TRANSPORTATION

INTRODUCTION

Fairfax County is served by an extensive transportation system comprised of roadways, bus and rail rapid transit, paratransit services and an international airport. In addition, an extensive sidewalk and trail system serves pedestrian and bicycle travel. The roadway and public transit system accommodates hundreds of thousands of trips every day. However, the provision of transportation facilities and services has not kept pace with the increasing travel demand in the County. This increased travel demand is fueled both by the growth within Fairfax County and by the growth in surrounding jurisdictions.

Over the past three decades, Fairfax County has been one of the most rapidly growing jurisdictions in the United States in terms of population growth – more than doubling the size of its population since 1970. Aided by the strong regional economy, growth in Fairfax County is projected to be significant in the future as well. While the rate of population growth is expected to decrease, overall population will continue to grow, with a 28% increase projected from 2005 to 2030. The number of households in Fairfax County is projected to grow from 378,000 in 2005 to 482,000 in 2030, an increase of 104,000 or 28%. Even more dramatic is the projected increase in jobs in Fairfax County from 600,500 in 2005 to 845,000 in 2030, an increase of 244,500 or 41%. That will make Fairfax County the second largest employment center in the Washington, DC metropolitan area, only slightly behind the District of Columbia.

In addition to experiencing growth, the demographic and socioeconomic characteristics of the population in Fairfax County have changed significantly and will continue to change in the future. Two examples are the cultural and ethnic diversification and the aging of the population. These demographic changes contain challenges for the provision of transportation facilities and services. For example, as the County's population ages, it becomes more important to provide transportation options and services geared to their needs.

One of the primary implications of the trends and forecasts for Fairfax County is that traffic conditions are likely to deteriorate further, even with extraordinary expenditures to improve the transportation infrastructure (including both roadways and transit). In addition, many forces outside the County, which generate increasing levels of traffic demand, are out of the County's direct control. Thus, it becomes imperative to explore possible options for reducing current and future demands on the transportation system.

The objectives and policies presented in this Transportation Section of the Comprehensive Plan provide the framework for the continued development of the County's transportation system, in the face of the continued growth in population and employment as well as the changing characteristics of the population. One of the options for bringing about long-term improvements to the transportation system is to exercise its ability to influence the pattern of land use in the County; specifically, to establish more efficient land use patterns with respect to transportation. Since it is apparent that roadway improvements cannot be relied upon to provide unlimited transportation capacity for the future, measures to bring about less demand for roadway capacity should be a focus of the County's Comprehensive Plan. It will be impossible to meet travel demand solely by roadways. The objectives and policies presented in this section thus emphasize the need to maximize the efficient use of the existing and future Fairfax County transportation system by reducing reliance on automobile travel, and by coordinating land use decisions and transportation planning within Fairfax County and the region as a whole.

BOARD OF SUPERVISORS GOAL

Transportation - Land use must be balanced with the supporting transportation infrastructure, including the regional network, and credibility must be established within the public and private sectors that the transportation program will be implemented. Fairfax County will encourage the development of accessible transportation systems designed, through advanced planning and technology, to move people and goods efficiently while minimizing environmental impact and community disruption.

A keystone policy for future planning and facilities includes achievement of a multi-modal transportation system to reduce excessive reliance upon the automobile. Regional and local efforts will focus on planning and developing a variety of transportation options. Sidewalks, trails and on-road bicycle routes should be developed as alternate transportation facilities leading to mass transit, high density areas, public facilities and employment areas.

COUNTYWIDE OBJECTIVES AND POLICIES

Objective 1: **Provide for both through and local movement of people and goods via a multi-modal transportation system that provides transportation choices, reduces single-occupancy-vehicle (SOV) use and improves air quality.**

Policy a. Integrate motorized and non-motorized transportation facilities and services in accordance with transportation elements in both the Transportation Plan and Countywide Trails Map. (See Figures 1 and 2)

Policy b. Provide motorized and non-motorized transportation facilities or improvements that best meet County goals as determined by detailed corridor and/or subarea studies. Provide for full public participation in such studies.

Policy c. Accommodate inter-county and through trips with the Interstate and Primary Highway Systems, mass transit, high-occupancy-vehicle (HOV) and high-occupancy-toll (HOT) facilities.

Policy d. Consider providing HOT lanes on limited access roadways to enhance throughput. Ensure that buses and HOVs have free access to HOT lanes.

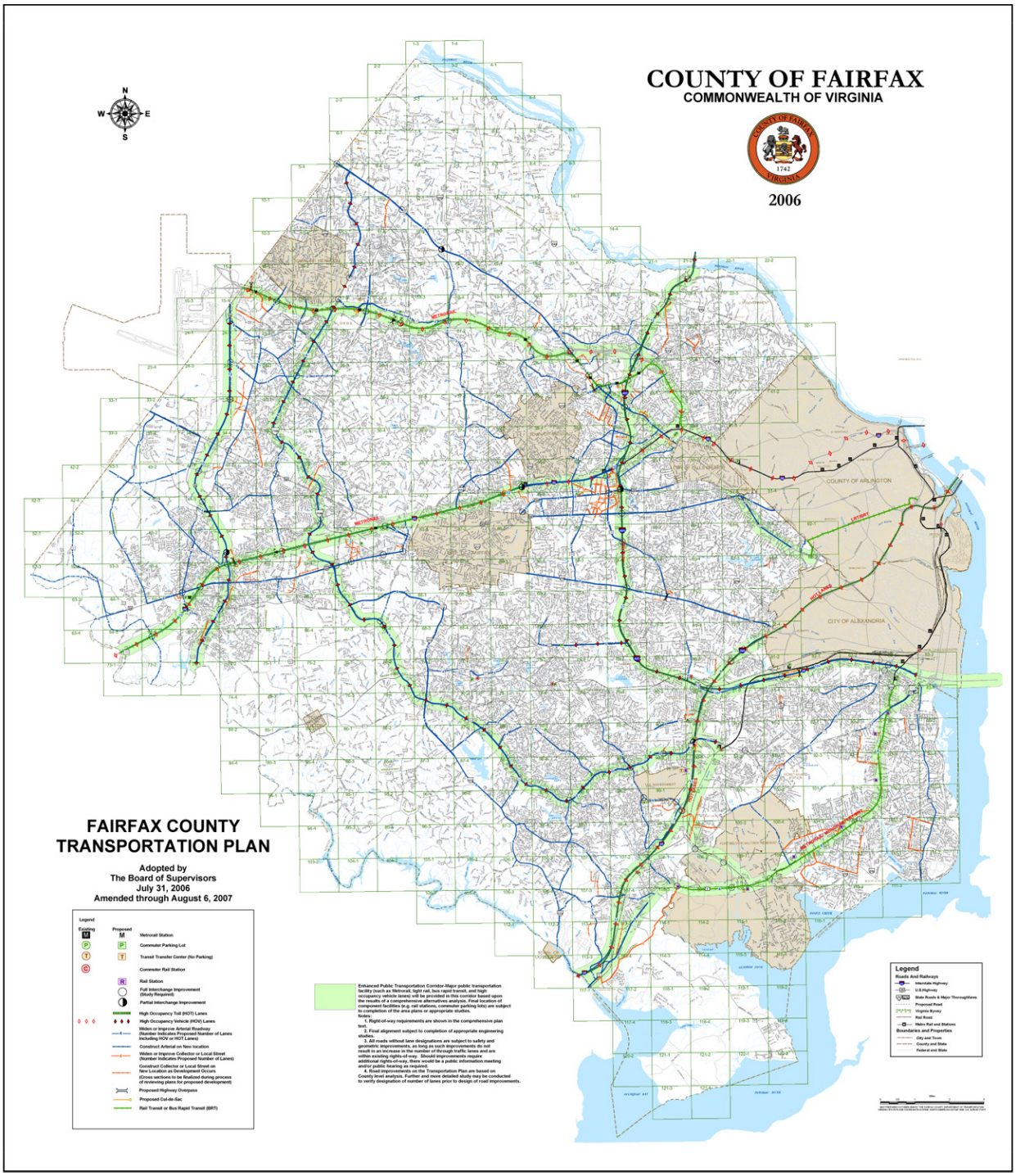
Policy e. Design and construct trails, sidewalks, overpasses, bike lanes, transit amenities, and other non-motorized facilities leading to and accessing public transportation facilities and commuter collection points.

