TRANSPORTATION

INTRODUCTION

Fairfax County is served by an extensive transportation system comprised of highways, bus and rail rapid transit and an international airport. In addition, an extensive sidewalk and trail system serves pedestrian and bicycle travel. This transportation system accommodates hundreds of thousands of trips every day, of which the majority occur on the highway and public transit systems. The provision of transportation facilities and services - roadways in particular - has not kept pace, overall, with the increasing travel demand in the County. However, the number of arterial lane-miles within the County since 1990 increased relatively more than both population and employment in the County. During this period (1990-1995), major investments were made in such facilities as the Fairfax County Parkway, thus maintaining the relative capacity of the transportation network (as measured by arterial highway lane-miles), with development in the County. This comparison does not address the growth in traffic associated with development in other local jurisdictions. An indication of increasing traffic demand conditions is revealed in the data collected by the County's Office of Transportation. For example, whereas less than 25 percent of the signalized intersections monitored annually by the County were classified as "failing" during peak periods in the late 1970s, currently, over 50 percent are so classified. Other measures of roadway system adequacy, such as volume-to-capacity ratios and travel speed indicators, reveal similar declines in County roadway operations.

A number of factors related to the overall growth in Fairfax have contributed to the transportation system problems being experienced today. These include not only the pace and amount of land development within (and adjacent to) the County, but also the pattern and character of that development. Socio-economic factors, such as high automobile availability and two-worker households, also contribute to the increasing demand for transportation services and facilities. The rapid extension of commercial air travel and the increasing usage of helicopters makes aviation an important future component of the County's transportation system. For instance, the Metropolitan Washington Airports Authority forecasts that there will be nearly 11 million boarding passengers each year by the year 2000 at Dulles Airport alone. Besides transportation, aviation expansion will also impact land use compatibility, the environment, and the overall safety of County residents.

Coupled with dramatically increased transportation demand in the County, the complexity of planning, funding and implementing transportation improvements requires long lead times to increase the supply of transportation services and facilities. For instance, the Metrorail alignments within Fairfax County were agreed upon by 1975, fully eight years before the first rail service in Fairfax commenced from the Huntington station in 1983. Similarly, the Fairfax County Parkway has been a feature shown on the County's Comprehensive Plan since 1975, currently, 24 miles of the proposed 35-mile facility are open. Finally, an integral part of the increasing traffic volumes is generated by other nearby jurisdictions and their concomitant growth in housing and employment.

In an effort to address the shortcomings of the overall transportation system in the Northern Virginia region, the Governor of the Commonwealth of Virginia initiated the "Sub-regional Planning Process" which was undertaken during the 1988 calendar year. Key political and technical people in the area, as well as concerned citizens, worked together in this process to forge a new transportation plan for the Northern Virginia region.

In seeking to accommodate the projected growth in the Northern Virginia region, the Sub-regional Transportation Plan recommends approximately $10 billion in transportation improvements, including new roadway alignments, roadway widenings, and substantial

enhancements to the existing transit (rail and bus) and High Occupancy Vehicle (HOV) lane networks. However, even with these improvements in place, the analysis suggests a further deterioration of traffic conditions in the County. For instance, the number of miles of congested arterials experienced during peak demand in Fairfax County is anticipated under this plan to increase from 25 percent of arterial mileage in 1985 to over 40 percent in 2010.

One of the primary implications of the trends and forecasts for Fairfax County is that traffic conditions are likely to further deteriorate, 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.

One of the options available to the County for effectuating 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 into the future, measures to bring about less demand for roadway capacity should be a focus of the County's Comprehensive Plan. It will be virtually impossible to meet travel demand solely by roadways. The objectives and policies presented in this section thus emphasize the need to maximize the efficiency 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.

