17,120</td>
<td>95,110</td>
</tr>
<tr>
<td>1990</td>
<td>20,065</td>
<td>21,120</td>
<td>16,900</td>
<td>28,515</td>
<td>19,010</td>
<td>105,610</td>
</tr>
<tr>
<td>2005</td>
<td>26,017</td>
<td>27,386</td>
<td>21,909</td>
<td>36,971</td>
<td>24,647</td>
<td>136,930</td>
</tr>
</tbody>
</table>

NOTE: Income categories are based on the 1980 median income of $16,060 for a family of four in Forsyth County, as prescribed by HUD.

Source: City-County Planning Board
Inconsistency of density distribution. Due to the lack of a uniform countywide zoning ordinance and noncoordination between existing zoning ordinances and the General Development Guide, residential density distribution has been sporadic. Current density distribution has little relationship to the appropriate location of residential development in the county. Presently, high density projects can be built within areas that are far removed from services and the more intensely developed parts of the county.

Conflicts between land uses. Conflicting land uses threaten the viability and identity of some residential neighborhoods. Unguided business and industrial uses have encroached upon, and in some cases eliminated, the residential character of various areas of the county. The location of multifamily dwellings near and adjacent to single family homes is perceived ubiquitously as a negative influence. A lack of application of communitywide urban design principles which could accommodate successful mixed use development is evident.

Uncoordinated and inefficient service provision. Countywide residential development is not guided to accommodate cost efficient service provision. Presently, sewer service follows residential and other development, thus allowing developers more control, than is preferred, to determine the community’s expenditure for the installation and maintenance of services. With the exception of a reasonable allocation for rural lifestyles, new housing should be located so as to optimize usage of existing public services and should follow the community’s plan for future service expenditures.

Location of manufactured housing. For some time, the community has struggled with the manufactured housing issue. The structural character of this housing type has long been perceived as having a negative impact on the property value of single family homes. Current zoning ordinances permit manufactured housing in parks on less land per unit than single family detached housing. In general, manufactured housing has lower initial costs than conventional housing. Manufactured housing is also classified as personal property. As personal property, these homes tend to decline in value rather than increase in value over time like real estate.

Lack of central area housing stock. The central area of Winston-Salem contained 7,149 housing units in 1980. Many homes in the central area have recently been renovated, as the area has attracted increasing numbers of stable, higher income households. During the past several decades, little or no construction of new market rate or low/moderate income housing has occurred in the central area communities.

Lack of neighborhood services within walking distance. In all urbanized communities of Forsyth County, one must drive to commercial centers for basic services, such as food, dry cleaning, or shoe repair. The zoning ordinance and the design of subdivisions and suburban neighborhoods have not allowed for the provision of this essential aspect of residential and commercial development.

Housing

Accessible housing. For the purpose of the comprehensive plan, accessible housing is defined in two ways. In a physical sense, housing is that which is close to places of work, shopping, and recreation. Socially, housing is that which is affordable by
all segments of society and which is open to all segments of society. Housing means an adequate supply of all types in appropriate areas to provide choices for the widening of household composition and to provide for increasingly diverse residential lifestyles of the people in this community. Forsyth County communities and neighborhoods remain stratified in the provision of residential choice, both racially and economically.

**Affordable housing for low and moderate income households.** Low income households and households which spend a high proportion of their income for housing are primarily single person households, households headed by persons under 25 years of age or 65 and over, households that include handicapped persons, and female headed households. Although Winston-Salem and the Housing Authority have attempted to provide rental units and ownership opportunities for low and moderate income families, Forsyth County as a whole does not have an adequate number of units to meet the special housing needs of its constituents. Unlike Winston-Salem, the county does not have an agency such as the Neighborhood Housing Development and Services Department or other housing clearinghouse to devise and administer special need housing programs.

The major problems identified in the Comprehensive Housing Plan (1978) are as follows:

Most standard housing costs more than lower income households can afford.

Public efforts to upgrade the substandard stock and eliminate dilapidated conditions can impose an economic hardship on households that can only afford to live in substandard housing.

Most investor-owners of lower income housing on the open market are not interested in rehabilitation or durable maintenance because of the high risk and limited return on the investment. The incidence of tenant irresponsibility further discourages high levels of maintenance on the part of landlords.

Although mortgage interest rates are currently low, homeownership is still increasingly difficult for low and moderate income household. This problem is particularly pressing for new households and young families.

Construction cost increases have driven the price of new rental units up so that renter households will also face larger housing costs.

Lower income housing cannot be built by most developers without subsidies, although market demand is strong. The existing subsidized programs are not attractive to many private developers.

Housing problems are not just problems of substandard stock, but extend to social and economic problems that must be faced in designing housing solutions.

The community’s neighborhoods are segregated largely by economic class, and some are also segregated by race. This pattern presents a discrimination problem, if households which can afford better housing cannot obtain such homes due to practices that constrain their choices.

**Lack of coordination between county and community housing efforts.** Efforts to provide housing services for Forsyth County citizens are not coordinated or guided to achieve unified results. Four major obstacles which must be overcome for the community to make further gains in meeting housing needs are as follows:

The policies and recommendations of the Comprehensive Housing Plan (1978) have not been adopted nor implemented fully.

Neither Forsyth County nor Winston-Salem has a person or office responsible for coordinating public efforts in housing. The Winston-Salem Department of Neighborhood Services and Neighborhood Development, the Housing Authority, the City-County Planning Board, and the Inspections Division all deal with some aspect of housing, yet coordination of these efforts has not been accomplished.

Few attractive mechanisms for financing low income housing are available. The major low and moderate income housing programs offered by the federal government are in the Section 8 program which provides rent supplements but not construction financing. Developers are expected to obtain private financing, yet private lenders are dubious about the program.

More private involvement is needed in the development of low and moderate income housing. A force in the private sector is needed to mobilize local developers and prove that profits are available in low and moderate income housing.

**GOALS**

Residential land use and housing goals which need to be met are as follows:

**Residential**

- Accommodate future residential development in balance with other land uses.
- Provide residential areas that offer a variety of housing densities, types, sizes, costs, and locations to meet projected demand.
- Locate residential development in relation to the availability of employment, commercial services, public utilities and facilities, and transportation modes.
- Provide for and promote generally higher residential densities in Growth Areas 1, 2, and 3 to encourage a compact urban growth form.
- Protect existing and proposed residential areas from conflicting nonresidential land uses, while providing for compatible and functional mixed use development, residential and nonresidential.
- Encourage cooperation among public, private, and consumer sectors of the area’s housing market.
RESIDENTIAL LAND USE

- Balance the need to provide a sufficient amount of land to accommodate affordable housing with the community's goals to maintain a compact urban growth form.

Housing
- Meet the housing needs of the existing and projected population.
- Encourage conservation of existing housing by rehabilitation of substandard units and other methods, such as relocation of existing structures and conversion of nonresidential structures to residential use, provided such actions reflect planned densities for the area.
- Encourage and support development of housing units for low and moderate income households. To increase housing opportunities for the specialized needs of the elderly, handicapped, and students, as well as minority, female-headed, and single person households.

RESIDENTIAL LAND USE OVERLAY

The objectives of the residential land use overlay are to guide the location of housing development and to determine appropriate housing density as related to the six areas of development of the Growth Management Plan. The residential land use overlay will provide a guide for the governing boards in making decisions related to zoning, physical development, and public investment. Another objective is to provide for the countywide standardization of residential density allocation.

The basis of the residential land use overlay is the allocation of density ranges to each of the Growth Management Plan development areas. The determination of the ranges for each area was based on existing density patterns and an analysis of existing and preferred density. The density ranges account for the need to establish incentives for developers to provide more public amenities and services, to encourage infill of the existing urbanized areas, and to accommodate citizens' preferences for both rural and urban lifestyles. The density ranges do not change the residential zoning in the county, nor do they regulate the type of units which can be built, such as multifamily or single family. The ranges are to be followed in determining the best location for various unit types and as a guide for determining the most desirable residential zoning of an area. The proposed Unified Development Ordinance should utilize the density ranges as a basis for new zoning districts which would be consistent with the comprehensive plan.

To accommodate the unique conditions and desired intensity of specific locations within each development area, the density ranges were further refined into subranges of low, moderate, and high densities. Appropriate density ranges will be applied to specific locations through the area plan process.

The density ranges and criteria applied in their determination are as follows (Figure 7.1):

**Central Business District**
- **Area 1.** The density ranges proposed for central business districts are based on the need to establish incentives for developers to provide for public amenities, such as urban parks, special streetscape design, and extra parking.

The residential density of the Central Business District of Winston-Salem would be determined on an individual project basis by the "floor area ratio" (FAR) formula (Figure 7.2). The formula defines the measurement of building bulk or mass as related to land area. Floor area ratio is the total floor area of all building stories used for residential purposes, divided by the area of residential land. The FAR determination, along with parking and fire protection regulations, would be implemented through the zoning ordinance revision process.

For Kernersville, an Area 1 high density range of 0-25 DU/acre is proposed as CBD development in these locations has not been and will not be as intense in the near future. A density of 25 DU/acre would be appropriate for this area with the application of design criteria and performance standards.

With the application of design and locational criteria, the moderate density range proposed for Winston-Salem is 0-25 DU/acre and 0-15 DU/acre for the incorporated towns. Low densities for intensely developed CBD's would be 0-15 DU/acre for Winston-Salem and 0-5 DU/acre for Kernersville.

**Central Area — Area 2.** A maximum density range of 0-25 DU/acre for Winston-Salem and 0-20 DU/acre for Kernersville will be applied in the Central Area. Currently, an unlimited density is allowed through the R-1, office and multifamily, zoning category.
**FIGURE 7.1**
**RESIDENTIAL DENSITY RANGES**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4A</th>
<th>4B</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CENTRAL</td>
<td>CENTRAL</td>
<td>URBAN</td>
<td>SHORT-RANGE</td>
<td>LONG-RANGE</td>
<td>RURAL</td>
<td>CONSERVATION</td>
</tr>
<tr>
<td></td>
<td>BUSINESS</td>
<td>AREA</td>
<td>AREA</td>
<td>GROWTH</td>
<td>GROWTH</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DISTRICT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FAR*</td>
<td>0-25</td>
<td>0-20</td>
<td>0-10</td>
<td>0-2</td>
<td>0-1</td>
<td>0-1</td>
</tr>
<tr>
<td>Winston-Salem</td>
<td>High</td>
<td>FAR*</td>
<td>25</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>25</td>
<td>15</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>15</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knoxville</td>
<td>High</td>
<td>25</td>
<td>20</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>15</td>
<td>10</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural Hall, Watauga, Clemmons and Lenoirville</td>
<td>High</td>
<td>NA</td>
<td>NA</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>NA</td>
<td>NA</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>NA</td>
<td>NA</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remainder of County</td>
<td>High</td>
<td>10</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>5</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Floor Area Ratio determined on individual project basis.
The proposed higher density would encourage infill of this existing urbanized area. Because the Central Area is comprised of older, established residential neighborhoods, very explicit locational and development standards must be applied to prevent any potential negative impacts of higher density development on existing low density development. These criteria would include the density of adjacent residential development.

**Urban Area — Area 3.** To encourage infill of the urban area, a high density of 0-20 DU/acre for Winston-Salem and 0-15 DU/acre for Kernersville and other towns is proposed for Area 3. Currently, the R-1 district allows unlimited density and the R-2 district allows 17.4 DU/acre for Winston-Salem. Kernersville allows a maximum density of 17.5 DU/acre.

As in Area 2, locational criteria and standards must be applied to the high and moderate density ranges to minimize negative impact on existing neighborhoods and to mitigate land use conflicts.

**Short-Range Growth Area — Area 4A.** Because public services will be provided in the Short-Range Growth Area, a maximum density range of 0-10 DU/acre is proposed. This density would establish a gradation of land use intensity between Areas 3 and 4, and provide incentive for development within Area 4A.

A gradation and application of the high, moderate, and low density ranges are encouraged for Area 4A (Figure 7.2). The high density range of 0-10 DU/acre should be applied to locations directly adjacent to the Area 3 boundary. Area 4A moderate densities of 0-5 DU/acre should be applied to locations that fall midway between the boundaries of Areas 4A and 4B. The Area 4A low density of 0-2 DU/acre should be applied to locations within Area 4A which are directly adjacent to the Area 4B boundary.

Locational criteria and standards must be applied to the high density range of Area 4A to protect existing low density residential development.

**Long-Range Growth Area — Area 4B.** High density development is presently inappropriate for the Long-Range Growth Area of Area 4B. Public sewer is not provided, and limited public water service is available. Septic tanks have a history of failure in many areas of Area 4B. The installation of package treatment plants is discouraged due to environmental and maintenance problems. Future maintenance of treatment plants by the public is not cost effective and would siphon limited public funds needed for other community services. Therefore, only low densities of 0-2 DU/acre will be allowed.

**Rural — Area 5.** To preserve prime farmland and to provide many Forsyth County residents with the choice of a rural lifestyle, a very low density that corresponds to the zoning ordinance’s minimum lot requirement of 1 dwelling unit per 20,000 square feet is proposed for the rural area, Area 5.

**Conservation — Area 6.** Densities for the inner portion of the Salem Lake Watershed are prescribed by the Salem Lake Watershed Area Plan. Extension of the watershed management plan to the jurisdictions of Forsyth County, Walkertown, and Kernersville will identify appropriate densities of development for the remainder of the watershed. Densities for the conservation area along the Yadkin River have not been determined but will have to be very low to achieve the conservation objectives for that area.

**Density Range Locational Criteria**

To ensure that the appropriate density is applied to specific areas within development areas, criteria have been developed for the low, moderate, and high density ranges (Figure 7.3).
FIGURE 7.3
RESIDENTIAL LOCATIONAL CRITERIA

<table>
<thead>
<tr>
<th>DENSITY RANGE</th>
<th>LOCA TIONAL CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Require adjacent residential uses to be connected by adequate roads, parkways, and pedestrian ways.</td>
</tr>
<tr>
<td>Moderate</td>
<td>Disallow higher density residential uses to have major access through an adjacent lower density residential area.</td>
</tr>
<tr>
<td>Low</td>
<td>Require proximity to a public park or recreation area, unless private recreation amenities provided within the development.</td>
</tr>
<tr>
<td></td>
<td>Allow clustering of dwelling units at higher densities on environmentally suitable portions of sites that have difficult topography or floodplains.</td>
</tr>
<tr>
<td></td>
<td>Discourage residential development adjacent to industrial or commercial areas where noise and odors would be offensive, obnoxious, and would diminish the quality of life.</td>
</tr>
<tr>
<td></td>
<td>Encourage adequate neighborhood commercial development within one and one-half mile.</td>
</tr>
<tr>
<td></td>
<td>Promote adequate public facilities, such as schools, police, and fire stations, to serve the designated density ranges.</td>
</tr>
<tr>
<td></td>
<td>Provide adjacent roads of sufficient capacity to handle traffic generated by new development.</td>
</tr>
<tr>
<td></td>
<td>Allow adjacent nonresidential areas to have street access through residential areas, only if such access does not serve as the primary access.</td>
</tr>
<tr>
<td></td>
<td>Require access to public sewer for all multifamily dwelling units.</td>
</tr>
<tr>
<td></td>
<td>Promote location of higher density residential development along major arteries, if screening and access comply with other guidelines.</td>
</tr>
<tr>
<td></td>
<td>Require two access points for developments, limiting the number of curb cuts.</td>
</tr>
<tr>
<td></td>
<td>Encourage new residential developments at a scale compatible with the scale of surrounding land uses.</td>
</tr>
<tr>
<td></td>
<td>Disallow land coverage ratios more than 25 percent higher than surrounding land uses.</td>
</tr>
<tr>
<td></td>
<td>Use densities of existing neighborhoods as a guide for determining density of new development.</td>
</tr>
<tr>
<td></td>
<td>Comply with zoning ordinance for parking requirements.</td>
</tr>
</tbody>
</table>

IMPACT FEES AND INCENTIVE ZONING

Since 1980, federal and State funds for local government infrastructure have decreased steadily. The ability of local communities to provide citizens with vital services, such as police, fire, school, water and sewer, and with important amenities, such as parks, recreation centers, greenways, and natural areas, is threatened by the loss of these traditional funding sources.

Many communities have found that by incorporating new programs to control residential development, better project design may be encouraged and additional services and amenities provided without raising local taxes. Two such innovative approaches, impact fees and incentive zoning, should be considered by the City and County governing bodies for adoption. Descriptions of these proposed techniques are included because of the effect on traditional notions of residential density.

New residential development adds an additional burden on local government to provide amenities and services. These additional costs are not offset by the increase of residential property taxes from new residents. Impact fees are a means for new developments to share in the cost of providing public facilities.

A recent National Association of Homebuilders survey of 500 builders found nationally that impact fees are often required and that the percentage is increasing. Half of the builders pay impact fees of $1,000 to $5,000 per dwelling unit. These fees are utilized by local governments to pay for improvements in water and sewer service, transportation, schools, libraries, day-care centers, parks, and fire stations.

In Winston-Salem and Forsyth County, developers traditionally have contributed to the community’s infrastructure by building roads, curbs and gutters, storm drainage and other improvements and then “dedicating” or giving these improve-
ments to the local government. These requirements for developers to build and dedicate infrastructure are called exactions. Most builders agree that impact fees are an improvement over traditional exactions which vary on a case-by-case basis according to the location or timing of the project. An established system of impact fees allows developers and planners to calculate the costs of a project in the early planning phases. Elected decision makers, who are able to stabilize tax rates as the community grows, are generally supportive of impact fees.

The collection of impact fees would serve to mitigate complaints that higher density developments have been allowed without adequate provision for the impact on public facilities. Developers of new housing would be required to pay their fair share to reap the benefits provided by the existing community. This program could be enhanced and augmented by a system of incentive zoning.

Incentive zoning offers the developer the opportunity to exceed the maximum allowable density by a specific percentage in exchange for providing infrastructure or amenities needed by the community. Incentive zoning benefits both the community and the developer. The community receives public service support that would otherwise be unaffordable, such as greenways, public parks, or streetscapes with landscaping or seating areas, in exchange for allowing the developer to build more dwelling units on a site than normally would be allowed. The extent of the density bonus and description of the choices of amenities or infrastructure, which the developer must provide to earn such a bonus, would be found in the wording of the incentive zoning ordinance. Such a system would be more equitable than the current practice of exactions, because the terms, by which the desired bonus is determined, would be defined clearly in advance and enforced uniformly.

Incentive zoning techniques have been used in various jurisdictions in the United States. These techniques have been employed to encourage the provision of day-care facilities in new CBD office space in San Francisco and to preserve theaters in New York's Broadway theater district. Developers and citizens appreciate these programs because the negotiations and agreements are aboveboard and voluntary.

The application of both impact fees and incentive zoning would serve to help the municipalities and County achieve the levels of service and amenity provision the citizens desire, as new residential units are added to the existing housing stock. Incentive zoning would be a positive inducement to development.

MANUFACTURED HOUSING

As the cost of traditional site built housing increases, a larger segment of the population finds the goal of home ownership unattainable. Manufactured housing is a growing trend within the American housing industry and appears to be playing an increasingly important role in providing the public with decent, safe, and affordable housing.

Manufactured housing is produced in a factory rather than at the site. The entire structure, or the completed components, are transported to and assembled at the site. Tremendous cost savings are achieved because the structural components are manufactured in mass quantities.

In recent decades, manufactured housing construction techniques have become more sophisticated. As of 1980, the National Association of Home Manufacturers had classified nine different types of such housing, based on differences in the extent of the completion at the factory, on construction style, and on how the units will be used.

City and County ordinances treat the category of manufactured housing as a legally distinct type of residential dwelling. According to the NAHM classification system, these would be more precisely called “mobile-component homes.” These homes are transported in either a single completed section or in segments on a steel chassis, and placed on a foundation or piers at the site. Contrary to the implication of the name, mobile-component homes are almost always permanently placed. The only period of mobility is from the factory to the site. Less than 3 percent of mobile-component homes are moved to a second site. Multi-section homes are extremely difficult to disassemble and move. In effect, there is little technical difference
between a mobile-component home and a site built wooden frame house, other than the process of construction and architectural character.

