

9.0 COMMUNITY FACILITIES, SERVICES AND INFRASTRUCTURE

9.1 OVERVIEW

This element addresses several types of public facilities and services (police, fire, and libraries) and infrastructure systems (water, sewer, stormwater, and solid waste) provided by the City of Greensboro. Several other types of public facilities and infrastructure, including parks and recreation and transportation systems are addressed in other elements of the Comprehensive Plan (Chapter 5.0, Community Character, and Chapter 8.0, Transportation, respectively).



Areas of community consensus identified in the Vision Statement that are related to community facilities, services, and infrastructure include:

- The importance of good community services and facilities to **quality of life and livability**
- The need to ensure adequate **infrastructure capacity**; i.e., the ability to meet future needs for water, wastewater treatment, storm drainage, and solid waste management

Figure 9-1 shows the locations of existing community facilities within the Comprehensive Plan study area. Also shown on this map are potential school sites identified by Guilford County Public Schools, proposed library sites identified by Greensboro Public Library, and proposed fire station sites identified by the City's Fire Department.

In general, the City is doing a good job in providing community facilities and services for residents. Departments such as Parks and Recreation, Police, and Libraries have completed or are developing proactive plans for the future provision of facilities and services. The Fire Department has a process in place to plan for future facility needs based upon factors such as response time. Public water supply capacity issues are being addressed through the development of the Randleman Dam project, which is projected to meet the City's water needs for the next 30 to 40 years. However, the lack of a natural water source such as a river will affect the City's ability to provide for its long-term water supply and wastewater

treatment needs. Other important issues to consider in developing policies for community facilities, services, and infrastructure include:

- **Capacity of Solid Waste Disposal Facilities:** The White Street Landfill is projected to reach capacity in 2008. Options such as transfer stations are being explored to meet the City's future solid waste disposal needs.
- **Performance Standards vs. Cost Implications:** While the current provision of community facilities and services is generally good, future planning and programming will need to explore creative solutions to maintain current standards in a cost-effective manner while adapting to societal and technological trends. The current strategic planning effort for the libraries, for example, is moving away from the traditional emphasis on fixed, single-use facilities towards more creative ways of providing services (neighborhood resource centers, multi-use facilities, partnerships with other agencies, etc.).
- **Integrated Planning:** Coordination of community facility and service planning with land use and development policies within the water and sewer service area boundary is essential to ensure efficient, cost-effective provision of future public facilities and infrastructure. This includes the staging of development to permit efficient service delivery and maximize use of available infrastructure before requiring additions.

9.2 GOALS AND POLICIES

GOALS

Provide community facilities, services, and infrastructure in a cost-effective manner to meet citizens' needs, contribute to quality of life, and support desired land use patterns

POLICIES

9A. Proactively target infrastructure (water/sewer) extensions to support desired land use patterns [see also Land Use Policy 4F]

9A.1 Develop a Fringe Area Land Use Concept Plan [see Land Use Policy 4F.1], including:

- **Targeted growth areas as the priority locations for water/sewer extensions** in advance of development
- Guidelines for the desired form and pattern of development (e.g., compact, pedestrian-friendly, etc.) within the targeted growth areas [see also Land Use Policy 4G.1]



Narrative:

As described in the Land Use Element (Chapter 4.0), the City's decisions concerning extension of water and sewer infrastructure at the urban fringe have traditionally been reactive in nature; that is, they have occurred in piecemeal fashion in response to private development requests. The consequence of this type of "catch-up" approach has been the present fragmentary pattern of sprawl at the urban fringe. A key initiative of the Land Use Element is for the City to adopt a more **proactive, focused approach** to infrastructure planning and investment decisions, an approach that will serve to guide, rather than react to, growth and development patterns. Land Use Policy 4F.1 proposes that the City and County collaborate to create a Fringe Area Land Use Plan. This Land Use Plan will refine and elaborate upon the concept of **growth tiers** described in Land Use Policy 4F.2, which establish the basic framework for the staged expansion of infrastructure and public facility capacity. The framework should include a growth monitoring mechanism to monitor changes in reserve capacity levels. It should also provide specific criteria for the expansion of infrastructure and facilities consistent with the "tiered" approach, including, but not necessarily limited to:

- Contiguity with existing development patterns and present City limits
- Location within appropriate growth tier
- Availability of infrastructure capacity
- Consistency with City development standards
- Fiscal impact assessment and mechanisms for the allocation of public facility costs through a capital recovery fee [see Policy 9A.3 in this element]

9A.2 Develop a **phased capital program** for the extension of water and sewer lines in support of the Fringe Area Land Use Concept Plan.