Policy f. Provide accessible transportation services and facilities that address the travel needs of the senior, disabled, and mobility challenged population.

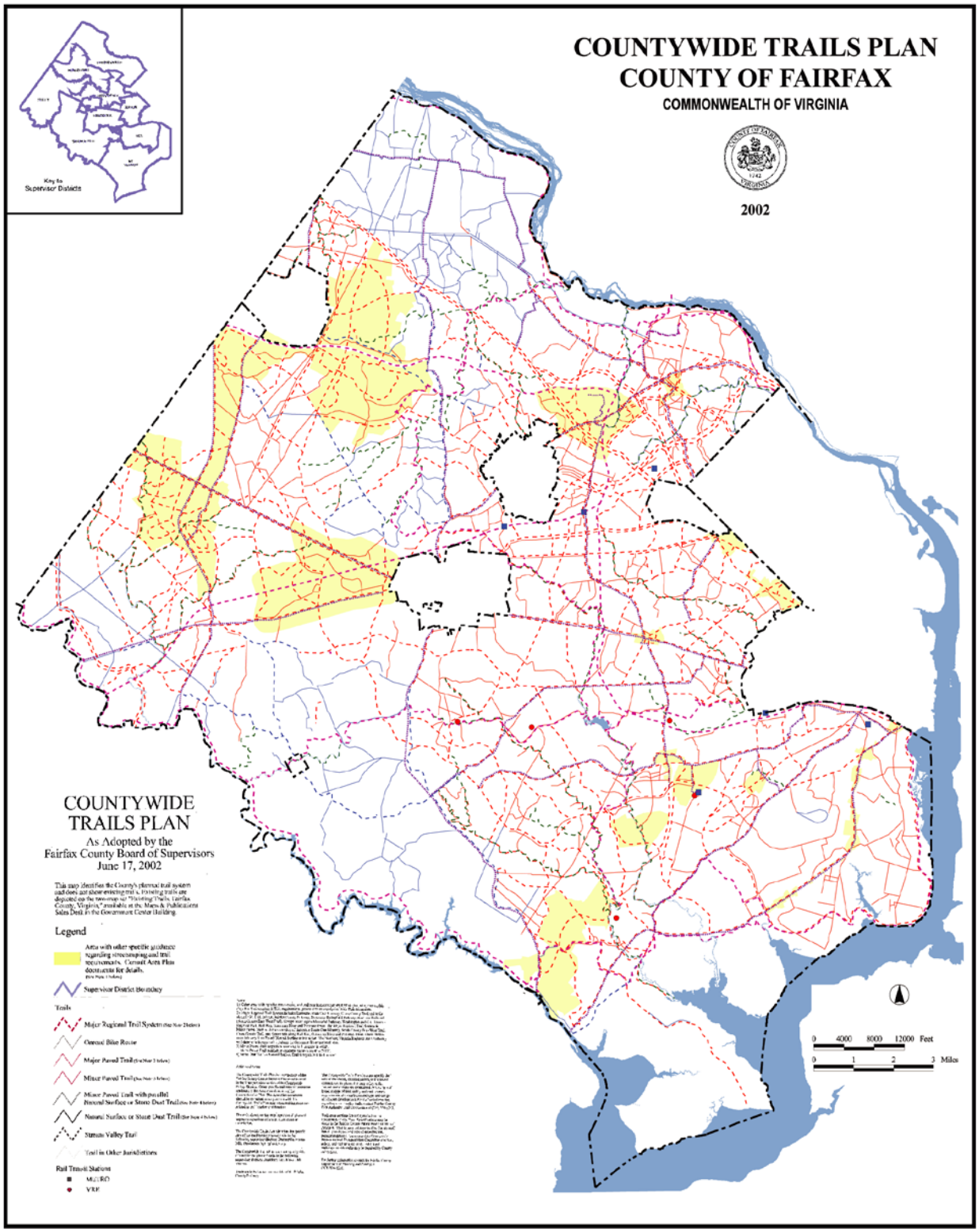
Objective 2: **Increase use of public transportation and non-motorized transportation.**

Policies on Facilities

Policy a. Support the extension of the Metrorail system in the Dulles Corridor to the Dulles Airport and Loudoun County.



TRANSPORTATION PLAN MAP **FIGURE 1**



COUNTYWIDE TRAILS PLAN MAP **FIGURE 2**

Policy b. Provide public transportation facilities (such as rail transit, commuter rail, bus rapid transit and/or HOV lanes) in major radial and intra-county commuter corridors designated as Enhanced Public Transportation Corridors in the Transportation Plan Map. Preserve land and rights-of-way where appropriate.

Policy c. Provide HOV lanes on freeways and major arterials where substantial travel benefits can be realized. Develop an integrated HOV system with direct connections between park-and-ride lots, transit centers, and other modal transfer facilities and to major mixed-use Centers. Strictly enforce HOV regulations to minimize violations.

Policy d. Establish and/or expand park-and-ride lots along major inter-county and intra-county corridors and at potential future modal transfer points such as rail stations in order to promote transit and HOV usage.

Policy e. Establish a network of multi-modal centers as necessary to facilitate both inter-county and intra-county travel.

Policy f. Provide supporting facilities for the transit system, and provide resources to maintain County-owned equipments and facilities effectively.

Policy g. Provide safe and convenient non-motorized access (e.g., sidewalks, pedestrian crosswalk signals and markings, trails, on-road bicycle routes and secure bicycle parking) and user amenities (e.g. paved waiting areas, bus shelters and route/schedule information) for transit services and facilities.

Policies on Services

Policy h. Improve the speed, quality, reliability, convenience and productivity of transit service.

Policy i. Provide mass transit service in major commuter corridors, including those designated as Enhanced Public Transportation Corridors on the Transportation Plan Map. These services, including intra-county express bus service, should connect designated public transit transfer points and park-and-ride lots to mixed-use centers, the Metrorail system, and the metropolitan core.

Policy j. Provide feeder and local bus service to connect to mass transit facilities, mixed-use centers, educational facilities and employment centers.

Policy k. Provide local circulation service within mixed-use centers and employment centers.

Policy l. Make appropriate use of advanced transit technologies to provide service information and improve system operations. Evaluate and implement innovative services and methods to increase transit ridership.

Policy m. Facilitate transfer between modes at transit centers through coordination of services, schedules, fares, communication systems and information.

Policy n. Coordinate with neighboring jurisdictions to promote public transportation usage and reduce SOV travel.

Policy o. Coordinate the planning and provision of public, human service agency, and non-profit transportation services targeted to the senior population, people with disabilities and low-income residents.

Policy p. Work with Fairfax County Public Schools and human service agencies to travel train the senior population and people with disabilities in the use of public transportation.

Objective 3: Ensure that the roadway system provides adequate local access and capacity for through movements, consistent with financial, social, and environmental constraints and with the County's goal of reducing SOV use.

Policy a. Plan, design and operate the roadway system consistent with the Roadway Functional Classification System.

Policy b. Provide a street network level of service as high as practical, recognizing the social, environmental, and financial constraints associated with the diverse areas of the County. At a minimum, level of service D should be provided, except where a lower level of service has been determined acceptable.

Policy c. Encourage the use of context sensitive solutions in roadway design to improve integration of roads into the physical environment and community.

Policy d. Provide new roadway construction which can be accepted by the Virginia Department of Transportation (VDOT) for inclusion in the State highway system.

Objective 4: Provide a comprehensive network of sidewalks, trails and bicycle routes as an integral element of the overall transportation network.

