PUBLIC FACILITIES

INTRODUCTION

Public facilities are those facilities required to support the services and functions provided by the County government or public utility companies. Such facilities are essential to support the community and its development and to enhance the overall quality of life. Public facilities include such necessities as water and sewer lines and police and fire protection, as well as educational and cultural services. In addition, they also include human service providers and parks and recreation, although these facilities and services are discussed in separate sections of the Comprehensive Plan.

The vigorous growth of Fairfax County has been paralleled by demands for public services and facilities. The County's present system of public facilities demonstrates a high commitment to service provision and the community's expectations. However, as the infrastructure in currently developed portions of the County ages, there will be increased competition between newer and older areas for facility dollars. Therefore, it will become increasingly important to cause future development to occur in concert with adequate public facilities, if the existing level of service is to be maintained in a fiscally sound manner.

The Public Facilities Element of the Comprehensive Plan recognizes that the level of public services enjoyed by County residents is a significant local attribute and its continuation requires sound and supportable planning guidelines. These must not only ensure that there is a balance between the County's future land use intensity and facility quantity, but that new facilities are located to maximize accessibility while minimizing neighborhood impact. Therefore, it is the purpose of this Plan element to provide specific guidance on the following:

- the appropriate general location of new facilities;
- appropriate specific locational criteria, such as site size, access, and screening for different facility types;
- service level standards which indicate the number of new facilities;
- methods for determining the specific need and appropriate timing of facilities;
- the acceptable character and extent of facilities and measures for attaining them.

The primary mechanisms for applying this guidance and ensuring a well balanced and adequate public facility system, is through both the Capital Improvement Program and 2232 Review processes. These mechanisms are important tools for implementing the County's public facilities plan. They will be guided by the standards and guidelines identified in the Public Facilities Element of the Comprehensive Plan.

The County's Capital Improvement Program guides the development of public facilities over a five year period. It shows the arrangement of projects in a sequential order based on a schedule of priorities and assigns an estimated cost and anticipated method of funding each project. The Capital Improvement Program provides the financial foundation necessary to implement plans.

The County's 2232 Review process is a mechanism for reviewing the compatibility of proposed public facilities with the locational guidelines established in the Comprehensive Plan. Specifically, this process is used to determine if the general or approximate location, character and extent of a proposed facility are in substantial accord with the Plan.

BOARD OF SUPERVISORS GOALS

There are six Board adopted goals which relate directly to public facilities: Growth and Adequate Public Facilities, Adequate Public Services, Education, Culture and Recreation, Land Use, and Financial Planning and Management. These goals establish the basis for public facilities planning in Fairfax County as articulated by the objectives and policies in this element of the Comprehensive Plan. Overall, these goals emphasize the following:

- that the County is committed to a high level and quality of public services;
- that growth and new development should be held to a level consistent with the adequacy and accessibility of existing facilities and phased in accordance with the County's ability to provide new ones;
- that the County should ensure a quality education system by providing comprehensive education, training programs and facilities;
- that the County should provide a local system of libraries and cultural programs and facilities; and,
- that the County should support an equitable system of taxation and user charges to provide quality services and facilities to residents.

These goals also underscore the idea that public facilities, and the County's ability to provide them, is essential to maintaining the quality of life in the County and that a careful balance between land use decisions should be made only after public facility service implications are fully addressed.

COUNTYWIDE OBJECTIVES AND POLICIES

The overall Public Facilities element of the Comprehensive Plan is based on general objectives which apply to the County's public facility planning effort as a whole and specific functional program areas in particular. These objectives therefore should be viewed as the key principles for establishing a facility network which is responsive to the County's ability to pay, community expectations, the public health, safety and general welfare, and neighborhood and land use impacts.

Objective 1: **Locate new facilities to provide convenient service to the greatest number of people or service consumers and users.**

Policy a. Site facilities appropriately to the area they are intended to serve.

Policy b. Reduce service area overlap between like facilities, unless overlap is necessary to correct service deficiencies.

Policy c. Site facilities in accordance with locational standards that maintain accepted levels of service while reducing duplication or underutilization.

Policy d. Ensure that minimum populations or service thresholds are projected to be met before facility construction is undertaken.

Objective 2: **Construct and maintain facilities in accord with expected levels of service objectives and fiscal limitations.**

Policy a. Program the establishment of facilities through the County's Capital Improvement Program. Projects programmed for construction in the CIP should either be 1) identified in the plan text or on the Plan map in accordance with adopted service levels; 2) be demonstrated as particularly urgent to meet public health or safety needs or required service levels; or 3) be supported by a needs analysis reviewed both by the Offices of Comprehensive Planning and Management and Budget and supported by the County Executive's recommendation as evidenced by CIP inclusion.

Policy b. Follow adopted public facility standards to identify facility requirements associated with level of need, appropriate quantity and size, and relationship to population.

Policy c. Ensure adequate maintenance of existing facilities.

Objective 3: **Balance the provision of public facilities with growth and development.**

Policy a. Construct new facilities in size and quantity which is consistent with projected population needs.

Policy b. Ensure that adequate facility space and services are available, programmed in the CIP, or provided by new development, before increasing planned intensities through revision of the Comprehensive Plan.

Policy c. Assess the adequacy and need for public facilities in the rezoning process.

Policy d. Phase increases in development intensity with the establishment of necessary facilities, when rezoning to higher intensities is to occur prior to the establishment or programming of adequate facilities.

Policy e. Designate and reserve future public facility sites that will be required by future growth and development.

Policy f. Ensure that when existing public facility sites are no longer needed for their original use, the land formerly used for that purpose is reserved, to the extent possible and prudent, for other public uses.

Policy g. Acquire, as fiscally possible, sites for public facilities in advance of demand either through purchase or dedication.

Objective 4: **Mitigate the impact of public facilities on adjacent planned and existing land uses.**

Policy a. Locate public facilities in areas of compatible land use, if service efficiency and cost effectiveness can be achieved. Siting facilities in areas of different land uses is acceptable and at times required, to provide centrally located public facilities

which are critical to the public interest as long as the integrity of the Comprehensive Plan is not impinged.

Policy b. Co-locate public facilities whenever appropriate to achieve convenience and economies of scale, as long as the integrity of the Comprehensive Plan is not impinged.

Policy c. Design facilities to promote and enhance the community identity of existing character.

Policy d. Ensure that public facilities are properly screened and buffered in order to mitigate visual impact on adjacent planned development of a different use or nature.

Policy e. Ensure that site size and development conforms to all requirements of the Fairfax County Zoning Ordinance and exceeds site acreage requirements, as possible, to achieve maximum compatibility with surrounding land uses.

Objective 5: Acquire sites which are appropriate for the facility's specific purpose. Apply acceptable criteria when evaluating public facility sites.

Policy a. Consider accessibility in siting facilities. In general, public facilities should have access to primary arterial roadways. Exceptions to this locational principle include facilities with a community pedestrian orientation, such as a neighborhood park or an elementary school.

Policy b. Locate facilities on sites which have adequate acreage for short-term needs, but can also accommodate expansion.

Policy c. Avoid areas of environmental sensitivity except where site acquisition is in support of open space.

Policy d. Evaluate engineering considerations, such as slopes and soils and other factors pertinent to knowing the extent of the site's development cost.

Policy e. Locate, as possible, facilities on sites with public water and sewer.

Policy f. Locate facilities on sites preferably having mature vegetation, capable of providing a natural buffer and enhancing building design.

Policy g. Use the 456 Process to determine the siting suitability and appropriateness of facilities in relation with the Comprehensive Plan.

THE PUBLIC FACILITIES ELEMENT

The Public Facilities Element of the County's Comprehensive Plan is organized in four major sections: Education - Higher Education and Public Schools; Libraries; Public Safety - Police, Fire and Rescue, Sheriff, Courts and Animal Control; and Utilities and Services - Water Supply, Sanitary Sewer, Solid Waste, Drainage Systems and Stormwater Management Facilities, County Vehicle Maintenance Facilities, Gas, Electric, Telephone, and Communication Towers.

For each of these sections findings and issues are discussed and planning guidelines are presented. In most cases these guidelines provide policies and standards for the following factors:

Location - where should facilities be located in order to provide accessibility, support planned land uses, and adequately serve their function.

Character and Extent - the quantity of the facility which should be constructed in relation to the population, the appropriate facility size, and design requirements to achieve neighborhood compatibility.

Other - factors which must be addressed to provide an acceptable level of service or community or user benefit.

EDUCATION

Fairfax County residents are offered a full and varied range of educational opportunities through the County's public school system and the presence of both a community college and a four-year university.

PUBLIC SCHOOLS

INTRODUCTION

Fairfax County Public Schools (FCPS) is the major provider of education in the County. This system, which has been nationally recognized for excellence and is one of the largest school system in the nation, has a wide range of educational facilities that accommodate instructional programs for County students from kindergarten through grade 12. In addition to accommodating educational programs, school facilities are used to meet the recreational and cultural needs of the County through programming by the Department of Recreation and Community Services. Generally, separate facilities are provided to serve three levels of education:

- Elementary _ _ _ _ _ _ _ kindergarten to grade 6
- Intermediate _ _ _ _ _ _ grades 7 and 8
- High _ _ _ _ _ _ _ _ _ _ _ grades 9 through 12

Additionally, FCPS has an extensive adult education program, and many specialized educational programs. Special education programs serve mentally and physically handicapped students, ranging in age from 2 to 22. The Family and Early Childhood Education Program (FECEP), formerly known as Head Start, is a preschool program operated primarily in elementary schools for children ages 4 and 5.

The fundamental element in capital facility planning for public schools is determining future memberships, a complex procedure which continues to be refined. The school system employs a combination of two statistical methodologies, a modified cohort-survival model and the cohort-component model, for projecting student populations. The cohort-survival model is based on expected birth and migration rates and the cohort-component model modifies survival ratio projections to account for special events that effect projections, such as students generated by new housing. The latter model employs housing student-generation yields using a computer-assisted geographic planning model, which aggregates estimates to attendance area level. These estimates are then incorporated into the cohort-survival generated attendance area estimates. These models are

only effective with current data. Therefore, thorough knowledge of housing starts and use of appropriate dwelling-unit multipliers are essential. In addition to obtaining current housing start information, FCPS staff conduct both windshield surveys, to determine construction progress, and mail-out surveys, to determine current household composition. Enrollment is frequently projected to within a 1% level of accuracy.

Planning for schools is particularly difficult in areas with transient populations, such as Northern Virginia. This problem is compounded in Fairfax County by rapid housing development, and a multitude of variables which alter enrollment levels, such as transfers to and from private schools, in and out migration rates, and changing family compositions in existing housing stock.

FCPS strives for precise facility planning, in order to mitigate costs associated with over-estimates and yet ensure adequate physical space for students and programs. The need for new facilities and additions is determined by comparing available capacity in an area and the projected students for that area. Capacity is an estimate of the number of student spaces available within an educational facility which takes into account the following factors: educational specifications for elementary, intermediate and high schools; program requirements; and appropriate student-teacher ratios. For example, program requirements can alter space allocations within a building if they utilize additional space, such as the addition of a room for computer training. Changes in student-teacher ratios can alter the number of classrooms required for a given number of students by modifying how they are organized into classes and scheduled into rooms.

Student membership forecasts, coupled with capacity estimates and facility standards, provide the framework for capital facility planning. Locational criteria assist in site planning, identification and selection.

The next 20 years will prove a significant challenge in maintaining and improving the County's high standards for educational facilities. In addition to keeping pace with technological advances and demographic fluctuations, FCPS must acquire schools sites in an ever-tightening real estate market. Land acquisition and construction of schools will compete with other community facilities for available land and funding resources. While providing for new facilities is expected to be a major focus for FCPS, it is becoming increasingly apparent that the rehabilitation of existing facilities will compete for limited facility funding. Therefore, every effort should be made to ensure that projects cost-effectively meet FCPS requirements.

The Constitution of Virginia delegates the supervision of public schools to the school board of each locality. Virginia school boards are not County agencies. The Virginia Supreme Court consistently has acknowledged that the power to select school sites and to determine the manner in which school properties shall be used is essential to the school board's supervisory role.

Pursuant to Virginia Code annotated Section 15.2-2232 when a proposed public school facility is not featured in the Comprehensive Plan, the School Board must submit the proposed facility to the Planning Commission for a determination of whether the general, or approximate location, character, and extent of the proposed facility is substantially in accord with the Comprehensive Plan. The text, objectives, and policies appearing in this portion of the Policy Plan are planning guidelines and are not intended to negate the School Board's constitutionally vested authority for school site selection, school design, or the most appropriate method to house and accommodate Fairfax County public school students. On the other hand, to the extent that the text, objectives, and policies of this section reflect land use rather than programmatic concerns, they will be implemented by the Planning Commission, as required by Virginia Code, Section 15.2-2232.

