REPORT OF THE
DEPARTMENT OF TRANSPORTATION ON THE

Georgetown Pike

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

SENATE DOCUMENT NO. 47

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PREFACE

House Joint Resolution No. 411 (HJR 411) and Senate Joint Resolution No. 235 (SJR 235) requested that the Virginia Department of Transportation (VDOT) study specified preservation issues concerning the Georgetown Pike (Route 193) in Fairfax County, Virginia, and report its findings to the Governor and the 1994 General Assembly.

Gerald E. Fisher, a Research Scientist at the Virginia Transportation Research Council, was designated to lead this study. The study team included Richard V. Taylor, who led the research and writing of the report, and Philomena B. Lockwood, who assisted with the research, analysis, and writing on accidents and the effects of development on transportation in Fairfax County.

The study team thanks the following people for their extraordinary assistance with this study: Senator Janet D. Howell and Delegate Vincent F. Callahan, especially for their participation at the Public Hearing; Fairfax County Dranesville District Supervisor Ernest J. Berger; Elizabeth David and Bruce Kriviskey, our contacts with Fairfax County's Heritage Resources Branch; Chuck Almquist, Sam Chamberlain, Paul Eno, Kathy Ichter, Ed Jankiewicz, Colleen Karmol, Dennis King, Wayne Pumphrey, and John Winfield with the Fairfax County Government; Tanya Beauchamp, preservation consultant to Fairfax County; John J. Adams and all the citizens and organizational representatives who wrote comments or spoke at the Public Hearing on August 5, 1993; Hugh Miller, Julie Vosmik, and Elizabeth Hoge with the Virginia Department of Historic Resources; and Art Buelher and Derral Jones with the Virginia Department of Conservation and Recreation.

From VDOT's Central Office: Phil Baker, William A. Brown, Lynwood Butner, Claude D. Garver, Jr., David R. Gehr, Jack Hodge, Gene Martin, Margaret Redford, Leo Rutledge, Carl Sheets, Mary Lynn Tischer, Gerald Venable, and Cooper Wamsley. From VDOT's Northern Virginia District: Jim Cromwell, Otis Deal, Frank Edwards, Thomas F. Farley, Bill Jones, Noreen Maloney, Bill Mann, David Ogle, Bill Thomas, Tom Walker, and Gary Yowell. From VDOT's Fairfax Residency: Kaye Braxton and Young Ho Chang. From VDOT's Richmond District: Jerry Moore.

From the Virginia Transportation Research Council: Gary R. Allen, Angela Andrews, Gene Arnold, Steve Blackwell, Bob Borhart, Tina Briganti, Randy Combs, Ben Cottrell, Eileen Dieck, Linda Evans, Wayne Ferguson, Jerry Garrison, Roger Howe, Jan Kennedy, Mike Perfater, and Jennifer Ward.

EXECUTIVE SUMMARY

Raising public awareness of the history of the Georgetown Pike, in order to preserve the road's historic character, has long been a goal of citizens and Fairfax County officials. The road was designated as the Commonwealth's first Virginia Byway in 1974. Since that time, growth along the road and in other parts of Northern Virginia has resulted in a significant increase in traffic. A proposed widening of a portion of the road to four lanes was canceled in 1979 due to public opposition.

There is continuing public opposition to safety and capacity improvements (e.g., deceleration lanes) proposed by Virginia Department of Transportation (VDOT) engineers to help manage traffic at new subdivision street entrances. For this reason, the 1993 General Assembly directed VDOT to reexamine this subject.

Pursuant to House Joint Resolution No. 411 (HJR 411) and Senate Joint Resolution No. 235 (SJR 235) (1993), VDOT examined issues concerning the preservation of the historic, cultural, and scenic nature of the Georgetown Pike (Route 193) in Fairfax County. VDOT identified existing standards, regulations, and statutes as well as alternatives to these that could be used in preserving the Georgetown Pike.

VDOT designated a team at the Virginia Transportation Research Council to research and write this study. The study team accomplished this through (1) meetings with Fairfax County officials and citizens; VDOT Central Office, Northern Virginia District, and Fairfax Residency staff; and Virginia Department of Historic Resources and Virginia Department of Conservation and Recreation staff; (2) comments received at a public hearing held in Fairfax County; and (3) written comments from other interested parties. Research of statutes, regulations, processes, and standards identified by various officials was conducted, and special traffic counts on the Georgetown Pike were taken.

MAJOR FINDINGS

1. Basic Configuration

The Georgetown Pike does not now conform to state and national design standards regarding pavement width, shoulder width, and horizontal and vertical alignment for a highway of its functional classification and traffic volumes.

Earlier attempts to widen the road to a four-lane facility were vigorously resisted, and the Highway Commission (now the Commonwealth Transportation Board) adopted a resolution in 1979 that the road would remain a two-lane facility. This remains the position of the Board and of VDOT. However, turn lanes added to accommodate new development are viewed by some as widening the road.

2. Traffic Volume

Special one-day traffic counts were taken on three different Thursdays in the summer of 1993 to verify gross traffic volume estimates and to obtain some details of turning movements. Counts taken on other days or other times of the year could show different results.

These limited traffic counts indicated that volumes were lowest at the ends of the Georgetown Pike (near Route 7 and Route 123) and highest just west of its intersection with I-495. They show an approximate (two-way) range of 10,000 to 24,000 vehicles per day, depending on location. Peak-hour (one-way) volumes ranged from 800 to 1,700 vehicles; these numbers are quite high for a two-lane road.

The number of turning movements by Georgetown Pike traffic at the I-495 interchange was very high, with one 24-hour count showing 66% of eastbound traffic turning onto northbound I-495.

3. Traffic Volume Reduction

Citizens and the Fairfax County government have expressed a desire to maintain the Georgetown Pike as a two-lane road on its present alignment. In order to keep the road in its two-lane configuration, it may be necessary to plan for and fund the improvement or creation of alternative transportation corridors or to use other techniques to divert traffic from the road.

Current VDOT and Fairfax County planning documents include major highway improvements on

- Route 7 (widening to six lanes from Leesburg to the Dulles Toll Road),
- I-495 (add a fifth lane, probably an HOV lane),
- Fairfax County Parkway (four and six lanes from the Dulles Toll Road to Route 7), and
- Dulles Toll Road (add an HOV lane from Route 28 to I-495).

Full funding for these improvements depends on future allocations to these projects. In addition to these improvements planned by public agencies, an extension of the Dulles Toll Road to Leesburg is planned by a private corporation.

Each of these improvements would provide more capacity for motorists in those areas and could have an effect on the traffic volume on the Georgetown Pike. However, from a brief evaluation of these planned improvements, viewed against the continued residential and

commercial development in Fairfax and Loudoun Counties, it appears that none of them alone, nor all of them together, is likely to have a significant, long-term effect in reducing traffic volumes on the Georgetown Pike.

4. Accident History

The struggle between preservation and safety is expected to grow more acute on the Georgetown Pike as traffic volumes increase. As this occurs, accident analysis will become a more critical tool for assessing safety.

An analysis of the accident history conducted as part of this study revealed that, despite the increase in the volume of traffic since 1972, the annual number of reported accidents occurring on the Georgetown Pike has not increased. Accidents involving injuries have fluctuated over the 21-year period, with no significant upward or downward trends. A general decline is evident in the number of fatalities and in reported accidents involving property damage only.

The types of collisions that occurred most frequently on the Georgetown Pike between 1982 and 1992 were angle, rear-end, and fixed-object accidents. Those accidents involving collisions with fixed objects (primarily run-off-road accidents) had more severe consequences than other types of collisions and accounted for three of the seven fatalities occurring on the roadway over this time period.

Two intersection locations where safety enhancement projects were completed showed a drop in accident occurrence. These projects were at the Mackall Avenue and Springvale Road intersections.

Eight intersections where more than 40 accidents occurred were also identified and analyzed more closely. Most of these had a much greater percentage of angle accidents than average for the entire corridor. Some specific problems were identified and are discussed in the body of this report.

One high-accident site was distinguished from the others as the only location that was not an intersection. These 1.24 miles of meandering roadway lie between Old Dominion Drive and Towlston Road and account for twice as many accidents per mile than the average section of the road.

5. Design and Safety Considerations

The Georgetown Pike has lane widths of 10 or 11 feet over 86% of its length. It has a meandering alignment over rolling terrain, resulting in limited sight distance due to vertical and horizontal curves. It has areas with no shoulders and areas with shoulders of variable width and surface materials. Those shoulder areas that are relatively free of fixed objects

(utility poles, trees, etc.) often drop off from the road so steeply that recovery of a vehicle that has run off the road would be difficult.

The most serious flaw of the Georgetown Pike is the lack of adequate shoulders. The road has been widened throughout its history so that the pavement now reaches the ditches. This condition presents many problems.

Due to the lack of adequate shoulders, an accident or a disabled vehicle may block the road for an extended period of time, and police, fire, and rescue personnel have few safe places to position vehicles for emergency response situations. Speed limit enforcement is also hampered.

There are many run-off-road accidents involving fixed objects where an increased clear zone would provide an opportunity for drivers to recover control of vehicles. VDOT maintenance personnel have nowhere to push snow off the road, yet keeping the road open is a high priority for the citizens using it.

The lack of shoulders or other safe stopping places makes the road very demanding for drivers, and especially for tourists.

An analysis of possible shoulder widening indicated that adding six feet of unpaved shoulders to each side of the road would yield as much as a 35% reduction in nonintersection accidents.

6. Eligibility for Listing in the National Register

The Virginia Department of Historic Resources' (VDHR) recent designation of the road as eligible for listing in the National Register of Historic Places is the first such designation in the Commonwealth of any road without limited access, and it is the first designation of any road under VDOT control. Such designation could affect the design of any improvements to the road that are financed with federal funds. The operational and maintenance implications of the designation are not yet clear.

However, such a designation does not exempt VDOT from its responsibility to provide safe highways for the citizens of the Commonwealth. Further, it is not deemed sufficient to protect the right-of-way alone; without protection of the corridor surrounding the roadway, the Georgetown Pike could lose much of its remaining integrity, and its development would further stress the road's ability to function safely.

7. Accommodating Growth

Fairfax County has applied protective measures to the Georgetown Pike corridor through its zoning and subdivision powers, and one historic district has been created.

However, development of adjacent land continues, primarily in single-family residential subdivisions.

In the census tracts adjoining the Georgetown Pike, U.S. Census data indicate that between 1970 and 1990, the population increased by 115%, the number of housing units increased by 229%, and the number of vehicles increased by 234%.

The continuing connection of new subdivision street entrances onto a highway with more traffic than it can easily manage has led VDOT to request right-turn and left-turn lanes and tapers to maintain traffic flow and safety. Some citizens believe that VDOT engineers are requiring "unnecessary" changes.

8. Statute, Policy, and Regulation

VDOT engineers, often criticized by citizens elsewhere in Northern Virginia for failing to plan for ever-growing traffic volumes, respond by attempting to accommodate new subdivision street entrances without significantly endangering or slowing existing traffic. Measures to accomplish this include turn lanes and tapers, as well as other local improvements.

In the Northern Virginia District, which includes all of Fairfax County, VDOT employs the highway entrance standards appropriate for urban areas. In more rural areas of the Commonwealth, lower entrance standards are employed.

There are no provisions in statute or policy that authorize VDOT engineers to give priority to historic or scenic values over the safety, comfort, and convenience of the public. Nor are there provisions to protect VDOT employees from charges of negligence should they waive accepted design standards -- in the interest of historic preservation -- and accidents result. Finally, there is no provision stating that drivers of the Georgetown Pike should expect to find less than customary highway design and safety features.

9. Virginia Byway Designation and Tourism

The designation of the Georgetown Pike as a Virginia Byway in 1974 and its incorporation in state and county maps as a byway are actions intended to encourage visitors to tour the corridor. There were valid reasons for the designation, and there are still valid reasons for tourists to visit.

However, the road has almost no provisions for visitors. There are narrow or no shoulders along much of its length; there are few pull-offs for enjoying points of historic or scenic interest; and there are few places where pedestrians, equestrians, or cyclists can safely enjoy the surroundings.

Although there are parks and other attractions along it, the narrow road and its heavy traffic can be hostile to casual visitors, who are forced to concentrate on maneuvering safely through curves and traffic, rather than enjoying the scenery.