9A.3 Identify a **funding source** (e.g., a revolving fund derived from a capital recovery fee on developments) for the phased capital program.

Narrative:

Capital recovery fees (CRFs) allow for the recovery of the cost of new infrastructure. Typically used for facilities such as wastewater treatment plants or toll bridges, capital recovery fees are discontinued upon the amortization of the facility.

North Carolina legislation enables local governments to assess fees to recover the costs associated with road and infrastructure improvements needed to serve development. In essence, capital recovery fee programs require new development to pay its share, on a pro-rata basis, of present and future needs for infrastructure capacity. In many communities that charge such fees, an independent financial consultant estimates the cost of providing additional water and sewer infrastructure capacity, on a per-gallon per-day (gpd) of average flows basis. CRFs are customarily assessed at the time that building permits for new development are issued.

The advantages and disadvantages of CRFs should be carefully considered prior to adoption. Because such fees can only be used to finance construction of new infrastructure (i.e., not repair, operation, or maintenance of existing facilities), CRFs are typically a tool of choice in fast-growing communities which are experiencing considerable development pressures and have an adequate supply of vacant land. In communities planning significant redevelopment, CRFs may be less useful. Another consideration is an increase in development costs, which may be perceived as a disincentive. Therefore, and in addition to CRFs, the City should investigate other funding source options to strengthen its ability to undertake new capital improvement initiatives.

9A.4 **Work with Guilford County** on the use of funds collected by the County for water/sewer improvements to support the phased capital program.

Narrative:

Greensboro's consolidated water and sewer utility provides service not only to city residents, but also to customers in various unincorporated areas of Guilford County. Thus increased policy coordination will be necessary in the future to ensure that the allocation and expenditure of infrastructure funds is consistent with the phased capital program proposed in Policy 9A.2 of this element, and with the "tiered" growth management strategy outlined in the Land Use Element. As a result, the **City/County Utility Agreement** will need to be reviewed for consistency with the new infrastructure and growth policies.

9A.5 Continue to link **City-initiated annexations** and **approvals of annexation petitions** to water/sewer extension policies regarding designated growth areas, to avoid costs of servicing scattered annexations throughout the fringe area.

Narrative:

In 2001, the City of Greensboro adopted a policy of extending water and sewer infrastructure only within a limited area defined by the **Water and Sewer Service Area Boundary**. This policy is consistent with the recognized need to more effectively manage the City's limited resources. Furthermore, analyses conducted for the Plan estimate that the area within the water and service boundary has the capacity to accommodate approximately 40 or more years of growth at current trends.¹ This capacity spread across a large geographic area could result in costly infrastructure extensions to serve dispersed developments if growth is not planned for and staged in a logical manner. Thus the extension policy should be further refined and applied consistent with the transitional growth tiers described in the Land Use Element.

9B. Proactively plan for the provision of sufficient capacity to meet the City's future infrastructure needs

9B.1 Continue to develop and implement a **plan for solid waste disposal:**

- Explore all feasible options except for expansion of the White Street facility
- Enhance the current recycling program and increase efforts to reduce the City's solid waste volume



Narrative:

The **White Street Landfill**, located in the northeastern part of Greensboro, is owned and operated by the City. This facility, consisting of approximately 850 acres, has a current life expectancy of less than 10 years within the current active phase. The City is currently considering a range of alternative solutions, such as transfer stations, to replace the existing facility when it reaches capacity.

¹ Documentation of the methodology used to develop the growth/capacity estimates is provided in Working Paper: Results of 9/4-6/01 Comprehensive Plan Charette, Wallace Roberts & Todd, LLC, November 2001.