Location

Objective 6: **Acquire sites for future building through negotiation, dedication, or condemnation, which best provide efficiently located schools.**

Policy a. Place schools on parcels meeting the optimum number of general locational criteria. Sites should be evaluated by the following factors:

- Safe and convenient accessibility to pedestrian and road networks.
- Acreage to accommodate expansion, when the school is originally sized below the maximum efficiency standard for that type of school.
- Compatibility with adjoining planned and existing development and with the Comprehensive Plan.
- Aesthetically pleasing physical qualities with appropriate engineering features (e.g. soils, topography).
- Proximity to other public facilities, such as Police and Fire and Rescue services.
- Proximity of schools to commercial areas should be avoided, if possible.

Policy b. Locate school sites, when situated in areas conducive to pedestrian traffic, to take advantage of maximum walking distances of one mile for elementary schools and one and a half miles for intermediate and high schools.

Policy c. Locate intermediate and high schools, and when possible, elementary schools, where they can be served by public water and sewer. When elementary schools must be located in nonsewered areas in order to serve their target student population, well and septic can be utilized if no other alternative is available.

Policy d. Purchase school sites, when land dedications cannot be obtained, as far in advance of construction as possible, to ensure availability of both the preferred location and the necessary site features. Implement a land acquisition plan through the Capital Improvement Program.

Policy e. Encourage site dedications which provide sufficient usable acreage to meet locational criteria.

Policy f. Coordinate the acquisition and design of the site's active recreation areas with the Fairfax County Park Authority as required to meet recreational standards and where feasible. This will ensure maximum opportunities for colocation and efficient use of recreational facilities.

Policy g. Encourage as part of the development and redevelopment process, commitments for school renewals and additions.

Objective 7: **Distribute administration and maintenance facilities to conveniently serve the areas they support.**

Policy a. Locate Area Administration buildings in the school areas they are intended to serve.

Policy b. Locate maintenance and operation facilities to afford greater convenience and reduction of travel time.

Character and Extent

Objective 8: **Locate schools on sites which meet or exceed minimum State size standards.**

Policy a. Ensure that minimum site size conforms to the Fairfax County Zoning Ordinance F.A.R. requirements. This may require acquisition of acreage in addition to the State minimum requirements.

Objective 9: **Design schools to allow for maximum site utilization while providing optimum service to, and compatibility with, the local community.**

Policy a. Design schools to maximize a site's utility, while providing for safety and aesthetics. Provide for possible future expansion and allow for efficient flow of traffic. Provide adequate stacking space and circulation for school buses, and offstreet parking, as required. The impact of school traffic on local road networks should, to the extent possible, be minimized.

Policy b. Design and construct schools with appreciation for, and attention to, environmentally sensitive lands.

Policy c. Locate elementary, intermediate and high schools in relation to residential areas, the road network and traffic patterns to optimize the resulting safety and convenience for students, residents, and commuters. When possible, elementary schools should be located in, or on the periphery of, residential areas to ensure proximity and convenience for students and the local community.

Policy d. Provide for compatibility between schools and adjacent properties with appropriate screening and fencing, in accordance with the Fairfax County Zoning Ordinance. When designing and constructing schools, preserve as much mature natural vegetation as possible.

Other

Objective 10: **Encourage full utilization of existing school facilities, whenever possible and reasonable, to support educational and community objectives.**

Policy a. Build additions, when appropriate, to minimize the need for new facilities. Analyze carefully the costs and benefits associated with construction of an addition as compared to a new facility.

Policy b. Consider the expansion of existing school facilities identified on the Comprehensive Plan map, a feature shown of the Comprehensive Plan provided the proposed expansion has received prior approval by a public bond referendum, is included in the County's currently adopted Capital Improvement Program, and does not significantly impact on the character of the existing facility and its compatibility with the surrounding area.

Policy c. Provide temporary facilities as required to respond to short term student population accommodation needs.

Policy d. Promote equity between older and newer schools through the Renewal Program. Apply the same educational specifications used as a guide in the construction of new schools for planning the renewal of old ones. Consider expected future utilization rates when proposing renewal projects.

Policy e. Continue the practice of serving local communities, for scouts, senior citizen programs and other neighborhood based activities, through the use of school facilities. Provide access to school grounds for community use of recreational facilities. Cooperate in the use of schools for the School Age Children child care program.

Policy f. Continue the practice of allowing the Park Authority to utilize sites before school construction begins.

Policy g. Provide space for other public service needs, when possible and reasonable, in underutilized schools.

HIGHER EDUCATION

INTRODUCTION

Fairfax County encourages and supports institutions of higher learning in order to promote intellectual development and educational opportunities for all students, and to provide resources which benefit the community as a whole.

Fairfax County's two institutions of higher learning, George Mason University (GMU), a four-year university, and Northern Virginia Community College (NVCC), a two-year college, are both state funded. NVCC is also funded (for capital only) by the local jurisdictions where campuses are located. Funding provided by these jurisdictions is calculated according to population, and in Fairfax County, the percentage share is determined annually.

As of spring 1996, GMU had a full time equivalent (FTE) student population of about 15,700. Future GMU projections to the year 2010 indicate an increase of 88% to 29,600 FTE's. These projections are based on analysis of current admissions applications and requests for classes in additional subject areas, and Washington Metropolitan Council of Governments (COG) population and employment projections.

In addition, the Virginia Tech/University of Virginia Education Center near the West Falls Church Metro Station provides graduate and continuing education programs. Approximately 4,900 students are enrolled at this center.

Character and Extent

Objective 11: **Ensure that development of higher educational facilities is consistent with the goals of the Comprehensive Plan.**

Policy a. Encourage the State to phase facility construction in conjunction with area road improvements.

Policy b. Encourage the State to construct new facilities to be compatible with and supportive of adjacent land uses.

Objective 12: **Expand services and facilities of higher education commensurate with regional demands and expectations in areas that are conveniently located for students and effectively concentrated for educational efficiencies.**

Policy a. Expand services to the community through the community college. Support NVCC's efforts which continue to provide undergraduate and continuing educational instruction, study, and research, and the use of a community center for meetings and cultural events.

Policy b. Encourage the State to achieve GMU's plans for additional educational facilities and services, in a manner which is consistent with the Comprehensive Plan and the County's road and facility systems. Ensure that the implementation of these plans respect adjacent planned and developed land uses.

LIBRARIES

INTRODUCTION

The mission of the Fairfax County Library is to provide and to encourage the use of library resources and services to meet the evolving educational, recreational, and informational needs of all residents of Fairfax County, thus enhancing individual and community life. To achieve fulfillment of this mission the Library will continue:

- To provide a network of facilities that offer library services responding to the needs of the community in which each library is located and systemwide mechanisms to share resources among branches.

- To select, obtain, process and provide access to materials that meet the educational, recreational, and informational needs of Fairfax County citizens.

- To provide convenient, remote or off-site access to library services for County residents that is free of time and location constraints.

Since the early 1960's, the Fairfax County Public Library has grown from two libraries to 20 library facilities with an administrative center in the County Government Center. (See Figure 1.) The library system is comprised of two categories of libraries based on facility size and breadth of services provided.

Regional Libraries are the largest facilities with approximately 25,000 to 39,000 square feet offering a comprehensive collection of materials, services and programs. Regional libraries provide services to their local community and support informational needs of all County users on a coordinated and shared basis.

Community Libraries range in size from 10,000 to 17,000 square feet. These medium sized facilities provide a mix of library services designed to serve the community in which the library is located.

By agreement, Fairfax County Public Library provides library services to the City of Fairfax. Services to the hard of hearing, visually and physically disabled residents are provided by Access Services, housed at the Government Center.

Until the implementation of the Library's Strategic Plan in 1993-94, the Fairfax County Public Library followed a long-range plan that emphasized providing equal distribution of library services throughout the County. The long-range plan grew out of a space needs study conducted in the early 1980's. Under this plan, the services available at a library were more determined by the size of the facility than the characteristics of the community served. The organizational structure was hierarchical with resources concentrated in the regional libraries.

Several significant changes motivated the Library to adopt a strategic planning process:

- Expanding technologies offered new opportunities, and user expectations, to improve information delivery.

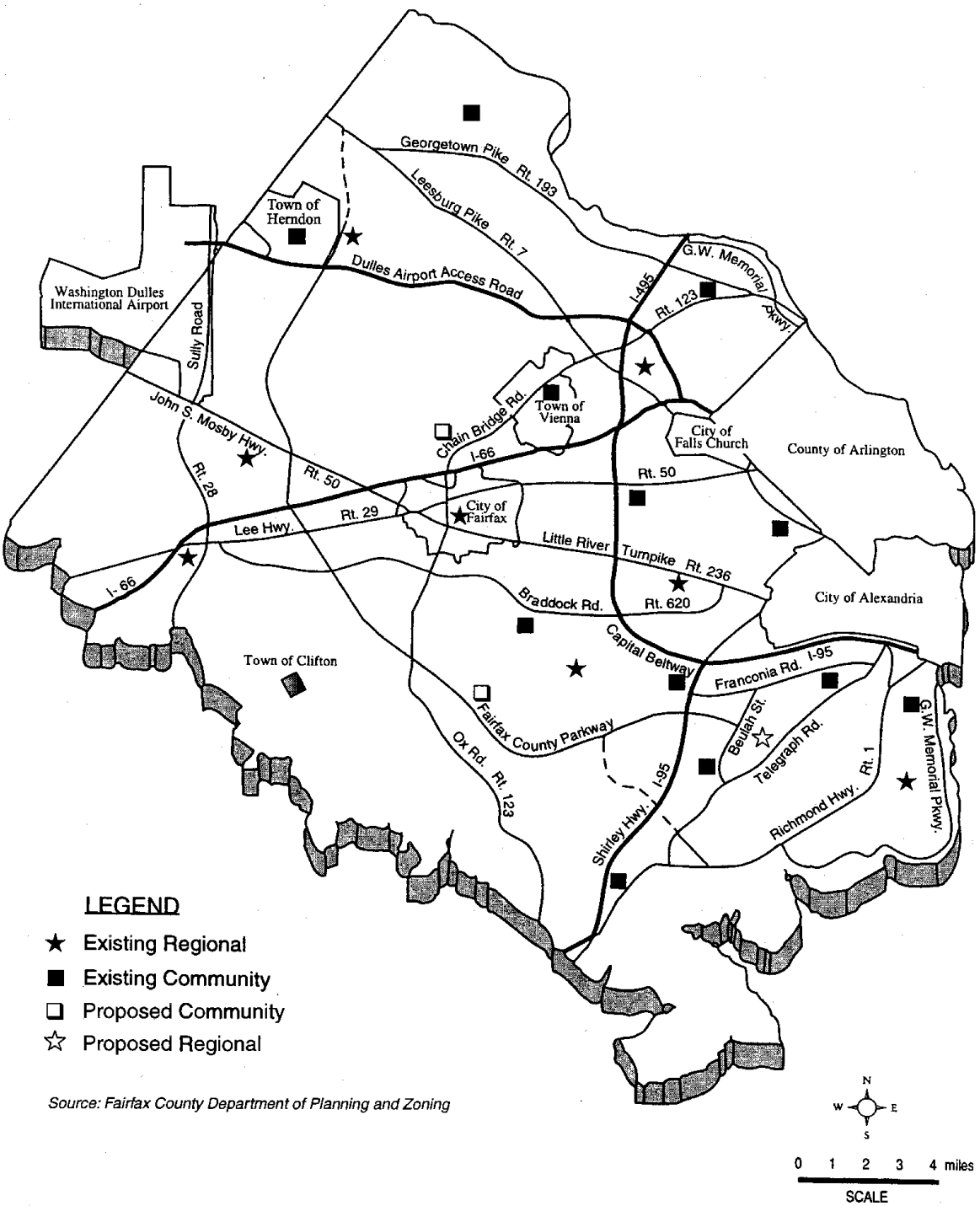
- Changing demographics indicated a growing diversity among residents and among communities within the County.

- Increasing costs combined with shrinking resources meant the Library could not continue to equally distribute all services and preserve quality.

In response to these incentives, the Library's strategic plan provides that the array of services, collection and staffing specialties available at each site is designed to support the use-oriented roles of each branch. The Library adopted three equally important roles: to provide popular materials; to provide information; and to support lifelong learning. Individual library role assignments are based on the demographics of their community and library use patterns. The provision of complete service for the individual user is accomplished by referrals and an efficient reserve system that moves requested materials to users.

In addition, new technologies for information delivery are placing new demands on library services. Existing libraries need to be re-designed and renovated to maximize the use of information technologies. New facilities need to be designed to incorporate new technologies. Remote access enables users to access library services by computer or telephone; this remote access also provides the opportunity to offer document delivery and other information services from a non-traditional site.