The Georgetown Pike is designated as a Virginia Byway and is listed as such on the official state transportation map and on the Fairfax County historical tour map. Continued encouragement for tourists to visit the Georgetown Pike is a questionable public policy unless reasonable provisions are made for their safety and enjoyment.

These findings, as well as the comments of citizens, local officials, VDOT staff, and other state agency staff, led the study team to recommend that the following actions be taken to preserve the Georgetown Pike without reducing safety.

RECOMMENDATIONS

During the course of this study, the right-of-way of the Georgetown Pike was designated by VDHR as eligible for listing in the National Register of Historic Places. No other VDOT-maintained highway has been so designated. Accordingly, issues concerning this designation were incorporated into this study.

In the field of historic preservation, there are several treatment philosophies for the preservation of a historic property, depending on the circumstances and uses of the property. Of the major options available, *it is recommended that "rehabilitation" be the accepted treatment philosophy for the Georgetown Pike.*

Rehabilitation acknowledges the possibility that a historic property still in active use may require alteration or addition to meet continuing or changing uses while retaining its essential historic character. The essential historic characteristics of the Georgetown Pike are its location and its meandering alignment over rolling terrain.

The following specific recommendations are offered.

1. Configuration of the Georgetown Pike

A. *The Traveled Way*

Since 1979, it has been the position of the Commonwealth Transportation Board that the Georgetown Pike remain a two-lane facility. The traffic volume on this road would normally indicate a need to widen it to four lanes, at least in some locations. However, there is a strong consensus among persons interested in historic preservation that such

widening is not desirable. Angle and rear-end collisions, the most common types of accidents on the Georgetown Pike, are not associated with inadequate road width, but are more typically the result of inadequate intersection design.

For these reasons, it is recommended that maintaining a good two-lane roadway, in its current location, continue to be the position of the Commonwealth Transportation Board and VDOT, Fairfax County, and VDHR. No general widening, realignment, or relocation of the traveled portion of the road is recommended, except as provided below.

B. *The Roadside*

The inadequate shoulders of the Georgetown Pike cannot be ignored. Due to a lack of shoulders, an accident or a disabled vehicle may block the road for extended periods, and police, fire, and rescue personnel have few safe places to position vehicles for emergency response situations. Speed limit enforcement is also hampered. VDOT maintenance personnel have nowhere to push snow off the road, yet keeping the road open is a high priority for citizens who use it.

Because there are many run-off-road accidents involving fixed objects, an increased clear zone would provide an opportunity for drivers to recover control of vehicles.

It is strongly recommended that plans be developed to improve the shoulders of the road. In lieu of conventional paved shoulders, it is recommended that planning be undertaken by VDOT and Fairfax County, in cooperation with VDHR, to provide parkway-like grass-covered aggregate and soil shoulders along both sides of the road.

Such grass shoulders would provide many of the safety benefits of paved shoulders, would be more attractive, would discourage their use as alternate travel lanes, yet would provide sufficient support for occasional vehicular use. Analysis indicates that adding six feet of grass shoulders to each side of the road could yield as much as a 35% reduction in nonintersection accidents.

In planning for shoulder widening, these related roadside provisions should be included:

- Pull-offs for tourist use to be provided at areas of unusual scenic or historic value (very important in making the road tourist-friendly);

- Landscape plans for planting selected native tree species behind the relocated ditches (to maintain the character of the corridor past the life expectancy of existing mature vegetation and well into the twenty-second century); and

- A path for cyclists and pedestrians, preferably separated from the road (this is not as important as pull-offs and tree planting but may also be desirable).

Partial funding of the design and implementation of these nonshoulder improvements may be available through the enhancement provisions of ISTEA.

C. *Spot Safety Improvements*

Periodic analysis of accidents occurring on the Georgetown Pike should be continued to insure the early identification of safety problems. The accident history should also be used by decision-makers to determine the most appropriate entrance treatments for specific conditions.

Specific locations are identified in this report, and will continue to be identified through regular analyses of accident data, where spot improvements will be required to reduce localized hazards to the traveling public. All parties must recognize that such spot improvements will be needed and that their design must be undertaken in a way to minimize the adverse effects of these improvements on the character of the roadway.

Where controversies arise over the design of a particular improvement, it is recommended that mediation, which has been used successfully in Virginia for some road improvements, be considered for use in the design process.

2. Street Entrances

It is recognized that the connection of new subdivision street entrances (and the measures that provide for safe turning movements at these new intersections) creates strong opposition from many citizens. *It is recommended that several actions be taken to minimize the number and the adverse effects of new entrances, in the priority order listed below.*

A. *Alternate Access*

Where feasible, it is recommended that Fairfax County and VDOT work together to ensure that new subdivisions have no direct access to the Georgetown Pike but connect instead to existing secondary roads in the area.

B. *Joint Access*

Where new subdivision street entrances are unavoidable, it is recommended that Fairfax County and VDOT take strong measures to minimize the number of new entrances, by requiring joint entrances, by requiring that new subdivisions accommodate the future access needs of adjacent undeveloped lands, and by using any other appropriate means.

C. *Rural Entrance Standards*

Because some new subdivisions will have no other lawful access, new entrances to the Georgetown Pike will be required. However, as shoulders are widened, intersection sight

distance will improve. Therefore, the need for deceleration lanes and tapers for such street entrances should be reduced.

Provided the Fairfax County Board of Supervisors so requests, and provided that VDHR formally concurs, it is recommended that VDOT engineers, where a minimum stopping sight distance of 300 feet is available or can be provided at no cost to the Commonwealth, adhere to VDOT's Minimum Standards for Entrances to State Highways (1989 edition) for new entrances to the Georgetown Pike.

This document, intended primarily for application for rural highways, is considered inadequate for use in urban areas such as Northern Virginia, where higher entrance standards are employed. *In consideration of Fairfax County's desire to maintain the road's existing character, and in consideration of VDHR's designation of this road as eligible for listing in the National Register of Historic Places, it is recommended that VDOT engineers recognize and employ these "rural" standards on this road,* ***on a trial basis.***

This change would require most new cul-de-sac subdivision streets serving fewer than 30 residential units (which is believed to include most subdivision activity in the area) to have only an entrance radius, with no right-turn deceleration lane or taper.

VDOT's engineers, concerned for public safety and traffic capacity, prefer higher standards. They have not recommended this course of action, nor have they recommended against it. However, with a formal request from the Fairfax County Board of Supervisors to initiate this change, and with formal concurrence of VDHR, VDOT could accede to the wishes of these governmental agencies on a trial basis, for this road only.

However, should accident or other information show that the application of these minimum standards led to safety or other traffic problems, their application should be discontinued at the discretion of VDOT's Northern Virginia District Administrator.

D. *Existing Entrances*

Earlier evaluation of entrances resulted in a 1979 recommendation by the Virginia Department of Highways, and supported then by the Georgetown Pike and Potomac River Association, that the entrance from Langley Lane to the Georgetown Pike be closed.

Although the major construction project proposed at that time was dropped, this minor street, with its very limited sight distance, is still a problem entrance. *It is recommended that Fairfax County, with the cooperation of VDOT, give strong consideration to closing or abandoning the Langley Lane entrance.*

3. The Corridor

Fairfax County has requested, and VDHR has concurred, that only the right-of-way of the Georgetown Pike be designated as eligible for listing in the National Register of Historic Places. Some observers of this process note that, while preservation of the right-of-way may serve a useful purpose, the roadway structure is not very historic. Instead, it is a mid-twentieth-century adaptation of what probably began as an animal trail.

The preservation of the road itself does little to preserve the scenic characteristics of the corridor, which include the public and private properties within view of the road. Without action to preserve and protect these lands, all that might remain of the scenic and historic Georgetown Pike could be the roadway's lay on the land.

The preservation of private lands is much more difficult than the preservation of lands owned by public agencies. However, as these lands continue to develop, the accommodation of increased traffic volumes and increased turning movements will continue to modify the Georgetown Pike's roadway.

It is recommended that Fairfax County, in cooperation with VDHR, seriously consider additional corridor protection schemes that would control and preserve the views along the corridor. Only by preserving the scenic qualities of the land is preservation of the road likely to succeed.

4. Alternative Transportation Corridors

Current VDOT and Fairfax County plans include highway improvements on:

- Route 7 (widening to six lanes from Leesburg to the Dulles Toll Road);
- Interstate 495 (adding a fifth lane, most likely an HOV lane);
- Fairfax County Parkway (widening to four and six lanes from the Dulles Toll Road to Route 7); and
- Dulles Toll Road (adding an HOV lane from Route 28 to I-495).

In addition to these improvements planned by public agencies, an extension of the Dulles Toll Road to Leesburg is scheduled for construction by a private corporation.

Each of these improvements would improve conditions for motorists in the affected areas and could have an effect on traffic volume on the Georgetown Pike. However, from a brief evaluation of these planned improvements viewed in the context of the continued residential and commercial development in western Fairfax and Loudoun Counties, it appears

that none of them alone, nor all of them together, is likely to have a significant, long-term effect in reducing traffic on the Georgetown Pike.

It is recommended that Fairfax County, VDOT, and the Virginia Department of Rail and Public Transportation continue to examine alternatives for improving highways, transit, and ridesharing opportunities and to work to broaden the acceptance of telecommuting as an alternative to commuting.

5. The Administrative System

Suggestions have been made that the Georgetown Pike be transferred from the Primary System to the Secondary System of State Highways to provide opportunities for restricting through-truck traffic or to limit other traffic.

Historically, this road was designed and constructed for commercial hauling between Leesburg and the port of Georgetown. For most of its considerable history, the road served primarily for the mobility of through traffic, and only in the past few decades has access to local lands become a significant traffic volume factor.

Route 193 is functionally classified as a rural major collector (west of Bullneck Run) and as an urban minor arterial to its eastern end. It meets criteria for a primary highway, and it accommodates a traffic volume upwards of 20,000 vehicles per day.

It is not appropriate, either from a historical perspective or from the perspective of today's transportation needs, that through traffic be restricted. It is recommended that the road remain in the primary system.

As this report was given to VDOT to write, it is important to recognize that while many of the objections raised over the years to work done by VDOT on the Georgetown Pike are legitimate from a preservation standpoint, the question of safety is not. One of the major reasons for government in the United States is to protect the health, safety, and welfare of its citizens. Certain safety measures need to be taken on the Georgetown Pike to create a safer environment for citizens who use the road. However, as VDOT Commissioner Ray D. Pethtel wrote in the June 1993 issue of VDOT's newspaper, *Bulletin*:

> *Cultural resources are integral to our environment here in Virginia, and VDOT is playing a great role in preserving them for posterity, while we remain committed to providing the safest, most efficient transportation network possible.*[1]

CHAPTER 1 -- INTRODUCTION

The Georgetown Pike has a long history as a transportation corridor. The path along which it lies today is said to have begun as a trail carved out of the forest by animals. Later, Native Americans picked up this trail and used it to access the Potomac River below the Little Falls. When settlers came to the area, the trail was used as a rolling road, with hogsheads of tobacco rolled to awaiting ships for transport abroad. From 1813, when the first portion of the road was chartered, until 1934, the road served as a toll road under various names -- most notably the Georgetown-Leesburg Pike. One of the private toll road companies built the road in its present configuration in 1920. In 1934, the Madeira School (which is located on the Georgetown Pike) purchased the road from a private toll road company and turned it over to the state, which placed the road in the secondary road system. In May 1948, the Georgetown Pike was transferred to the Primary System of State Highways at the request of Fairfax County officials.[2]

On June 20, 1974, the Commonwealth Transportation Board (CTB) designated the Georgetown Pike as the first Virginia Byway. Throughout the 1970s and 1980s, the area surrounding the Pike saw great development pressure and population growth, which sent new cars onto the road and changed the scenic character of its corridor. This growth, combined with transportation planning and safety concerns, led to the emergence of a number of issues regarding conflicts between the preservation of the road and the necessity for safety improvements for the growing number of drivers using it.

Most of these issues surfaced at public hearings where improvements to the Georgetown Pike proposed by the Virginia Department of Transportation (VDOT) were presented. The major issues found in writing this study were identified by VDOT staff, Fairfax County officials, and citizens. The major issues and the project(s) that led to their identification were as follows (see Figure 1-1):

- "***Projects that include the addition of lanes or the widening of the road could adversely impact the historic character of the road.***" A project to expand a section of the road to four lanes from the Beltway east for approximately one mile, which was first proposed in 1977, was never built due to opposition from citizens and county officials. Some vertical curves were corrected for better sight distance.