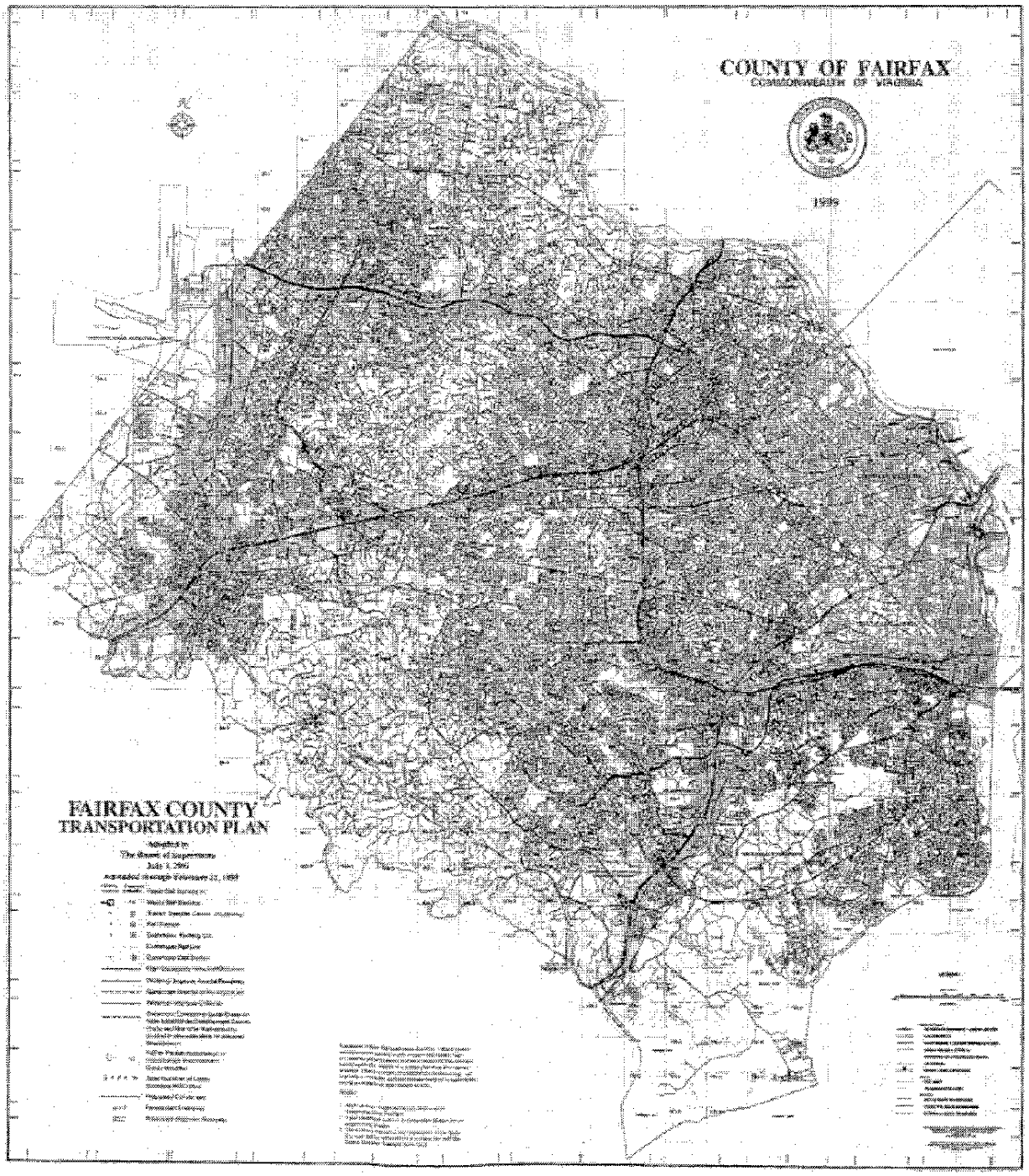
BOARD OF SUPERVISORS GOAL

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. Regional and local efforts to achieve a balanced transportation system through the development of rapid rail, commuter rail, expanded bus service and the reduction of excessive reliance upon the automobile should be the keystone policy for future planning and facilities. Sidewalks and trails 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: Fairfax County should provide for both through and local movement of people and goods through a multi-modal transportation system that places the maximum practical emphasis on alternatives to the single-occupant automobile.

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



Note: This is a generalized delineation of the Transportation Plan.
The 1" =4000' scale map is available at the Maps and Publications Sales Desk

Source: Fairfax County Department of Transportation

TRANSPORTATION PLAN MAP **FIGURE 1**

See the Countywide Trails Map. The 1"-4000' scale map is available at the Maps and Publications Desk.

COUNTYWIDE TRAILS MAP **FIGURE 2**

Policy b. Provide motorized and non-motorized transportation facilities or improvements which best meet County goals as determined by more detailed corridor - level studies. Where projects have not been programmed as of August 6, 1990 [the date of adoption of the Policy Plan] or, for programmed projects, where full corridor-level studies would not unreasonably interfere with implementation, such studies must include a consideration of whether there exists a need to be addressed by the project and an analysis of a reasonable range of alternatives with regard to their effectiveness in meeting County transportation goals and objectives, their cost, and their direct, indirect and cumulative impacts on the environment, heritage resources, parklands, stable and/or residential neighborhoods, and other social and economic values. The scope and geographic breadth of corridor-level studies must be commensurate with the scale of the impact area involved, the size of alternative investments being evaluated, and the magnitude of potential impacts. Such studies must be subject to full public participation.

Policy c. Accommodate inter-county and through trips with the Interstate and Primary Highway Systems, Metrorail, the Virginia Railway Express, and high occupancy vehicle facilities.

Policy d. Design transportation facilities and provide services to accommodate the needs of the mobility-impaired.

Objective 2: **Fairfax County should seek to increase the number of commuters using non-motorized transportation and public transportation (i.e., rail, bus, carpooling and vanpooling) so that by the year 2000, 60% of County commuters to the metropolitan core, 20% of the commuters to the Tysons Corner Urban Center, 15% of the commuters to Suburban Center and Transit Station Areas and 5% of other County commuting work trips will use public transportation, and 3% of all trips will be made by non-motorized (pedestrian and bicycle) transportation.**

Policies on Transit Facilities

Policy a. Support the completion of the 103-mile Metrorail system, including the extension to Springfield/Franconia.

Policy b. Provide mass transit facilities (such as rail transit, commuter rail and/or HOV lanes) in major radial and intracounty commuter corridors including the Shirley Highway, I-66, the Fairfax County Parkway, the Beltway, and the Dulles Access/Toll Road. Preserve rights-of-way for track and station sites where appropriate. Base the selection of the preferred mode in each corridor upon the results of detailed corridor studies.

Policy c. Provide HOV lanes on congested freeways and other heavily used commuter routes where: (1) a substantial travel time savings (generally 8 to 10 minutes or more) can be afforded, and (2) HOV volumes are likely to exceed 500 vehicles per lane in the peak hour. Seek to develop an integrated HOV-lane system with direct connections between HOV park-and-ride lots, transit centers, and other

modal transfer facilities and to major mixed-use Centers. HOV regulations should be strictly enforced to minimize violations.

Policy d. Establish and/or expand park-and-ride lots along major intercounty and intracounty 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 transit centers as necessary to facilitate both intercounty and intracounty travel.

Policy f. Provide necessary supporting facilities for the transit system including operations centers and storage/maintenance facilities.

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

Policy h. Provide for effective management and maintenance of County-owned transportation facilities, including park-and-ride lots, bus garages, and FAIRFAX CONNECTOR vehicles.

Policies on Transit Service

Policy i. Provide high quality mass transit service in major commuter corridors including the Shirley Highway, I-66, the Beltway, the Fairfax County Parkway, and the Dulles access/toll road. These "trunk" services 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 service between areas of medium to high-density residential development and trunk routes, including the Metrorail system. Feeder bus service to Metrorail and commuter rail from Suburban Neighborhoods will also be considered. The frequency of peak and off-peak service will be based on ridership levels except where minimum policy headways apply.

Policy k. Provide transit service between areas of medium to high-density residential development, mixed use centers and employment centers. The frequency of peak and off-peak service will be based on ridership levels except where minimum policy headways apply.

Policy l. Provide local service within mixed use Centers in order to distribute transit riders arriving on trunk routes and to meet internal circulation needs. Mixed use Centers should be designed in ways that promote and facilitate transit service and pedestrian access.

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

Policy n. Evaluate, and where warranted, implement innovative technologies, services and methods that increase transit ridership and/or productivity. Examples might include privatization, pricing, and timed-transfer service.

Policy o. Develop parking requirements, parking management programs, and parking controls in mixed use Centers to encourage transit and high occupancy vehicle usage.