In 1980, the average sales price of a new manufactured house was $18,500, with an average size of 1,050 square feet. Nationally, over 220,000 manufactured housing units were produced and shipped, and 11,375 of those units were erected in North Carolina. In 1980, North Carolina ranked fourth nationally in year-round occupied manufactured houses, at 196,196 units. Because of substantial cost savings and technological improvements making manufactured housing more comfortable and attractive, demand for these units and land on which to erect them is increasing. Nationwide HUD standards have been followed by the industry since 1976, and manufactured home quality and safety have greatly improved. Older homes, susceptible to wind and fire damage, are being replaced with more durable and safer units. A 1980 New Hampshire Office of State Planning study estimated that the annual income needed to support a manufactured home was $17,856, while the income needed to support a new site built home was $34,380. Thus, the manufactured home option may represent a 48 percent savings in housing costs and bring the home ownership option to those in the low and moderate income bracket.

Currently, manufactured home parks are allowed, by right, in the R-7 zoning district only in Winston-Salem and Forsyth County. Single-wide manufactured homes are allowed in R-6 zoning districts when a special use permit is obtained from the Zoning Board of Adjustment. Review of existing ordinances should be undertaken to examine the current state of incentives and controls for manufactured housing in the community. Manufactured homes are architecturally distinct in appearance and should still be treated as a separate classification of dwelling for the purposes of planning and zoning.

As the housing market changes in the future, traditional concepts and rules about manufactured homes have to be addressed by the public and the governing bodies.

**RECOMMENDATIONS**

**Residential Land Use**

Recommendations related to residential land use are as follows:

- Establish specific density ranges in zoning ordinances that are consistent with the density range categories of the comprehensive plan.
- Establish standards for allowing a waiver of the specific density ranges in this plan to increase the supply of low and moderately priced housing.
- Develop performance standards and criteria which guide the location of single, multifamily, and manufactured housing according to the density range categories of the comprehensive plan.
- Coordinate new residential development with the provision of an adequate level of services and facilities, such as sewers, water, transportation facilities, schools, and parks.
- Review residential land development regulations to encourage a variety of housing densities and types.
- Consolidate and make consistent all residential zoning categories in the City and County zoning ordinances.
- Investigate and, when advisable, implement mixed use zoning, particularly in established neighborhoods where compatible and functional mixes already exist.
- Encourage location of nonresidential uses, such as neighborhood commercial, within residentially designated areas, when those auxiliary uses are compatible with area plans, zoning ordinances, and other local controls for allowed uses in residential neighborhoods.
- Encourage a variety of new residential development in and near the downtown area.
- Encourage infilling and utilization of existing undeveloped subdivision lots in urban areas.

- Encourage a mixture of dwelling unit types in appropriate areas.
- Encourage higher density residential development near employment centers throughout the metropolitan area.
- Achieve densities and the variety of housing types envisioned in the comprehensive plan through zoning.
- Evaluate the following criteria when considering changes of a residential zone: (1) Consistency with the comprehensive plan; (2) consistency with policies and plans of the applicable jurisdiction(s); and, (3) consistency with area plan recommendations.

**Housing**

Recommendations related to housing issues are as follows:

- Update and adopt the Countywide Comprehensive Housing Plan. All local governments should adopt a comprehensive housing policy which clearly states the goals and actions to pursue, outlines strategies and programs to be undertaken, and sets objectives.
- A Housing Coordinator position should be created within the public sector. This person’s major responsibility would be the implementation of the Countywide Comprehensive Housing Plan and local housing policy. Other responsibilities would include promotion of low and moderate income housing, development of program ideas into active programs, and coordination of the various agencies needed to implement the programs and strategies of the housing plan.

- The major missing link hindering the construction of new assisted housing is the lack of financing for low and moderate income housing. Possibilities include the creation of a private lending pool for Section 8 developers; selling tax exempt bonds for use in financing low income construction through Section 11(b) of the Housing Act of 1937; using Community Development funds to leverage private investment in housing or to provide public guarantees to private lenders to reduce the risk.
of financing low income ventures.
- A public spirited, advocacy group for low income housing is needed to involve the private sector in the strategies initiated by this plan. Such an organization should bring builders and lenders into public programs and foster private initiatives for housing. As a private, nonprofit organization, this group could operate as a sponsor or partner in low income development and could assist in ways not available to local government.
- With proper backing, the organization could loan seed money, provide technical assistance, package low income applications, and help absorb the extra burdens of developing assisted housing. In doing this, the organization would involve local builders in the production of assisted housing resources.
- Presently, the Twin City Development Corporation (TCDC) functions in this capacity for the City of Winston-Salem. However, no such organization exists for the County. The TCDC should expand its program and institute a more aggressive marketing effort in light of the federal government's anticipated future minimal participation in and funding of housing stimulation programs.
- Encourage public, private, non-profit, and cooperative associations and joint public-private partnerships to enter the low and moderate income housing market.
- Continue to encourage the dispersal of housing for all income groups.
- Develop local mechanisms and processes which ensure coordination between public, private, and consumer sectors of the area's housing market.
- Implement housing programs that provide housing opportunities for all metropolitan area residents without discrimination.
- Encourage programs that facilitate home ownership by low and moderate income families.

Manufactured Housing

Recommendations related to manufactured housing are as follows:
- Encourage the development of manufactured home parks and subdivisions at sewerable sites in Areas 3 and 4A.
- Identify lots for manufactured home developments where needed for rental and for ownership in park or subdivision settings. New parks and subdivisions must be located on major arterial streets and be connected to the City-County sewer system. No high density manufactured home development should be serviced by septic tanks or package sewage treatment. Neighborhoods in Areas 1 and 2 are already too densely developed to allow harmonious integration of manufactured home parks or subdivisions into the existing architectural context.
...we turned our eyes to the great market-place and...they all said they had never seen a market so well ordered, so large and so crowded with people.

— HERNANDO CORTES
Commercial Development Classification

Shopping Centers

Shopping centers can be defined as a group of commercial establishments that are planned, developed, owned, and/or managed as a unit. The location, size, and type of shops in the center are oriented to the trade area. The shopping center provides on-site parking in a definite relationship to the types and sizes of stores in the center.

Shopping centers can be classified into three primary types based on major tenant or tenants:

- **Neighborhood centers** provide convenience goods, including groceries and drugs, plus services for daily consumption and frequent purchases to satisfy day-to-day needs of the surrounding residential area.
- **Community centers** provide groceries and drugs, plus a broad selection of goods and services needed frequently, but not daily, and serve a market area larger than the neighborhood.
- **Regional centers** serve all or a major part of a region with a wide variety of comparison and specialty goods (Table 8.1).

Highway Commercial Development

Highway commercial development, or strip development, often occurs as a miscellaneous collection of individual stores standing on separate lots strung along road frontages. Such development includes a mix of auto-oriented uses, services for the traveling public, land intensive uses, and older small businesses. In contrast to shopping centers, there is usually no anchor tenant, no central management, and no shared access and parking.

A major subcategory of highway commercial development includes uses such as auto dealers, furniture stores, and home improvement centers. Goods from these businesses are purchased infrequently, the sale often being the sole purpose of the shopping trip. These uses require extensive space and, therefore, traditionally have not been able to afford the premium of locating in shopping centers. Another subcategory is travel-oriented commercial uses, such as restaurants, motels, and service stations, which need to be located near freeway interchanges and major highway intersections.

The modern convenience store, usually part of a self-serve gasoline station, is a third subcategory of highway commercial development. This type of commercial development needs to have high visibility and be located on main traffic routes.

Table 8.1 Characteristics of Shopping Center Types

<table>
<thead>
<tr>
<th>Shop Type</th>
<th>Purpose</th>
<th>Principal Tenant</th>
<th>Typical Number of Stores</th>
<th>Typical Size</th>
<th>Local Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEIGHBORHOOD CENTER</td>
<td>Convenience goods (food, drugs and sundries) and personal services (laundry, dry cleaning, barbering)</td>
<td>Supermarket</td>
<td>5-20</td>
<td>Four to ten acre site; 50,000 sq.ft. bldg.; serves 5,000 to 40,000 people</td>
<td>Robinhood Plaza</td>
</tr>
<tr>
<td>COMMUNITY CENTER</td>
<td>Convenience goods, personal services, and soft lines (apparel) and hard lines (hardware and appliances)</td>
<td>Junior department or discount store in addition to supermarket</td>
<td>15-40</td>
<td>Ten to thirty acre site; 150,000 sq.ft. bldg.; serves 40,000 to 150,000 people</td>
<td>Northside Center</td>
</tr>
<tr>
<td>REGIONAL CENTER</td>
<td>General Merchandise, apparel, furniture, home furnishings in full depth and variety</td>
<td>One or more full line department stores</td>
<td>40 or more</td>
<td>Thirty acre site; 400,000 sq.ft. bldg.; serves 150,000 to 400,000 people</td>
<td>Hanes Mall</td>
</tr>
</tbody>
</table>

Source: Modified from the City of Glendale Land Use Plan, 1977.

There will continue to be a need for highway commercial development in this community in the future. This type of commercial activity contributes heavily to roadside blight. Without planning, the worst side effects of commercial growth are likely to continue.

Existing Commercial Development

In 1986, the Chamber of Commerce and the Commercial, Industrial, and Investment Property Service of the Winston-Salem Board of Realtors commissioned a survey of...
retail blocks of space in downtown Winston-Salem and all major retail centers of over 30,000 square feet in Forsyth County.

The report, 1986 Retail Space Survey of Winston-Salem/Forsyth County, concludes that Forsyth County has a large and rapidly growing retail market. The survey identified over six million square feet of gross leasable retail space in major retail centers.

Other key findings of the survey were that overall market conditions are strong with a low 9.8 percent vacancy rate. Community centers comprised 30.6 percent of all area retail space and had a very low 4.7 percent vacancy rate. The highest vacancy rates were in the Winston-Salem Central Business District, 27.4 percent, and in free standing retail buildings, 28.6 percent. Absorption of retail space was strong in the decade of the 1970's, with an annual vacancy rate at 27.4 percent, and in free standing retail buildings, 28.6 percent. Absorption of retail space was strong in the decade of the 1970's, with an annual absorption rate of 245,455 square feet. Retail space construction has slowed during the 1980's, but projects developed or planned at the time of the Chamber survey put the absorption rate at 212,000 square feet annually.

### TABLE 8.2
**FUTURE COMMERCIAL SPACE NEEDS**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>ADDITIONAL COMMERCIAL SPACE NEEDS (SQ. FT.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>1,590,000</td>
</tr>
<tr>
<td>1995</td>
<td>770,000</td>
</tr>
<tr>
<td>2005</td>
<td>1,610,000</td>
</tr>
</tbody>
</table>

Source: Winston-Salem/Forsyth County Market Assessment, June 1983
Prepared by Real Estate Research Corporation

### Future Commercial Development

In 1983, Real Estate Research Corporation (RERC) prepared the following analysis of retail activity in Forsyth County. Each person in Forsyth County spent an average of $5,195 for retail goods and services. Standards in national sales publications indicate that retail facilities average between $90 to $100 per square foot in overall sales, ranging from a low of about $45 per square foot for certain types of services to over $300 per square foot for high-priced items like jewelry. At the average sales rate, each person who spends $5,195 on retail merchandise can support between 52 and 57 square feet of retail space per year.

RERC projected the need for nearly four million square feet of additional commercial space over the next twenty years based on projected population growth in Forsyth County. (Table 8.2).

A large proportion of local retail sales are generated by food stores, restaurants, drinking establishments, furniture and appliance stores, automobile dealers and related suppliers, and drug stores. All are retail uses that typically do not locate in regional shopping centers. Automotive goods, furniture, and appliances are normally sold in free-standing highway commercial businesses. Grocery and drug stores prefer to locate in smaller community or neighborhood centers. However, RERC projected that about 20 to 25 percent of future retail space needs are likely to occur in larger regional shopping centers. RERC projected that another 30 to 40 percent would likely locate in neighborhood and community shopping centers, with the remainder in highway commercial facilities.

The 1986 Retail Space Survey of Winston-Salem/Forsyth County did not estimate future commercial space needs. Bell and Gardner, Inc., a local real estate consulting firm that carried out the Chamber's retail survey, did offer their estimate of retail market strength over the next five years. Their estimate was based on recent commercial market activity. Their professional judgment was that commercial development is underbuilt in Winston-Salem/Forsyth County compared to other major North Carolina cities. They estimated the local market could sustain a 250,000 square feet annual absorption rate over the next five years. Bell and Gardner estimated that 125 acres of commercial land would be needed to accommodate this amount of development.

### Shopping Center Locational Analysis

The boundaries of a market area are determined by a number of factors, including the type of center, location of competing facilities, and limitations of driving time and distance. Within a shopping center's market area, customers closest to the site will affect the center most strongly, with customer influence diminishing gradually as distance from the center increases. The market area from which the center will derive its largest share of repeat sales is called the primary market area and accounts for 70 to 80 percent of the center's regular customers.

The Urban Land Institute has prepared guidelines for estimating the primary market area for different classes of shopping centers (Table 8.3).

As part of this study, market area coverage of shopping centers in Forsyth County was analyzed. The study included existing centers and those with development approval.
but not yet built. Minimum requirements for designation as a shopping center for the analysis was the presence of a food store and a drug store. Thus, College Plaza Center was not included since there is no longer a food store at that center. Generally, centers were categorized as either neighborhood or community according to the established criteria (Table 8.1). However, some areas that did not have a true community center, but had a number of neighborhood centers and other commercial, were considered as equalling a community center (Map 8.1).

Identified centers were located on a map, with surrounding primary market areas defined as a one and one-half-mile radius for neighborhood centers and a three-mile radius for community centers. The pattern of primary market areas for neighborhood centers showed much of the central county well served for day-to-day grocery needs and convenience goods. Notable deficiencies in the Urban Area, Area 3, include an area near the intersection of Reynolda and Stratford Roads, and portions of eastern Winston-Salem. Much of the Growth Area, Area 4A, is not well served and will require the identification of shopping center sites and development of centers as that area is populated.

Much of the population is within three miles of a community shopping center, except for the southwestern part of the county.

ISSUES

Shopping Centers

RERC has predicted that 50 to 65 percent of the community's future commercial development will be shopping centers. From a public viewpoint, encouragement of shopping centers will allow the community to escape haphazard and blighting strip commercial development and to support continued commercial growth in a manner that underscores planning objectives.

Highway Commercial

Some commercial uses, for example automobile dealers or motels and service stations, have not traditionally been located in shopping centers because of extensive land needs or because these uses serve the traveling public. There will continue to be a need for highway commercial sites where these uses can locate. However, unplanned uses of this type create substantial traffic problems and are often visually undesirable and blighting.

Local Convenience Stores

Local convenience stores can be one of two types: The quick stop store located on transportation routes, dispensing gasoline; and, the "mom and pop" corner grocery, once a fixture of neighborhoods.

Although an inventory of local convenience stores has not been prepared nor locations mapped, there has been considerable demand for quick stop stores in recent years, as evidenced by rezoning requests. This type of convenience store will continue to be built around the country in response to market demand.

The "mom and pop" type of convenience store has disappeared gradually over time, replaced by automobile access to larger food stores. The preservation and revival of these pedestrian oriented stores should be encouraged where appropriate.

Downtown Business Districts

Most new commercial development will follow residential development. The Central Business District of Winston-Salem and, to a lesser extent, Kernersville cannot compete successfully with suburban shopping areas. Retail in the downtown must cater to conventioneers, tourists, and downtown office workers. The downtown is best suited for upscale restaurants, entertainment, and specialty shops.

GOALS

The following are the goals for commercial development.

• Provide convenient business locations that reduce traffic, travel, and loss of time.
• Protect environmental quality and neighborhood integrity.
• Promote commercial development as an important part of economic growth and development.
OFFICE LAND USE

Summary

The economy of Forsyth County increasingly emphasizes non-manufacturing sectors, such as services, wholesale and retail trade, and finance, insurance and real estate. This trend is expected to continue into the next century, as productivity gains and foreign competition decrease manufacturing employment and as the information age and increased demand for services increase non-manufacturing employment. Therefore, the use of land for office development will become increasingly important.

Forsyth County currently has approximately 7.3 million square feet of leasable office space, with about 48 percent in downtown Winston-Salem. The most recent additions to downtown office space are One Triad Park, a nineteen story tower with 250,000 square feet of prime office space, and Salem Towers with two buildings totaling 110,000 square feet. The remaining office space is located in several office parks, such as Stratford Executive Park and Madison Park. Forsyth Corporate Center, just south of Hanes Mall, recently opened the first of five planned buildings. Scattered smaller offices are found in a few areas, such as Reynolda Road. Rental rates for office space vary considerably from a low of about $8.00 per square foot to a high of $18.00 per square foot in the new Triad Park. Forsyth County can absorb about 600,000 square feet of office space per year, triple the absorption rate of a few years ago.

Several issues have affected office development in Forsyth County in the past. Little speculative development has occurred in the county which has hampered the expansion and relocation of local businesses. Downtown space, occupied by small two-story buildings, is not used very efficiently for retail or office development. There has been difficulty in attracting office developers and office users downtown because of the higher cost of construction, the difficulty of assembling large parcels of land, and the community's perception of downtown as less desirable than suburban locations.

INTRODUCTION

As cities develop a more regional market for services, office development becomes a stronger statement of an area, its Central Business District, and the strength of local economy. The location of office related employment centers also has an impact on travel and shopping habits. Therefore, the design and location of future office development in Forsyth County must be part of the comprehensive picture of growth and development outlined in the growth strategy of Chapter 2. This chapter addresses the location implications of office development in Forsyth County over the next twenty years.

EXISTING SITUATION

As Winston-Salem and Forsyth County have grown and started to shift from a traditional manufacturing-based economy, the amount of office space in the county has increased dramatically. According to a study completed by the Winston-Salem Chamber of Commerce in 1986, Forsyth County currently has about 8.5 million square feet of office space (Table 9.1). Approximately 52 percent of all office space is in downtown Winston-Salem. Other than downtown Winston-Salem, most office space is located in Stratford Executive Park, Plaza West/Healy Drive, North Point, Madison Park, and Forsyth Corporate Center (Map 9.1). Outside Winston-Salem, Kernersville and Clemmons are gaining importance as office centers. This trend will accelerate because more and more firms seek locations in Kernersville to be near Piedmont Triad International Airport, or in Clemmons to benefit from the expanding suburban growth in Forsyth County's southwestern areas.

Office space in Forsyth County ranges broadly in price, type, and quality. Currently, office space in the Stratford Road area rents for $8.00 to $13.00 per square foot per year.
Downtown office space rents for as much as $14.00 per square foot. The new office building in Triad Park rents for $18.00 per square foot. Little difference exists between rents for central business district (CBD) and suburban office space, a somewhat unusual situation that has tended to slow the construction of speculative office projects in the CBD. Office construction in the CBD is more difficult logistically than that in the suburbs, and usually more expensive.

Office development in areas outside downtown Winston-Salem did not begin until 1966, when Stratford Executive Park was begun. The Park now contains twenty-one buildings with a total of about 267,000 square feet of net leasable space occupied by a mixture of single and multiple tenants. Construction at North Point began in 1974, and now contains nine buildings and nearly 200,000 square feet. Plaza West/Healy Drive has five buildings and 57,300 square feet. The most recent addition to the Forsyth County selection of suburban office parks is Madison Park located at the intersection of US 52 and University Parkway in the northern portion of the county. This development has about 250,000 square feet in five buildings. Some of Forsyth County's major employers have their office headquarters in Madison Park, such as L'eggs.

Triad Park in Winston-Salem's CBD is the newest office complex. The first building contains 267,000 square feet of office space in a nineteen-story tower. Winston-Salem has built an underground parking garage and a plaza as part of the development. When complete, the entire project will contain about 800,000 square feet of office space, 80,000 square feet of retail space, and 150 residential units. Tenants in this type of building demand support services, such as restaurants, barber shops, fitness centers, and retail shops.