- "***The choice and design of proposed changes to the road are not always sensitive to the historic character of the road and its corridor.***" A project to widen Chain Bridge Road and Route 193 at Langley Forks in the late 1950s was challenged by citizens and was resolved by building a Route 123 "bypass" to the east of what is now Old Chain Bridge Road. Around 1987, another realignment at the Langley Forks intersection was proposed to improve sight distance. The cut and fill required on these vertical curves would have affected historic structures and very old boxwood along the road. Through many meetings and much compromise, the road was realigned without damaging the boxwood or the relationship of the historic structures

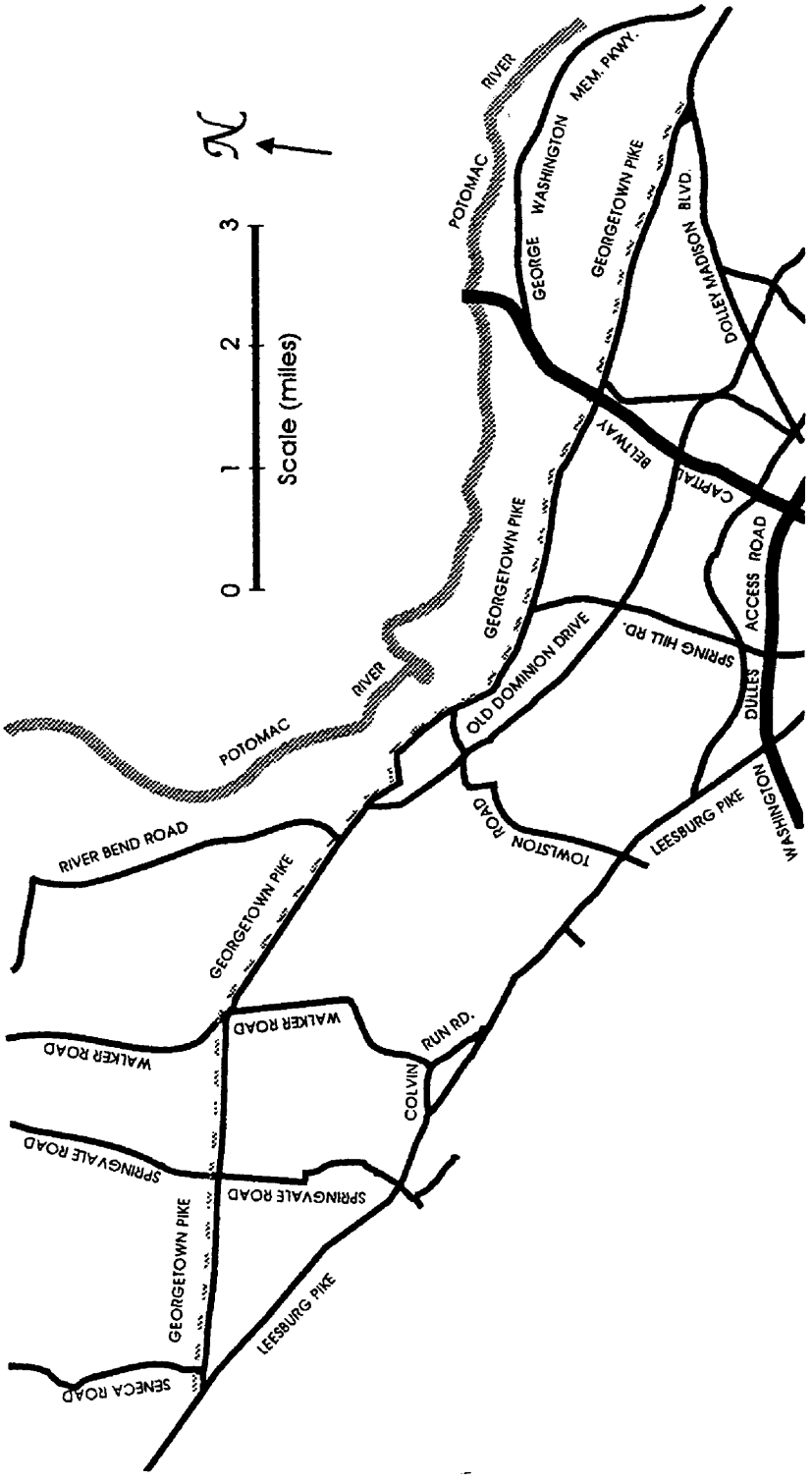

Figure 1-1. The Georgetown Pike Corridor, Fairfax County, Virginia.

to the roadway. The Langley Forks area was declared a Historic District, listed in the National Register of Historic Places, and placed in a historic overlay district by Fairfax County between 1980 and 1982.

- "***Projects proposed in the name of safety disrupt the special character of the road.***" This relates to the rolling character of the road and safety improvements that reduced vertical curves for better sight distance. Projects on Utterback Store Road and Leigh Mill Road in 1986, Mackall Avenue in 1987, and Springvale Road in 1989 reduced vertical curves at intersections with the Georgetown Pike to improve safety and sight distance.

- "***Deceleration, acceleration, and turning lanes degrade the historic character of the road and are a means of widening the road.***" VDOT standards require that many new entrances to Route 193 include right-hand or left-hand turn and/or deceleration/acceleration lanes. The Thistle Hill subdivision -- for which VDOT engineers felt a 250-foot deceleration lane was necessary -- was allowed to have only a 60-foot taper. This compromise was worked out by VDOT, citizens, and local officials.

- ***As a result of these conflicts, citizens and county officials have been searching for ways of protecting the Georgetown Pike from improvements that would degrade the historic character of the road.*** The ways identified by citizens and county officials included historic designation of the road and its VDOT-held right-of-way, use restrictions, and a change of highway systems. An Ad Hoc Committee to Preserve Georgetown Pike was organized to identify these measures.

Concern over these issues led local citizens, county officials, and state legislators from the Georgetown Pike area to initiate the legislation that led to this study report.

This report is organized to identify problems and possible solutions to the many issues raised concerning the Georgetown Pike. According to the joint resolutions, VDOT was directed to study the following:

1. Identification of all statutory, regulatory, or published engineering, construction, traffic, or safety standards that may be inconsistent with the purpose of maintaining the existing or historic character of this byway;

2. Identification and recommendation of alternatives to any engineering, legal, or other requirements of standards that, if followed, would degrade the aesthetic, natural, or historic character of the Georgetown Pike;

3. Identification of sources of funding available for preservation or improvements to alternative transportation corridors including those sources available under ISTEA (the Intermodal Surface Transportation Efficiency Act of 1991) and the National Historic Preservation Act of 1966; and

4. A study of ISTEA, especially the environmental programs and provisions of the act, as well as programs developed by the states of Maryland, Delaware, and Pennsylvania pursuant to ISTEA, in determining what alternatives and options may be available.

From these major issues and the issues referred to in the resolutions, the following organization of the report was created:

Chapter 2 -- Issues Dealing with the Georgetown Pike as a Road
- Section 2.1 -- The Role of VDOT
- Section 2.2 -- The Role of Fairfax County
- Section 2.3 -- Virginia Byway Designation

Chapter 3 -- Issues Dealing with the Georgetown Pike Corridor
- Section 3.1 -- Growth
- Section 3.2 -- Land Use
- Section 3.3 -- Protection Techniques

Chapter 4 -- Transcendent Issues
- Section 4.1 -- Historic Preservation
- Section 4.2 -- Safety and Tort Liability

CHAPTER 2 -- GEORGETOWN PIKE: THE ROAD

SECTION 2.1 -- THE ROLE OF VDOT

The issues surrounding the Georgetown Pike (Route 193) in Fairfax County are far-reaching and complex. Some citizens believe that certain actions taken by VDOT are interfering with the historic nature of the road and are incompatible with its designation as a Virginia Byway. Citizens and county staff have suggested many possible solutions to this issue.

Among the requests made by citizens and county staff to VDOT, the following were offered at a meeting with Fairfax County Heritage Resources staff, Dranesville District Supervisor Berger and his staff, and residents from the Georgetown Pike corridor and are discussed in this section: the transfer of the Georgetown Pike from the primary highway system to the secondary road system, the possibility of placing through-truck traffic restrictions on Route 193, and the possibility of using cut-through traffic restrictions on the road. These suggestions are seen by citizens as ways of (1) reducing traffic -- and congestion -- on the road; (2) keeping the historic "character" of the road intact; and (3) using current regulations and policy procedures to "save" the road from what they see as harmful alterations.

Before the specifics regarding these requests are discussed, it is important to know how VDOT's actions regarding the Georgetown Pike are governed by certain laws, standards, and regulations and the role of funding for these actions. This section focuses on these issues.

Highway Functional Classification

There are many levels of classification for a highway, all of which are used to aid in the administering of transportation programs. Highways can be classified by design type (freeways vs. conventional streets), route number (allocation of roads to various road systems to help with traffic operations), and administrative systems (denoting level of importance and funding source). A fourth level of classification is functional classification, or the organization of highways by the nature of the service they are meant to provide.[3]

The functional classification is meant to aid transportation planners by describing the purpose of a highway in the overall transportation network. The capacity of a highway -- the maximum hourly rate at which (persons or) vehicles can reasonably be expected to traverse a point or uniform section of a lane or roadway during a given time period -- is used to assess whether or not a highway system is meeting the needs of those who travel on it.[4] The capacity of a road helps transportation officials determine the type of road needed to meet the traffic demand and the steps to be taken to relieve overcrowding when roads are over-capacity.

Another term that deals with the service characteristics of a road is *level of service*.

> Level of service is a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A level-of-service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.[5]

Level of service is usually based on operating speeds and volume-to-capacity ratios. There are six levels of service according to the national standards of the American Association of State Highway and Transportation Officials (AASHTO), with Level A indicating free-flow traffic conditions and Level F denoting primarily stop-and-go traffic.[6] According to studies by VDOT's Northern Virginia District, in 1990 the Georgetown Pike was operating over-capacity during peak hours at a Level of Service E, which generally indicates an unstable flow, with speeds averaging 30 to 35 mph. The studies forecast the Georgetown Pike operating in 2010 at a Level of Service F during peak hours, the lowest and least desirable level.

The usual method of improving a highway's level of service or increasing its capacity is the addition of lanes. Widening shoulders or supplying turn lanes can also increase capacity because they allow traffic to flow more smoothly. Another method is to provide alternate routes for traffic using the road.

A functional classification is a way of defining a road's purpose and placement in the hierarchy of the transportation network. VDOT's functional classifications -- which follow standards set by the Federal Highway Administration (FHWA) -- for the Georgetown Pike include three categorizations. The section from Route 7 to Bullneck Run (between Langley Ridge Road and Merriwood Lane) is classified as a rural major collector, and the section from Bullneck Run to Old Chain Bridge Road is classified as an urban minor arterial. A short section from Old Chain Bridge Road to Dolley Madison Boulevard (Route 123) is considered a connecting link under the urban principal arterial classification. According to the *Virginia Statewide Highway Plan*, the functional classification definitions for the Georgetown Pike are as follows:

> **Rural Major Collector** - These highways provide service to any county seat, large towns, or other major traffic generators not served by the arterial system. They provide links to the higher classified routes and serve as important intracounty travel corridors.

> **Urban Minor Arterials** - These highways interconnect and supplement the principal arterial system with a greater emphasis on land access and a lower level of traffic mobility. They provide intracommunity services as well as connecting rural collectors to the urban highway system.[7]

AASHTO's *A Policy on Geometric Design of Highways and Streets*, which provides guidelines for standards for new highway construction, also contains functional classification definitions (see Appendix A).

VDOT's classifications for the Georgetown Pike seem to be appropriate for the road. Route 193 is much more urban on its eastern end and grows more suburban as it moves westward. The road passes through parks, which give it a rural feel, and it connects with two principal (major) arterials and an interstate in Fairfax County -- Route 7 (Leesburg Pike), Route 123 (Dolley Madison Boulevard/ Chain Bridge Road), and I-495 (the Capital Beltway), respectively.

VDOT cannot prohibit through-truck traffic on the Georgetown Pike -- which is in the Primary System of State Highways -- unless it is deemed necessary for the safety of the traveling public. There is no evidence of significant safety problems involving trucks, so truck restrictions on the Georgetown Pike do not seem appropriate. However, some restrictions are allowed in the secondary road system. Some citizens asked the Dranesville District Supervisor's office staff to look into ways of transferring the Georgetown Pike to the secondary system.