The Library Board of Trustees recognizes that current fiscal limitations restrict the achievement of the Virginia standard of .6 square foot of library space per resident or of the Board's own standard of .5 square foot adopted in 1984. As of July, 2002, there was approximately .39 square foot of library space per resident.



Source: Fairfax County Department of Planning and Zoning

PUBLIC LIBRARIES **FIGURE 1**

Location

Objective 13: **Locate library facilities to provide service to the greatest number of persons within designated service areas, and provide high visibility, safe and easy access, and ample size for the building, parking areas, landscaping and future expansion.**

Policy a. Locate library facilities on sites that are centrally located in terms of service area, population distribution and distance.

Policy b. Locate library facilities near major thoroughfares in order to maximize visibility. In general, regional libraries should have the highest degree of exposure and be located on or near arterial roadways.

Policy c. Ensure that access to a facility is from a feeder or collector street directly to a major thoroughfare. This eliminates dangerous turning patterns and unnecessary curb cuts to heavily traveled roadways.

Policy d. Locate libraries in proximity to or within commercial-retail areas as this promotes visibility, land use compatibility, and convenience because many library visits are in combination with shopping and work travel.

Character and Extent

Objective 14: **Library facilities should be compatible with adjacent land uses and with the character of the surrounding community and should be sized to provide adequate space for the population to be served.**

Policy a. Ensure that a library facility is designed compatibly with the character of its surrounding area.

Policy b. Acquire sites for libraries that will be large enough for future expansion, if additional facilities are needed. In general, a site area of 6 to 7 acres is required for a regional facility and 3 to 5 acres for a community facility.

Policy c. The total library system should provide at least .4 square foot of library space per resident. Accordingly, ensure that the population of each library district is served with adequate facilities, based upon the following size and population standards:

- Size: In general, regional libraries should be between 30,000 and 40,000 square feet. Community libraries should be between 10,000 and 20,000 square feet.
- Service population: Regional libraries should serve a minimum population of 100,000. Community libraries should serve a minimum population of 50,000.
- Service area: Based on the local transportation network and average travel times the service area for regional libraries should extend up to six miles, and community Libraries should have a three to four mile service area.

Objective 15: Library facilities should sustain adequate levels of patronage.

Policy a. Maintain acceptable levels of circulation and visitor counts for Regional and Community libraries. In general, library facilities should sustain the following levels of monthly circulation:

- Regional libraries:	at least 50,000
- Community libraries:	10,000 to 50,000

In general, libraries should sustain the following levels of monthly visitor or door counts:

- Regional libraries:	at least 20,000 visitors
- Community libraries:	10,000 to 20,000 visitors

Policy b. Promote expansion of existing community or regional facilities in stable areas, and new construction of the same in growing portions of the County in order to maintain the planning standard of .4 square feet of library space per resident.

Policy c. Continue innovative approaches to library service such as remote access by telephone and computer, document delivery to homes and offices, and information kiosks.

PUBLIC SAFETY

INTRODUCTION

The provision of public safety services is basic to an orderly society and the protection and safeguarding of the health and safety of County residents. For the most part, these functions in the County are the responsibility of the Police Department, Fire and Rescue Department, Office of Sheriff, the Circuit and General District Court System and the Animal Services Division.

Each of these functions is discussed in this section with specific objectives and policies. However, there are certain general guidelines, objectives and policies, that are common to all.

Objective 16: Maintain the high level of training provided to public safety officials, including but not limited to police officers, deputy sheriffs, fire and medical emergency personnel and animal wardens, so they either become or remain proficient and qualified in their duties.

Policy a. Expand when necessary the Public Safety Academy for sworn police officers and deputy sheriffs based on separate needs analyses for these protective agencies.

Policy b. Expand the Fire and Rescue Training Academy when necessary in fire suppression, medical emergencies and other disaster-related training based on a needs analysis for this facility of the Fire and Rescue Department.

Objective 17: **Enhance the operations elements of public safety officials with facilities to properly support the duties of sworn law enforcement officials, fire and emergency personnel and animal wardens.**

Policy a. Provide and locate the major facilities and appurtenances that will have the most optimum effect for public safety telecommunications necessary for the rapid dispatch of police units, fire and rescue units and animal wardens to the scene of citizen or other agency requests for assistance.

Policy b. Locate telecommunications facilities and equipment associated with public safety agencies in accordance with communication utility standards presented in the "Public Utilities" section of the Comprehensive Plan.

Policy c. Locate new public safety facilities in order that adequate space remains on site for future expansions and that public safety agencies which relate closely in their activities or clients are located in close proximity to one another with shared utilization to the extent possible.

Policy d. Maintain the Massey Building/Judicial Center Complex as the County's Public Safety Center which will include the expanded Adult Detention Center, juvenile detention facilities, adult and juvenile courts systems, and police and fire and rescue main administrations.

Policy e. Maintain facilities at the Public Safety Center and Emergency Operations Center to be functional and efficient with respect to County environmental guidelines, particularly storm drainage, and pedestrian and vehicle access and circulation. These centers should be aesthetically pleasing, complement existing architecture, and provide for future expansions for a 20-year horizon.

POLICE

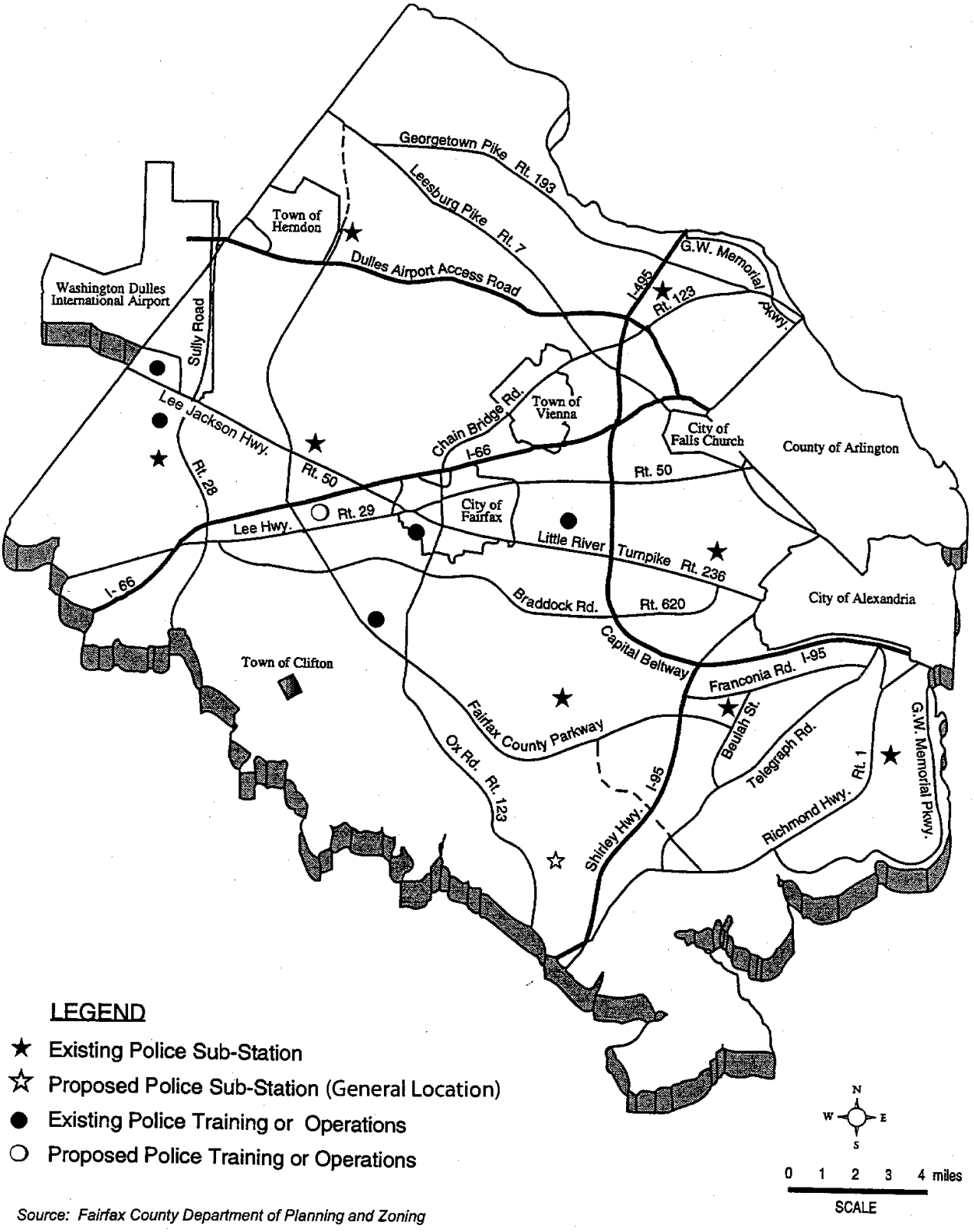
INTRODUCTION

Due to the nature of the majority of police work, which involves mobile patrol operations, the greatest need for facility space has been and will be for administrative, operational support and training functions. There are no nationally accepted standards for such facilities.

Similarly, there are no nationally accepted service area standards for police patrol areas. Due to the flexible and decentralized nature of police work, the day to day demands on police personnel change and local deficiencies can readily be alleviated through reassignment of officers and vehicles between station and patrol areas.

Location

Objective 18: **Locate police stations and facilities so as to provide the most efficient and expeditious law enforcement/protective service to the County as a whole and to the individual police districts. (See Figure 2.)**



Source: Fairfax County Department of Planning and Zoning

POLICE FACILITIES **FIGURE 2**

Policy a. Locate new police stations near the geographical center of the service area; preferably not in residential areas, but adjacent to commercial areas; compatible with adjoining areas; on a major street with good access to all parts of the service area; and adequate parking for police, employees and visitors.

Policy b. Plan for a new police substation in the southeastern part of the County.

Policy c. Evaluate the need to expand helicopter fleet facilities at the West Ox Road facility as determined by a needs assessment for this special operation or any changes in the Police Department policies which would require an expansion or change to the helicopter fleet. Evaluate the need for an alternate location for the police helicopter fleet in the southeastern part of the County to provide citizens with quicker response times for Medevac flights and for responding to traffic incidents on the I-95 corridor and Springfield interchange.

Policy d. Evaluate the need for locating a centralized police vehicle storage center, to provide a secure area for vehicles involved in fatal accident investigations, surveillance vehicle storage, and police vehicle preparation. This facility should be centrally located in a commercial area in the County and have adequate security.

Policy e. Evaluate the need to establish a combined Police/Fire and Rescue boat docking facility in a location that would allow for the immediate launching of boats along the coastal boundaries of Fairfax County.

Policy f. Evaluate the need for a police mounted unit, preferably in a location easily accessible to the County's existing trails and parks network. A horse mounted unit would provide high visibility patrols, crowd control, and search and rescue capabilities. Mounted officers would work with community organizations, school educational programs, and youth programs.

Character and Extent

Objective 19: Maintain or establish facilities that allow Police Department personnel to operate at maximum effectiveness.

Policy a. Plan, locate and construct new police facilities based on 35 square feet per sworn officer per shift.

Policy b. Size stations to meet the expected level of police service required to protect people and property located in the service area.

Policy c. Construct new police stations on a minimum of two acres in order to provide the necessary minimum station square footage for civilian personnel, sworn officers, equipment, department and visitor vehicles.

Policy d. Construct new police stations on a minimum of five acres when collocated with one other public facility such as a governmental center for a supervisor district or a fire and rescue station.

FIRE AND RESCUE

INTRODUCTION

Fire and rescue stations in the County are located to provide maximum coverage based on a total response time of seven minutes, which is further defined as a five-minute travel response and two-minute preparation time from the time the emergency call is received. This response goal is critical to providing effective fire suppression as well as emergency medical services. Provision of service recognizes economical constraints and certain basic guidelines, however, increased requests for service and significant traffic volume create delays which may impede the attainment of this goal.

The County's adopted *Fire and Rescue Station Location Master Plan* assumes that stations can be located to enable a seven-minute response time to at least 95 percent of the County's population. This assumption was based on population and call volume projections that have been exceeded. If all projected stations in the Master Plan are built as planned, it is likely that the response time goal will be reached approximately 90 percent of the time. Therefore, a study of the placement of future infill stations needs to be undertaken.

The fundamental element in facility planning is determining future demand for emergency services, the methodology for which is defined in the *Fire and Rescue Station Location Master Plan*. While providing new facilities to meet the increasing demand is expected to be a primary focus for the Fire and Rescue Department, it is becoming apparent that existing facilities will require additions and rehabilitation to accommodate necessary emergency response equipment. Continued analysis of resource utilization may result in redeployment of equipment to heavier demand areas.