Policy p. Provide leadership in working with the private sector to establish effective transportation demand management (TDM) programs at employment locations. The County will also encourage and support employers and landowners in establishment of transportation management associations (TMAs) for the purpose of reducing single occupant automobile use.

Policy q. Seek to establish, with assistance of all employers, including the private sector and all levels of government, incentives and disincentives in order to reduce single occupant automobile use. These might include flexible and alternative work schedules, transit pass programs, dedicated bus/van transportation between employment centers and designated transit centers, alternative parking arrangements, provision of adequate sidewalks and trails, and related measures to promote transit ridership, ridesharing, bicycling and walking.

Policy r. Work with Fairfax County Public Schools, private schools, and area colleges to establish programs for encouraging the use of bicycling, walking, carpooling and transit, including school buses.

Policy s. Require applicants for all rezonings and special exceptions to include a statement explaining the applicant's consideration of TDM strategies. Where applicable, proffers of TDMs and proffers in support of the County's transit system should be encouraged.

Policy t. In cooperation with MWCOG and other local jurisdictions, develop on demand carpooling/ridesharing system. Actively promote and market public transit, ridesharing, bicycling and walking.

Policy u. Facilitate transfer between modes by coordinating services and facilities, schedules, information and fares. To the extent feasible, major mixed use Centers should be the focal points of timed transfer connections for both trunk and feeder services.

Policy v. Provide adequate programs for marketing, publicity and public information for transit services.

Policy w. Enhance coordination with neighboring jurisdictions to promote public transit and high occupancy vehicle (HOV) usage and minimize single occupant vehicle travel.

Policy x . Develop an intermodal transportation network including intracounty and cross-county connections with frequent transit service from transportation hubs. Appropriate use should be made of new technologies to provide service information and for system operations.

Objective 3: **Fairfax County should provide a road system that provides adequate local access and capacity for through movements, consistent with financial, social, and environmental constraints and with the County's goal of reducing commuting by single-occupant automobile.**

Policy a. Ensure that the street network is planned, designed and operated in recognition of the Roadway Functional Classification System described in the Transportation Appendix.

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 minimum, level of service D should be provided where feasible.

Policy c. In cooperation with VDOT, re-examine the design standards for local streets and the criteria for acceptance of such streets into the State Secondary System.

Policy d. Provide new roadway construction and other facility improvements which meet Virginia Department of Transportation (VDOT) standards for inclusion in the State highway systems.

Objective 4: **A comprehensive network of trails and sidewalks should be provided as an integral element of the overall transportation network.**

Policy a. Plan for pedestrian, bicycle and bridle path/hiking trail system components in accordance with the Countywide Trails Plan (see Figure 2).

Policy b. Provide nonmotorized facility improvements in accordance with standards delineated by the Virginia Department of Transportation (VDOT) and the American Association of State Highway and Transportation Officials (AASHTO).

Policy c. Provide for bicycle and pedestrian features, including clearly marked sidewalks and trails, and marked crosswalk and pedestrian signals, in the construction and reconstruction of roads and bridges.

Policy d. Establish trails and/or sidewalks in conjunction with roads and stream valleys as indicated by the Countywide Trails Plan.

Policy e. Provide sidewalks and/or trails which link residential concentrations with transit stations, mixed-use Centers, shopping districts, recreational facilities, and major public facilities, and provide for pedestrian circulation within mixed use centers. (See Figure 2 for Countywide Trails Plan Map).

Policy f. Provide sidewalks on both sides of streets in commercial areas.

Policy g. Use open space/conservation easements where appropriate to implement the Countywide Trails Plan.

Objective 5: **The programming of improvements to the transportation system should be based upon considerations of cost-effectiveness, should be sensitive to the County's environmental, social, land-use, economic, and other goals and objectives, and should reflect an overall goal of reducing reliance on the single- occupancy automobile as far as is reasonably possible.**

Policy a. Give priority to the programming of transit 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; provide a focus of transit service and plan future rail stations and bus transit centers in these core areas, with congestion-free transit access to the extent feasible.

Policy b. Take affirmative action in the allocation of capital improvement funds, to advance the construction of those transit and HOV facilities that increase transit ridership and HOV use in a cost-effective manner.

Policy c. Recognize anticipated future levels of demand and operating conditions, as well as existing conditions, when making programming decisions.

Policy d. Consider direct and indirect costs in making programming decisions.

Policy e. Pursue advanced acquisition of land for future highway rights-of-way and public transportation facilities, in order to minimize project costs and impacts on established neighborhoods.

Policy f. Consider funding intersection improvements when highway funding is insufficient to permit the improvement of full segments.

Objective 6: **Transportation facilities and services should be provided in a manner that minimizes community disruption and adverse environmental impacts.**

Policy a. Use all reasonable means to minimize adverse impacts of existing and planned transportation facilities and services on environmental and heritage resources and neighborhood stability.

Policy b. Plan and design transportation facilities to minimize intrusion into Environmental Quality Corridors (EQCs).

Policy c. Adopt strategies to reduce automobile emissions in order to help the region attain and maintain the National Ambient Air Quality Standards.

Policy d. Promote telecommuting, teleconferencing, and tele-education to reduce transportation demand.

Objective 7: Fairfax County should work to ensure adequate financing for its transportation system.

Policy a. Develop and implement a responsible financial plan that identifies existing and new funding mechanisms, including private funding initiatives, to achieve the County's transportation system objectives.

Policy b. Pursue increased state and federal support for the Interstate and Primary Highway Systems, Metrorail and Virginia Railway Express.

Policy c. Supplement state and federal funding of Secondary roadways, transit, and other high priority projects, and continue local funding initiatives.

Policy d. Encourage and facilitate private sector initiatives to finance and provide additions to the transportation system and to provide supplementary public transportation services.

Policy e. Increase funding for trails, including Federal, State and private sources.

Policy f. Seek multi-jurisdictional funding sources for transportation facilities and services.

Objective 8: Public safety should be ensured both for the users of transportation facilities and services and for the general public.

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

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

Policy c. Upgrade existing roadways, including rural collectors, to correct unsafe conditions along segments which have substandard geometrics such as horizontal and vertical alignments and side clearances.