9B.2 Develop a long-term plan to provide for the City's future **public water and wastewater treatment needs**, including:

- Coordination of water/sewer extensions with growth and development policies per Policies 9A.1 to 5 above
- Identification and promotion of long-term alternative methods to provide increased capacity and reduce consumption (e.g., cooperative arrangements among jurisdictions in adjacent watersheds on use of water supply, indirect potable reuse of treated effluent (recycling), and additional/more stringent conservation measures)

9B.3 **Complete plans within timeframes** sufficient to allow strategies for meeting future needs to be implemented before currently planned capacities are exceeded (e.g., within five years of completion of Randleman Lake for water supply needs).



Narrative:

Currently, Greensboro's **public water supply** comes from three impounded reservoirs (Lake Higgins, Lake Townsend, and Lake Brandt) that are fed by Reedy Fork Creek. The three reservoirs have capacity for approximately 8 billion gallons of water, with a "safe yield" level of approximately 31.5 million gallons per day (gpd) of finished water. For the past decade, however, water demand has routinely exceeded this production level, requiring the City to purchase additional water from Reidsville and, to a

lesser extent, from Winston-Salem and High Point. In addition, a water supply connection to Burlington is currently under design. Although this solution has raised safe capacity to about 38 million gpd, it is projected that the safe-yield level without Randleman Lake will again be exceeded sometime after 2005. The City is currently pursuing the Haw River project as another water source that will help ensure that the current safe yield will hold up during a multi-year drought.

The **Randleman Lake project**, originally authorized by the U.S. Congress in 1968, is scheduled to be complete by 2005-2006. Managed by the Piedmont Triad Regional Water Authority (PTRWA) and straddling Guilford and Randolph Counties, this project will increase Greensboro's water capacity by approximately 28 million gpd. However, Randleman will provide only a provisional solution to



Randleman Dam under construction

Greensboro's water problems, as it is expected to satisfy water supply needs in the entire Piedmont Triad Region for a period of about 30 to 40 years. Therefore, Greensboro should begin to explore long-term alternatives for meeting projected demand before the existing capacity is exceeded. These alternatives should include both providing additional water supply and reducing consumption (e.g., water conservation, use of reclaimed water for purposes such as industry and irrigation, and additional treatment to reclaim water for indirect potable reuse).

With respect to **wastewater treatment**, the City operates two wastewater treatment plants: North Buffalo and T.Z. Osborne. An expansion to the Osborne Plant is currently underway and will bring the combined capacity of the two plants to 56 million gpd, sufficient to meet projected demand for at least 20 years under current growth rates. Planning is needed to address:

- Greensboro's long-range wastewater treatment capacity needs
- The quality of water discharged from the plants to local streams. This issue is particularly important because of anticipated federal and state water quality standards.

9B.4 Continue the development and implementation of programs to manage **stormwater runoff** to prevent flooding, address water pollution, and improve the quality of the City's streams (e.g., through establishment of stream buffers that filter pollutants, shade and cool the water, provide channel stability, and provide flood storage capacity). [See also Community Character Policies 5B.3 & 4]



9B.5 Modernize **design standards for stormwater** structures and outlets to reflect emphasis on water quality, protection of stream ecology, and conformity with state regulatory expectations (e.g., use of bottomless culverts, reduction of riprap, etc.). [See also Community Character Policies 5B.3 & 4]



Stream Bank Restoration

Narrative:

Stormwater management is necessary to manage both the quantity and quality of runoff generated by developed areas (buildings, parking areas, roads, etc.). All available **best management practices** (BMPs) should be used to reduce the impacts of stormwater

runoff. Examples of BMPs include preserving natural vegetation, protecting unstable or steep slopes, retaining stormwater onsite through features such as wet detention ponds, and instituting measures to prevent sediment from leaving construction sites or recently cleared areas. To the extent feasible, standards for stormwater drainage structures should promote designs that emulate natural characteristics of ponds and streams (e.g., curved, "organic" geometries, gently sloping edges, and native plantings) and which, in addition to their primary function, serve as aesthetic amenities.