This type of project, a mixed-use development, represents the future trend of office development, particularly as the supply of office space increases. From a planning perspective, mixed-use developments use land more efficiently than the traditional ring patterns of a central business district surrounded by homogeneous residential neighborhoods. With mixed-use developments people can live within walking distance of work and shopping areas, thus decreasing congestion on roads leading into and out of the city.

Two other major projects are currently under construction in Winston-Salem. Salem Towers, located at the corner of Brookstown Avenue and Liberty Street, consists of two fifteen-story towers totaling 110,000 square feet. Eventually, the neighboring old Southern Railway building will be developed as an inn, giving the area a mixed-use orientation with nearby Old Salem and Brookstown Mill. The new Strollway will connect this area to the CBD. Forsyth Corporate Center, south of Hanes Mall, has one of the five planned buildings completed. The project will contain about 260,000 square feet of leasable space.

An important component of small office development has been the renovation of older, historic structures. This type of renovation not only preserves the building and its historical and architectural importance, but also provides a use appropriate to the structure's size and location. Developers can take advantage of federal tax credits and accelerated depreciation to facilitate these renovations.

**FUTURE MARKET FOR OFFICE SPACE**

Presently, the local market for office space absorbs about 600,000 square feet of additional space each year, according to the Chamber of Commerce's 1986 office survey. As the county grows and as the local economy changes emphasis, this rate of office growth should increase. Real Estate Research Corporation (RERC) predicted that Forsyth County and Winston-Salem will require an additional 2.58 million square feet of office space between 1980 and 1989, another 1.13 million square feet between 1990 and 1995, and a further increase of 2.35 million square feet between 1996 and 2005. Most of this construction should occur in the Central Area of Winston-Salem, according to RERC and the adopted Winston-Salem/Forsyth County Growth Strategy. Since 1980, approximately half the projected need by 1989 has already been built; so, the area is well on the way to fulfilling projections.

The Winston-Salem/Forsyth County Growth Strategy predicts that the Central Business District of Winston-Salem and the surrounding Central Area neighborhoods will require an additional twenty-five acres of land for office use between 1980 and 2005. The remainder of the city will require 100 additional acres, and the county twenty-four acres. Location of these office sites will depend on several factors, such as transportation, adjacent land uses, and existing uses of land.

In summary, Forsyth County seems to have a healthy market for office space. Developers will need to continue to be responsive to market demands to prevent an oversupply of office space. More office buildings are being built; most, if built in a useful location with some attention to the quality of the space, quickly find tenants. Given the increased emphasis in the economy on the service sector, office space of a variety of types will be needed increasingly. However, not every service business needs or wants an upscale office with an image. Many smaller businesses with different needs will continue to need office space. In fact, these smaller businesses may be the major tenants of future office buildings. Developers will need to adjust to this by providing more than a mere building. As small businesses become more prevalent, flexible space with shared services, such as telephone lines and photocopy
MAP 8.1
SHOPPING CENTERS, FORSYTH COUNTY

NEIGHBORHOOD SHOPPING CENTERS

Existing
1. King
2. Rural Hall
3. Stanleyville
4. Pinebrook Plaza
5. North Chase
6. Lochmann's Plaza
7. Grandview
8. Robinson
9. Lewisville
10. Food Fair
11. Westwood Village
12. Food Lion Clemmons
13. Clemmons Village
14. Westchester
15. Center Stage
16. Vineyard Plaza
17. Gordon Manor

Approved but not built
18. Knollwood
19. Pavilion at Highland Oaks
20. West Salem
21. Kroger
22. Food Mart
23. Shop-Rite
24. Food Lion Plaza
25. East Winston
26. Walkertown
27. Northwood
28. Charleston Center
29. New Market Plaza
30. Kerners Village
31. Elason Capital
32. Clemmons Shopping Center

COMMUNITY SHOPPING CENTERS

Existing
33. Fifty-Two Plaza
34. Old Town
35. University Plaza
36. Pine Ridge Plaza
37. Reynolds Manor
38. Northside
39. Sherwood Plaza
40. Thruway
41. Cloverdale
42. Parkway Plaza
43. K-Mart
44. Southpark Center
45. Parkview
46. Center Stage at Walkertown

REGIONAL SHOPPING CENTERS

Existing
47. Hanes Mall
48. The Marketplace

Source: City-County Planning Board
RECOMMENDATIONS

**Shopping Centers**

- Neighborhood, community, and regional shopping centers should not be located in Growth Management Areas 4B and 5. Local convenience stores, farm supply stores, and certain other rural serving retail establishments are the only commercial uses encouraged in these areas.
- New shopping centers proposed to be located in areas already well-served by existing commercial development should be required to prepare a market study to justify the new development.
- Shopping centers should be compatible with adjacent land uses, utilizing landscaping buffers, setbacks, a smooth transition in building heights, consistent architectural design, and limited signage.

**Highway Commercial**

- Improvements should be encouraged for existing highway commercial areas, such as consolidation of vehicular access points, improved signage, extensive landscaping, and deepening of lots.
- Only commercial uses requiring high accessibility or otherwise unsuited to shopping center style development should be allowed to locate in a linear fashion.
- Areas of future highway commercial development should be limited in length and separated from other highway commercial uses by transition areas. Office, medical, and institutional uses having limited contact with the general public should be considered for development buffers. New highway commercial uses should be fronted by service roads with limited curb cuts on streets and thoroughfares.

**Local Convenience Stores**

- Standards should be developed for the location and design of local convenience stores. For quick stop stores, standards should include minimum spacing between stores, placement based on surrounding population densities, and a highway classification system. Design compatible with surrounding residential uses should be encouraged. Their location should not contribute to strip commercial development.
- The return of “mom and pop” convenience stores to neighborhoods should be encouraged. Careful design and application of standards can make these stores good neighbors.
- A mix of commercial development should be encouraged in downtown Winston-Salem, creating an exciting shopping experience for the downtown market of tourists, convention-goers, and office workers.

**General**

- Commercial uses shall be located, grouped, and designed to encourage access by public transit and pedestrians.
- Developers of commercial property should be encouraged to address neighborhood concerns during the site planning process.
The service sector is the fastest growing area of employment...office employment in the service sector has been a major...source of new jobs...

—NORTON E. LONG
large, visible office or business developments, have not been available. Related to this issue is Winston-Salem's recent "losses" of corporate regional headquarters. Government and the private sector have been unable to provide the type of land parcels to attract such clients to the Forsyth County area.

Office development in Forsyth County has followed traditional patterns of design. In general, little imagination or community pride seems to have affected the choice of style of building to construct. Furthermore, mixed-use facilities, now prevalent in many other cities, have not yet been built in Forsyth County. This type of project is increasingly popular and often gives a building a marketing advantage.

Downtown office space has been underused. Many buildings in premier downtown locations, such as along 4th or Trade Streets, represent a less than efficient use of the land. Many buildings have only two or three stories, often with the upper stories used for storage.

**RECOMMENDATIONS**

Through various means, local planners, City government, and the development community should work together to locate and design

---

**TABLE 9.1**

**COMPETITIVE OFFICE SPACE INVENTORY, FEBRUARY 1986**

<table>
<thead>
<tr>
<th>BUILDING</th>
<th>LOCATION</th>
<th>YEAR BUILT</th>
<th>TOTAL NET LEASABLE</th>
<th>VACANCY RATE (%)</th>
<th>QUOTED LEASE RATES AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Union Building</td>
<td>Downtown W-S</td>
<td>1933</td>
<td>160,000</td>
<td>8.1</td>
<td>$ 9.50</td>
</tr>
<tr>
<td>Reynolds Tobacco Building</td>
<td>Downtown W-S</td>
<td>1934</td>
<td>192,000</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Western Arms</td>
<td>Downtown W-S</td>
<td>1950</td>
<td>25,600</td>
<td>100.0</td>
<td>7.00</td>
</tr>
<tr>
<td>Wachovia Building</td>
<td>Downtown W-S</td>
<td>1963</td>
<td>430,000</td>
<td>0.9</td>
<td>13.50</td>
</tr>
<tr>
<td>Integon I</td>
<td>Downtown W-S</td>
<td>1965</td>
<td>120,000</td>
<td>0.0</td>
<td>9.50</td>
</tr>
<tr>
<td>Phillips Building</td>
<td>Downtown W-S</td>
<td>1972</td>
<td>270,000</td>
<td>0.0</td>
<td>13.50</td>
</tr>
<tr>
<td>NCNB Plaza</td>
<td>Downtown W-S</td>
<td>1974</td>
<td>194,959</td>
<td>8.2</td>
<td>9.00</td>
</tr>
<tr>
<td>Hall of Justice</td>
<td>Downtown W-S</td>
<td>1974</td>
<td>108,000</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>First Home Federal</td>
<td>Downtown W-S</td>
<td>1975</td>
<td>40,294</td>
<td>4.1</td>
<td>9.25</td>
</tr>
<tr>
<td>Federal Building</td>
<td>Downtown W-S</td>
<td>1976</td>
<td>220,000</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Twin City Building</td>
<td>Downtown W-S</td>
<td>1978</td>
<td>60,000</td>
<td>0.0</td>
<td>8.00</td>
</tr>
<tr>
<td>The Foundry (Liberty St. Bldg.)</td>
<td>Downtown W-S</td>
<td>1980</td>
<td>18,000</td>
<td>0.0</td>
<td>6.75</td>
</tr>
<tr>
<td>Integon II</td>
<td>Downtown W-S</td>
<td>1980</td>
<td>210,000</td>
<td>4.5</td>
<td>9.50</td>
</tr>
<tr>
<td>City Center Building</td>
<td>Downtown W-S</td>
<td>1981</td>
<td>10,500</td>
<td>28.6</td>
<td>9.50</td>
</tr>
<tr>
<td>Reynolds Plaza</td>
<td>Downtown W-S</td>
<td>1982</td>
<td>398,300</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Nissen Wagonworks</td>
<td>Downtown W-S</td>
<td>1982</td>
<td>30,000</td>
<td>0.0</td>
<td>7.50</td>
</tr>
<tr>
<td>Brookstown Mill</td>
<td>Downtown W-S</td>
<td>1983</td>
<td>23,000</td>
<td>7.8</td>
<td>12.00</td>
</tr>
<tr>
<td>City Center West</td>
<td>Downtown W-S</td>
<td>1984</td>
<td>30,746</td>
<td>28.9</td>
<td>10.50</td>
</tr>
<tr>
<td>Home Real Estate Building</td>
<td>Downtown W-S</td>
<td>1984</td>
<td>7,50</td>
<td>0.0</td>
<td>9.00</td>
</tr>
<tr>
<td>B B &amp; T (Wachovia)</td>
<td>Downtown W-S</td>
<td>1984</td>
<td>70,000</td>
<td>84.0</td>
<td>11.00</td>
</tr>
<tr>
<td>Long-Haymes-Carr (former)</td>
<td></td>
<td>1965</td>
<td>12,700</td>
<td>100.0</td>
<td>8.50</td>
</tr>
<tr>
<td>Tultex Bldg. (Washington Group)</td>
<td></td>
<td>1970</td>
<td>17,006</td>
<td>100.0</td>
<td>8.50</td>
</tr>
<tr>
<td>Cromer Grubbs, Sr., Bldg.</td>
<td></td>
<td>1972</td>
<td>15,000</td>
<td>0.0</td>
<td>8.50</td>
</tr>
<tr>
<td>First Center Building</td>
<td></td>
<td>1973</td>
<td>118,000</td>
<td>3.2</td>
<td>12.50</td>
</tr>
<tr>
<td>Southern Bell Building</td>
<td></td>
<td>1973</td>
<td>54,115</td>
<td>0.0</td>
<td>8.50</td>
</tr>
<tr>
<td>McLean Building</td>
<td></td>
<td>1977</td>
<td>135,210</td>
<td>0.4</td>
<td>12.50</td>
</tr>
<tr>
<td>State Employees Cr. Union</td>
<td></td>
<td>1977</td>
<td>11,700</td>
<td>0.0</td>
<td>10.00</td>
</tr>
<tr>
<td>Stratford Oaks</td>
<td></td>
<td>1977</td>
<td>56,000</td>
<td>5.4</td>
<td>11.75</td>
</tr>
<tr>
<td>Bethesda Oaks</td>
<td></td>
<td>1984</td>
<td>56,000</td>
<td>48.2</td>
<td>8.50</td>
</tr>
<tr>
<td>Vest Mill Office Condo</td>
<td></td>
<td>1984</td>
<td>12,000</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Plaza West (14 Bldgs.)</td>
<td>Plaza West</td>
<td>1982</td>
<td>80,000</td>
<td>22.5</td>
<td>9.00</td>
</tr>
<tr>
<td>Consolidated Center I (Bali)</td>
<td>Plaza West</td>
<td>1983</td>
<td>40,000</td>
<td>0.0</td>
<td>9.88</td>
</tr>
<tr>
<td>Consolidated Center II (Hanes)</td>
<td>Plaza West</td>
<td>1983</td>
<td>60,000</td>
<td>0.0</td>
<td>9.88</td>
</tr>
<tr>
<td>Thirty-Four Ten Bldg.</td>
<td>Plaza West</td>
<td>1984</td>
<td>26,000</td>
<td>0.0</td>
<td>9.00</td>
</tr>
<tr>
<td>Munden Bldg.</td>
<td>Stratford Exec.</td>
<td>1966</td>
<td>19,800</td>
<td>100.0</td>
<td>7.00</td>
</tr>
</tbody>
</table>

---
office developments that serve the purposes of developers, as well as those of the entire community. The following recommendations will help promote such cooperation and make office development a more efficient process:
- Promote continued public-private cooperation to provide the type of office development best suited for Forsyth County.
- Use a variety of methods, such as eminent domain and the redevelopment law, to assemble small parcels of land into larger blocks suitable for large office development, especially in the CBD where many buildings are not used to their fullest potential.
- Continue promotion of the CBD as the major location for office space, using public incentives where appropriate, to contribute to the re-shaping of downtown Winston-Salem as a desirable place to work and to spend time after work.
- Promote mixed-use developments as alternatives to the standard office building.
- Provide public incentives, such as infrastructure, to promote office development in a style and location most desirable.
- Evaluate the success of R-1 zoning designation for office uses in residential areas.
- Allow office development only in Areas 1, 2, 3, and 4A of the Growth Management Plan.
- Promote office development at existing and future activity centers to promote compact growth.
- Provide for office development in underserved areas, such as East Winston.

### OFFICE LAND USE

<table>
<thead>
<tr>
<th>BUILDING</th>
<th>OFFICE PARK</th>
<th>YEAR BUILT</th>
<th>TOTAL NET LEASABLE</th>
<th>VACANCY RATE (%)</th>
<th>QUOTED LEASE RATES AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travenaux Bldg. (Bali)</td>
<td>Stratford Exec.</td>
<td>1966</td>
<td>35,800</td>
<td>100.0</td>
<td>$ 7.00</td>
</tr>
<tr>
<td>Hanes Building - I</td>
<td>Stratford Exec.</td>
<td>1969</td>
<td>10,000</td>
<td>0.0</td>
<td>7.00</td>
</tr>
<tr>
<td>Hanes Building - II</td>
<td>Stratford Exec.</td>
<td>1969</td>
<td>10,000</td>
<td>0.0</td>
<td>6.00</td>
</tr>
<tr>
<td>Hanes Building - III</td>
<td>Stratford Exec.</td>
<td>1970</td>
<td>36,000</td>
<td>0.0</td>
<td>6.00</td>
</tr>
<tr>
<td>Other St. Ex. Pk. Bldgs. (1970-1975) (5)</td>
<td>Stratford Exec.</td>
<td>1972</td>
<td>24,800</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Winston-Salem Health Care I</td>
<td>Stratford Exec.</td>
<td>1976</td>
<td>27,700</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Winston-Salem Health Care II</td>
<td>Stratford Exec.</td>
<td>1976</td>
<td>8,000</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Other St. Ex. Pk. Bldgs. (1975-1979) (6)</td>
<td>Stratford Exec.</td>
<td>1977</td>
<td>24,400</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>RJR Dental Bldg.</td>
<td>Stratford Exec.</td>
<td>1978</td>
<td>37,100</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>200 Charlois</td>
<td>Stratford Exec.</td>
<td>1980</td>
<td>18,000</td>
<td>0.0</td>
<td>10.00</td>
</tr>
<tr>
<td>Triad Life Bldg.</td>
<td>Stratford Exec.</td>
<td>1980</td>
<td>20,000</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>150 Charlois</td>
<td>Stratford Exec.</td>
<td>1981</td>
<td>12,000</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>House-Blanco-Osborne</td>
<td>Stratford Exec.</td>
<td>1981</td>
<td>18,000</td>
<td>0.0</td>
<td>11.00</td>
</tr>
<tr>
<td>Salem Psychiatric Assoc.</td>
<td>Stratford Exec.</td>
<td>1981</td>
<td>12,000</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Other St. Ex. Pk. Bldgs. (1980-1984) (4)</td>
<td>Stratford Exec.</td>
<td>1982</td>
<td>22,000</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>West Ridge</td>
<td>Stratford Exec.</td>
<td>1982</td>
<td>27,840</td>
<td>7.2</td>
<td>12.50</td>
</tr>
<tr>
<td>Long-Haymes-Carr</td>
<td>Stratford Exec.</td>
<td>1983</td>
<td>26,400</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Piedmont Natural Gas</td>
<td>Stratford Exec.</td>
<td>1983</td>
<td>15,000</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>K &amp; W Complex</td>
<td>1960</td>
<td>61,300</td>
<td>100.0</td>
<td>9.00</td>
<td></td>
</tr>
<tr>
<td>RJR World Headquartes</td>
<td>1977</td>
<td>445,400</td>
<td>0.0</td>
<td>10.00</td>
<td></td>
</tr>
<tr>
<td>Reynolda Village</td>
<td>1978</td>
<td>30,000</td>
<td>0.0</td>
<td>10.00</td>
<td></td>
</tr>
<tr>
<td>One Brownsboro Plaza</td>
<td>1982</td>
<td>28,000</td>
<td>17.9</td>
<td>11.00</td>
<td></td>
</tr>
<tr>
<td>Hammill-Walter Bldg.</td>
<td>1983</td>
<td>18,000</td>
<td>0.0</td>
<td>10.50</td>
<td></td>
</tr>
<tr>
<td>MSA Bldg.</td>
<td>Madison Park</td>
<td>1983</td>
<td>40,000</td>
<td>0.0</td>
<td>12.00</td>
</tr>
<tr>
<td>Piedmont Airlines Bldg.</td>
<td>Madison Park</td>
<td>1983</td>
<td>67,000</td>
<td>0.0</td>
<td>12.00</td>
</tr>
<tr>
<td>L'eggs-5650 Bldg.</td>
<td>Madison Park</td>
<td>1984</td>
<td>100,000</td>
<td>0.0</td>
<td>10.00</td>
</tr>
<tr>
<td>L'eggs-5660 Bldg.</td>
<td>Madison Park</td>
<td>1985</td>
<td>60,000</td>
<td>0.0</td>
<td>10.00</td>
</tr>
<tr>
<td>North Point Office Park</td>
<td>North Point</td>
<td>1974</td>
<td>18,770</td>
<td>0.0</td>
<td>9.75</td>
</tr>
<tr>
<td>North Point Distrib. Center</td>
<td>North Point</td>
<td>1979</td>
<td>46,080</td>
<td>0.0</td>
<td>9.75</td>
</tr>
<tr>
<td>Republic Square</td>
<td>North Point</td>
<td>1980</td>
<td>148,950</td>
<td>24.2</td>
<td>10.50</td>
</tr>
<tr>
<td>North Gate - I</td>
<td>North Point</td>
<td>1981</td>
<td>23,000</td>
<td>0.0</td>
<td>10.50</td>
</tr>
</tbody>
</table>

Source: 1986 Office Survey; Greater Winston-Salem Chamber of Commerce
...America is a story of the industrial development which has brought us such a high standard of living.

