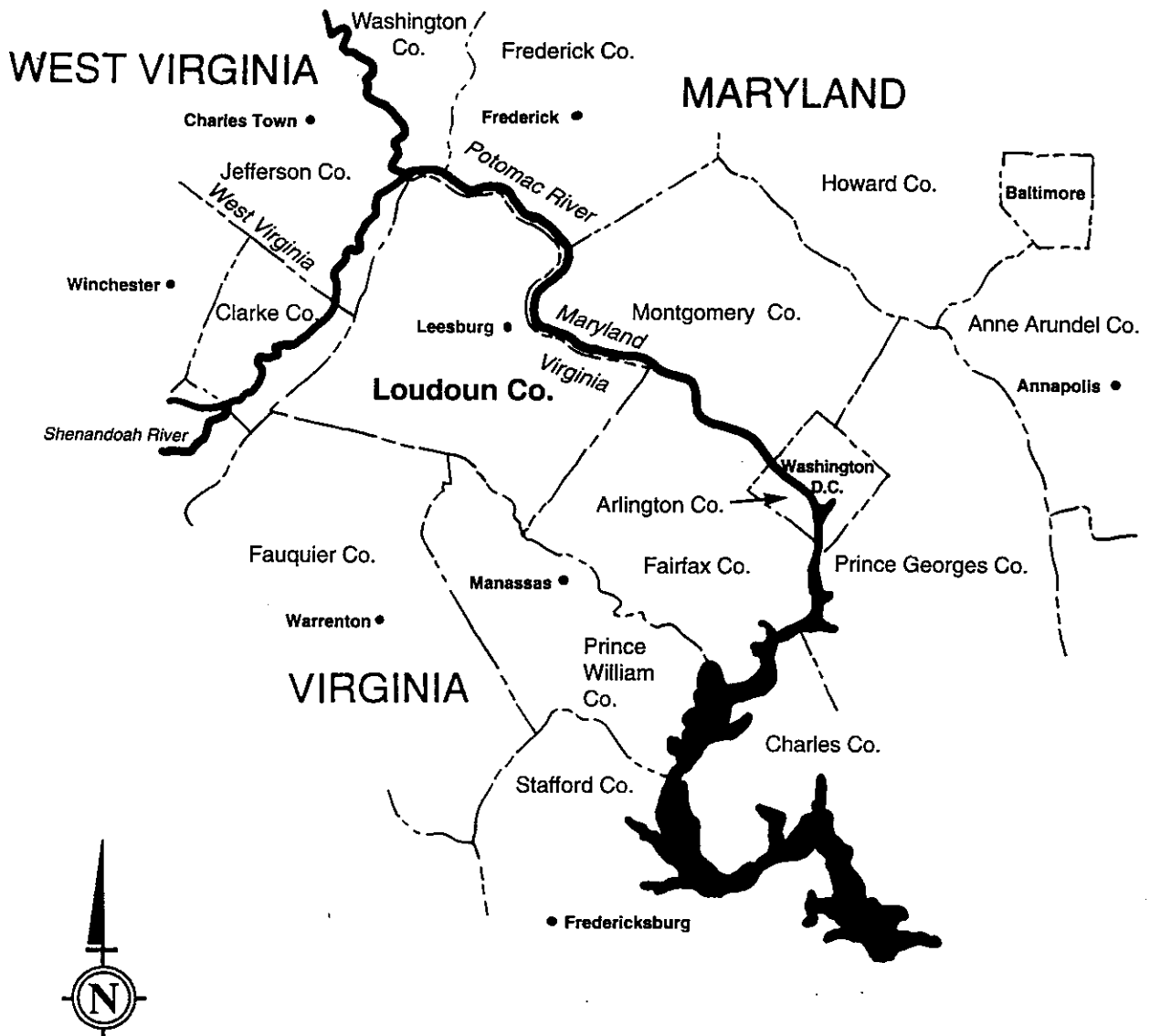
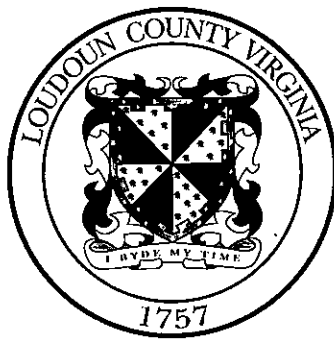


Countywide Transportation Plan

July 5, 1995
Loudoun County, Virginia



Countywide Transportation Plan



**July 5, 1995
Loudoun County, Virginia**

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With Special Thanks

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who devoted their time and knowledge
to this planning process.
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who provided input that shaped this document.



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C H A P T E R 1

INTRODUCTION

PURPOSE

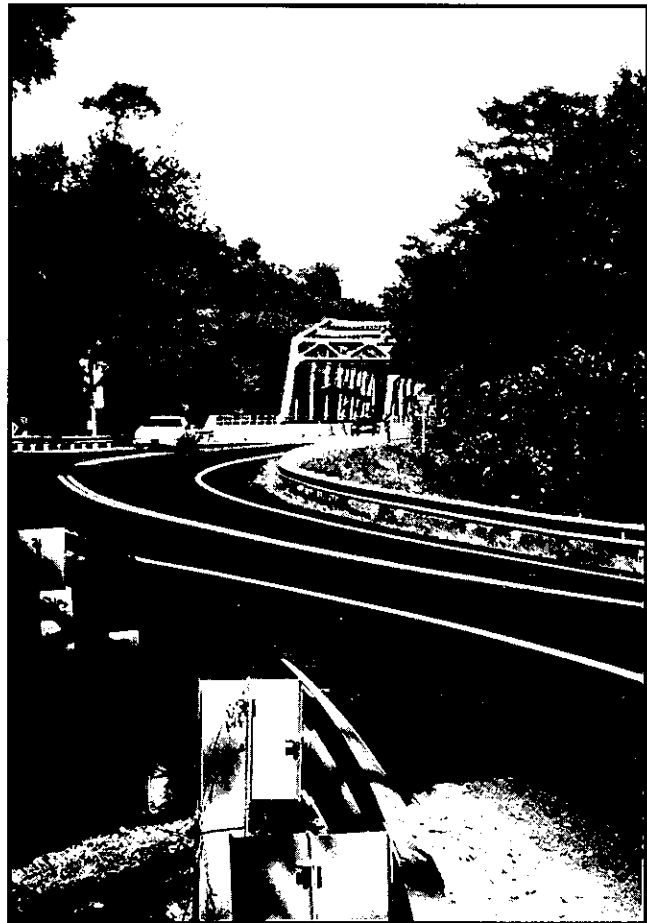
The Countywide Transportation Plan (Transportation Plan) is a strategic plan consisting of policies and goals that are intended to address identified transportation issues or opportunities. The Transportation Plan is not linked to a specific implementation schedule or time horizon (i.e., 10, 20 or more years). In fact, the Transportation Plan proposes solutions and programs, such as rail transit service, that may not occur for many years. With other issues, such as the Transportation Plan's approach to working with VDOT, policies can be implemented in the short term. In addition to a long range vision, the Plan includes more immediate policy and implementation components. These provide for a continuing transportation planning process and regularly updated transportation priorities and policies.

The Countywide Transportation Plan is a means of implementing the following Board objectives:

Board of Supervisors' Strategic Objectives

- a. To maintain Loudoun County's fair share of federal and state transportation funding;
- b. To develop a comprehensive transportation strategy by consolidating the transportation policies found in numerous County Plans; and
- c. To develop a strategy that will accommodate the County's planned growth.

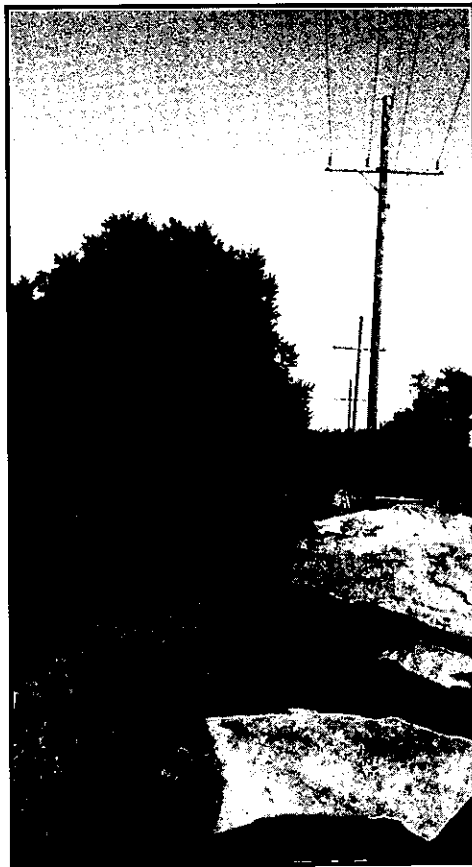
Underlying these strategic objectives are a number of issues arising from an economic and legislative environment in which the County finds itself grappling with new rules, conditions and pressures, both locally and regionally.





With the introduction of the Clean Air Act Amendments (CAAA) in 1990 and the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, the federal government increased the role and authority of regional planning agencies. These acts also tie federal road improvement funds to environmental and land use planning objectives and heighten the need for transit alternatives in local transportation planning. These changes in federal legislation and the regional transportation planning environment make it imperative that the County develop a strategy that takes a comprehensive look at transportation in relation to the County's other planning efforts and strengthens the County's regional negotiating position. Alternative transportation opportunities are an important part of this Plan.

The resurgence in new development locally has emphasized the need to develop a responsive transportation system. Just as County schools and services find themselves pressed by new growth, the capacity of major roads in eastern Loudoun County is quickly being consumed. Although the number of new vehicles on the County's roads is a concern, the fact that Loudoun County continues to be a commuter community whose people travel eastward to work or shop is the principal problem along the County's major corridors. Balanced housing and employment development, a goal of the County's land use plans, is also a goal of the Countywide Transportation Plan. For this reason, the Transportation Plan provides policy guidance emphasizing the link between land use and transportation.



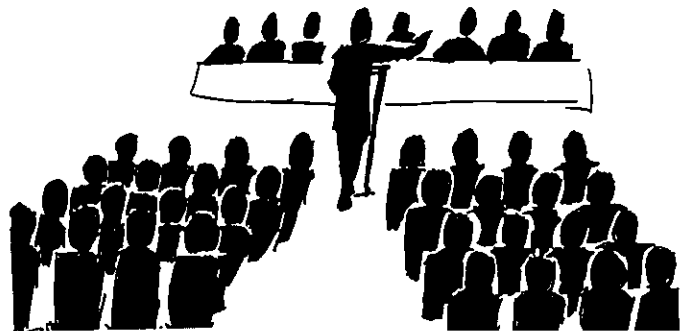
The approval of the Choices and Changes: Loudoun County General Plan (General Plan) in 1991 and the Dulles South Area Management Plan (DSAMP) in 1993, led to a significant expansion of the County's urban growth area, and intensified the need to evaluate the appropriateness of the County's existing transportation policies. Additional capacity is being built into the transportation network of eastern Loudoun County to serve the County's new growth with an adequate level of performance; however, it has been recognized that roads alone will not adequately serve the transportation demands of the County's planned growth. County land use policies need to continue to encourage mixed use development as a means of reducing long distance commuting. Land use policies must also recognize the need for higher density development in transit corridors to improve the viability of bus and rail transit services.

By contrast, in western Loudoun County, local growth is exerting less pressure and the road system continues to reflect the pattern of a traditional rural, farming area where gravel roads remain commonplace. This rural character is recognized and supported in County land use plans, which attempt to concentrate growth in the east and around the towns, while preserving western areas as rural communities. Nevertheless, growth continues to occur in western Loudoun County. The gradual development of rural subdivisions, hamlets and mixed use villages will put more and more people on the County's rural roads. Development around the existing towns, supported by the County's land use plans, will also generate transportation demands similar to eastern Loudoun County. Currently, the major traffic demand in western Loudoun County is commuter traffic generated from outside the County. This traffic is concentrated on Route 7, Route 9 and to a lesser extent on Routes 15, 50, 287 and 734. In addition, issues of historical and rural protection, raised in conjunction with proposed improvements on roads such as Route 9, Route 15 and Route 734, need to be addressed.

Improved highway access to Dulles International Airport is a major planning consideration in Loudoun County. The County is participating in regional efforts to improve access to Dulles Airport, including improvements to the Dulles Access/Toll Road corridor for transit service, beginning with express bus service leading to rail service. Construction projects, such as the Dulles Airport Terminal expansion and the Smithsonian Air and Space Museum Annex, suggest that Loudoun County needs to be prepared for additional regional traffic demands. There are also a number of long range transportation projects, including the Western Bypass, that are currently being evaluated and may need to be accommodated in the future.

PUBLIC PARTICIPATION

An integral part of the Countywide Transportation Plan effort was to provide opportunities for people to voice their opinions. A number of meetings were held during the initial stages of the planning process to solicit public input. From those comments, as well as comments from the Board of Supervisors, the Planning Commission and a number of agencies and groups dealing in transportation issues, a series of Issues Papers, each including a number of related questions, was developed. These Issues Papers form the framework from which the Countywide Transportation Plan Committee, made up of four Planning Commission members, analyzed and prepared policy recommendations.

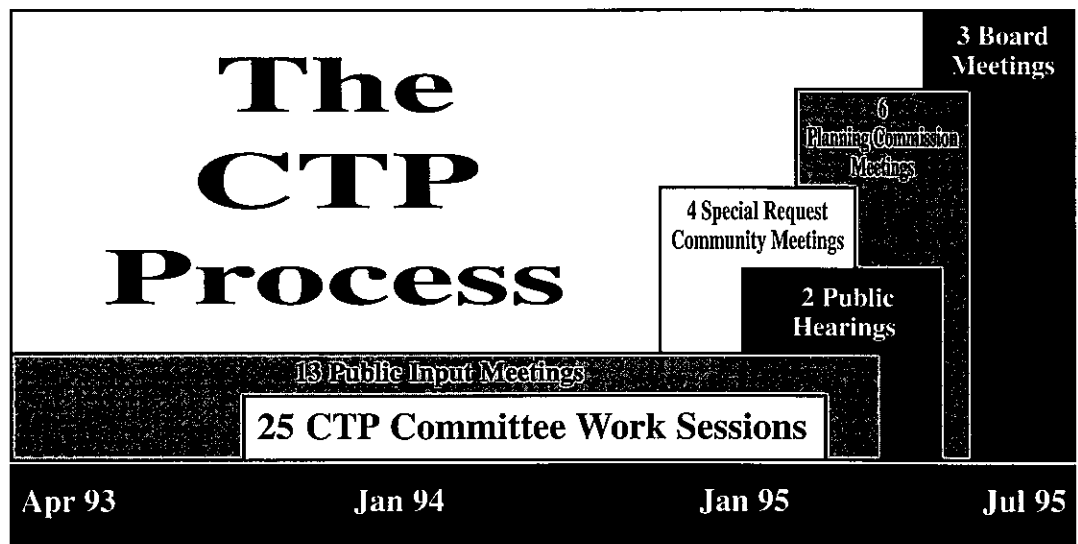


During the 12-month period that the Transportation Plan Committee reviewed the Issues Papers, five additional public meetings were held to discuss local transportation issues in different parts of the County. These meetings provided the opportunity to give a status report on the planning process, present initial policy directives developed by the Committee, and to solicit input from citizens about issues in their local areas.

The Committee also invited individuals and organizations with knowledge on specific topics to participate in the work session discussions. Most notable has been the ongoing participation by representatives of the Virginia Department of Transportation (VDOT) and the County's Facilities Standards Manual (FSM) Review Committee. Volunteer involvement from the engineering and environmental communities and various citizen groups assisted in the development of modifications to VDOT road design standards, which were forwarded by the Board of Supervisors to the State Secretary of Transportation. Outside expertise also proved valuable in developing the long range road network vision for the Plan.

The Planning Commission Committee of the Whole began its review of the Transportation Plan in January 1995 and conducted a series of work sessions to refine proposed policy. This review was completed in April 1995. The Planning Commission certified its draft of the Plan on May 18, 1995.

The Board of Supervisors conducted a series of District Meetings through May 1995 to hear citizen comments on the Certified Draft and held a Public Hearing on June 1, 1995. Two Committee of the Whole work sessions followed the Public Hearing and the Board adopted the Plan on July 5, 1995.



PLAN FORMAT

Policies of the Countywide Transportation Plan are categorized in three functional areas: Modes and Networks, Planning Coordination, and Funding.

Chapter Four: Modes and Networks - develops the long range or ultimate picture of what transportation will look like in the County. The Countywide Transportation Plan provides a road network encompassing both eastern and western Loudoun County; locates corridors and establishes guidelines for transit. Chapter Four examines specific design issues for rural roads and subdivision streets that will help the County achieve its community design objectives. The Transportation Plan identifies in Appendix 1: Design Guidelines for Major Roadways Countywide, all major roads in the County by their functional classification, number of lanes, cross-section, design speed, and right-of-way.

The regular updating of road priorities continues to be based on the VDOT Six-Year Programs with annual review and negotiation with the County. Similarly, the Countywide Transportation Plan proposes that the process of paving gravel roads should use the current program of identifying roads in an appendix in the Six-Year Program and setting priorities based on road safety and landowner dedication of right-of-way.

The Transportation Plan suggests that the County continue to build on improving relations with VDOT by involving it more directly in the County's long range planning efforts and in the development review process. The Plan proposes a more proactive approach in dealing with regional planning agencies by developing an annual regional planning strategy similar to the County's legislative program to better focus resources on selected issues and objectives. Finally, the Plan advocates a regular program of County-Town discussions to improve coordination.

Chapter Five: Planning Coordination - examines the relationship between current environmental and historic protection policies and transportation. The Plan examines the link between transportation and land use and sets standards for the level of service on roads where development may occur. Chapter Five also examines Transportation Demand Management strategies in detail and proposes specific strategies for different levels of development.

The Countywide Transportation Plan recognizes a direct link between development density, its location and design, and the demand for transportation facilities, including multimodal systems. The Plan identifies four transit corridors. Within these corridors, the Transportation Plan supports development densities and design concepts that should improve the feasibility of that particular type of transit mode. Throughout the Urban Growth Areas, the Transportation Plan proposes to incorporate Transportation Demand Management strategies in the development review process to help minimize traffic demands from individual projects.

Chapter Six: Funding - outlines the various funding sources available to the County and makes suggestions of how these funds should be used. Proffers have

been examined in detail to see what has previously been proffered, how the money can be used and weaknesses in the County's current program. Proffers need to be more specific in addressing the County's needs not only for roads, but also transit and Transportation Demand Management strategies.

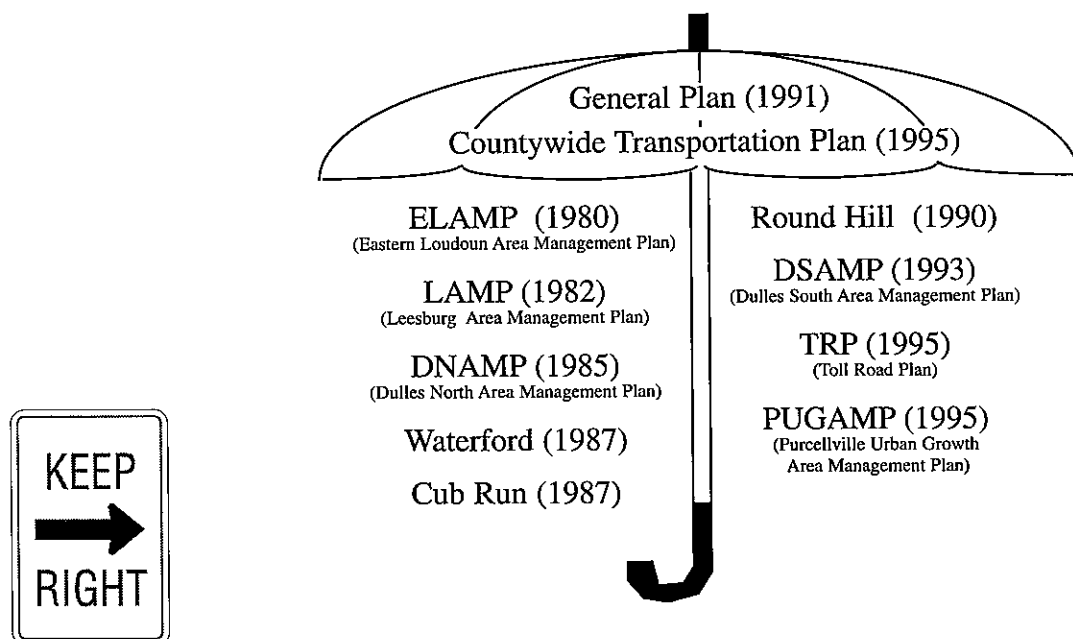
Chapter Seven: Implementation - presents a series of implementation recommendations that outline ongoing and future planning efforts that will be needed to fully realize the policies of the Plan. The Transportation Plan also takes a broad view of issues and concepts. More detailed planning, such as the preliminary engineering developed in specific corridor studies or the design of potential transit facilities, must be an ongoing process.

LEGAL BASIS FOR THE PLAN

The Countywide Transportation Plan is a part of the County's Comprehensive Plan and will be a companion document to the General Plan and the various area management plans adopted by the Board in accord with State enabling legislation (Code of Virginia, Chapter 15.1). As set out in the Code of Virginia, Loudoun County's purpose in adopting all plans, is to achieve a "coordinated, adjusted and harmonious development" of land.

The adoption of this Plan carries significant weight. The Transportation Plan policies supersede existing transportation policies in the General Plan and area management plans. As part of this process, the Transportation Plan recommends updating existing plans to bring them up to date with the Transportation Plan.

Changes to the adopted policies of the Plan require a formal plan amendment process. By State law, the County must update the Plan at least every five years although the Board may consider amendments earlier.



CHAPTER 2

MISSION STATEMENT & GOALS

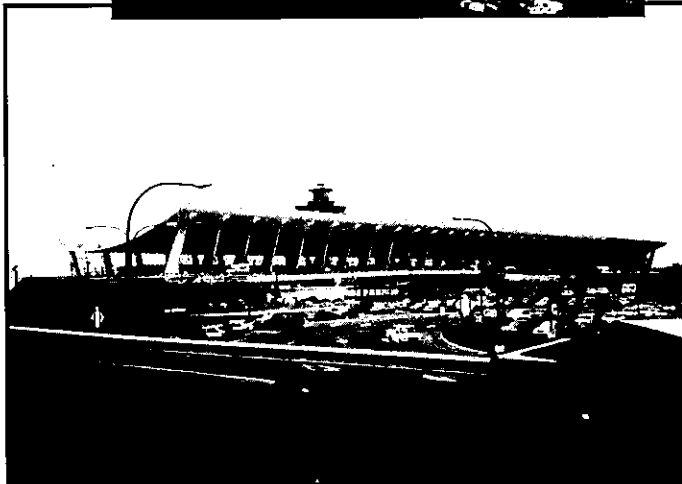
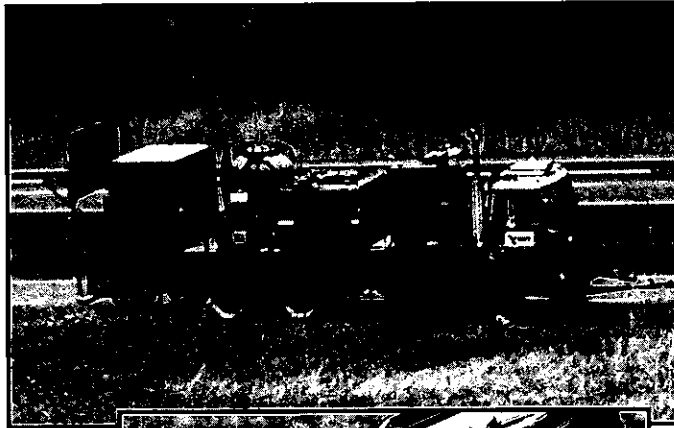
MISSION STATEMENT

The mission of the Countywide Transportation Plan is to provide a transportation strategy that supports the County's land use and growth management objectives, provides guidance for regional planning programs to ensure compatibility with Loudoun County's needs, and clarifies the County's position on State transportation issues and programs, which should include the orderly maintenance and improvement of the system of roads, transit and other transportation programs and facilities both within the County and the region.

GOALS

- A. Ensure the existing road network continues to provide safe and convenient access to business and employment areas.
- B. Provide a safe and efficient transportation system that will support the County's planned growth.
- C. Ensure that land use and transportation decisions are linked together so that the location and timing of new development coincides with existing and planned transportation improvements needed to meet increased traffic demands.
- D. Expand the alternatives to single occupancy automobiles and encourage the public's use of these alternatives.

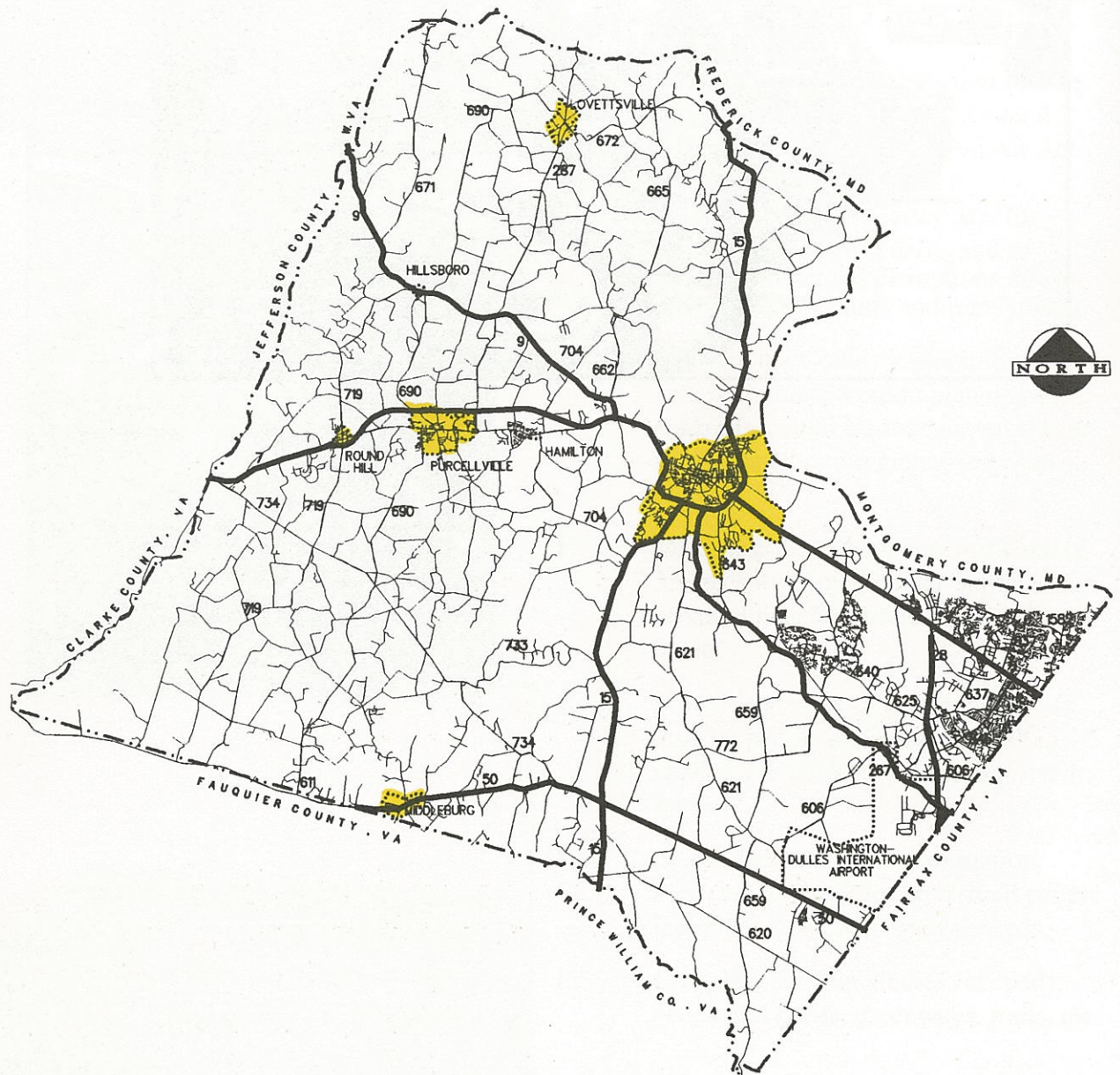




- E. Encourage the State to provide adequate funding and to apply appropriate standards to ensure an efficient and safe transportation system that is responsive to local needs.
- F. Reduce the impact of inter-county traffic on existing communities and on the level of service on County roads.
- G. Place the County in a position to take full advantage of State and Federal legislation, such as the Clean Air Act and the Intermodal Surface Transportation Efficiency Act, for funding and other benefits and to minimize potential disruptions due to unforeseen standards and regulations.
- H. Enhance the County's role in regional and State transportation planning to ensure Loudoun County's interests are incorporated into regional and State plans.
- I. Maximize the effectiveness of County finances to leverage other public and private funds for public road improvements.
- J. Provide the most effective means of moving people and goods including appropriate mass transit facilities and services.
- K. Ensure that County transportation services and facilities benefit all people including those with special needs.
- L. Complete corridor studies for roads, pedestrian needs, greenways, trails, etc.