Policy a. Plan for pedestrian, bicycle, and trail system components in conjunction with the Countywide Trails Plan.

Policy b. Incorporate pedestrian, bicycle, and other non-motorized components and supporting facilities that meet VDOT, American Association of State Highway and Transportation Officials (AASHTO), or County Standards.

Policy c. Provide for clearly-marked bicycle and pedestrian features, such as sidewalks, on-road bicycle routes, trails, crosswalks, curb cuts, refuge areas and pedestrian signals, in the construction and reconstruction of roads and bridges.

Policy d. Provide sidewalks, trails and/or on-road bicycle routes which link residential concentrations with transit stations, activity centers, shopping districts, recreational facilities, and major public facilities, and provide for pedestrian and bicycle circulation within activity centers.

Policy e. Provide sidewalks on both sides of streets.

Objective 5: **Promote Transportation Demand Management (TDM) to support efficient use of the County's transportation system.**

Policy a. Promote and market public transit, ridesharing, use of HOV lanes, bicycling and walking with all potential users.

Policy b. Promote TDM strategies including teleworking, teleconferencing, tele-education, alternative work schedules, flexible work hours and/or variable pricing.

Policy c. Implement parking management programs and parking controls in activity centers to encourage use of mass transit, HOV and non-motorized transportation.

Policy d. Encourage and support employers and landowners to establish transportation management associations (TMAs).

Policy e. Work with private and public employers by establishing alternative commute programs to reduce SOV use.

Policy f. Work with the County residents, developers, homeowner associations and property management companies through residential based programs to promote use of public transportation, HOVs, non-motorized travel, and other alternatives.

Policy g. Work with Fairfax County Public Schools, private schools, and area colleges to establish programs that encourage the use of bicycling, walking, carpooling and transit.

Policy h. Require that applicants for rezoning and special exceptions show evidence that they have analyzed and evaluated potential TDM strategies. Encourage proffers of TDMs and develop enforcement mechanisms and proffers in support of the County's transit system.

Policy i. Develop TDM strategies and programs in cooperation with MWCOG and other local jurisdictions.

Objective 6: **Ensure that improvements to the transportation system are cost-effective and consistent with environmental, land use, social, and economic goals.**

Policy a. Give priority to the programming of transportation improvements that assist in accomplishing the County's land use goals and objectives, particularly the encouragement of transit-oriented development at Transit Station Areas, Commercial Revitalization Areas, and in the cores of the Urban and Suburban Centers.

Policy b. Allocate capital improvement funds to advance the construction of those transit and HOV/HOT facilities that are the most cost-effective.

Policy c. Integrate non-motorized transportation projects into the programming of construction and maintenance projects and improve bicycle level of service with road reconstruction projects.

Policy d. Anticipate future demands and operating conditions in addition to existing conditions when making programming decisions.

Policy e. Consider direct and indirect costs, including operations and maintenance, in making programming decisions.

Policy f. Pursue advanced acquisition of easements and rights-of-way to reduce project costs and adverse impacts**.**

Policy g. Consider intersection improvements when funds are insufficient to permit construction of full segments between intersections.

Policy h. Consider the needs of all users, especially seniors and people with disabilities, when making programming deicisions.

Objective 7: Provide transportation facilities and services that minimize community disruption and adverse environmental impacts.

Policy a. Plan and design transportation facilities and services to minimize adverse impacts on Environmental Quality Corridors (EQCs), Resource Protection Areas (RPAs), other environmental resources, and heritage resources.

Policy b. Plan and design transportation facilities and services to minimize and mitigate adverse impacts to residents and neighborhoods.

Policy c. Adopt strategies to reduce vehicle emissions to meet the National Ambient Air Quality Standards.

Policy d. Minimize adverse impacts of storm water runoff from transportation facilities and services. Use innovative techniques and technologies to manage storm water run-off from transportation facilities.

Policy e. Apply best practices for walkable communities, pedestrian and bicycle planning, quality of life, and ecological preservation.

Policy f. Ensure pedestrian access and safety during construction of transportation facilities.

Objective 8: Identify the funding needed for the County's transportation system and potential sources for that funding.

Policy a. Develop and implement a responsible financial plan that considers both public and private sources of financial support for the County's transportation system.

Policy b. Pursue local, regional, state and federal funding support for the County's transportation system.

Policy c. Encourage and facilitate private sector initiatives to finance new construction, new transportation services, and improvements to existing facilities and services.

Policy d. Pursue increased funding for trails, sidewalks and on-road bicycle routes.

Objective 9: Ensure safety for users of transportation facilities and services and for the general public.

Policy a. Monitor safety and security associated with existing transportation facilities and services.

Policy b. Correct safety and security problems associated with existing transportation facilities and services that lie within the control of the County.

Policy c. Incorporate safety and security features into new transportation facilities.

Policy d. Incorporate medians and separate turning lanes in the design or redesign of roadways having four or more travel lanes.

Policy e. Upgrade existing roadways to correct unsafe conditions along segments with substandard geometrics.

Policy f. Monitor and enforce the provisions and regulations for transporting hazardous materials.

Policy g. Provide adequate maintenance of County transit vehicles and other County transit facilities, and enhance maintenance resources wherever possible.

Policy h. Reduce conflicts between motorized and non-motorized traffic and correct unsafe conditions for walking and bicycling.

Policy i. Work with VDOT and local communities to implement traffic calming and other measures where needed to encourage motorists to drive with caution and consideration in residential communities.

Policy j. Plan and prepare to assist with orderly evacuations (selected, staged or full-scale) in the event of an emergency. Provide assistance for residents without a means of transportation during an evacuation.

Policy k. Coordinate with regional public safety and transportation agencies using state-of-the-art communications technology for emergency operations and transportation incident management.

Objective 10: Maximize the operational efficiency of transportation facilities.

Policy a. Maximize the efficiency of existing roads through low-cost strategies to increase capacity such as channelization, turning lanes, optimized signalization, and signage, while avoiding negative impacts on pedestrians and bicyclists.

Policy b. Preserve and enhance the efficiency of the arterial street network by reducing and consolidating private entrances, median crossovers, and similar disruptions to traffic flow.

Policy c. Promote accessibility between residential developments to facilitate emergency access, local circulation of motorized and non-motorized traffic and potential neighborhood bus service.

Policy d. Develop a roadway system which discourages through travel while maintaining connectivity on local and collector streets.

Objective 11: Ensure that land use and transportation policies are complementary.

Policy a. Require all new developments to mitigate adverse impacts upon the transportation system. Evaluate measures to facilitate access by transit and to provide other enhancements necessary to promote use of transit and non-motorized transportation.

Policy b. Limit development to the low end of the planned range unless the applicant demonstrates that arterials and collectors within the impact area of the proposed project as defined by the County will operate at an acceptable level of service, upon completion of the project, taking into consideration expected development and transportation facilities within the area during that period.

Policy c. Encourage higher density residential development in activity centers to promote non-motorized trips and transit services to reduce SOV use.

Policy d. Support public transportation and non-motorized travel through the design and development of mixed-use projects in Tyson's Corner Urban Center, Suburban Centers, Revitalization Areas, Transit Station Areas, and Community Business Centers. The road design and site design (including the location of parking, transit stops, pedestrian facilities, and secure bicycle parking), and other facilities should be supportive of public transportation usage and non-motorized travel.

Policy e. Encourage compatible commercial use and appropriate land uses such as childcare facilities in mixed-use centers and in close proximity to public transportation transfer points.

Policy f. Require new development and redevelopment projects, where applicable, to provide temporary pedestrian access when such access is affected by the development.

Policy g. Evaluate land uses around airports during the development review process, to ensure compatibility in terms of height, noise, and the functional classification of the facility; and encourage the Metropolitan Washington Airports Authority to procure aviation and related facility easements where appropriate.

Policy h. Encourage location of activities with significant demand for air transportation in close proximity to existing aviation facilities.

Objective 12: Preserve land needed to accommodate planned transportation facilities.