— CARL CROW
TABLE 10.1
CRITERIA FOR EVALUATING INDUSTRIAL SITES

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>SUITABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside III-C Urban Services District</td>
<td></td>
</tr>
<tr>
<td>Direct Access to Interchange</td>
<td></td>
</tr>
<tr>
<td>Sewer and Water Available</td>
<td></td>
</tr>
<tr>
<td>Visible/Attractive Area</td>
<td></td>
</tr>
<tr>
<td>100+ Contiguous Acres</td>
<td></td>
</tr>
<tr>
<td>Largely Vacant</td>
<td></td>
</tr>
<tr>
<td>Minimum Impact on Residential Areas</td>
<td></td>
</tr>
<tr>
<td>Outside Water-Supply Watersheds</td>
<td></td>
</tr>
<tr>
<td>Available Telecommunications</td>
<td></td>
</tr>
</tbody>
</table>

1 One mile or less
2 Sewer and water immediately available to the site
3 From a major highway
4 Noise, traffic, pollution, etc.
5 Subbasins which drain into water-supply sources

Source: Winston-Salem/Forsyth County Growth Strategy modified by City-County Planning Board.

TABLE 10.2
POTENTIAL INDUSTRIAL SITES IN FORSYTH COUNTY

<table>
<thead>
<tr>
<th>MAJOR INDUSTRIAL SITES*</th>
<th>ACRES</th>
<th>EXISTING ZONING</th>
<th>WATER SEWER</th>
<th>ROAD ACCESS</th>
<th>SITE PREP.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Liberty/Patterson Area</td>
<td>32</td>
<td>I</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2. Old Railroad Station/US 52</td>
<td>9</td>
<td>I</td>
<td>0</td>
<td>0</td>
<td>X</td>
</tr>
<tr>
<td>3. Winston-Salem Business Park</td>
<td>140</td>
<td>I</td>
<td>0</td>
<td>X</td>
<td>0</td>
</tr>
<tr>
<td>4. Perimeter Point</td>
<td>39</td>
<td>I</td>
<td>0</td>
<td>X</td>
<td>0</td>
</tr>
<tr>
<td>5. Bethania Station Industrial Park</td>
<td>190</td>
<td>I&amp;R</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6. Graham Property</td>
<td>275</td>
<td>I</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7. US 52 North/Ziplar Road</td>
<td>274</td>
<td>R</td>
<td>X</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8. US 52 North/Shore Road</td>
<td>201</td>
<td>R</td>
<td>X</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9. US 52 North/Forum Parkway</td>
<td>139</td>
<td>I</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10. Northridge Business Park</td>
<td>200</td>
<td>I</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11. New I-40/I-40</td>
<td>52</td>
<td>R</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>12. New I-40/Stratford Road</td>
<td>129</td>
<td>I</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>13. West Point Business Center</td>
<td>150</td>
<td>I</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>14. South Forty Business Park</td>
<td>31</td>
<td>I</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>15. US 52 South/Barnes Road</td>
<td>69</td>
<td>R</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>16. US 52 South/Jones Road</td>
<td>60</td>
<td>R</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17. US 52 South/Fishel Road</td>
<td>92</td>
<td>R</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18. US 52 South/Lexington Road</td>
<td>52</td>
<td>C</td>
<td>0</td>
<td>X</td>
<td>0</td>
</tr>
<tr>
<td>19. New I-40/Sprague Street</td>
<td>89</td>
<td>I</td>
<td>0</td>
<td>X</td>
<td>0</td>
</tr>
<tr>
<td>20. New I-40/US 311/Ridgewood Road</td>
<td>102</td>
<td>R</td>
<td>X</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>21. NC 66/New I-40 (Kernersville)</td>
<td>289</td>
<td>I</td>
<td>0</td>
<td>X</td>
<td>0</td>
</tr>
<tr>
<td>22. I-40/US 421 (Kernersville)</td>
<td>54</td>
<td>R</td>
<td>0</td>
<td>X</td>
<td>0</td>
</tr>
</tbody>
</table>

TOTAL 2,628

* Major Improvement/Cost/Activity
X Minor Improvement/Cost/Activity
* See Map 10.1 for location of sites
Source: Winston-Salem/Forsyth County Growth Strategy modified by City-County Planning Board.

which to evaluate major industrial sites (Table 10.1). Each area or site was evaluated according to nine criteria. These potential industrial sites are geographically dispersed and provide a range of parcel sizes to suit differing industrial requirements. (Table 10.2 and Map 10.1).

I-4 Industrial Use in the Zoning Ordinance

As a result of the Winston-Salem/Forsyth County Growth Strategy, Winston-Salem and Forsyth County adopted a new I-4 industrial zone, providing high-quality, exclusive industrial sites for light manufacturing, research and development, or wholesale distribution in an attractive park-like setting. The requirements include regulations and setbacks to...
protect neighboring land uses from noise, odor, smoke, glare, dust, visual or water pollution. No application for I-4 zoning has been made.

ISSUES
Much of the industrially zoned land is intermeshed intricately with other nonindustrial zoning, inevitably creating opposition to zoning boundary changes, as well as permitting other market uses to preempt the sites before being presented to bona fide industrial candidates.

Many communities are over-zoned for industry, and the Forsyth County area is no exception. The County has four times the amount of industrially-zoned land than is needed through 2005, even under the most optimistic growth scenario. The effect of this situation is to drive quality residential uses further out of town and create competition between industrial and commercial uses. As a result, industrial uses may not select the most suitable sites.

The governments and Chambers of Commerce in Greensboro, High Point, and Winston-Salem have supported the concept of approaching industrial marketing and recruitment from the Piedmont Triad's perspective rather than as three individual cities competing against one another. While this viewpoint has been discussed, no regular forum for interchange has been established, although the Chambers have made some significant progress.

While Forsyth County hosts 306 industrial employers, according to the N.C. Employment Security Commission, only four or five industrial parks have been established. The
Chamber of Commerce reports that industries seek park-like sites for several reasons:
(1) To be located near similar land uses or operations.
(2) To lease space as opposed to purchase.
(3) To have access to additional space for expansion.
(4) To enable themselves to test quickly and accurately their market.

This shortage of developable industrial park sites should not be misinterpreted as a shortage of industrial land. The shortage results from the lack of land packaging or assembling agents needed to bring industrial users and developers together.

**RECOMMENDATIONS**

- Provide 2,450 acres of prezoned and construction-ready industrial land by 2005, to absorb the predicted need for an additional 1,224 acres. The excess will be sufficient to ensure competitive pricing and market choices, provided that other non-industrial uses do not preempt good industrial sites or drive up prices to office or commercial use levels.
- Reevaluate the vacant, industrially zoned acres not selected for potential industrial sites for appropriate new commercial or residential classification. Some sites should be retained with industrial zoning to meet the needs of small industrial firms or others that do not require large, visible sites.
- Complete a comprehensive rezoning process to change industrial classification where other uses have already settled or where the sites do not offer good rail and highway access, visibility, drainage, utilities, and/or suitable topography. This rezoning would free-up some close-in land for commercial, residential, or institutional uses.
- Establish regular meetings of officials/organizations of the Piedmont Triad to explore joint marketing possibilities and other important regional planning issues.
- Increase the number of ready-to-build, developable sites. Continue the land assembly process needed, currently performed by Winston-Salem Business, Inc., Chamber of Commerce, and City Development Office staff with assistance of the planning staff, and encourage more private sector involvement in this process.
- Promote and use industrial sites in Areas 1, 2, and 3 of the Growth Management Plan before moving into Area 4. These areas already contain some industrial uses and have the infrastructure in place needed by most industrial employers. These areas are also close to commercial and residential areas.
- If it is necessary to expand industrial uses into Area 4A, location criteria and design standards should be applied to minimize negative impacts and land use conflicts.
- Promote industrial uses in Area 4B only after sufficient infrastructure is in place.
- Permit no industrial uses in Area 5 and 6. Industrial development would be in conflict with plan objectives for these areas.
- Promote compatibility between industrial land and neighboring commercial or residential uses.
- The factories of the R.J. Reynolds Tobacco Co. have played a major role in the development of downtown Winston-Salem. If at any time production at these facilities is reduced or abandoned, they could be reused as second generation industrial space. While the situation of second generation industrial space of this scale has not been encountered in the community previously, the renovation of these factories for other uses should not be difficult. Some of these buildings have architectural and historical significance which should be preserved from a community interest point of view.
- Initiate a process for designation and rezoning of sites, and then a sequence of actions to gain a controlled land supply, matching sites, developers, and industrial firms in project-specific investments.
- Sponsor a series of initiatives in cooperation with the Chamber of Commerce, Winston-Salem Business, Inc., and Winston-Salem Development Office, in conjunction with the City of Winston-Salem and County comprehensive planning and zoning actions, in part to build property owner interest in supporting zoning reclassifications. These measures should include increased national and local industrial recruitment and publicity, and the creation of a countywide land inventory and information clearinghouse, developed in cooperation with site owners and brokers, to identify sites most likely to be held for a reasonable time and used for industrial use.
- As new sites are developed successfully and occupied by local industries and manufacturers with expansion or growth, a result will be a surplus of second generation industrial space. While there has been very little of this type of industrial space available, the community will be faced with the new challenge of inventories, marketing, and possibly designing adaptive uses for this space. This information should be included in clearinghouse for industrial data.
- The Chamber of Commerce, Winston-Salem Business, Inc., City Development Office, and City-County Planning Board should execute jointly a year-to-year program of planning specific sites for designated industrial functions. This activity would involve the property owners in cooperative planning and land assembly/disposition strategies. In return for such cooperation, programs of public-private investment and site promotion assistance would be offered.
CHAPTER 11
OPEN SPACE

There are none happy in the world but beings who enjoy freely a vast horizon.

— DAMODARA, FROM WALDEN
Rural Hall owns and operates the 8.5 acre Numa and Emma Covington Memorial Park located in the southern part of the city. In addition, the town uses the 19 acre Rural Hall Elementary School, located in the northern area.

Forsyth County is responsible for providing recreational opportunities only in unincorporated areas. Public recreational areas total 1,740 acres on nine sites. These areas are supplemented by thirteen school sites. Most of the land acreage is in Tanglewood Park. Formerly in private ownership, Tanglewood was acquired by Forsyth County in 1977. This 1,152 acre site has two golf courses, one of which is championship size. Other facilities include horseback riding, a swimming pool, a theatre, camping, tennis courts, and lakes for canoeing. Horizons Park, in the north central part of the county, was also acquired in 1977, containing 492 acres, of which 100 acres are developed.

In summary, some 121 parks and recreation sites are available, totaling 5,555 acres (Table 11.1). These areas include a wide range of facilities from golf courses to tot lots, and from stadiums to fitness trails.

Additional recreational facilities in all four jurisdictions are available through quasi-public agencies and private commercial providers. Swimming pools, meeting and/or recreation halls, play areas, basketball courts, etc., are provided at many apartment complexes and in various subdivisions for residents. Privately owned horseback riding facilities, golf courses, and fishing lakes are available to the public. Quasi-public facilities include the YWCA, YMCA, and Salvation Army Boys and Girls Clubs. While these resources are not available necessarily to all residents, these facilities do reduce the recreational demand on the public sector and are, therefore, taken into account in public recreation planning.

## Issues

### Future Parks and Recreation Needs

Standards for provision of parks and open space have been adopted locally (Table 11.2). Based on these standards, and a total county population estimate of 256,685 for 1985, deficiencies exist in the current district and countywide park system (Table 11.3). Winston-Salem operates ten district parks, and Kernersville operates one. The bulk of the countywide resources is currently owned and operated by Winston-Salem: 2,410 acres in fourteen sites. Because the County only began providing recreational services in 1973, deficiencies exist in the County's district and countywide system.

The Open Space and Recreation Plan, Forsyth County, 1975-1980 (January 1975) called for the grounds of most schools in unincorporated areas of the county to be developed for park use to help meet park needs. Four schools were specifically proposed for use as district parks. Since 1975, no school ground has been developed for recreation use. However, the County has acquired a community park near Lewisville and a district park near Walkertown. To meet countywide park needs, emphasis was placed on water-based recreation and water access areas, including the use of floodplain lands. In addition to the purchasing of Tanglewood and Horizons Parks, the County has acquired the Old U.S. 421 River Park adjacent to the Yadkin River.

To serve the projected population of 316,000 in the year 2005, an additional 1,506 acres of park land will be required (Table 11.3). Most of this new acreage will need to be in parks and facilities serving residents countywide. Countywide needs can be met, at least in part, by acquiring sites on the Yadkin River. Over the years the Yadkin River has been under used as a recreational resource. However, with its designation as a "recreational river trail" by the State, this will change. The 130 mile river trail has eighteen public access points in seven counties, two of them in Forsyth. Additional access points are needed. For canoeists and tubers, a distance of about six miles between access points is thought to be ideal.

The distance between Old U.S. 421 River Park and Tanglewood's access point is sixteen miles. At least one additional site is needed between the two. Countywide park needs can also be met by utilizing the floodplains of streams to create a park and greenway system. New sites will also be needed for neighborhood, community, and district parks, as annexations occur and as other growth areas are developed.

### Coordination and Cooperation

Local jurisdictions have a long history of coordination and cooperation in the provision of public services: Schools, libraries, planning, inspections, tax collection, purchasing, water and sewer, etc. Coordina-

## Table 11.1

<table>
<thead>
<tr>
<th>Inventory of Existing Public Recreation/Open Space Resources, Forsyth County, 1986</th>
<th>NO. OF SITES</th>
<th>ACREAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood and Community Parks</td>
<td>72</td>
<td>985</td>
</tr>
<tr>
<td>District Parks</td>
<td>13</td>
<td>295</td>
</tr>
<tr>
<td>Countywide Parks and Facilities</td>
<td>20</td>
<td>4,235</td>
</tr>
<tr>
<td>Special Areas and Facilities</td>
<td>16</td>
<td>40</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>121</strong></td>
<td><strong>5,555</strong></td>
</tr>
</tbody>
</table>

Source: Compiled by City-County Planning Board.
tion and cooperation in the provision of recreation also have a long history. Winston-Salem depends heavily on the use of school grounds in its total recreation program. Forsyth County also depends on the use of school facilities in its program. Kernersville, Rural Hall, Clemmons, and Walkertown have schools within town limits and make extensive use of these resources.

Local jurisdictions also work with a number of quasi-public agencies to ensure that a full array of facilities and services are available. The YMCA and YWCA, the Arts Council and its member agencies, the Salvation Army Boys and Girls Clubs, community clubs, and many others provide invaluable resources.

Coordination and cooperation between local jurisdictions in providing recreation are not as widespread. While each unit works well with other agencies and even with private entities within their boundaries, the jurisdictions do not interact extensively with each other. As this community continues to grow, as citizens demand more and varied services, and as new sites become more difficult to find and acquire, the need for intergovernmental coordination and cooperation will become more critical. Areas of special concern include service for the fringes of municipalities and provision of unique countywide resources.

Another area causing increasing concern is public/private partnerships in the provision of recreation

---

**TABLE 11.2**

**STANDARDS FOR PARKS, FORSYTH COUNTY**

<table>
<thead>
<tr>
<th>CLASSIFICATION</th>
<th>ACRES/1000 PEOPLE</th>
<th>SIZE RANGE</th>
<th>POPULATION SERVED</th>
<th>SERVICE AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play lots</td>
<td>Not Applicable</td>
<td>2,500 sq.ft. to 1 acre</td>
<td>500-2,500</td>
<td>Subneighborhood</td>
</tr>
<tr>
<td>Neighborhood parks</td>
<td>2.5</td>
<td>Min. 5 acres up to 20 acres</td>
<td>5,000</td>
<td>1/4 to 1/2 mile</td>
</tr>
<tr>
<td>Community parks</td>
<td>2.5</td>
<td>Min. 5 acres up to 20 acres</td>
<td>4,000-10,000</td>
<td>3 miles</td>
</tr>
<tr>
<td>District parks (Urban)</td>
<td>2.5</td>
<td>20-100 acres</td>
<td>15,000</td>
<td>1/2 to 3 miles</td>
</tr>
<tr>
<td>District parks (Rural)</td>
<td>2.5</td>
<td>20-100 acres</td>
<td>10,000-25,000</td>
<td>5 miles or more</td>
</tr>
<tr>
<td>Countywide parks (Multipurpose and special purpose)</td>
<td>20.0</td>
<td>Various</td>
<td>Serves entire population</td>
<td>Within 1/2 hr. driving time</td>
</tr>
<tr>
<td>Unique areas and special facilities</td>
<td>Not Applicable</td>
<td>Includes plazas, small parks, ornamental parks, scenic protection, historical sites, floodplains, greenways, lakes, and water-based recreation. No standard is applicable.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Adapted by City-County Planning Board from the National Recreation and Park Association.

**TABLE 11.3**

**OUTDOOR OPEN SPACE/RECREATION NEEDS, FORSYTH COUNTY AND ITS MUNICIPALITIES, 1985 AND 2005**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood &amp; Community</td>
<td>2.5</td>
<td>985</td>
<td>642</td>
<td>+ 343</td>
<td>148</td>
<td>790</td>
</tr>
<tr>
<td>District</td>
<td>2.5</td>
<td>285</td>
<td>642</td>
<td>- 348</td>
<td>148</td>
<td>790</td>
</tr>
<tr>
<td>Countywide</td>
<td>20.0</td>
<td>4,235</td>
<td>5,140</td>
<td>- 907</td>
<td>1,210</td>
<td>6,350</td>
</tr>
<tr>
<td>Special Areas</td>
<td>NA</td>
<td>40</td>
<td>Various</td>
<td>N.A.</td>
<td>Various</td>
<td>Various</td>
</tr>
<tr>
<td>Total</td>
<td>5,555</td>
<td>6,424</td>
<td>- 912</td>
<td>1,506</td>
<td>7,930</td>
<td></td>
</tr>
</tbody>
</table>

Source: Computations by City-County Planning Board, based on a population estimate of 256,685 in 1985, and a projection of 316,000 in the year 2005.
for new residential developments. Recently adopted area plans (Country Club/Jonestown Area Plan and Robin­hood Road Area Plan) have proposed recreation options for developer participation, including changes in the subdivision regulations, geographically-based recreation impact fee, square footage requirement per dwelling unit, density bonus concept, land use intensity systems, and donation of easements for greenways.

**Goals**

- This community consists of diverse population groups. Not only are the people diverse in socio-economic characteristics, but they are diverse in choices of lifestyles, with some preferring city living, others preferring the suburbs, and still others demanding rural living with ample open space.
- Recreation choices are equally diverse. Goals for the provision of parks and recreation facilities must consider this diversity, as attempts are made to improve the quality of life for all residents. Four specific goals are outlined as follows:
  - Provide a variety of land and water areas adequate in size and strategic in location for leisure pursuits and visual enhancement, and conservation for present and future generations.
  - Provide diverse facilities and programs to meet the basic recreational interests of children, teenagers, and adults, recognizing the special needs of the elderly, the disadvantaged, and the handicapped. Such facilities and programs shall be located conveniently and distributed equitably.
  - Utilize the county's natural features and people resources to develop a variety of unique, specialized, and innovative leisure opportunities which are educational, recreational, and fulfilling.
  - Offer programs, services, and facilities which complement and supplement those provided by other public and private agencies. Actively work toward the eventual consolidation of all local government recreation and open space programs within Forsyth County.

**Parks And Recreation Plan**

Public parks and recreation areas, major private and quasi-public resources, and future areas of recreational need are dispersed throughout the county (Map 11.1). The parks and recreation plan emphasizes two concepts: First, a system of traditional nearby parks and facilities offering a variety of active recreation opportunities for urban and urbanizing areas. This is the system of district, neighborhood, and community parks, supplemented by school grounds, playlots and small parks. Most of these resources already exist. The second concept is a system of countywide parks and open space areas, including multipurpose large parks and special facilities which already exist, and a new subsystem of resource oriented parks for preservation of open space, such as greenways and watercourses.