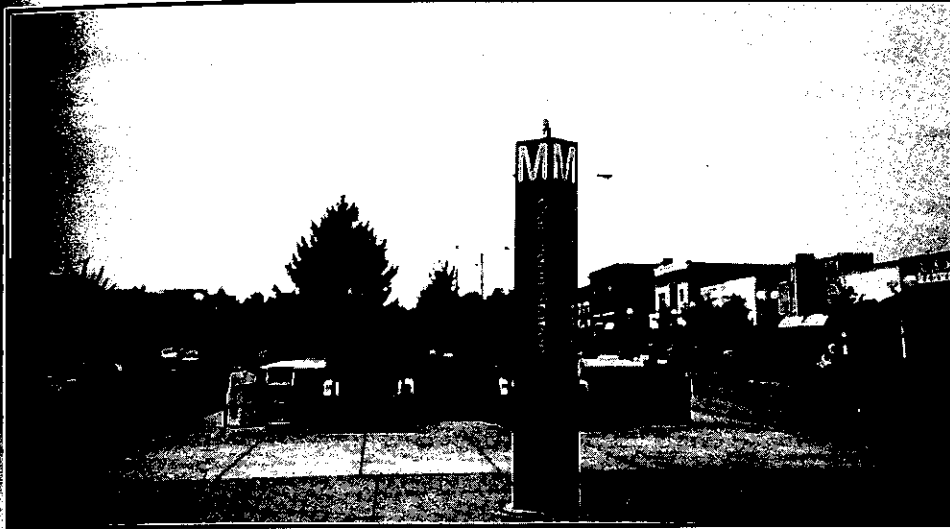


Figure 1. Critical Corridors



C H A P T E R 3

LONG TERM VISION



PURPOSE

Planning for Loudoun County's road network and long range transportation needs requires both an immediate plan and a long range plan. The immediate plan coordinates projects currently in adopted plans such as the General Plan, Virginia Department of Transportation's (VDOT's) Six-Year Primary and Secondary Road Improvement Programs, or the State's Long Range Plan. The long range plan examines how the County can fully realize its transportation and growth management goals. The Transportation Plan provides both.

This chapter identifies long range road network needs that, to date, have not been part of the public transportation planning dialogue. In some cases, they have been ignored in favor of maintaining the status quo, or because other County objectives have taken precedence. Any recommendations made in Chapter Three are conceptual and are subject to further analysis and feasibility study. The recommendations are not intended to rule out any alternatives, but rather to suggest a direction that, based on the County's current knowledge and discussion, may be appropriate.

Although Chapter Three focuses on road corridor improvements, it is clear that transit is an integral part of the long-range transportation solution for Loudoun County. Transit can consist of services including, but not limited to: taxi service; car/vanpools; buses; rail, such as Metro; and innovative systems, such as monorails and people movers. A transit system, which is complementary to the established highway network, will not only help Loudoun County meet some of the recently mandated air pollution guidelines, but also help "prevent" the paving over of the land. A successful transit system needs to be planned as early as possible in the land development process. The transit corridors need to be identified and funds appropriated for construction and implementation.

NETWORK ISSUES

In examining existing and currently planned roads in the County, how they relate to each other and the projected demands that will be placed on them, a number of unaddressed issues arise. Specifically, the Transportation Plan identifies gaps in planned improvements that may create serious bottlenecks as traffic volumes increase, which subsequently will increase traffic demand on roads previously not thought of as major traffic corridors (Figure 1, page 10). The following list describes some of these problems:

1. The County has an insufficient number of limited access roads that serve an interstate or bypass function. The only limited access roads in the County are the Route 7 Bypass between Clarkes Gap and Round Hill, the Leesburg Bypass between the Dulles Greenway and Business 7 West, and the Dulles Greenway. Currently, the County's major commuter corridors: Routes 7, 28 and 50 are, at best, controlled access roads and the conflict between local and commuter traffic is obvious during peak hours. Traffic congestion is putting a greater burden on local roads and roads through existing neighborhoods as travellers seek alternative travel routes.
2. Route 15 from Maryland to Leesburg is designated as part of the National Highway System. The Federal Government emphasizes high volume, high speed traffic movement on these roads and may require that states establish corresponding design criteria in order to remain eligible for federal transportation funding. Loudoun County may, through State action, be forced to improve the Route 15 corridor unless alternatives are proposed.
3. The County lacks adequate north-south roads between Frederick County and Montgomery County in Maryland and Prince William County in Virginia. Increasing north-south traffic is placing significant traffic volumes on Route 15, a Scenic Byway, and creating serious safety risks. Improved north-south access has been cited as an important component for the continued future success of Dulles Airport. A connection to I-95 is needed to bolster the County's economic development outlook.
4. The Town of Leesburg sits at the junction of most major roads in the County. Traffic moving around the Town relies on the existing Route 7/15 Bypass. With increasing development along the Bypass, completion of the Dulles Greenway, and increasing traffic on roads leading to Leesburg, the level of service on the Bypass continues to deteriorate. Portions of the Bypass are projected to carry upwards of 60,000¹ vehicles per day in upcoming years, potentially forcing travellers to seek alternative, local roads to avoid the congestion.

¹ Source: Virginia Department of Transportation

5. Traffic volumes on Route 9 and Route 15 have reached the point where significant improvements are needed to increase the road capacity and improve safety. Such improvements may seriously impact existing communities and nearby scenic features. These improvements may also serve to increase development pressures in areas where the County is discouraging growth.
6. Development along Route 7 in eastern Loudoun County requires that the adopted Route 7 Corridor Study be modified. The Corridor Study concepts do not address new development that has occurred in the area and decisions concerning the ultimate status of the road (is it to be a limited or controlled access facility) need to be re-evaluated.
7. As congestion continues on roads, such as Route 7 in eastern Loudoun County or the Dulles Toll Road in Fairfax County, travellers are using local streets to avoid traffic congestion. Through traffic on local streets suggests that a decision needs to be made to either upgrade these streets to carry through traffic or develop an alternative collector road pattern to avoid existing neighborhoods.
8. Regional planning agencies have not, to date, been able to provide traffic data or projections for roads in western Loudoun County. This has made it impossible for the County to plan with any accuracy for future needs. Long range projections prepared by VDOT are regional in nature and, therefore, may not reflect local trends. Regional agencies are now developing traffic data for all of Loudoun County that should be available in the near future.

CORRIDOR ISSUES

Route 15: North of Leesburg

Route 15 north of Leesburg is part of the National Highway System. Federal funding for improvements to Route 15 and other National Highway System roads is aimed at increasing the carrying capacity of the roads through access controls and high speed design criteria. County plans, which currently limit improvements to Route 15 to those needed to alleviate safety problems, may be superseded by State and Federal mandates. Route 15 is also designated by the State as a Scenic Byway between Route 50 and Maryland.

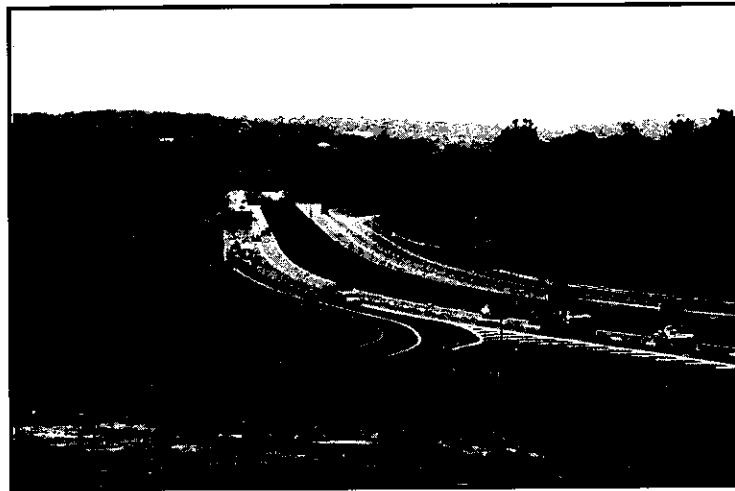


Route 15 North of Lucketts

***Plan recommendation:** The Countywide Transportation Plan recommends that the current right-of-way and section be maintained for Route 15. Future improvements are proposed to consist of right- and left-turn lanes at intersections and safety improvements along the corridor. Landscaping and noise attenuation are proposed, where feasible, along the corridor.*

Leesburg Bypass

The Leesburg Bypass is a controlled access facility with a number of at-grade, signalized intersections. Current traffic volumes are approximately 25,000¹



The Leesburg Bypass shown connecting to the Dulles Greenway

vehicles per day. By the year 2010, these volumes are expected to rise as high as 70,000¹ vehicles per day between Route 7 and Route 15 south. With the addition of the Dulles Greenway interchange, traffic weaving between interchanges in this area will also create safety problems as volumes increase.

Since many of the major roadways in Loudoun County converge in and around the Town of Leesburg, and the current Leesburg Bypass is really a Bypass for both Routes 7 and 15, the future of the Leesburg Bypass is a very important issue for the County. The Leesburg Bypass carries both local and interstate traffic. Town plans call for the Bypass to become a limited access facility with grade separated interchanges. The Town and the County must continue to coordinate planning for improvements in this area. Possible improvements or additions to the road network fall within the Town or within the Town's Urban Growth Area boundaries.

The Countywide Transportation Plan considers a number of alternative improvement scenarios to help move traffic around Leesburg. These are presented in no order of priority and with the understanding that the Town has jurisdiction over the design and construction of roads within its corporate limits as well as a coordinating role for improvements within the Leesburg Urban Growth Area.

***Plan recommendation:** The Countywide Transportation Plan recommends several alternative improvements to address the problem of traffic congestion on the Leesburg Bypass. One recommendation is to upgrade the Leesburg Bypass to a limited access facility as proposed in the Town of Leesburg's plans. The proposed Battlefield Parkway should be completed as a major arterial, on the outer side of the current Leesburg Bypass, with signalized at-grade intersections.*

¹ Source: Virginia Department of Transportation

The Plan also suggests that consideration be given to a new limited access facility for the Leesburg Bypass using the Battlefield Parkway alignment within the Town. The current Leesburg Bypass would become a major arterial with signalized at-grade intersections and the proposed Battlefield Parkway would be upgraded to a limited access facility. On the south side of Town, the proposed Bypass alignment shall stop at Route 15.

Further, the Plan suggests investigating another alignment for the Leesburg Bypass using the Route 653 corridor in the Urban Growth Area as currently shown in County plans. The current Leesburg Bypass would become a major arterial with signalized at-grade intersections and the proposed Route 653 would be upgraded to a limited access facility. On the south side of Town, the limited access alignment shall stop at Route 15.

Route 7: East of Countryside Boulevard

Route 7 is a median divided, four-lane arterial highway providing the principal east-west connection to the Washington metropolitan area. Despite improvements to other east-west connections such as the Dulles Greenway and Route 50, Route 7 is expected to continue to carry a major share of commuter traffic. The Route 7 corridor is also a fast developing employment and residential area. Increasing local traffic will add to existing serious congestion problems.



Herndon Junction

Projected year 2010 daily traffic volumes for Route 7 east of Route 637 exceed 80,000¹ vehicles per day. If at-grade intersections remain in place, Level of Service (LOS) F² will be chronic along the road. Given the high forecasted traffic volumes, including increased turning movements, high accident rates can also be expected at signalized intersections.

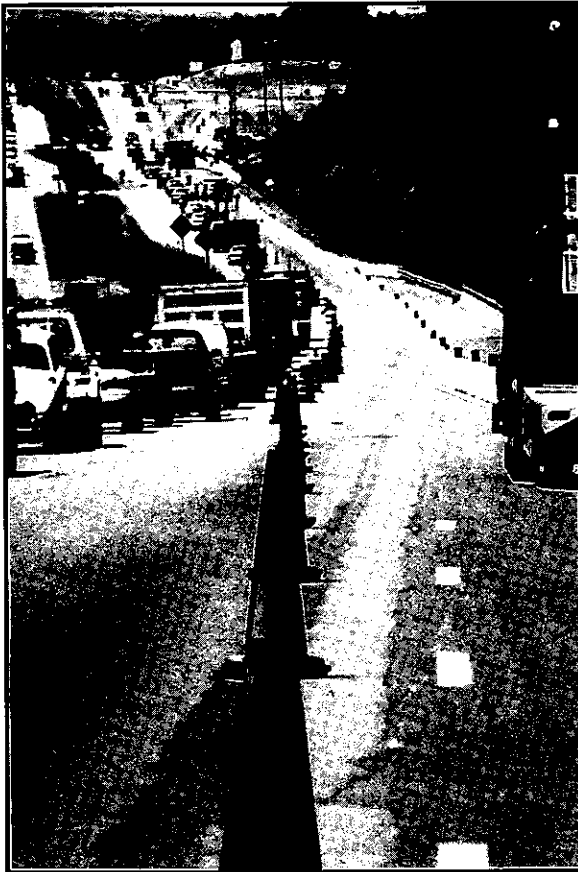
Route 7 is on the list of National Highway System (NHS) roads VDOT has submitted to Federal Highway Administration (FHWA) for approval by Congress. NHS roads are at the top of the national road hierarchy and are prime candidates for improvement to limited access.

Plan recommendation: *The Countywide Transportation Plan recommends that the current Route 7 Corridor Study, adopted by the County as part of the Eastern Loudoun Area Management Plan (ELAMP), should be updated to address changes in current conditions, development patterns and traffic*

¹ Source: Virginia Department of Transportation

² Source: Loudoun County Department of Planning

demands. The Transportation Plan recommends continuing the proposed six-lane, controlled access plans for the corridor in eastern Loudoun County pending the outcome of the updated corridor study. The County should support the continued evaluation of noise abatement along existing residential neighborhoods including, but not limited to, noise barriers to be built through innovative funding techniques (e.g., ISTEA, State).



*Route 7 west at the Goose Creek Bridge.
Photo provided by Leesburg Today*

Route 7: Countryside Boulevard to Leesburg

Beginning at its planned, grade separated interchange with Algonkian Parkway, Route 7 runs westward to Leesburg as a four- to six-lane principal arterial highway. The road is scheduled to be widened to uniform six lanes, including the Goose Creek Bridge, through a combination of private sector proffers and publicly funded projects. Much of the public sector funding will come from State Section 9d bonds financed by the recordation tax. This funding was authorized by the State Legislature following the Northern Virginia Transportation Coordinating Council's (TCC's) endorsement of the Route 7 improvements as a regional priority project. The improvement project will include upgrades to the existing interchange at the Route 7/Route 15 Bypass.

Currently daily traffic volumes on Route 7 are approximately 50,000¹ vehicles per day between Route 641 and the Route 15 Bypass, resulting in Level of Service E-F² conditions at intersections. The widening of Route 7 to six lanes and the opening of the Dulles Greenway will offer substantial relief for a period of

years. However, Route 7 will continue to carry a major share of commuter traffic and, as local development continues, congestion will return.

Route 7 is planned to become a limited access road between Route 28 and the Leesburg Bypass by the year 2010. This improvement will be required to adequately serve forecasted traffic volumes averaging approximately 60,000¹ vehicles per day. Interchanges are planned on Route 7 at Algonkian Parkway/Atlantic Boulevard, Loudoun/Panorama Parkway (Route 607), Ashburn Village Boulevard (East Spine Road), Claiborne Parkway (West Spine Road), Route 659, Route 653 and Battlefield Parkway (in Leesburg). There are substantial private sector proffers in place for right-of-way and construction of these interchanges. Interchange locations may change if a Western Bypass interchange is proposed on Route 7.

¹ Source: Virginia Department of Transportation

² Source: Loudoun County Department of Planning

Development applications in this area of the Route 7 corridor suggest a move away from the primarily office and employment development pattern envisioned by the General Plan and the Dulles North Area Management Plan (DNAMP). As such, the traffic volumes and characteristics that were part of the basis for current road plans may have changed, thereby suggesting a need to re-evaluate some of the improvements adopted in the current Route 7 Corridor Study.

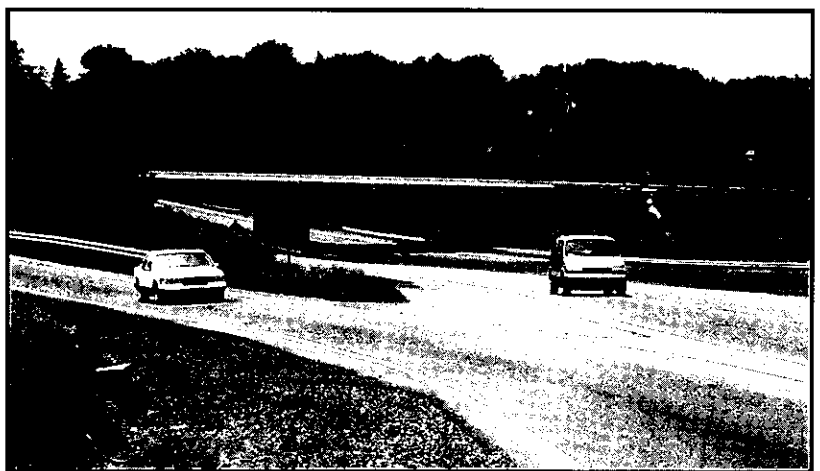
Plan recommendation: *The Countywide Transportation Plan recommends that the current Route 7 Corridor Study, adopted by the County as part of the Dulles North Area Management Plan, should be updated to address changes in current conditions, development patterns and traffic demands. The Transportation Plan recommends continuing development of the road as a limited access facility for the corridor pending the outcome of the updated corridor study.*

Route 7: West of Leesburg

Between the Leesburg Bypass and its interchange with Route 9 at Clarkes Gap, Route 7 is a four-lane, median divided, principal arterial with at-grade intersections and right-of-way for expansion to six lanes. These intersections generally serve low volume frontage roads. Estimated current traffic volumes are 30,000¹ vehicles per day and Level of Service is in the B-C² range. Traffic volumes are forecasted to reach 50,000¹ vehicles per day by the year 2010, which will result in Level of Service E¹. This section of Route 7 will either need to be widened to six lanes with controlled access or improved to a four-lane, limited access road.

The Hamilton, Purcellville, Round Hill Bypass is a four-lane, median divided, limited access road west of Clarkes Gap to Route 712 west of Round Hill. From the end of the Bypass to the County Line, Route 7 is a four-lane, median divided road with at-grade intersections and access from driveways. Average daily traffic is approximately 12,000¹ vehicles per day currently and Level of Service² is A².

Plan recommendation: *The Countywide Transportation Plan recommends that two scenarios be assessed for Route 7 between Leesburg and Route 9. The scenarios include either widening the road to six lanes with controlled access or developing a limited access facility to match the rest of Route 7 between Route 28 and Round Hill.*



Interchange at Clarkes Gap linking Routes 7 and 9

¹ Source: Virginia Department of Transportation

² Source: Loudoun County Department of Planning

Route 50

Route 50 is currently a four-lane, median divided arterial road from the Fairfax County Line east to Lenah. From Lenah to Gilberts Corner, the road narrows to a two-lane road. Level of Service F¹ conditions occur at Gilberts Corner during peak periods. The first major development project in this section of the Route 50 Corridor, South Riding, is underway east of Route 606. Traffic volumes on Route 50 as it approaches the Fairfax County line are approximately 20,000¹ vehicles per day. Projected daily traffic volumes for the year 2010 are 50,000¹ vehicle trips per day.

Route 50 is planned to be widened to a six-lane, median divided road in eastern Loudoun County, transitioning to a four-lane, median divided road at an appropriate location near Gilberts Corner. Interchanges are planned at the following locations: Route 639, South Riding Boulevard, Route 606/Loudoun Parkway/Tri-County Parkway, Route 659/West Spine Road, Route 659 Relocated/ Route 234 Bypass Connector, Lenah Area Spine Road, and Route 860. The interchange locations may change, depending on the outcome of the Western Bypass discussion and the Route 50 Corridor Study. North and south parallel roads to Route 50 are planned to extend between Routes 609 and 860.

From Gilberts Corner to the Town of Middleburg, Route 50 is a two-lane rural arterial. Lane widths are about ten feet and there are numerous at-grade intersections and private entrances. The physical dimensions of the road are in keeping with the surrounding rural countryside, but are strained to serve the approximately 12,000¹ daily vehicle trips on this section of Route 50. Further complicating operational problems, Route 50 runs through the Village of Aldie and the Town of Middleburg serving as the main street for both communities.

Projected daily traffic volume for this western section of Route 50 in the year 2010 is 30,000¹. This volume greatly exceeds the capacity of the road and will result in Level of Service F² conditions. Currently, there are long lines of stacked traffic at the Gilberts Corner intersection of Route 15 and Route 50 during weekday peak periods. The intersection and its approaches will require considerable improvements in the near future.

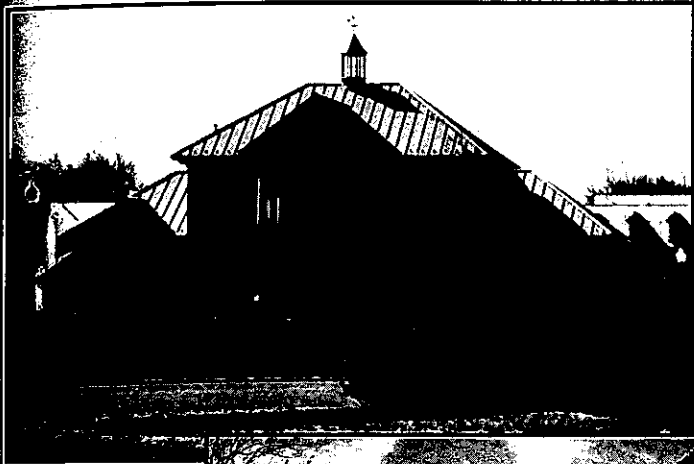
Route 50 bypasses of Aldie and Middleburg have been under consideration since the 1970s. Funds to begin the design of the Middleburg Bypass in 1998 are included in the Six-Year Primary Road Improvement Program. As shown in a draft Route 50 Corridor road plan prepared by VDOT in 1989, the two bypasses are short and pass just to the north of the two communities. This would leave approximately six miles of Route 50 between the two bypasses that would need substantial improvement. The forecasted level of future traffic would require widening the existing road to a four-lane, median divided section. As an alternate, the two short bypasses could be replaced by one long bypass beginning just west of Gilberts Corner and ending west of Middleburg. This bypass would be similar in format and

¹ Source: Virginia Department of Transportation

² Source: Loudoun County Department of Planning

geometrics to the Route 7 bypass of Hamilton, Purcellville and Round Hill. The alignment for this bypass has not been determined, but will be considered as part of the Route 50 Corridor Study, to be completed soon.

Plan recommendation: The Countywide Transportation Plan recommends that the Route 50 Corridor Study be completed and incorporated into this Plan.

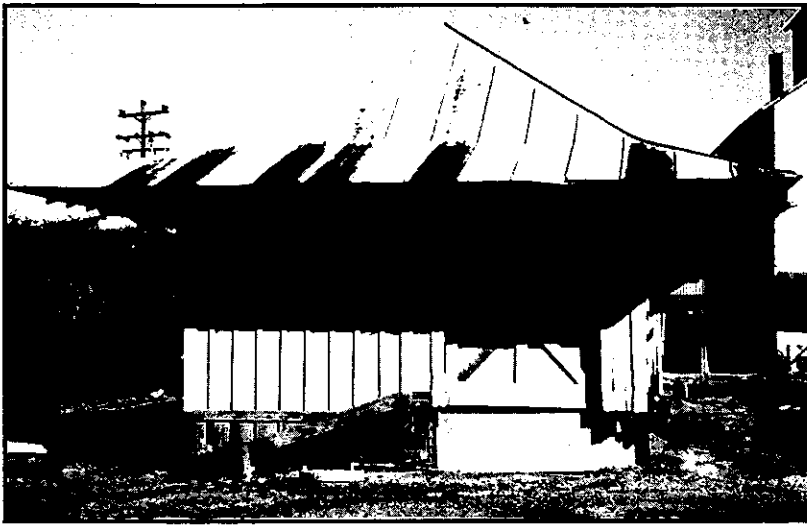


*Right: Mt. Zion Church
Top left: South Riding
Bottom left: Aldie Mill*

Round Hill – Purcellville – Hamilton Area

With the completion of the Dulles Greenway and improvements to Route 7 in western Loudoun, the communities of Purcellville, Hamilton and Round Hill may expect accelerated development. Current land use plans propose suburban development in designated Urban Growth Areas surrounding each town. The current road network outside of the towns themselves, consists primarily of rural roads. The major exception is the Route 7 Bypass, which is a limited access, four-lane, divided highway.

In order to protect the regional traffic function of the Route 7 Bypass, a road network may be needed to accommodate local traffic generated by development in the Urban Growth Areas. As has been discovered in eastern Loudoun County, traffic



*The old train station
in Purcellville*

congestion arises from the mix of local and through traffic using the same road. Consequently, the Transportation Plan supports a number of road improvements to serve local traffic. The Plan relies on the planning efforts that have gone into the Round Hill Area Management Plan, the Hamilton Area Plan and the Purcellville Urban Growth Area Management Plan for road improvement concepts for these communities. The Transportation Plan policies are intended to reflect the direction of such planning efforts.

***Plan recommendation:** The Countywide Transportation Plan recommends that the currently approved road network for the Round Hill, Purcellville, and Hamilton Urban Growth Areas continue to be developed. More detailed alignment plans need to be developed to provide better information regarding the cost of improvements for proffer negotiations and investment decisions.*

Route 9

Route 9 is a rural, two-lane, minor arterial highway that serves as a major connection from West Virginia to the Washington metropolitan area. The majority of the existing traffic using Route 9 is commuter traffic from West Virginia. With development intensifying and housing costs continuously increasing in Northern Virginia, this commuting trend will continue to rise; therefore, posing more serious safety hazards on the already overloaded highway.

The 1994 daily traffic volume on Route 9 was 10,875¹ vehicles per day (vpd) east of Hillsboro and 8,938¹ vpd west of Hillsboro. The current two-lane section is at capacity or Level of Service E². The projected daily traffic volumes for the year 2010 will approach 19,000¹ vpd, which would equate to a Level of Service F² for the current two-lane road section.

To improve the overall Level of Service and safety of the corridor, the existing two-lane section would be required to be upgraded to a four-lane section with a design speed of approximately 60 miles per hour (mph). This may be accomplished along the existing or a new alignment that would intersect Route 7 near Purcellville.

¹ Source: Virginia Department of Transportation

² Source: Loudoun County Department of Planning

***Plan recommendation:** The Countywide Transportation Plan recommends that localized safety improvements be made along the current Route 9 alignment. A study of the long-term safety improvements is to be started within 12 months after adoption of this Plan. The study participants are to include citizens and VDOT.*



Village of Hillsboro

Route 28: Route 7 to Fairfax County

Current plans for Route 28 call for the phased conversion of the road to a limited access facility with grade separated interchanges at Route 7, Routes 638/647, Route 625, Route 846 and Route 606. In addition, a privately funded interchange has been constructed at the Dulles Greenway and another is planned at Innovation Drive. East and west parallel roads are planned for Route 28 and sections of both have been completed. Phase One of the Route 28 improvements has been completed, which included widening the road to six lanes and completing interchanges at Route 7 in Loudoun County and at Route 50 in Fairfax County. Phase Two is to complete the four remaining interchanges in Loudoun County. No schedule has been set for this.