Location

Objective 20: **Establish and maintain at a minimum, a seven-minute total response time coverage for fire and rescue emergencies to at least 95 per cent of the County's population. (See Figure 3.)**

Policy a. Plan, locate and construct new fire stations based on the standards and guidelines and when the following conditions are met:

- The projected service area of a new station has a population density of 1,000 persons per square mile;
- The projected service area is greater than two square miles;
- The projected service area is estimated to experience an activity level of 730 calls annually or an average of two per day; and
- Those service areas which are never expected to meet the population density or incident activity criteria due to land use restrictions should receive consideration for a mini (less than 9,500 square feet) fire station when they encompass eight square miles or more.

Policy b. Locate new fire and rescue stations at the most strategic point in a proposed service area to achieve a seven-minute total response time coverage to all points of the area and/or provide the most optimum service to that area based on the

service area void map of the S*tation Location Master Plan* and the locational criteria of the Plan to include the following:

- Locate stations close to intersections where there is no problem with highway access;

- Avoid hillside locations or locations at the bottom of hills when many responses must be made upgrade;

- Avoid locating stations directly on heavily traveled major arteries; rather, locate on a parallel street or cross street with a traffic signal with pre-emption capability at a nearby intersection for efficient egress/ingress;

- Locate stations on paved roads, preferably state-maintained with shoulders and a minimum of curves in the immediate vicinity of station access;

- Locate stations on relatively flat topography and provide the opportunity to buffer the station from adjoining properties;

- Locate stations on the side where the greatest hazard or higher incident activity exists, where there is either a man-made or natural obstacle such as a railroad or river; and

- Locate stations to minimize service area overlap and to provide coverage to areas not within five minutes of an existing station. When a new station is required to remove an existing service void and there is unavoidable overlap with other existing service area, the new station should be located so that any service overlap benefits the high risk/high density areas and alleviates the response requirements of other high activity areas.

Policy c. In addition to the regular review of fire station needs, plan and implement operational policies which enhance the ability of fire and emergency medical personnel to meet a seven-minute total response time from existing stations.

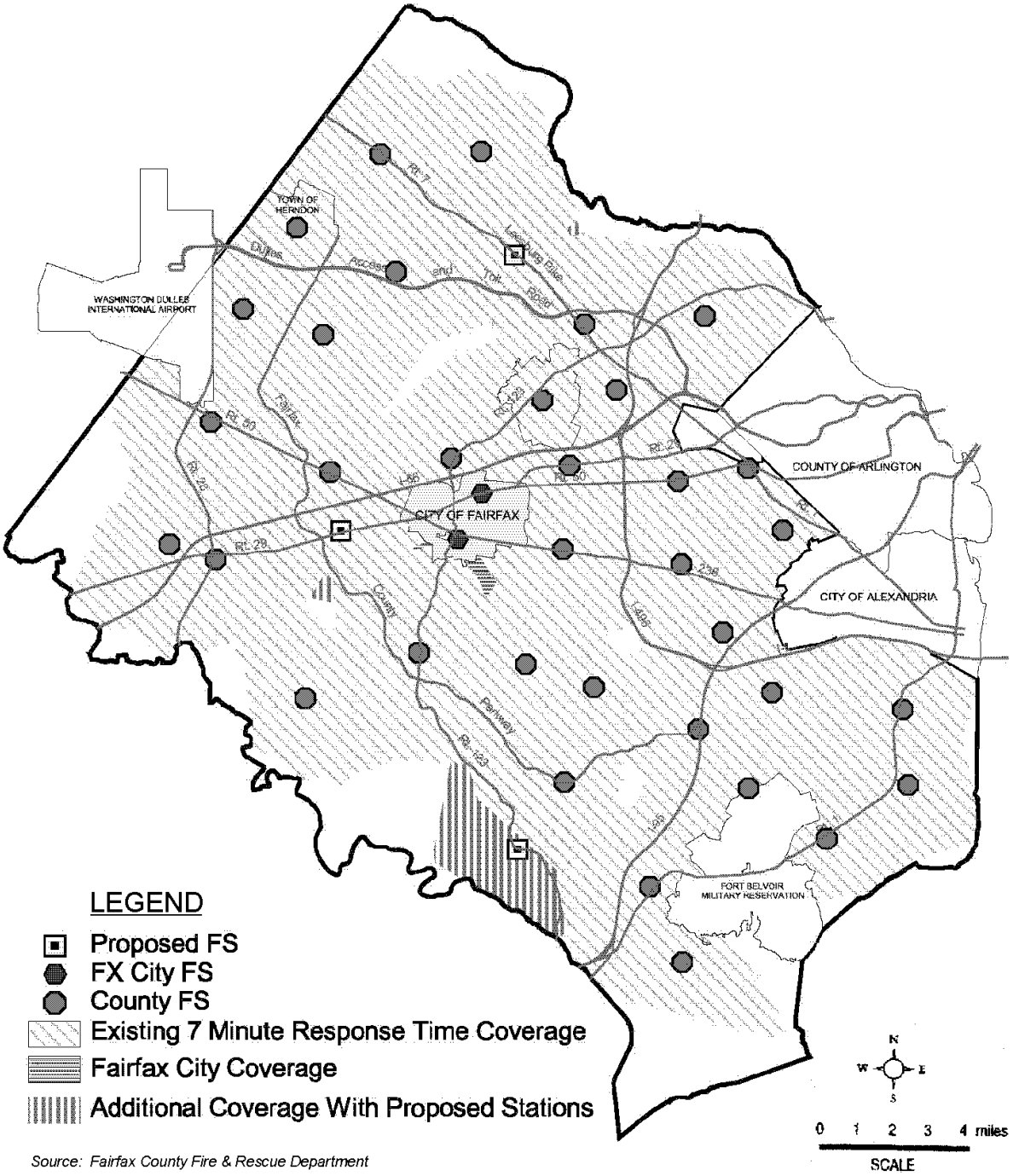
Character and Extent

Objective 21: While adhering to constructing new full service fire stations of a minimum 14,000 square feet, all efforts should be made to construct new stations to be compatible with the surrounding community.

Policy a. New fire stations should consider the following site/design guidelines:

- Be constructed on sites of approximately five acres;

- Be designed to be compatible with the character of the surrounding area.



Source: Fairfax County Fire & Rescue Department

FIRE AND RESCUE STATIONS **FIGURE 3**
SEVEN MINUTE RESPONSE TIME COVERAGE

Other

Objective 22: **Safeguard the County's investment and ensure appropriate positioning of the Fire and Rescue Department's specialized emergency response equipment.**

Policy a. Plan to establish a combined Police/Fire and Rescue boat docking facility in a location that allows for the immediate launching of boats along the coastal boundaries of Fairfax County.

SHERIFF

INTRODUCTION

The number of sentenced offenders requiring maximum security detention has continued to grow, reflecting the increased growth and development of the County. Nonviolent offenders must also be housed in the ADC due to lack of space in detention-alternative programs that exist in the County and elsewhere.

Other

Objective 23: **Meet the State Department of Corrections rated capacity standards for Average Daily Population at the Adult Detention Center (ADC) and provide for sentenced offenders not incarcerated at the ADC.**

Policy a. The County should utilize excess unused space in the ADC, until such time that it is needed for its intended purpose. Based on financial considerations and/or the temporary needs of other County agencies, such space could be effectively utilized by leasing to other County or outside agencies.

Policy b. Continue to follow guidelines, standards and procedures for jail renovations and additions as established by the American Corrections Association for any additions to the ADC.

Policy c. Continue to study, plan and construct alternative adult correctional programs and facilities such as the Work Training Facility at the Criminal Justice Collocation Site in Chantilly. These programs and facilities are for sentenced non-violent adult offenders which require minimum security detention facilities. New facilities of this type should be located at either existing or planned clustered County public facility centers throughout the County. For example, the County Governmental Center, the Massey/Judicial Complex, or police district stations. Locations in residential areas should not occur. Use the *American Corrections Association's* guidelines and standards for the design and size of any new facilities.

Policy d. In the planning of new correctional facilities, assess and consider options which are, or represent, alternatives to incarceration.

Objective 24: **Provide facilities for inmates to serve their sentence with opportunities not otherwise available in confinement to include: work release, education**

programs, rehabilitative programs in the community, and weekend community service as alternatives to incarceration.

Policy a. Establish a plan for the County to include facility, site and location standards for alternative incarceration programs.

COURTS

INTRODUCTION

The court system, comprised of the 19th Judicial Circuit Court and the General District Court, primarily involves the administration and enforcement of justice based on civil and criminal laws of the Commonwealth of Virginia. These courts' facilities, with the exception of the District Court's Magistrates System which occupies space in the Adult Detention Center and a substation in Mt. Vernon, are located at the Judicial Center/Courthouse Complex in Fairfax City. Although completed in 1982, there continues to be an increase in the number of criminal, traffic and civil cases heard, creating a need for more court-rooms, staff offices and judges chambers. Space for retention of court records, as required by code, continues to be an important requirement of the Court system.

Location

Objective 25: Maintain a central location for the main court system for the County to be convenient to all County residents.

Policy a. Plan and locate new or expanded facilities at the Judicial Center/Courthouse Complex so that centrality of this service is preserved and that other related criminal justice agencies existing at the complex remain in close proximity.

Character and Extent

Objective 26: Maintain the efficient and expedient processing and adjudication of cases of the 19th Judicial Circuit Court and General District Court of Fairfax County by providing the necessary facilities to accomplish such actions.

Policy a. Plan and construct additional court space in accordance with needs analyses and avoid deferring expansion to a point where unsatisfactory conditions exist.

ANIMAL CONTROL

INTRODUCTION

The Animal Services Division is a division of the Fairfax County Police Department. The primary role of the Animal Services Division is to safeguard the citizens of the County against stray and unwanted animals; protect citizens and animals from certain animal diseases, and to control and enforce the licensing of dogs and rabies inoculation of domesticated animals and address all issues concerning wild life.

In 1975, the County constructed an Animal Shelter for the Department of Animal Control to provide holding and processing areas for unwanted and stray dogs and cats, to enforce the County ordinance regarding animals and the Virginia State Code regulation for the protection and prevention

of cruelty to animals. The Shelter also provides administrative space and a classroom for humane education. In 1988, the shelter was expanded to include more space for human needs rather than for animals. Animal space has become less adequate and during certain times of the year--spring and summer--is not adequate to house potentially adoptable animals. It is recognized that shelter space for animals has diminished as the population has grown and more services are is provided and there will be a subsequent need to care for more pets, more strays, particularly cats, and a larger displacement of wild animals from their natural habitats due to development. There will also be an impact because more laws are being enacted to protect animals.

There are no generally accepted standards used to plan animal shelters. However, the following determination was made through a preliminary needs analysis by the Animal Services Division.

To prepare for the continued increase in animals and humans that utilize the Animal Services Division, a new shelter is planned for the southeast portion of the County. This new facility will offer additional benefits to the Department and County residents by providing greater accessibility to County residents in the eastern half of the County for all division services; more holding space for dogs and cats; additional education rooms, additional animal control officer workspace, other than the main facility on West Ox Road, which will mitigate additional travel time to and from animal pickups or incidents for animal control officers patrolling this portion of the County; and assist/prevent overcrowding and overburdening the main Animal Shelter.

Location

Objective 27: **Provide for convenience of Animal Services Division services to all County residents by maintaining the current shelter location on West Ox Road and providing an additional satellite shelter in the eastern half of the County.**

Policy a. Locate a new satellite animal shelter in the southeast portion of the County. A preferable location in the Springfield/Mt. Vernon area will help decentralize service currently available in only one facility in the County and provide easier access to residents/citizens in the eastern part of the County.

Character and Extent

Objective 28: **Continue to provide convenient pet adoptions, licensing, vaccinations, and education services to County residents and the necessary facilities for managing all phases of animal control and safety.**

Policy a. Continue to plan and construct a new facility of comparable size to the existing shelter, for the southeast portion of the County. The new facility should, if possible, collocate with other County facilities for convenience.

UTILITIES AND SERVICES

The provision of utility infrastructure is essential to development. Homes and businesses cannot function without water, electricity and a system of waste disposal. Other services, such as telephones, communication towers, and cable television, are highly preferable in a region which

thrives on the rapid exchange of information. Additionally, the County government constructs drainage systems to correct drainage problems and maintains extensive garage and maintenance facilities for County vehicles.

The following utilities and services are addressed in this section:

- Water Supply
- Sanitary Sewer
- Solid Waste
- Drainage Systems and Improvements
- County Vehicle Maintenance Facilities
- Public Utilities
  - gas
  - electric
  - telephone
- Communication Towers

WATER SUPPLY

INTRODUCTION

Residents of Fairfax County receive public water service from one of three water agencies; Fairfax County Water Authority, City of Fairfax Department of Transit and Utilities, or the Falls Church Department of Public Utilities. (The Towns of Vienna and Herndon, while operating their own water distribution systems, purchase water from the City of Falls Church and the Fairfax County Water Authority, respectively. In terms of building major capital facilities to meet water supply needs, the towns are dependent of these two water agencies.) According to recent estimated averages, seventy-nine percent of Fairfax County residents are served by the Fairfax County Water Authority, Falls Church serves thirteen percent, the City of Fairfax one percent, and the remaining seven percent of the residents receive water from individual wells.