State Highway Systems

Knowing the origin of the state's two older road systems, the Primary System of State Highways (or state highway system) and the Secondary System of State Highways (or secondary road system), is helpful in understanding what roads are placed in each system today. The state highway system is composed of major roads with the exception of interstate highways. The secondary road system originated with the Byrd Road Act of 1932, when the state assumed responsibility for county roads (with a few exceptions) and placed them in this new system. In general, the state highway system includes major intercounty and statewide connecting routes that form an alternative to and supplement the interstate system; these routes are numbered from 1 to 599. The secondary roads are used for more localized, intracounty traffic providing access to adjacent lands; these routes are numbered beginning at 600.

Given that the uses and capacity of roads change over time, the General Assembly has allowed for the transfer of roads from one system to another (Section 33.1-35 of the *Code of Virginia*).

> The Commonwealth Transportation Board may transfer such roads, bridges and streets as the Board shall deem proper from the primary system of state highways to the secondary system of state highways.[8]

A 60-day public notice period followed by a public hearing is required if a locality requests it. There is no existing policy establishing criteria for the transfer of a road from the primary to the secondary system.

For comparative purposes, the requirements of the policy for transferring a secondary road to the primary system were analyzed. A majority of the nine requirements is needed to justify a transfer (see Appendix B). The Georgetown Pike does serve as a link between important roads, it does serve places of great scenic and historical interest, and it does have greater than 750 vehicles per day traveling on it. If undertaken, studies of light trucks, foreign vehicles, and tractor trailers may prove out also. Whether they do or not, the Georgetown Pike appears to be appropriately designated as a primary highway.

The most common reason for transferring a road from the primary to the secondary system is when an alternate or bypass of that route is built. Since there are no plans to build an alternate to the Georgetown Pike, and existing alternate routes are strained, this possible reason for transferring it to the secondary system is not applicable. For all of these reasons, Route 193 is appropriately assigned to the primary system, and no transfer is recommended.

The policies governing the secondary road system do contain provisions for implementing use restrictions in specified cases. Through-truck traffic restrictions and residential cut-through traffic provisions are two mentioned for use by some citizens.

Through-Truck Traffic Restrictions

Restricting through trucks on a secondary road is possible; the Commonwealth Transportation Board adopted a policy regarding requests for these restrictions on September 15, 1988. The policy consists of five criteria, of which three must be met to impose through truck restrictions on a secondary road. These five criteria are summarized below:

1) Reasonable alternate routing is provided.

2) The road requested for restriction is functionally classified as local or collector.

3) The character and/or frequency of truck traffic on the route proposed for restriction is not compatible with the affected area. The chart below should be used as a guide:

Total Traffic Volume Ranges	Total Truck Volume Ranges
4000+	200
2000-4000	100-200
1000-2000	50-100
400-1000	20-50
250-400	13-20
50-250	3-13

4) The engineering of the roadway and/or the accident history indicate the road is not suitable for truck traffic.

5) Within 150' of the roadway center line there must be at least 12 dwellings per 1,000 feet of roadway.[9]

Assuming the Georgetown Pike were to be placed in the secondary system, there is little evidence that it meets any of the above criteria for restricting truck traffic, with the one possible exception being criterion #2. Since part of the Georgetown Pike is classified as a rural major collector by VDOT (although not by Fairfax County), it might pass this criterion for the portion of the road classified as a collector. Although the volume of truck traffic has not been determined, alternate routing of the trucks away from the Georgetown Pike would seem to require longer distances and times than it would take to travel the Georgetown Pike. The closest alternate route would be Rte. 7 (Leesburg Pike) to Rte. 123 (Dolley Madison Boulevard), routes which are often congested. In addition, a substantial portion of truck traffic on the Georgetown Pike is likely to be serving citizens and businesses along the road and would not qualify as "through trucks."

So even if the Georgetown Pike were to be transferred to the secondary system, it does not seem likely that through truck restrictions would be placed on the road under current policy. Another measure mentioned by some citizens for the Georgetown Pike was the restriction of cut-through traffic.

Residential Cut-Through Traffic Restrictions

The cut-through traffic restrictions which VDOT policy allows can occur only on local residential streets. A local street is a street that provides access to adjacent land and access to higher road systems, where service to through traffic is discouraged.[10] Accordingly,

> *Residential cut-through traffic* is traffic passing through a specific residential area without stopping or without at least one trip end within the area. It is traffic that would be better served by the street system intended for through traffic, but, for various reasons, uses the residential street system.[11]

Since the Georgetown Pike is classified much higher than a local residential street, restrictions on cut-through traffic could not be placed on it.

As for the Georgetown Pike corridor, traffic may well be using local residential streets to cut through to the Georgetown Pike from Rte. 7, or vice-versa. Cut-through traffic using local residential streets that connect with the Georgetown Pike is a problem beyond the scope of this study.

The conclusion reached from this analysis of use restrictions is that they are inappropriate for use on the Georgetown Pike regardless of the road system it is in.

Traffic Counts

Attempts to analyze traffic patterns on the Georgetown Pike were made difficult by the lack of actual traffic counts in recent years. Economies have been achieved in the operations of VDOT by significantly reducing traffic counts. However, the lack of current traffic counts presents problems when a particular road is being examined.

VDOT's Traffic Engineering Division, Special Studies Section, undertook special traffic counts as a part of this study and additional traffic counts were made by technicians at the Virginia Transportation Research Council. These counts provide useful information regarding travel trends on the Georgetown Pike, but are not intended to represent a comprehensive study of all traffic patterns on the road (see Figures 2-1 and 2-2).

Special traffic counts were taken on the Georgetown Pike (Route 193) on three Thursdays: June 24, July 29, and August 12. These midnight-to-midnight counts were taken at different locations on different days, and direct comparisons of these one-day traffic counts are not necessarily valid. However, there is no reason to believe that these figures are atypical of summer Thursdays. Traffic counts at other times of the year could be higher or lower.

These special traffic counts were made along Route 193 at five locations: near Route 7, east of Towlston Road, west of I-495, east of I-495, and near Route 123. Counts were also taken on the ramps of the interchange at I-495 and Route 193.

At the Route 7 (Dranesville) end, 24-hour traffic volumes on June 24 were 7,613 eastbound and 6,169 westbound, for a total of 13,782 (no explanation is offered for this 55/45% directional distribution). Peak-hour morning traffic (eastbound) was 779 vehicles between 6:30 and 7:30 a.m. Peak-hour evening traffic (westbound) was 565 vehicles between 4:30 and 5:30 p.m.

The counters placed just east of Towlston Road (and east of the Great Falls National Park) on July 29 recorded 7,443 vehicles eastbound and 7,963 vehicles westbound, for a 24-hour total of 15,406. Peak-hour morning traffic (eastbound) was 1,115 between 7:15 and 8:15 a.m. Peak-hour evening traffic (westbound) was 1,049 between 5:15 and 6:15 p.m.

Comparing the Towlston Road data with those from Dranesville, one notes that there is only a gradual increase in total traffic, from west to east, over the approximately six miles between these count locations. However, there is a significant increase in traffic volumes over the three miles between Towlston Road and I-495, as will be seen.

Georgetown Pike traffic volumes are highest just west of the I-495 interchange, where two-way traffic totaled 23,539 vehicles on July 29. As expected, eastbound and westbound traffic was about evenly divided, with 52% westbound. Peak-hour morning traffic (eastbound) at this location was 1,567 vehicles between 7:30 and 8:30 a.m. Peak-hour evening traffic (westbound) was 1,681 vehicles between 5:30 and 6:30 p.m.

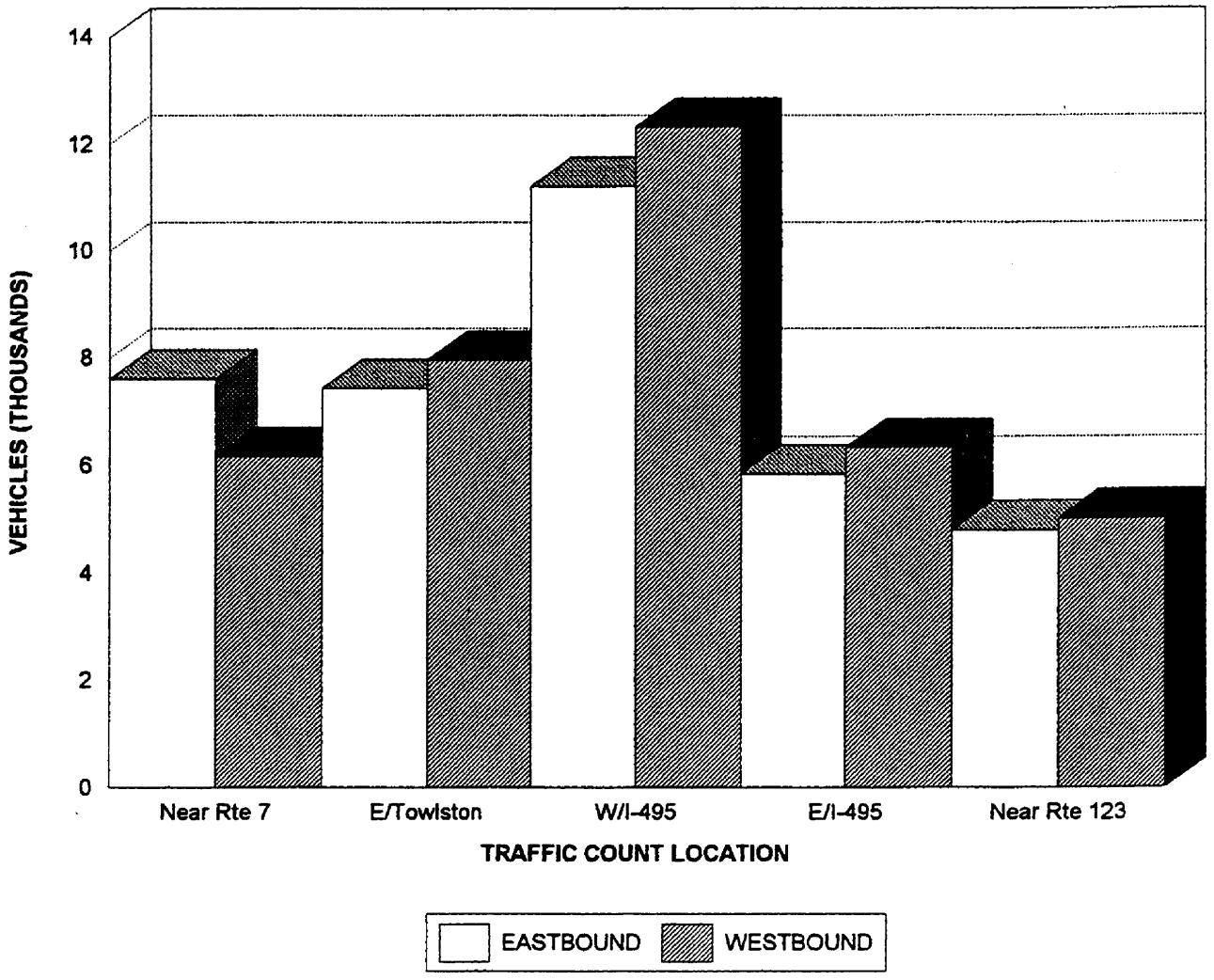

Figure 2-1. Georgetown Pike 24-Hour Traffic Volumes at Selected Locations.