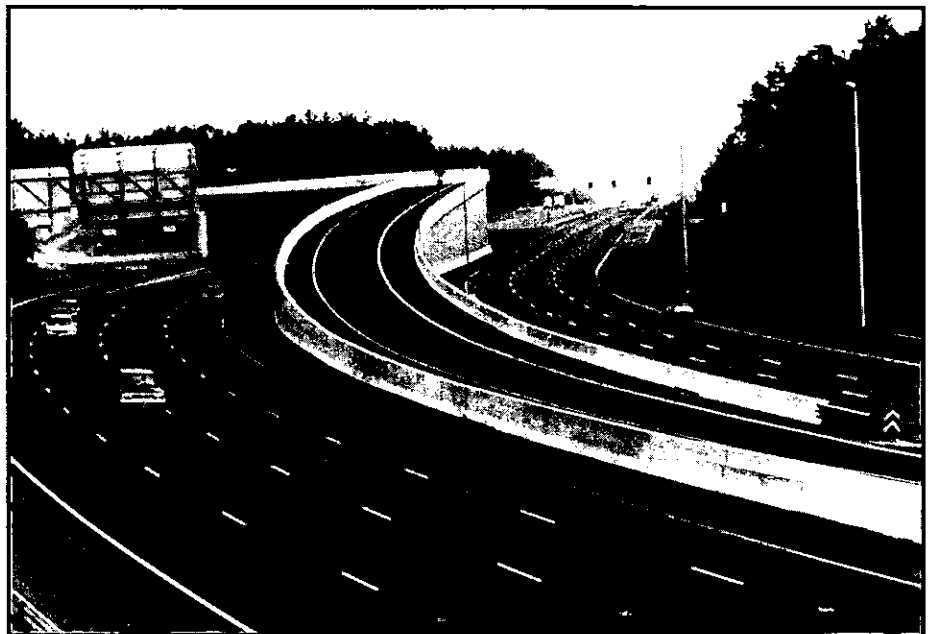
Funding for Phase One improvements has been raised through the sale of bonds, with collateral provided by the creation of a Highway Improvement Tax District (the Route 28 Tax District) which applies a surcharge of 20 cents on the real property tax rate of commercial land in the District. The funds from this surcharge depend on the assessed value of land in the District. In recent years, with the drop in commercial assessments, the revenue for the District has decreased. In the event the District revenues cannot pay all of the amortization costs, Loudoun and Fairfax Counties would have to use State Primary Road Improvement Program funds to make up the difference. The success of the Route 28 Tax District may influence the timing of Phase Two and the types of funding sources that may be available.

Route 28 has been included as a potential alignment for the Western Bypass. This raises questions about the ability of the road to continue to serve its local access function and carry increased regional traffic.

The numerous evolving technologies for moving people should be closely monitored for potential efficient and cost effective adaptation within the Route 28 corridor. In view of the significant commitment made by the federal government to transit and the Intelligent Vehicle Highway System (IVHS) in the adopted Intermodal Surface Transportation Efficiency Act of 1991, serious effort must be expended to secure federal funding for transportation and land use studies and implementation programs authorized by this Act. Many of these measures could expedite traffic flow for both transit and automobiles.

In order to meet the transportation demands that are anticipated for the corridor and to address the imbalance between the zoned development potential of the area and the planned roadway capacity, Loudoun County should coordinate with Fairfax County's proposal to evaluate the feasibility of a fixed-guideway transit system. Dedication of right-of-way for such a system should be sought once a more specific alignment for the system has been determined. In order to serve a greater number of people, this fixed-guideway transit system could extend beyond the boundaries of the Route 28 corridor and Loudoun County. The regional implications of this system should be incorporated into any future consideration of its feasibility.

***Plan recommendation:** The Countywide Transportation Plan endorses the currently planned improvement of Route 28 to a limited access facility. Additional grade separated interchanges are recommended at Route 638/647, Route 625, Route 846 and Route 606. The Plan recommends construction of east and west parallel roads for property access. Additional property entrances on Route 28 will be restricted. Future corridor analyses should evaluate the most promising transportation systems available to identify feasible routes and specific station sites for mass transit facilities, and approximate system costs.*



Route 28 at the Dulles Greenway

Dulles Greenway

The Dulles Greenway has been constructed between the existing Dulles Toll Road interchange at Route 28 and the Route 7/15 Bypass in Leesburg. The road was constructed by a private corporation and will operate as a limited access toll road. The road and its interchanges are to be phased; initially the road will be a four-lane, median divided facility, but two additional lanes can be added as traffic demands increase. Interchanges are also proposed in phases with interchanges to the west planned for later stages.



Dulles Greenway at Route 659

Feeder roads access the Dulles Greenway by interchanges at Route 606, Loudoun Parkway/Route 607, Route 772, Claiborne Parkway at Route 659, Route 653, the future Battlefield Parkway and the Route 7/15 Bypass. Two of the interchanges, Routes 653 and the future Battlefield Parkway, are conditioned upon the economic feasibility and service demands.

In the Toll Road Plan, which proposes a land use strategy for the area along the Dulles Greenway, the construction of an additional interchange is proposed at Route 643. This proposed interchange can only be approved in accordance with the Virginia Highway Corporation Act. Furthermore, the Town of Leesburg is proposing a connection to the Dulles Greenway from Catoctin Circle by realigning Harrison Street. While the Countywide Transportation Plan does not suggest any dramatic changes to the Dulles Greenway, consideration should be given to these possible improvements.

***Plan recommendation:** The Countywide Transportation Plan endorses the current Dulles Greenway concept. No additional interchanges or extensions are proposed beyond those already planned.*

Subdivision Cut-Through Traffic

The eastern portion of Loudoun County has grown rapidly in recent years. This growth has dramatically affected the existing road network. While additional capacity is being built into the transportation network (e.g., improvements to Route 637 and Route 606) to serve growth, traffic continues to increase with heavy eastbound traffic during the A.M. peak hour and westbound traffic during the P.M. peak hour. This has created significant delays along major corridors such as Route 7 in Sterling. As a result, some commuters avoid arterial roads and utilize alternative

routes such as cutting through residential areas in order to reach destinations sooner. One particular area which has been experiencing a significant amount of cut-through traffic is the Forest Ridge subdivision in Sterling. During the morning and evening peak hours, large amounts of traffic from outside the Forest Ridge subdivision use local residential streets (e.g., Forest Ridge Drive and East Maple Avenue) between Sterling and Herndon. This traffic is primarily commuter and retail oriented. A recent traffic count by VDOT found daily traffic on Forest Ridge Drive in excess of 7,000 vehicles.

Citizens from the Forest Ridge subdivision requested that cut-through traffic be reduced. VDOT was requested to study and address the problem. Following conclusion of the study, VDOT recommended extending South Fillmore Avenue from its current terminus at Forest Ridge Drive east to Lincoln Avenue to help relieve traffic on Forest Ridge Drive. The Board of Supervisors then held a joint public hearing in order to obtain public input on VDOT's recommendation. A majority of citizens expressed concern over the cut-through traffic and recommended that only interim measures (i.e., stop signs) be implemented. At the request of the Board of Supervisors, VDOT has placed stop signs at various intersections along Forest Ridge Drive and South Fillmore Avenue. VDOT is currently studying the results of these measures including the impacts of displaced additional traffic on Maple Avenue.

Stop signs alone may not adequately solve the cut-through traffic problem in this area. VDOT, in cooperation with Loudoun County, is studying the possible impacts of alternative road connections in the vicinity of this subdivision to alleviate cut-through traffic.

Plan recommendation: The Countywide Transportation Plan recommends that the analysis of the interim traffic control measures should be continued and that applicability of such measures be examined for other cases. As a means of reducing cut through traffic, the Plan endorses completion of regional road improvements in peripheral corridors such as Davis Drive, Fairfax County Parkway and Algonkian Parkway.

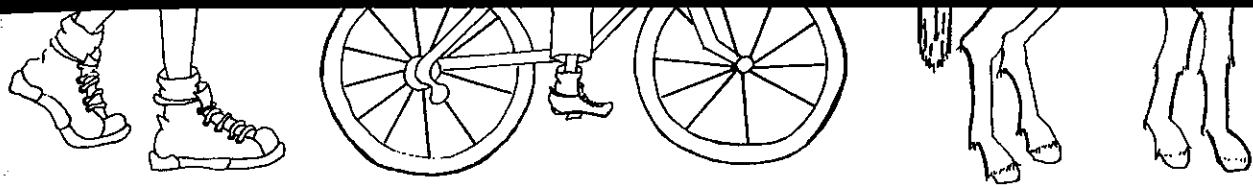


An aerial photo displaying the street patterns in eastern Loudoun County

CHAPTER 4

MODES & NETWORKS

SHARE THE TRAIL



BACKGROUND

Modes and networks are key terms in transportation planning. Modes identify the type of transportation being considered and its operating characteristics. Modes are organized into integrated systems called networks.

Networks are elements structured to create a system. For example, a road map of Loudoun County shows the current highway network, whereas this Plan shows both the road and the transit networks. A system of transit routes in a jurisdiction or region is a transit network. Networks are linked together in a coordinated, logical manner. In a highway network, for example, regional arterial and collector roads form the major framework of the network and are generally designed for large volume, higher speed operations. The arterial/collector roads are in turn served by a variety of local roads including, in some cases, private roads.

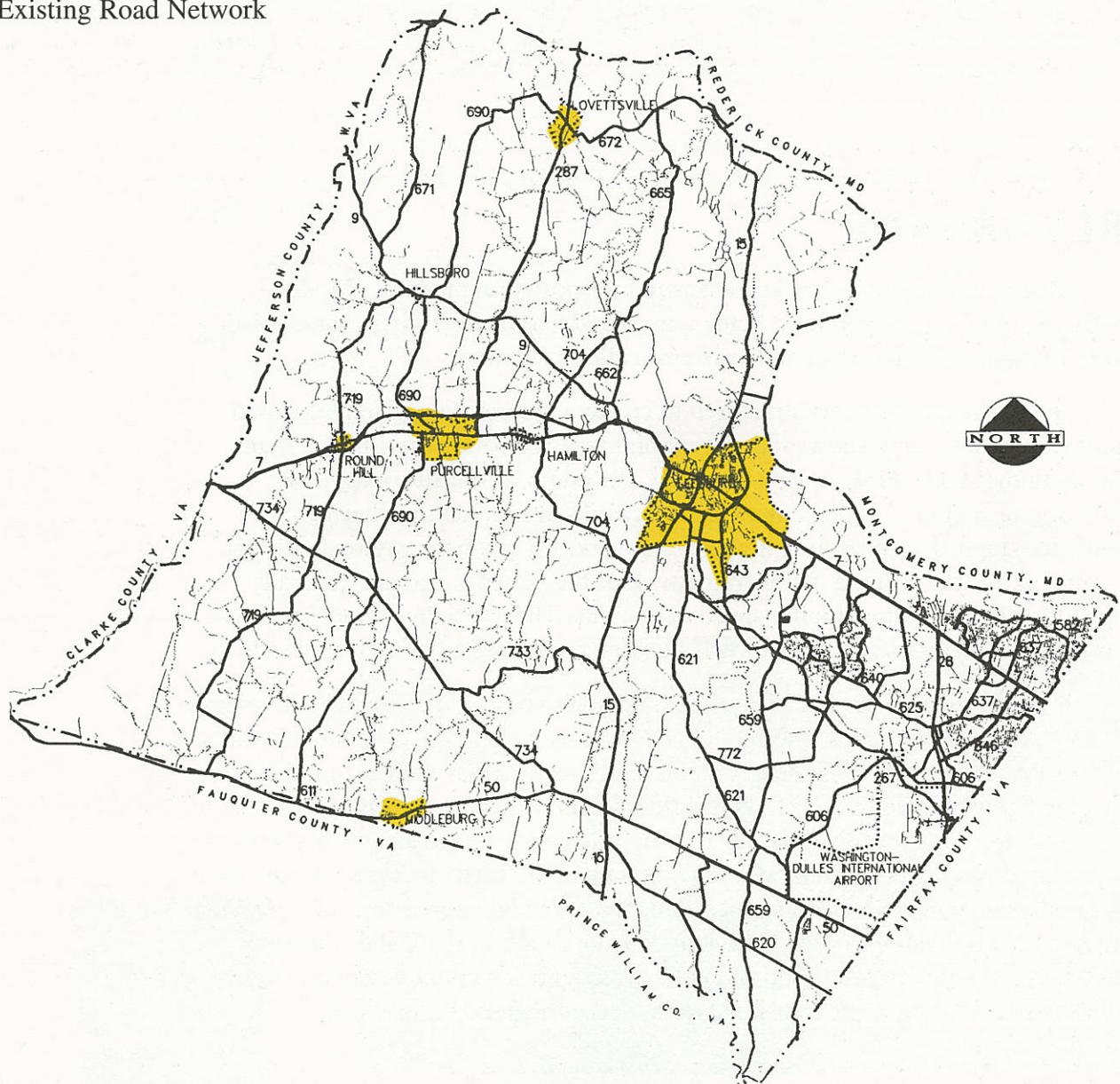
It has become clear that increasing travel demands on the County's highways have created the need to plan intermodal networks as well as single mode networks. In areas of substantial development, current and forecasted levels of congestion have shown the highway network, even with substantial improvements, may not be able to serve travel needs adequately. Instead, a greater network is required which allows the transit, bicycle and pedestrian modes to complement the highway network and allow it to maintain adequate levels of service. This multi-modal approach is an important characteristic of planning for development corridors such as the Dulles Greenway corridor. The Countywide Transportation Plan recognizes that the highway mode will need support from a bus transit network, and ultimately, rail service.

MAJOR ROAD NETWORKS AND ALIGNMENTS

A. Functional Classification of the Road Network

The Countywide Transportation Plan employs the highway functional classification system developed by the Federal Highway Administration (FHWA), and used by the Virginia Department of Transportation (VDOT) to classify public roads. In conjunction with the adoption of this Transportation Plan, the references to classifications of roads in all Loudoun County ordinances and area plans will be made consistent with the definitions in Appendix 1, Design Guidelines For Major Roadways Countywide. It is the County's intent that its transportation plans be fully consistent with the FHWA/VDOT functional classification system.

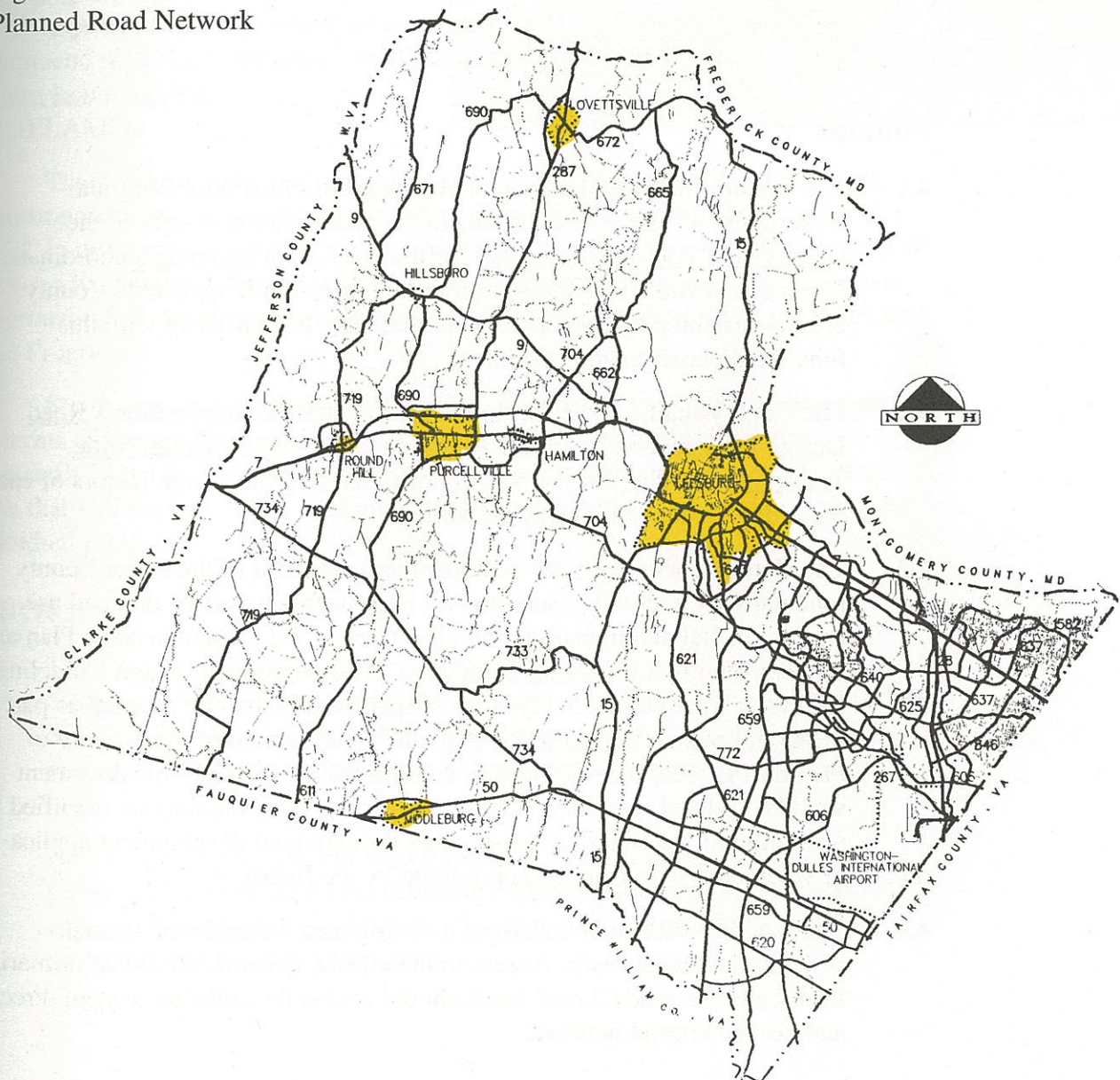
Figure 2.
Existing Road Network

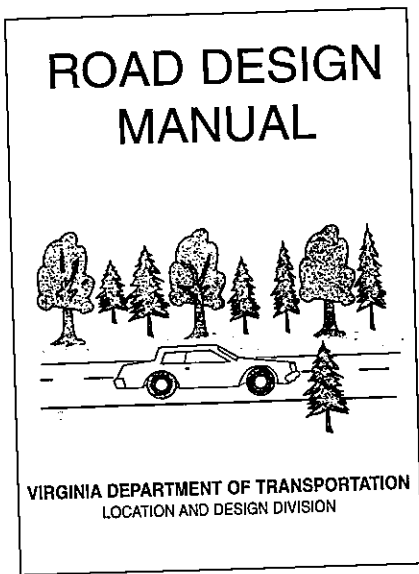


This system is also used by the Transportation Planning Board (TPB) for the purpose of coordinated regional planning. County and VDOT staffs use this classification system in their review of land development applications and transportation improvements associated with these applications.

The functional classification for each planned road improvement in this Plan is provided in Appendix 1, Design Guidelines For Major Roadways Countywide. This includes the current classification, any interim classification and its ultimate improvement stage. Appendix 1 will be updated regularly through Board review of the Six-Year Primary and Secondary Road Improvement Programs, appropriate changes arising from development activity, and more detailed analyses through corridor studies and other efforts.

Figure 3.
Planned Road Network





VDOT's Road Design Manual and Road and Bridge Standards specify geometric sections and standards for the various types of roads in the functional classification system. These standards include the number of lanes in each direction, whether the road has a median or is undivided, design speed, grade, right-of-way and other parameters. The standards specify that major roads in urbanized areas should be constructed with curb and gutters, while major roads in rural areas should have shoulders and drainage ditches. In this Plan, roads in areas that are anticipated to become urban by the year 2010 are described as urban sections, even though they may currently serve rural areas. Some roads in urban areas, such as Route 28, have been constructed to rural standards. This Plan recommends that such roads become consistent with urban standards as they are further improved over time. Finally, VDOT standards provide flexibility for right-of-way widths. This Plan proposes a right-of-way that can adequately accommodate the specified roadway geometry.

Policies

- 4.1 The County shall use the Federal Highway Administration/Virginia Department of Transportation functional classification system in the Countywide Transportation Plan for the purpose of planning a coordinated highway network. The description of highways in all applicable County ordinances and planning documents shall also be consistent with this functional classification system.
- 4.2 The County shall use the Virginia Department of Transportation's Road Design Manual, and Road and Bridge Standards in the Countywide Transportation Plan for the purpose of specifying the design factors of each road in the planned highway network.
- 4.3 The County encourages the continued improvement of the entire County road network and will ensure that all improvements further the land use, environmental and transportation objectives of the Comprehensive Plan as implemented by the Zoning Ordinance. The document "Design Guidelines for Major Roadways Countywide," (Appendix 1) shall be adopted as part of the Countywide Transportation Plan and shall be used by the County to identify the recommended design features for new roads. This document shall be updated regularly, at least every two years, and may be modified by resolution of the Board of Supervisors through land development applications or when otherwise deemed appropriate by the Board.
- 4.4 The road network shall consist of a coordinated hierarchy of arterial, collector and local roads. Access to the arterial network should be primarily from collector roads. Local roads should access the collector system directly and not the arterial network.

B. Road Improvement Priorities for Individual Roads in the County's Road Network

It is important that the County set priorities for its planned road improvements in order to be able to efficiently focus public and private resources on major projects needed in the short term. In order to determine the most pragmatic process for determining road priorities, previous Loudoun County planning documents and professional literature on techniques for ranking road priorities were examined. The only previous County plan to recommend road priorities was the Eastern Loudoun Area Management Plan (ELAMP).



*Improvements to
Route 15 near
Battlefield Parkway*

There are priorities built into the County's Six-Year Primary and Secondary Road Improvement Programs, which reflect considerable effort by the County and VDOT in programming, designing, and funding actions. In addition, these technical exercises have been combined with political judgments as to the project's relative importance. It is, therefore, logical for this Plan to confirm the project priorities in these Programs.

Short-term priority projects should be advanced toward construction during the terms of current Six-Year Road Improvement Programs. This does not necessarily mean that construction will be completed during the current six years, since that will depend on the total amount of funding which can be allocated to the individual projects.

Policies

- 4.5 The County shall place all its road improvement projects into one of two categories, Short-Term Priority Projects, or Long-Term Priority Projects. The Six-Year Primary and Secondary Road Improvement Programs shall be the process for updating short-term road improvement priorities on a regular basis.
- 4.6 New road construction and road improvements will promote traffic safety, provide for improved vehicular capacity consistent with area land uses and regional demands, and adhere to community design and resource protection policies and ordinances.

C. Regional Transportation Coordination

Loudoun County and adjoining jurisdictions need to plan together for significant improvements to regional roads to ensure that they continue to serve their regional transportation function. This regional function is defined by two types of traffic. First, there is regional through traffic which does not originate or terminate in Loudoun County, but rather flows through the County either in a north-south or east-west direction. This traffic will largely be served by the County's network of principal and minor arterials. Traffic forecasts for the year 2010 indicate these arterial roads will need considerable improvement. Second, there is traffic whose origins/destinations are within Loudoun County. This traffic is often served by major collector roads in Loudoun County as well as arterial roads.

The regional transportation planning process for roads is the responsibility of the National Capital Region Transportation Planning Board (TPB) at the metropolitan area level and the Northern Virginia Transportation Coordinating Council (TCC) at the Northern Virginia level. The process reflects the conclusion that arterial and major collector roads are regional roads that need cooperative planning, environmental evaluation and funding. Minor collector roads and local roads, however, are addressed largely through the County and State relationship in the Six-Year Secondary Road Improvement Program.

Loudoun County's need to participate extensively in regional transportation bodies changed substantially beginning in 1990:

- ☐ In 1990, the Loudoun County Transportation District Commission was dissolved and Loudoun County became a member of the Northern Virginia Transportation Commission (NVTC).
- ☐ On September 20, 1990, the Commonwealth Transportation Board (CTB) passed a resolution directing the development of a phased multi-modal transportation program for the Dulles Corridor, including rail service as its transportation objective.
- ☐ On November 15, 1990, the Clean Air Act Amendments of 1990 were enacted. This legislation required the Washington nonattainment region, now including Loudoun County, to meet Federal emissions reductions standards including a 15 percent reduction from 1990 levels by 1996 and a 24 percent reduction from 1990 levels by 1999.
- ☐ In 1991, the Northern Virginia Transportation Coordinating Council (TCC) was established with the purpose of identifying projects, setting priorities and pursuing funding for projects of key regional significance in Northern Virginia.

- ❑ The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) was passed. Loudoun County, because of its status as an air-quality non-attainment area, needed for the first time to have its projects involving Federal funding included in the Regional Transportation Improvement Program (TIP). Long-range Loudoun County projects also needed to be included in the Financial Constrained Regional Long Range Transportation Plan (CLRP). Both the TIP and CLRP need to pass regional air quality conformance tests and both documents must be approved by the National Capital Region Transportation Planning Board prior to their submission to the Federal Government.

Loudoun County must cooperate in these regional processes to achieve federal funding for key transportation projects. In addition to these new processes, Loudoun County has had to devote attention to coordinated approaches to regional transportation projects through more traditional channels, including:

- ❑ Its relationship with VDOT through the Six-Year Primary and Secondary Road Improvement Programs, as well as, special projects.
- ❑ The land development review process which necessitates coordination with VDOT and developers on road improvement matters. In addition, when necessary, obtaining referrals from neighboring jurisdictions and regional bodies, such as Dulles Airport.
- ❑ The County's legislative program in Richmond and its relationships with other jurisdictions through the State Legislature.

The County cooperates with area towns and adjoining counties as specific issues arise. General Plan policies specifically call for towns to have a greater say in land use and development in the Urban Growth Areas surrounding each. The General Plan also provides that the County staff could, at the direction of the Board of Supervisors, serve as liaison with the towns to provide assistance on planning matters. Leesburg and Purcellville have adopted Annexation Agreements with the County, which provide for joint review of land use and planning issues.

The County must work with its neighboring jurisdictions and through regional institutions to achieve solutions for regional transportation problems. Federal and State laws form the framework for the counties' participation in TPB, TCC and NVTC. The magnitude of the resources needed to fund major highway or transit projects, such as rail to Dulles Airport and Loudoun stations, is so large that, realistically, they are only available through regional organizations and processes. Loudoun County must emphasize its role in the region as a provider of employees and employment, and thus have the other entities recognize its emerging role in the region and the metropolitan area. Proactive participation, rather than simple monitoring of meetings, will require that staff be fully aware of the County's position and objective for each issue. If not, the County's interests may not be well served.

Policies

- 4.7 The County shall continue to participate as a member of regional transportation planning agencies to increase the County's role and status in the regional planning arena and to generate support for transportation projects which benefit Loudoun County. To this end, the Countywide Transportation Plan identifies, in Appendix 2, Recommended Regional Road Improvements, those road improvement projects in the region which are important to the continued improvement of the Loudoun County road network. The list of projects in this Appendix is intended to be a guide and will be updated on a regular basis through the regional process, cooperation with other localities, and by resolution of the Board of Supervisors.
- 4.8 The County shall continue to work with other localities on specific issues of mutual concern, such as the Route 28 Highway Transportation Improvement District (HTID), and seek regional support for County transportation initiatives.
- 4.9 The County shall initiate a regular meeting with officials of area towns to discuss transportation issues and opportunities. This effort should be made a regular part of the County's role in the State's Six-Year Primary and Secondary Road Improvement Programs and, in other cases, where mutual or regional transportation issues and opportunities arise.
- 4.10 To focus County resources on priority issues and projects, the County will develop an annual regional planning objectives strategy. The strategy will identify the priority projects, the required or preferred funding package or action/solution, regional planning agencies and committees that must support the proposal, and the staff and/or officials to represent the County before those committees and agencies.

D. State and County Partnership Roles

VDOT has the responsibility for maintenance and operation of all the public roads in Loudoun County. However, the County and the State share the responsibility to ensure that new roads, designed and constructed by the private sector, meet standards which allow their acceptance into the State System for maintenance/operation. The County intends to continue the current VDOT-County relationship and to seek changes in VDOT policies and standards. These changes will provide a cost effective and safe road network with flexibility to accommodate the County's land use and community design objectives. The County continues to encourage VDOT to participate as a member of the County's transportation planning team. At the same time, the County should continue its present practice of reviewing VDOT project plans for Six-Year Primary and Secondary Road Improvement Programs, while taking steps with VDOT to arrange a more formal role in the design process. The



County has, and will continue, to request VDOT to design its projects in rural Loudoun County with more sensitivity to the environment and to protecting the ambiance and character of the area.