Policy d. Incorporate safety features into new transportation facilities both for the users and for the general public.

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

Policy f. Provide adequate maintenance of transportation vehicles and facilities, and enhance these resources wherever possible.

Policy g. Reduce conflicts among pedestrians, bicyclists and motorists and correct unsafe conditions for walking and bicycling.

Objective 9: **Fairfax County should, to the extent consistent with other County goals and objectives, maximize the efficiency with which each facility within the transportation system fulfills its assigned function.**

Policy a. Maximize the efficiency of existing roads through low-cost strategies to increase capacity such as channelization, turning lanes, signalization, and signage.

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 local circulation of traffic and potential neighborhood bus service.

Policy d. Develop a roadway system which discourages through travel on local and collector streets. Encourage motorists to drive with caution and consideration in residential communities. Work with VDOT and local communities to implement Traffic Calming and other measures where needed.

Policy e. Develop and implement a Corridor Management Program in cooperation with VDOT.

Policy f. Develop and implement a Signalization Standards and System capable of providing safe ingress and egress for neighborhoods to and from arterials.

Objective 10: **Fairfax County's land use and transportation policies should be complementary.**

Policy a. Encourage relatively high density residential development in mixed use Centers to promote walking trips, enable more efficient transit service and to reduce single occupant vehicle use.

Policy b. Support public transportation and non-motorized travel through the design and development of building projects in Tysons Corner Urban Center, Suburban Centers, Transit Station Areas, and Community Business Centers. The road network 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 c. Encourage compatible and appropriate land uses such as child care facilities in close proximity to public transportation transfer points.

Policy d. Evaluate land uses around existing aviation facilities during the development review process, to ensure compatibility in terms of height, noise, and the functional classification of the aviation facility.

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

Policy f. To help ensure that development is timed to coincide with the provision of adequate transportation facilities, where the plan provides for an intensity range,

development should be limited to the low end of that plan range unless the applicant demonstrates that the level of service on arterials and collectors within the impact area of the proposed project as defined by the County will, upon completion of the project, meet the level of service standard established within the area pursuant to Objective 3(b) of the Transportation element of the Plan, taking into consideration expected development and transportation facilities within the area during that period.

Policy g. Require all new developments to mitigate adverse impacts upon the transportation system both in the immediate vicinity of the site and in the surrounding area, and to evaluate measures to facilitate access by transit and to provide other enhancements necessary to promote transit use.

Objective 11: Preserve land needed to accommodate planned transportation facilities.

Policy a. Describe each street or highway shown in the Comprehensive Plan for improvement, by the anticipated number of lanes, shoulder and median treatments, and right-of-way requirements, subject to the results of detailed corridor-level studies.

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, rail stations, rail line rights-of-way in the Enhanced Public Transportation Corridors (I-66, I-95, Dulles Toll Road, and I-495), 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 12: Provide safe, efficient, convenient and compatible aviation transportation facilities.

Policy a. Locate and operate aviation and related facilities in such a way as to minimize detrimental environmental and community impacts.

Policy b. Encourage the use and development of Washington Dulles International Airport and the continued use of National Airport, so long as they do not negatively effect the local communities.

Policy c. Encourage the Metropolitan Washington Airports Authority to procure aviation and related facility easements where appropriate.

Policy d. Evaluate land uses around existing aviation facilities during the development review process, to ensure compatibility in terms of height, noise, and the functional classification of the aviation facility.

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

Policy f. Classify aviation facilities in the County in terms of their function as part of an overall transportation network.

Policy g. Ensure that aviation facilities are subject to the same environmental review as all other transportation facilities, with the additional review of height, noise, and vibration.

Policy h. Support the provision of an integrated mass transit system to Dulles and National Airports, not only for passengers, but in support of the airports' role as a major employment center. Such an integrated mass transit system to Dulles may be the TSM Alternative of the Dulles Transit Alternatives Study.

Policy i. Support the provision of adequate road transportation for access to and from Dulles and National airports.

Policy j. Support the provision of adequate parking facilities for both passengers and employees at both National and Dulles airports.

Policy k. Seek greater cooperation between the County and the Metropolitan Washington Airports Authority in responding to emergency situations at both Dulles and National airports.

Objective 13: At least once every five years Fairfax County should review and update the transportation plan taking into account the degree to which its elements are being implemented, and the degree to which the transportation objectives are being achieved.

Policy a. Monitor changes in travel patterns, traffic, transit use, and the provision of transportation facilities and services.

Policy b. Evaluate the transportation plan's ability to address future travel needs as part of the periodic review process and invite participation by county-based private industry and higher learning institutions as well as local city and town governments.

Policy c. Conduct major corridor level and communitywide transportation planning studies in an effort to refine the plan and comprehensively address systemwide transportation needs within the County.

Policy d. Promote public participation in the planning and development of transportation facilities and services.

Policy e. Consider regional travel patterns when formulating and implementing the County's transportation plan.

Policy f. Actively promote and participate in the transportation planning processes conducted at the regional and subregional level.

Policy g. Convene an annual summit on transportation to review and discuss the progress made in implementing the County's Transportation Plan and policy objectives. Such a review will help articulate and update policy guidance for the upcoming year. This summit should include representation from the Board of Supervisors, Planning Commission, the Transportation Advisory Commission, and from County and external transportation implementing and operating agencies.

Objective 14: Fairfax County should address the transportation challenges associated with continuing trends in suburb-to-suburb commuting patterns and the resulting need to facilitate employee access to major employment areas within the County.

Policy a. Initiate a cooperative effort among the area's local governments to coordinate and plan for a network of additional transit routes, services, and roads within the County and between neighboring jurisdictions that provide alternatives to commuting by single occupant vehicle to major employment sites within the County.

Policy b. Emphasize the importance of providing improved access to major County employment centers through improved transit and roadway facilities and services, such that home-based work trips initiated by employees living both within the County and within neighboring jurisdictions, can be made in a manner that minimizes roadway congestion and community disruption.

APPENDIX 1

FUNCTIONAL CLASSIFICATION

A fundamental concept addressed in the transportation plan is the development of a functional classification system. This concept specifies the type of service which any given facility provides. 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.