Location

Objective 29: **Locate sites, for adequate and appropriate facilities to treat, transmit and distribute a safe and adequate potable water supply, which conform to the land use goals of the Comprehensive Plan.**

Policy a. Elevated water storage tanks and standpipes should be grouped together, designed to harmonize with surrounding development, and be screened as much as possible.

Policy b. Locate booster pumping stations, wherever feasible, in well-buffered, attractively designed structures.

Policy c. Encourage the early acquisition of sites for distribution and storage facilities where development activities are imminent. This must be done before the area develops, so that neighborhood disruption and costs are minimized.

Policy d. Locate water lines to minimize impacts on environmental features such as stream valleys, wetlands, and forested areas.

Character and Extent

Objective 30: Plan and provide for facilities to treat, transmit and distribute a safe and adequate potable water supply.

Policy a. Maintain the 110 gallons per person per day guideline for the provision of water with a peak factor of 1.6 times the estimated average day demand to determine maximum daily demand. The 110 gallons is derived from total water sales (including commercial, industrial and institutional uses) and the estimated population served.

Policy b. Maintain the standards established for fire protection flows as follows;

- One and two family dwellings, 1,000-2,000 gallons per minute depending on separation.
- Townhouses and multiplex units, 2,500 gallons per minute.
- Commercial, office, industrial, 2,500 gallons per minute.

Policy c. Coordinate all Water Authority projects by continuing the Water Facilities Agreement between the Board of Supervisors and the Water Authority which requires:

- Fairfax County Board's review and approval of the Water Authority's Capital Improvement Program (CIP) as part of the County's CIP;
- Fairfax County Board's approval of proposed water facilities including water mains greater than 16" in diameter in accordance with Section 15.2-2232 of the *Code of Virginia*, as amended; and
- Notification to individual Board of Supervisors members and the Chairman of water main extensions 16" or less in diameter in their districts.

Policy d. Continue the implementation of expansion and improvement programs at the water treatment facilities.

Policy e. Pursue strategies to reduce the per capita consumption of water.

Policy f. Promote opportunities, including formation of water districts, for extending access to water service to communities or areas within Fairfax County that are threatened by failure of private wells and are without public water service as long as such districts do not require the Water Authority to contribute more than provided for under the Water Authority's Bad Well Policy, dated January 7, 1993, which specifies the conditions and terms for financial assistance.

SANITARY SEWER

INTRODUCTION

Fairfax County provides sanitary sewer through a system of over 3,100 miles of sewer lines, 64 pumping stations and one treatment plant owned and operated by the County, the Norman M. Cole, Jr. Pollution Control Plant. Additional treatment capacity is provided by contractual agreement with the District of Columbia, the Alexandria Sanitation Authority, Arlington County and the Upper Occoquan Sewage Authority.

It is important that the location and timing of sanitary sewer facility construction be supported by specific public facility standards and Plan recommendations.

Location

Objective 31: **Provide public sewer in accord with the approved sewer service area and in support of the County's land use objectives. (See Figure 4.)**

Policy a. Limit expansion of the approved sewer service area to areas which are planned for uses which require such infrastructure and which are contiguous to the existing approved areas.

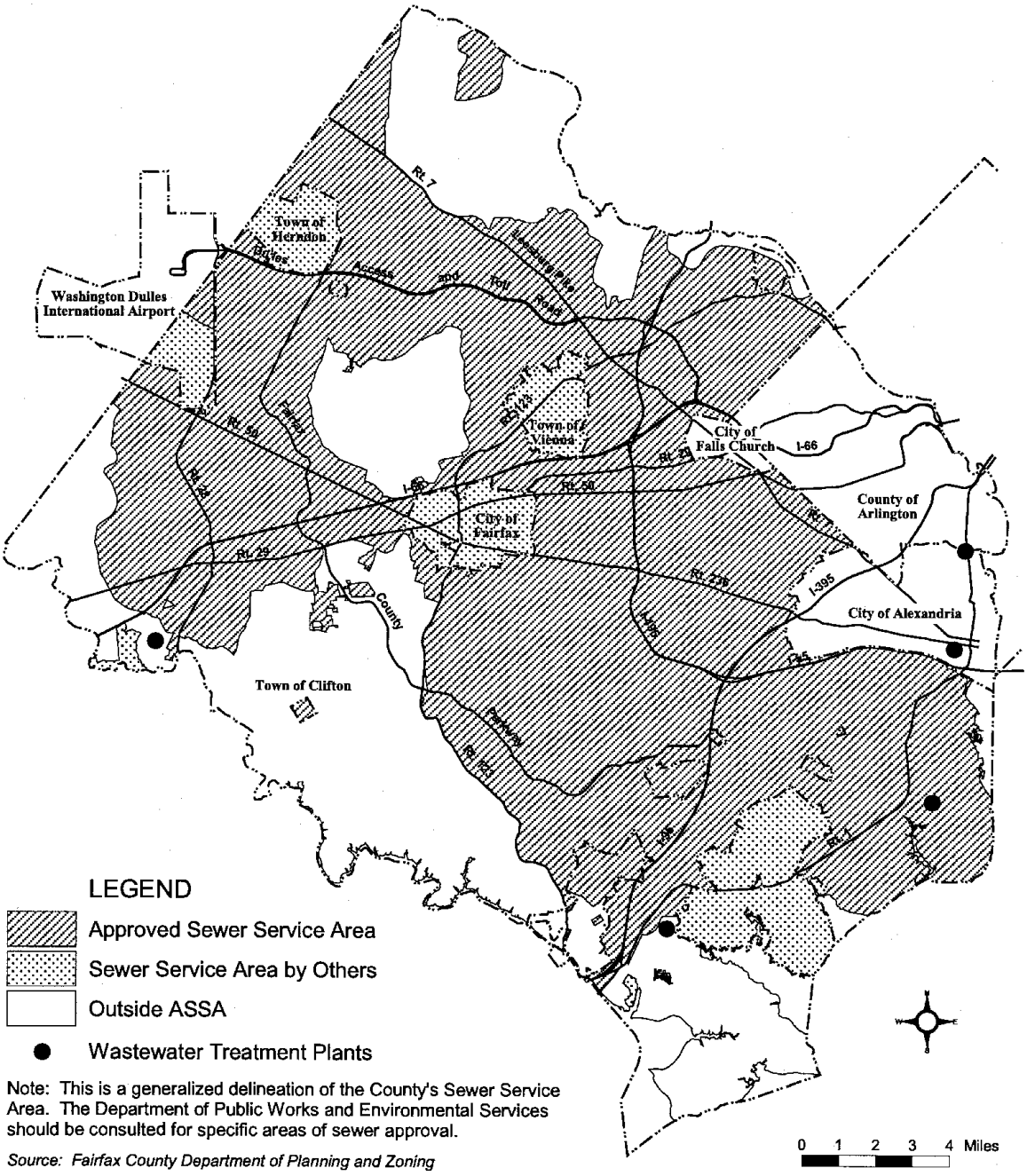
Policy b. Locate sewer lines to minimize impact on environmental features such as stream valleys, wetlands, and forested areas.

Policy c. Expansion of the approved sewer service area should not occur until other public infrastructure is available or funded, or programmed in the Capital Improvement Program and is adequate to support development of the area already approved for sewer and the area proposed for expansion.

Character and Extent

Objective 32: **Maintain a system of conveyance and treatment facilities that is responsive and compatible with the development and environmental goals of the County, and provide necessary renovations and improvements that will permit the entire system to function at a high level of efficiency.**

Policy a. Plan and design sewer facilities in accordance with the following standards. This flow is based on a combination of population and land uses and is determined by the following factors:



Note: This is a generalized delineation of the County's Sewer Service Area. The Department of Public Works and Environmental Services should be consulted for specific areas of sewer approval.

Source: Fairfax County Department of Planning and Zoning

APPROVED SANITARY SEWER AREA AND WASTEWATER TREATMENT PLANTS **FIGURE 4**

Type of Development	Design Flow (Gallons Per Day)
Residential	
General	100 gallons per person
Single-Family	370 gallons per residence
Townhouse Unit	300 gallons per unit
Apartment Unit	300 gallons per unit
Commercial	
General	2,000 gallons per acre
Motel	130 gallons per unit
Office	30 gallons per employee or .20 gallons per square foot
Industrial	
General	10,000 gallons per acre
Warehouse	600 gallons per acre
School Site	
General	16 gallons per student

Policy b. Design and construct the overall sewer system so as to minimize the need for sanitary sewer pumping stations.

Policy c. Schedule priorities in the planning and construction of sewerage systems so that actual plus committed sewage flow does not exceed the capacity of the treatment facilities.

Policy d. Where existing development without public sewer is experiencing public health problems caused by failing septic or individual sewage disposal systems, consider the appropriateness of conventional public sewer, pump and haul or other methodologies to remedy public health hazards.

SOLID WASTE AND RECYCLING

INTRODUCTION

The mission of the Solid Waste Management Program is to protect the public interest through solid waste management planning and regulatory oversight of the County's refuse ordinances, and to provide efficient and effective collection, recycling, and disposal of solid waste for customers in an environmentally responsible manner.

Refuse collection and recycling services are available to all citizens and businesses by either private contractors and/or County vehicles. Currently the County operates two permitted solid waste management facilities, the I-95 Landfill and the I-66 Transfer Station, with their ancillary operations such as brush grinding and vehicle parking. A Citizen's Recycling and Disposal Facility is maintained at each of these sites which allows residents to both recycle and dispose of non-recyclable materials. The County also operates a facility in the Newington area for parking and

maintenance of refuse collection vehicles that serve County Sanitary Districts. The I-95 Energy/Resource Recovery Facility, which began operation in June 1990, has a design capacity of 3,000 tons per day and generates approximately 80MW of electricity for sale to a local utility. In addition, the County has a Waste Reduction and Recycling Program which has met or exceeded the state-mandated recycling rate since its enactment.

Location

Objective 33: **Provide conveniently located solid waste management facilities and operations, while ensuring that these facilities area compatible with adjacent land uses. (See Figure 5.)**

Policy a. Continue to modify the I-66 Transfer Station as necessary to ensure compliance with Federal and State regulations, as well as accommodating the needs of the community.

Policy b. Add facility enhancements at the I-66 Transfer Station and I-95 Landfill to allow environmentally sound and efficient collection, recycling, transfer and disposal of refuse and recyclable materials. Maintain access to the I-66 Facility from West Ox Road and the I-95 Facility from Furnace Road.

Policy c. Maintain existing Recycling Drop-off Centers to serve residential and business customers. Where possible, recycling centers should be located at convenient locations while ensuring that these facilities are compatible with adjacent land uses.

Policy d. Apply environmental criteria to the selection of future sites for the collection, recycling, transfer and disposal of waste and recyclable materials.

Policy e. Continue landfill gas collection/processing systems at the I-66 facility and I-95 complex to allow utilization of decomposition gases for beneficial purposes.

Character and Extent

Objective 34: **Provide an efficient, cost effective, and environmentally sound, comprehensive solid waste management system that meets the current and future needs of the County.**

Policy a. Complete a new 20-year Solid Waste Management Plan for the County by June 2004, as required by State regulations.

Policy b. Prior to the expansion of the Energy/Resource Recovery Facility or other waste management facilities, comprehensively consider the costs, benefits and effects of other alternatives including recycling and waste reduction for the protection of the public health, public safety, the environment, and natural resources.

Policy c. Encourage public/private partnerships for environmentally safe and economically sound collection, recycling, and disposal.

Policy d. Maintain the mandatory Countywide collection of yard debris for recycling.

Policy e. Provide for a consistent level of cost effective service for refuse and recyclables collection throughout the County.

Policy f. Maintain the I-95 Landfill Complex to provide adequate ash disposal capacity through at least FY 2020.

Policy g. Use state-of-the-art technology and procedures in solid waste management to protect and/or improve the County's environmental quality.

Policy h. Provide for environmentally safe and economically sound, collection, recycling, and disposal of household and small quantity generator hazardous waste to prevent pollution in the County.

Objective 35: Provide a waste reduction and recycling program readily available to all, that meets the current and future needs of the County.

Policy a. Continue the County's Waste Reduction and Recycling program consistent with the integrated solid waste management hierarchy. The program currently includes drop-off centers, yard debris management, curbside collection of designated recyclable materials, scrap metal recycling and commercial and institutional recycling of designated materials.

Policy b. Continue to promote citizen and private sector participation in all recycling and hazardous waste collection programs.