VDOT works closely with the County in a number of different processes. When a rezoning or a special exception application is being reviewed, VDOT has an advisory role. During the subdivision or site plan stage of development, VDOT has a different role. It is no longer simply providing advice, but has statutory jurisdiction over all public roads in the State Highway System. For example, a highway permit is required before any work can be done within VDOT right-of-way. VDOT has adopted a formal set of regulations associated with the highway permit process including guidelines for the use of a highway's right-of-way. They also have established another set of criteria for the addition of subdivision streets into the Secondary System of Highways, which is explained in detail in a manual published by VDOT entitled Subdivision Street Requirements. The County has complied with these regulations to ensure that new streets are eligible for State acceptance.

Policies

- 4.11 The County shall continue to encourage the Virginia Department of Transportation to participate as a team/committee member in long range planning processes, which contemplate discussion of County transportation policies.
- 4.12 The County shall examine ways of increasing its involvement in the Virginia Department of Transportation decision process and shall continue to seek mutually acceptable policy positions through formal and informal channels.
- 4.13 The County shall continue to seek the Virginia Department of Transportation's input into development applications through the County's application referral process, and by working with VDOT and applicants to ensure that proposed public streets are accepted into the State's system.

E. Local Control and Management Options

In Virginia, responsibility for roads in most counties lies with the State; however, State legislation permits counties to take responsibility for road management. Local control is mandatory in incorporated communities larger than 3,500 people and in cities. Recent indications are that the State may encourage increased local responsibility as a means of reducing costs. Arlington County has historically maintained local control of roads. More recently, Fairfax County has taken on maintenance responsibility for approximately 30 miles of road as well as construction and planning responsibilities for all secondary road construction projects funded locally. Fairfax County has used bonds and general operating funds to construct improvements, such as the Fairfax County Parkway, and to maintain roads.

The terms of transferring responsibility from VDOT to Loudoun County would require agreement by the Commonwealth Transportation Board and voter approval in a public referendum. The agreement could provide for the transfer of VDOT equipment to the County. Local management and responsibility for roads would entail significant costs to the County including a substantial increase in local staff to undertake additional responsibilities.

Should Loudoun County choose to maintain the local roads, it has been estimated, based on a 1993 Fairfax County study, that the County could face an annual maintenance expenditure of between \$3.23 million to \$9.65 million current dollars depending on the level of State funding to the County. This figure does not include the potentially larger costs of additional preconstruction and review staff, equipment, materials and other costs associated with local control of secondary roads.

The County should continue to support VDOT management of both primary and secondary roads in the County. In addition, the County should examine ways of increasing its involvement in the VDOT decision making process within the current relationship.

Policies

- 4.14** The State/Virginia Department of Transportation shall continue to have jurisdiction over all public roads in Loudoun County.
- 4.15** The County will endorse transportation systems that will minimize the fiscal impact of construction, operation and maintenance on the County.
- 4.16** All roads will be built to Virginia Department of Transportation standards for acceptance into the State Highway System. County policies and ordinances may support modifications (i.e., private streets) to protect rural character or to accomplish other design objectives, where such modifications do not reduce the level of safety.

F. Western Bypass and Loudoun Parkway

Western Bypass

In August 1987, Virginia and Maryland authorized a study to assess the need for and feasibility of an Eastern and/or Western Bypass corridor around the Washington metropolitan area. The objective of the study was to develop a consensus between the States concerning an eastern bypass, a western bypass, a combination or no bypass. In 1988, findings of the feasibility report were presented to the public. Agreement to use a tiered environmental process was reached in January 1989 and the initial results were made public later that year. Refinements were made to the study and additional public meetings and hearings held. The original phase of the Tier 1 Environmental Impact Study (EIS) considered seven "most reasonable build" alternatives to the bypass, three to the west of Washington.

alternative routes, and the projected number of truck accidents. While in agreement with these factors, Loudoun County has also been concerned with providing direct regional access to Dulles Airport via an alignment as close to the Airport as possible, protection of the historic/scenic byway portion of Route 15 and protection of Goose Creek.

Following publication of a "White Paper" on the Western Bypass in 1993, VDOT announced its intention to proceed with the completion of the Tier 1 EIS. The Study corridors include:

- a. VDOT W-1a, which runs along the north-south power line alignment (paralleling Route 659) and then follows the Route 15 Corridor to a Potomac River crossing in the vicinity of Point of Rocks;
- b. VDOT W-2, which runs along the north-south power line alignment and crosses the Potomac River into Montgomery County east of Leesburg and west of Goose Creek;
- c. VDOT W-3, which runs along the Route 28 alignment.

In 1995, VDOT announced it was commencing a Major Investment Study (MIS) rather than moving forward with the Tier 1 EIS. This MIS will examine the feasibility of the Western Bypass and examine a number of alternative transportation models including mass transit and "no-build" alternatives. From Loudoun County's perspective, it is clear that a Western Bypass is required to serve the regional north-south transportation needs west of the existing Capital Beltway. Improved transportation access to Dulles Airport is particularly important. The County's preferred corridor is VDOT's W-2 corridor (Figure 4, page 35). However, it is recognized that the Major Investment Study must be completed as quickly as possible to reflect on the most appropriate corridor and the County is supportive of examining all options. Whichever corridor is selected, land use policies need to be evaluated to prepare for the development that may occur as the road moves closer to reality. Current land use policies do not directly address the Bypass. In addition, the County must retain enough flexibility in its Transportation Plan to allow road alignments to be coordinated with the final alignment of the Bypass.

Loudoun Parkway

The Board of Supervisors has also initiated an exploration of options for the development of a Loudoun Parkway, that would add to the County's north-south transportation grid in the near term. The Parkway would be designed as a controlled access four- to six-lane divided arterial. The Loudoun Parkway would serve a number of functions for the County:

- a. Provide a link with the Tri-County Parkway in Fairfax and Prince William Counties;
- b. Provide a second connection to Interstate 66; and

- c. Improve access to Dulles Airport from the south via an existing interchange on the Dulles Greenway.

While the Parkway would initially terminate at Route 7, the County should actively seek to reserve the right-of-way north of Route 7 to the Potomac River in anticipation of a future river crossing.

Policies

- 4.17 The County supports the development of a limited access parkway north from the I-95 Dumfries area to provide Dulles Airport with an entrance from the south and west and then going north to connect with I-270 in Maryland. In Loudoun County, the alignment of the Western Bypass is preferably east of Leesburg to avoid historic and conservation areas. This corridor is identified as the Virginia Department of Transportation W-2 alignment in the VDOT Tier 1 Environmental Impact Study.
- 4.18 The Western Bypass should provide access to Dulles Airport and accommodate north-south regional traffic passing through Loudoun County in an efficient and environmentally protective manner.
- 4.19 The County supports development of the Loudoun Parkway as an extension of the Tri-County Parkway in Fairfax and Prince William Counties.
- 4.20 The Loudoun Parkway may initially terminate at Route 7; however, the County should pursue an extension of the Parkway into Maryland.

6. Design and Construction Standards

Growth is occurring in Loudoun County in both suburban and rural areas. It is important that the roads serving these areas be designed and constructed in a manner which is consistent with the special character of adjoining communities and land uses. Roads should fit and complement the communities they serve.

In Urban Growth Areas, new Rural Villages and Hamlets, the street system is essential to the visual and functional character of public spaces. The County seeks to re-create features of traditional road systems where they function safely.



Crews from the County, VDOT, and citizens prepare for a walk-through during the design stages of the improvement project for Route 734.

In rural areas, and existing villages and hamlets, the rural character needs to be maintained by ensuring that the scale of road improvements is not intrusive. A road's design speed, right-of-way, safety and capacity need to be balanced against the County's rural preservation policies and ordinances.

VDOT has design standards for the wide variety of secondary roads which exist in Loudoun County, ranging from rural local roads to subdivision streets. The application of these geometric standards to secondary roads in Loudoun County, in both urban and rural areas, has for the most part proceeded without great controversy. However, as the County developed policies to encourage creative forms of residential development and the public demand for preservation of the character of the County's unique rural roads grew, friction developed in the strict application of VDOT standards to secondary road improvement and construction projects.

VDOT standards are based on nationally recognized engineering and design practices. For example, VDOT design standards are closely correlated with A Policy on Geometric Design of Highways and Streets prepared by the American Association of State Highway and Transportation Officials (AASHTO).

VDOT has been willing to consider modifications to specific standards for individual projects on a case by case basis. The process does not result in a permanent change of VDOT standards in the County and may be appropriate for some projects and not others. Belmont Forest and South Riding are two projects which have participated in the process. Applicants may view this process as not being completely satisfactory, since some requested modifications have not been granted.

There is strong support in the County to use VDOT standards in the improvement of roads in western Loudoun County in a manner sensitive to the rural environs and safety. The number of lanes planned for a road and the required right-of-way are two frequently requested modifications. From time to time, other aspects of VDOT rural road standards may need modification to "fit" a road into its surrounding rural context. Traffic forecasts in VDOT's 2010 Statewide Highway Plan indicate road sections beyond two lanes are not required for most rural roads in western Loudoun County.

Right-of-way widths which are less than the "Desired" width shown in the VDOT standards may be reasonable and desirable for rural roads in western Loudoun County. Appendix 1, Design Guidelines for Major Roadways Countywide, contains recommended right-of-way for each specified road. A 1994 NVBIA (Northern Virginia Builders Industry Association) paper on issues involving VDOT and County Agencies contains the following discussion and position on street design standards for subdivisions:

"Development trends for residential neighborhoods within Northern Virginia and in other regions of the country are increasingly oriented toward the interrelationships of the pedestrian, vehicular and recreational needs of the community. Design standards for subdivision streets in the

Commonwealth, however, have evolved to maximize the safety of vehicular traffic and, in general, minimize congestion within the road network. These divergent goals have resulted in neighborhood streets which allow (and to some extent induce) vehicle speeds which jeopardize the safety of residents. The minimum allowable design speed of 30 miles per hour (mph) coupled with geometric standards for on-street parking and increased pavement widths inherently create conditions which jeopardize bicyclists, joggers and residents at their leisure. Safety factors included in these design standards to accommodate inclement weather or aging facilities create neighborhood roadways which (on a clear day) can and do permit comfortable vehicular speeds of 40 mph or greater. Posting these streets at 25 mph and periodic policing has proven less than fully satisfactory. Further, the standards require more land disturbance, permit less neighborhood layout flexibility and involve higher construction costs than their historic predecessors. Standards for design speed, roadway widths and right-of-way width should be reviewed to accommodate the more pedestrian nature of neighborhood streets in these urbanizing areas.

Local neighborhood street standards for urban and suburban areas should be revised to permit design speeds of 20 and 25 miles per hour with resultant geometric reductions (tangent lengths, centerline curve radii, etc.). Additionally, narrower travel lane widths and creative street landscape treatments need to be developed to reflect physically and perceptually lower travel speeds through neighborhoods to create safer pedestrian conditions."

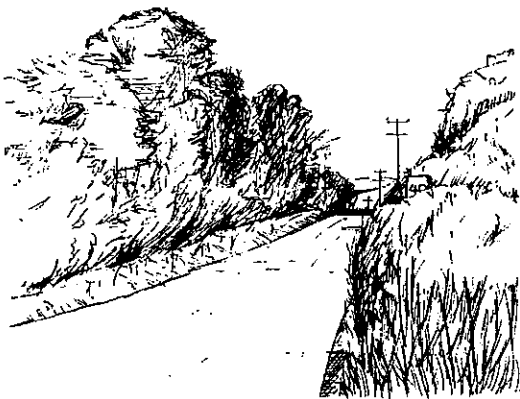


The developers of South Riding worked with VDOT to grant modification to specific street standards for their neighborhood.

This plan supports the NVBIA position. As a result of this support and during the preparation of the Countywide Transportation Plan, the Transportation Plan Committee established a VDOT Standards Subcommittee made up of citizens and staff. The resulting Subcommittee Report was reviewed by the Transportation Plan Committee and forwarded by the County Board of Supervisors to Virginia Secretary of Transportation, Robert E. Martínez on July 15, 1994.

Policies

- 4.21 New road construction shall be sensitive to the County's goal of encouraging pedestrian-friendly community character and environmental protection.
- 4.22 All roads should be planned and constructed to the standards of the Virginia Department of Transportation for acceptance into the State Highway System. Private roads not meeting State standards, may be allowed in cases specified in the County's ordinances.
- 4.23 Provision for interparcel connections will be required in rural development proposals, as provided in the Facilities Standards Manual, and in all urban development proposals to achieve a local road network, and to help keep local traffic off regional roads.
- 4.24 Direct vehicular access is discouraged between individual residential and commercial lots. Direct access from individual lots to arterial and major collector roads is discouraged.
- 4.25 Local roads that provide individual lot access should lend themselves to a more prominent role in defining community character and responding to pedestrian and bicyclist transportation objectives. Local roads shall be designated as an integral part of the community and the design or preservation of local roads must always consider safety and mobility as a principal concept. On local streets, this is best achieved by designs that encourage slower, safer speeds and invite pedestrian activity.
- 4.26 The County shall work with Virginia Department of Transportation to develop modified standards that can be applied to both the improvements of existing roads and the creation of new roads. To this end, the cooperation of the Residency, District, and Richmond offices of VDOT will be sought.
- 4.27 The County shall continue to work with appropriate business and community groups to refine and improve Virginia Department of Transportation road design standards. This process will include development of justifications for the proposed changes and strategies for approaching the State to implement the changes.



- 4.28 The County intends that developers and the Virginia Department of Transportation use Scenic Design Guidelines in planning road improvements on all designated Scenic Byways in rural Loudoun County. The Board may, by resolution, apply such guidelines to improvements planned on other local access or minor collector roads in rural Loudoun County. Such optional design guidelines may include the following:

- a. A lower design speed and narrower right-of-way to minimize land acquisition and disturbance, and to reduce the need for removal of stone walls, treelines, fences, and other such features, that often parallel roads. Lower design speeds also allow road alignments that follow the existing terrain and minimize road cut and fill areas. Allowing the road to follow the topography of the area reduces the amount of land disturbance and the profile of the road.
- b. Variable shoulder and ditch widths that are determined by the existing topography. In areas where natural water flow is away from the road, ditches could be eliminated. Variable shoulder widths could provide the flexibility to avoid removal of trees, stone walls or other such features.
- c. Landscaping on all cleared areas that includes indigenous plants, trees, wild flowers and other groundcover found in natural areas. Landscaping should be allowed as close to the road as possible while maintaining a safe and reasonable sight distance and clear zone.
- d. Rest areas, "pullover" areas and other features that provide the opportunity for vehicles to pull off of the main travelway.
- e. Construction material, such as light-colored pavement, guard rails and fences that reflect the historic and rural nature of the area (i.e., painted or rustic guard rails rather than steel). In the case of new bridges, abutments and other structures, exteriors and facades should be of materials, such as stone used in some of the historic bridges in the County.
- f. In the case of arterial roads where a four-lane, divided section is proposed:
 - i. A variable median width should be used to allow the travel lanes to maneuver around features that are to be protected.
 - ii. Planting within the median should be used to reduce the visual impact of the road, yet allow appropriate and safe sight distance at crossovers and intersections.
 - iii. Each travel surface should individually follow the existing topography to minimize cut and fill areas and lower the road profile.

4.29 The Scenic Design Guidelines and other policies supporting the preservation of the character of rural roads are not intended to impede the construction of needed safety improvements on rural roads or delay construction beyond conventional planning and design schedules.



H. Unpaved Roads

Loudoun County has a system of rural roads which reflects the County's agricultural heritage. Population growth throughout the past two decades has generated the need to improve a large number of these unpaved roads. Improvements involve balancing a variety of issues including: public safety, community access, funding limitations and preservation of historic and scenic features.

There are over 300 miles of unpaved roads in Loudoun County, all administered by VDOT. The County cooperates with VDOT to select unpaved road projects for paving and to program candidate projects for funding through the Six-Year Secondary Road Improvement Program.

VDOT estimates that less than one percent of all travel on public roads, statewide, is on unpaved roads. At the same time, current funding allocations target 5.67 percent of total construction funding to unpaved road projects. An unpaved road must carry more than 50 vehicles per day to be eligible for paving. VDOT recommends that this threshold be increased to 100 vehicles per day and that unpaved road funds be cut to 1.5 percent of total construction funding.

It is County policy to place unpaved road paving projects in an appendix attached to the Six-Year Secondary Road Improvement Program rather than include them in the body of the Six-Year Program. This policy was adopted to more accurately determine if there is local support for a proposed paving project. If 60 percent of the right-of-way needed for a paving project on a Local Through Road is donated by adjoining land owners, VDOT will proceed with the project. A 70 percent dedication of the right-of-way is required to move forward on projects on Local Access Roads and 80 percent on Local Stub Streets.



Policies

- 4.30** The County shall continue its policy of requiring right-of-way dedications as a prerequisite for placing an unpaved road improvement project on the Six-Year Secondary Road Improvement Program.
- 4.31** Safety, community support, road maintenance and preservation of stone walls, trees, fences and other such features should be among the criteria for selecting roads to be paved.

I. Private Streets

The use of private streets by new development in Loudoun County is limited. The County requires frontage on a public road maintained by the Virginia Department of Transportation for nearly all types of development. Exceptions to this policy include the A-10 Subdivisions, structures in Historic Site Districts, Family Subdivisions and low density 25- and 50-acre residential subdivisions.



Ashburn Village

During the rezoning process, the Board of Supervisors may grant modifications to permit the use of private streets for single family detached housing. Private streets serving townhouse and multifamily uses in PD-H districts may be permitted by-right, because such lots are most often accessed by a travelway, which also serves as a parking area. Contemporary townhouse development uses perpendicular or angle parking along the travelways. This feature is not permitted by VDOT design standards. All private streets must meet the design and construction standards of the County's Facilities Standards Manual (FSM).

Proponents of private streets argue that VDOT design standards are excessive with respect to street widths, design speed, landscaping restrictions, and other requirements and do not allow creative community designs. VDOT continues to advise against the use of private streets for new development because of concerns related to continued maintenance, road network development, and other issues. The County has taken steps with the Land Subdivision and Development Ordinance (LSDO) to prevent public liability for the maintenance of private streets.

The Land Subdivision and Development Ordinance states the following:

"For any subdivision or development of a tract of land involving a Class III road, a private access easement, or other designated right-of-way which is to be privately maintained, the plats, plans, and deeds recorded for the subdivision or development and for each lot therein shall contain the following statement:

The access serving this lot is private and its maintenance, including snow removal, is NOT a public responsibility. It shall not be eligible for acceptance into the State secondary system for maintenance until such time as it is constructed and otherwise complies with all requirements of the Virginia Department of Transportation for the addition of subdivision streets current at the time of such request. Any costs required to cause this street to become eligible for addition to the State system shall be provided from funds other than those administered by the Virginia Department of Transportation and by Loudoun County."

Road maintenance is an expensive commitment that includes snow removal, landscape care, trash cleaning and other activities, as well as the repair of road surfaces, curbing and drainage facilities. Generally, the maintenance responsibility falls to the homeowners association (HOA) or similar organization.

For successful HOA maintenance, it is important that their road maintenance program be adequately funded for current operations and a sinking fund established for reconstruction and emergency repairs. The maintenance program must assure an adequate service level and be capable of providing access as soon as possible after snows or other emergency situations.

Transportation planning in Loudoun County has supported the concept of providing interparcel connections between adjacent development projects to create a network for use by local traffic. This practice keeps local trips off the major collector roads, freeing up capacity for through trips and more regionally oriented traffic.

Policies

- 4.32** The County should continue to allow private streets in circumstances provided for in the Zoning Ordinance, Land Subdivision and Development Ordinance and Facilities Standards Manual.
- 4.33** The County supports interparcel connectors in developments with private streets designed to the standards of the Facilities Standards Manual.
- 4.34** An entity other than the County or Virginia Department of Transportation will maintain all private roads. The maintenance responsibility will be ensured before the approval of the private road. In each case where County ordinances allow private streets, there shall be language specifying what entity will provide the maintenance of the road and what public disclosures are necessary to expressly state that the County or VDOT have no, and will have no, responsibility for the maintenance, repair or replacement of private streets.
- 4.35** The designation of a design sensitive street as private may be appropriate where alternative solutions do not address the policies of this Plan. The private street designation shall be made by the Board of Supervisors through the rezoning process or County ordinances.
- 4.36** The County should use the mechanisms provided by the County Zoning Ordinances to ensure long term success of private streets.

TRANSIT MODES

A. Public Involvement in Transit

Based on regional modeling and traffic demand trends, it is projected that the County's planned road network may not accommodate traffic demands beyond the year 2010. In other words, the Level of Service on our major roads will continue to

deteriorate to Level of Service "F" or below before eastern Loudoun County reaches buildout. Even with some transit service, including rail, the County's roads will not accommodate traffic demands beyond 2010. There are indications that transit service is needed in Loudoun County. In order to effectively counter the congestion on County roads, a combination of alternate modes of transportation, including: taxis, car/vanpools, buses and rail will have to remove a significant percentage of automobiles from major roads. A comprehensive transit system can be composed of a number of service types and all forms of transit should be evaluated to determine whether they are realistic and viable in particular situations.

Loudoun County has historically provided indirect support for transit services through rideshare coordination and marketing funded primarily through State grant programs. The County has subsidized para-transit services through a number of County departments and agencies. County land use and strategic planning policies have increasingly encouraged transit, promoted mixed use and nodal development and, more recently, promoted higher density development.



Loudoun Ride-on

This Plan endorses a stronger link between development density and proffers towards transit facilities and services. Further, the policies suggest that a phased, direct investment in transit service be made over a number of years. Currently, this involves contracting with a private transit operator and providing policy oversight, with limited operational or managerial responsibilities. In the interim, the County could establish or participate in a public authority to fund and manage basic and express bus service. Ultimately, the County supports rail service from Dulles Airport to Leesburg.

Policies

- 4.37** Loudoun County supports, where feasible:
- a. the development of efficient, convenient local and commuter transit services consisting of carpools, vanpools, bus and rail services, and other alternate modes; and
 - b. the development of an efficient all-day bus service beginning in eastern Loudoun County and potentially providing interjurisdictional connections to areas such as Herndon and Reston.
- 4.38** The County may provide support for transit service in the form of technical and financial assistance, and by establishing the operational infrastructure, so the public can respond to transit opportunities with minimal "start up" costs and delays.
- 4.39** County involvement in transit will be phased based on user demand for transit service. Initially, the Board shall entertain applications for assistance from

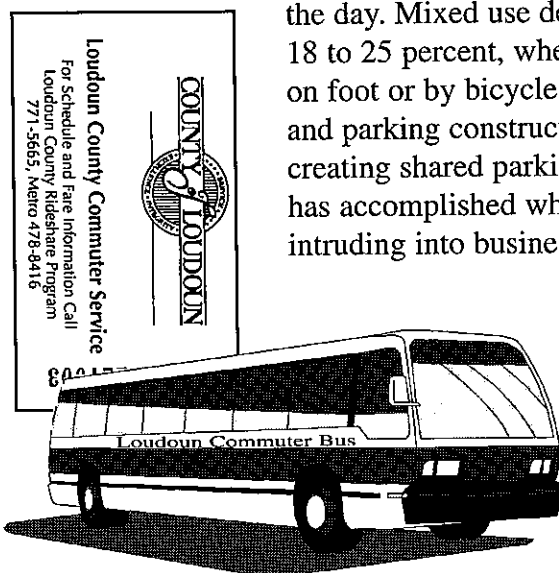
private transit operators through the Local Gasoline Tax Program. Ultimately, the County should consider control and management of a transit system and/or membership participation in a regional or intercounty system.

- 4.40 County financial assistance to a particular transit service shall be based on factors, such as population and area served, cost effectiveness and level of the service, reliability and others that suggest the service is realistic and viable.
- 4.41 The County shall encourage new development within identified transit corridors that shall improve the viability and cost effectiveness of the future transit services. Specifically, the County shall encourage densities, land use mix and design features that improve transit accessibility and efficiency.
- 4.42 Recognizing that transit service may not be attainable in the short run, the County should permit "conventional density" development in transit corridors provided the development maintains the ability to provide higher density uses by preserving a portion of the site for future "transit friendly" uses; or alternatively, the development proposes to provide assistance that would reduce the cost of transit service in the area.
- 4.43 The County shall create a transit fund by accepting development proffers, redirecting a portion of the Local Gasoline Tax Program revenue and actively pursuing State and Federal funding.
- 4.44 The County shall establish a process for evaluating funding requests from the transit fund: based on the cost, the population that shall be served by the transit program and other performance standards.

B. Transit and Land Use

Successful transit depends on a balanced land use mix. Mixed use development, including a combination of residential, commercial and office uses, yields the intensities and complementary activities necessary to accommodate transit. The combination provides a continuous two-way flow of riders throughout the day. Mixed use development has been shown to reduce the need for the car by 18 to 25 percent, when some trips, such as lunch time errands, can be accomplished on foot or by bicycle. This benefit can also reduce trip length and the need for road and parking construction. The need for parking construction can be reduced by creating shared parking opportunities. In several instances, mixed use development has accomplished what flex-time, staggered work hour programs can, without intruding into business affairs.

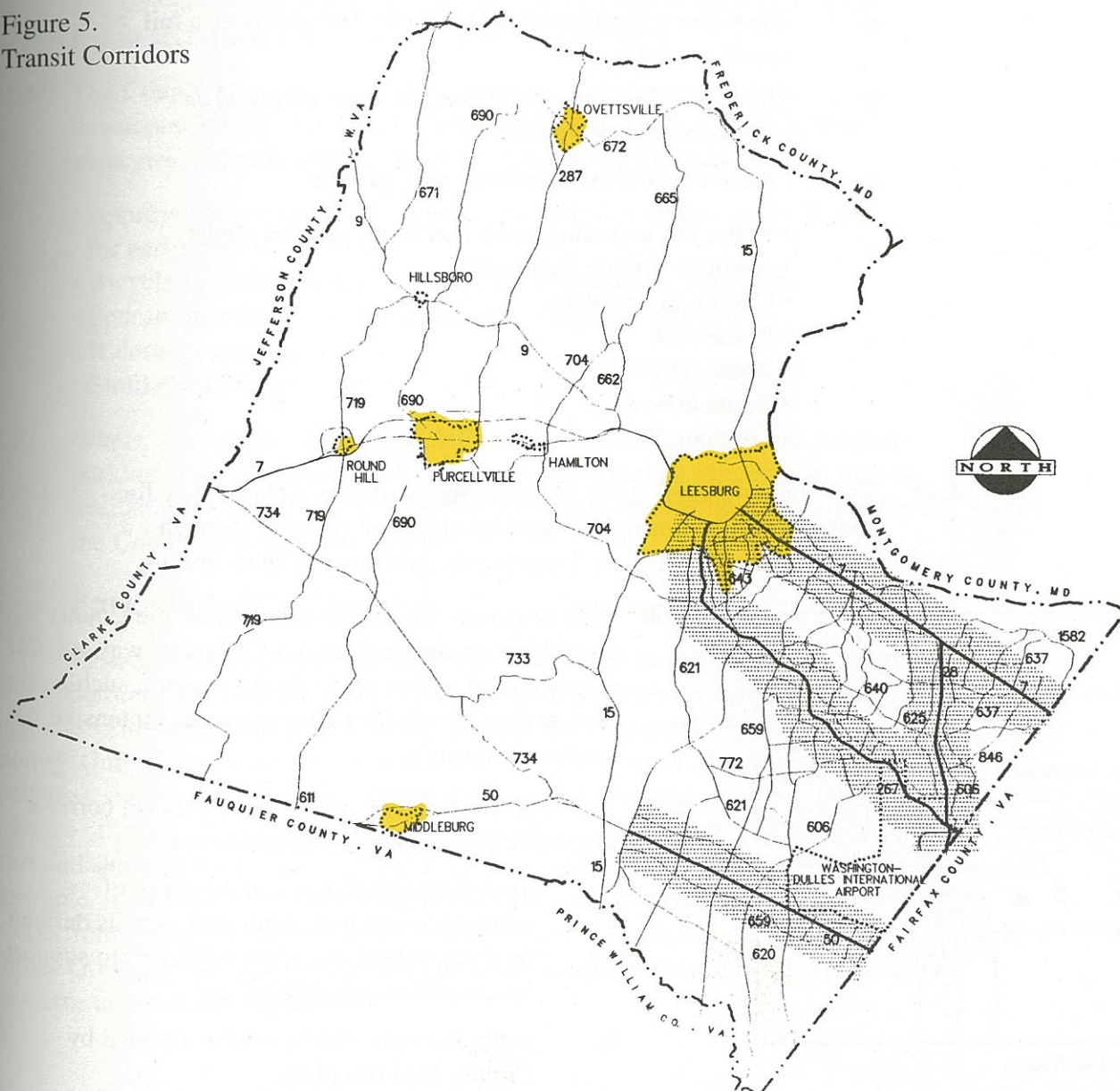
Advance planning facilitates future transit service. The densities necessary to support transit will only occur over time. Thus, it is essential to plan interim land uses surrounding future transit stops that can be used as a nucleus for future higher density development. Additionally, the right-of-way needed for the transit service should be obtained during the development process.