Although the utilization of the various functional classes is seldom discrete or absolute (e.g. most local streets carry some nonlocal traffic), a substantial amount of the transportation problems in the County arises directly from the excessive mixing of functions on a particular facility. For example, one of the most frequently raised transportation issues in the County is the excessive use of local and/or collector streets by through traffic. Since these streets are not ordinarily designed for such usage, which usually occurs at peak hours, it is evident that a major cause is congestion and delay on the arterials. Further, this arterial congestion is itself often caused by traffic using the arterials for local access. Another similar problem involving a mixing of function is the excessive use of the Beltway, which was originally designed for interstate and regional travel, by short-distance trips covering only a few interchanges. Obviously, a principal reason for this attractiveness of the Beltway is the congested and slow operation of most arterial highways in the circumferential direction. Travel on any high-speed, limited access highway becomes correspondingly reduced, by the presence of large volumes of entering and exiting traffic at frequent interchanges. Therefore, the additional traffic attracted to the Beltway because of these inadequate arterials serves only to diminish its effectiveness in carrying the through-traffic it was originally designed to serve.

Clearly, then, the development of an effective circulation plan for any area should rely on the delineation of a basic functional classification system of that area. The extent to which this system is violated or compromised may determine the adequacy of circulation in the area. In developing such a system, consideration was given to the magnitude and distribution of projected travel demand, and the 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.

For this document, the facilities and services of the total transportation system were classified according to their primary function. Transit service is classified by line-haul service, and collection and distribution service. Highway facilities are classified by freeways and expressways, other principal arterials, minor arterials, collectors and local streets.

TRANSIT SYSTEM FUNCTIONAL CLASSIFICATION

Line-haul transit service provides express or limited-stop high-speed travel over relatively long distances or between points which are relatively far apart. The guideway required for this service can be reserved exclusively for transit vehicles, or be shared with all traffic. The line-haul function can be fulfilled by either bus or rail vehicles. The critical elements determining the efficiency of the service are a concentration of travel demand between activity centers, sufficient access to the service through provision of parking facilities and integration with collection and distribution transit services, and adequate guideway capacity to ensure high speeds.

Collection and distribution transit service offers local travel between two activities or between an activity and a mode for line-haul transit service. Unlike line-haul service, most users walk to and from stops. Transit vehicles almost always share the guideway with other traffic unless the concentration of transit vehicles is quite high and their performance would be extremely adversely affected by shared use, as is the case in the downtown area of Washington, D.C.

In addition to these transit services, specialized community-oriented transit services may be advantageous. Such systems are usually characterized by more personalized service with deeper neighborhood penetration and a much greater emphasis on local rather than regional trips. To determine the applicability and structure of such systems requires careful analysis on a case by case basis to assure the most effective use of County resources.

Recommendations for improvement and services, including fringe parking lots, bus priority lanes and express bus thoroughfares, commuter rail service and rapid transit service are included in this Phase. Due to the dynamic nature of bus transit service, recommendations for specific bus routes are not included in the Comprehensive Plan.

ROADWAY SYSTEM FUNCTIONAL CLASSIFICATION

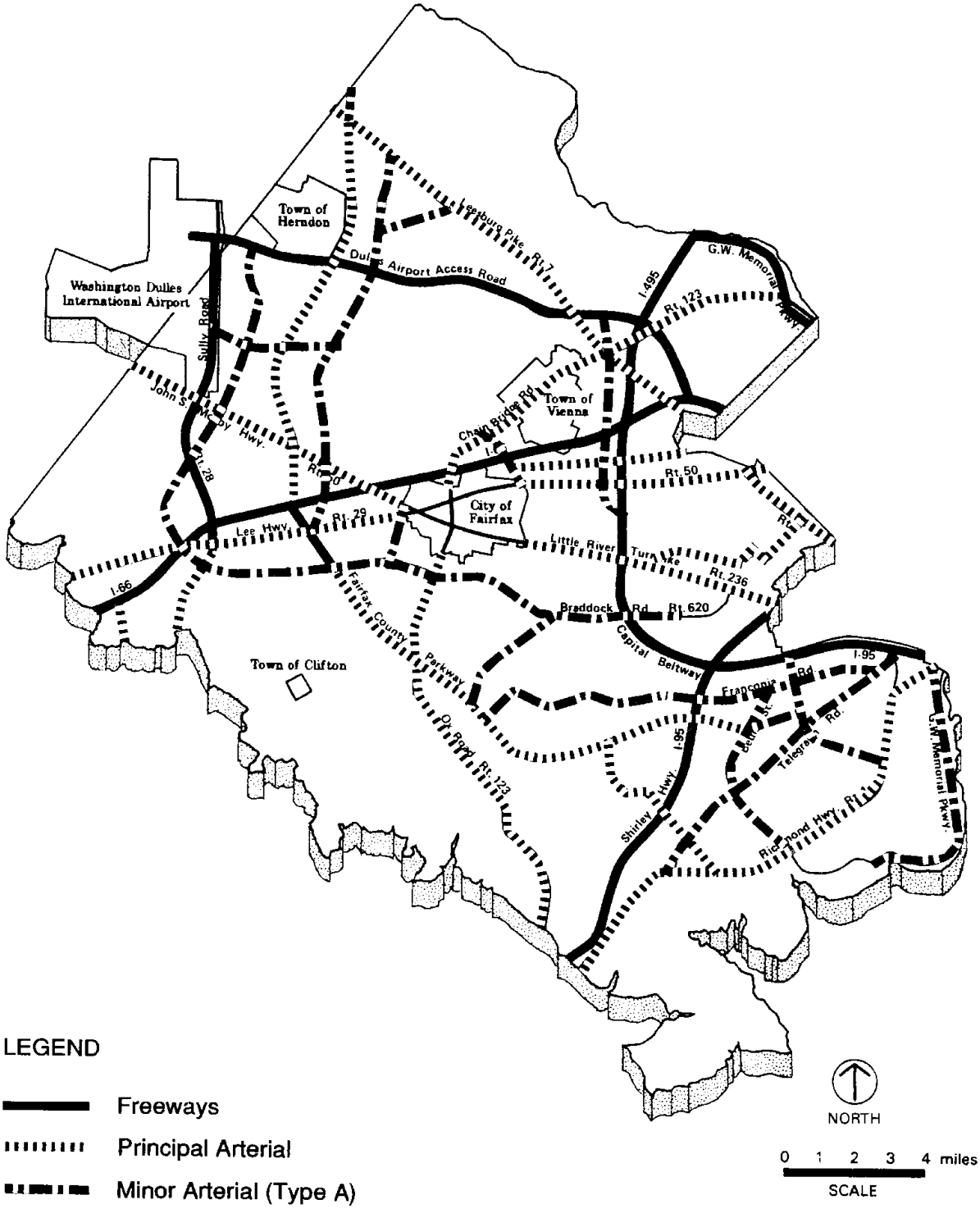
The functional classification system for roads includes a variety of roadway types. (See Figure 3.)