DRAINAGE SYSTEMS AND STORMWATER MANAGEMENT FACILITIES

INTRODUCTION

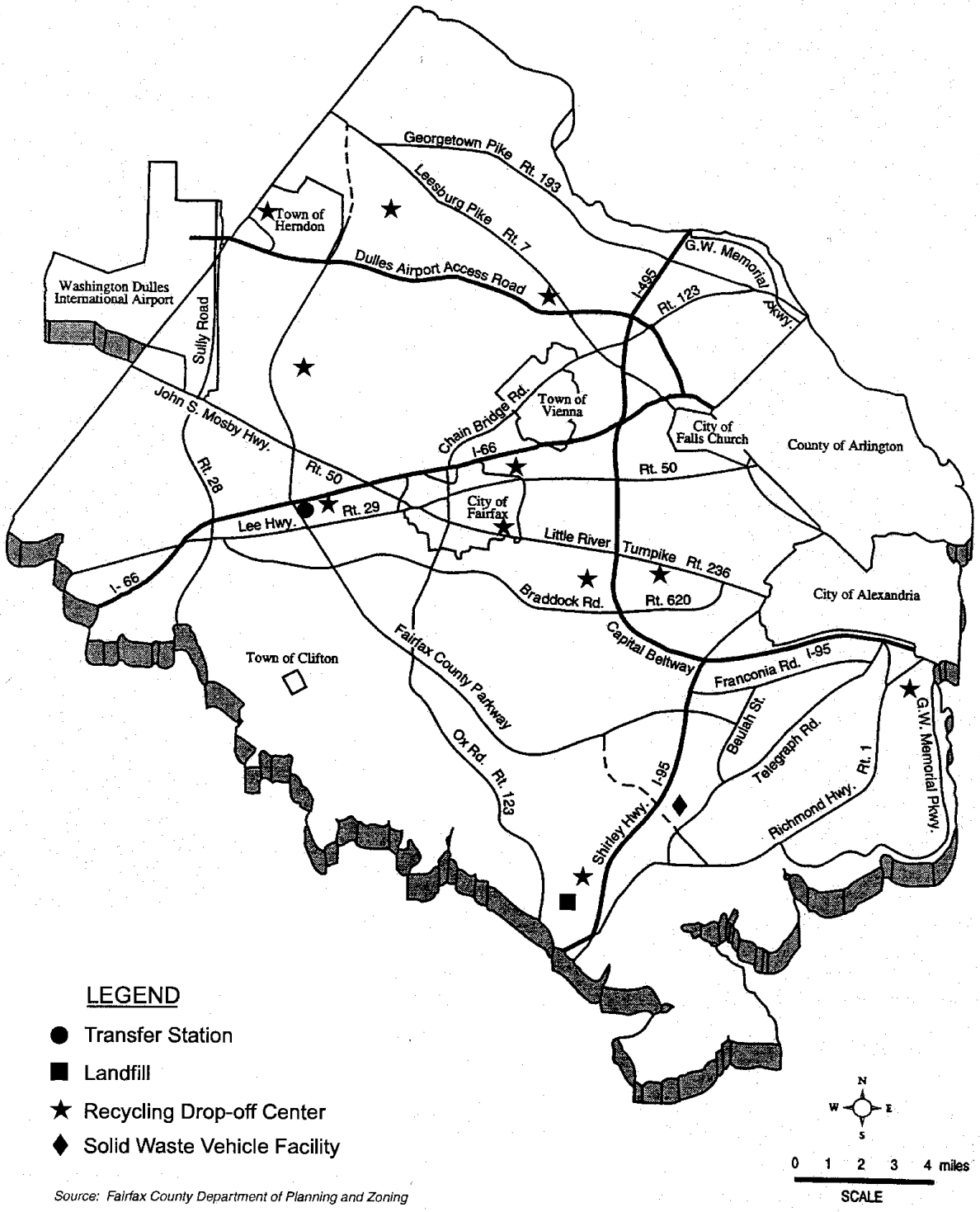
Rapidly urbanizing watersheds present a myriad of potential problems for the County's drainage system. Construction activity can generate sediment at hundreds of times the normal rate. Impervious pavements increase both the volume of stormwater runoff and the magnitude of peak flood flows. Runoff from urban areas is often highly polluted with pesticide and nutrients as well as oils and toxic metals. The net result of these problems is that water quality is seriously degraded, property damage is excessive and in many instances the aesthetic quality of natural areas is destroyed.

Location

Objective 36: Provide for a comprehensive drainage improvement and stormwater management program to maximize property protection and environmental benefits throughout the watershed.

Policy a. Locate stormwater control facilities to correct problems that affect the greatest number of persons or structures.

Policy b. Locate drainage structures and Best Management Practices (BMPs) in conjunction with new development to minimize future problems.



Source: Fairfax County Department of Planning and Zoning

SOLID WASTE FACILITIES **FIGURE 5**

Policy c. Locate regional stormwater management facilities where feasible throughout the County to maximize pollutant removal, streambank erosion protection, and flood control.

Character and Extent

Objective 37: Provide a system of drainage facilities that prevents or minimizes structure flooding, stream degradation and traffic disruption in an efficient, cost effective and environmentally sound manner.

Policy a. Continue enforcement of the County's ordinance for erosion and siltation control.

Policy b. Continue to regulate development on filling land within the 100 year floodplain.

Policy c. Continue to implement the County's Regional Stormwater Management and Master Drainage Plans.

Policy d. Encourage a regional approach to stormwater management in developing and in redeveloping sites.

Policy e. Expand existing programs to implement best management practices (BMPs) in all areas of the County not currently served by BMPs.

MAINTENANCE FACILITIES

INTRODUCTION

Maintenance and repair services to the County's automotive and equipment fleet are provided by the Department of Vehicle Services (DVS) in maintenance facilities located throughout the County. Related to the DVS maintenance facilities are more specialized types of repair/service facilities, such as the radio repair/installation facility operating at the Jermantown Road Facility, and the Fairfax County Fire and Rescue Department (FCFRD) Apparatus Maintenance and Repair Facility located at the Newington Maintenance Facility. Finding appropriate locations for maintenance facilities, however, is extremely difficult, given their size and the nature of the activities conducted at these facilities. By the year 2012 fleet growth is projected at over 1,000 vehicles consisting of approximately 700 school buses and 300 public safety vehicles (to a total of 6,300). At least one additional maintenance facility will be required, preferably in the northwestern County area.

Location

Objective 38: Ensure that County vehicle maintenance facilities are located on adequate and appropriate sites. (See Figure 6.)

Policy a. Locate any new facility in proximity to the center of its designated service area, which is a determined geographic region based on fleet distribution.

Policy b. Ensure that access to each facility is oriented to an arterial roadway.

Character and Extent

Objective 39: Consider established design and service area standards when planning new County vehicle maintenance facilities.

Policy a. Provide screening and buffering around each facility in excess of Zoning Ordinance requirements in order to minimize the impact of this use.

Policy b. Ensure that all facilities protect the water quality of nearby water courses by providing the most efficient stormwater Best Management Practices (BMPs) to control run-off from building and parking areas.

ELECTRICAL AND LAND-LINE UTILITY SERVICES

INTRODUCTION

Electrical and land-line utility services include electrical, communication and cable facilities, which are provided through a wired infrastructure and viewed, for the most part, as absolute necessities. The need for electrical, communication, and cable facilities accelerates commensurate with development. As the need for sites increases, so does the scarcity of appropriate land for construction of these facilities. The objectives and policies set forth in this section provide guidance on siting and design issues and are to be used in evaluating land use applications. They should not be interpreted as superseding or amending any requirements of the Zoning Ordinance or other local, state and Federal laws pertaining to these issues.

Objective 40: Locate electrical and land-line service facilities to provide maximum service levels as unobtrusively as possible. (See Figure 7.)

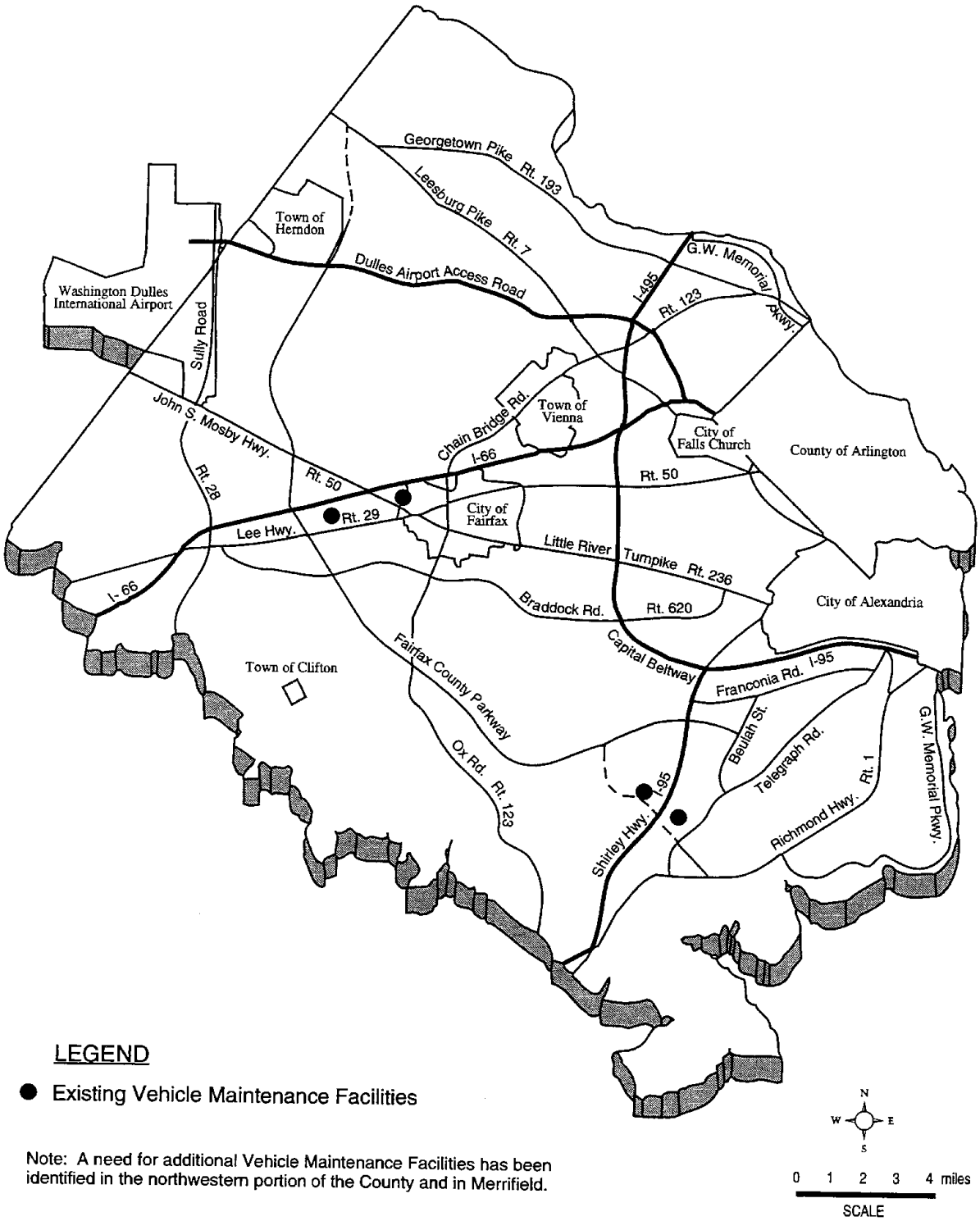
Policy a. Avoid areas of environmental sensitivity.

Policy b. Collocate facilities such as distribution and transmission poles, switching and hub centers and electrical substations whenever feasible and appropriate to minimize visual and neighborhood impacts.

Policy c. Plan for existing and future needs of facilities in conjunction with emerging development designs.

Policy d. Provide adequate acreage for expansion of substations, hub centers and equipment areas and maintain levels of screening to accommodate expansion.

Policy e. Locate future switching and hub centers, equipment areas, and electrical substations on sites, which shield nearby residences from noise, while affording privacy and safety.



Note: A need for additional Vehicle Maintenance Facilities has been identified in the northwestern portion of the County and in Merrifield.

MAINTENANCE FACILITIES **FIGURE 6**

Policy f. Construct underground transmission and distribution lines, whenever possible, along existing or planned utility or road rights-of-way, preferably on lot lines which will least disturb future development of the site.

Policy g. Locate future above-ground transmission lines along railroad rights-of-way, where possible, and when in keeping with adjacent development. Placement of transmission lines should not compromise the objectives of the Comprehensive Plan. Visual impact should be a key element in the evaluation of proposed transmission line locations.

Policy h. Regulate new development to minimize unnecessary human exposure to unhealthful impacts of low level electromagnetic fields from electrical transmission lines.

Policy i. Utilize existing towers and poles to support electrical and land-line utility services whenever possible, to reduce the need for new towers and poles. However, avoid overloading existing towers and poles with related equipment.