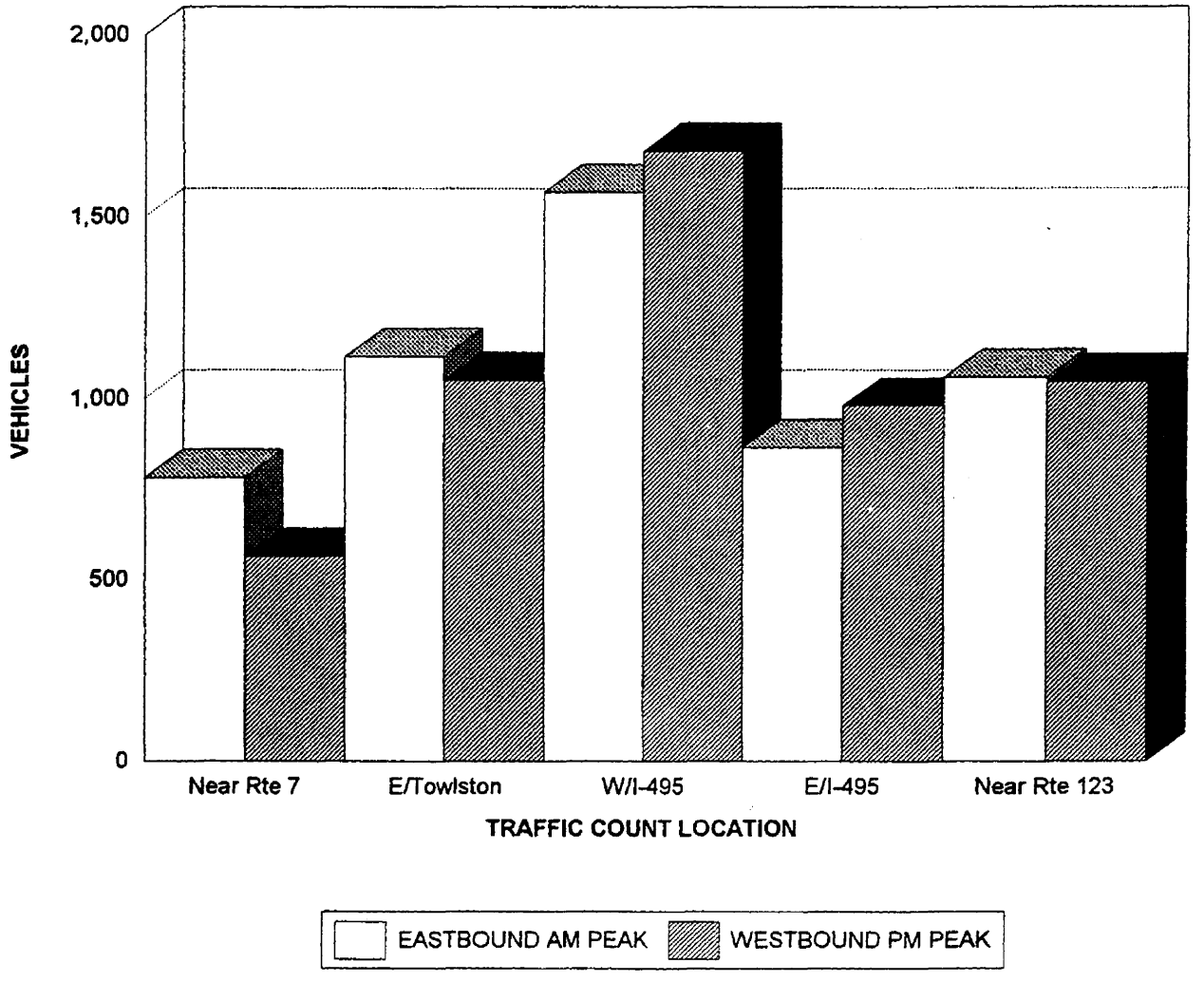

Figure 2-2. Georgetown Pike Peak-Hour Traffic Volumes at Selected Locations

The turning movement of eastbound Route 193 traffic at the I-495 interchange is very high. On July 29, eastbound Route 193 traffic totaled 11,218 vehicles (24 hours). Of this total, fully 7,376 vehicles (65.8%) turned left onto the ramp to I-495 northbound. Peak-hour turning movements are very similar: of 1,567 vehicles eastbound, 997 vehicles (63.6%) turned left. This indicates that a significant portion of the eastbound traffic on Route 193 is either crossing the Potomac River to reach destinations in Maryland or the District of Columbia, or accessing other points in Northern Virginia via the George Washington Memorial Parkway.

Traffic from I-495 southbound onto Route 193 is also high, as may be expected. On August 12, 9,368 vehicles used that off-ramp, with a one-hour volume of 1,189 vehicles between 5:00 and 6:00 p.m. On June 24, the total traffic volume was 11,414, with a peak-hour volume of 1,722 between 5:15 and 6:15 p.m.

Just east of I-495, traffic volumes are lower. On June 24, traffic was 5,856 eastbound and 6,399 westbound, for a total of 12,255. Peak-hour morning traffic (eastbound) was 864 between 7:00 and 8:00 a.m. Peak-hour evening traffic (westbound) was 979 between 4:45 and 5:45 p.m.

Near Route 123, traffic on June 24 was 4,820 eastbound and 5,020 westbound, for a total of 9,840 vehicles. Peak-hour volumes were 1,058 eastbound and 1,044 westbound.

These counts give an idea of how crowded the Georgetown Pike is, especially during the morning and evening rush hours. The capacity of the Georgetown Pike currently is given as 12,000 ADT (average daily traffic) by VDOT's Northern Virginia District Transportation Planning Division. There was a volume of 23,539 vehicles on the busiest section of the Georgetown Pike during the special counts. The road, for the most part, seems to be operating over-capacity.

Geometric Design Standards

The safety of highways used by the public is the top concern of any transportation agency. There are many standards and guidelines that transportation agencies follow to ensure that safety is always being considered. For example, the standards presented in AASHTO's *A Policy on Geometric Design of Highways and Streets* are considered to be national guidelines for standards for new highway construction. VDOT has adapted many of AASHTO's standards into its own *Road Design Manual*, which includes the standards used by VDOT when designing new highways or reconstruction projects.

Design standards are meant to be used as guidelines by designers when designing new highways or reconstructing old highways to increase safety and capacity. However, there are often times when exceptions to the standards are made for certain road projects. When exceptions are considered, safety plays a major role in the ultimate decision. Some

discretion is given to the design engineer. In Virginia, major variations from standards can be granted only by VDOT's Chief Engineer.

Examples of standards (from VDOT's *Road Design Manual*) for roads classified as urban arterials -- as a portion of the Georgetown Pike is -- include a minimum lane width of 11 feet and a minimum paved/stabilized shoulder width of eight feet. For a rural collector -- which another segment of the Georgetown Pike is classified as -- the minimum lane width is 12 feet, and for graded shoulders (cut and fill), the minimum width is eight feet. The Georgetown Pike does not meet the standard for the minimum width for shoulders along almost its entire length, and there are some sections that do not have lanes at least 11 feet wide.

Given these examples though, the only time an AASHTO or a VDOT design standard for new highway construction would be applied to the Georgetown Pike would be on any project that involved more than maintenance -- i.e., bridge replacement, cross-section improvements, the addition of shoulders, and other major construction projects.

Safety

Improvements to highways are almost always made for one of two reasons: to improve the safety of the highway or to improve the capacity of the highway. Many improvements can increase safety and capacity at the same time. After reviewing the major safety improvements that can be made to two-lane highways, accident statistics and design features on the Georgetown Pike are discussed.

Highway Improvements

Safety improvements that are often made to highways include increasing lane width, shoulder width, and clear zones; straightening horizontal curves; and cutting or filling vertical curves to increase sight distance. Increasing lane width and shoulder width gives drivers room to recover after their vehicles run off the road and also increases the distance between vehicles traveling in opposite directions on two-lane roads. Other important aspects regarding shoulders include the provision of better emergency vehicle access, improved road maintenance performance, and a safe pull-off area for speed limit enforcement.

A clear zone, or a "forgiving roadside," is an area next to the roadway that has no fixed obstacles for vehicles to hit when they run off the road. Fixed obstacles include trees, guardrail, nonbreakaway signs or structures, sharp pavement-edge drop-offs, and deep drainage ditches. These clear zones (or recovery areas) can range from simple eight-foot shoulders to 30-foot-wide clear zones. The safety impact of clear zones is obvious -- with no obstacles on the side of the road, an out-of-control vehicle or driver trying to avoid an accident has a safe alternative to a collision.

The vertical alignment of roads can have a great effect on safety. The height of a vertical curve can affect the sight distance of a driver. When a vehicle goes up a vertical curve, the driver cannot see what is coming toward the vehicle on the other side of the road or what is happening on the downside of the hill. Reduction of vertical alignment can improve sight distance, therefore permitting drivers to see the other side of the slope sooner, allowing for better accident avoidance.

The straightening of a horizontal curve can also improve sight distance. Another important safety factor on horizontal curves is the effect of entering and exiting a sharp curve from a straight portion of a highway. Excessive speed at these points can often cause a vehicle to stray from its lane or to run off the road. The superelevation (or "banking") of such a curve can improve the ability of a vehicle to stay on the road while also improving passenger comfort while the vehicle is passing through the curve.

A final major category of safety improvements involves intersections. When vehicles enter a roadway from another roadway, factors such as sight distance and the grading of an intersection play important roles in the safety of that intersection. The number of turning movements at an intersection affects safety. A vehicle leaving a road down slope from the entering road has the added difficulty of entering the roadway fast enough. If sight distance is also restricted, the intersection can become very dangerous. Also, if the intersection cannot be viewed from a decent distance, drivers might not be properly aware of the impending intersection, which could cause accidents, especially rear-end collisions.

Accidents -- General Trends

Between 1972 and 1992, there was a general decrease in the number of reported accidents on the Georgetown Pike. This prevalent trend can be seen in Figure C-1 in Appendix C, which compares the total number of accidents for each year. The number of accidents ranged from 248 in 1972 to 155 in 1991; the average was 206 per year. The general decline may be a result of many factors. The likelihood that certain types of accidents are reported may change from year to year. A fatal accident must be reported, and because of unknown potential medical costs and the need for emergency care, an injury accident is also likely to be reported. However, there may be some fluctuation from year to year in the number of accidents reported that involve only property damage. This could be caused by the dollar amount of property damage -- which must be reported -- increasing over time. This increase is intended to account for inflation but may also cause fluctuation in the total number of accidents reported. Also, since the consequences of reporting accidents to insurance companies have grown more severe over the 21-year time frame, the likelihood of individuals reporting accidents may have decreased, thereby creating further fluctuation.

The possible variance in reporting property damage accidents suggests that more reliable results may be found from an examination of trends in fatal and injury accidents. A comparison between the injury and property damage only accidents is shown in Figure C-2 in Appendix C. This graph displays the general decline in the number of property damage only

accidents. The number of injury accidents, on the other hand, fluctuated over time, with no significant upward or downward trend.

Between 1972 and 1992, 21 fatal accidents occurred on the Georgetown Pike. The number of fatalities per year has shown a general decline. This trend is depicted in Figure C-3 in Appendix C. The figure shows that the decline is not represented by a steady, straight line, but rather by a grouping of fatal accidents in the earlier years of the period examined. During the last eight years, three fatal accidents occurred, resulting in three fatalities.

Normally, as the volume of traffic increases, the number of accidents also increases. However, such an upward trend has not been observed on the Georgetown Pike. Although the slower traveling speeds that have resulted from increased congestion have kept the number of accidents from increasing; safety enhancement projects have also played a role. As land use changes bring additional traffic to the corridor, the struggle to provide a safe roadway while preserving its special character will become more acute.

Accident Characteristics

In order to provide insight into the causes of and possible reductions in the severity of accidents on the Georgetown Pike, all accidents between 1982 and 1992 were examined in greater detail. The data are from police accident reports provided to VDOT and stored in a database management system.

The types of collisions and their frequency of occurrence are shown in Figure C-4 in Appendix C. Angle accidents, characteristic of intersection turning conflicts, are the most common type of collision. The second most common type is the rear-end collision. This accident type is often attributed to a combination of limited sight distance, vehicle speeds greater than those deemed safe, and vehicles following too closely to those in front of them. The third highest accident type is the collision with a fixed object off the roadway. The types of objects most frequently hit, shown in Figure C-5 in Appendix C, are trees and guardrail; utility poles and embankments are also hit in a significant number of accidents. The severity of fixed-object collisions is greater than that of other types of accidents. Of the 42 collisions with fixed objects between 1982 and 1992 on the Georgetown Pike, three resulted in fatalities. As there were seven fatalities on the corridor during this time, this representation is significant. The percentage of fixed-object collisions resulting in injuries is also slightly higher than the average for all collision types.