Policy a. Identify streets or highways shown in the Comprehensive Plan for improvement, by the anticipated number of lanes, typical cross-sections, and right-of-way requirements.

Policy b. Preserve the maximum potential requirements for the planned typical section and right-of-way, where planned roadway improvements have not been designed. (See the Roadway Right-of-Way Requirements Section in the Transportation Appendix.)

Policy c. Establish right-of-way requirements and preserve the land for future interchanges, transit stations and transit rights-of-way in the Enhanced Public Transportation Corridors and other public transportation facilities shown on the Transportation Plan Map. Develop potential right-of-way requirements based upon conceptual drawings where designs have not been approved.

Policy d. Prepare engineering plans for future transportation improvements as soon as feasible in order to clarify and secure right-of-way requirements and to develop improved cost estimates.

Objective 13: Review and update the Fairfax County Transportation Plan once every five years.

Policy a. Monitor changes in travel patterns, traffic, transit use, and the implementation of transportation facilities and services for the purpose of evaluating progress towards attainment of transportation objectives.

Policy b. Promote public participation in the review and update of the transportation plan.

Policy c. Promote regional and subregional transportation planning by cooperating with neighboring jurisdictions to coordinate a planned network of transit routes, services and roads.

Policy d. Integrate planning and review so that non-motorized, mass transit, and motorized transportation needs are evaluated concurrently.

APPENDIX 1

ROADWAY SYSTEM FUNCTIONAL CLASSIFICATION

Roadway functional classification is the process by which streets and highways are grouped into classes according to the type of service any given facility provides. It defines the role of any particular road or street in serving the flow of trips through the roadway network. Functional classification is very useful in considering the dual role of the transportation network in providing both travel mobility and access to property. Although access is a fixed requirement which is necessary at both ends of a trip, mobility can be provided at varying levels incorporating a wide range of elements.

The development of an effective circulation plan for any area should rely on the delineation of a basic roadway functional classification system of that area. In developing such a system, consideration is given to the magnitude and distribution of projected travel demand, and types and spatial distribution of activities within the County. Because the effectiveness of any one type of transportation facility is dependent upon the adequacy of other types, it is necessary to determine the purpose and function of facilities and services prior to making recommendations.

The County's roadway functional classification is based on the Federal Highway Administration's functional classifications for urbanized areas, with consideration given to the local characteristics and variation within the County's roadway network. For this document, the roadway system is classified into freeways and expressways, other principal arterials, minor arterials, collectors and local streets. (See Figure 3).

Freeways and expressways are controlled access facilities providing for high-volume travel. Servicing abutting land is subordinate to accommodating the through movement of vehicles. It is desirable that medians, shoulders, acceleration and deceleration lanes, and grade separated interchanges be included in the design. Parking and pedestrian travel should not be permitted along the traveled portion of the roadway.

Other principal arterials also serve as main travel corridors. Some access is provided to abutting land, but the primary function of the roadway, particularly during peak periods, is to carry through traffic. Intersections with expressways and other principal arterials (see following description under Minor Arterials) should generally be grade separated. Where many turning movements could occur over a relatively short roadway section, service drives are desirable. Medians, shoulders, and acceleration and deceleration lanes are also desirable. Where shoulders cannot be provided, bus storage bays are desirable. Adequate and safe pedestrian and bicycle travel along and across these facilities should be included in the design. Parking should not be permitted along the traveled position of the roadway. These facilities should include four to six travel lanes with a minimum right-of-way of 122 feet.

Minor arterials usually carry an even mix of local and through traffic. They link collectors, and sometimes local streets, with principal (major) arterials. Minor arterials are lower service level roadways with partial control of access. Adequate and safe pedestrian and bicycle travel along and across these facilities should be included in the design.

A wide disparity exists in the characteristics of minor arterials found in the County. At one end, Braddock Road, with segments carrying over 70,000 vehicles daily on six lanes, represents a very high design standard. Conversely, Fox Mill Road, a two-lane rural road, is also a minor arterial because it carries a significant volume of through traffic over a

relatively long distance. In an effort to recognize and accommodate this disparity, minor arterials are divided into two categories in this Plan.

Type A minor arterials are those which perform a particularly significant function in the transportation network due to their length and/or their design. These facilities closely approach principal arterials in terms of their traffic characteristics and role in the network. They include Braddock Road, Old Keene Mill Road-Franconia Road, Centreville Road, and several additional segments. They should be multi-lane divided facilities within a minimum right-of-way of 122 feet. Parking should not be permitted along the traveled portion of the roadway. Interchanges should be provided at intersections with freeways. Interchanges at other locations should only be provided where the results of a detailed traffic study indicate that an at-grade intersection cannot accommodate the traffic.

Type B minor arterials represent the remaining minor arterials which are somewhat shorter in length, traverse a less densely developed area, or are located in more mature areas and consequently were built to a somewhat older design standard. Examples include Backlick Road, Annandale Road, and Sherwood Hall Lane. They can generally be constructed within a 122-foot right-of-way, although in less developed areas or where additional lanes are needed, additional right-of-way may be necessary. Parking may be permitted, although it should generally be discouraged along the traveled portion of the roadway due to the arterial nature of the road. Interchanges should only be provided with freeways, and then only at selected locations, or where the results of a detailed traffic study indicate that an at-grade intersection cannot accommodate the traffic.

Collector streets provide direct service to and from local areas, routing traffic to the arterial street system. Generally, these roadways are not used for through trips. Collector streets are very important for the collection and distribution functions of transit service. As such, they should be designed in conjunction with the arterial system to permit safe boarding and alighting, and allow buses to safely enter, exit, and turn around if necessary. Medians, access control, and turning lanes are desirable only where traffic volume is expected to exceed about 5,500 vehicles per day. Parking is optional, and can generally be safely accommodated in most sections. Sidewalks and/or trails should be provided on both sides of the road. These facilities should generally allow for two travel lanes with sufficient pavement width to permit safe bus operations. Where traffic volumes are anticipated to be high due to relatively intense use of the area served, four travel lanes should be provided. Many unimproved rural roads in lower-density areas of the County serve a collector function. They are characterized by narrow pavement, poor horizontal and/or vertical alignment, and a lack of shoulder. These roads should be improved for safety reasons to minimum VDOT geometric standards.

Local streets provide access to properties abutting the roadway and within the immediate vicinity. Traffic speed and volume should be low. Parking should be accommodated and sidewalks and/or trails should be provided. Right-of-way widths should be in conformance with standards for safe operation and proper maintenance.

The above functional classification system is used to help develop recommendations to facilitate the flow of trips generated in or traveling through the County. Facilities intended to serve a certain type and magnitude of travel will require improvements consistent with such a function. The plan has been developed with heavy emphasis on separating local and non-

local facilities by functional classification and maintaining the integrity of local streets by recommending improvements on higher type facilities. The highest three classification categories of the roadway system functional classification are depicted on Figure 3. The following lists the freeway and arterials in the County.