Policy j. Locate new towers required to support electrical and land-line utility services in areas of commercial or industrial land uses. Locate in residential areas only when other, more suitable land uses are not available, and on parcels, which afford natural screening adjacent to nearby structures or planned land uses.

Objective 41: Meet service area requirements with a minimum of facilities and ensure that those facilities are designed to minimize impacts on adjacent properties.

Policy a. Provide justification for the proposed facility's need. Specify alternative actions and justify why the proposed location and type of facility is the least disruptive.

Policy b. Mitigate the visual impact of switching and hub centers, equipment areas and electrical substations from adjacent development. Land with existing mature vegetation is preferable, as are access roads which obscure entrances, berms which provide screening, and slopes that provide localized lower elevations.

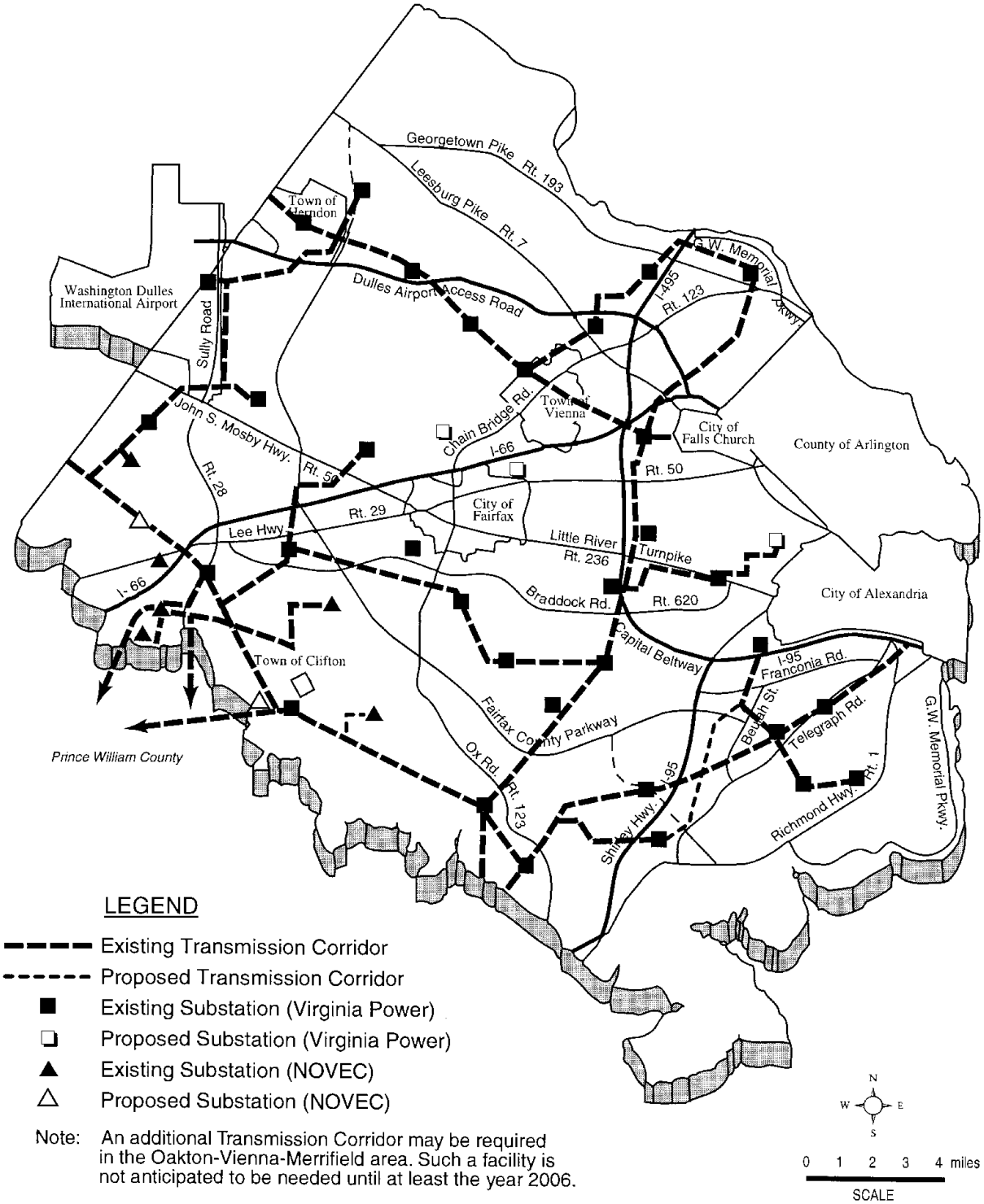
Policy c. Locate transmission and distribution lines underground, whenever possible.

Policy d. Conceal, screen or site ground transformers and distribution boxes to reduce their visual presence and potential for clutter.

Policy e. Provide for the appropriate screening and buffering of proposed facilities.

Policy f. Design and site proposed facilities to preserve areas necessary for future right-of-way dedication and ancillary easements for construction of road improvements.

Policy g. Provide safety measures in design and construction of towers used to support electrical and land-line utility services. Provide a fall radius of at least one third the height of guyed towers.



Source: Virginia Power and Northern Virginia Electric Cooperative (1996)

ELECTRICAL SUPPLY FACILITIES **FIGURE 7**

Policy h. Avoid interference with radio, television, and telecommunications receivers of the public.

Policy i. Assure that radiation levels, individually and cumulatively, will be maintained at acceptable levels.

MOBILE AND LAND-BASED TELECOMMUNICATION SERVICES

Mobile and land-based telecommunication services provide for the wireless transmission of voice and data and include cellular and personal communications services (PCS), paging and wireless Internet services and mobile radio communication**.** These services operate from wireless networks that depend on antenna devices and related equipment to transmit from a sender to one or more receivers. Such services are viewed as public utility service providers that benefit the community and its economic growth and vitality.

A **telecommunications facility** is defined as a facility, site, or location that contains one (1) or more antenna, telecommunications towers or monopoles, a distributed antenna system (DAS), micro-cell or other miniaturization technology, alternative support structures, satellite dish antennas, other similar communication devices, and related equipment and site improvements used for transmitting, receiving, or relaying telecommunications signals.

The objectives and policies set forth in this section provide guidance on siting and design issues used in evaluating land use applications. They should not be interpreted as superseding or amending any requirements of the Zoning Ordinance or other applicable local, state and Federal laws pertaining to these issues.

The 1996 Telecommunications Act, implemented by the Federal Communications Commission (FCC), and the federal courts defers to state and local governments (subject to certain exceptions) with respect to the placement, construction, and modification of facilities used to provide cellular, broadband, and other personal wireless services. State and local governments may not regulate these facilities based on the potential health or environmental effects of radio frequency (RF) emissions, to the extent that the facilities comply with established FCC regulations. Information on the FCC regulations is available for review on their Website.

GENERAL GUIDELINES

Objective 42: **In order to provide for the mobile and land-based telecommunication network for wireless telecommunication systems licensed by the Federal Communications Commission, and to achieve opportunities for the co-location of related facilities and the reduction or elimination of their visual impact, locate the network's necessary support facilities which include any antennas, support structures and equipment buildings or equipment boxes in accordance with the following policies.**

Policy a. Avoid the construction of new structures by locating proposed telecommunication facilities on available existing structures such as rooftops, telecommunication and broadcast support structures, electrical utility poles and towers, and water storage facilities when the telecommunication facilities can be

placed inconspicuously to blend with such existing structures. (See Figures 8, 9, 10.)

Policy b. When existing structures are not available for co-location**,** or co-location is not appropriate because of adverse visual impacts or service needs, locate new structures that are required to support telecommunication antennas on properties that provide the greatest opportunity to conceal the telecommunication facilities and minimize their visual impact on surrounding areas.

Policy c. When new structures or co-locations are required to serve residential neighborhoods, consider minimizing visual impacts on the surrounding area by utilizing camouflage structure design and/or micro-cell technologies or similar miniaturization technologies**,** such as distributed antenna systems (DAS), if feasible.

Policy d. When multiple sites provide similar or equal opportunity to minimize impacts, public lands shall be the preferred location.

Policy e. Locate mobile and land-based telecommunication facilities on public property only after a lease agreement between the County, or related board or authority, and the service provider has been established.

Policy f. Ensure that the use of public property by mobile and land-based telecommunication facilities does not interfere with the existing or planned operational requirements of the public use and complies with adopted policies and plans to protect natural resources.

Policy g. Co-locate mobile and land-based telecommunication facilities operated by different service providers on single sites and/or structures whenever appropriate. Locate single-use structures on a property only when a co-location structure for multiple service providers is not desirable or feasible due to technological differences, site limitations or visual impact concerns.

Policy h. Ensure that the height of the proposed telecommunication facility is no greater than necessary to allow for co-location on the telecommunication facility based on its service area requirements while still mitigating the visual impact of the facility.

Policy i. When new structures, co-locations and/or technologies (such as distributed antenna systems, micro-cell technology or miniaturization technology) are necessary to meet the service area requirements for the residential neighborhood(s), ensure that the height and mass of any appropriate co-location on the telecommunication facility is in character with the surrounding residential area and mitigates the visual impact of the facility on the surrounding residential area.

Policy j. Design, site and/or landscape proposed telecommunication facilities to minimize impacts on the character of the property and surrounding areas. Demonstrate the appropriateness of the design through facility schematics and plans which detail the type, location, height, and material of the proposed structures and their relationship to other structures on the property and surrounding areas.

Policy k. Demonstrate that the selected site for a new telecommunication facility provides the least visual impact on residential areas and the public way, as compared with alternate sites. Analyze the potential impacts from other vantage points in the area, especially from residential properties, to show how the selected site provides the best opportunity to minimize its visual impact on the area and on properties near the proposed site.

Policy l. A key concept in assessing telecommunication facilities is mitigation which is defined as actions taken to reduce or eliminate negative visual impacts. Mitigate the visual impact of proposed telecommunication facilities and their equipment, by using effective design options appropriate to the site such as:

- Design, site and/or landscape the proposed facility to minimize impacts on the character of the area;
- Locate proposed telecommunication facilities near or within areas of mature vegetation and trees that effectively screen or provide an appropriate setting for the proposed structure provided such location does not adversely impact sensitive resources or cause fragmentation of forested communities. When viewed in context, consider perspective views, relative topography and other factors, to mitigate the visual presence and prominence of the structure;
- Blend proposed telecommunication facilities with an existing pattern of tall structures;
- Obscure or block the views of proposed telecommunication facilities with other existing structures, vegetation, tree cover, or topographic features to the maximum extent feasible; and
- Replace existing telecommunication facilities with taller structures or extend their overall height to reduce the need for another structure when such height increases or structure replacements are visually appropriate to the site, including the surrounding area and are consistent with the type, style and pattern of the existing structure.

Policy m. Locate proposed telecommunication facilities to ensure the protection of historically significant landscapes and cultural resources. The views of and vistas from architecturally and/or historically significant structures should not be impaired or diminished by the placement of telecommunication facilities.

Policy n. Site proposed telecommunication facilities to avoid areas of environmental sensitivity, such as steep slopes, floodplains, wetlands, environmental quality corridors, and resource protection areas.

Policy o. Site proposed telecommunication facilities to allow for future expansion and with corresponding levels of screening to accommodate expansion.

Policy p. Design and site proposed telecommunication facilities to preserve areas necessary for future right-of-way dedication and ancillary easements for construction of road improvements.

Policy q. Locate and construct antennas used for purposes other than mobile and land-based telecommunication services in accordance with the same guidelines established in this "Mobile and Land-Based Telecommunications Services" section.

Objective 43: Design proposed telecommunication facilities to mitigate their visual presence and prominence, particularly when located in residential areas, by concealing their intended purpose in a way that is consistent with the character of the surrounding area. (See Figures 11 and 12.)

Policy a. Disguise or camouflage the appearance of proposed telecommunication facilities to resemble other man-made structures and natural features (such as flagpoles, bell towers, and trees) that are typically found in a similar context and belong to the setting where placed.

Policy b. Design proposed telecommunication facilities that are disguised and camouflaged to be of a bulk, mass and height typical of and similar to the feature selected.

Policy c. Use other new and existing structures and vegetation of comparable form and style to establish a grouping that complements a camouflaged telecommunication facility and supports its design, location and appearance.

FEATURE SHOWN GUIDELINES

Objective 44: With Planning Commission approval, consider mobile and land-based telecommunication facilities to be located on existing or replacement structures a "feature shown" of the Comprehensive Plan to be processed without a public hearing when placed in conformance with the following policies:

Policy a. Locate telecommunication facilities on existing buildings and structures at the following properties:

- In any zoning district on buildings and structures owned or controlled by a public use or Fairfax County governmental unit (as defined under Sect. 2-514 of the Zoning Ordinance);
- Commercial and industrial zoned property and in the commercial areas of PDH, PDC, PRM, PRC and PTC zoning districts;
- Residential properties zoned for and developed with multiple family dwellings 35 feet or greater in height; and
- Institutional and quasi-public property (as defined under Section 2-514 of the Zoning Ordinance).