**GREENWAYS AND OPEN SPACE**

A greenway is defined as linear open space along a natural or human-made corridor which may be used for passive recreation. The "Central Area Action Plan" of the Winston-Salem/Forsyth County Growth Strategy encourages the development of greenways for recreation and the protection of water supply watersheds and flood prone areas. Specifically, the plan calls for the linking of environmental goals with recreation and land use development objectives to provide a visible network of pedestrian/riding trails and other recreation along floodplains.

The Salem Creek Trail, extending from Marketplace Mall to Salem Lake, was chosen as the pilot project for the Greenway System. Work on this project began officially in the fall of 1984, with the formation of the Salem Creek Greenway Study Team, and construction on the project began in the fall of 1985. The first 1.5 mile section of eight foot wide asphaltered trail was officially opened in May 1986, and two additional miles were constructed in 1987. When completed, this project, along with the strollway, will help promote the redeveloping South Marshall area and provide the "Institutional Triangle," composed of Winston-Salem State University,
Salem College, and the North Carolina School of the Arts. Planning for a second project, Bethabara Trail in northwestern Winston-Salem, is currently underway.

**Issues**

There is a projected need for significant additional recreational acreage. By 2005, there will be a deficiency of approximately 1,500 acres (Table 11.3). The Winston-Salem/Forsyth County Growth Strategy recommends that some of the overall acreage needs for active recreation be made up in a more continuous network, such as walking and biking trails. Such a network would also provide safe, off-road transportation to existing recreational facilities and other destinations for all citizens, especially the elderly and children.

A second problem is the need for protection of flood prone areas and water supply watersheds. Floodplains function to store water during heavy rains and prevent flooding. If they are disturbed by development, the result can be flooding, erosion, and sedimentation problems downstream. Use of floodplains for greenways, rather than development, preserves their floodwater storage
function and has other environmental benefits, including reduced noise pollution, soil erosion, and water and air pollution.

Goals

With the first section of Salem Creek Trail now successfully completed, planning is underway for an extensive Winston-Salem/Forsyth County Greenway System. The following are the general goals for development of that system:

- Provide a system of greenways for needed opportunities for passive recreational activities, such as walking, running, biking, and picnicking.
- Provide a safe transportation alternative linking parks, schools, institutions, shopping, and other points of interest with each other and neighborhoods.
- Control flooding, soil erosion, and sedimentation by preserving floodplains in a natural state.
- Preserve a habitat for wildlife.
- Conserve open and green space to provide separation and buffering between neighborhoods, increasing the livability of urban areas.

GREENWAY SYSTEM PLAN

The Greenway System can provide a variety of trail types, from essentially undeveloped to very formal pathways, such as the Strollway now being constructed from downtown Winston-Salem to Old Salem.

The following list identifies a hierarchy of greenway types which were used in developing the Greenway Plan:

Level 1. Unimproved easement or floodplain space.

Level 2. Easement or floodplain space with marked, unmaintained trails.

Level 3. Cleared, maintained trails.

Level 4. Improved trail with gravel or mulch surface.

Level 5. Paved trail, two lanes.

Level 6. Formal pathway with design elements such as bricked walks, landscaping, lighting, etc.

For floodplain protection, all floodplains in the county are designated as Level 1 greenways. With this designation, a comprehensive program for land and/or easement acquisition in both flood prone areas and future trail corridors will be developed. The hierarchy also allows mobility so that as monies become available to support a more developed greenway, improvements to the system may be made.

Because of the large number of potential greenway projects and limited funding, the following criteria have been used in developing the proposed greenway plan:

- Formal requests for greenways by neighborhood groups.
- Access provided to facilities, points of interest.
- Service population, neighborhoods served.
- Overall system linkage provided.
- Amount of land owned or acquired by City/County.

All potential major greenways being considered for the Greenway

<table>
<thead>
<tr>
<th>TABLE 11.4</th>
<th>RECOMMENDED GREENWAY PHASING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PHASE I</strong></td>
<td><strong>PHASE II</strong></td>
</tr>
<tr>
<td>Brushy Fork Creek (A)</td>
<td>Muddy Creek (D)</td>
</tr>
<tr>
<td>Mill Creek (A) &amp; (B)</td>
<td>Peters Creek</td>
</tr>
<tr>
<td>Silas Creek (B) &amp; (C)</td>
<td>Salem Creek (B)</td>
</tr>
<tr>
<td>Muddy Creek (C)</td>
<td>Kerners Mill Creek</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: City-County Planning Board.
System and the factors considered in prioritization for the greenway program have been arrayed in a matrix (Figure 11.1). The matrix divides some of the longer potential greenways into subsections. The total length of the Greenway System being considered is approximately 120 miles: 107 miles along major greenway corridors, and thirteen miles on tributaries connecting to these corridors.

The plan assumes the commitment already made to the 4.5 miles of the pilot Salem Creek Trail and the 5.8 miles of the Bethabara Trail. Based on an analysis of information provided, phasing for the remainder of the projects is recommended (Table 11.4).

A connection to Tanglewood Park has been proposed, though no route is identified (Map 11.1). Another consideration is future linkage to a regional system of trails, as High Point and Greensboro expand their greenway systems. The Yadkin River could also provide greenway linkage to surrounding counties.

**YADKIN RIVER CONSERVATION AREA**

The Yadkin River is an important water and recreational resource for Forsyth County and has been identified as a conservation area in the Growth Management Plan. The problems, issues, and recommendations...
### Figure 11.1
Funded and Proposed Greenway Trails

<table>
<thead>
<tr>
<th>Trail Name</th>
<th>Origin/Destination</th>
<th>Sections</th>
<th>Neighborhoods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bethabara Trail</td>
<td>Historic Bethabara Park/Schaffner Park</td>
<td>(1) Muddy Cr. to Hobby Park 2.8 miles</td>
<td>Bethabara, Minocaras Creek, Valley View, Town and Country Estates, Belvedere Estates, Hope Valley, Stonewall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) Hobby Park to Marketplace Mall 4.1 miles</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) Marketplace Mall to Salem Lake Park 4.5 miles</td>
<td></td>
</tr>
<tr>
<td>Salem Creek</td>
<td>Muddy Creek/Salem Lake Park</td>
<td>(1) Salem Creek at Stadium Drive to Winston Lake 2.3 miles</td>
<td>British Woods, Ardmore, Shalimar, Happy Hill, Washington Park, West Salem</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) Winston Lake to Mill Creek 4.5 miles</td>
<td></td>
</tr>
<tr>
<td>Brushy Fork Creek</td>
<td>Mill Creek, south of NC 66/Salem Creek</td>
<td>(1) Old Greensboro Rd. to US 158 2.0 miles</td>
<td>Angel Acres, Wildwood Estates, Walkertown</td>
</tr>
<tr>
<td>Grasssy Fork Creek</td>
<td>Summit Street in Rural Hall/Becks Church Rd. at Mill Cr.</td>
<td>(2) US 158 to Walkertown 2.5 miles</td>
<td></td>
</tr>
<tr>
<td>Kerners Mill Creek</td>
<td>Cherry Street in Kernersville/Salem Lake at Linville Road</td>
<td>(3) University Parkway to Walkertown 6.9 miles</td>
<td>Woodbridge, Guthrie, Post Oak, Timber Trail, Christy Acres, Kernersville</td>
</tr>
<tr>
<td>Lowery Creek</td>
<td>Walkertown/Salem Lake at Old Greensboro Rd.</td>
<td>(1) Muddy Cr. to Reynolds Rd. 3.0 miles</td>
<td>Town and Country Estates, Holly Hills, Valleyview, Bethabara, Walkertown</td>
</tr>
<tr>
<td>Mill Creek</td>
<td>Walkertown/Muddy Creek</td>
<td>(2) Reynolds Rd. to University Pkwy. 2.9 miles</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) University Parkway to Walkertown 6.9 miles</td>
<td></td>
</tr>
<tr>
<td>Muddy Creek</td>
<td>Bethania/Davidson County</td>
<td>(1) Davidson County line to US 158 3.0 miles</td>
<td>Clemmons, Sherwood Forest, Huntcliff, Old Town, Shattalon Grandview, Bethania</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) US 158 to US 421 3.9 miles</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) US 421 to Robinhood Rd. 3.4 miles</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4) Robinhood Rd. to Bethania at NC 65 4.5 miles</td>
<td></td>
</tr>
<tr>
<td>Peters Creek</td>
<td>University Pkwy-North Winston/Marketplace Mall</td>
<td>(5) Muddy Creek to NC 150 5.4 miles</td>
<td>West End, Ardmore, Crystal Towers, North Winston</td>
</tr>
<tr>
<td>Salem Lake</td>
<td>Salem Lake Park</td>
<td>(2) NC 150 to NC 109 4.4 miles</td>
<td>Woodbridge, Shalimar</td>
</tr>
<tr>
<td>Silas Creek</td>
<td>Schaffner Park/Muddy Creek</td>
<td>(3) NC 109 to Union Cross Rd. 5.6 miles</td>
<td>Hampton Woods, Westbrook, Peachaven Estates, Sherwood Forest, Ashley Forest, Hope Valley, Gordon Manor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4) Muddy Creek to NC 150 5.4 miles</td>
<td>Shore Acres, Pinedale Manor, Wilshire, Union Ridge</td>
</tr>
<tr>
<td>S. Fork/Fiddlers Creek</td>
<td>Union Cross Rd in Abbotts Cr. Township/Muddy Creek</td>
<td>(2) NC 109 to Union Cross Rd 5.6 miles</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) Muddy Creek to NC 150 5.4 miles</td>
<td></td>
</tr>
<tr>
<td>Little Creek</td>
<td>Muddy Creek/Artwood Acres-Salem Woods Park</td>
<td>(4) NC 150 to NC 109 4.4 miles</td>
<td>Atwood Acres, Salem Woods</td>
</tr>
<tr>
<td>POINTS OF INTEREST</td>
<td>LINKS TO OTHER GREENWAYS</td>
<td>CONNECTORS</td>
<td>TOTAL LENGTH (MILES)</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>-----------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Historic Bethabara Park, Reynolds Village, Reynolds Manor Branch Library, Schaffner Park, Speas Elementary School, Polo Park, Wake Forest University</td>
<td>Mill Creek</td>
<td>Bethabara Branch 2.0 miles</td>
<td>8.3</td>
</tr>
<tr>
<td>Winston-Salem State University, Old Salem, Forsyth Technical College, Marketplace Mall Parks: Hobby, Washington, Civilian, Central, Salem Lake, Happy Hill Reynolds</td>
<td>Muddy Creek, Peters Creek, Brushy Fork Creek Salem Lake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winston-Salem State University, Winston Lake Park, Skyland Park, I-40 Industrial Park, Carver High School</td>
<td>Salem Creek Mill Creek</td>
<td>Frazier Creek 1.5 miles</td>
<td>9.30</td>
</tr>
<tr>
<td>Nature Science Center Hanes Weeks Plant</td>
<td>Mill Creek</td>
<td></td>
<td>4.7</td>
</tr>
<tr>
<td>Salem Lake Park East Forsyth High School Kernersville Greenway system</td>
<td>Salem Lake Trail</td>
<td></td>
<td>5.2</td>
</tr>
<tr>
<td>Salem Lake Park Walkertown Elementary</td>
<td>Salem Lake Trail Mill Creek</td>
<td>Martin Mill Creek 3.5 Miles</td>
<td>8.0</td>
</tr>
<tr>
<td>Schools: Mt. Tabor, North Forsyth, Walkertown Elementary, Historic Bethabara Park Madison Park Hanes Weeks Plant Pinebrook Country Club Nature Science Center</td>
<td>Muddy Creek Grassly Fork Creek Brushy Fork Creek Lowery Mill Creek Bethabara Trail</td>
<td>Pettee Creek 1.5 miles Brenner Lake Branch 1.2 miles Leak Fork Creek 0.9 miles</td>
<td>17.6</td>
</tr>
<tr>
<td>Bethania Grandview Golf Course Pfafftown</td>
<td>South Fork/Fiddlers Creek Salem Creek Silas Creek Mill Creek</td>
<td>Muddy Creek tributary 1.2 miles Muhaven 2.2 miles Bear Creek 2.5 miles</td>
<td>20.4</td>
</tr>
<tr>
<td>Hanes Park, Hanes Dye and Finishing, Brunson Elementary, Wiley Middle School, Reynolds High School, YMCA-YWCA, Marketplace Mall</td>
<td>Salem Creek</td>
<td>Hanes Park Branch 1.5 miles</td>
<td>4.4</td>
</tr>
<tr>
<td>Salem Lake Park</td>
<td>Salem Creek Lowery Mill Creek Kerners Mill Creek</td>
<td></td>
<td>14.0</td>
</tr>
<tr>
<td>South Fork Park South Fork Elementary Shaffner Park, Sherwood Elementary, Forsyth Country Club</td>
<td>Bethabara Trail (funded) Muddy Creek</td>
<td>Buena Vista Creek 0.4 miles</td>
<td>6.2</td>
</tr>
<tr>
<td>Wildshire Golf Course Stroths Brewing Company</td>
<td>Muddy Creek</td>
<td>Hines Lake Branch 1.3 miles</td>
<td>16.7</td>
</tr>
<tr>
<td>Atwood Acres-Salem Woods Park</td>
<td>Burke Creek/ Muddy Creek</td>
<td>Atwood Creek 0.7 miles</td>
<td>2.5</td>
</tr>
</tbody>
</table>
dealing with the Yadkin River as a water supply are detailed in Chapter 4: Environmental Quality. The Yadkin River as an open space and recreational resource is addressed in this section.

Forsyth County currently has two parks along the Yadkin River, at Old U.S. 421 and Tanglewood. The Donnaha Bridge Park, which borders Forsyth County, is operated by Yadkin County. The parks provide access to the Yadkin River canoe trail which runs from the W. Kerr Scott Reservoir near Wilkesboro to the High Rock Reservoir south of Lexington.

**Issues**

Regional and State agencies, public and private, such as the Northwest Piedmont Council of Governments, the North Carolina Department of Natural Resources and Community Development, the Yadkin River Trail Association, the Yadkin-Pee Dee River Basin Committee, and others, have been working on the protection of the Yadkin River for a number of years. The need for all counties adjoining the Yadkin River to take more local protection measures, particularly an urban county such as Forsyth County, is becoming more critical. Several issues need to be addressed:

1. Point and non-point pollution
2. Floodplain protection
3. Types and intensity of development near and along the river
4. Steep slopes/escarpments
5. Significant natural areas
6. Historic areas
7. River access
8. Recreation, passive and active
9. Greenways as possible regional links

The issues break down into two major categories: The amount of land and the treatment of the land comprising the conservation area; and, the recreational facilities to be provided in the conservation area.

**FARMLAND PRESERVATION**

The Forsyth County Farmland Preservation Program is an adopted strategy for preserving open space, prime farmland, and viable agricultural activities in the rapidly urbanizing Winston-Salem/Forsyth County community. The farmland preservation effort is composed of three program elements: (1) a purchase of development rights program; (2) a policy on impact review of local government projects; and, (3) revisions to the comprehensive plan and zoning ordinances.

Under the purchase of development rights program, the County purchases or leases from farmland owners the rights to develop land for non-farm purposes and then renews those rights. The farmland owner retains all rights to use the land for purposes and activities related to agriculture and open-space. Purchasing development rights to farmland and open-space has a number of advantages. The program is voluntary; the farmland owner is compensated for the sale of the development rights; farmland and open space are preserved permanently; and, farming and farm-related activities continue on the land. To date, development rights have been purchased or leased on six farms totaling 502 acres, and contracts are pending on an additional 138 acres.

The second element of the farmland preservation program is a procedure for reviewing the impact of local government decisions on the availability of farmland. The construction of highways, the provision of sewer and water, and the impoundment of reservoirs are some of the most obvious actions that affect farmland. The Forsyth Soil and Water Conservation District Board of Supervisors reviews the ongoing actions of local governmental agencies and advises the Board of County Commissioners of any actions which might threaten prime farmland, and suggests less harmful alternatives to those actions.

The third element is inclusion in the comprehensive plan of proposed development patterns and land use policies that support and reinforce the purchase of development rights program. These revisions include adjustments to the urban services district and a strengthening of rural zoning categories.

The Growth Management Plan proposes a number of policy guidelines that will reinforce and support
the Farmland Preservation Program. The Rural Area, specifically, seeks to retain farming activities and preserve the natural environment.

RECOMMENDATIONS

Parks and Recreation
- New recreation sites should be identified and land acquired in advance of need to achieve the best locations.
- Sustain local government funding sufficient to match other sources of funds; as the opportunity arises, in conformity with adopted priorities; and pursue a program of land acquisition, facilities construction, and program administration in the absence of outside funding.
- Provide financial support for leisure opportunities available through the historical, cultural, and educational resources of the community.
- Develop mechanisms for public participation in recreation planning.
- Identify and draw into recreational programs local individuals and groups with capabilities for devising and leading unique leisure experiences.
- Develop an administrative mechanism for cooperating with the School Board in selecting, designing, and developing new sites and buildings, providing adequate facilities on existing sites, and making dual use of facilities, and sponsoring joint programs.
- Cooperate with the Library Board and other public agencies to expand cultural resources and programs, extending their availability.
- Cooperate with nonpublic groups in the provision of open space/leisure opportunities.
- Make temporary recreational use of existing publicly owned land acquired for other purposes.
- Identify, conserve, and enhance natural resources with unique recreational value.
- Experiment with ways, other than full purchase, to bring open space into public ownership or control.
- Provide incentives and controls to encourage owners of private property to preserve open space as a visual amenity.
- Encourage implementation of county intergovernmental, regional, State, and federal park and watershed proposals which affect local residents.
- In the planning and administration of recreational programs and facilities, keep open communication among local governments in Forsyth County toward cooperative provision of leisure services and a consolidation of services.
- Expand and strengthen the Planning Board and intergovernmental review processes for capital improvement projects.
- Review, evaluate, and, if needed, update, and re-adopt standards for publicly owned acreage for recreation and open space, convenient and equitable site location, and facilities for recreational programs.
- Define governmental levels of responsibility for provision of open space/recreational opportunities, avoiding duplication of facilities and programs in different jurisdictions.
- As a part of zoning and subdivision processes, develop local options for developer participation in recreation provision, such as those recommended in the Country Club/Jonestown and Robinhood Road Area Plans.
- The City-County Planning Board, in conjunction with local recreation departments, should prepare and recommend to the governing bodies updated Open Space and Recreation Plans.
- Countywide citizen recreation attitude surveys should be conducted at least every five years, with selected sampling biannually.
- Local recreation departments should work with each other, FIRSTline, the Arts Council, and others to develop a directory of recreation resource persons.
- Establish a Recreation Consolidation Study Committee with representatives from the Planning Board, local governments, recreation departments, and the general public.

Greenways
- A citizen based Greenway Commission should be formed to guide in the development of greenway policies. This commission would serve as the
liaison to neighborhoods in which greenways are proposed.

- Greenways should be developed in sewerable basins where growth is encouraged and population exists to support them. Phasing of the greenway program will be related to the Growth Management Plan.
- In conjunction with the floodplain protection recommendations, all designated floodplains in Forsyth County should be considered as greenways, addressing the dual purpose of recreation and floodplain protection.
- The City and County zoning and subdivision ordinances should be revised to require the dedication of greenway easements along floodplains. At a minimum, a 40-foot easement should be dedicated for trail purposes. Larger easements may be required for floodplain protection purposes.

- Dedication of easements should be required along minor streams, tributaries, or other linear features which are identified as possible neighborhood connectors to major greenways.
- All land or easement donation options should be made available to land owners. North Carolina provides tax credits for gifts of land for greenway and conservation purposes.
- A manual outlining development standards, maintenance standards, the trail development process, graphic standards for signage, and operational policies should be prepared.

Yadkin River Conservation Area

- Study other river conservation areas to determine possible strategies and alternatives, such as acquisition, obtaining of easements, or performance standards implemented by ordinance.
- Define the criteria for determining the boundary of the Yadkin River Conservation Area.
- Determine the recreational needs of the defined area.
- Choose strategies for implementing the conservation area and recreational facilities.
- Promote those environmental strategies which will protect the Yadkin as a recreational and natural resource.