ROADWAY SYSTEM FUNCTIONAL CLASSIFICATION **FIGURE 3**

LISTING OF ROADWAYS BY FUNCTIONAL CLASSIFICATION
(Exclusive of Collectors and Local Streets)

	Freeways/Expressways	From	To
1.	Beltway (I-495)	American Legion Memorial Bridge	Alexandria City Line
2.	Dulles Airport Access Road (DAAR) and Dulles Toll Road (DTR)	Loudoun County	I-66
3.	Fairfax County Parkway	Braddock Road	Route 50
4.	Franconia-Springfield Parkway	Fairfax County Parkway	Beulah Street
5.	George Washington Memorial Pkwy	I-495	Arlington County Line
6.	I-66	Prince William County Line	Arlington County Line
7.	Shirley Highway (I-95 & I-395)	Prince William County Line	Alexandria City Line
8.	Route 28	Route 29	Loudoun County Line

	Other Principal Arterials	From	To
1.	Arlington Boulevard (Route 50)	Fairfax City Line	Arlington County Line
2.	Route 28	Route 29	Prince William County Line
3.	Route 123	Fairfax City Line	I-495
4.	Route 123	George Washington Parkway	Arlington County Line
5.	Columbia Pike	Little River Turnpike	Arlington County Line
6.	Route 123	I-495	George Washington Parkway
7.	Fairfax County Parkway	Route 50	Route 7
8.	Fairfax County Parkway	Braddock Road	Route 1
9.	Route 29	Fairfax City Line	Falls Church City Line

10.	Route 29	Prince William County Line	Fairfax City Line
11.	Route 50	Loudoun County Line	Fairfax City Line
12.	Route 7	Loudoun County Line	Falls Church City Line
13.	Route 7	Falls Church City Line	Alexandria City Line
14.	Little River Turnpike	Fairfax City Line	Alexandria City Line
15.	Route 123	Fairfax City line	Prince William County Line
16.	Route 1	Prince William County Line	Alexandria City Line
17.	Manassas National Battlefield Bypass	Route 29	Prince William County Line
18.	Tri-County Parkway	Prince William County Line	Loudoun County Line

	Minor Arterials (Type A)	**From**	**To**
1.	Baron Cameron Avenue	Herndon Town Line	Route 7
2.	Beulah Street	Franconia Road	Telegraph Road
3.	Blake Lane	Jermantown Road	Fairfax City Line
4.	Braddock Road	Backlick Road	Union Mill Road
5.	Burke Lake Road	Fairfax County Parkway	Braddock Road
6.	Centreville Road	Herndon Town Line	Route 50
7.	Franconia Road	Backlick Road	Telegraph Road
8.	Gallows Road	Route 7	I-495
9.	George Washington Memorial Parkway	Mount Vernon Highway	Alexandria City Line
10.	Holly Knoll Drive	Route 7	Loudon County Line
11.	International Drive	Route 7	Spring Hill Road
12.	Kingstowne Boulevard	Kingstowne Village Parkway	South Van Dorn Street
13.	Lawyers Road	Fox Mill Road	West Ox Road

14.	Lorton Road	Route 1	Route 123
15.	Manchester Boulevard	Beulah Street	Kingstowne Village Parkway
16.	McLearen Road	Route 28	Reston Parkway
17.	New Braddock Road	Union Mill Road	Route 29
18.	Old Keene Mill Road	Backlick Road	Fairfax County Parkway
19.	Poplar Tree Road	Sully Station Drive/ Sequoia Farms Drive	Braddock Road
20.	Reston Parkway	Route 7	Lawyers Road
21.	Shirley Gate Road	Route 29	Fairfax County Parkway
22.	South Van Dorn Street	Alexandria City Line	Telegraph Road
23.	Stone Road	Route 29	Braddock Road
24.	Telegraph Road	Alexandria City Line	Route 1
25.	Walney Road	Route 50	Westfields Boulevard
26.	Waples Mill Road	Route 50	Route 29
27.	West Ox Road	Route 29	Lawyers Road
28.	Westfields Boulevard	Walney Road	Sully Station Drive/ Sequoia Farms Drive
29.	Old Mill Road	Telegraph Road	Route 1

	Minor Arterials (Type B)	**From**	**To**
1.	Alban Road	Backlick Road	Rolling Road
2.	Anderson Road	Route 123	Magarity Road
3.	Annandale Road	Little River Turnpike	Falls Church City Limit
4.	Amherst Avenue	Calamo Street	Highland Street
5.	Armisted Road	Lorton Road	Route 1
6.	Backlick Road	Little River Turnpike	Fairfax County Parkway

7.	Beacon Hill Road	Route 1	Fort Hunt Road
8.	Belle View Boulevard	Fort Hunt Road	George Washington Parkway
9.	Beauregard Street	Little River Turnpike	Alexandria City Line
10.	Beulah Road	Route 7	Vienna Town Limits
11.	Braddock Road	Backlick Road	Columbia Pike
12.	Braddock Road	Pleasant Valley Road	Stone Road
13.	Browns Mill Road	Crowell Road	Beulah Road
14.	Burke Center Parkway	Burke Lake Road	Fairfax County Parkway
15.	Burke Lake Road	Fairfax County Parkway	Route 123
16.	Carlyn Springs Road	Seminary Road	Arlington County Line
17.	Cedar Lane	Gallows Road	Route 50
18.	Chain Bridge Road	Anderson Road	Route 123
19.	Clifton Road	Route 29	Route 123
20.	Colvin Run Road	Walker Road	Route 7 East
21.	Commerce Street	Old Keene Mill Road	Franconia Road
22.	Compton Road	Ordway Road	Clifton Road
23.	Crowell Road	Hunter Mill Road	Browns Mill Road
24.	Dranesville Road	Route 7	Herndon Town Limits
25.	Fair Lakes Parkway	West Ox Road	Stringfellow Road
26.	Edsall Road	Backlick Road	Alexandria City Limits
27.	Fort Hunt Road	Route 1	Vernon View Drive
28.	Fox Mill Road	Monroe Street	Reston Parkway
29.	Frying Pan Road	Route 28	Monroe Street
30.	Fullerton Road	Backlick Road	Fairfax County Parkway

31.	Furnace Road	Route 123	Route 1
32.	Gallows Road	I-495	Hummer Road/ Annandale Road
33.	Gallows Road	Annandale Road/ Hummer Road	Columbia Pike
34.	Georgetown Pike	Route 7	Route 123
35.	Glen Carlyn Road	Route 7	Arlington County Line
36.	Gosnell Road	Route 7	Old Courthouse Road
37.	Graham Road	Annandale Road	Route 29
38.	Great Falls Street	Route 123	Falls Church City Line
39.	Guinea Road	Little River Turnpike	Route 123
40.	Haycock Road	Route 7	Westmoreland Street
41.	Hayfield Road	Manchester Boulevard	Telegraph Road
42.	Henderson Road	Old Yates Ford Road	Clifton Road
43.	Hooes Road	Fairfax County Parkway	Route 123
44.	Hummer Road	Little River Turnpike	Gallows Road
45.	Hunter Mill Road	Baron Cameron Avenue	Blake Lane
46.	Huntington Avenue	Fort Hunt Road	Telegraph Road
47.	Idylwood Road	Cedar Lane	Great Falls Street
48.	Lee Road	Route 50	Stonecroft Boulevard
49.	Jermantown Road	Fairfax City Line	Blake Lane
50.	John Marr Drive	Ravensworth Road	Columbia Pike
51.	Kirby Road	Great Falls Street	Route 123
52.	Lawyers Road	Fox Mill Road	Vienna Town Line
53.	Lee Chapel Road	Burke Lake Road	Route 123
54.	Lewinsville Road	Route 7	Route 123

55.	Lincolnia Road	Columbia Pike	Beauregard Street
56.	Loisdale Road	Franconia Road	Newington Road
57.	Magarity Road	Lisle Avenue	Great Falls Street
58.	Monroe Street	West Ox Road	Herndon Town Line
59.	Mount Vernon Highway	Route 1	Mount Vernon Memorial Highway
60.	Mount Vernon Memorial Highway	Route 1	Mount Vernon Highway
61.	Newington Road	Loidale Road	Fairfax County Parkway
62.	North Kings Highway	Route 1	Telegraph Road
63.	Nutley Street	Vienna Town Line	Route 50
64.	Old Courthouse Road	Beulah Road	Gallows Road
65.	Old Dominion Drive	Georgetown Pike	Arlington County Line
66.	Old Yates Ford Road	Prince William County Line	Henderson Road
67.	Ordway Road	Prince William County Line	Compton Road
68.	Park Street	Vienna Town Line	Cedar Lane
69.	Patrick Henry Drive	Route 7	Route 50
70.	Pleasant Valley Road	Route 29	Route 50
71.	Pohick Road	Fairfax County Parkway	Route 1
72.	Poplar Tree Road	Stringfiellow Road	Westfields Boulevard
73.	Prosperity Avenue	Little River Turnpike	Gallows Road
74.	Ravensworth Road	Little River Turnpike	Braddock Road
75.	Roberts Parkway	Fairfax County Parkway	New Guinea Road
76.	Rolling Road	Braddock Road	Franconia-Springfield Parkway
77.	Rolling Road	Fairfax County Parkway	Pohick Road
78.	Seminary Road	Carlyn Springs Road	Alexandria City Limits