The condition of the road surface at the accident location can be a factor in the cause of an accident. However, as shown in Figure C-6 in Appendix C, about 70% of the accidents on the Georgetown Pike were on dry pavement. By examining the time of accident occurrence, peak-period problems can be identified as well as possible lighting deficiencies for late-night accidents. On the Georgetown Pike, the majority of accidents occurred between 2:00 and 7:00 p.m. There also was a significant percentage of accidents between 7:00 and 8:00 a.m. These trends are displayed in Figure C-7 in Appendix C. The graph

represents percentages of accidents and does not account for volumes of traffic. Hourly volumes are not available for the years examined, but concentration during peak traffic periods is presumed.

Site-Specific Accident Analysis

Another benefit of looking at the trends of all accidents along the Georgetown Pike is that smaller samples can be compared to the larger picture. A disproportionate representation of a particular factor may mean that it plays a role in the accidents taking place at that location.

As part of the accident analysis, those locations with the highest accident occurrence and those representing a significant upward or downward trend were examined. By identifying these locations, some of the contributing factors were identified, and in some cases recommendations were made for safety improvement. All accidents between 1982 and 1992 were included in the analysis. Because of the limited volume data available for specific locations, accidents are presented in gross numbers only and not in accident rates. Where possible, consideration for volumes were made.

Intersection locations with greater than 40 accidents over the 11-year period were identified and are shown in Table 2-1.

Table 2-1. Sites with Greater Than 40 Accidents

Intersecting Route	Number of Accidents (1982-1992)
Old Dominion Drive	62
River Bend Road	59
Swinks Mill Road	54
Harvey Road	50
Leesburg Pike	46
Douglas Drive	45
Route 1049	45
Ramp from EB Route 193 to NB I-495	43

These sites accounted for almost 20% of all the accidents on the Georgetown Pike over the 11 years examined. Characteristics of the accidents at these sites are described in the following paragraphs. Figures for each intersection can be found in Appendix C.

- **Old Dominion Drive (Route 738)**: The highest number of accidents occurred at this intersection. The total number of accidents by year is displayed in Figure C-8. Although there are a number of years that have an excessively high number, there is no upward or downward trend. A significant number of accidents occurred during the evening peak period, and the percentage of angle accidents was higher than the percentage of angle accidents along the entire length of the roadway.

  This intersection provides access to residential areas south of the corridor and is an alternative route to the Tyson's Corner area and Arlington County. The north leg of this intersection provides access to Great Falls National Park. The high number of angle incidents indicates conflicts between turning vehicles. As they were prevalent in the evening, they were probably occurring between westbound vehicles turning left onto Old Dominion and eastbound Georgetown Pike traffic. *The provision of a left-turn lane for this turning movement with an exclusive left-turn signal phase might help reduce the accident problem. However, other steps to improve the sight distance for eastbound Georgetown Pike traffic might be warranted, as well as a review of the signal timing and phasing to ensure adequate opportunity for the left-turn movement onto Old Dominion.*

- **River Bend Road (Route 603)**: A substantial number of accidents occurred at this intersection. A slight upward trend can be seen in the number of accidents occurring per year, as is displayed in Figure C-9. This was likely due to increased commuter traffic at this location. This intersection provides access to several residential areas north of the Georgetown Pike and to Riverbend County Park. The percentage of accidents between 7:00 and 9:00 a.m. was greater than 55%. This is very significant, as the total number of accidents during this time period on the entire corridor was less than 13%. Several citizens provided comments regarding this problem. During the morning peak period, drivers wait on River Bend Road to turn left onto the Georgetown Pike. Occasionally, an eastbound driver will stop long enough to allow a car to make the turn. Motorists behind the courteous Georgetown Pike driver will use the right-turn lane into Nethercliffe Hall Road to pass the stopped vehicle. The driver turning from River Bend Road cannot see this motorist until a collision is close at hand. This explanation is supported by the abnormally high representation of angle accidents at this site.

  It was suggested that the right-turn lane be closed to prevent this conflict. Although this may be the only complete solution, eliminating this lane may have other safety and capacity consequences that cannot be fully known until implemented. It is recommended that other possible improvements be attempted before going to this extreme. One such alternative might involve a positive barrier to make use of the right-turn lane as a passing lane very difficult while still allowing complete access. This suggestion is depicted in Figure C-10.

- **Swinks Mill Road (Route 684)**: Rear-end collisions represented over 46% of the accidents at this location, as compared to 29% of the accidents on the entire road.

Figure C-11 shows a general decline in the number of accidents each year. The time the accidents occurred corresponded very closely with that of all accidents on the road. *Steps should be taken to increase the sight distance so that turning vehicles are visible sooner and to increase driver expectancy of stopped or slowed vehicles. This site might also benefit from turning lanes to provide storage for waiting vehicles.*

- **Harvey Road (Route 1970)**: Although this intersection represents a high-accident location, there was a general decline in the number of collisions over the past six years. This trend can be seen in Figure C-12. The accident occurrence was highest in the afternoon from 2:00 to 6:00 p.m., and there was a high representation of angle accidents. A traffic signal at this location provides access to the north and south for residential areas. This afternoon peak of accidents may be due to the increased volume of traffic during those hours from Langley High School drivers. *The phasing and timing of the traffic signals should be reviewed to ensure adequate access for all movements.*

- **Leesburg Pike (Route 7)**: The number of accidents at this intersection fluctuated over recent years and significantly increased in 1992 to nine accidents. These trends are depicted in Figure C-13. A high percentage of these accidents occurred in the afternoon, between 1:00 and 5:00 p.m. Seven of the nine accidents in 1992 occurred during this time frame. All the accidents in 1992 and more than 90% of those in the prior years were rear-end collisions. This is significantly higher than the 29% figure for all rear-end collisions that occurred on the Georgetown Pike. *The possibility of increasing driver expectancy of stopped vehicles should be examined at this intersection.*

- **Douglas Drive (Route 937)**: Except for a peak of 11 accidents in 1990, the number of accidents at this intersection did not change significantly over the time period examined, as is depicted in Figure C-14. There was a sharp increase in the number of collisions in the morning peak hours and in the early afternoon. The majority of accidents were angle collisions. The high number of accidents in the morning indicates a problem involving drivers turning out of the subdivision.

- **Mackall Avenue (Route 1049)**: This intersection warrants attention because of the high number of accidents, but also because of the steady decrease in accidents over the 11 years examined. This trend is shown in Figure C-15. Eleven accidents occurred at this location in both 1982 and 1983. Over the next four years, the number of accidents per year ranged between three and five. In January of 1987, a road project was initiated to change the grade and improve the vertical sight distance. The project was completed in October of that year, and only six accidents have occurred in the six years since then, with no more than two accidents occurring in any one year.

- **Ramp from Route 193 Eastbound to I-495 Northbound**: The number of accidents at this ramp in 1989 was the greatest over the 11-year period, but accidents have

steadily declined since. This trend can be seen in Figure C-16. The times the accidents occurred were at the same peak periods as for the total sample. One notable factor is that a much greater percentage of the accidents at this location were angle collisions. Only about 32% of all accidents on the entire corridor were angle collisions, but at this ramp, 86% were categorized as angle collisions. This is not surprising, as a significant percentage of the eastbound drivers on this section of the Georgetown Pike make a left turn onto this ramp. Over the last several years, suggestions and complaints regarding this intersection have been received from commuters. Changes in traffic control measures have been implemented as warranted to help alleviate the problem.

Two additional locations were examined that had fewer than 40 accidents. The first of these locations, 0.5 mile east of Old Dominion Drive, was the site of 38 accidents. It is of significant interest because it was the only location with such a high occurrence of accidents that was not an intersection. This location falls within the 1.24-mile section of the Georgetown Pike between Old Dominion Drive and Towlston Road, is adjacent to Great Falls National Park, and is distinguished by its meandering nature. This short stretch of roadway accounted for 10.73% of all accidents along the Pike between 1982 and 1992; it accounted for 18.8% of all accidents at nonintersection locations -- about double the percentage expected from the percentage of roadway represented. These accidents were spread more evenly throughout the day, with some concentration between 8:00 and 11:00 p.m. About 50% of the accidents occurred when the pavement was wet, which is significantly higher than the overall rate of 24%. Almost 70% of these accidents were collisions with fixed objects off the roadway, and the objects most frequently hit were trees and guardrail. Although some of these accidents were attributed to driver inattention and vehicle speed, the weather and time of day also appear to have played roles. *Additional warning and possible lighting may be needed on this stretch of roadway as it has a more severe curvature than other sections.* By improving driver expectancy, proper precautions can be taken. *This section of the roadway should also be reviewed and suggestions made on how to increase the clear zone adjacent to the roadway to allow an errant vehicle to re-enter the roadway without hitting a fixed object.*

The second location, Springvale Road, was examined not because of the high number of accidents, but because of the strong decline in accidents over the 11-year period. As depicted in Figure C-17, the number of accidents at this intersection peaked in 1984 and 1985, with eight each year. The sight distance at this intersection was very poor, with angle accidents representing the majority of collisions. One of the accidents in 1984 resulted in a fatality, as did an accident in 1980. A road project to change the grade and increase the sight distance at this location was completed in November of 1989. In the three years since the project was completed, only three accidents have occurred.

In summary, except for the one meandering section of the Georgetown Pike, all high-accident locations were at intersections. These accidents typically occurred during one or both peak traffic periods. The types of collisions most dominant were angle and rear-end conflicts. Critical to these safety concerns are adequate sight distance, appropriate

deceleration and storage areas, and driver expectancy. In two locations described previously, measures taken to change the alignment and increase the sight distance appear to have been effective in reducing the number of accidents at these locations. Additional scrutiny of high-accident locations should occur so that carefully planned, effective changes can be implemented. Also, increased knowledge of these accident locations would allow proper precautions to be taken during the planning and development stages and therefore might help prevent the creation of additional high-risk locations.

Road Design -- General Considerations

When designing a highway project, the idea of roadway consistency should be kept in mind. Drivers expect certain things on roadways -- anything that could be a surprise to drivers should be warned of well in advance. A consistent design of roadways, especially when spot improvements are made, will aid driver expectation.

Safety is of the utmost concern to highway officials, and it is the one area that is never compromised. However, considering the fact that each road in the state is different and involves many different factors, there are options available to providing safe means of transportation. One fact to keep in mind is the following:

> Most of the present day roadway routes were in existence by [1920], but they were largely unpaved, unsuited to all weather travel by automobiles, and generally not intended for use by motor vehicles. . . . the automobile inherited, and had to make do with, a road system created for another means of transportation.[12]

Making these road systems safe for automobile drivers is not an easy or inexpensive task, but it is necessary. Roads were originally built for use by horse and wagon, whose speed was well below five miles per hour, a speed at which sight distance on curves is not a great concern. The Georgetown Pike retains a great deal of its pre-motor vehicle alignment.

Given all of the information on the importance of safety, and the necessity of some safety improvements given accident statistics for the Georgetown Pike, the study team felt that a recommendation for improving the overall safety of the Georgetown Pike would be appropriate. There seems to be a consensus among interested parties that the traveled way of the Georgetown Pike should remain in its present location and should not be widened. However, traffic volumes continue to grow and accidents continue to occur.

Shoulders

Since the Georgetown Pike has almost no shoulders in several areas, and minimal shoulders in other areas, this is an obvious area to examine. It is well known that paved shoulders can improve safety. However, paved shoulders would be objectionable to many people who want to maintain the minimum asphalt intrusion on the land. For this reason, the study team examined whether unpaved shoulders would improve safety.

A method exists for predicting the accident rate of various two-lane, two-way, paved rural roads on state primary and secondary systems. This method, developed by Zegeer, et al, is summarized in the Transportation Research Board's report entitled *Designing Safer Roads*.[13] The Zegeer method is intended for use with rural roads and thus does not predict intersection accidents. However, for some stretches of the Georgetown Pike, there are few street entrances and rural conditions prevail. Fortunately, intersection and non-intersection accident data can be separated, and reasonable comparisons can be made between actual accident data and predictions made using the Zegeer method.

For this method, the accident rate is defined as the number of run-off-road, head on, opposite-direction side-swipe, and same-direction side-swipe accidents per mile per year. Significantly, intersection and rear-end accidents are not predicted by the Zegeer method. The roadside hazard rating used in this methodology is a median rating of the roadside hazards (fixed-objects such as trees that are close to the road) for a particular highway segment that is measured subjectively on a scale from one (least hazardous) to seven (most hazardous).