Farmland Preservation

- Develop and support policies for the Rural Area that will reinforce the purchase of development rights program.
- Coordinate the Farmland Preservation Program with other local, State, and federal conservation efforts.
A service or facility that a few years ago was a luxury may now be regarded as a necessity.

— FRANK S. SO
tion Program for high school students who cannot function well in the regular school program; and, the Career Center, special career development for grades 10 through 12. The School Board utilizes independent school districts for all grade levels. Moore and Kimberly are elementary alternative schools. South Park and the Optional Education Program draw students from throughout the county. The Career Center serves students from all high schools.

**FUTURE PUBLIC SCHOOL SPACE NEEDS**

To project future public school space needs, a number of assumptions must be made, including assumptions about federal and State tax policies for private schools, dropout rates, standards related to classroom and total school size, and local School Board initiatives. The following assumptions were made in projecting school space needs: (1) There will be no drastic changes in federal and State tax policies concerning private schools; (2) the dropout rate will not change significantly, with continued local innovations, such as the Career Center and Optional Education, plus an improved curriculum, the rate may decrease slightly; (3) no major changes will be made in classroom and school size standards; and, (4) private schools, both parochial and secular, will continue to be an educational alternative.

In 1980, the school age population, those 5 to 17 years of age, was 49,155. Future school age projections are 43,811 in 1995 and 43,393 in 2005. Only 82 percent of the school age population are expected to be enrolled in the public school system due to dropouts, enrollment deadlines, and private school enrollment.

The approved school size ranges provide the basis for future public school capital needs projections (Table 12.1).

In total, the City-County system has adequate facilities to meet future needs. However, some parts of the county are growing rapidly, causing overcrowding at selected schools. Elementary schools in the eastern part of the county, particularly Kernersville, exceed school size guidelines to the extent that a new school is needed now. In addition, several school buildings are recommended for replacement because of age and poor structural conditions, including Forest Park and Walkertown.

**INSTITUTIONS OF HIGHER EDUCATION**

**Existing Situation**

Forsyth County is home for both State and private institutions of higher learning: North Carolina School of the Arts, Winston-Salem State University, Salem College, Wake Forest University, Winston-Salem Bible College, and Piedmont Bible College. These institutions of higher education are expected to continue to grow over the next two decades. Salem College, Wake Forest University (Reynolda Campus), and the School of the Arts will grow on existing campuses. Those with campus expansion needs are Winston-Salem State University, Piedmont Bible College, and the Wake Forest University (Hawthorne Campus). These schools are expanding by acquisition and conversion of surrounding properties.

Industrial and technical training centers include: Forsyth Technical College, City-County School Board's Career Center, Piedmont Aerospace Institute, Draughon Business College, Rutledge College, two commercial barber schools, and other facilities.

**Future Space Needs**

Little additional land for long-range expansion for most of these smaller schools is anticipated, nor are any major new schools anticipated. As enrollment grows, on-site expansion is expected. On the other hand, Forsyth Technical College has already expanded off-site with the acquisition of Dalton School west of Silas Creek Parkway. The public school system provides most of the technical business training. Specialized training for some manufacturing occupations is also conducted on the job. Training in office skills is given frequently in office buildings and at other business locations.

**PUBLIC LIBRARIES**

**Existing Situation**

The Forsyth County Public Library System consists of the Main Library and eight branches (Map 12.1). The Main Library, located downtown, headquarters the system's administrative units and the bookmobile. Four branches are in Winston-Salem, and other branches are in Clemmons, Kernersville, Lewisville and Rural Hall. In addition, the Public Library sponsors mini-libraries at three recreation centers in Winston-Salem: Happy Hill, M. L. King, and Sprague.

**TABLE 12.1**  
**PUBLIC SCHOOL NEEDS, FORSYTH COUNTY, 1995 AND 2005**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Elementary &amp; Middle</td>
<td>25,926</td>
<td>25,510</td>
<td>32 to 52</td>
<td>32 to 51</td>
</tr>
<tr>
<td>10*</td>
<td>High Schools</td>
<td>11,230</td>
<td>11,262</td>
<td>6 to 9</td>
<td>6 to 9</td>
</tr>
</tbody>
</table>

* Including South Park High and Optional Education Programs; does not include Career Center.

Source: Grade level and school size standards adopted by the Winston-Salem/Forsyth County Board of Education in 1983, City-County Planning Board school enrollment projections.
Future Library Space Needs

Based on population projections, the existing library system with some expansion can serve well through the planning period. Two Winston-Salem branches, Reynolda Manor and Thru-way, each need about 4,000 additional square feet of floor area to meet space standards. Neither can make the necessary expansion at its current location. As the population of Lewisville increases, the demand for more extensive library service will increase as well. In total, nine or more acres will be required to accommodate these branches as they become full service facilities. In addition, the northeastern parts of Winston-Salem and Forsyth County are currently without nearby library facilities. The need for branches to serve these areas should be studied.
CULTURAL RESOURCES

Existing Situation

Forsyth County is replete with cultural resources: Art and Crafts Association, Arts Council and its member agencies, Bethania Restoration, Historic Bethabara, Little Theater, Museum of Man, Museum of Southern Decorative Arts, Nature Science Center, Old Salem Incorporated, R. L. Stevens Center for the Performing Arts, Reynolda House, Southeastern Center for Contemporary Art, numerous commercial art galleries, and others, including community serving facilities and programs in the local schools, colleges, and universities (Map 12.1).

Future Space Needs

No standards exist for the provision of cultural activities. Rather, the community has pursued a policy, originated and nurtured in the private sector, of innovation and maximization of local cultural enrichment opportunities. Most often the land or buildings which provide cultural opportunities were donated privately to a public agency or were developed on publicly owned property.

HEALTH CARE

Existing Situation

Forsyth County's health care resources include the following: North Carolina Baptist Hospital/Bowman Gray School of Medicine of Wake Forest University, which provides a multi-state referral service (701 beds); Forsyth Memorial Hospital, general services (896 beds including bassinet); Medical Park Hospital, elective surgery (136 beds); Mandala Center Hospital and Clinics, psychiatric services (99 beds); Reynolds Health Center, outpatient family medicine, analytical laboratory, immunization programs, and public health nursing services; Hospice program, Public Health Department, and Mental Health Department.

Health Care Space Needs

Standards for health care facilities change with the characteristics of the population and advances in medical science. While no new hospitals are anticipated over the next twenty years, expansion of Baptist Hospital and Forsyth Memorial Hospital are expected (Ardmore Area Plan, 1985). Baptist Hospital will expand into the adjacent residential area of Ardmore, and housing displacement will result. Forsyth Memorial Hospital's campus is expected to accommodate necessary growth during the planning period, although parking decks to replace surface parking may be needed for a major expansion.

The number of privately operated convalescent centers will increase as the population ages and grows. The need will be met partially in congregate housing for the elderly; part, in converted private dwellings; and part, through new or expanded programs emphasizing home care as opposed to institutional care. However, there will be a need of six to eight new institutional facilities for the elderly over the next twenty years. Each new facility will require three to five acres of land, totaling some eighteen to forty acres.

PUBLIC SAFETY

POLICE PROTECTION

Existing Situation

Forsyth County residents are protected by over 500 sworn officers in various jurisdictions utilizing approximately 250 marked cars. Police service is provided by three local jurisdictions, with support from the State Highway Patrol, the State Bureau of Investigation, and the Federal Bureau of Investigation. The Winston-Salem Police Department, headquartered at the Public Safety Building at Cherry and Eighth Streets, serves the city. The Kernersville Police Department is headquartered in the Kernersville Town Hall. Rural Hall, Walkertown, and Clemmons and the unincorporated areas of Forsyth County are served by the Forsyth County Sheriff's Department. Stationed at the Hall of Justice in Winston-Salem's downtown, the Sheriff's Department is also responsible for the County Jail and court room security in Winston-Salem and Kernersville.

Police Department Space Needs

Currently, ten different locations are used for police, sheriff, and fire
training. Winston-Salem uses eight locations for training police and fire personnel including a pistol range in Clemmons, the Coliseum parking lot, the National Guard Armory on Silas Creek Parkway, and classroom facilities in downtown Winston-Salem. Forsyth County and Kernersville share many of these facilities. In addition, Forsyth County has a fire training facility south of the Elledge Treatment Plant off West Clemmonsville Road. Kernersville has a firing range located near the Guilford County line.

A recent government space study concluded the need for expansion or replacement of the County Jail. The County is cooperating with the State to determine specific expansion needs.

FIRE PROTECTION
Existing Situation

Fire protection facilities include fire stations, training facilities, and headquarters offices. Fifteen fire stations are located in Winston-Salem, two in Kernersville, one in Rural Hall, and nineteen volunteer stations in the suburban and rural areas of Forsyth County. Two fire stations, located outside Forsyth County, have service areas which include portions of Forsyth County: the King station in Stokes County serves portions of Old Richmond and Bethania Townships, and the Gumtree station in Davidson County serves a portion of Broadbay Township.

Through a mutual aid agreement, City and County fire services provide backup for each other. The volunteer stations with service areas bordering neighboring counties will provide service across boundaries, if needed. The Hornetown station will serve neighboring Guilford and Davidson Counties; the Griffith station has a service area that extends into Davidson County; and the Clemmons station serves portions of Davie County. Most volunteer fire stations are financed with County general funds and Fire Tax Districts, as well as service area contributions.

Scattered areas within Forsyth County are not located within a five mile fire service district. To locate stations in these areas, giving them the fire insurance rating, would not be feasible economically because most are sparsely developed and could not support a volunteer fire station.

Headquarters for the Forsyth County Fire Department is located at Smith Reynolds Airport in the northeastern part of Winston-Salem. The County's fire training facility is located south of West Clemmons Road near Salem Creek. The City headquarters shares space at the Public Safety Building at Eighth and Cherry Streets. Winston-Salem's fire training facility is on Silas Creek Parkway near Forsyth Technical College. The City and County cooperate in the use of training facilities.

Fire Protection Space Needs

Criteria for fire service are based on two sets of standards: Volunteer fire service standards are based on a travel distance of five road miles from the station site. This standard is set by the State Insurance Rating Bureau. Winston-Salem uses the following standards:

1. Response time of four minutes, plus or minus one minute depending on risk factors.
2. Risk factors include: Population density, the proximity of schools, hospitals, and shopping centers, building conditions, internal fire protection, building height, building density, and potential dollar loss.
3. A citywide configuration which permits two or more companies to converge on a fire from different directions.
4. A computerized fire station locator model is used to assess city fire protection needs. In 1976, a plan was adopted by the Board of Aldermen that called for six new fire stations to be built in or within one mile of the city, and two existing stations to be relocated. Since 1976, five new stations have been built, and one station has been relocated. When this plan is completed, fire service will meet the city's needs into the next decade. The new stations, primarily located near the city limits, can serve areas which will be annexed. Assuming an average site size of one-half acre for an urban fire station site, completion of the 1976 plan will require one additional acre of land and two buildings.

Outside Winston-Salem, long-range fire protection needs include: A new or renovated station for Rural Hall; two additional sites for Kernersville; and, two to four stations in the outlying areas of the county. New stations require two acres for rural sites. Thus, the long-range need for unincorporated Forsyth County will be six to eight acres of land and four to six buildings.

As Winston-Salem and other municipalities annex adjacent areas, the service areas of nearby volunteer fire stations are reduced. This in turn reduces the ability to generate revenues. Those stations not within a fire tax district often face financial hardships.

GOALS FOR THE PROVISION OF COMMUNITY FACILITIES

The basic mission of local government is to improve the quality of life for those governed. The availability of an array of community facilities and services is a major determinant in quality of life. The following goals for the provision of community facilities address three areas: (1) Cost effectiveness; (2) equity in the delivery of services; and, (3) quality of service.

- Provide needed community facilities and services in a cost effective manner by determining future needs and by balancing protection of existing resources with new needs and opportunities.
- Provide community facilities and services in an equitable manner,
taking into account the total population, its characteristics, and its distribution.

- Enhance the community’s livability by providing high quality facilities and services in the county.

RECOMMENDATIONS

- Most service facilities should be limited to urban growth areas where the most people can be served with the least amount of transportation and with the fewest satellite installations.
- Costs of construction and operation of facilities should be minimized by providing an adopted service level throughout the urban growth areas.
- Appropriate service levels should be established for nonurban services.
- Decisions to construct new facilities or to abandon existing facilities should be made in the context of long-range changes in the number, composition, and location of the population.
- Shared use of facilities by two or more governmental agencies and by the public and private sectors should be fostered.
- The role of the private sector in providing community facilities should continue to be fostered.
- The government’s role should be reaffirmed as provider for those who do not have access to private facilities and services, with the cost of facilities and services spread among those who benefit directly and indirectly.
- Facility expansion needs, coupled with the uncertainty surrounding federal, State, and local school policies, birth rates, future technology and innovation, and other factors influencing public school enrollment, demand that the School Board retain selected surplus school sites. Although cross bussing negates the need to have a school in every neighborhood, sites located near the fringes of the city might be especially critical in the future.
- Winston-Salem, through its community development and zoning activities, should continue to assist local institutions in meeting land and facility expansion needs.
- The Forsyth County Public Library System, with assistance from the City-County Planning Board, needs to begin to investigate alternatives for expansion and/or relocation of Reynolda and Thruway branches.
- Detailed analysis is needed to determine if a branch library is needed in northeastern Winston-Salem.
- The City-County Planning Board and local governing bodies should continue to work with local hospitals and other health care providers to meet land expansion needs.
- Currently Winston-Salem is formulating proposals for a new centralized Career Development and Public Safety Training Center. Conceptual plans for the facility include: Classrooms, firing ranges, obstacle driving ranges, a tear gas chamber, fire and smoke towers, gym(s), outdoor tracks, and various types of burn facilities. Approximately 100 acres will be needed for the facility. Winston-Salem should continue to cooperate with Forsyth County and Kernersville in the utilization of training facilities. A centralized training facility of 100 acres or more should serve beyond the planning period.
- A number of minor public safety space needs could surface as development continues. Depending on population densities in specific areas, small satellite police stations may be needed in the future. The feasibility of fire stations doubling in this function should be explored.
- The 1976 fire station locator model should continue to be updated and expanded to reflect projected growth areas.
CHAPTER 13
HISTORIC PRESERVATION

When we build, let us think that we build forever.
— JOHN RUSKIN
character, historical significance, the building's significance to the surroundings, or a style representative to the Piedmont or Forsyth County. Approximately 1,200 properties were documented during the inventory, over 200 of which have sufficient historical or architectural significance to warrant possible local or national designation.

In 1976, the governing boards passed local legislation which established the Historic Properties Commission, a representative board charged with the identification and protection of local historic properties. The Commission's jurisdiction is countywide. In addition to community education and awareness, the Commission has the authority to review and to recommend a property to the governing boards for designation as a Local Historic Property. Such designation provides the property owner the opportunity to apply at the Tax Office for a property tax deferral of up to 50 percent. Once designated, the Commission retains architectural governance over the property. This local incentive program is an innovative and positive step taken by the governing boards, especially with recent cutbacks in federal tax incentive programs. As of January 1988, 72 properties have received such designation. During the past year, the Historic Properties Commission has prepared a long-range Preservation Plan which outlines the goals and objectives of the Commission and future programs, many of which are incorporated in recommendations to follow.

Forsyth County also has several locations which have a high concentration of historic properties, such as Old Salem and Bethabara. To provide adequate protection of these areas, a historic (H) zoning district was established and applied to Old Salem and Bethabara. The district designation establishes both land use and redevelopment standards, and gives complete review authority to Forsyth County's second official preservation body, the City of Winston-Salem Historic District Commission. The Historic District Commission is a five member board given the authority to review and to approve any and all exterior changes to both buildings and properties located within the boundaries of a designated historic zoning district.

Several other private preservation organizations are active within Forsyth County: Kernersville Historic Preservation Society; Old Salem, Inc.; Historic Bethabara, and others. These private groups are often oriented to a specific project or area, but the cumulative effect adds significantly to the community's overall preservation efforts.

ISSUES

While much has been done to preserve local architecture and history, many opportunities still exist to further preservation effort programs. The past successes should only strengthen the community's desire and vision of the ultimate potential of historic preservation.

Historic Districts

The approval of local historic district designation for Old Salem and Bethabara was one of the earliest and most significant steps taken to preserve community heritage. Very stringent, thorough controls and standards apply which insure restoration to a museum-quality village environment. Recent planning studies have identified the need for similar safeguards for other areas of the county (Map 13.1).

Identified areas include portions of downtown Winston-Salem, several of Winston-Salem's center-city neighborhoods (West End/Crystal Towers, Washington Park, Holly Avenue), Kernersville's South Main Street area, Bethania, certain areas within Pfafftown and Clemmons, and others. While the existing "H" zoning district standards may be appropriate for some areas, such as Bethania, others may be best suited for new, more flexible standards while maintaining some architectural and design control. A place where this has been done successfully is the "Victorian Historic District" in Savannah, Georgia. National Register Historic District classification should also be pursued for all eligible areas of the county. Old Salem, Bethabara, Bethania, and West End/Crystal Towers are already designated, and Kernersville's South Main Street area has been nominated. Winston-Salem's downtown area and the Washington Park neighborhood have both been identified as being eligible for national designation.

Planning For Preservation

Preservation should become a more integral part of the community's planning process. The Planning Board
presently staffs both the local Historic Properties and Historic District Commissions with a full time historic preservation planner. A study should be undertaken to consider the linkage of the resources of the community's two preservation commissions either through consolidation or establishment of a closer working relationship.

**Black History**

While preservation programs have succeeded in certain areas of the community, in others such is not the case. Many of the city's black neighborhoods lost much heritage and identity due to the decline of the inner-city neighborhoods and the urban renewal programs which followed. Many structures and institutions which played an important part in the cultural and social growth of these areas were lost. A blind approach of total land clearance had little or no sensitivity to elements that were significant to local black history and neighborhood identity. An increased emphasis on retention and promotion of the heritage of all the city's neighborhoods, particularly the black inner-city areas, should be stressed through the planning process, goals of the official commissions, and policies of the governing boards. Area plans, special site and design studies, and the sale of community development and urban renewal lands should stress the social, cultural, and manmade environments

---

**MAP 13.1**

**HISTORIC DISTRICTS**

- **National and Local**
  1. Old Salem
  2. Bethabara
- **Potential**
  3. Bethania
  4. West End/Crystal Towers
  5. Platfftown
  6. Kent Roads
  7. North Stratford Road
  8. Central Business District
  9. Industrial District
  10. Holly Avenue
  11. South Marshall
  12. Cascade Avenue
  13. S. Main Street Area, Kernersville
of these neighborhoods.

**Economic Incentives**

Economic incentives have increased greatly the number of rehabilitation projects. Locally, these projects comprise a major portion of the Winston-Salem downtown and center city investments. The reduction of federal tax incentive programs increases the need not only to continue the existing tax benefit program, but also to consider other economic incentives, such as transfer of development rights or low interest loan programs for rehabilitation. Additionally, the implementation of a facade improvement program would encourage rehabilitation of downtown building facades, particularly at the street level.

**Strengthen Existing Programs**

A continued emphasis on existing programs of the Historic Properties and Historic District Commissions will strengthen further preservation programs on a countywide basis. Continued designation of individual historic properties and careful monitoring of the historic districts will increase the numbers and quality of our historic architectural resources, as well as increase community awareness. Funding and staff resources should be increased for promotional and educational programs, such as audio-visual presentations, tour maps, and programs on the social and economic benefits of preservation. Formation of a countywide preservation alliance would also serve to strengthen, support, and enhance historic preservation in the area.

**GOALS**

Much has been done to further local architectural and historic preservation; however, compared to the many programs already accomplished or underway, the purpose of this plan may seem limited. Many specific recommendations follow, but the overriding goals and objectives of this section are as follows:
- To preserve local heritage, culture, and architecture.
- To establish public policy, goals, and direction for future community preservation action.
- To address comprehensively the various issues and concerns of preservation efforts in Forsyth County.