79.	Sherwood Hall Lane	Route 1	Fort Hunt Road
80.	Shreve Road	Route 29	Route 7
81.	Silverbrook Road	Route 123	Lorton Road
82.	Sleepy Hollow Road	Columbia Pike	Route 7
83.	South George Mason Drive	Seminary Road	Arlington County Line
84.	South Kings Highway	Telegraph Road	Route 1
85.	Spring Hill Road	Route 7	Georgetown Pike
86.	Springvale Road	Georgetown Pike	Route 7
87.	Stonecroft Boulevard	Route 50	Westfields Boulevard
88.	Stringfellow Road	Route 50	Route 29
89.	Sunrise Valley Drive	Centreville Road	Hunter Mill Road
90.	Sunset Hills Road	Herndon Town Line	Hunter Mill Road
91.	Swinks Mill Road	Georgetown Pike	Lewinsville Road
92.	Sydenstricker Road	Old Keene Mill Road	Fairfax County Parkway
93.	Towlston Road	Old Dominion Drive	Trap Road
94.	Trap Road	Towlston Road	Beulah Road
95.	Twinbrook Road	Braddock Road	Guinea Road
96.	Vale Road	West Ox Road	Vienna Town Line
97.	Vernon View Drive	Fort Hunt Road	George Washington Parkway
98.	Wakefield Chapel Road	Little River Turnpike	Braddock Road
99.	Walker Road	Georgetown Pike	Colvin Run Road
100.	Waples Mill Road	Route 50	West Ox Road
101.	West Ox Road	Centreville Road	Lawyers Road
102.	West Street	Route 29	Falls Church City Limit
103.	Westmoreland Street	Chain Bridge Road	Arlington County Line
104.	Westpark Drive	International Drive	Route 7

105.	Wiehle Avenue	Crestview Drive	Sunrise Valley Drive
106.	Willard Road	Stonecroft Road	Walney Road
107.	Wilson Boulevard	Route 7	Arlington County Line

APPENDIX 2

TYPES OF TRANSIT SERVICES AND FACILITIES

The Countywide Transportation Plan identifies improvements of public transportation services and facilities. The Transportation Plan designates a number of Enhanced Public Corridors where major transit services will be provided in corridors that carry higher volumes of inter-county and/or intra-county vehicular traffic. The Plan also maps out approximate locations for supporting facilities of the existing and planned transit services for the purpose of reserving rights-of-way required by the facility development. Final locations of component facilities are subject to completion of area plans or appropriate studies. This document outlines types of transit services and facilities based on comprehensive consideration of transit modes, technologies, rights-of-way, capacities, and service and operational characteristics.

Transit Services

Public transportation services can be generally categorized into three major types: rail transit, bus transit and paratransit.

Rail Transit is a mass transit service using rail technology and occupying a separate right-of-way. Heavy rail, commuter rail and light rail are the common rail transit services.

Heavy rail transit (HRT) is an electric railway with the capacity for carrying a heavy volume of urban passenger traffic. It is characterized by high speed and rapid acceleration passenger rail cars operating in multi-car trains on fixed rails, separate rights-of-way from which all other vehicular and foot traffic are excluded, and high platform loading. Most passengers access heavy rail services by walking, riding feeder bus services, or using park-and-ride facilities near suburban stations. The heavy rail transit service in the Washington DC region is referred to as Metrorail.

Commuter rail (CR) is a type of passenger train service that utilizes diesel-electric or electrically propelled trains and operate over existing railway track on the same rights-of-way used by intercity railway freight and passenger trains. Services are operated on a regular basis by or under contract with a transit operator for the purpose of transporting passengers within urbanized areas, or between urbanized areas and outlying areas. The Virginia Railway Express (VRE) is a commuter rail service that provides service between Virginia suburbs, including outlying counties, and downtown Washington DC.

Light rail transit (LRT) is essentially an improved and modernized version of the old streetcars and electric interurban railways that were common in the United States from the 1890s through the World War II. It utilizes electrically propelled passenger cars operating on fixed rails in rights-of-way that may or may not be separated from other traffic for much of the way. Light rail vehicles typically operate at surface level with power drawn from an overhead trolley wires. Light rail serves passenger trips within the densely developed urban and suburban areas. A modern streetcar is a form of light rail that has less capacity.

Automated guideway transit (or people mover) is an electric railway of guided transit vehicles, operating singly or in multi-car trains, without an onboard crew. AGT systems provide short-distance collection and distribution service, usually in major

activity centers. Service may be on a fixed schedule or in response to a passenger activated button. AGT systems are located in several U.S. cities but are more commonly found in downtown areas and at airports and amusement parks.

Monorail is a form of guided transit where the vehicles are supported by or suspended from a guideway formed by a single beam, rail or tube, usually elevated. If the trains do not have an onboard crew, they are considered automated guideways.

Bus Transit utilizes rubber-tired vehicles operating on fixed routes with fixed schedules on roadways. Bus transit can be further classified in the following types.

Local bus service is the most common type of bus service. Buses may stop every block or two along a route several miles long and serve a destination end or traffic generator, for example, a shopping mall or a hospital, for example.

When limited to a small geographic area or to short-distance trips, local service is often called feeder, circulator, or shuttle service. Such routes may operate in a loop and connect, often at a transfer center or rail station, to major routes for travel to more destinations. Most Fairfax Connector bus routes are categorized as local bus service.

Express service is a high-speed limited-stop service generally operating within transportation corridors oriented to a principal destination. It consists of longer trips, especially to major activity centers during peak commuting hours, and operates long distances without stopping. Examples include services accessing freeways, and services on major streets that operate local service on the outlying portions of a route until a certain point and then operate non-stop to activity centers. Reverse commute is a type of express service transporting passengers from residential locations in urban core areas to employment centers in the outlying areas. It is operated in the opposite direction of the peak direction of travel.

Bus rapid transit (BRT) is a limited-stop service developed in the 1990s that relies on technology to help speed up the service. It combines the quality of rail transit and the flexibility of buses. Bus Rapid Transit can operate on exclusive rights-of-way, within high-occupancy-vehicle (HOV) lanes, on expressways, or on ordinary streets. A BRT typically combines intelligent transportation system (ITS), technology applications, signal priority for transit, cleaner and quieter vehicles, rapid and convenient fare collection, and integration with land use policy.

Paratransit is a demand-responsive shared-ride transportation service without a fixed route. In practice, paratransit covers two broad areas: ADA paratransit and other paratransit.

ADA paratransit, in compliance with the Americans with Disabilities Act (ADA) and other rulings, transports people with disabilities who are unable to travel alone on fixed route system. MetroAccess is the ADA paratransit service for the Washington DC metropolitan area.

Other paratransit services can transport individuals to a destination ("many to one") or to several destinations ("many to many"). There are several forms including shared-ride taxi, general public dial-a-ride (typically used in areas of low transit demand), human service agency transportation, and ridesharing including vanpools. Vanpools, comprised of vans operating as a ridesharing arrangement, provide service to a group

of individuals traveling directly between their homes and a regular destination within the same geographical area.

Transit Facilities

Transit facilities provide access and modal transfer for users of public transportation services.

Bus stop is where one or multiple bus routes pick up passengers. A bus stop should have minimum amenities such as schedule and route information displays, sidewalks or trails accessing the stop, benches and/or shelters. The provision of benches and shelters should take into consideration daily passenger boarding levels and adjacent land use characteristics.