Freeways and expressways are controlled access facilities providing for high-volume travel. The concept of service to 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 along or very near the traveled portion of the roadway should not be allowed.

Other Principal arterials also serve 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, other principal arterials, and Type A minor arterials (see following description under Minor Arterials) should not be at grade. 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 allowed.

These facilities should include four to six travel lanes with a minimum right-of-way of 120 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.



ROADWAY SYSTEM FUNCTIONAL CLASSIFICATION **FIGURE 3**
(EXCLUDING TYPE B MINOR ARTERIALS AND LOCALS)

A wide disparity exists in the characteristics of minor arterials found in the County. At one extreme, Braddock Road, with segments carrying over 50,000 vehicles/day 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 120 feet. Parking should not be allowed. Interchanges should be provided at all intersections with principal arterials and 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 120-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 provided, although it should generally be discouraged 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. Bus routes along local streets should be discouraged. Sidewalks and parking are desirable. Right-of-way widths should provide conformance with standards for safe operation and proper maintenance.

The above functional classification system for transit and highways has been kept in context in the development of recommendations for serving the trips generated in or traveling through the County. It is essential to clearly understand that 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.

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

	Freeways	**From**	**To**
1.	Capital Beltway (I-495 & I-95)	Cabin John Bridge	Alexandria City Line
2.	Dulles Airport Access Road (DAAR) Dulles Toll Road (DTR)	Loudoun County	I-66
3.	Fairfax County Parkway	Popes Head Road	Fair Lakes Parkway
4.	George Washington Memorial Pkwy.	I-495	Arlington County Line
5.	I-66	Prince William County Line	Arlington County Line
6.	Shirley Highway (I-95 & I-395)	Prince William County Line	Alexandria City Line
7.	Sully Road (Route 28)	U.S. Route 29	Loudoun County Line

	Principal Arterials	**From**	**To**
1.	Arlington Boulevard (U.S. Route 50)	Fairfax City Line	Arlington County Line
2.	Centreville Road (Route 28)	U.S. Route 29	Prince William County Line
3.	Chain Bridge Road (Route 123)	Fairfax City	I-495
4.	Chain Bridge Road (Route 123)	George Washington Pkwy.	Arlington County Line
5.	Columbia Pike (Route 244)	Route 236	Arlington County Line
6.	Dolley Madison Blvd (Route 123)	I-495	George Washington Pkwy
7.	Fairfax County Parkway	I-66	Route 7
8.	Fairfax County Parkway	Braddock Road	U.S. Route 1

9.	Franconia-Springfield Parkway	Fairfax County Parkway	Beulah Street
10.	Lee Highway (U.S. Route 29)	Fairfax City Line	Falls Church City Line
11.	Lee Highway (U.S. Route 29)	Prince William County Line	Fairfax City Line
12.	Lee Jackson Memorial Hwy (U.S.Route 50)	Loudoun County Line	Fairfax City Line
13.	Leesburg Pike (Route 7)[1]	Loudoun County Line	Falls Church City Line
14.	Leesburg Pike (Route 7)	Falls Church City Line	Alexandria City Line
15.	Little River Turnpike (Route 236)	Fairfax City Line	Alexandria City Line
16.	Ox Road (Route 123)	Fairfax City Line	Prince William County Line
17.	Richmond Highway (U.S. Route 1)	Prince William County Line	Alexandria City Line
18.	Route 28 Bypass	Prince William County Line	I-66
19.	Tri-County Parkway	I-66	Loudoun County Line

	Minor Arterials (Type A)	**From**	**To**
1.	Baron Cameron Avenue	Reston Parkway	Route 7
2.	Beulah Street	Franconia Road	Woodlawn 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	U.S. Route 50
7.	Franconia Road	Backlick Road	Telegraph Road
8.	Gallows Road	Route 7	I-495
9.	George Washington Memorial Pkwy	Mount Vernon Highway	Alexandria City Line

[1] Provide grade-separations and service drives where feasible between Herndon Junction and Tysons Corner.

10.	Holly Knoll Drive	Route 7	Loudoun County Line
11.	International Drive	Route 7	Spring Hill Road
12.	Kingstowne Boulevard	Kingstowne Village Pkwy.	South Van Dorn Street
13.	Lawyers Boulevard	Centreville Road	Reston Parkway
14.	Lawyers Road	Fox Mill Road	West Ox Road
15.	Manchester Blvd	Beulah Street	Kingstowne Blvd
16.	McLearen Road	Route 28	Reston Parkway
17.	New Braddock Road	Union Mill Road	U.S. 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	Fox Mill Road
21.	Shirley Gate Road	U.S. Route 29	Fairfax County Parkway
22.	South Van Dorn Street	Alexandria City Line	Telegraph Road
23.	Stone Road	U.S. Route 29	Braddock Road
24.	Telegraph Road	Alexandria City Line	U.S. Route 1
25.	Walney Road	U.S. Route 50	Westfields Blvd
26.	Waples Mill Road	U.S. Route 50	U.S. Route 29
27.	West Ox Road	U.S. Route 29	Lawyers Road
28.	Westfields Blvd	Walney Road	Sully Station Drive/ Sequoia Farms Drive
29.	Woodlawn Road	Beulah Street	U.S. 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	Route 236	Falls Church City Limit