**RECOMMENDATIONS**

- Establish local historic districts or preservation overlay districts for downtown Winston-Salem: Winston-Salem inner-city neighborhoods, West End/Crystal Towers, Holly Avenue, and Washington Park; Kernersville's South Main Street area; Bethania, Pfafftown, and Clemmons.
- Support and establish National Register Historic Districts for eligible areas of the city and county, particularly the Winston-Salem downtown and center city areas.
- Increase emphasis on preservation in the local planning process and the governmental decision-making process through maintaining a full-time preservation planner and through increased input and review by the local historic commissions.
- Consider the merger of or functional linkage between the Historic Properties and Historic District Commissions.
- Increase promotion and awareness of Winston-Salem's black history through programs of the local Commissions and support of groups and projects, such as the proposed black history museum and the Society for the Study of Afro-American History.
- Consider innovative local financial incentive programs to encourage investment in historic properties, such as additional tax benefits, loan programs, revolving funds, or transfer of development rights programs.
- Continue to designate locally historic properties and to increase funding for community awareness and educational programs.
- Form a countywide preservation alliance to better coordinate historic preservation efforts.
A town, like a flower,...should at each stage of its growth, possess unity, symmetry, completeness, and the effect of growth should never be to destroy that unity but to give it greater purpose...

— EBENEZER HOWARD
a public environment. The elements appropriate for urban design management include building facades, street trees, street furniture, and utilities (Figure 14.1). Interior areas of buildings represent inward oriented areas with separate identities, are entered by choice on the part of individual users, and are, therefore, not considered part of the public environment.

Urban design guidance, or the lack thereof, significantly affects the character of Forsyth County in several different ways: (1) Real estate values; (2) Civic pride; (3) Sense of obligation and commitment to private property; (4) Personal enjoyment and satisfaction; (5) Overall investment climate.

EXISTING SITUATION

Historical Perspective

The urban design history of Forsyth County can be traced back to its earliest settlements more than 225 years ago. The Moravians demonstrated great care in managing the physical form of new towns. Efficient development plans were designed in support of overall community needs. Designs for Bethania (1759) and Salem (1766) were prepared and exhibited similar characteristics. Building lots and side streets were created around a main street and central square, thereby creating a focal point for community activities. The 1766 plan of Salem illustrates this pattern of organization (Figure 14.2).

The Moravians also demonstrated concern for the visual development of Salem. The Church’s business board, known as the Collegium, acted as a board of architectural review.

Recent Conditions

With the establishment of Winston as the county seat in 1849, industry and manufacturing activities followed; Forsyth County's population grew rapidly. Although many fine examples of architectural design still exist from this era, attention to urban design yielded to economic considerations.

The Forsyth County industrial base strongly influenced the form of physical and visual development of the area and created a distinctive urban character in contrast to most of its neighboring counties. Until recently, North Carolina has been a rural state (Table 14.1).

A noticeable shift from rural life has occurred in the past forty years. However, approximately one half of the State's population is rural. By contrast, Forsyth County's population grew in more concentrated patterns, and the dominance of urban life is distinctive.

The sheer growth of Forsyth County, combined with the continued preference for urban lifestyles, has produced significant physical and
visual changes in Forsyth County's environment. More people live, work, and shop in urban areas now than ever before. Densely developed areas support several different activities for a more concentrated population. The visual and physical qualities of the county have been threatened by rapid change and growth.

Public awareness of the negative effects associated with sprawling growth has increased in many areas of the county. Urban design related problems were identified by residents in almost every area plan prepared by the City-County Planning Board staff.

For example, the US 311 Area Plan, adopted in 1984, said in part: "...This road [U.S. 311] is a major gateway to Winston-Salem, [and] its attractive appearance needs to be protected. First impressions are important to visitors."

The Ardmore Area Plan, adopted in 1985, observes: "The potential poor visual impact of commercial and office areas due to the lack of compatibility of architectural scale and character, signage, cluttered appearance, and a lack of landscaping is viewed as a problem by Ardmore residents."

Urban design improvement actions thus far have taken place on a narrowly defined or issue-specific basis, such as historic preservation efforts, downtown and Winston-Salem center city programs, and the recently adopted sign and buffer yard ordinances. A comprehensive approach is needed to anticipate potential visual and physical problems rather than respond to existing difficulties on an incremental basis.

**URBAN DESIGN APPROACH**

A comprehensive urban design framework is needed for the guidance of visual and physical development in Forsyth County. Such a framework serves several functions. Distinct character areas or districts can be viewed in a countywide context. A
uniform approach to the guidance of visual and physical development, regardless of the specific district, maintains the effectiveness and credibility of urban design efforts. Individual issues, such as signage, can be addressed on an incremental basis and still relate to overall urban design goals and policies for each district. Improvement strategies can rank actions that will yield the greatest relative benefits.

Initiation of a countywide urban design program includes the following tasks: (1) Countywide visual inventory; (2) Visual quality assessment; (3) Issue identification; (4) Ranking of issues; (5) Improvement strategy; (6) Action program.

The Urban Design Matrix (Figure 14.3) graphically illustrates a suggested conceptual approach and organizational scheme for addressing urban design issues. Urban design areas are the six areas on the Growth Management Plan, activity centers, and other special areas amenable to urban design treatment. The matrix is not intended to represent an exhaustive list of potential areas, districts, or elements. The structure is based on the assumption that character or livability can be analyzed and improved by describing a district as a sum of smaller parts or urban design elements. The district serves as a generic urban design unit. Each element may vary in importance or meaning for any given district. For example, the influence of building facade elements on the character of downtown Winston-Salem might be considered much more important than in less densely developed rural areas. Elements may also possess different meanings in different areas. Transportation corridor signs could focus on the impact of advertising billboards, while commercial district signs analysis might be more concerned with business identification signs. If the relative impact of each urban design element on each district's character can be evaluated objectively and ranked, a powerful and valuable tool is created which will enable efficient and economic decision-making.

**ISSUES**

Although State enabling legislation was passed in 1971, Forsyth County has not taken advantage of its ability to form a local appearance commission to assess visual and aesthetic issues on a comprehensive basis. Urban design actions, such as the recently adopted sign ordinance, take place in reaction to existing problems, rather than in anticipation of potentially harmful effects.

Suburban sprawl threatens Forsyth County's distinctive character and identity as an urban center ringed by rural areas and satellite communities. Wooded and agricultural lands are yielding to suburban development, resulting in a trend toward a homogeneous visual pattern.

**TABLE 14.1**

<table>
<thead>
<tr>
<th>PERCENT URBAN NORTH CAROLINA</th>
<th>PERCENT URBAN FORSYTH COUNTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940</td>
<td>27</td>
</tr>
<tr>
<td>1980</td>
<td>48</td>
</tr>
</tbody>
</table>

Source: Censuses of Population — 1940 and 1980

**FIGURE 14.3**

URBAN DESIGN MATRIX

Growth Concept Areas
- Area 1: Central Business District
- Area 2: Central Area
- Area 3: Urban Area
- Area 4: Growth Area
- Area 5: Rural Area
- Area 6: Conservation Area

Special Districts
- Activity Centers
- "Gateways"/Vistas
- Major Transportation Corridors
- Strip Commercial Districts
- Visitor Attractions
Although some developers have exhibited tremendous sensitivity to urban design, most private development has been undertaken without attention to physical and visual effects upon the community as a whole. Problems stem from overriding profit motivation and use of standard construction practices which ignore recent improvements in site layout and design techniques.

Typical construction site preparation involves the removal of all trees and other vegetation to make way for machinery, equipment, and structural foundations. This process ignores the functional and visual benefits of vegetation and produces a barren environment dominated by structures, pavement, and vehicles.

Favorable development market conditions have sparked increased interest in infill sites. In many cases, the highest and best use of an infill site results in new construction which is incompatible with surrounding properties and community character.

Many inner-city black communities have suffered historically because of inappropriate urban design treatment. Wholesale urban renewal clearance of blighted neighborhoods destroyed the social and cultural fabric of inner-city communities, and replaced them with low cost housing projects. Until recently, low income housing projects have been incrementally designed without regard to urban design quality, for cost cutting reasons. Lack of sensitivity to visual and physical form still plagues the neighborhood character of many inner-city black communities today.

Forsyth County's major form of transportation is the private automobile. As a result, many areas, such as strip commercial districts, shopping centers, and office complexes, are overwhelmingly dominated by vast stretches of surface parking lots. Standard parking lot design normally ignores aesthetic impact, pedestrian circulation, and user comfort.

Visitor perceptions of Forsyth County's character and image are strongly influenced by the visual experiences encountered along major travel routes. Several transportation corridors are unremarkable at best and unsightly at worst.

GOALS

- Forsyth County should take advantage of State enabling legislation to approach community appearance in a comprehensive manner. This provides an opportunity to integrate community appearance concerns with other planning mechanisms, such as zoning, subdivision regulations, historic preservation, economic development, and environmental protection.
- The distinct identity and character of different areas of Forsyth County should be maintained. Visual and physical variety provide choices of lifestyle preference, support a wider range of activities, and preserve the historic character of the county.
- Urban design concepts should be incorporated into private development plans. Individual project orientation should be tempered by consideration for overall community impact. In many cases, sensitivity to visual and physical effects does not increase construction cost.
- The visual and functional benefits of trees and other vegetation should be recognized through protection programs. Instead of viewing vegetation as a construction obstacle, the true value of trees, shrubs, and ground cover should be made explicit, particularly in terms of economic advantages for private developers.
- Infill development should be evaluated carefully for compatibility with existing structures. The design characteristics of new development can provide contrast and yet complement older buildings.
- Urban design principles should be emphasized in improvement plans for inner-city black communities. Neighborhood visual and physical quality should reflect social and cultural strengths and residents should participate in the development of plans to improve an area's character.
- The design and location of parking lots should reflect better sensitivity to visual quality and functional needs. Large, uninterrupted parking lots are eyesores, are unbearably hot due to solar absorption, and seldom provide pedestrian routes to and from parking spaces.
- Major transportation corridors, entry points, and vistas should be given special urban design attention. Forsyth County needs to "put its best foot forward" to create an image
that impresses visitors. This goal is important to tourist attraction and overall investment climate objectives.

RECOMMENDATIONS

A countywide appearance commission should be established, the powers and responsibilities of which equal those specified by State enabling legislation. The Appearance Commission would serve as an advisory board to governing bodies in Forsyth County. The powers and duties of the Appearance Commission should include those specified in the State enabling legislation:

1. Preparation of studies, plans, and programs for the improvement of Forsyth County's appearance.
2. Recommendation of design policies and goals for all or parts of Forsyth County.
4. Review and evaluation of conditional use development proposals for the determination of aesthetic impact.
5. Review and evaluation of plans for public buildings, facilities, and projects for aesthetic purposes.
6. Promotion of public education and citizen participation programs for the enhancement of Forsyth County's appearance.
7. Issuance of design awards for outstanding development to heighten public awareness of urban design.

- An urban design district approach should be used to maintain distinctive character areas in the county. The Growth Management Plan provides a district framework with which to work. Additional special districts, such as major gateways, entry points/vistas, or historic districts and other visitor attractions, can be identified that support specialized activities.
- An urban design guidelines handbook should be developed for use by private developers. The handbook can serve as an education tool and would explain urban design regulations such as the sign or bufferyard ordinances.
- A landscaping ordinance should be established which integrates environmental quality and urban design goals. Minimum open space requirements, protection of existing trees, tree replacement in lieu of removal, bufferyard and screening standards, parking lot planting requirements, and the use of shrubs and groundcovers should be comprehensively addressed by this set of regulations.
- Guidelines for infill development should be established by local regulations. Design flexibility should be maintained through an Appearance Commission design review process.
- Urban design plans for inner-city black neighborhoods should be developed with a strong emphasis on resident participation, guidelines for infill development, and guidance of public improvement programs.
- Design standards should be established for surface parking lots. Primary emphasis upon the required planting of trees and other vegetation would soften the harshness of paved areas and provide shading for user comfort.
- A visual inventory and analysis of major transportation corridors should be conducted. Improvement strategies should be ranked according to the traffic volume and relative visual quality of each roadway or highway. Plans for the new I-40 project should be reviewed for aesthetic and visual impact, and local recommendations should be made available to the North Carolina Department of Transportation before highway construction begins.
VISION 2005
IMPLEMENTATION PLAN
**IMPLEMENTATION PLAN**

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encourage the recycling of solid wastes.</td>
<td>Study the feasibility of additional recycling measures.</td>
<td>Winston-Salem Public Works Department; County Government</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Investigate alternative technologies for solid waste disposal.</td>
<td>Study the feasibility of alternative methods of waste disposal.</td>
<td>Winston-Salem Public Works Department; County Government</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

**CHAPTER 4: ENVIRONMENTAL QUALITY**

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Quality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control transportation related air pollution.</td>
<td>1. Continue involvement with the Winston-Salem Technical Coordinating Committee to control transportation related carbon monoxide and ozone concentrations.</td>
<td>County Department of Environmental Affairs</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>2. Assess air quality impact of new and proposed developments that generate heavy automobile activity, including temporary impacts associated with fugitive dust.</td>
<td>County Department of Environmental Affairs; City-County Planning Board</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Salem Lake Water Quality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implement the Salem Lake Area Plan recommendations in the entire Salem Lake watershed.</td>
<td>Develop a watershed management plan for the entire watershed to be adopted by Kernersville, Walkertown, and Forsyth County.</td>
<td>City-County Planning Board; Inspections Division; Winston-Salem Public Works Department; Kernersville; Walkertown; Forsyth County</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Yadkin River Water Quality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protect the quality of Yadkin River water in Forsyth County.</td>
<td>1. Develop a plan for protection of the Yadkin River Conservation Area.</td>
<td>City-County Planning Board</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>2. Monitor water quality of the Yadkin River in Forsyth County and prepare annual report for distribution to appropriate agencies.</td>
<td>Utility Commission</td>
<td>FY 88-89</td>
</tr>
<tr>
<td></td>
<td>3. Forsyth County should support the development of a regional river basin management plan that addresses water quality.</td>
<td>Forsyth County Commissioners; City-County Planning Board</td>
<td>Fiscal Years 90-91 through 92-93</td>
</tr>
</tbody>
</table>
## IMPLEMENTATION PLAN

### Solid Waste Management

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adopt a program for the prevention of illegal solid waste disposal.</td>
<td>1. Prepare a City-County solid waste disposal plan</td>
<td>Forsyth County Commissioners; County Department of Environmental Affairs</td>
<td>Fiscal Years 90-91 through 92-93</td>
</tr>
<tr>
<td></td>
<td>2. Revise laws against illegal dumping; increase education and enforcement efforts.</td>
<td>County Department of Environmental Affairs; Sheriff's Department</td>
<td>FY 88-89</td>
</tr>
<tr>
<td></td>
<td>3. Provide funding for pickup of large items.</td>
<td>Forsyth County Commissioners</td>
<td>FY 88-89</td>
</tr>
</tbody>
</table>

### Floodplain Protection

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institute stronger measures for floodplain protection.</td>
<td>1. Include incentives and standards in the unified development code.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td></td>
<td>2. Promote use of floodway fringe areas for greenways and other passive recreational uses through the area planning process.</td>
<td>City-County Planning Board</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

### Land Resources

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop performance standards that permit design flexibility and are adaptable to sites with variable characteristics.</td>
<td>Include performance standards in the unified development ordinance.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Preserve natural vegetation and allow no net change in runoff from development sites.</td>
<td>Amend Erosion and Sedimentation Control Ordinance.</td>
<td>City-County Planning Board; Winston-Salem Inspections Division; Governing Boards</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Enact regulations that give increased protection to areas with steep slopes.</td>
<td>Include slope-density regulations in the unified development ordinance.</td>
<td>City-County Planning Board; Governing Boards</td>
<td>FY 88-89</td>
</tr>
</tbody>
</table>

## CHAPTER 5: THOROUGHFARE PLAN

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a higher level of funding for local road improvements.</td>
<td>1. Adopt impact fees; Obtain enabling legislation; identify assessment areas; prepare improvement procedures and fee schedule.</td>
<td>Forsyth County Legislative Delegation; City-County Planning Board; Transportation Advisory Committee; Winston-Salem Board of Aldermen; Forsyth County Commissioners</td>
<td>Fiscal Years 90-91 through 91-92</td>
</tr>
<tr>
<td></td>
<td>2. Review and request legislation for additional transportation funding.</td>
<td>City-County Planning Board; Transportation Advisory Committee</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>
# IMPLEMENTATION PLAN

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepare a Right-of-Way Protection Plan.</td>
<td>1. Do design work; prepare Official Maps; lobby NCDOT for adoption of Official Maps.</td>
<td>City-County Planning Board; NC Department of Transportation</td>
<td>FY 88-89</td>
</tr>
<tr>
<td></td>
<td>2. Draft and adopt a Right-of-Way Protection Ordinance.</td>
<td>City-County Planning Board; Transportation Advisory Committee; Governing Boards</td>
<td>FY 88-89</td>
</tr>
<tr>
<td></td>
<td>3. Revise zoning ordinances and subdivision ordinances to protect rights-of-way; look at acquisition incentives such as transfer of development rights; revise definitions.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td></td>
<td>4. Project costs for right-of-way purchase.</td>
<td>City-County Planning Board; Winston-Salem Engineering Department; NC Department of Transportation</td>
<td>FY 88-89</td>
</tr>
<tr>
<td></td>
<td>5. Prepare setback ordinance; review and edit Thoroughfare Plan Technical Report; draft and adopt ordinance.</td>
<td>City-County Planning Board; Governing Boards</td>
<td>FY 88-89</td>
</tr>
<tr>
<td></td>
<td>6. Draft and adopt standards and procedures for a Thoroughfare Plan overlay district.</td>
<td>City-County Planning Board; Transportation Advisory Committee</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Promote car pooling, van pooling, and transit ridership.</td>
<td>Strengthen review and approval of Winston-Salem Transit Authority's operating and capital plans.</td>
<td>City-County Planning Board; Winston-Salem Transit Authority</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Adopt Collector Street Plan.</td>
<td>Draft and adopt selection criteria, list of streets, map, and text.</td>
<td>City-County Planning Board; Governing Boards</td>
<td>FY 88-89</td>
</tr>
</tbody>
</table>

## CHAPTER 6: ECONOMIC DIVERSIFICATION

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote development of existing and new industries.</td>
<td>1. Continue efforts to recruit new employers to Forsyth County.</td>
<td>Winston-Salem Business, Inc.; Winston-Salem Development Office</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>2. Continue to support the Business and Technology Center.</td>
<td>City of Winston-Salem</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>3. Continue to assist local firms with site location/site planning.</td>
<td>City-County Planning Board; Winston-Salem Development Office; Chamber of Commerce</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>4. Develop roster of services available to firms, e.g., venture capital, and location incentives.</td>
<td>Chamber of Commerce; Winston-Salem Development Office</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Provide well-serviced and properly located industrial sites</td>
<td>1. Maintain an inventory of industrial sites.</td>
<td>City-County Planning Board</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>2. Provide selected industrial sites with infrastructure.</td>
<td>Winston-Salem Development Office; City-County Utility Commission; Governing Boards</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>
### IMPLEMENTATION PLAN

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote tourism.</td>
<td>1. Undertake economic impact analysis of tourism.</td>
<td>Tourism Authority; Chamber of Commerce</td>
<td>FY 88-89</td>
</tr>
<tr>
<td></td>
<td>2. Support the Tourism Authority.</td>
<td>Governing Boards</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Improve the vitality of Winston-Salem’s central business district.</td>
<td>1. Continue implementation of the Central Area Action Plan.</td>
<td>City of Winston-Salem; Civic Ventures</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>2. Implement recommendations for the central area in Vision 2005.</td>
<td>City-County Planning Board; City of Winston-Salem</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>3. Promote comprehensive plan recommendations for additional middle and upper income housing and support services near downtown.</td>
<td>City-County Planning Board; Winston-Salem Board of Aldermen</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