Research indicates that development at the following densities, within a one-half mile radius of a transit stop, would sustain a viable transit system:

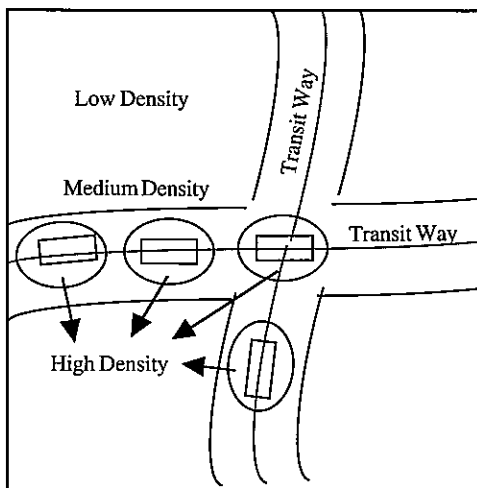
Table 1: Transit/Land Use Matrix	
Density	Transportation Mode
0 to 4 dwelling units/acre	car, car and vanpools, park-and-ride lots, taxis
5 to 7 dwelling units/acre	bus at 30 minute intervals
8 to 15 dwelling units/acre	bus at 10 minute intervals
15+ dwelling units/acre	high capacity bus or rail

Figure 5.
Transit Corridors



Policies

- 4.45** The transit system in Loudoun County may consist of high occupancy vehicles, buses, rail or some other modes of transportation.
- 4.46** The Countywide Transportation Plan identifies transit corridors for existing and proposed bus and rail transit networks as shown in Figure 5, page 47. Development within these corridors should be planned using the ultimate transit system to determine the density, use mix and design. A transit corridor can be defined as the transit route, plus the land area for up to one mile on either side of the route.
- 4.47** Ideally, a distance of one-half mile should be maintained between parallel, like-kind transit corridors.
- 4.48** The County transit system shall be developed in phases:
- The County has identified the Dulles Greenway as a rail transit corridor.
 - The Route 7 and Route 28 corridors are identified as appropriate for bus transit.
 - Future transit (bus) corridors may include:
 - Route 50, including north and south parallel roads;
 - Ashburn Village Boulevard;
 - Claiborne Parkway;
 - Route 659;
 - Route 640/625;
 - Route 606; and
 - Loudoun Parkway/Route 607/Route 772.
- 4.49** The County should strive to obtain the necessary right-of-way for each transit line during the land development process, through programs such as Transit Trust Funds, proffers and other means.



Illustrative Nodes

- 4.50** With respect to identified transit lines, the County should ensure the dedication of rights-of-way suitable for each final transit mode. In the interim, such a right-of-way may be used for alternative, less intensive modes of transit.
- 4.51** The land development activities in a transit corridor shall have the following characteristics:
- an appropriate balance and density of residential and non-residential uses as defined by County land use plans sufficient to support a successful transit system, and
 - an appropriate mix of uses as defined by County land use plans.

- 4.52 It is anticipated that development surrounding the transit stations shall ultimately occur with high intensity development located in the center and lesser densities at the outer edge of the transit corridor.
- 4.53 The County shall initially encourage land uses along transit designated corridors that can later be incorporated into the fringes of higher density development.
- 4.54 The County should examine the capital facilities formula calculations relating to higher density developments. The per unit contributions may be decreased as density increases, without impairing the total contribution, and be redirected to transit services where appropriate.
- 4.55 The County encourages new employment and business uses to support alternative travel modes by encouraging ridesharing and car/vanpooling, minimizing the availability of parking beyond current County requirements and providing design features and facilities that accommodate bicycle use, transit access and pedestrian convenience and safety.
- 4.56 The County may consider reduced parking requirements where a development proposal includes Transportation Demand Management strategies that reduce trip generation. Such strategies may include:
- Appropriate transit access, such as bus stop and shelter convenient for pedestrian use;
 - Bicycle facilities, such as stands, lockers and changing rooms;
 - Pedestrian and bicycle paths linked to a regional network;
 - Rideshare coordination; or
 - Similar features.
- 4.57 Where it is agreed that a proposed development will exceed the minimum parking requirements of the County, the additional parking spaces may be available for shared use by adjacent businesses or uses or made available to the County as a park-and-ride lot.

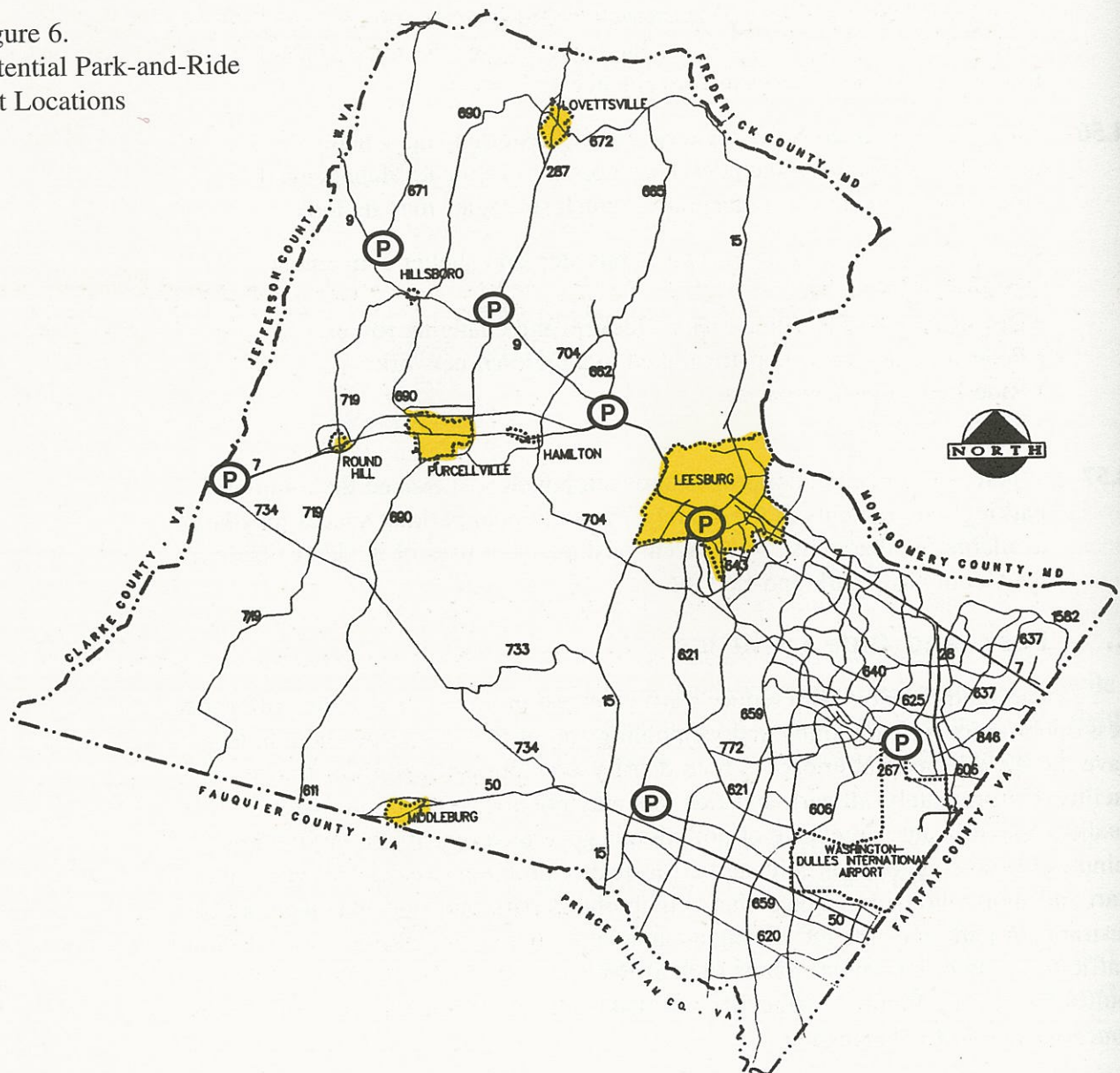
C. Park-and-Ride Facilities

Park-and-ride lots help reduce traffic congestion in two ways: they offer the best opportunity for carpooling and vanpooling and, if they are large enough, they have the same beneficial impact as high density development close to a transit facility. Unfortunately, all park-and-ride lots may not always help improve air quality. A significant percentage of pollution is generated by cars in the first few minutes of travel, known as cold starts. Air quality problems associated with cold start and short auto trips, suggest that neighborhood park-and-ride sites may not be desirable. A park-and-ride lot serving an area larger than a neighborhood, or drawing traffic from major commuter routes such as Routes 7, 9, 15, 28, 50, 287 and the Dulles Greenway (Figure 6, page 50) will strike a better balance between pollution concerns and traffic congestion.

Park-and-ride lots create a compact, high density node for transit services, in lieu of actual building and development. Properly located, a park-and-ride lot can also function as an interim use prior to future development of a site. A park-and-ride lot next to a future transit stop may provide land that could later be used for high density development to help ensure the long term viability of the transit station. As “holding zones” for future development, park-and-ride lots can also play an important role in developing Transit Related Urban Centers (TRUCs) proposed in the General Plan and the mixed use nodes proposed in the Toll Road Plan.

Once transit service is available, park-and-ride lots will improve the efficiency of that service if located near a transit station. Therefore, park-and-ride lots should be co-located with express bus service stops or rail stops.

Figure 6.
Potential Park-and-Ride
Lot Locations



Policies

- 4.58 The County and private developers shall fund the development of park-and-ride lots. The County will seek funds from a variety of sources including federal, state, county and Local Gasoline Tax.
- 4.59 Park-and-ride lots in rural Loudoun County are intended for the use of long distance commuters. Therefore, they should be located on major corridors such as Route 7, Route 9, Route 50 and Route 287. Where possible, such lots should be located in conjunction with other public or quasi public facilities (community centers, churches, recreation facilities, etc.) to minimize their impact on the surrounding area.
- 4.60 Park-and-ride lots in urban areas around and within the towns and eastern Loudoun County should also be located along or at the intersection of arterial or major collector roads, near activity centers such as commercial or mixed use centers, schools or other intensive destination points, at transit stops, or in locations that provide convenient access and safety.
- 4.61 Park-and-ride lots should be designed to provide convenient and safe bus access. Regional park-and-ride lots will not be located in nodes.

BICYCLE FACILITIES

The implementation and use of bicycle facilities is important to a well functioning transportation system in Loudoun County. With the increasing awareness of environmental and health issues, bicycling for recreation, commuting, shopping, etc., has grown in popularity.

At present, designated bicycle facilities are limited in Loudoun County. The Northern Virginia Regional Park Authority's W&OD Trail, which extends from Arlington to Purcellville, is the only designated bicycle trail in the County. This is a paved 8- to 10-foot wide facility for use by bicyclists, pedestrians and horseback riders. In Loudoun County, the trail serves several residential areas, villages and towns including Sterling, Ashburn, Leesburg, Paeonian Springs, Hamilton and Purcellville. A variety of roadways, such as Business Route 7 and Route 734 in western Loudoun County, are currently used by bicyclists.



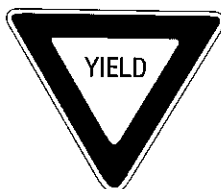
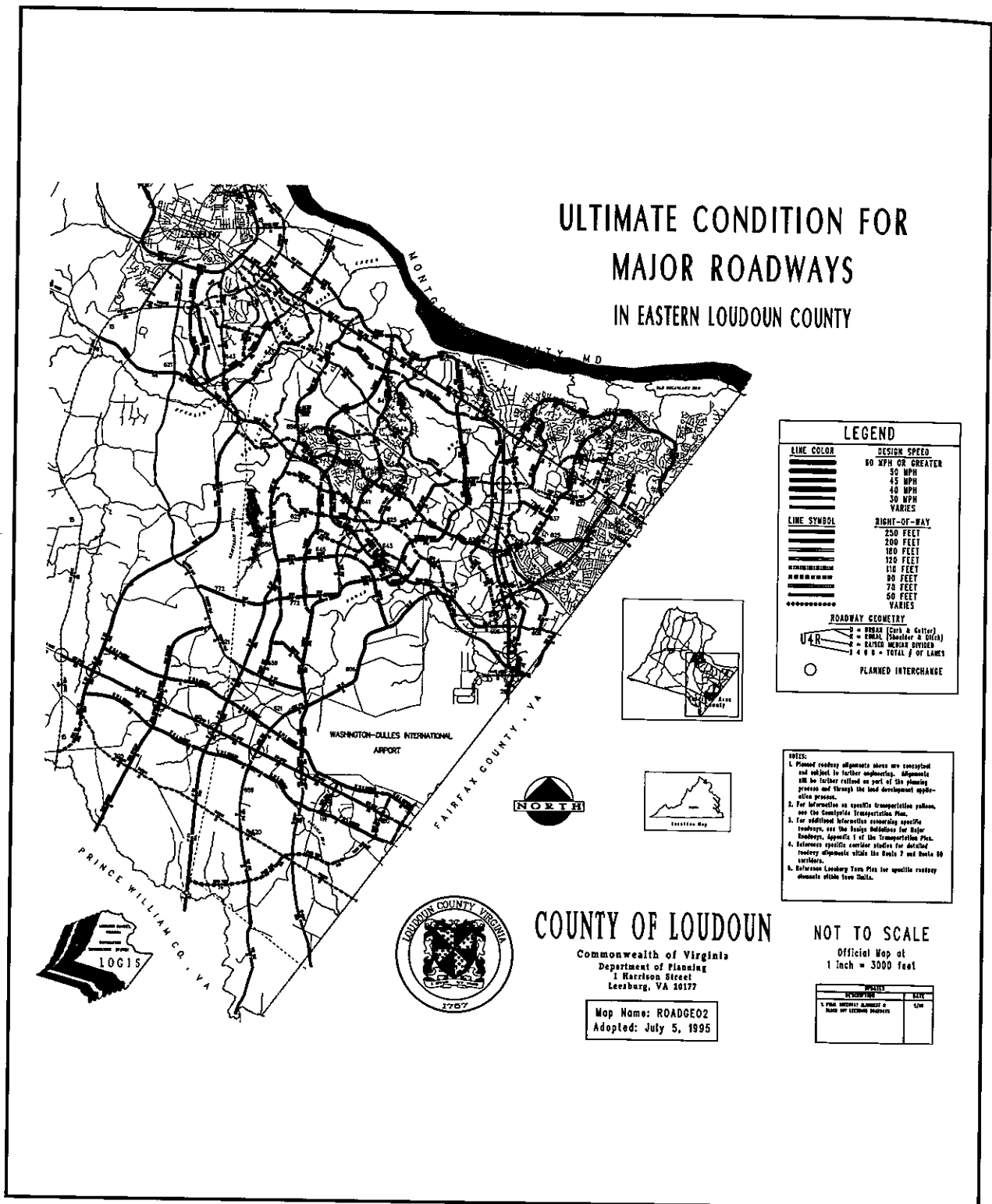
*Walkers and bikers
share the W&OD Trail*

Policies

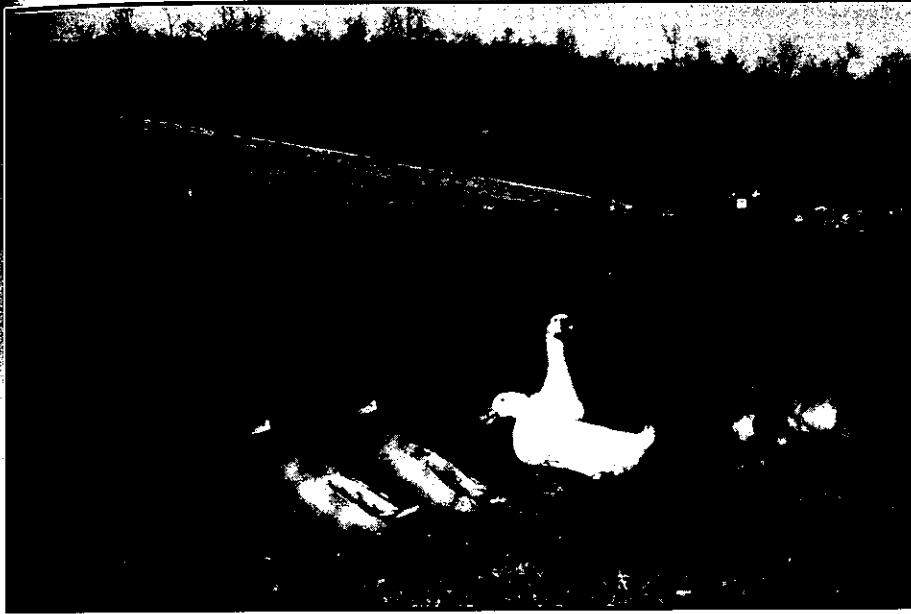
- 4.62 Multi-use trails should be encouraged in accordance with the policies of the Greenways and Trails Master Plan for Leesburg and Loudoun County, Virginia.
- 4.63 Loudoun County should pursue grant funding of greenway and trail projects, which can be combined with other transportation goals and policies.
- 4.64 Bicycle parking should be provided at commuter transit stops and park-and-ride lots.
- 4.65 The County should encourage bicycle safety and education in conjunction with information programs sponsored by the County Sheriff's Office and the Virginia Department of Motor Vehicles.
- 4.66 The County, with the assistance of the Virginia Department of Transportation, should initiate a countywide bicycle trail plan within 12 to 18 months of the adoption of the Countywide Transportation Plan.
- 4.67 In order to maintain the opportunity to qualify for funding of bicycle facilities and to maintain regional planning support for Loudoun County projects, the County encourages the planning and designing of bicycle trails and facilities in conjunction with road improvement projects provided the following criteria are satisfied:
 - a. Separate funding is available so that Primary and Secondary road funds are not required.
 - b. There is no significant, additional cost associated with planning and engineering a trail or bicycle shoulders within VDOT right-of-way.
 - c. Owners of property along the planned road improvement have indicated their support of a trail or bicycle shoulders along the road by dedicating right-of-way and providing a statement, in writing, in support of the bicycle facility.
 - d. User demand, measured through surveys done by volunteer groups or County staff, indicates a demand for the bicycle facility.
 - e. There is a reasonable opportunity to connect to an existing trail or ultimately provide a continuous length of trail between logical destination points.
 - f. The addition of a trail component to a road improvement project does not delay or increase the cost of the project or interfere in the awarding of funds to the project.
 - g. The proposed trail or facility can be designed and constructed in a manner that is safe for the motorist and bicyclist.

- 4.68 If, on certain projects, the road improvement is ready to proceed and the bicycle facility is not funded, the road improvement should not be delayed.
- 4.69 Priority trails for the purposes of future planning include:
- a. A connector between the W&OD Trail and White's Ferry;
 - b. the extension of the W&OD Trail to Bluemont; and
 - c. the Potomac Heritage Trail.

Figure 7.
Ultimate Conditions for Major Roadways in Eastern Loudoun County



PLANNING COORDINATION



BACKGROUND

As development intensifies in Loudoun County, the pressures on the existing developments, infrastructure, and natural and cultural features will increase greatly. Current roads may need to be rebuilt and relocated, new roads may need to be constructed, and alternate means of transportation may need to be identified and provided. National legislation of recent years also places greater emphasis on analyzing the impacts that all forms of transportation have on the natural and built environment. Through the Countywide Transportation Plan, Loudoun County proposes policy guidelines to address these various trends and obligations in support of the General Plan and other adopted land use planning documents.

NATURAL AND CULTURAL ELEMENTS

A. Environmental Protection

The Transportation Plan supports the General Plan policies for natural resource management and protection as implemented by the Loudoun County Zoning Ordinance, with the addition of specific environmental policies to address transportation related impacts. Further, the Transportation Plan supports participation in regional and state efforts to improve and protect the natural environment. With

respect to air quality, the County supports the implementation of Transportation Demand Management strategies and transportation control measures to reduce the usage and dependence on the automobile.

Policies

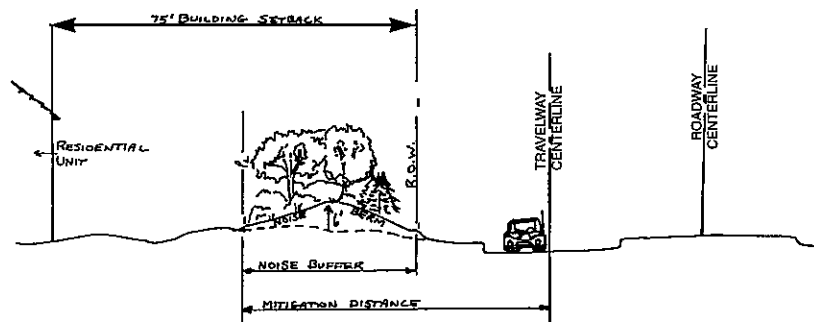
- 5.1 The County shall participate in the regional Clean Air Act Attainment Plan development and implementation process.
- 5.2 The County shall continue to support the current General Plan policies, as implemented by the Zoning Ordinance, with regard to the protection of key natural and cultural resources.
- 5.3 Regarding air quality, the County shall continue to depend upon the General Plan as implemented by the Loudoun County Zoning Ordinance, the State Implementation Plan (SIP), and the approval by the Board of Supervisors of other measures to protect air quality and to meet the Federal Air Quality Attainment Standards established for the region by the Department of Environmental Protection.
- 5.4 The County shall develop land use policies which tend to reduce vehicular trips and vehicle miles traveled to improve air quality. Such land use measures include park-and-ride lots, promoting pedestrian traffic and bicycle use, carpooling, development of mass transit and bus options, encouraging self-sustaining mixed use communities and allowing for sufficient densities at transportation nodes to support mass transit.

B. Noise

Residents living in close proximity to major transportation corridors could be exposed to highway noise and, in the future, to rail noise. It is the County's intention to protect the residents within reasonable limits using industry standards. To implement this objective, the Transportation Plan recommends adopting a highway noise ordinance in accord with the State Noise Abatement Policy (Appendix 3) which outlines the standards for noise abatement that comply with federal laws. This will ensure that the County receives State assistance in mitigating traffic noise problems near existing developments. The County should also adopt the State standards into the County Zoning Ordinance to ensure that future development protects itself from noise problems.

**Table 2:
Maximum Acceptable Design Year Noise Standards**

Land Use Activity	Maximum Acceptable Exterior Noise Level
Residential Development Single Family Detached Single Family Attached Multiple Family	67 dB(A)Leq(h)
Public and Quasi-Public Schools Libraries Churches Hospitals Nursing Homes Auditoriums Concert Halls Public Meeting Rooms	67 dB(A)Leq(h)
Parks and Recreation Areas Outdoor Amphitheaters Golf Courses Nature Trails	60 dB(A)Leq(h)



A berm is a feature that helps alleviate noise from roadways.

Policies

- 5.5 The Countywide Transportation Plan shall continue to support the General Plan highway noise policies that recommend maximum acceptable design year noise standards for residential and quasi-public and/or other noise sensitive land uses along specified corridors.
- 5.6 The County anticipates that all future land development applications which propose land uses adjacent to any of the existing and/or proposed arterials and major collectors, will be designed to ensure that no residential or other type(s) of noise sensitive use(s) will be exposed to highway noise levels exceeding the maximum design year noise levels referred to in Table 2, page 57 (Maximum Acceptable Design Year Noise Standards). To determine the projected highway noise impact at a particular location, a land development applicant will be required to use the latest version of the Federal Highway Administration's Highway Traffic Noise Prediction Model (FHWA-RD-77-108, as amended). The design year shall be understood to be the probable traffic volume for said facilities at a time at least fifteen years in the future.
- 5.7 The County shall amend the Zoning Ordinance to implement the State Noise Abatement Policy thereby minimizing future highway noise impacts and qualifying the County for State assistance in the event noise abatement features are needed to protect existing developments.

C. Historic and Cultural Resources



Loudoun County is a tourist destination for many reasons. Some of the popular destinations are the cultural and historic resources, such as Middleburg, Leesburg, Oatlands and Waterford. However, there are many lesser known and, in some cases, still unidentified resources that could prove to be important to the economy of Loudoun County. The impact that roads and other means of transportation have on the surrounding cultural and historic resources must be considered during development.

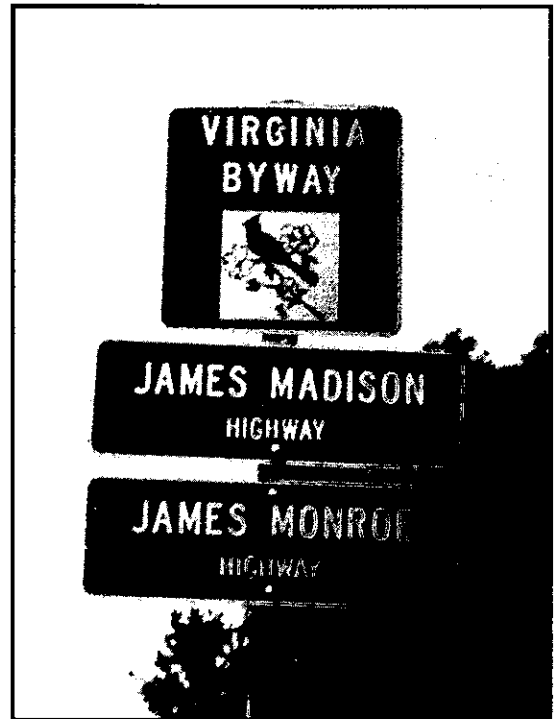
There are six County administered historic districts: Aldie, Bluemont, Goose Creek, Oatlands, Taylorstown and Waterford. Additionally, there are two historic districts administered by local towns: Leesburg and Middleburg. The Virginia Historic Landmarks Register and the National Register of Historic Places list 40 sites in Loudoun County, plus there are four National Historic Landmarks in the County.

Village of Waterford

Loudoun County has seven State designated “Virginia Byways,” including:

- Route 15 from Route 50 to Maryland,
- Route 662 from Waterford to Route 9 at Paeonian Springs,
- Route 665 from Taylorstown to Waterford,
- Route 690 from Lovettsville to Hillsboro,
- Route 704 from Hamilton to Route 15,
- Route 719 from Round Hill to Hillsboro, and
- Route 734 in its entirety.

Historic, cultural and scenic sites in Loudoun County are closely tied to their settings and may be affected by the upgrading, reconstruction or construction of a road or other transportation corridor. Similarly, agriculture represents a significant aspect of Loudoun County’s history. The associated way of life and culture help define the character of the County and bolster the economy. The agricultural industry is also one of Loudoun County’s valuable economic sectors. Rural road improvements can have a significant impact. The Transportation Plan proposes design sensitive improvements for road safety.