4.	Backlick Road	Little River Turnpike	Fairfax County Parkway
5.	Baron Cameron Avenue	Reston Parkway	Herndon Town Line
6.	Beacon Hill Road	U.S. Route 1	Fort Hunt Road
7.	Belle View Blvd	Fort Hunt Road	George Washington Parkway
8.	Beauregard Street	Route 236	Alexandria City Line
9.	Beulah Road	Route 7	Vienna Town Limits
10.	Braddock Road	Backlick Road	Columbia Pike
11.	Braddock Road	Pleasant Valley Road	Stone Road
12.	Browns Mill Road	Crowell Road	Beulah Road
13.	Burke Center Parkway	Burke Lake Road	Fairfax County Parkway
14.	Burke Lake Road	Fairfax County Parkway	Route 123
15.	Carlyn Springs Road	Seminary Road	Arlington County Line
16.	Cedar Lane	Gallows Road	U.S. Route 50
17.	Chain Bridge Road	Anderson Road	Route 123
18.	Clifton Road[2]	U.S. Route 29	Route 123
19.	Colvin Run Road	Walker Road	Route 7 East
20.	Commerce Street	Old Keene Mill Road	Franconia Road
21.	Compton Road	Ordway Road	Clifton Road
22.	Crowell Road	Hunter Mill Road	Browns Mill Road
23.	Dranesville Road	Route 7	Herndon Town Limits
24.	Edsall Road	Backlick Road	Alexandria City Limits
25.	Fort Hunt Road	U.S. Route 1	Vernon View Drive
26.	Fox Mill Road	Centreville Road	Waples Mill Road
27.	Frying Pan Road	Route 28	Centreville Road

[2] Clifton Road from Braddock Road to Route 123, and Georgetown Pike from Route 7 to Route 123 are designated as Virginia Byways pursuant to Section 33.1-63 of the *Code of Virginia*, as amended.

28. Fullerton Road	Backlick Road	Fairfax County Parkway
29. Furnace Road	Route 123	U.S. Route 1
30. Gallows Road	I-495	Hummer Road
31. Gallows Road	Annandale Road	Columbia Pike
32. Georgetown Pike[2]	Route 7	Route 123
33. Glen Carlyn Road	Route 7	Arlington County Line
34. Gosnell Road	Route 7	Old Courthouse Road
35. Graham Road	Annandale Road	Route 29
36. Great Falls Street	Route 123	Falls Church City Line
37. Guinea Road	Route 236	Route 123
38. Haycock Road	Route 7	Westmoreland Street
39. Hayfield Road	Manchester Blvd	Telegraph Road
40. Henderson Road	Old Yates Ford Road	Clifton Road
41. Hooes Road	Fairfax County Parkway	Route 123
42. Hummer Road	Route 236	Gallows Road
43. Hunter Mill Road	Baron Cameron Avenue	Blake Lane
44. Huntington Avenue	Fort Hunt Road	Telegraph Road
45. Idylwood Road	Cedar Lane	Great Falls Street
46. Jermantown Road	Fairfax City Line	Blake Lane
47. John Marr Drive	Ravensworth Road	Columbia Pike
48. Kirby Road	Great Falls Street	Route 123
49. Lawyers Road	Fox Mill Road	Vienna Town Line
50. Lee Chapel Road	Burke Lake Road	Route 123
51. Lewinsville Road	Route 7	Route 123
52. Lincolnia Road	Columbia Pike	Beauregard Street
53. Loisdale Road	Franconia Road	Newington Road

54.	Lorton Road	Furnace Road	U.S. Route 1
55.	Magarity Road	Lisle Avenue	Great Falls Street
56.	Monroe Street	West Ox Road	Herndon Town Line
57.	Mount Vernon Highway	Route 1	Mount Vernon Memorial Highway
58.	Mount Vernon Memorial Highway	Route 1	Mount Vernon Highway
59.	Newington Road	Loisdale Road	Fairfax County Parkway
60.	North Kings Highway	U.S. Route 1	Telegraph Road
61.	Nutley Street	Vienna Town Line	U.S. Route 50
62.	Old Courthouse Road	Beulah Road	Gallows Road
63.	Old Dominion Drive	Georgetown Pike	Arlington County Line
64.	Old Yates Ford Road	Prince William County Line	Henderson Road
65.	Ordway Road	Prince William County Line	Compton Road
66.	Park Street	Vienna Town Line	Cedar Lane
67.	Patrick Henry Drive	Route 7	Route 50
68.	Pleasant Valley Road	Route 29	Route 50
69.	Pohick Road	Fairfax County Parkway	Route 1
70.	Poplar Tree Road	Stringfellow Road	Westfields Boulevard
71.	Prosperity Avenue	Route 236	Gallows Road
72.	Ravensworth Road	Route 236	Braddock Road
73.	Roberts Parkway	Fairfax County Parkway	New Guinea Road
74.	Rolling Road	Braddock Road	Fairfax County Parkway
75.	Rolling Road	Fairfax County Parkway	Pohick Road
76.	Seminary Road	Carlyn Springs Road	Alexandria City Limits
77.	Sherwood Hall Lane	U.S. Route 1	Fort Hunt Road

78. Shreve Road	U.S. Route 29	Route 7
79. Silverbrook Road	Route 123	Lorton Road
80. Sleepy Hollow Road	Columbia Pike	Route 7
81. South George Mason Drive	Seminary Road	Arlington County Line
82. South Kings Highway	Telegraph Road	U.S. Route 1
83. Spring Hill Road	Route 7	Georgetown Pike
84. Springvale Road	Georgetown Pike	Route 7
85. Stringfellow Road	Fairfax County Parkway	U.S. Route 29
86. Sunrise Valley Drive	Centreville Road	Hunter Mill Road
87. Sunset Hills Road	Herndon Town Line	Hunter Mill Road
88. Swinks Mill Road	Georgetown Pike	Lewinsville Road
89. Sydenstricker Road	Old Keene Mill Road	Fairfax County Parkway
90. Towlston Road	Old Dominion Drive	Trap Road
91. Trap Road	Towlston Road	Beulah Road
92. Twinbrook Road	Braddock Road	Guinea Road
93. Vale Road	West Ox Road	Vienna Town Line
94. Vernon View Drive	Fort Hunt Road	George Washington Parkway
95. Wakefield Chapel Road	Route 236	Braddock Road
96. Walker Road	Georgetown Pike	Colvin Run Road
97. Waples Mill Road	U.S. Route 50	West Ox Road
98. West Ox Road	Centreville Road	Lawyers Road
99. West Street	U.S. Route 29	Falls Church City Limit
100. Westmoreland Street	Chain Bridge Road	Arlington County Line
101. Westpark Drive	International Drive	Route 7
102. Wiehle Avenue	Crestview Road	Sunrise Valley Drive
103. Wilson Boulevard	Route 7	Arlington County Line

APPENDIX 2

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 are associated with developed properties, requirements are hereby set forth regarding right-of-way limits 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, 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 a rigid right-of-way swath through areas or mature neighborhoods, but rather to secure additional right-of-way needed for road improvements as development or redevelopment occurs.