9C. Establish an ongoing system to identify community facility and service needs and allocate resources to meet them

9C.1 Enact a “community facility planning system” based upon **objective level of service standards** for each type of facility or service, similar to what fire, libraries, and parks and recreation have in place.

Narrative:

Although Greensboro has generally done well in providing basic public facilities and services to its growing population, incipient capacity problems indicate the need for a proactive approach to service provision. The adoption of a **community facility planning system** is essential to the implementation of this policy. One component of this system would be the adoption of **level of service standards (LOS)** or similar performance criteria to measure the capacity of each type of public facility or service and guide their planning for additional facilities or services. The LOS may be derived from government requirements, professional or industry standards, or even from measuring citizen expectations through surveys or other means. As indicated, some standards are already in place for fire, parks and recreation, and library services, while others need to be developed.



9C.2 Use the community facility planning system to ensure that **sufficient resources are allocated in operating and capital budgets** to maintain levels of services equitably throughout the City.

Narrative:

The systematic approach provided by the community facility planning process should be incorporated into the planning and programming activities of all City departments that provide facilities and services. Using existing and projected population characteristics, the current and projected provision of community facilities can be compared to levels of service

and adjustments made accordingly. Coordination should extend to service providers outside of City government, including Guilford County Public Schools.

9C.3 Ensure that Police and other service delivery departments are provided with **adequate new resources to serve newly annexed areas** rather than being required to serve these areas with existing resources, which dilutes levels of service throughout the City.

Narrative:

The costs of providing services and facilities to serve growth associated with continued annexation of land and additional population clearly underscores the need for a proactive long-term planning approach, to which the community facilities planning system is perfectly suited. To calculate additional staff and facility needs to serve newly annexed areas, objective LOS standards should be established. For police service, for example, the LOS can be based on a desired "maximum utilization" or workload capacity rate, on a maximum response time, or police officer/1,000 population. Regardless of the standard chosen for each type of community facility or service, all LOSs should be periodically evaluated and adjusted, if necessary, to respond to changing conditions.

9C.4 Coordinate with **Guilford County Public Schools** regarding the **identification of school sites** consistent with the City’s policies for growth and redevelopment.



Photo courtesy of Guilford County Schools

Narrative:

Like public facilities and services provided by the City (police, fire, etc.), it is important that public schools be systematically planned for to ensure that future needs are met and that schools are located consistent with development trends and the growth management policies of the Comprehensive Plan. Guilford County Public Schools maintains a list of future school sites

needed to accommodate projected future enrollment. While attendance lines developed in 1999 may limit preferred sites for new schools, coordination between the City and Schools’ Facilities staff will facilitate the sharing of critical information that affect school location (traffic conditions, population density, site size, etc.) Locating schools to be consistent with the "tiered growth" concept for the area at the city/county fringe and to promote neighborhood revitalization in the Urban Core will be key policy considerations. Such planning will also



Photo courtesy of Guilford County Schools

facilitate identification of potential sites as large-scale developments are considered.

9D. Emphasize shared rather than single-use facilities to promote cost efficiencies and more comprehensive service for residents

9D.1 Wherever possible, program new city facilities to **accommodate multiple uses** (e.g., the currently programmed Steveco facility (police/fire/water resources) and Horse Pen Creek fire station (fire/recreation)).

Narrative:

Shared or **multi-use facilities** are one way to achieve cost savings and more efficiency in service delivery. They also benefit residents through the convenience of providing more than one type of service in a location. While existing facilities may not always easily lend themselves to shared use because of design or other factors, the City should identify and pursue every possible opportunity to apply this concept in future facilities.

9D.2 Work with Guilford County Public Schools to establish joint facilities in designated growth areas (e.g., joint school/library/recreation area rather than separate, stand alone facilities).

Narrative:

Opportunities for establishing multi-use facilities should be sought not only between local government agencies, but also with other public service providers, both at the local and regional level. The objective would be to work together to achieve benefits such as limiting traffic, promoting alternative forms of transportation, and reducing the amount of new impervious surface developed. As one example, joint agreements with schools and other institutions for use of recreational facilities during off-hours are common in many jurisdictions. Not only can such joint-use agreements provide an innovative way to achieve park and recreation level of service standards, but often these facilities are better located in relation to the surrounding area to serve as neighborhood parks.