Transit transfer center (T) is a passenger loading and waiting area where a number of bus routes and/or other modes converge. A transit transfer center should have good access to nearby arterials and/or freeways in order to minimize transit travel times. It could be a free-standing individual facility or could easily be integrated with the design of a building. A transit transfer center typically has significant infrastructure such as a waiting room, benches, restrooms, sales outlet, ticketing or pass vending machines, and/or other services. In some instances, a timed-transfer system is used and buses converge on the transit center at a specific time to exchange passengers. Parking typically is not provided at these locations, although the transit transfer center could be co-located with a rail station parking facility or park-and-ride lot.

Rail Station (R) is defined as a location where a rail rapid transit service picks up and drops off passengers. A rail station typically has a bus transit waiting area, kiss-and-ride, bicycle parking and other amenities listed under transit transfer centers. It may or may not be accompanied by vehicle parking areas, depending on the nature of the station area.

Commuter Rail Station (C) is defined as a location where commuter rail service is provided. It has passenger amenities similar to those provided for a rail station.

Park-and-Ride (P) is a parking garage and/or surface lot used for parking passengers' vehicles, either free or for a fee, while they use public transportation facilities or vanpools. Park-and-ride facilities are generally established as collector sites for multiple bus routes, rail service, and high-occupancy-vehicle (HOV) lane access, and may also serve as collector sites for vanpools and carpools. They may have amenities similar to transit transfer centers.

Kiss-and-Ride is a location where passengers in non-transit vehicles are dropped off to board public transportation vehicles. Kiss-and-Ride areas could be located at transit transfer centers, rail stations, commuter rail stations, and park-and-ride facilities.

APPENDIX 3

TRAIL CLASSIFICATION

Major Regional Trail: Includes the Interstate Route One Bikeway, Cross County Trail, and trails along I-495, I-66, Dulles Airport Access Road, Fairfax County Parkway, Franconia-Springfield Parkway, Norfolk Southern Railway, George Washington Memorial Parkway, Washington and Old Dominion Regional Park, Bull Run, Occoquan River and Potomac River. Most of the trails designated in this category are paved trails, 8 feet or more in width. However, surface materials vary from paved, natural surfaces and stonedust for the Interstate Route One Bikeway, South County East-West trail, Cross County Trail and those trails along the Bull Run, Occoquan River, and Potomac River.

On-road Bike Routes: Designated bike lanes or signed routes to accommodate bicycle users. Design features are determined on a case by case basis.

Major Paved Trail: Concrete or asphalt trail, 8 feet or more in width.

Minor Paved Trail: Concrete or asphalt trail, 4 feet to 7 feet 11 inches in width.

Minor Paved Trail with Parallel Natural Surface or Stone Dust Trail: Concrete or asphalt trail, 4 feet to 7 feet 11 inches in width adjacent to, and in the same easement with a stone dust or natural surface trail typically 6-8 feet in width.

Natural Surface or Stone Dust Trail: Stone Dust or natural surface trail typically 6-8 feet in width.

Stream Valley Trail: Trails along stream ways as determined by Fairfax County Park Authority Staff.

Trails in Other Jurisdiction: Trails to be reviewed by and located in the Towns of Herndon, Vienna and Clifton and the Cities of Fairfax and Falls Church.

APPENDIX 4

ROADWAY RIGHT-OF-WAY REQUIREMENTS

In an effort to preserve land for roadway improvements, to decrease delays in land acquisition, and to obtain land before land values increase with developed properties, requirements are hereby set forth regarding right-of-way requirements for roadways shown on the transportation plan.

The rights-of-way specified herein should be obtained through the development approval process (e.g. rezoning, special exception, site plan, etc.) as applications are submitted to the County. The provision of these rights-of-way will allow for future road improvements to be constructed with adequate ancillary features such as turning lanes, sidewalks, trails, and buffering, while minimizing impacts on properties which are subsequently developed.

It should be stressed, however, that the ultimate roadway designs will recognize available right-of-way to the extent possible; the intent of these requirements is not to impose rigid right-of-way standards through areas or mature neighborhoods, but rather to secure additional right-of-way needed for road improvements as development or redevelopment occurs.

Freeways/Expressways

Right-of-way needs along freeway facilities can be variable and extensive. The right-of-way may need to accommodate HOV/HOT lanes and rail transit as well as roadway configurations such as interchanges, ramps, and collector-distributor lanes. The right-of-way requirements for freeway facilities should be based on studies for each facility. These could include the detailed corridor analyses, feasibility studies, location and design studies and/or environment impact studies.

Arterials

Right-of-way requirements for arterials should be similar throughout the County. Table 1 summarizes the right-of-way requirements for arterial roadways based upon the number of lanes and the type of edge treatment: 'curb and gutter' or 'shoulder'. The number of lanes refers to the designation on the transportation plan. The edge treatment will vary by location within the County as follows:

(1). In the Low Density Residential Areas of the County, right-of-way should be provided as described for a 'shoulder' edge treatment. The provision of sufficient right-of-way to accommodate shoulders will allow for the ultimate typical section to be determined at the time detailed design is initiated. It is anticipated that this decision will be made based on a number of factors, including cost, clearing and grading requirements, the presence of storm sewer lines in the area, aesthetics, and other concerns. However, it is recognized that in all other areas of the County, curb-and-gutter treatments having less right-of-way requirements will normally be appropriate.

(2). The 'shoulder' edge treatment is optional in suburban neighborhoods.

(3). Additional right-of-way requirements for items such as turn lanes, service drives, parking lanes and on-road bike lanes are noted on Table 1.

When highway projects have approved designs or are in active stages of design, the strict application of these right-of-way requirements, shown in Table 1, could result in inconsistencies with such plans. To avoid this situation, approved or active designs should be utilized to determine right-of-way requirements on those projects where no change is envisioned in the Plan designation for number of lanes. However, where the new Plan recommendation provides for more lanes than were previously shown on the Plan, or where there are no design plans, right-of-way should be provided in accordance with Table 1.

The cross-section illustrations in Figure 1 and Figure 2 correspond to the measurements provided in Table 1. These cross-sections represent the typical right-of-way needed and can serve as guidelines in the development of roadway plans.

Other Considerations

Additional right-of-way might be required to support traffic operations and facilitate non-motorized transportation. Table 1 includes the required rights-of-way for turn lanes, service, etc. Provision of such facilities should be determined on a case-by-case basis, taking into consideration community development characteristics, land use types and density, traffic volume and turning movements, transit service, and non-motorized users.

TABLE 1

Right-of-Way Requirements for Roads
Shown on Transportation Plan Map Where No Plans Exist [1, 2]
(Measurement in Feet for the Entire Cross Section)

	Typical Curb and Gutter Section	Typical Shoulder Section
Lanes	Feet	Feet
2-lane	---	87
4-lane	119	161
6-lane	143	185
8-lane	167	209

Add XX feet of right-of-way for each of the following special circumstances:

	Feet
Dual Left Turn Lanes at Major [3] Intersections on All Legs	12
Right Turn Lanes at Major [3] Intersections on All Approaches	12
Enhanced Median Treatments [4]	4
Service Drives [5]	92
Parking Lanes [6]	9
On-Road Bike Route [7]	4

Add 15 feet in ancillary easements. Add supplemental right-of-way with transitions to avoid special features (e.g., historic properties, parks, cemeteries, wetlands, landfills, sewage and water treatment facilities, existing buildings, etc.) and/or to improve horizontal alignment. Add 40 feet radius at intersections dedicated to the chord of the radius curve.

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1 Where design plans consistent with the Comprehensive Plan and providing all anticipated future turn-lane requirements are developed to a sufficient level of detail and approval, right-of-way and easement dedication requirements should be based upon them.

2 Where a substitute trail is to be provided in easements within the development site, the right-of-way requirements can be reduced in an amount to be determined by VDOT and DPWES; however, adequate right-of-way must be retained to meet VDOT clear zone requirements.

3 Within 500 feet of intersections of arterial roads with collectors or with other arterials unless specifically determined by a traffic study to not be needed. The use of dual turn lanes requires a width of 30 feet on the receiving road.