For analysis of the Georgetown Pike, the following assumptions were made, for the two-lane sections only:

Traffic Volume:	17,000 ADT (median value)
Pavement Lane Width:	10.15 feet (weighted average)
Shoulder, Paved:	0 feet
Shoulder, Unpaved:	0, 1, 2, 3, 4, 5, and 6 feet
Terrain:	Rolling
Roadside Hazard Rating:	5 (of a possible 7)

The results of the analysis predicted that the present road, with no significant shoulders over much of its length, should experience 7.97 accidents per mile per year, excluding rear-end collisions. This predicted figure agrees surprisingly well with the 1,169 nonintersection accidents that occurred over the entire length of the Georgetown Pike from 1982 through 1992. This is an average of 9.01 accidents per mile per year, including rear-end collisions.

Having developed confidence that the Zegeer method was appropriate, it was then used to predict the effects of adding grass-covered shoulders while holding lane width and other variables constant. The results, shown graphically in Figure C-18 in Appendix C, predicted that adding six feet of unpaved shoulder (consisting of gravel, turf, or earth) could reduce the nonintersection accident rate by 35%, to 5.2 accidents per mile per year.

Alternatives to the Use of the Georgetown Pike

There are a number of routes that can and do serve as alternatives to the Georgetown Pike. A list of these routes and the improvements planned or being considered for them

follows (sources include the Northern Virginia 20-year subregional plan, the Fairfax County Comprehensive Plan Transportation Map, and news articles):

- **Route 7 (Leesburg Pike)**: widening to six lanes, limited access, from the Dulles Toll Road to the Loudoun County line; to a six-lane arterial from the Loudoun County line to Route 28; to six lanes, limited access, from Route 28 to Leesburg;

- **Dulles Toll Road**: new construction of a four-lane, privately built extension from Route 28 to Leesburg; adding an HOV (high-occupancy vehicle) lane in each direction over the entire length;

- **Fairfax County Parkway**: new construction of a four-lane arterial from Baron Cameron Avenue north to Route 7, and new construction of a six-lane arterial from the Dulles Toll Road to Baron Cameron Avenue;

- **Old Dominion Drive**: no major improvements planned;

- **I-495 (Capital Beltway)**: adding a fifth lane in each direction, most likely an HOV lane; and

- **Route 123**: widening to six lanes from Tyson's Corner to the George Washington Memorial Parkway.

None of these improvements is scheduled for completion in the next few years. The improvements that could have the greatest affect on the Georgetown Pike are the Route 7 widening, the Dulles Toll Road extension, and construction of the Fairfax Parkway between Route 7 and the Dulles Toll Road. However, it does not appear that significant amounts of traffic will be diverted from the Georgetown Pike even when these projects are completed.

Other alternative corridors or means of transportation include carpooling and its related ridesharing/commuter parking lots; public transportation, including possible mass transit rail lines in the Dulles Toll Road median; a western bypass of Washington, D.C.; and bicycle or pedestrian circulation on existing and planned trails, including those that are included on the Fairfax County Trail Map.

Another alternative to more cars on the Georgetown Pike is the broadened use of telecommuting. Businesses can implement programs that allow their employees to work at home with computers, facsimile machines, and telephones. Telecommuting could take place full time or part time. The main benefit of this program would be to relieve commuter traffic using area roads. In addition, reducing traffic through telecommuting could reduce air pollution, which is one requirement of the Clean Air Act Amendments of 1990 and an important factor in the environmental programs of ISTEA.

Funding Sources for Alternatives

The funding process for highway maintenance and improvements is very complicated and is beyond the scope of this study. However, a description of funding sources that could be used on improvements to alternative transportation corridors will provide a picture of the options open to VDOT for funding a transportation project.

In terms of funding, it is important to remember that there are many projects that need to be constructed with a limited amount of funds. Therefore, the allocation of money to improve these corridors (or for use on the Georgetown Pike itself) would not be automatic -- the usual process of allocating funds at the state, regional, and local levels would still need to be followed. Allocations for improvement projects are listed in the Commonwealth Transportation Board's Six-Year Plan, the most recent of which allocated funds through Fiscal Year 1998-1999. The Six-Year Plan contains no allocations for improvements on the Georgetown Pike. There are sources of funds for safety improvements and regular maintenance that could be applied to the Georgetown Pike if it was decided that such work was necessary.

There are three major sources of funding for transportation projects: federal, state, and local funds. (All federal funds flow to VDOT with some restrictions on their use.) A fourth source, private funds, is being used for the Dulles Toll Road extension to Leesburg. After a description of federal and state sources, a list of possible funding sources for improvement to four of the Georgetown Pike's alternative corridors is presented.

Federal Sources

The most recent federal transportation funding bill is the ISTEA, in which many different funding programs are outlined. For the purposes of this study, those funding programs that could be applied to the Georgetown Pike and/or its alternative transportation corridors are presented.

National Highway System

The National Highway System (NHS) includes interstate highways and other principal, connecting arterial roads within states that are designated as part of the NHS. NHS funding can be used for a variety of projects -- from new construction to maintenance. These funds must be met with a minimum state match of 20% of the total project cost, as do all ISTEA-allocated funds. (The Georgetown Pike will not be included in the NHS.)

Surface Transportation Program

The Surface Transportation Program (STP) includes funding that goes to states for allocation to transportation projects. Enacted as a major part of ISTEA, the STP has funds for a variety of transportation projects.

> The STP provides broad discretion for State and local governments to fund a wide variety of activities, including highway and transit capital projects, carpool projects, bicycle and pedestrian facilities, planning, and research and development.[14]

Within the STP, there are specific required funding categories. Fully 10% of STP funds allocated to a state must be used for transportation enhancements. Another 10% must be used for safety improvements.

Funds from the STP can also be used for planning, including plans for reaching air quality standards in areas that do not meet the standards set in the Clean Air Act Amendments of 1990. The allocation of a portion of STP funds to specific projects are prioritized regionally by the Metropolitan Planning Organizations (MPOs). The MPOs take into account the entire regional transportation system and its intermodal nature when prioritizing these funds.

Congestion Mitigation and Air Quality Improvement Program

The Congestion Mitigation and Air Quality Improvement program (CMAQ) is another major new program under ISTEA. Funding for CMAQ projects (which are identified by MPOs) is used to alleviate congestion problems, and most important, to aid in helping nonattainment areas meet air quality standards. This program has $6 billion authorized over six years to be allocated to help with these problems. Since Northern Virginia is a nonattainment area, some of these funds might be used there.

Other Environmental Provisions

ISTEA also has provided limited funding for the Interim Scenic Byways Program and for the National Scenic Byways Program, which is being developed by a Scenic Byways Advisory Committee. These funds are to be used for technical assistance and grants to states that have existing byways programs or to states wanting to set up byways programs that meet national standards. Those standards have yet to be established by the Advisory Committee.

State Sources

The federal funds provided under ISTEA are allocated to states for uses specified under each program. Within these program allocations, states have broad discretion in how to spend the funds.

Highway Maintenance and Operating Fund

In Virginia, federal funds go first into the Highway Maintenance and Operating Fund (HMOF). Some revenues from state motor fuel taxes also are placed in the HMOF. The combined funds are used first for highway maintenance and operating costs (the only federal funds for maintenance are for interstates) as well as for other costs, such as transfers to other

agencies. Any remaining funds are transferred into the state's Transportation Trust Fund (TTF). Designated federal funds are passed through the HMOF to the TTF.

Transportation Trust Fund

> The Transportation Trust Fund was established in 1986 as the result of recommendations of the Commission on Transportation in the Twenty-First Century (COT-21). A major reason for its creation was to establish a mechanism for funding multimodal transportation facility construction.[15]

TTF revenues are provided by pass-through funds from the HMOF, revenues from 1/2% of the state sales tax, state motor fuel taxes, and other taxes. TTF funding is used to support aviation, ports, public transportation, and highways.

Federal and state highway funds are combined and allocated together, through allocation processes controlled by the Virginia legislature. Highways that serve as alternatives to the Georgetown Pike will be constructed or improved using TTF funds.

Enhancement Funding

The requirement in ISTEA that 10% of STP funds must be used to fund transportation enhancements provides a source of funding for scenic byways and historic roads. There are ten categories of projects for which these enhancement funds can be used:

1. Provision of facilities for bicycles and pedestrians.
2. Acquisition of scenic easements and scenic or historic sites.
3. Scenic or historic highway programs.
4. Landscaping and other scenic beautification.
5. Historic preservation.
6. Rehabilitation and operation of historic transportation buildings, structures or facilities.
7. Preservation of abandoned railway corridors.
8. Control and removal of outdoor advertising.
9. Archaeological planning and research.
10. Mitigation of pollution due to highway run-off.[16]

Most states have created a Transportation Enhancement Program to allocate funds to projects under various categories.

The enhancement programs developed by Maryland, Delaware, Pennsylvania, and Virginia are essentially similar. All of the programs were created following basic FHWA guidelines, and the ten enhancement categories are the same for all the programs. Areas that differ somewhat from state to state include the makeup of project selection committees, the responsibility for final approval, the matching funds policies, and the number of funding cycles completed. This information was compiled from state DOT enhancement program

documents and the Rails-to-Trails Conservancy's report entitled, *Enhancing America's Communities: A Nationwide Survey of The Transportation Enhancements Provisions of ISTEA*.[17]

- **Delaware**: Delaware's Transportation Enhancement Program had not yet completed a full funding cycle as of December 1992. The projects are reviewed on an ongoing basis, with planning and funding selections made annually. The final project recommendations are made by an executive-level Advisory Committee, which includes one citizen. The final selection of projects to receive enhancement funding is made by the Secretary of Transportation. Federal funds must be matched at 20% of the total project cost. The local sponsors propose the level of local match for their project.

- **Maryland**: Maryland's and Delaware's enhancement programs are nearly identical. Maryland also accepts applications on an ongoing basis, and selection is accomplished on an annual basis. The final recommendations are made by an interagency executive-level Advisory Committee, which does not include any citizens. The final selection and approval reside with the Secretary of Transportation. Maryland has completed two funding cycles, allocating a total of $12,457,000 combined federal/state/local match. The matching fund policy in Maryland is different from others in that the project sponsor must provide 50% of the total project cost, to be combined with federal (40%) and state (10%) shares.

- **Pennsylvania**: The Pennsylvania Transportation Enhancement Program has completed two funding cycles, allocating a total of $20,130,000 in federal, state, and local funds for enhancement projects. The final recommendations are provided by an Advisory Committee of state and local officials and representatives of public interest groups. Final selections are made by the State Transportation Commission. Project sponsors must provide at least 20% of the proposed project costs.

- **Virginia**: Virginia's Transportation Enhancement Program is relatively new, with the first application deadline on August 1, 1993, and the first of the annual selections scheduled for November 1993. Virginia's program is very similar to Pennsylvania's in that recommendations are made by an Advisory Committee with final approval and selection made by the Commonwealth Transportation Board. Virginia's program also requires project sponsors to provide at least 20% of the total project costs.

This comparison of enhancement programs identified important information regarding funding. Both Pennsylvania and Virginia provide the option for in-kind contributions of land, materials, and/or labor to make up part of the 20% match. However, under FHWA advisement on in-kind contributions, the amount of the contributions can be applied only to reduce the total project cost (with the exception of certain right-of-way donations); they cannot be used to make up a portion of the required 20% match of federal funds.[18] This provision will most likely be changed in the near future in both programs.

The major element in these enhancement programs seems to be the provision of matching funds from sources other than state-allocated transportation funds. In Virginia, in particular, it seems that those projects with the 20% minimum funding provided from sources other than state transportation funds and in-kind contributions will have the greatest chance for success.

Application of Sources

VDOT's Programming and Scheduling Division provided a list of possible sources of funding for improvements to the following alternative transportation corridors:

- **Route 7 (Leesburg Pike)**: Eligible funding could include NHS funds, state-only funds, regular primary allocations allocated to Northern Virginia, regional STP funds available for prioritization by the responsible MPO (the National Capital Region Transportation Planning Board), and Commonwealth Transportation Board discretionary statewide STP funding.

- **I-495 (Capital Beltway)**: Eligible funding includes NHS funds.

- **Fairfax County Parkway**: Funding has been a combination of developer financing, county board financing, secondary road funds, and NHS funds; eligible funding includes statewide STP funds.

- **Dulles Toll Road**: Currently funded through toll collections, funding of the private road could be through a combination of loans and private investment.