9D.3 Provide links to other city services that may not have a separate presence in the facility (e.g., computer stations that access the library system). [see Policy 9E.2]

9E. Pursue opportunities to establish community facilities as neighborhood anchors/activity centers

9E.1 Where feasible, **integrate community facilities into mixed-use centers** of activity for surrounding residents, thus contributing to quality of life and neighborhood vitality.

Narrative:

In addition to meeting specific community needs for delivery of programs and services, community facilities can function as hubs of neighborhood and community activity. In this capacity, such facilities can help further other Comprehensive Plan policies, such as those related to **neighborhood revitalization** or to supporting the establishment of **mixed-use centers**. New community facilities should be strategically located as to meet identified needs and to enhance neighborhood life. Mixed-use centers, which by definition act as destinations and places for communal activity, should be the preferred location for new facilities whenever possible. In the case of existing facilities, opportunities should be pursued to increase their present contribution to neighborhood vitality.

9E.2 Explore non-traditional means of providing services to residents, including **neighborhood resource centers** that provide access to multiple city services.

Narrative:

In many communities, service providers are examining and redefining their roles as society and community needs change. Libraries, for example, may provide community meeting and exhibit spaces, as well as "service kiosks" where citizens can access city services, whether on-line or through a "customer service" representative. A concept that is being explored in some American cities, **neighborhood resource centers** can provide convenient, "one-stop shopping" for residents through information and services made available via computer stations or other means.

9E.3 Respond to the unique **needs of Greensboro's diverse populations** (e.g., African American, Hispanic, etc.) in the provision of neighborhood-based community facilities, services, and programs.

Narrative:

The 2000 U.S. Census indicates that the City of Greensboro become more **ethnically diverse** between 1990 and 2000. During this period, the African American and American Indian populations grew 34.5 percent and 27 percent, respectively, while the Hispanic/Latino population grew by over 600 percent. Recognizing that these ethnic groups often have specific needs, the City should explore ways to meet these needs in the provision of services and programs, while creating opportunities for interaction and increased community involvement.

9F. Make Greensboro the “Safest City in the United States”

9F.1 Consistent with the "Strategic Five-Year Plan" of the Greensboro Police Department, implement an integrated approach to policing that focuses on **crime prevention**.

9F.2 Identify ways **other city departments can contribute to crime prevention** through partnerships with the police and citizens (e.g., by sponsoring programs to involve youths in meaningful activities).

9F.3 Involve residents in addressing **safety and crime prevention issues at a neighborhood level**.

9F.4 Pursue other Comprehensive Plan policies that will foster a “safer city,” e.g.:

- The **Neighborhood Planning Initiative** proposed as part of a comprehensive neighborhood conservation and improvement program [see Housing and Neighborhoods Policy 6A.1]
- Policies to increase economic opportunities for the minority community

9F.5 Increase **human, operational, and capital resources of the Police Department** to the level necessary to permit achievement of the envisioned quality of life for citizens in all neighborhoods.



Narrative:

The City of Greensboro Police Department was certified as a governmental agency in 1889. Today, the department maintains a workforce of over 680 employees, including over 500 law enforcement officers. This equates to a level of service ratio of approximately 2.28 officers per 1,000 citizens (based on 2000 population).

Policies 9F.1 to 5 are consistent with priorities established in the department's *Front and Center Five-Year Strategic Plan*, which is aimed at making Greensboro the **safest city in America**. A key operational goal of this plan is to decentralize and place service delivery closer to its end users for increased effectiveness. Key initiatives of the plan include:

- Handling emergencies quickly and fighting crime effectively
- Providing high visibility patrols
- Partnering in problem solving
- Creating an atmosphere of fairness and trust
- Focusing on prevention

Effective crime prevention is related to many different factors, such as economic opportunity, healthy neighborhoods with involved residents, and a good public school system. Similarly, other city departments have roles to play in crime prevention. Recreational programs for youths offered by the Parks and Recreation Department and small business, employment, and training programs supported by the City consistent with the policies of the Economic Development Element are examples.