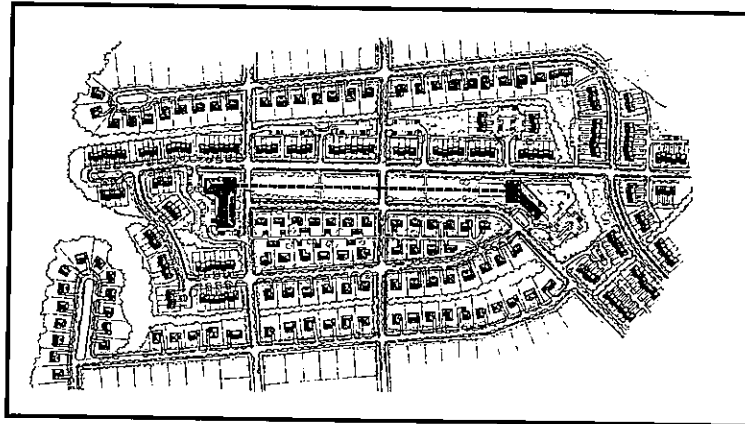


Policies

- 5.8 The Countywide Transportation Plan maintains and supports the policies contained in the General Plan, as implemented by the Zoning Ordinance, to protect the historical and archeological resources, the agricultural and forestal districts and “Virginia Byways.”
- 5.9 The creation of Historic Roadway Districts and Historic Access Corridors shall be pursuant to Section 15.1-430(b) and 15.1-503.2 of the Code of Virginia, respectively. No property may be placed in any type of historic district without the written consent of the landowner and the majority vote of the landowners in the district.
- 5.10 The County shall rely on existing State legislation and associated criteria contained within “A Guide for Virginia Byway Management” for the designation of Virginia Byways.
- 5.11 The County will work with the Virginia Department of Transportation to develop standards that allow flexibility in the design of road improvements to make new road construction and development compatible with the historic nature of the County and to preserve the character of existing villages and hamlets.

LAND USE

A. Land Use and Transportation Relationship



*Neighborhood Center Sketch,
Brambleton, CHK*

Loudoun County's land area totals approximately 520 square miles with 122 miles of primary roads and 768 miles of secondary roads, of which approximately 350 miles are unpaved, as of December 31, 1992. The adequacy of the road network serving a property is frequently one of the most significant issues faced in the development process. The General Plan and associated area plans outline where growth can occur and the allowable densities, while the Transportation Plan will provide direction concerning existing and planned road capacities.

Once a proposed development is approved and constructed, the road network frequently becomes congested, especially in urbanizing parts of the County. The Transportation Plan and the Facilities Standards Manual both state that the Level of Service (LOS) on the eastern road network should not fall below LOS "D."

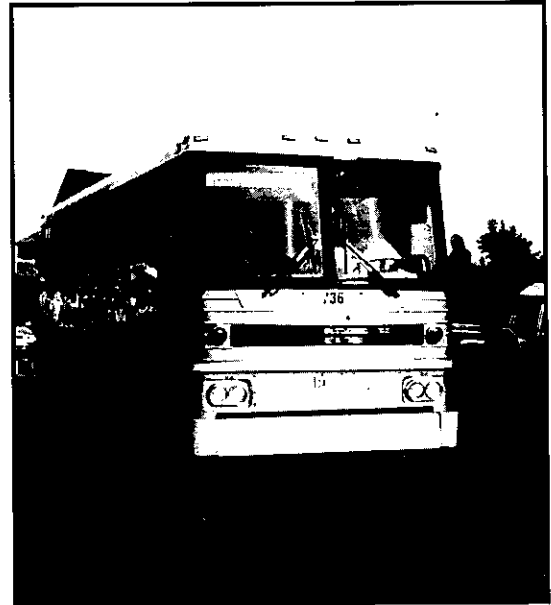
Policies

- 5.12 Land development shall occur along roads which currently function at a Level of Service "D" or better in designated Urban Growth Areas; where planned road improvements would improve the level of service; or where the developer provides the improvements.
- 5.13 Level of Service "D" or better must be demonstrated for new development in Urban Growth Areas, using peak hour and daily traffic volumes, for the existing and future road networks.
- 5.14 A traffic analysis shall be performed as required by the Zoning Ordinance and Land Subdivision and Development Ordinance (LSDO). A traffic analysis may be waived by either the Director of Planning (for applications pursuant to the Zoning Ordinance) or the Director of Building and Development (for applications under the LSDO). Such a waiver can be requested from the respective Director if the proposed development will generate less than five hundred daily trips and the applicant provides the appropriate trip generation information (daily and AM/PM peak hour) in support of the waiver request.

- 5.15 The first phase of development of each project permitted by rezoning shall be defined by the actual capacity of the existing road network or improvements planned or proffered by the developer, other developments or proposed by VDOT for construction serving the project, and by the existing level of service. Subsequent project phasing shall be determined through a negotiation process between the County and the applicant during the rezoning process.

B. Transportation Demand Management Strategies

Transportation Demand Management (TDM) strategies have become a key element of federal, state, and local efforts to provide improved mobility in urban areas, while simultaneously helping to achieve environmental goals such as clean air. Transportation Demand Management strategies are designed to maximize the people moving capability of the transportation system by increasing the number of people in a vehicle, or by influencing the time of, or need to travel. Successful implementation of Transportation Demand Management strategies requires personal changes in travel behavior as well as technical and political changes in how travel demand is accommodated. Transportation Demand Management strategies are alternatives to driving alone, and measures to encourage the use of these alternatives. Transportation Demand Management measures are now required by both the Clean Air Act Amendments and the Intermodal Surface Transportation Efficiency Act.



Loudoun County Commuter Bus

Available funds to expand highway capacity are shrinking, and non-compliance with regional clean air objectives may result in the withholding of federal funds. It appears important that the approval of new development, both residential and non-residential, be linked to public and proffered Transportation Demand Management strategies. Such strategies will mitigate the traffic impact of the development on the surrounding community.

A review of the proffers received since the mid-1980s shows a variety of Transportation Demand Management strategies shall be made available as development occurs. These strategies include park-and-ride lots ranging in size from 30 spaces to 500 spaces; bus shelters; transit studies; transit, bicycle and pedestrian incentive programs; and cash contributions. For these measures to be effective, the County needs assurance that they will be available before or concurrently with the development that will generate the need for them.

Loudoun County currently uses the following Transportation Demand Management strategies to mitigate congestion and improve air quality:

- Ridesharing Program
- Park-and-Ride Lots
- Commuter Bus Service
- Proffers to fund TDM strategies

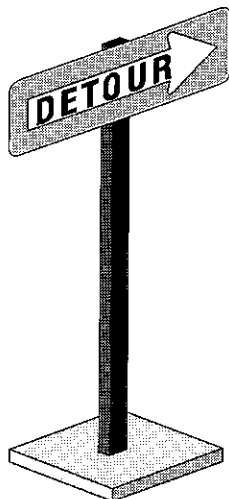
These strategies may be provided at the local or regional level or by the public or private sectors. The most successful Transportation Demand Management strategies seem to contain a combination of public and private efforts, and employ incentives or disincentives to make shifts in behavior attractive to people.

Policies

- 5.16** The County shall encourage Transportation Demand Management strategies in both residential and non-residential development.
- 5.17** Transportation Demand Management strategies shall be an integral part of the transportation solution for each rezoning project.
- 5.18** Developers shall mitigate the transportation impacts of a proposed development through constructed road improvements, Transportation Demand Management strategies, cash contributions to implement road improvements or Transportation Demand Management strategies, or a combination thereof.
- 5.19** Transportation Demand Management strategies, facilities, and/or funding may be accepted in lieu of a corresponding level of road improvements where TDM is deemed by the County to provide at least a ten percent reduction in vehicle trips.
- 5.20** The County shall establish a trust fund for Transportation Demand Management strategies, including transit. Within the trust fund, contributions should be allocated to specific accounts based on the type of transit service or TDM strategy being supported. The accounts may include, but not be limited to:
- Rideshare coordination and car/van pool service, related capital expenses
 - Buses and bus facilities such as bus stops
 - Rail service and support facilities
 - Park-and-ride lots
 - Pedestrian and bicycle facilities and services.
- 5.21** Transportation Demand Management strategies which are financed using monies from the trust fund shall directly benefit the transportation system serving the project(s) which made the contributions. The funds identified for any particular strategy shall be expended either when the total amount needed is accumulated, when the amount accumulated is sufficient for an acceptable, partial improvement, or when the amount accumulated can be used to acquire "matching" funds from another source which, when combined, equals the total amount necessary to fulfill the strategy.

- 5.22** Transportation Demand Management strategies which are appropriate for residential development (3 to 7 dwelling units per acre) may include:
- Bus stops/shelters
 - Car/van pools
 - Rideshare programs
 - Purchase of vans
 - Park-and-Ride lots
 - Pedestrian friendly design
 - Research bus service feasibility
 - Signal improvements
 - Contributions toward Transit Trust Fund where construction or provision of actual facilities is deemed impractical or undesirable by the County.
- 5.23** Transportation Demand Management strategies which are appropriate for residential development (8 to 15 dwelling units per acre) may include:
- Bus stops/shelters
 - Car/van pools
 - Rideshare programs
 - Purchase of vans
 - Park-and-Ride lots
 - Research bus service feasibility
 - Signal improvements
 - Dial-a-Ride service
 - Guaranteed ride service
 - Shuttle bus service
 - Contributions toward Transit Trust Fund where construction or provision of actual facilities is deemed impractical or undesirable by the County.
- 5.24** Transportation Demand Management strategies which are appropriate for residential development (greater than 15 dwelling units per acre) may include:
- Mixed land uses with shared parking
 - Transit related design elements
 - Bicycle path network
 - Travelers information system
 - Limit vehicular access in Town Centers or Urban Centers
 - Signal improvements
 - Pedestrian networks
 - Contributions toward the Transit Trust Fund where construction or provision of actual facilities is deemed impractical or undesirable by the County.

- 5.25 Transportation Demand Management strategies which are appropriate for non-residential development may include:
- Compressed work week
 - Flexible hours
 - Telecommuting
 - Preferred parking
 - Paid parking for Single Occupancy Vehicles (SOV)
 - Transit user subsidies
 - Reduced employee parking
 - Guaranteed ride service
 - Bicycle facilities
 - On-site rideshare information
 - Contributions toward the Transit Trust Fund where construction or provision of actual facilities is deemed impractical or undesirable by the County.
- 5.26 The County should evaluate a trip reduction ordinance as an amendment to the Zoning Ordinance, which may be applied in the corridors designated for transit in the Countywide Transportation Plan.
- 5.27 The County shall support the use of transportation control and demand strategies to help reduce air pollution.



FUNDING

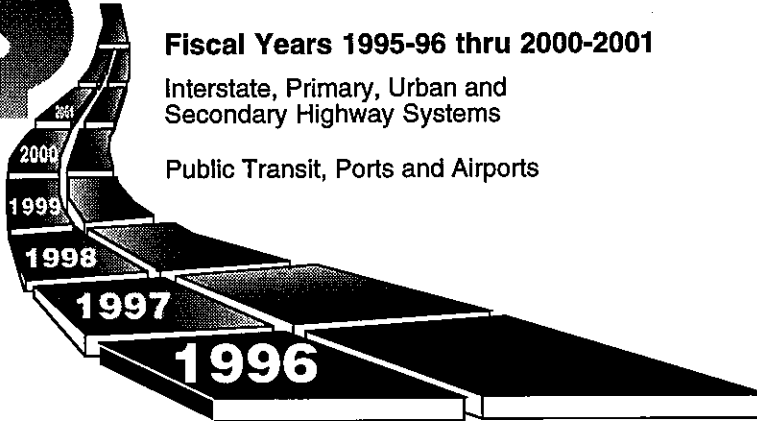


Six Year Improvement Program

Fiscal Years 1995-96 thru 2000-2001

Interstate, Primary, Urban and
Secondary Highway Systems

Public Transit, Ports and Airports



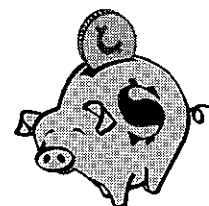
BACKGROUND

Funding presents the biggest challenge in providing transportation improvements and services. Monies are available at the state and federal levels, but the competition is stiff and the available funds fall short of the needs. Funds, provided through the Local Gasoline Tax and development proffers, have been used successfully to accomplish significant improvements to the road network. In the case of proffers, the availability of private sector assistance and the timing of that assistance is negotiated on a case by case basis. This has led to difficulties in projecting the timing of improvements or in coordinating the level of improvements within a given corridor. Historically, the County has been relatively successful at the state and local levels.

It is the County's intent to position itself to take best advantage of all funds available in the future. One of the restrictions that has faced the County in the past is the limited staffing available to monitor and prepare funding requests. The Countywide Transportation Plan proposes means of setting priorities through annual project review and recommends guidelines and direction for funding management.

FUNDING SOURCES

The following section outlines different funding sources that may be available to the County. This list is not all inclusive and may not reflect changes to state and federal procedures, regulations and legislation altering existing programs or adding new programs.



A. Road Funding Programs and Techniques

The following road improvement programs are publicly funded on an annual basis:

1. Regional Surface Transportation Program (STP)
2. STP Enhancement Program
3. STP Safety Program
4. Congestion Management and Air Quality Program (CMAQ)
5. Six-Year Primary Road Improvement Program
6. Six-Year Secondary Road Improvement Program
7. Revenue Sharing Program
8. Recreational Access Program
9. Industrial Access Program
10. Local Gasoline Tax Program

With the exception of the Local Gasoline Tax, these programs are administered by the state with funding coming from federal, state and local sources. At the federal level, the Intermodal Surface Transportation Efficiency Act (ISTEA) establishes a number of funding programs that distribute funds to state administered programs. The two largest ISTEA programs are the National Highway System (NHS) and the Surface Transportation Program (STP). NHS funds can only be allocated to Loudoun County roads which are in the National Highway System. Such funds are received through the Six-Year Primary Road Improvement Program. STP funds can reach Loudoun County projects through both the Six-Year Primary and Secondary Road Improvement Programs, as well as, the regional STP Enhancement and Safety Programs. State funds can be allocated to Loudoun County through all of the above programs except the Local Gasoline Tax that is funded solely from local revenues.

The following funding techniques have been used for very large road improvement projects, which would have been difficult to construct expeditiously using the programs listed above:

11. Special Tax Districts (Route 28)
12. Private Sector Toll Road Construction (Dulles Greenway)
13. Section 9d Bonds Financed by Recordation Taxes

This Plan also examines the feasibility of impact fees as a funding mechanism. Due to current enabling legislation, the Plan recommends against using impact fees at this time.

A summary of each funding source including the advantages and disadvantages for several of the major programs follows hereunder:

1. Regional Surface Transportation Program (STP)

The federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) establishes several categories of STP funding. Thirty percent of these funds flow through the state formulas for primary, secondary and urban road programs. STP funds are distributed through a regional allocation process. This process includes initial allocation of funds to projects through the Northern Virginia Transportation Coordinating Council (TCC) with final endorsement by the Transportation Planning Board (TPB). For FY95 it is projected that \$11.6 million in Regional STP funds will be available in Northern Virginia.

Advantages: The application of Regional STP funds is extremely flexible. Funds can go to primary or secondary road projects or projects in the Town of Leesburg as well as transit projects. Funds can be used to accelerate projects which have difficulty in advancing in other funding programs. The State may pay the required 20 percent local match of federal funds.

Disadvantages: STP funds can only be applied to projects that are ready to be engineered or constructed. The process to obtain funds for Regional STP funding is both very competitive and complex. Projects must first be recommended by the Technical Committee of the Transportation Coordinating Council, endorsed by the TCC Policy Committee, and ultimately approved by the Washington Area's TPB.

2. STP Enhancement Program

Ten percent of the state's yearly STP funding allocation is set aside for enhancement projects. These projects provide environmentally focused amenities to the transportation system. Pedestrian and bicycle paths/trails can be funded under this program. Jurisdictions and private groups are eligible to apply to the state for enhancement funding through a competitive grant application process.

3. STP Safety Program

Ten percent of the state's yearly STP funding allocation is set aside for highway safety projects. These projects focus on eliminating hazards on the roadway network. Loudoun County annually submits a list of safety projects to the Virginia Department of Transportation for funding along with accident statistics at key intersections. Project funding is on a competitive basis with VDOT making the final selections.

4. Congestion Management and Air Quality (CMAQ) Program

The CMAQ Program is another funding category under ISTEA. In order to receive CMAQ funding, a project must demonstrate a positive impact on reducing vehicle emissions and improving air quality. Loudoun County is part of VDOT's Coordinated Traffic Signal Program, which is an effort to reduce stops and starts during peak traffic periods. It is projected that \$8.7 million in CMAQ funds will be available in FY95. Most past and proposed CMAQ projects are transit or ridesharing oriented. The largest project has been to provide funds for replacement of Metrobuses, which are being purchased at a rate of 15 to 20 vehicles per year.

***Advantages:** The Washington Metropolitan Area Transit Authority (WMATA) currently consumes all of Northern Virginia's federal formula transit funds. However, CMAQ funds can be used by the jurisdictions for local transit projects such as transit service start-up costs, the purchase of vehicles or bus shelters. CMAQ funds for traffic signal coordination or ridesharing programs require no local match.*

***Disadvantages:** CMAQ transit project funds require a 20 percent local match, which the State currently does not pay. CMAQ projects are selected through the same competitive and complex process as Regional STP projects, involving approval of both the TCC and TPB. At the present time, the selection process is dominated by jurisdictions belonging to WMATA. Virginia Rail Express (VRE) is also well represented in this selection process. This results in a large portion of CMAQ funds going to WMATA and VRE projects, making it difficult for local projects to compete.*

5. Six-Year Primary Road Improvement Program (PRIP)

This program is updated each year by the Commonwealth Transportation Board (CTB) based on requests received from local jurisdictions through a public hearing process and input from local VDOT staff.

By state formula, primary roads receive 40 percent of the statewide construction funds available each year. Funds are then allocated to the nine highway construction districts in Virginia by a formula that includes 70 percent for primary vehicle miles traveled (VMT), 25 percent for primary lane miles and 5 percent for needs. Competition for project funds between jurisdictions within the VDOT Northern Virginia District is intense. Loudoun County and the Town of Leesburg, together, are projected to receive \$4,135,000 in PRIP funds in FY95. Funds to Loudoun County from this Program can vary substantially from year to year, as the Program is competitive in nature and is not based on a standardized formula to divide funds among jurisdictions within the District.

***Advantages:** The program is a regular source of funds which can move small to medium size primary road improvement projects forward at a good pace. Over time, Loudoun County has tended to become more successful in achieving CTB approval to place its requested projects in the Program. Such funds have been used to improve Route 7, Leesburg Bypass and Route 50.*

***Disadvantages:** The Program is highly competitive. Loudoun County competes head-to-head with the more populous Northern Virginia jurisdictions. It is difficult to place new major primary road projects on the Program. Those on the list tend to endure long waiting periods before advancing to construction.*

6. Six-Year Secondary Road Improvement Program (SRIP)

This program is updated every two years by the County in cooperation with VDOT. It provides state and federal STP funds for the construction of secondary road improvements. These funds are distributed to the counties through a series of formulas. First, secondary road funds are 30 percent of the state construction funds

available each year. Each county then receives its share of secondary road funds determined by a formula based on 80 percent for population and 20 percent for land area. Unpaved road funds are allocated to a county based on its share of the total unpaved miles eligible for funding in the state. Program funds projected for Loudoun County by VDOT in FY95 are \$4,265,160. Loudoun County funds from this program have tended to remain at the same level from year to year.

***Advantages:** This funding source works well for smaller, non-controversial projects. This program provides excellent opportunities for public input. Many of the SRIP projects originated through requests from the public. The County has been able to combine Local Gasoline Tax, Revenue Sharing Program and private sector dollars with SRIP funds, to accelerate construction schedules for key projects. The County places unpaved road projects in an Appendix of the SRIP, pending determination of whether the required percentage of right-of-way will be dedicated by property owners. Placing a road project in the appendix, prior to moving the project to the main body of the SRIP, is a good gauge of public support for the project and saves program dollars.*

***Disadvantages:** Without additional revenues, secondary road construction funds for Loudoun County are likely to decrease over time, as needs grow among jurisdictions. VDOT's process for preparing construction plans tends to be cumbersome and slow. Major design work has been assigned to other VDOT districts. For costly projects, a project can be on the SRIP for a number of years before enough funds are allocated. The projects on the SRIP have total costs which far exceed the resources identified within any six-year period. In reality, the six-year program is a ten to twenty-year program. Many parties in the County believe that VDOT needs to demonstrate more creativity and flexibility in the application of its standards to rural road improvement projects. VDOT is considering changes to the secondary road funding formulas that may have negative impacts on Loudoun County.*

7. Revenue Sharing Program

The state Revenue Sharing Program is a competitive funding mechanism by which a county may seek matching funds of up to \$500,000 from the state to match local dollars assigned to road improvement projects (may be adjusted up or down depending on overall state funding). The match is typically 50/50 and to date, the County has maximized its share of these funds. The state Revenue Sharing Program provides additional funding on a dollar for dollar matching basis to counties for the maintenance or improvement of the primary and secondary highway system. Since FY89, the County has made it a practice to match each dollar it could possibly qualify for under this program with funds from the Local Gasoline Tax Program.

VDOT also has a supplemental re-allocation process in June of each fiscal year, when unallocated revenue sharing funds are made available to the counties that requested more than \$500,000 in matching funds. The FY95 Local Gasoline Tax Program has \$600,000 budgeted to match state revenue sharing funds. The state's process for allocating revenue sharing funds occurs annually. County staff annually

recommends to the Board of Supervisors a series of projects for funding. Upon approval by the Board, the list of projects is submitted to the state. Each project has a cost associated with it and the state may accept all or some of the projects.

Private sector proffers originally were the major contributor to the County's local match funds, representing between 80 percent and 100 percent of the County's revenue sharing contribution in the late 1980s. By using proffers, the County could only spend the money in the vicinity of or in the planning area near the development.

Currently, the County relies more heavily on Local Gasoline Tax funds managed through the Northern Virginia Transportation Commission. Unlike other localities, Loudoun County can spend Local Gasoline Tax revenues for road improvements as well as transit. Other localities use the money solely for transit related costs. The use of Local Gasoline Tax funds is guided by the Interim Transportation Plan adopted by the County in 1989. The Interim Plan does not specify priority projects but uses a series of categories for qualifying projects. These categories of eligible Local Gasoline Tax projects are incorporated in this Transportation Plan through policies which are specified below.

***Advantages:** Revenue sharing allows the County to fund important projects which are not otherwise fundable. It allows the County to leverage its Local Gasoline Tax dollars by matching one Local Gasoline Tax dollar for one revenue sharing dollar thereby doubling available resources for participating projects. This is the County's most flexible public funding source since it may be used in conjunction with the Primary or Secondary Road Improvement Programs or proffer funds.*

***Disadvantages:** Revenue sharing is a modest funding source limited to \$500,000 per year plus any supplemental reallocation funds. Revenue sharing funds must be spent within one year if they are applied to projects which are not in the Six-Year Primary or Secondary Road Improvement Programs.*

8. Recreational Access Funding Program

The purpose of the Recreational Access Funding Program is to provide adequate access to, or within, publicly developed recreational areas or historical sites operated by the state or local jurisdictions. The access may consist of a roadway or bikeway to, or within, the facility. Application for program funding is made to VDOT by resolution of the local jurisdiction with funding allocation by the Commonwealth Transportation Board. Upon completion of construction, recreational access roads are taken into the state public road system for maintenance. Use of access funds does not count against the County's yearly Six-Year Secondary Road Improvement Program allocation. Not more than \$250,000 may be allocated for an access road for a local facility with an additional \$100,000 if matched on a dollar-for-dollar basis by the local jurisdiction. The corresponding limits for bikeways are \$60,000 and \$15,000, respectively.

9. Industrial Access Funding Program

The purpose of the Industrial Access Funding Program is to provide public road access to industrial sites. For the most part, this consists of building a public road between the industrial site and the nearest public road, although in certain cases improvements to existing public roads can be considered. Industries seeking such assistance must work closely with the local jurisdiction, as it must adopt a resolution of support for submission to VDOT. The funds may not be used for access to residential, institutional or retail land uses. The maximum unmatched allocation to a local jurisdiction per fiscal year is \$300,000, although an additional \$150,000 may be available on a dollar for dollar local matching basis. Maximum funds for a single project are limited to the cost of construction or 10 percent of the qualifying industrial investment for the industry, whichever is less.

10. Local Gasoline Tax Program

The County began to receive Local Gasoline Tax revenues in January 1989, with the formation of the Loudoun County Transportation District Commission (LCTDC). In January 1990, the LCTDC was dissolved and Loudoun County became a member of the Northern Virginia Transportation Commission (NVTC). The Local Gasoline Tax revenues are received by the Commonwealth and held in trust by NVTC for Loudoun County. A written request to NVTC from the County authorizing the disbursement is required. Expenditure of Loudoun County's Local Gasoline Tax is regulated by the Interim Transportation Plan (ITP) adopted by the former LCTDC on September 11, 1989.

The ITP allows gasoline tax funds to be spent for a wide variety of transportation projects including road improvements, public transit, park-and-ride lots, human services transportation and special studies. It is estimated the Local Gasoline Tax will generate \$1.3 million dollars per year in FY95 and FY96. The Board of Supervisors has endorsed the following formula for allocating Local Gasoline Tax funds: 80 percent for capital projects (construction), 15 percent for transportation related projects, and 5 percent for administration.

Advantages: *Application for Local Gasoline Tax funds has been extremely flexible. Funds have been used to obtain state Revenue Sharing Program funds, to leverage private contributions for road construction, to supplement primary and secondary road improvement projects to overcome delays, and for a variety of locally oriented transportation projects which have no other funding source. In the future, the Local Gasoline Tax could be used to finance Loudoun County transportation improvement bonds.*

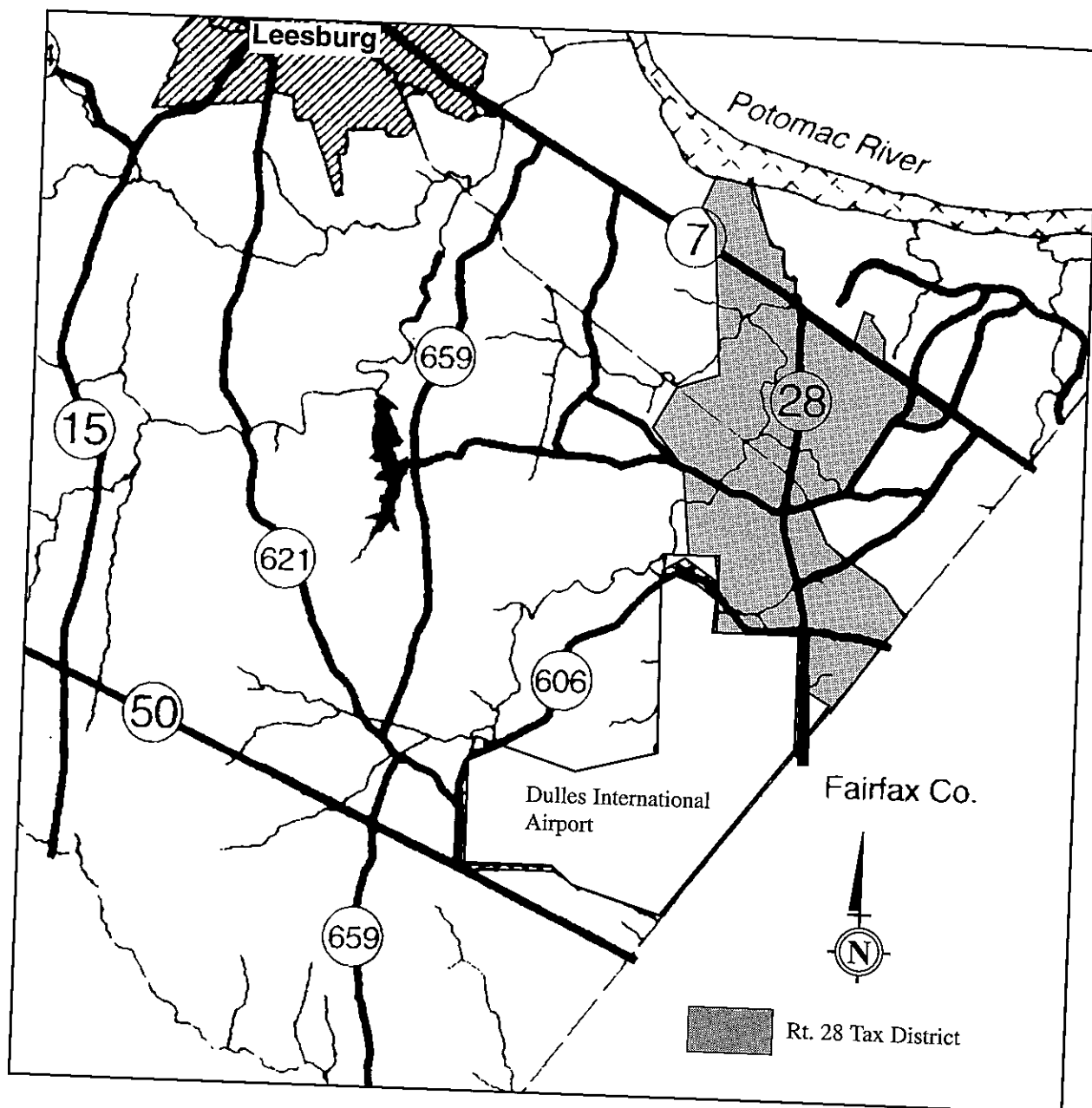
Disadvantages: *The tax produces only a modest amount of funds per year (\$1.3 million) and the competition for Local Gasoline Tax allocations has been growing. The current Board formula which allocates 80 percent of the funds for capital projects may need revision as public requests for transit service increase.*



11. Special Tax Districts

Route 28 was improved to a six-lane divided road through the use of a transportation service district authorized by State Code. A District can be created only by a resolution of the Board of Supervisors upon the petition of the owners of land representing at least 51 percent of either the assessed value of land or actual land area within the proposed district, and which has been zoned for commercial or industrial use or is used for such purposes. The Route 28 Highway Transportation Improvement District (HTID) was established by resolutions of the Loudoun and Fairfax County Boards of Supervisors in 1987.