Freeways

Right-of-way needs along freeway facilities can be variable and extensive. The right-of-way may need to accommodate HOV treatments and rail transit as well as roadway configurations which are difficult to standardize such as collector-distributor systems. The right-of-way requirements for freeway facilities should be based upon the associated studies for each improvement. These studies could include the detailed corridor analyses which are referred to in Objective 1 for the Shirley Highway, I-66 and Dulles Road Corridors as well as other environmental impact studies, feasibility studies and design efforts.

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:

- 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. The following roadways traverse or abut Low Density Residential Areas and hence should be considered for shoulder treatment:

Roadway	Between
Route 1	Route 235 (S. Int.) and Pr. Wm. Co.
Route 123	Fx Co. Pkwy and Pr. Wm. Co.
Route 28	Braddock Road Ext. and Pr. Wm. Co.
Route 29	I-66 and Pleasant Valley Road
Rt. 28 Bypass.	I-66 and Pr. Wm. Co.
Lockheed Blvd	Telegraph Road and Harrison Lane
Woodlawn Road	Telegraph Road and Route 1
Lorton Road	Route 1 and Silverbrook Road
Hunter Mill Road	Route 123 and Sunrise Valley Dr
Telegraph Road	Lockheed Blvd. and Route 1

- In other areas of the County, right-of-way should be provided as described for a 'curb and gutter' edge treatment.

- The 'shoulder' edge treatment is optional in Suburban Neighborhoods.

Additional right-of-way requirements are noted on Table 1 regarding service drives and intersections.

Many highway projects have completed, approved designs or are in active stages of design at this time. Thus, the strict application of these right-of-way requirements 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, right-of-way should be provided in accordance with Table 1.

Applying the foregoing principle, right-of-way for the following roads should be provided in accordance with Table 1, and the designs should be reconsidered to ensure compatibility with the expanded section:

Roadway	Between
Route 7	Falls Church City and Alexandria
Route 123	Burke Center Parkway and Burke Lake Road
Braddock Road	Fairfax Co. Pkwy. and Rt. 123
Telegraph Road	S. Van Dorn St. and Route 1
Lorton Road	Silverbrook Rd and Route 1
Hunter Mill Rd.	Lawyers Rd. and Sunrise Valley Drive
Fairfax Co. Pkwy.	Sydenstricker Rd. and Rt. 1

These right-of-way requirements should not affect the design and/or construction of the following projects:

Roadway	Between
Fairfax County Pkwy	Rt. 7 and Sydenstricker Rd.
Route 29	Fairfax City and Route 495
Beulah Street/Woodlawn Rd	Franconia Rd and Route 1
Burke Lake Rd	Pohick Rd. (Fairfax Co. Pkwy.) and Burke Centre Pkwy.

Roadway	Between
Centreville Rd	Rt. 50 and Dulles Toll Rd
Franconia Rd	Telegraph Rd. and Craft Rd.
Lawyers Rd	Fox Mill Rd and West Ox Rd
Shirley Gate Rd	Route 29 and Braddock Rd
Lockheed Blvd.[1]	Route 1 and Telegraph Rd
Stone Rd	Route 29 and Braddock Rd
Telegraph Rd.	Franconia Rd and S. Van Dorn St.
West Ox Rd	Route 29 and Lawyers Rd
Rolling Rd	Franconia/Spfd. Pkwy. and Old Keene Mill Rd.
Wiehle Avenue	Dranesville Rd. and Reston Ave.
Backlick Rd	Franconia/Sprfd. Pkwy. and Fairfax Co. Pkwy.
Haycock Rd	Rt. 7 and Great Falls St.
Jermantown Rd	Rt. 123 and Fairfax City
Lee Chapel Rd	Burke Lake Rd. and Old Keene Mill Rd.
Pohick Rd	Fairfax Co. Pkwy. and Alban Rd.
Waples Mill Rd.	Rt. 29 and Gov't Center Pkwy. Ext.
Rt. 28	I-66 and Loudoun Co.
Braddock Rd.	Fairfax Co. Pkwy. and Union Mill Rd.
Spring Hill Rd.	Rt. 7 and International Dr.
Burke Centre Pkwy. Ext.	Rt. 123 and Fairfax Co. Pkwy.
Lawyers Rd.	Centreville Rd and Fairfax Co. Pkwy.

[1] No change in number of lanes from previous Plan; consider shoulder design as suggested for Low Density Residential Area.

TABLE 1

Right-of-Way Requirements for Roads
Shown on Transportation Plan Where No Plans Exist[1, 2]

	Edge Treatment			
	Curb and Gutter		Shoulder	
Lanes	meters[3]	feet	meters[3]	feet
2-lane	---	---	27	90
4-lane	34	112	48	158
6-lane	41	136	55	182
8-lane	49	160	63	206

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

	XX	
	feet	meters
Tandem Left Turn Lanes at Major[4] Intersections on All Legs	12	4
Right Turn Lanes at Major[4] Intersections on All Approaches	12	4
Enhanced Median Treatments[5]	4	1
Service Drives[6]	92	28
Parking Lanes[7]	9	3

Add 15 feet (5 meters) 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 (12 meters) 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 DEM; however, adequate right-of-way must be retained to meet VDOT clear zone requirements.

3 These metric equivalents were derived using the conversion rate of 1 foot = 0.3048 meter and approximating the result to the nearest whole number.

4 Within 500 feet (152 meters) of intersections of arterial roads with collectors or with other arterials unless specifically determined by a traffic study to not be needed.

5 Commercial revitalization areas or other special areas where landscaping or special design features are desired.

6 Primary Highways, except where waived.

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