#### Business Recruitment

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote the Triad Area.</td>
<td>Support coordination between Greensboro, High Point, Winston-Salem and other towns for business recruitment.</td>
<td>Chambers of Commerce; Governments of Cities and Counties</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Support Winston-Salem Business, Inc., in industrial recruitment efforts.</td>
<td>Act as a resource by providing information on industrial sites.</td>
<td>City-County Planning Board; Winston-Salem Development Office</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Develop information packets for industrial recruitment.</td>
<td>Prepare detailed brochure on best industrial sites.</td>
<td>Winston-Salem Development Office; City-County Planning Board</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

#### Expansion of Existing Businesses

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support and encourage the entrepreneurial spirit.</td>
<td>1. Support the Winston-Salem Business and Technology Center.</td>
<td>City and County Governments; Chamber of Commerce</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>2. Continue support for Small Business Group at the Chamber of Commerce.</td>
<td>Chamber of Commerce</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>3. Form coordinating committee to market new business programs.</td>
<td>Chamber of Commerce</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>4. Continue to support the Winston-Salem Business and Technology Center and the Piedmont Entrepreneur’s Network.</td>
<td>Chamber of Commerce; Winston-Salem Development Office; Winston-Salem State University</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Increase the availability of start-up capital for businesses.</td>
<td>Assist with present efforts to develop and expand venture capital.</td>
<td>Winston-Salem Business and Technology Center; Chamber of Commerce; Winston-Salem Development Office</td>
<td>Long-Term</td>
</tr>
</tbody>
</table>
## CHAPTER 7: RESIDENTIAL LAND USE

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish residential density ranges consistent with the Growth Management Plan.</td>
<td>Link density ranges to Growth Management Plan areas in the unified development ordinance.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Coordinate new residential development with the provision of public services.</td>
<td>Incorporate recommendations in the area planning process and preparation of the unified development ordinance.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Promote mixed-use zoning.</td>
<td>Include in unified development ordinance and area planning process.</td>
<td>City-County Planning Board</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Encourage a variety of residential development in and near downtown Winston-Salem.</td>
<td>Include incentives for variety in unified development ordinance.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Encourage infilling in Areas 2 and 3 of the Growth Management Plan.</td>
<td>Investigate incentives for this in unified development ordinance; include in area planning process.</td>
<td>City-County Planning Board</td>
<td>FY 89-90</td>
</tr>
</tbody>
</table>

### Housing

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Update and adopt the countywide Comprehensive Housing Plan.</td>
<td>Evaluate countywide housing needs.</td>
<td>Forsyth County Housing Planner; City-County Planning Board; Forsyth County Commissioners</td>
<td>Fiscal Years 89-90 through 90-91</td>
</tr>
<tr>
<td>Appoint a housing coordinator to manage development of a countywide housing plan.</td>
<td>Include in update of Comprehensive Housing Plan.</td>
<td>Forsyth County Government</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Establish a countywide advocacy group for low-income housing.</td>
<td>Include in update of Comprehensive Housing Plan.</td>
<td>City and County governments; Human Relations Department; Civic Ventures</td>
<td>FY 90-91</td>
</tr>
<tr>
<td>Encourage public, private, nonprofit, and public-private partnerships to enter the low and moderate income housing market.</td>
<td>Include in update of Comprehensive Housing Plan; develop incentives in unified development ordinance.</td>
<td>City and County governments; Civic Ventures; Board of Realtors</td>
<td>FY 90-91</td>
</tr>
<tr>
<td>Encourage programs that facilitate home ownership.</td>
<td>Address in Comprehensive Housing Plan.</td>
<td>City and County government</td>
<td>Fiscal Years 90-91 through 92-93</td>
</tr>
</tbody>
</table>
# CHAPTER 8: COMMERCIAL LAND USE

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locate only rural serving commercial in the Long-Term Growth and Rural Areas identified in the Growth Management Plan.</td>
<td>Provide sufficient commercial locations in areas identified for growth; prepare area plans that adhere to this recommendation; counsel commercial developers on this policy early in the development process.</td>
<td>City-County Planning Board</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Improve compatibility of shopping centers with adjacent land uses.</td>
<td>Review standards for buffers, setbacks, architectural design, etc. as part of the preparation of the unified development ordinance.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Encourage improvement to existing commercial areas.</td>
<td>Seek improvements such as consolidation of vehicular access points, upgraded landscaping, improved signage during the development review process.</td>
<td>City-County Planning Board; Governing Boards</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Encourage proper location and good site design for highway convenience stores.</td>
<td>Develop districts and standards in the unified development ordinance.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Encourage the return of neighborhood convenience stores to residential areas.</td>
<td>Develop districts and standards in the unified development ordinance for this use.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Encourage an appropriate mix of commercial uses in downtown Winston-Salem.</td>
<td>Revise downtown zoning district and standards in the unified development ordinance.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
</tbody>
</table>

# CHAPTER 9: OFFICE LAND USE

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continue promotion of the Winston-Salem central business district as the major location for office development.</td>
<td>Use public incentives where appropriate to encourage office development in downtown Winston-Salem.</td>
<td>City of Winston-Salem; Chamber of Commerce</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Promote mixed-use developments as alternatives to the standard office building.</td>
<td>Place provisions in the unified development ordinance to encourage mixed-use developments, especially in downtown Winston-Salem.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Evaluate the success of the R-1 office district in residential areas.</td>
<td>Study the R-1 office district as part of the preparation of the unified development ordinance.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Promote office developments at activity centers.</td>
<td>Incorporate recommendation into area plans, provide infrastructure; rezone land.</td>
<td>City-County Planning Board; Governing Boards</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Encourage office development in underserved areas, such as East Winston.</td>
<td>Follow recommendations of the East Winston Area Plan; provide infrastructure; rezone land.</td>
<td>City-County Planning Board; City of Winston-Salem</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>
## CHAPTER 10: INDUSTRIAL LAND USE

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide 2,450 acres of industrially zoned land by the year 2005.</td>
<td>Policy directives formulated by an Industrial Development Committee.</td>
<td>Winston-Salem and Forsyth County economic development officials; Chamber of Commerce; City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Reevaluate vacant, industrially zoned land not selected as major industrial sites.</td>
<td>Establish evaluation criteria, review of sites by Industrial Sites Committee.</td>
<td>Winston-Salem Economic Development Officials; Chamber of Commerce; City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>If production at R.J. Reynolds downtown facilities is reduced, consider reuse as second generation industrial space.</td>
<td>Coordinate with R.J. Reynolds officials the reuse of these buildings.</td>
<td>R.J. Reynolds officials; City of Winston-Salem; Chamber of Commerce</td>
<td>Long-Term</td>
</tr>
<tr>
<td>Reevaluate the I-4 zoning classification.</td>
<td>Examine incentives, development standards, as part of preparing the unified development ordinance.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
</tbody>
</table>

## CHAPTER 11: OPEN SPACE

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify and acquire new recreation sites in advance of need to achieve the best locations.</td>
<td>Prepare Open Space/Recreation Plans for the City and County.</td>
<td>City-County Planning Board; City and County Recreation Depts.</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Provide financial support for leisure opportunities available through the historical, cultural, and educational resources of the community.</td>
<td>Support community cultural, historical, and educational organizations through the governmental budgeting process.</td>
<td>City and County Budget Offices; Governing Boards</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Develop mechanisms for public participation in recreation planning.</td>
<td>Build citizen participation process into preparation of Open Space/Recreation Plans.</td>
<td>City-County Planning Board; City and County Recreation Depts.</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Identify and draw into recreational programs, all local individuals and groups with capabilities for devising and leading unique leisure experiences.</td>
<td>Develop a directory of local persons; support special programs and services.</td>
<td>City and County Recreation Depts.; Governing Boards</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Identify, conserve, and enhance natural resources with unique recreational value.</td>
<td>Detail in Open Space/Recreation Plans.</td>
<td>City and County Recreation Depts.; City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Provide incentives and controls to encourage owners of private property to preserve open space as a visual amenity.</td>
<td>Include in preparation of unified development ordinance.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Develop local options for developer participation in recreation provision.</td>
<td>Include in unified development ordinance.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
</tbody>
</table>
## IMPLEMENTATION PLAN

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consider consolidation of Winston-Salem and Forsyth County Recreation Departments.</td>
<td>Establish a Recreation Consolidation Study Committee; include representatives from the Planning Board, local governments, Recreation Commission, and the general public.</td>
<td>Governing Boards</td>
<td>FY 88-89</td>
</tr>
</tbody>
</table>

### Greenways

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a citizen-based Greenway Commission to guide development of the greenway system.</td>
<td>Define scope of duties and appoint commission members.</td>
<td>Governing Boards</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Consider for greenways all floodplains in Forsyth County; acquire easements along minor streams and other linear features identified as neighborhood connectors.</td>
<td>Include necessary language in unified development ordinance and Subdivision Regulations.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Prepare a Greenway Manual.</td>
<td>Document trail development process, development standards, maintenance standards, graphic standards for signage, and operational policies.</td>
<td>Greenway Commission; City and County Recreation Depts.; City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
</tbody>
</table>

### Conservation Areas

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepare plan for the Yadkin River Conservation Area.</td>
<td>Define objectives, define area boundary, prepare resource inventory, identify incentives and funding sources to implement plan.</td>
<td>City-County Planning Board</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Support the Forsyth County Farmland Conservation Area.</td>
<td>1. Develop and support policies and programs for the Rural and Conservation Areas of the Growth Management Plan that reinforce the Farmland Preservation Program.</td>
<td>City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td></td>
<td>2. Study and recommend strategies for long-term funding of the Farmland Preservation Program.</td>
<td>Soil and Water Conservation District Board of Supervisors</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>3. Support establishment of a statewide farmland preservation program.</td>
<td>Governing Boards; Soil and Water District Board of Supervisors</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

## CHAPTER 12: COMMUNITY FACILITIES

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct service facilities to growth areas identified in the Growth Management Plan.</td>
<td>Coordinate Capital Improvement Programs with comprehensive plan and individual Facility Plans.</td>
<td>City-County Planning Board; Governing Boards</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Foster the shared use of facilities by governmental agencies and by the private sector.</td>
<td>Incorporate into Capital Improvement Programs and Facility Plans.</td>
<td>City-County Planning Board; City and County Operating Depts.; Governing Boards</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Foster the private sector role in providing community facilities.</td>
<td>Implement through Facility Plans.</td>
<td>City-County Planning Board; Operating Departments</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>
### IMPLEMENTATION PLAN

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reaffirm the government's role as provider for those who do not have access to private facilities and services.</td>
<td>Allocate funds adequate to provide services and care for those needing assistance.</td>
<td>Governing Boards</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Prepare a Library Facilities Plan.</td>
<td>Determine the need for new branch libraries.</td>
<td>Library Board; City-County Planning Board</td>
<td>FY 87-88</td>
</tr>
<tr>
<td>Prepare Police space needs study.</td>
<td>Undertake study; consider the need for satellite police stations.</td>
<td>Police Department; City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Identify sites for future City of Winston-Salem fire stations.</td>
<td>Update Fire Station Locator Model; expand boundary; project population; revise street base.</td>
<td>City-County Planning Board; Fire Department</td>
<td>FY 88-89</td>
</tr>
</tbody>
</table>

### CHAPTER 13: HISTORIC PRESERVATION

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish National Register and local Historic Districts in appropriate areas of the county.</td>
<td>1. Establish local historic district in downtown Winston-Salem; possible zoning ordinance revision for business overlay district, seek concurrence of property owners, expand scope of Historic District Commission, draft design review guidelines.</td>
<td>City-County Planning Board; Governing Boards; Historic District Commission</td>
<td>Long-Term</td>
</tr>
<tr>
<td></td>
<td>2. Establish local historic district for West End/Crystal Towers neighborhoods; addition of overlay district zoning, modify membership of HDC, draft design review guidelines, hold neighborhood meetings.</td>
<td>City-County Planning Board; Governing Board; Historic District Commission</td>
<td>FY 88-89</td>
</tr>
<tr>
<td></td>
<td>3. Apply concept of conservation district to Holly Avenue; examine concept in other jurisdictions, draft ordinance, develop closer relationship with Neighborhood Association.</td>
<td>City-County Planning Board; Governing Board; Historic District Commission or Appearance Commission</td>
<td>FY 88-89</td>
</tr>
<tr>
<td></td>
<td>4. Study application of conservation district or historic district to Washington Park.</td>
<td>City-County Planning Board; Governing Board; Historic District Commission or Appearance Commission</td>
<td>Fiscal Years 90-91 through 92-93</td>
</tr>
<tr>
<td></td>
<td>5. Establish local historic district for Kernersville; create local HDC, establish zoning provision, draft design review guidelines, hold neighborhood meetings.</td>
<td>Kernersville Planning Board; Governing Board; City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td></td>
<td>6. Investigate local Historic Districts for Bethania, Pflaufftown, and Clemmons: expand HDC's jurisdiction into Forsyth County, choose zoning provisions, draft design review guidelines, hold neighborhood meetings.</td>
<td>City-County Planning Board; Governing Board; Historic District Commission</td>
<td>Fiscal Years 90-91 through 92-93</td>
</tr>
<tr>
<td>Recommendations</td>
<td>Proposed Actions</td>
<td>Primary Responsibility</td>
<td>Suggested Schedule</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------</td>
<td>------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>7. Establish National Register District for downtown Winston-Salem.</td>
<td></td>
<td>City-County Planning Board; Historic Properties Commission; State and Federal Authorities</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>8. Work with interested groups and individuals in Walkertown to encourage individual preservation efforts within the town.</td>
<td></td>
<td>Historic Properties Commission; City-County Planning Board; Town of Walkertown</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Increase emphasis on historic preservation in the local planning process.</td>
<td>Integrate historic preservation concerns into the development review and land use planning processes.</td>
<td>City-County Planning Board</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Consider the merger of or functional linkage between the Historic Properties and Historic District Commissions.</td>
<td>Schedule a series of joint meetings between the HPC and HDC to determine the feasibility of merger or linkage.</td>
<td>Historic Properties Commission; Historic District Commission; City-County Planning Board; Governing Boards</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Increase awareness of Winston-Salem's black history.</td>
<td>Coordinate with organizations lectures, public awareness programs, media attention, and expanded oral history program.</td>
<td>City-County Planning Board; The Society for the Study of Afro-American History; East Winston Restoration Association; National Association for the Advancement of Colored People; Winston-Salem State University</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Consider financial incentive programs to encourage historic preservation.</td>
<td>1. Initiate a facade improvement program.</td>
<td>City-County Planning Board; Historic Properties Commission</td>
<td>FY 88-89</td>
</tr>
<tr>
<td></td>
<td>2. Initiate loan program for residential and commercial historic rehabilitation.</td>
<td>City-County Planning Board; Housing/Neighborhood Development; Winston-Salem Development Office; Historic Properties Commission</td>
<td>FY 89-90</td>
</tr>
<tr>
<td></td>
<td>3. Explore possibility of setting up a revolving fund for the restoration of historic structures.</td>
<td>City-County Planning Board; Historic Properties Commission</td>
<td>FY 89-90</td>
</tr>
<tr>
<td>Continue to designate locally historic properties and increase funding for community awareness and educational programs.</td>
<td>1. Prepare downtown preservation plan and secure funds to publish the plan in conjunction with countywide preservation plan.</td>
<td>Historic Properties Commission; City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
<tr>
<td></td>
<td>2. Develop a public information program for media, civic groups, public schools.</td>
<td>City-County Planning Board; Historic Properties Commission</td>
<td>FY 88-89</td>
</tr>
<tr>
<td></td>
<td>3. Prepare an audio-visual program on historic preservation.</td>
<td>Historic Properties Commission; City-County Planning Board</td>
<td>FY 88-89</td>
</tr>
</tbody>
</table>
## CHAPTER 14: URBAN DESIGN

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Proposed Actions</th>
<th>Primary Responsibility</th>
<th>Suggested Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish a joint City-County Appearance Commission.</td>
<td>Obtain local legislation; conduct public participation program.</td>
<td>City-County Planning Board; Governing Boards</td>
<td>FY 88-89</td>
</tr>
<tr>
<td>Develop a comprehensive local urban design/community appearance action plan.</td>
<td>Conduct citizen survey; prepare inventory of physical and visual features; prioritize issues; undertake public education programs; develop Urban Design Guidelines Handbook.</td>
<td>City-County Appearance Commission; City-County Planning Board; Governing Boards</td>
<td>Fiscal Years 90-91 through 92-93</td>
</tr>
<tr>
<td>Develop standards for appearance related issues.</td>
<td>Prepare recommendations for Landscape/Open Space Ordinance, Infill Development Guidelines, Inner-City Black Neighborhood Improvements, Transportation Corridor/Gateway Programs.</td>
<td>City-County Appearance Commission; City-County Planning Board; Governing Boards</td>
<td>Long-Term</td>
</tr>
</tbody>
</table>
ACKNOWLEDGEMENTS

FORSYTH COUNTY COMMISSIONERS
Dr. James N. Ziglar, Jr., Chairman
John S. Holleman, Jr., Vice Chairman
Forrest E. Conrad
Richard V. Linville
Wayne G. Willard
Graham Pervier, County Manager

WINSTON-SALEM BOARD OF ALDERMEN
Wayne A. Corpening, Mayor
Martha S. Wood, Mayor Pro Tem
Vivian H. Burke
Frank L. Frye
Patrick T. Hairston
Lynne S. Harpe
Virginia K. Newell
Robert S. Northington, Jr.
Larry W. Womble
Bryce A. Stuart, City Manager

VILLAGE OF CLEMMONS COUNCIL
Pat Sheppard, Mayor
Marvin K. Conley
Warren E. Kasper
Nat Swanson
William E. Tschopp
Thomas Long, Interim Town Manager

KERNERSVILLE BOARD OF ALDERMEN
Roger P. Swisher, Mayor
Larry R. Brown
J. Max Coltrane
R. Marion Martin
Calvin L. O'Briant
W. T. Walker
Randy McCaslin, Town Manager

RURAL HALL TOWN COUNCIL
Dewey Shropshire, Mayor
Sandra M. Rannells
Charlie G. Shelton
Durward A. Smith
Larry T. Williams
Frank James, Town Manager

WALKERTOWN TOWN COUNCIL
H. Gray Swain, Mayor
James (Tommy) Carmichael
Billy Hairston
Annette M. Leight
Bobby J. Wilson
Rob Shepherd, Town Manager

CITY-COUNTY PLANNING BOARD OF FORSYTH COUNTY AND WINSTON-SALEM
I. Bryce Gordon, Chairman
Irene Hairston, Vice Chairman
DeWayne H. Anderson, AICP
McAuley C. Byrum, Jr.
Jerry C. Gilmore, III
William A. Goodson, Jr.
Sarah Johnston Hunter
D. J. Redding
Lloyd G. Walter, AIA

Former Planning Board members who served during the preparation of Vision 2005:
Roger L. Bauggess
Robert E. Dalton
Paul C. Shepard
M. Candy Wood

PLANNING STAFF
G. Douglas Carroll, AICP, Director of Planning, Project Director
James E. Yarbrough, Jr., AICP, Deputy Director, Project Manager
Frederick D. Luce, AICP, Project Coordinator
Cheryl V. Myers, Organizational Coordinator
Antoinette M. Tupponce, Thoroughfare Plan Coordinator
Timothy M. Gauss, AICP
Ann Massey, AICP
Richard Redding, AICP
Julia S. Worth, AICP
Judith Hunt Wunker, AICP
Gregory L. Errett, AICP
Elizabeth Evans
Lovell Foster
Ronald B. Grubbs
David M. Hill, AICP
Tamzin L. Kelley, AICP
Jonathan T. Lockman
Samuel H. McDonald, AICP
Claude C. McMahan, Jr.
Judy K. Miller
C. LeAnn Pegram
C. Lynn Ruscher
Glenn M. Simmons, ASLA
Leslie F. Smith
Robert L. Solomon
Sheila Strain-Bell
P. Jerry Sumner
Cynthia M. Thomas
Addie M. Todd
Melanie Wilson

EDITING
Willie G. Shaw, Jr.

GRAPHICS
James Wolfe, Project Graphic Designer
Gary Anders
Emerson Duren
Kathryn Heathershaw

SECRETARIAL
Kay Hawkins, Primary Word Processor
Deronda Kee
Lou McLendon