Figure 8.
Illustration of Route 28 Tax District in Loudoun County



The Phase One improvements of the Route 28 project were financed by a transportation service district bond (\$138,483,372) to be redeemed 80 percent by private sector tax funds and 20 percent by public sector (Six-Year Primary Road Improvement Program) funds. On April 23, 1992, the state refinanced the bonds. The annual debt service is now approximately \$8.7 million per year.

The Route 28 District faces two major financial challenges. First, declining property values are generating less than the expected revenues to cover debt service. As a result, the Commonwealth Transportation Board, in 1994, exercised its option under the trust agreement and directed \$2,075,000 of the existing Bond Fund to be used for payment of principal debt service. Thus, the debt service payment due April 1, 1994 was reduced from \$5.4 million to \$3.3 million. The assessed value of taxable property in both counties is estimated to have generated just over \$2 million in 1994, which represents a 13 percent reduction from the previous year. Should deficits in revenues continue, State law specifies that funds from the County's Six-Year Primary and Secondary Road Improvement Programs be redirected to service the debt.

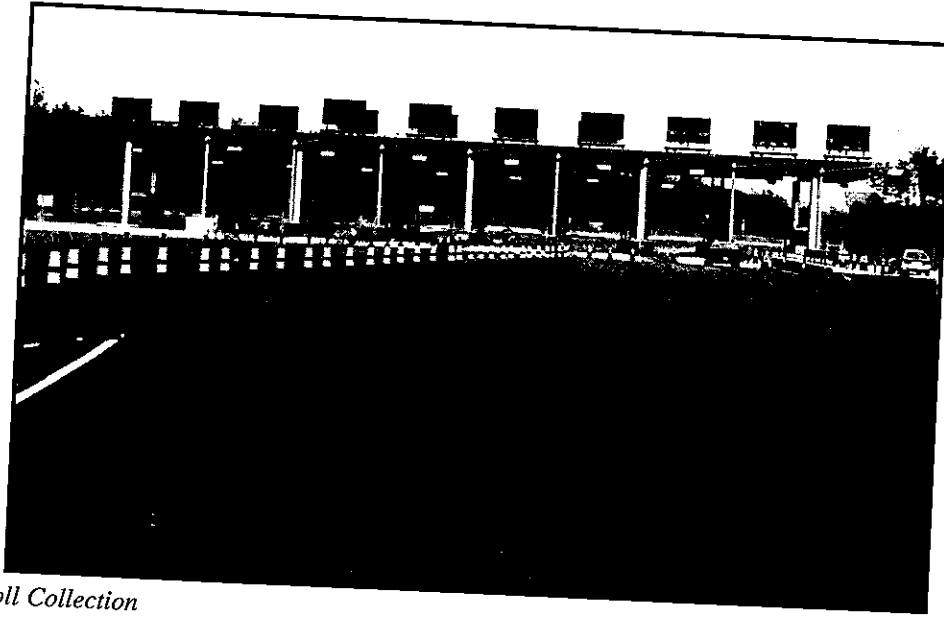
Second, some property owners in the District have sought to rezone commercial/industrial land to residential use, which is not subject to the special tax. State legislation specifically allows the County to zone land for uses other than commercial and industrial, at the request of the landowner, but no net loss in revenues to the district should result from such rezoning. Should a net loss in annual revenues to the District result, the loss of revenue must be offset either by increasing the tax or by replacing the funds with highway construction funds from either the Six-Year Primary or Secondary Road Improvement Program.

State law has been amended to permit lump sum payments to the District to offset the revenue loss. Loudoun County has adopted a policy within the General Plan, prohibiting rezonings from industrial or business districts to residential.

***Advantages:** The Route 28 HTID demonstrates that a public-private partnership can construct a major road improvement using this funding technique. The Route 28 improvements were constructed in a much shorter time frame than would have been the case through the Six-Year Primary Road Improvement Program (2 years versus an estimated 10-15 years). The District approach allows a major road improvement to be built before development occurs, avoiding congestion and maintaining good levels of service in the corridor.*

***Disadvantages:** Only the future will tell if the Route 28 HTID is a financial success. If the private sector tax revenue situation does not improve, the County may need to apply its Six-Year Primary and Secondary Road Improvement Program funds to service the bond debt. From the private sector perspective, the development expected to accompany the road improvement has not occurred. Given the tax district's precarious financial health, the drop in land values and the slow pace of development, the County and/or the private sector may be reluctant to employ a tax district for future road improvements in other corridors. This technique is only feasible in corridors with substantial commercial and industrial growth. It would not be viable in residentially oriented corridors, such as Route 9.*

12. Private Sector Toll Road Construction



*Toll Collection
Booths for the
Dulles Greenway*

The 14-mile extension of the Dulles Greenway constructed by the Toll Road Corporation of Virginia, a private corporation, opened to traffic in late 1995. All of the financing for this project was secured by the private sector. The rights-of-way for this road were obtained through either private sector negotiations and transactions or private sector proffers from land development applications.

***Advantages:** Once the financing and permits were obtained for this project and construction commenced, construction proceeded very rapidly under private sector management. The private sector has been given an opportunity to make a profit while providing a much needed road improvement. The public sector has been relieved of the responsibilities of providing funds for this \$300 million project.*

***Disadvantages:** Obtaining private sector financing for a project of this magnitude was difficult. The future financial health of the venture is not certain. If revenues fall below projections and it proves difficult to service the bonds, it is not known what role the public sector will play.*

13. Section 9d Bonds Financed by Recordation Taxes

The Northern Virginia Transportation Coordinating Council (TCC) was established in 1991 for the purpose of identifying, prioritizing and pursuing funding for projects of key regional significance in Northern Virginia. In December 1992, the TCC requested that the General Assembly authorize and fund a total of \$181 million in Section 9(d) bond debt to accelerate the completion of three regional priority projects: the Fairfax County Parkway, the Route 234 Bypass, and the Franconia/Springfield Transportation Center. On December 1, 1993, the TCC acting on a resolution forwarded to it by the Loudoun County Board of Supervisors endorsed adding a fourth project to the regional priority list. That project was widening Route 7 between Route 28 and the Route 15 Bypass to six lanes, including the widening of the Goose Creek Bridge and the construction of the ultimate Route 7/Route 15 Bypass interchange. The State Legislature subsequently authorized an additional \$140 million for the four regional priority projects including \$15 million for Route 7.

14. Impact Fees

Road Impact Fees legislation was added to Chapter 15 of the Code of Virginia, "Counties, Cities, and Towns," and adopted on March 22, 1989. Impact fees may be applied only to roads. The major objective of an impact fee program is to equitably divide the cost of developing a transportation system between the public and the private sector.

Virginia impact fee law is based on the principle of "rational nexus," which means the fee imposed must bear a direct relationship to the impact of the new development. Impact fees are not intended to address existing congestion. The public sector is considered the party responsible for bringing roads and other infrastructure up to the standards required to meet present day needs.

The application of impact fees is a very structured process requiring specifically identified physical areas, clearly defined capacity volumes, and detailed improvement cost estimates. In Virginia, a public hearing process is involved.

Advantages: *The local jurisdiction can require impact fees from ministerial land development actions, including subdivisions.*

Disadvantages: *Impact fees may not be used in conjunction with the proffer system in the same area of a locality. It is difficult and costly to develop and maintain the program. Since the Six-Year Primary and Secondary Road Improvement Programs would likely finance the public sector need to address existing congestion, impact fees could dictate which projects should be on the programs. Impact fee legislation allows for fee refunds, but not reassessments to make up for construction shortages, which are often experienced with current road improvement projects. The legislation also requires substantial survey and engineering data in each service area plan. Impact fees do not discriminate between developments, even though some sites are better suited to development than others. The legislation includes a provision for bonding as a funding technique, but impact fees may not produce a dependable income stream for repayment.*

Policies

- 6.1 The County will continue to use its current mix of funding sources, which include state, local and private means. The County will continue to seek innovative funding measures, such as special taxing districts and private toll roads, to assist in financing road improvements.
- 6.2 The County will continue the current processes of annually reviewing a project's priority through the State's Six-Year Primary Road Improvement Program and bi-annually reviewing secondary road priorities through the Six-Year Secondary Road Improvement Program.
- 6.3 Funding safety improvements on arterial and collector roads is a County priority. Available public construction funds should be used to complement the efforts being made to create the capacity of the planned road network in the areas of the County that are experiencing new development. Preference

shall be given to improvement projects that have demonstrated support expressed with funding and right-of-way contributions.

- 6.4 The County shall make maximum use of existing funding sources to construct the road improvements specified in this Plan in the shortest possible time frame.
- 6.5 Where appropriate, the County will combine funding from two or more funding sources to provide expedited construction schedules for road improvements.
- 6.6 The County shall periodically update the information in Appendix 1, "Design Guidelines for Major Roadways Countywide" and will use this information in assigning funding sources and levels to projects in the Six-Year Primary and Secondary Road Improvement Programs, and Regional Plan funding sequences.

B. State Funding Formulas

Highway construction and maintenance funds are allocated for use in the County on primary and secondary roads through a series of funding formulas. The funds are generally perceived to be inadequate to meet the County's needs.

Appropriations need to be increased at the State level for Six-Year Primary and Secondary Road Improvement Programs. Improved project coordination is necessary between public and private road improvements. The further pursuit of new funding sources is necessary for implementation of the County's planned road network. The County should endorse primary and secondary road formulas that provide the greatest level of funding for projects in Loudoun County, including constructing the hard surfaces on currently unpaved roads consistent with VDOT criteria and County policies.

VDOT has conducted a two-year analysis of the allocation and distribution of the Transportation Trust Fund in Virginia. A report was issued early in 1993 with a major finding that transportation needs (highways, transit, rail, aviation, ports) in the Commonwealth over the next 20 years are estimated to be \$49 billion, yet anticipated funding available for that same period will only be \$24 billion.

The 1993 General Assembly approved a joint resolution establishing a Select Committee of state legislators to review the findings and recommendations of the VDOT Trust Fund analysis. Public hearings were then held in four locations in Virginia. On July 7, 1993 the Board of Supervisors forwarded to the Legislature a Loudoun County statement supporting the State's action.

Policies

- 6.7 The County shall continue to use funds derived from the Loudoun County Local Gasoline Tax Program and transportation proffers derived through development applications to match Revenue Sharing Program funds.

- 6.8 At least 80 percent of Local Gasoline Tax Program revenues should be used for construction of transportation improvements.
- 6.9 Local Gasoline Tax Program revenues may be used to supplement private funds for transportation projects.
- 6.10 Local Gasoline Tax Program revenues shall continue to be used in accord with the elements originally adopted with the Loudoun County Transportation District Commission Interim Transportation Plan. Any expenditure of Local Gasoline Tax revenue must fall into at least one of the following elements:

Transportation Improvement category:

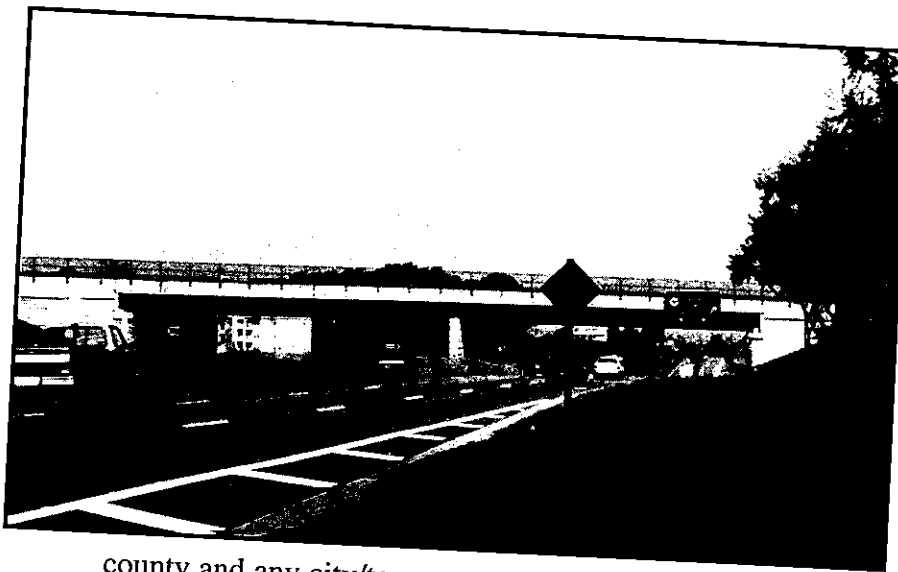
- a. Intersection safety improvements on the roads of the Primary system;
- b. Spot improvements that improve safety on rural roads;
- c. Interchange or intersection improvements along Route 7, Route 28, and Route 50;
- d. Improvement and promotion of public transportation, including park-and-ride lot development, car and van pooling, commuter bus service, and other transportation system management measures;
- e. Enhancement of human service specialized transportation programs, particularly for elderly and handicapped persons;
- f. Authorization of special transportation planning studies; and
- g. Consideration of implementing elements of the Northern Virginia 2010 Subregional Plan.

Intergovernmental and public/private cooperation category:

- a. Leverage private contribution to expedite road construction;
 - b. Supplement funding to expedite primary or secondary road projects;
 - c. Supplement regionally oriented road improvements within or near incorporated towns;
 - d. Provide the local share for the Revenue Sharing Program; and
 - e. Consider use of tax revenues as payment for road improvement bonds.
- 6.11 Loudoun County shall work with the state to consider a more accurate assessment of Loudoun County's transportation needs prior to changing funding formulas or developing new sources of transportation funds.
 - 6.12 The County supports:
 - a. Protecting Revenue Sharing Programs and Local Gasoline Tax Program funds;

- b. Additional state and local revenue sources for transportation;
 - c. State bonds for transportation, including use of the recordation taxes and new revenue sources to be established by the General Assembly;
 - d. Holding Loudoun County's unpaved roads funds to at least the current level and preferably increasing funding levels;
 - e. More flexibility in the Virginia Department of Transportation local road standards to lower the costs for unpaved road improvements;
 - f. Use of the Commonwealth's Airport Fund.
- 6.13 The County shall encourage the state to adopt formulas for allocating the Transportation Trust Fund in Virginia that provides the greatest secondary road funding, allowing the County to increase unpaved road expenditures as the Board deems appropriate.
- 6.14 The County shall continue to work with the Virginia Department of Transportation and the General Assembly to ensure that Loudoun County continues to receive its fair share of state funding through all funding mechanisms.
- 6.15 The County shall encourage the use of other road improvement funding mechanisms, such as proffers and taxing districts, that do not require local County funding.
- 6.16 The County shall encourage the state to increase funding available through the Revenue Sharing Program.

C. Private Sector Proffers



The proffered interchange at Cascades Parkway and Route 7

In the State of Virginia, proffer authority must be granted by the General Assembly. Loudoun County received such authority in the late 1970s with the passage of Section 15.1-491(a) of the State Code. Generally, this Section permits Fairfax County and any adjacent city or

county and any city/town surrounded by or contained in such an adjacent county to use proffers in its rezoning process. A proffer is a condition volunteered by a landowner, offered in advance of a public hearing before the governing body on a

proposed zoning map amendment. These proffers are added to the regulations provided in the zoning district by the Zoning Ordinance. Such volunteered proffers are designed to offset the anticipated impacts on the community following the approval of the zoning map amendment application and to allow flexibility in community design. One element of the anticipated impacts is the effect on the road system in the area of the proposed amendment. An analysis of the transportation impacts of a proposed zoning map amendment is required for each zoning map amendment application.

Loudoun County obtained few transportation proffers prior to 1984; however, the boom of the mid 1980s brought numerous transportation proffers. The comprehensive plan elements, which have been adopted since the mid 1980s have each contained some general transportation proffer guidelines. Loudoun County's degree of success with transportation proffers has been greatly enhanced by the major road descriptions and maps contained in the Plans for the eastern end of the County, where the majority of the development has occurred. Such general information during the early 1980s was usually sufficient to provide the overall framework for the road network in eastern Loudoun County.

Ensuring that the impacts of a project on the County's transportation system are addressed is of primary importance to the County. The County is primarily interested in obtaining physical transportation improvements; however, if it is not practical to construct these improvements, then the County will consider cash contributions. In order to address the potential that a proffered improvement may be constructed by others, a "cash-in-lieu" clause should be considered. A "cash-in-lieu" clause allows improvement contributions to be redirected, as defined in a proffer statement or directed by the Board, to other areas impacted by the project and identified within the area studied by the traffic impact analysis conducted for the developer. The development community and the County maintain the flexibility to coordinate the timing and location of improvements between projects in response to changing needs and opportunities. Where proffered improvements are provided better by others or by state funding, a "cash-in-lieu" clause allows improvement contributions to be redirected to other areas impacted by the project and identified within the traffic impact study area conducted for the development.

Policies

- 6.17** A case by case analysis of the needs for road improvement construction and/or contributions must be made for each project. The construction of full frontage improvements to existing roads and construction of planned new roads should be coordinated with each development project.
- 6.18** Funding road improvements will continue to be shared by the public and private sectors. The private sector share is intended to mitigate the impacts of their new development. The County will provide assistance from specifically designated local transportation funds and will coordinate the public and private improvement efforts.

- 6.19 All proposed land uses will adequately and safely handle their fair share of necessary highway improvements and not place undue hardship on existing facilities.
- 6.20 The County anticipates that impact mitigation may be accomplished by, but not be limited to, references to the following:
- a. Access improvements beyond those required by the County Land Subdivision and Development Ordinance (LSDO);
 - b. Frontage improvements beyond those required by the LSDO;
 - c. Appropriate right-of-way for on-site roads not required by the LSDO;
 - d. Appropriate cross-section of roadway to accommodate traffic beyond that generated by the project;
 - e. Regional improvements (on and off-site) and/or contribution to regional road improvement trust fund, if needed;
 - f. Traffic signalization at intersections;
 - g. Development and improvement phasing;
 - h. Interparcel connections beyond those required by the LSDO;
 - i. Sidewalks, pedestrian road crossings, bicycle trails;
 - j. Land acquisition or contributions towards eminent domain proceedings;
 - k. Routing and scheduling construction and industrial traffic to minimize impacts on adjoining areas;
 - l. Contributions towards abandonment/vacation of right-of-way proceedings;
 - m. Transportation Demand Management strategies.
- 6.21 When a roadway running through a property is designed for capacity in excess of that needed for the project, the excess capacity shall be credited towards anticipated regional transportation impact mitigation measures.
- 6.22 When phasing a project, the road capacity to serve each phase of the project shall be available at the commencement of that phase.
- 6.23 The County anticipates that transportation proffers shall contain a "cash-in-lieu" trade in clause for all road improvements and services proposed to address the situation where others actually construct a proffered road improvement. The value shall be based on actual construction cost adjusted over time until the time of contribution.

- 6.24 When converting a constructed improvement to a "cash-in-lieu" contribution, the area in which those funds can be used shall be defined by the traffic impact study conducted as part of the rezoning for the development.
- 6.25 The County shall value right-of-way dedications based on County assessment values at the time of the zoning map amendment in accord with Capital Facilities Proffer Guidelines.
- 6.26 Transportation improvements required by the LSDO or state regulations shall not be accepted as transportation proffers.
- 6.27 Certain subdivision streets may be considered for addition to the secondary system of state highways prior to their complete development in accordance with the following criteria:
- a. The street must be functionally classified as a "collector" or "arterial" road;
 - b. The travelway of the street, upon complete development, shall provide four or more lanes for motor vehicles, exclusive of turn lanes, parking lanes, etc;
 - c. Except as permitted by the state, only two phases of the street's development (i.e., initial and complete), shall be permitted;
 - d. The Board of Supervisors, by resolution, recommends the street's acceptance into the secondary system of state highways prior to its complete development;
 - e. The Board of Supervisors enters into an agreement, acceptable to the Virginia Department of Transportation, to ensure the street's subsequent completion in full compliance with state requirements. It shall specifically include suitable provisions for each of the following issues:
 - i. All costs incurred in the street's complete development, including construction, right-of-way, engineering, utility adjustment, etc. shall be provided from funds other than those derived from state revenue sources administered by the Virginia Department of Transportation, except as may be expressly authorized by the state secondary roads engineer;
 - ii. The Board's assurance for the completion of the street's full development pursuant to state requirements;
 - iii. The Board shall be solely responsible for collection and maintenance of any funds provided, either voluntarily or pursuant to its requirements, for the required subsequent development of the street;

- iv. The determination relative to the timing of the street's complete development shall be exclusively that of the Virginia Department of Transportation and will be based on whichever of the following situations occurs first:
 - (1) The street's actual traffic volumes, as determined by the Virginia Department of Transportation, exceeds 8,000 average daily trips;
 - (2) The Virginia Department of Transportation determines that the initial phase of the street's development is incapable of permitting a minimum Level of Service "D" to be maintained.
- v. Consideration for the acceptance of any street under the provisions of this policy shall be limited to the phased development of only the street's travelway. All other applicable requirements (e.g., public service, drainage easements, and administrative procedures) shall apply.



IMPLEMENTATION



BACKGROUND

The Countywide Transportation Plan is part of an ongoing local and regional process to provide transportation services. The policies of this plan will serve as the basis for future planning efforts, while providing the criteria, objectives and parameters for these future efforts. The Implementation Chapter provides an outline of some of the issues that need to be addressed and future tasks that should be undertaken to fully implement the Transportation Plan.

The Transportation Plan process does not allow for the detailed engineering and specific planning and analysis ultimately required to fully implement the Plan. These actions include corridor studies, modifications to land use plans and ordinances, and developing programs to work with other jurisdictions. Table 3, on the following pages outlines major tasks that the Transportation Plan recommends be undertaken as the County moves to achieve its transportation goals.

IMPLEMENTATION

The list below identifies a number of operational steps, as well as activities that were started prior to adoption of the Plan, and are recommended for completion.

- ☐ Complete the Route 50 Corridor Study.
- ☐ Complete the analysis of cut-through traffic in the Forest Ridge neighborhood of eastern Loudoun County.
- ☐ Continue to evaluate noise abatement alternatives along Route 7 in the area of Winchester Drive.

- ☐ Continue discussions with the state to modify Virginia Department of Transportation road design standards and to ensure that the County continues to receive its fair share of state transportation funding.
- ☐ Adopt an amendment to the County Zoning Ordinance to ensure that noise sensitive uses, such as housing, are not exposed to highway noise levels which exceed limits set by state and federal policies.
- ☐ Establish a transportation trust fund to collect, monitor and disburse funds targeted for Transportation Demand Management strategies and transit services.
- ☐ Adopt a trip reduction ordinance that would apply to corridors designated for transit service. Such an ordinance would encourage the use of Transportation Demand Management strategies to reduce traffic generated by new development.
- ☐ Initiate, with the assistance of Virginia Department of Transportation, a Countywide Bicycle-Trails Plan within 12 to 18 months of the adoption of the Transportation Plan.

Table 3: Implementation Recommendations

Issue/Policy	Task Objective	Task
A. Further Analysis of Major Transportation Corridors		
Route 7: Algonkian Parkway to Leesburg	<ol style="list-style-type: none"> 1. Minimize the cost of road improvements in the corridor. 2. Realign road improvements with new land use policies. 3. Accommodate planned connections with the Western Bypass and Loudoun Parkway. 	<ol style="list-style-type: none"> 1. Reevaluate land use policies in this segment of the Route 7 corridor through a review of the relevant area plans and the <u>General Plan</u>. 2. Update the current <u>Route 7 Corridor Study</u>. Analyze road improvement, public transit and Traffic Demand Management strategies to reduce and accommodate projected traffic demand. Examine the impact of the Dulles Greenway, Western Bypass and Loudoun Parkway on Route 7 traffic demands.
Route 7: East of Algonkian Parkway	<ol style="list-style-type: none"> 1. Minimize impact on properties along Route 7. 2. Reduce local traffic loads on Route 7. 3. Provide a long term and, preferably, phased and expandable solution to the traffic demands, including road, transit and Traffic Demand Management strategies. 	<ol style="list-style-type: none"> 1. Update current corridor study. Analyze road improvements, public transit and Traffic Demand Management strategies to reduce and accommodate projected traffic demand. Analyze alternative routing options, potentially outside the corridor, to mitigate the negative impacts on adjoining neighborhoods. 2. Update land use policies. Examine the impact of planned development on traffic generation and local/regional traffic conflicts. Identify land use changes that will improve transit feasibility. 3. The County should support the continued evaluation of noise abatement along existing residential neighborhoods, including but not limited to, noise barriers to be done through innovative funding techniques (e.g., ISTEA).
Route 9	<ol style="list-style-type: none"> 1. Minimize the impact of regional traffic on local residents. 2. Improve safety levels along the existing corridor. 3. Encourage VDOT to act immediately to improve safety. 	<ol style="list-style-type: none"> 1. Make localized safety improvements to the current Route 9 alignment to ensure pullovers at safe intervals and adopt a policy encouraging the rerouting of commuter traffic outside of Loudoun County. 2. The County should seek funding and citizen/VDOT input for a more detailed study of the long term safety needs on Route 9. This study is to be started within twelve months of adoption of the <u>Transportation Plan</u>.

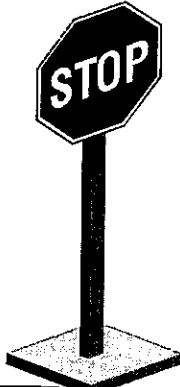
Table 3: Implementation Recommendations

Issue/Policy	Task Objective	Task
A. Further Analysis of Major Transportation Corridors (continued)		
Route 28: Route 7 to Fairfax County	<ol style="list-style-type: none"> 1. Ensure the continued viability of current plans. 2. Assess the proposed interchange improvements against changing traffic demands. 	<ol style="list-style-type: none"> 1. Update current corridor study to assess its continued feasibility and examine and plan for public transit and Traffic Demand Management strategies. 2. Acquire the right-of-way for Phase Two improvements. 3. Accelerate the completion of appropriate Phase Two improvements.
Route 15: North and South of Leesburg	<ol style="list-style-type: none"> 1. Minimize the impact of regional traffic on local residents. 2. Improve safety levels along the existing corridor. 3. Protect the stone walls, tree lines and other such features. 	<ol style="list-style-type: none"> 1. Make localized safety improvements to the current Route 15 alignment to ensure pullovers at safe intervals and adopt a policy encouraging the rerouting of commuter traffic outside of Loudoun County. 2. The County should seek funding and citizen input for more detailed study for the long term safety on Route 15. The study should identify alternative road improvements to address safety concerns and traffic mitigation options. Analyze safety improvements, public transit and Traffic Demand Management strategies to reduce and accommodate projected traffic demand.
Dulles Greenway	<ol style="list-style-type: none"> 1. To expedite the extension of rail service to Loudoun County. 2. To provide an interim transportation network needed to accommodate higher density development in the nodes. 	<ol style="list-style-type: none"> 1. Continue to participate in the Dulles Corridor Transportation Study to establish the County's preferred transit alignment and to develop more specific transit data and plans. 2. Reevaluate the capacity of the current planned road network against the land use densities proposed by the <u>Toll Road Plan</u>. Recommend modifications to the road network as well as other traffic mitigation options.
Road Improvement Priorities Policy 4.5 proposes that Appendix 1 (Recommended Design Guidelines for Major Roadways Countywide) be updated periodically.	<ol style="list-style-type: none"> 1. To keep the County's short term priority improvement projects current with County needs. 	<ol style="list-style-type: none"> 1. The Board's Transportation Committee, in conjunction with its review of the state's proposed Six-Year Primary Road Improvement Program should consider any new projects for inclusion as short term priority projects, as defined by the Plan.