Policy b. Utilize the following types of existing or replacement poles and towers for telecommunication facilities to avoid the construction of new monopoles and towers:

- Utility poles and towers that are within an easement 90 feet and greater in width, including "Fort Worth" or similar mounts that are designed to integrate a pole or other supporting structure within a transmission tower (See Figure 13.);

- Utility distribution poles on property zoned for residential uses provided:

  - The pole is located either within 10 feet of the pavement of an existing Principal or Minor (Type A) Arterial roadway as defined in Appendix 1 (Functional Classification) of the Transportation element of the County's Policy Plan; or is located on land that is developed with a public or nonresidential use; or is located on land that is undeveloped and planned for public or nonresidential use;

  - The antennas on the pole are either concealed within a cap enclosure that resembles the pole, is no greater than 12 inches in diameter, and is no higher than 7 feet above the top of the pole (See Figure 14.); or the antennas are flush-mounted panels no higher than the top of the pole and are limited to four in number; or the antennas are omni-directional (whips) that either extend no more than 4 feet above the top of the pole and are limited to 3 in number or extend no more than 8.5 feet above the top of the pole and are limited to 1 in number;

  - There is no more than one related equipment cabinet which is either (1) located on and painted to match the pole and is 20 cubic feet or less in volume, or (2) is located on the ground immediately adjacent to the pole, is 70 cubic feet or less in volume and no more than 5 feet in height, and is screened according to Zoning Ordinance provisions; and

  - The height of a replacement pole or standard, including antennas, shall not exceed sixty-four (64) feet in height. The diameter of a replacement pole shall not exceed eighteen (18) inches.

- Utility distribution poles on property zoned for commercial or industrial uses or that is within the right-of-way of an interstate highway or the Dulles Airport Access/Toll Road provided:

  - The antennas on the pole are either concealed within a cap enclosure that resembles the pole, is no greater than 12 inches in diameter and is no higher than 7 feet above the top of the pole; or the antennas are flush-mounted panels and are placed no higher than the top of the pole and are limited to 12 in number; or the antennas are placed in a unified design, such as a candelabra with cylindrical shells covering each antenna (See Figure 15.), and are limited to 12 in number; or the antennas are omni-directional (whips) that either extend no more than 4 feet above the top of the pole and are limited to 3 in number or extend no more than 8.5 feet above the top of the pole and are limited to 1 in number; and

  - There is no more than one related equipment cabinet which is (1) located on and painted to match the pole and is 20 cubic feet or less

in volume; or (2) is located on the ground no larger than 250 square feet in size, setback a minimum distance of 10 feet from any property line or setback a minimum distance of 20 feet from any right-of-way easement line when located in road right-of-way, or utility easement or right-of-way and screened according to Zoning Ordinance provisions.

- Water tanks and water towers;
- Communication towers and monopoles;
- Light and camera standards in rights-of-way of an interstate highway or the Dulles Airport Access/Toll Road provided the antennas on the standard are either concealed within a cap enclosure that resembles the standard, is no greater than 12 inches in diameter, and is no higher than 7 feet above the top of the pole; or the antennas are flush-mounted panels and are placed no higher than the top of the standard and are limited to 12 in number; or the antennas are placed in a unified design, such as a candelabra with cylindrical shells covering each antenna, and are limited to 12 in number; and
- Replacement utility poles or poles extended in height to accommodate telecommunication antennas provided the diameter and overall height of the new or extended pole are no more than 25% greater than that of the originally approved structure and provided such poles: (a) are located on a parcel of land developed with a public or nonresidential use or are on a vacant parcel that is planned for public or nonresidential use; and (b) are outfitted with antennas consistent with the sizes and numbers described above in this objective under the "utility distribution poles" bullets.

Policy c: In determining that proposed telecommunication facilities are a feature shown of the Comprehensive Plan, ensure that the following general factors are met:

- The proposed installation has no material adverse impact on the visual quality or character of the general area in which it is to be placed including any surrounding residential properties;
- The proposed installation is located and designed to blend with the structure on which it is placed such as flush-mounting antennas or screening the antennas and equipment as appropriate to the site;
- The proposed installation, when in a grouping of other similar structures, is consistent with the pattern of those surrounding structures;
- Related equipment cabinets or shelters located on the ground or on a rooftop should be appropriately screened or placed to obscure their visibility from surrounding properties;
- Building rooftop antennas should be either flush mounted to surface walls, screened or placed to not be visible from the surrounding area unless the antenna has a minimal visual impact if installed above the roofline;

- Access to the proposed installation for purposes of maintenance has no material adverse impact on adjoining properties; and

- Whip antennas with minimal visual impact and an overall height of 5 feet or less and a diameter of 2.5 inches or less.

Policy d. Consider new monopoles or towers to be located in major utility transmission easements or rights-of-way, which are at least 100 feet in width and not used for underground gas transmission lines, to be a feature shown of the Comprehensive Plan if it is demonstrated that the telecommunication facilities cannot be accommodated on existing utility structures and the following guidelines are met:

- The monopole or tower is placed at least 35 feet inside the transmission easement;

- The monopole or tower is placed a minimum of 200 feet from any existing residence;

- The monopole or tower is placed a minimum of 200 feet from the right-of-way of any existing public roadway or street.

ADMINISTRATIVE REVIEW GUIDELINES

Objective 45: Consider the placement of antennas and their associated equipment to be an Administrative Review "feature shown" of the Comprehensive Plan requiring no formal Planning Commission review when the placement of the antennas and the related equipment structures is in full conformance with all Fairfax County Zoning Ordinance provisions and the following applicable policies:

Policy a. Locate telecommunication facilities on building surfaces (including water tanks or towers) in accordance with the following standards:

- The antenna shall be placed directly in front of the building's or tank's surface, including the surfaces of the penthouse and other structures on the building's roof, and be no greater than 102 inches in height, 24 inches in width, and 6 inches in depth, or, when a dish antenna, no more than 24 inches in diameter;

- No part of the antenna shall extend above the surface of the building or tank on which it is placed and no part of the antenna's mounting shall extend more than 6 inches above the surface of the building on which it is placed;

- The back of the antenna shall be no more than one foot horizontally from the surface on which it is placed;

- The antenna and its mounting shall be of a color or finish that closely matches and blends with the surface on which they are placed.

- The equipment cabinet or shelter shall be either:

- Located inside the building, building penthouse or inside the building parking structure on a level other than the roof;

- Located on the ground and enclosed within a structure no greater than 500 square feet in area and 12 feet in height that is attached to the building and constructed of the material that is the same as, or visually the same as, the color and pattern of the building;

- Located on the ground behind a solid fence, wall, berm, or planted hedge, or combination thereof, as required by the Zoning Ordinance, and shall be no greater than 500 square feet in area and 8 feet in height; or,

- Located on the roof of the building immediately adjacent to its penthouse or other structure on the roof, is no greater than 500 square feet in area and 12 feet in height, and shall be screened by a material of the same, or visually the same, color or pattern and of an equal or lesser height as the adjacent rooftop structure.

Policy b. Locate telecommunication facilities on electrical transmission towers in accordance with the following standards:

- The electrical transmission tower shall be within an easement of 100 feet or greater;

- The top of the antenna shall be no higher than 15 feet above the top of the existing transmission tower;

- The color of the antenna and its mounting shall closely match the surface on which they are placed; and

- The related equipment cabinet or shelter shall be located under, and match the color of the tower structure.

Policy c. Locate telecommunication facilities on existing monopoles and towers in accordance with the following standards:

- The antenna shall be self-supporting and its top shall be located no more than 15 feet above the top of the existing structure.

- The color of the antenna and its mountings shall closely match the surface on which they are placed.

- The related equipment cabinet or shelter area shall be no greater than 500 square feet in area and 12 feet in height and shall be placed within an existing telecommunications compound. The compound must meet the screening requirements of the Zoning Ordinance; and

- The structure shall be located on property that is zoned I-1 through I-6 industrial zoning district.

Policy d. Install telecommunication facilities within existing structures in accordance with the following standards:

- The antenna shall be located totally within an existing structure; and
- The equipment cabinet or shelter shall be located totally within an existing structure.

Policy e. Expand and/or modify telecommunications facilities at existing installations in accordance with the following standards:

- The surface area (as measured for panel antennas as height times width and for whip antennas as height times diameter) of a replacement antenna shall be no more than 50% greater than the antenna originally approved by the Planning Commission;
- The top of the replacement antenna shall be mounted at a level no higher than the level of the top of the antennas being replace;
- The color of the replacement antenna and its mountings closely match the background on which placed; and
- The square footage and the height of the replacement or expanded equipment cabinet or shelter shall be no more than 25% greater than the square footage and the height of the original equipment cabinet or shelter approved by the Planning Commission for the provider at the site.

Policy f. As an option for approved monopoles (camouflaged or non-camouflaged), add telecommunication facilities in accordance with the following standards:

- Antennas allowed within the maximum number identified for the platform elevations in the original monopole approval;
- Antennas allowed within the allowable size;
- Pad sites and equipment cabinet/shelters allowed within the maximum number identified in the originally approved monopole equipment compound; and
- Proposed telecommunication facilities must be in accordance with the Zoning Ordinance.

Avoid building antennas silhouetted against the sky which create roof top clutter.

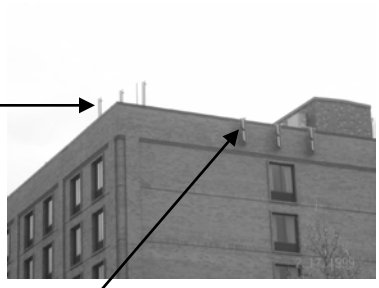


FIGURE 8

FIGURE 9

Place telecommunication facilities to blend inconspicuously with existing structures. Place antennas "flush" against the building wall to blend with the building material.

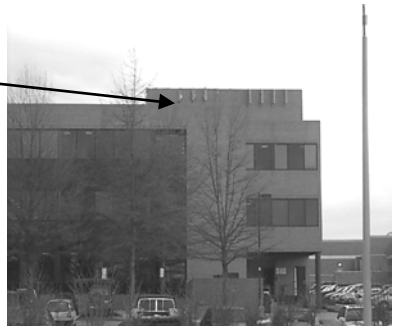


FIGURE 10

Disguise and camouflage telecommunication facilities to resemble other objects found within the area located.

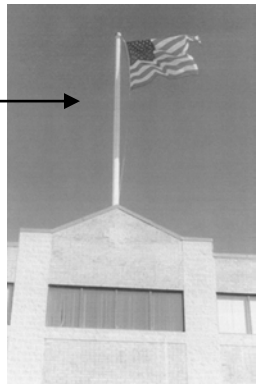
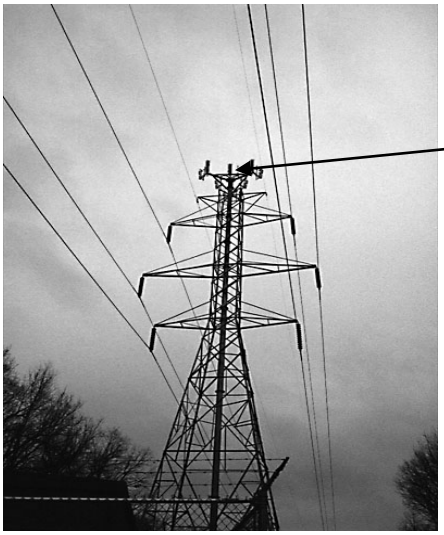


FIGURE 11

FIGURE 12



A "Fort Worth" structure integrates the telecommunication pole and antennas within an existing electrical transmission tower and helps to conceal the use.

FIGURE 13

A 7 foot "radome cap" on the top of an electrical distribution pole conceals the telecommunication antennas.

The equipment box located on the distribution pole or on the ground should be placed and colored to match the pole or screened to blend with its surroundings.

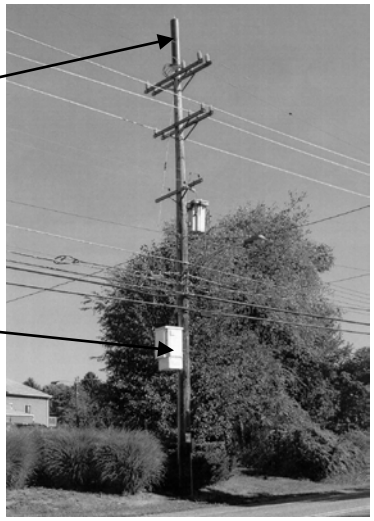


FIGURE 14

Antennas can be of a "candelabra" design and covered with a cylindrical shell to provide a unified, organized appearance.

FIGURE 15