4 Commercial revitalization areas or other special areas where pedestrian refuge, landscaping or special design features are desired within the median.

5 Primary Highways, except where waived.

6 On side(s) of road where residences front on the road or service drive. Does not apply to shoulder sections.

7 On-road bike route is a designated lane or signed route to accommodate bicycle users. Design features should be determined on a case-by-case basis, as either a marked bike lane, wide shoulder lane, or paved shoulder.

FIGURE 1

Cross Section Illustration of a Typical Curb and Gutter Section
(Measurement in Feet)

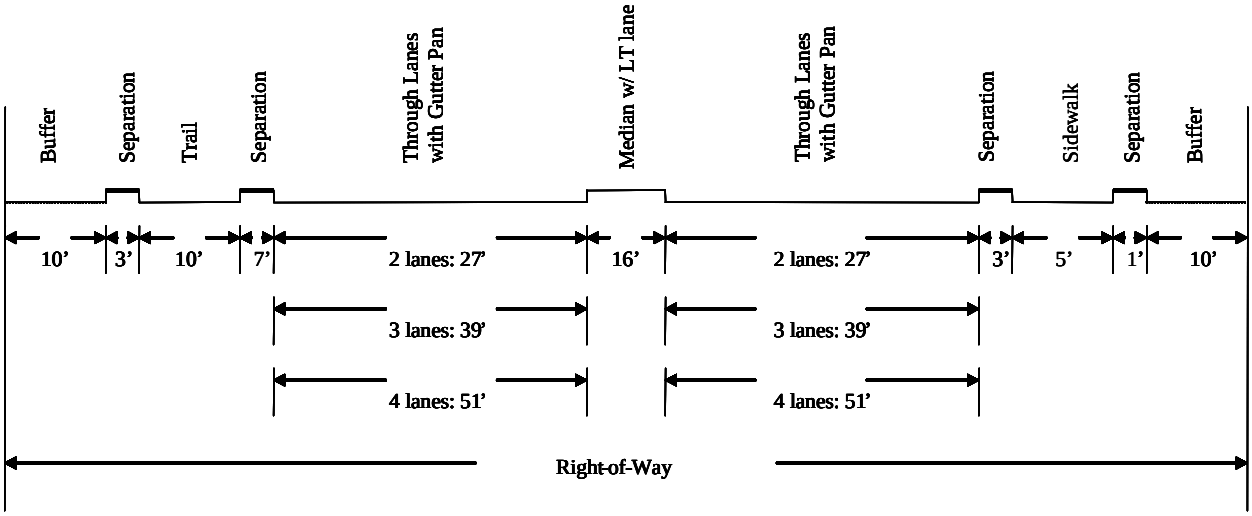
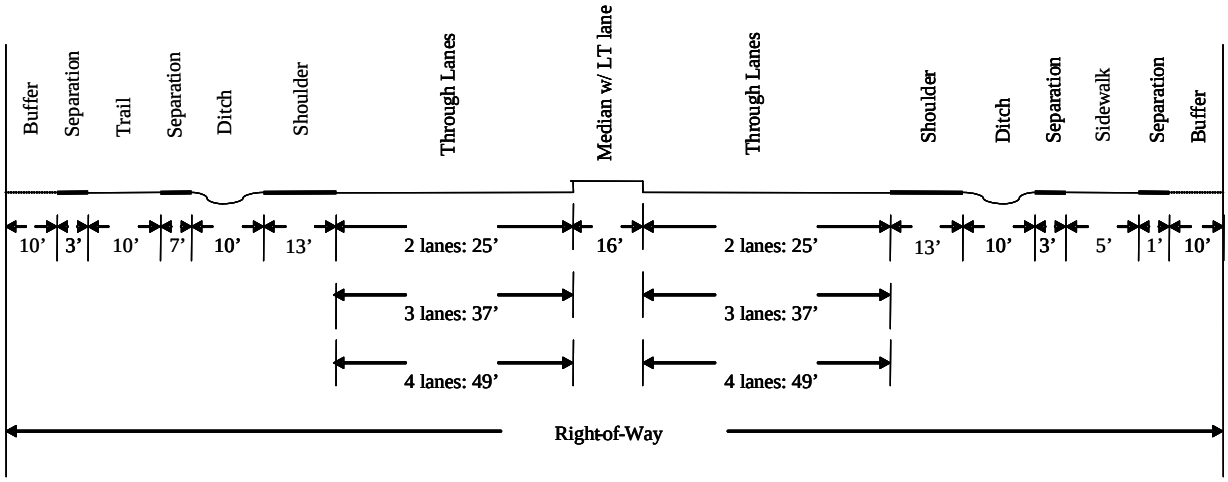


FIGURE 2

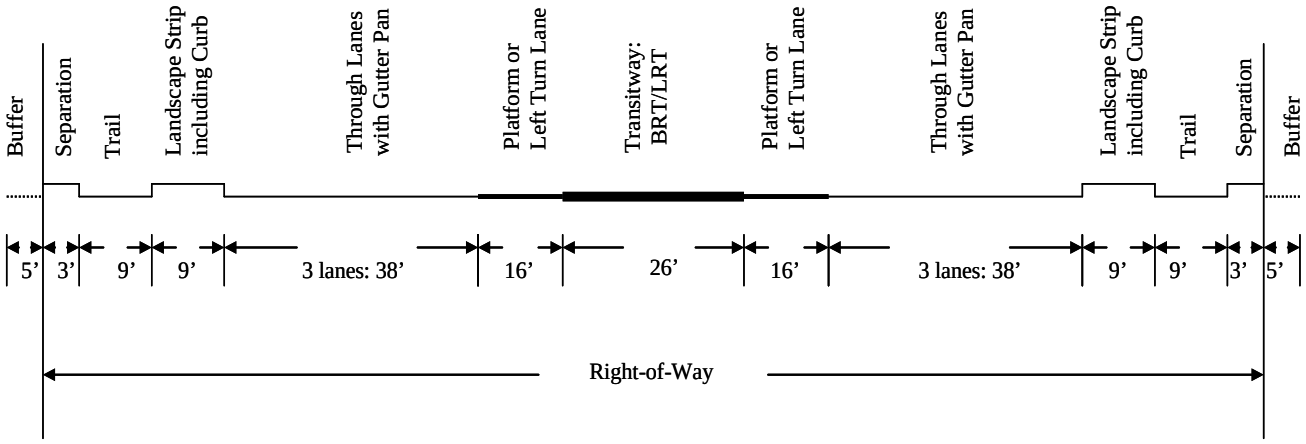
Cross Section Illustration of a Typical Shoulder Section
(Measurement in Feet)



Roads in Revitalization Areas

The right-of-way requirements outlined above (Figure 1 and Figure 2) are generally applicable for improvements in a typical suburban setting. The County is comprised of diverse communities and development patterns, some of which have more urban features, higher land use densities, and more pedestrian activities and transit services. To preserve communities' characteristics and support economic vitality, this Plan allows flexibility and variation in right-of-way requirements for the planned arterial improvements. The planning and design of individual roadways need to fit with the surrounding land use and community, while enhancing mobility and safety for all road users.

The County has designated several Revitalization Districts and Areas to encourage economic development in the older commercial and residential areas. Special incentives and policies are provided for these areas, such as flexibility within certain zoning regulations and urban design measures. The Plan emphasizes that road improvement policies within the Revitalization Districts and Areas be in concert with the adopted land use, urban design and economic and administrative policies formulated to foster a sense of place and to support successful revitalization. Figure 3 serves as a guideline for such variation and flexibility. It is important to recognize that land use, transit and travel patterns differ among these areas. Area Plans of the Comprehensive Plan provide specific guidelines for right-of-way requirements and cross sections in the Revitalization Districts and Areas.

FIGURE 3

Richmond Highway Cross Section
Including At-Grade Transitway in Center
(Measurement in Feet)