Table 3: Implementation Recommendations

Issue/Policy	Task Objective	Task
B. Coordination with other Localities		
Leesburg Area Bypass	<ol style="list-style-type: none"> 1. Increase the capacity of the Bypass and improve safety to accommodate projected increase in traffic demand. 2. Minimize the need for local traffic to use the Bypass. 3. To identify alternative regional traffic routes that do not impact existing neighborhoods. 	<ol style="list-style-type: none"> 1. Work with the Town of Leesburg and VDOT to complete planning and engineering studies of planned improvements. Examine the function of other peripheral roads to help reduce the local traffic on the bypass. 2. Support accelerated funding for planned improvements.
Round Hill - Purcellville - Hamilton Area	<ol style="list-style-type: none"> 1. To position the County to implement the planned road network through development proffers and other public programs. 2. To minimize the amount of local traffic that has to use the Route 7 Bypass. 3. To minimize the impact of regional traffic on adjacent properties. 	<ol style="list-style-type: none"> 1. Using adopted <u>General Plan</u> or area management plan road networks as a basis, work with the towns and VDOT to prepare preliminary engineering studies to provide sufficient information for planned roads to estimate costs, negotiate development proffers, and for other purposes.
Regular Town/County Transportation Meetings Policy 4.9 recommends that the County meet regularly with the local towns to identify transportation issues and opportunities.	<ol style="list-style-type: none"> 1. Improve County/town coordination in transportation planning. 	<ol style="list-style-type: none"> 1. Town and County staffs develop a format and agenda for such meetings.
Annual Regional Transportation Strategy Policy 4.10 recommends developing an annual strategy identifying regional transportation planning objectives.	<ol style="list-style-type: none"> 1. Make better use of staff and Board resources. 2. Improve the County's standing in the regional agencies and with other localities. 	<ol style="list-style-type: none"> 1. Consultation between the Board's Transportation Committee, the Planning Commission and staff to identify priority objectives and strategies to focus County efforts in working with regional agencies.

Table 3: Implementation Recommendations

Issue/Policy	Task Objective	Task
C. Neighborhood Issues		
Neighborhood "Cut Through" Traffic Planned collector and arterial road projects, such as Davis Drive/Atlantic Boulevard or Algonkian Parkway need to be completed.	<ol style="list-style-type: none"> 1. Minimize commuter traffic on local streets by providing alternative routes around the periphery of the neighborhoods. 2. Coordinate the implementation of traffic control measures (e.g., stop signs) to discourage "cut-through" traffic. 3. Discourage road improvement projects that may direct commuter traffic into residential neighborhoods. 	<ol style="list-style-type: none"> 1. Coordinate with VDOT and the Forest Ridge Subdivision citizens to complete VDOT's assessment of interim traffic mitigation efforts. 2. Complete a broader analysis of "cut-through" traffic problems and identify, where such problems would be reduced, if planned collector and arterial road projects, such as Davis Drive/Atlantic Boulevard or Algonkian Parkway, were completed.
D. Transit		
Transit Funding Policies 4.40 and 4.44 propose establishing criteria for evaluating applications for Local Gasoline Tax funding for transit projects.	<ol style="list-style-type: none"> 1. Provide an efficient means of evaluating transit funding applications. 2. Ensure that public funds are going to the most beneficial transit projects. 	<ol style="list-style-type: none"> 1. The Board should establish the Transit Funding Pool in order to maintain funds proffered or otherwise acquired to fund transit projects. 2. County staff should provide, for Board approval, a series of criteria that provide an equitable means of comparing and selecting transit projects which merit Local Gasoline Tax or Transit Pool funding.
Proffer Funding Policy 4.54 recommends that capital facilities proffers for higher density development be redirected towards transit services.	<ol style="list-style-type: none"> 1. To provide a source of funding for transit service without increasing the burden on developers. 	<ol style="list-style-type: none"> 1. Incorporate this concept into the Board's review of proffers and the Zurn Initiative. 2. Modify capital facility proffer guidelines.
Transit and Land Use Policies 4.46 and 4.51 recommend that land use plans should be modified to determine appropriate land use mix, density and design within transit corridors.	<ol style="list-style-type: none"> 1. To create the development pattern that will facilitate an efficient and effective transit service. 	<ol style="list-style-type: none"> 1. Initiate reviews of Dulles North, Eastern Loudoun and Dulles South area management plans to evaluate the land use pattern within identified transit corridors (Routes 7, 28, 50 and 267). 

A P P E N D I X 1

DESIGN GUIDELINES FOR MAJOR ROADWAYS COUNTYWIDE

(Appendix 1 is a part of this document and is sold separately.)

A P P E N D I X 2

**RECOMMENDED
REGIONAL ROAD
IMPROVEMENTS**

RECOMMENDED REGIONAL ROAD IMPROVEMENTS	
Road Section	Improvements
Route 7 in Fairfax County	The transition from a six-lane road in Loudoun to a four-lane road in Fairfax is a significant contributor to the congestion on Route 7. Route 7 in Fairfax should be widened to six lanes eastward at least to the Algonkian Parkway/Route 7 interchange.
Route 28 in Fairfax County	Improvements to this road should parallel the improvements made in Loudoun County. Fairfax should continue to seek limited access conditions on Route 28.
Fairfax County Parkway (in Fairfax County)	This road provides the southern leg of the Algonkian Parkway/Route 7 interchange in Fairfax County and would serve to significantly reduce traffic congestion on Route 7.
Dulles Toll Road (in Fairfax County)	Without increased capacity on the Dulles Toll Road, the environmental and economic benefits of the Dulles Greenway and Route 28 improvements and the opportunity to reduce traffic congestion on Route 7 may not be realized.
Rt. 50 in Fairfax County	In order for Route 50 in Loudoun County to function properly, Route 50 in Fairfax County to Route 28 needs to reflect the same specifications.
Western Washington Bypass in Maryland	Maryland support of the Western Bypass is crucial to its long term effectiveness. Any proposed alignment will have to be coordinated with Loudoun County.
Western Washington Bypass in Prince William County	Prince William support of the Western Bypass is crucial to its construction. Any proposed alignment will have to be coordinated with Loudoun County.
Rt. 15 in Prince William County	Improvements to Route 15 in Prince William County need to be coordinated with Loudoun County. In Prince William County, Route 15 is planned as a six-lane controlled access facility. An appropriate transition will be needed as the road connects to the two-lane Route 15 in Loudoun County.
Rt. 15 in Maryland	Improvements to Route 15 in Maryland need to be coordinated with Loudoun County. In Frederick County, Route 15 is planned as a four-lane controlled access facility. An appropriate transition will be needed as the road connects to the two-lane Route 15 in Loudoun County.
Rt. 9 in West Virginia	Improvements planned in West Virginia need to be coordinated with Loudoun County.
Route 340 south of Charles Town to Clarke County.	Improvements to Route 340 may serve to relieve the commuter load on Route 9 by redirecting traffic south to Route 7. This may delay the need for major improvements to Route 9.
Tri-County Parkway in Fairfax and Prince William Counties	The Loudoun Parkway will serve as an extension of the Tri-County Parkway in Loudoun. This road will serve an important function carrying commuter traffic north and south and improving southern access to Dulles Airport.
Rt. 234/Rt. 234 Bypass	Loudoun plans to connect Realigned Route 659 to the Route 234 Bypass. The Prince William County portion of Route 705 will need to be improved to accommodate this connection.
Rt. 620 in Fairfax County	This road will serve as an extension of Braddock Road and should be designed to reflect the planned improvements for Braddock Road.
Wiehle Avenue in Fairfax County	Planned extensions of this road need to be evaluated against the potential impact on neighborhoods in Loudoun.

A P P E N D I X 3

VIRGINIA STATE NOISE ABATEMENT POLICY

AUTHORIZATION

The State Noise Abatement Policy is adopted pursuant to the authority of Section 33.1-12 of the Code of Virginia.

FORWARD

The State Noise Abatement Policy established consistent criteria for providing noise abatement measures on all proposed highway projects regardless of funding. The proposed policy mirrors the Federal Highway Administration (FHWA) noise abatement criteria currently employed by VDOT for federal aid projects. For non-federal aid projects, the Policy requires 50% contribution to the cost of abatement by the locality through which the project traverses. The Policy also requires that the locality have an ordinance which requires developers to provide noise abatement for all new residential and other noise sensitive developments adjacent to existing highways or known future highway corridors.

DEFINITIONS

The following words and terms, when used in this Policy, shall have the following meaning, unless clearly indicated otherwise:

"Commonwealth" means Commonwealth of Virginia.

"The Cost Effectiveness Criteria of \$20,000 Per Receptor" means the cost of the abatement measure divided by the number of impacted receptors receiving noise protection (A minimum reduction of 5 decibels). The abatement cost includes only the cost of materials and installation. It does not include costs for drainage, mobilization, median barriers, landscaping, and other incidental items.

"DBA" means "A-weighted decibel:" which is a widely accepted measure for expressing traffic noise levels.

“Design Year” means the future year used to estimate the probable traffic volume for which the highway is designed. A time of 10 to 20 years from the start of construction is usually used.

“Extenuating Circumstance” means any unforeseen situation which may arise on an individual project, and due to its sensitivity to noise and its importance or value to the community, noise abatement is warranted even though the cost effectiveness criteria or other criteria contained in the State Noise Abatement Policy are met. An example is a noise barrier along I-495 which protects residential properties and a church which has membership of over 1,000 people and is used regularly for religious, social, and recreational activities. Even though the cost per receptor exceeds the \$20,000 criteria, the barrier has been determined to be warranted due to the church’s value to the surrounding communities, its sensitivity to noise, and the high noise levels which would occur without a barrier.

“FHWA” means Federal Highway Administration.

“Noise Abatement” means any measure taken to reduce highway traffic noise levels.

“Noise Abatement Criteria (NAC)” means numerical noise standards promulgated by the Federal Highway Administration and published in Volume 7, Chapter 7, Section 3 of the Federal Aid Highway Manual.

“Noise Barrier” means a solid structure erected between the highway and the protected property which is designed to reduce traffic noise levels at the protected property by blocking the sound waves on their path from the highway to the protected property.

“Receptor” means any property containing noise sensitive activity. Table 1 in Volume 7, Chapter 7, Section 3 of the Federal Aid Highway Program Manual lists the land use categories which are considered to contain noise sensitive activities to which the Noise Abatement Criteria apply. The list includes residential properties, both single family and multi-family, churches, schools, playgrounds, recreational areas, parks, libraries, and hospitals. Each residential unit is counted as a single receptor in the determination of cost effectiveness of noise abatement. The weight given to other activity areas, such as schools, churches, parks, etc., during the abatement evaluation is based on several factors and is determined on an individual basis. The term noise sensitive applies only to human activity. A receptor can be developed land or undeveloped land for which a development plan, design and program must have been approved by the local jurisdiction prior to the adoption by the Commonwealth Transportation Board of the highway alignment.

“VDOT” means Virginia Department of Transportation.

Moved By: Mr. Humphreys

Seconded By: Mr. Musselwhite

WHEREAS, in order to provide a noise abatement policy covering federal aid and non-federal aid highway projects, and

WHEREAS, the need for a single policy has been established and

WHEREAS, careful consideration has been given to the development of a policy.

NOW, THEREFORE, BE IT RESOLVED, that the State Noise Abatement Policy be approved by the Board, and that such policy be effective on January 1, 1989.

Motion: carried

August 18, 1988

STATE NOISE ABATEMENT POLICY

It is the policy of the Virginia Department of Transportation (VDOT) to employ the following criteria and procedures in determining the need and feasibility of noise abatement measures on all highway projects in the Commonwealth. In as much as VDOT does not have a retrofit noise abatement program for existing highways, this policy applies to proposed highway construction and improvement projects.

- a. Volume 7, Chapter 7, Section 3 of the Federal Aid Highway Program Manual (FHPM 7-7-3) will be the guiding document for the analysis and abatement of highway traffic noise on all proposed highway projects.
- b. In assessing traffic noise levels from a proposed project or determining the dimensions of a noise barrier, a source height of 8 feet for tractor trailers, 2.3 feet for medium trucks and 0 feet for auto mobiles will be used.
- c. Highway noise impacts beyond 1,000 feet from the roadway will not be considered in determining the need for the dimensions and cost of a noise barrier.
- d. A noise abatement measure will be considered if,
 1. It provides a minimum of 5 dB(A) attenuation (positive noise benefit), and
 2. The design year noise levels emanating from the project equal or exceed the FHWA Noise Abatement Criteria (NAC) given in FHPM 7-7-3 for various land use categories, or
 3. The design year noise levels emanating from the project exceed existing noise levels by 10 dB(A) or more.
- e. A noise abatement measure will be considered not cost effective if the cost of the measure per receptor protected exceeds \$20,000.00 For the purpose of this provision, the term "receptor" refers to any land use category listed in Table I of FHPM 7-7-3. (For example, a residential receptor would include single and multi-family dwellings).
- f. Extenuating circumstances will be considered on an individual project basis.
- g. For federal aid projects, the responsibility for assembling all relevant information and developing noise abatement related recommendations will rest with the joint FHW-VDOT standing Noise Abatement

- Committee. On non-federal aid projects, the committee's function will be carried out by its VDOT members.
- h. The Chief Engineer, on behalf of the Commonwealth Transportation Board, will make the final determination on all noise abatement related issues.
 - i. For non-federal aid projects, VDOT will consider and, if feasible, construct and maintain noise abatement measures, provided
 1. The local jurisdiction through which the project traverses agrees to assume 50% of the cost of the abatement measure, and
 2. The local jurisdiction has an ordinance requiring developers to include noise abatement in their plans for residential and other noise sensitive developments adjacent to existing highways and future highway alignments previously adopted by the Commonwealth Transportation Board. VDOT staff will provide limited assistance to local jurisdictions in the preparation of the noise ordinances. The abatement measures constructed by developers will ensure compliance with the FHWA Noise Abatement Criteria, where these criteria can be reasonably achieved, but will at the minimum, provide 5 dBA noise attenuation for each structure or activity which the abatement measure is designed to protect. If any portion of the abatement measure is located on the highway right of way, the developer will comply with VDOT's design, construction and materials specifications. The local jurisdiction will be responsible for maintaining the noise abatement measures constructed by the developer.
 - j. If a local jurisdiction insists on the provision of noise abatement measure deemed unnecessary by VDOT, arrangements may be made for the use of VDOT right of way, provided:
 1. The locality is willing to assume 100% of the cost of the abatement measure including but not limited to preliminary engineering, construction and maintenance and,
 2. VDOT's material, design and construction specifications are met.
 - k. In assessing the noise impacts associated with a highway project, undeveloped lands will be treated as developed lands, if and only if a proposed land use development plan and a schedule of development have been filed with and approved

by the local jurisdiction prior to the date the Commonwealth Transportation Board selects the final corridor alignment. The final decision concerning noise abatement for a proposed development will be conditioned on two points.

1. The noise barrier will not be constructed until the portion of the development to be protected by the abatement measure is completed to the satisfaction of VDOT, and
2. When there is a substantial time lapse between the final decision and the date the development is completed, the noise abatement analysis will be updated and the decision will be reconsidered.

Federal Aid Highway Program Manual (FHPM 7-7-3)

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§ 771.137 International actions.

(a) The requirements of this part apply to:

(1) Administration actions significantly affecting the environment of a foreign nation not participating in the action or not otherwise involved in the action.

(2) Administration actions outside the U.S., its territories, and possessions which significantly affect natural resources of global importance designated for protection by the President or by international agreement.

(b) If communication with a foreign government concerning environmental studies or documentation is anticipated, the Administration shall coordinate such communication with the Department of State through the Office of the Secretary of Transportation.

PART 772—PROCEDURES FOR ABATEMENT OF HIGHWAY TRAFFIC NOISE AND CONSTRUCTION NOISE

Sec.

772.1 Purpose.

772.3 Noise standards.

772.5 Definitions.

772.7 Applicability.

772.9 Analysis of traffic noise impacts and abatement measures.

772.11 Noise abatement.

772.13 Federal participation.

772.17 Traffic noise prediction.

772.19 Construction noise.

TABLE 1 TO PART 772—NOISE ABATEMENT CRITERIA

APPENDIX A TO PART 772—NATIONAL REFERENCE ENERGY MEAN EMISSION LEVELS AS A FUNCTION OF SPEED

AUTHORITY: 23 U.S.C. 109(h), 109(i); 42 U.S.C. 4331, 4332; 49 CFR 1.48(b).

SOURCE: 47 FR 29654, July 8, 1982; 47 FR 33956, Aug. 5, 1982, unless otherwise noted.

§ 772.1 Purpose.

To provide procedures for noise studies and noise abatement measures to help protect the public health and welfare, to supply noise abatement criteria, and to establish requirements for information to be given to local officials for use in the planning and design of highways approved pursuant to title 23 U.S.C.

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§ 772.3 Noise standards.

The highway traffic noise prediction requirements, noise analyses, noise abatement criteria, and requirements for informing local officials in this regulation constitute the noise standards mandated by 23 U.S.C. 109(i). All highway projects which are developed in conformance with this regulation shall be deemed to be in conformance with the Federal Highway Administration (FHWA) noise standards.

§ 772.5 Definitions.

(a) *Design year.* The future year used to estimate the probable traffic volume for which a highway is designed. A time, 10 to 20 years, from the start of construction is usually used.

(b) *Existing noise levels.* The noise, resulting from the natural and mechanical sources and human activity, considered to be usually present in a particular area.

(c) *L₁₀.* The sound level that is exceeded 10 percent of the time (the 90th percentile) for the period under consideration.

(d) *L₁₀(h).* The hourly value of L₁₀, sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same time period.

(e) *Leq(h).* The hourly value of Leq, which occur when the predicted traffic noise levels approach or exceed the noise abatement criteria (Table 1), or when the predicted traffic noise levels substantially exceed the existing noise levels.

(f) *Type I projects.* A proposed Federal or Federal-aid highway project for the construction of a highway on new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes.

(g) *Type II projects.* A proposed Federal or Federal-aid highway project for noise abatement on an existing highway.

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§ 772.7 Applicability.

(a) *Type I projects.* This regulation applies to all Type I projects unless it is specifically indicated that a section applies only to Type II projects.

(b) *Type II projects.* The development and implementation of Type II projects are not mandatory requirements of 23 U.S.C. 109(i) and are, therefore, not required by this regulation. When Type II projects are proposed for Federal-aid highway participation at the option of §§ 772.9(c), 772.13, and 772.19 of this regulation shall apply.

§ 772.9 Analysis of traffic noise impacts and abatement measures.

(a) The highway agency shall determine and analyze expected traffic noise impacts and alternative noise abatement measures to mitigate these impacts, giving weight to the benefits and cost of abatement, and to the overall social, economic and environmental effects.

(b) The traffic noise analysis shall include the following for each alternative under detailed study:

(1) Identification of existing activities, developed lands, and undeveloped lands for which development is planned, designed and programmed, which may be affected by noise from the highway;

(2) Prediction of traffic noise levels;

(3) Determination of existing noise levels;

(4) Determination of traffic noise impacts; and

(5) Examination and evaluation of alternative noise abatement measures for reducing or eliminating the noise impacts.

(c) Highway agencies proposing to use Federal-aid highway funds for Type II projects shall perform a noise analysis of sufficient scope to provide information needed to make the determination required by § 772.13(a) of this chapter.

§ 772.11 Noise abatement.

(a) In determining and abating traffic noise impacts, primary consideration is to be given to exterior areas. Abatement will usually be necessary only where frequent human use occurs

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and a lowered noise level would be of benefit.

(b) In those situations where there are no exterior activities to be affected by the traffic noise, or where the exterior activities are far from or physically shielded from the roadway in a manner that prevents an impact on exterior activities, the interior criterion shall be used as the basis of determining noise impacts.

(c) If a noise impact is identified, the abatement measures listed in § 772.13(c) of this chapter must be considered.

(d) When noise abatement measures are being considered, every reasonable effort shall be made to obtain substantial noise reductions.

(e) Before adoption of a final environmental impact statement or finding of no significant impact, the highway agency shall identify:

(1) Noise abatement measures which are reasonable and feasible and which are likely to be incorporated in the project; and

(2) Noise impacts for which no apparent solution is available.

(f) The views of the impacted residents will be a major consideration in reaching a decision on the reasonableness of abatement measures to be provided.

(g) The plans and specifications will not be approved by FHWA unless those noise abatement measures which are reasonable and feasible are incorporated into the plans and specifications to reduce or eliminate the noise impact on existing activities, developed lands, or undeveloped lands for which development is planned, designed, and programmed.

§ 772.13 Federal participation.

(a) Federal funds may be used for noise abatement measures where:

(1) A traffic noise impact has been identified.

(2) The noise abatement measures will reduce the traffic noise impact, and

(3) The overall noise abatement benefits are determined to outweigh the overall adverse social, economic, and environmental effects and the costs of the noise abatement measures.

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(b) For Type II projects, noise abatement measures will not normally be approved for those activities and land uses which come into existence after May 14, 1976. However, noise abatement measures may be approved for activities and land uses which come into existence after May 14, 1976, provided local authorities have taken measures to exercise land use control over the remaining undeveloped lands adjacent to highways in the local jurisdiction to prevent further development of incompatible activities.

(c) The noise abatement measures listed below may be incorporated in Type I and Type II projects to reduce traffic noise impacts. The costs of such measures may be included in Federal-aid participating project costs with the Federal share being the same as that for the system on which the project is located, except that Interstate construction funds may only participate in Type I projects.

(1) Traffic management measures (e.g., traffic control devices and signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits, and exclusive land designations).

(2) Alteration of horizontal and vertical alignments.

(3) Acquisition of property rights (either in fee or lesser interest) for construction of noise barriers.

(4) Construction of noise barriers (including landscaping for esthetic purposes) whether within or outside the highway right-of-way, Interstate construction funds may not participate in landscaping.

(5) Acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to preempt development which would be adversely impacted by traffic noise. This measure may be included in Type I projects only.

(6) Noise insulation of public use or nonprofit institutional structures.

(d) There may be situations where (1) severe traffic noise impacts exist or are expected, and (2) the abatement measures listed above are physically infeasible or economically unreasonable. In these instances, noise abatement measures other than those listed in § 772.13(c) of this chapter may be

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proposed for Types I and II projects by the highway agency and approved by the Regional Federal Highway Administrator on a case-by-case basis when the conditions of § 772.13(a) of this chapter have been met.

§ 772.15 Information for local officials.

In an effort to prevent future traffic noise impacts on currently undeveloped lands, highway agencies shall inform local officials within whose jurisdiction the highway project is located of the following:

(a) The best estimation of future noise levels (for various distances from the highway improvement) for both developed and undeveloped lands or properties in the immediate vicinity of the project.

(b) Information that may be useful to local communities to protect future land development from becoming incompatible with anticipated highway noise levels, and

(c) Eligibility for Federal-aid participation for Type II projects as described in § 772.13(b) of this chapter.

§ 772.17 Traffic noise prediction.

(a) Any traffic noise prediction method is approved for use in any noise analysis required by this regulation if it generally meets the following two conditions:

(1) The methodology is consistent with the methodology in the FHWA Highway Traffic Noise Prediction Model (Report No. FHWA-RD-77-108).*

(2) The prediction method uses noise emission levels obtained from one of the following:

(i) National Reference Energy Mean Emission Levels as a Function of Speed (appendix A).

(ii) Determination of reference energy mean emission levels in Sound Procedures for Measuring Highway Noise: Final Report, DP-45-1R.*

(b) In predicting noise levels and assessing noise impacts, traffic characteristics which will yield the worst hourly traffic noise impact on a regu-

*These documents are available for inspection and copying as prescribed in 49 CFR part 7, appendix D.

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lar basis for the design year shall be used.

§ 772.19 Construction noise.

The following general steps are to be performed for all Types I and II projects:

(a) Identify land uses or activities which may be affected by noise from construction of the project. The identification is to be performed during the project development studies.

(b) Determine the measures which are needed in the plans and specifications.

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tions to minimize or eliminate adverse construction noise impacts to the community. This determination shall include a weighing of the benefits achieved and the overall adverse social, economic and environmental effects and the costs of the abatement measures.

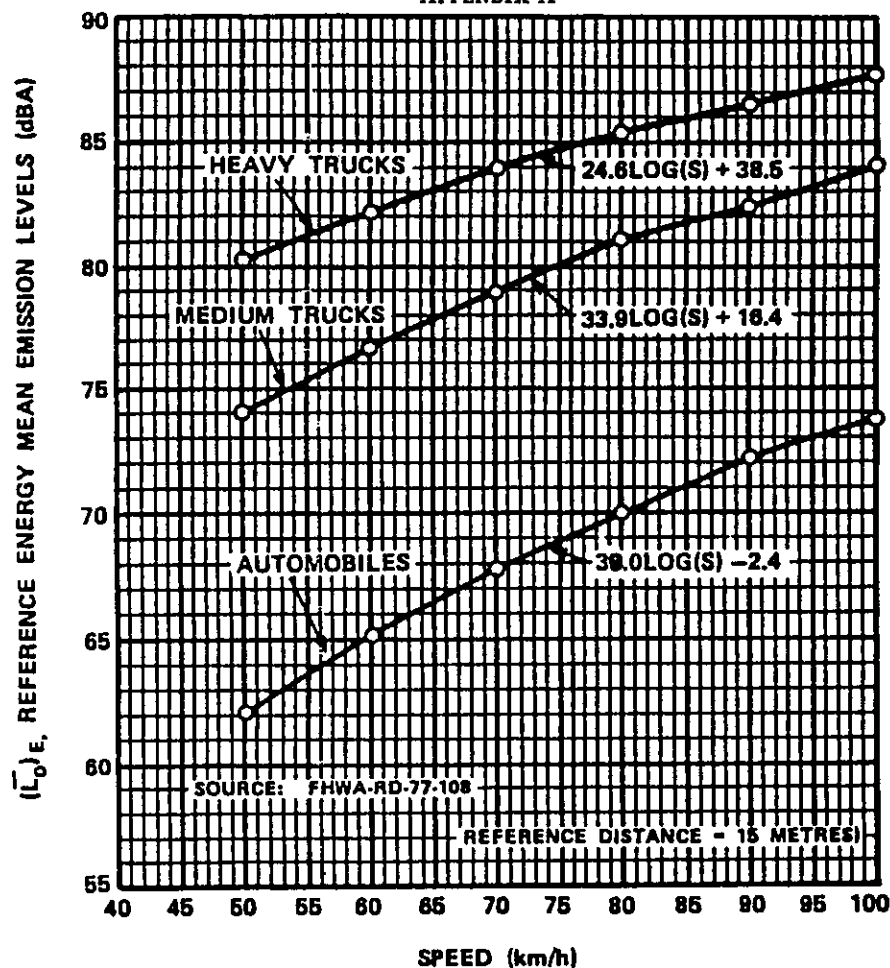
(c) Incorporate the needed abatement measures in the plans and specifications.

TABLE 1—NOISE ABATEMENT CRITERIA
(Hourly A-Weighted Sound Level—decibels (dBA)*)

Activity Category	Leq(h)	L _{dn}	Description of activity category
A.....	57 (Extensor)	60 (Extensor)	Lands on which serenity and quiet use of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B.....	67 (Extensor)	70 (Extensor)	Picnic areas, recreation areas, playgrounds, sports areas, parks, residences, hotels, schools, churches, libraries, and hospitals.
C.....	72 (Extensor)	75 (Extensor)	Developed lands, properties, or activities not included in Categories A or B above.
D.....	52 (Intensor)	55 (Intensor)	Undeveloped lands.
E.....			Residences, hotels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

* Either L_{dn} or Leq(h) must be used on a project.

APPENDIX A



LEGEND:

1. AUTOMOBILES: ALL VEHICLES WITH TWO AXLES AND FOUR WHEELS.
2. MEDIUM TRUCKS: ALL VEHICLES WITH TWO AXLES AND SIX WHEELS.
3. HEAVY TRUCKS: ALL VEHICLES WITH THREE OR MORE AXLES.

National Reference Energy Mean Emission Levels as a Function of Speed