Although many of these improvements have yet to be approved or funding allocated for them, this list does demonstrate the number of options available to VDGT, Fairfax County, the local MPO, and private investors to pay for highway construction.

Permits

VDOT has another major role in the administration of the Georgetown Pike, and that is the issuance of permits to private owners and developers. Developers and other landowners are required to obtain permits issued by VDOT before anything may be placed in its right-of-way or connections made to a state road. These permits include right-of-way permits, which regulate such things as utilities, fences, gates, mail boxes, and the like. Another type of permit is an entrance permit, or a permit that allows owners or developers to build entrances to their land from the state-owned road.

SECTION 2.2 -- THE ROLE OF FAIRFAX COUNTY

Fairfax County also plays a role in providing transportation within the county. Beyond working with VDOT in the allocation of funds for road improvement projects, the county also has a number of policies regarding transportation. This includes the review of site plans for new developments to ensure that they meet county policies. The county also supplies its own funding for a number of transportation projects that otherwise might not be constructed in a timely fashion.

Potential Transportation Impacts of New Development

The impacts of actual development and potential road projects on the character of the Georgetown Pike were a recurring issue throughout this study. Many comments made at the Georgetown Pike Public Hearing in August focused on the fear that any changes to the road would have a detrimental impact on the aesthetic nature of the corridor. Residents stated their affection for the overhanging trees and the meandering alignment that create a rural atmosphere. Any changes in these features, they contended, would detract from the beauty of the corridor.

While it is true that the trees, hills, and curves do add to the character of the road, scenic and environmental concerns are not the only objectives VDOT must consider in establishing and administering its policies. VDOT's mission statement is to provide safe, efficient, effective, and environmentally sound highways and surface transportation systems now and into the twenty-first century.[19] Balance, an integral aspect of this mission, is often difficult to achieve, and compromises are often required.

As there are no plans at this time or within the 20-year planning horizon to reconstruct the Georgetown Pike, any changes that occur will be the result of new developments or spot safety projects. The focus of this section is on the changes that will result because of new development. All growth generates additional traffic; however, of most interest along the Georgetown Pike are new access points. A new entrance creates additional points of conflict and can reduce the capacity of the roadway by slowing down through traffic while turning movements are made. The impact of entrances is emphasized in VDOT's *Site Review Manual*:

> Each entrance onto the road will decrease the road's capacity, the ability to convey traffic. Each entrance will also adversely affect the safety of the motorists. The second most predominant factor (next to the average daily traffic) in the overall accident rate of highways is the number of entrances per mile.[20]

Access management and good entrance design can minimize the impacts of these new entrances, and both VDOT and Fairfax County play a role in achieving these goals on the Georgetown Pike.

Nature of the Problem

VDOT's Northern Virginia District has been criticized over the past decade by those who feel that a lack of planning has resulted in an inadequate transportation network. Many have questioned why current traffic congestion was not anticipated and prevented. One of the explanations for the congestion is that vehicle usage in Northern Virginia is multiplying twice as fast as the population. Between 1980 and 1990, the population increased approximately 32% while the number of vehicle miles traveled increased 68%.[21]

Despite any possible explanations, disgruntled travelers frequently verbalize their criticisms to VDOT representatives. Critics and transportation officials alike have pointed to the fast rate of development as one of the causes of congestion and have expressed the philosophy that development should not be allowed unless the transportation network is available to accommodate the increased traffic generated. Although VDOT does not have any control over the amount or rate of development, as that is a local issue, it does have some control over the improvements required to mitigate the impacts of new developments. This is one area where the state can directly work to match road improvements with the anticipated growth. Developers' contributions are one of the few, consistent sources of private funding for transportation improvements. It is not expected that developers solve all the traffic woes of the county but rather improve facilities sufficiently so that the developments will not exacerbate the problem.

VDOT's Responsibility in the Site Plan Review Process

VDOT has the authority to regulate entrances to state highways as cited in the *Code of Virginia*, Section 33.1-198. The construction of such entrances must be in accordance with various VDOT standards. However, each case is reviewed individually. Measures beyond the minimum standards are often required to ensure the safe and efficient use of the highway. Under Section 33.1-12 of the *Code of Virginia*, VDOT is given the authority and responsibility to protect traffic, and it is under these broad general powers that VDOT can legally make requirements exceeding the minimums.[22]

In VDOT's Northern Virginia District, where the number and magnitude of new developments are so large, there is a section charged with reviewing all site plan submissions and providing recommendations for road improvements. This Land Development Section ensures that any roadways in a site plan intended to be taken into the state system meet VDOT's *Subdivision Street Requirements* and that all entrances to state-maintained roadways meet VDOT's *Minimum Standards of Entrances to State Highways*. VDOT engineers also try to ensure that sufficient accommodations are made so as to minimize the impact on the road network. VDOT's Fairfax Residency -- the body ultimately responsible for maintaining state roads within Fairfax County -- plays a role in reviewing and approving site plans. Access to a state road is prohibited without an entrance permit, which is issued by the residency.

Fairfax County's Responsibility in the Site Plan Review Process

The county is responsible for the physical development of territory within its jurisdiction. Under the *Code of Virginia*, the state mandates local commissions to prepare and recommend a comprehensive plan for this development. The purpose of this comprehensive plan is to

> achieve a coordinated, adjusted, and harmonious development of the territory which will, in accordance with present and probable future needs and resources best promote the health, safety, morals, order, convenience, prosperity and general welfare of the inhabitants.[23]

One basic thrust of the county's comprehensive plan is to balance land use with public facilities, such as the transportation infrastructure. There are three divisions within the county government that are primarily involved with development and its impact on transportation. The Office of Comprehensive Planning determines the existing zoning for the county and develops the county's blueprint for the future. The Department of Environmental Management is responsible for reviewing site plans and enforcing zoning regulations. The Office of Transportation coordinates the county's interest in development with other planned transportation improvements.

Site Review Process for Residential Subdivisions

As there is a strong relationship between the capacity and design of a highway facility and the zoning designation of adjacent property, there must be close coordination and cooperation between the two jurisdictions that govern these areas -- VDOT and Fairfax County.[24]

In order to build a new subdivision, a plan must first be produced by the landowner or land developers and then submitted for county approval. The county makes sure that the plan is in accordance with its zoning ordinance, the instrument by which the specific land use recommendations of its comprehensive plan are implemented.[25] Subdivision regulations must be adhered to if the parcel is being divided into lots smaller than five acres. The design of all facilities constructed to serve the new development are governed by the county's *Public Facilities Manual*.[26]

As part of the county's review process, development plans are submitted to VDOT so that it may assess the impact to the roadway. In the Northern Virginia District, where a high percentage of the roads operate above the traffic volume for which they were designed, VDOT engineers typically ask for substantial mitigation measures. This request usually includes right-turn and left-turn lanes into a new development and dedication of right-of-way to provide sufficient width for the ultimate roadway planned in the county's comprehensive plan. It may also include alleviation of off-site impacts of the development, such as contribution to a traffic signal at a nearby intersection. Frequently, a process follows where the developer or landowner tries to convince VDOT that the impacts of its development do

not warrant such extensive improvements. VDOT must consider any additional information provided by the developer, or extenuating circumstances, and determine which improvements are truly reasonable. Although VDOT engineers are directed to work with the developer as much as possible, their first responsibility is to ensure the safety of the traveling public.[27]

Neither the county nor the developer is required to incorporate VDOT's recommendations into the plan at this point. The plan can proceed to the next step without VDOT approval. However, even with the county's approval, the developer cannot begin entrance work without an entrance permit. The Fairfax Residency, the body responsible for issuing these permits, reviews the plans and notes if the recommendations made by the Land Development Section have been incorporated. The residency has the option of requiring revisions to the plan or approving it as is. If the residency requires changes not deemed reasonable by the developer, the developer may request a review by VDOT's district administrator. If the district administrator does not approve the waiver, the developer may appeal to VDOT's Chief Engineer.

Benefits of Managing Access

The benefits of access management can best be seen where it has been most ignored: on commercial strip developments. Delays and accidents are numerous along these corridors; they are also unsightly for motorists. Although access problems are magnified in commercial areas, the issues are the same for residential areas. In order to preserve the capacity and safety of a highway, it is vital to limit the total number of access points, to have sufficient separation between access points, and to provide appropriate design of entrances for the type and volume of expected traffic on both the existing road and the new one. By managing access, more costly, time-consuming, and socially disruptive future roadway reconstruction can often be avoided.[28]

The dilemma of implementing access management programs was summed up concisely in an FHWA report entitled *Access Management for Streets and Highways*, which stated that the application of these techniques is often a controversial issue among the individuals and agencies affected.[29] Property owners generally feel entitled to certain property rights of adjoining road facilities. Highway officials, charged with maintaining the safety and capacity of the roadway system, are often accused of being insensitive to the needs of property owners and the community. A balanced, comprehensive program that provides reasonable access while maintaining safety and efficiency in traffic movement is essential.[30]

Auxiliary lanes are an important component of access management on arterials such as the Georgetown Pike. The purpose of separate turning lanes is to expedite the movement of through traffic, increase intersection capacity, permit the controlled movement of turning traffic, and promote the safety of all traffic.[31] When undue deceleration or acceleration by accessing traffic takes place directly on the highway, it disrupts the flow of through traffic and often is hazardous.[32] The decelerating vehicles cause a speed differential between them and the through traffic. This differential is a major factor in the frequency and severity of

conflicts.[33] This problem is exacerbated by poor sight distance. If a driver does not see a slow-moving vehicle ahead, the chance for a conflict is higher.

The left-turning vehicle is the most susceptible to accidents and operational difficulties at an intersection or entrance.[34] Where left-turning vehicles share a lane with through traffic, the left-turn movement can be responsible for considerable delay and traffic disturbance, especially when the volume of opposing traffic is high.[35] Accidents involving left-turn movements are typically more severe than right-turn movement or through-movement accidents, with injury accidents being much more common.[36]

In terms of safety, special treatment for right-turning traffic is less critical than for left-turning traffic.[37] However, exclusive right-turn lanes can be cost-effective in certain situations as they reduce conflicts with following vehicles, side-swipe conflicts with through vehicles, and conflicts with pedestrians crossing a street being entered by right-turning vehicles.[38] By removing slow-moving vehicles from the traffic flow, right-turn lanes also help maintain the capacity of the mainline.

Warrants for Auxiliary Lanes

The decision to install auxiliary lanes should be determined by a traffic engineering study, with various guidelines and warrants used to direct the decision.[39] As stated in AASHTO's *A Policy on Geometric Design of Highways and Streets*:

> Many factors must be considered [in warranting acceleration and deceleration lanes], such as speeds, traffic volumes, capacity, type of highway, service provided, the arrangement and frequency of intersections, and accident experience.[40]

Several general conclusions are listed by AASHTO, and those that are germane to this study are as follows:

1. Speed-change lanes are warranted on high-speed and on high-volume highways where a change in speed is necessary for vehicles entering or leaving the through-traffic lanes.

2. All drivers do not use speed-change lanes in the same manner; some use little of the available facility. As a whole, however, these lanes are used sufficiently to improve the overall safety and operation of the highway.

3. Use of speed-change lanes varies with volume, with the majority of drivers using them at high volumes.

4. Deceleration lanes on the approaches to at-grade intersections that also function as storage lanes for turning traffic are particularly advantageous, and

> experience with them generally has been favorable. Such lanes reduce hazard and increase capacity.[41]

The AASHTO guidelines go on to state that deceleration lanes are particularly advantageous on high-speed roads because if not provided, turning vehicles must slow in the travel lanes. If drivers of following vehicles are not alert, rear-end collisions are a likely result.[42]

FHWA's *Access Management for Streets and Highways* mentions that many states and municipalities have adopted warrants for when to provide right-turn and left-turn lanes that serve as guidelines for their engineers and the developers. These guidelines vary widely, and within a jurisdiction where a written policy exists, authorities indicate that there is often little consistency in the way they are actually administered.[43]

Requirements for Left-Turn Lanes

Criteria have been developed for providing separate left-turn lanes by several studies. One study requires consideration of the peak-hour volume of the intersection approach and of left-turning vehicles and the operating speed. The AASHTO warrants for left lanes include these same factors, but they also consider the opposing volume of traffic.[44] These AASHTO guidelines are included in VDOT's *Minimum Standards of Entrances to State Highways*. By including the opposing volume, the likelihood of gaps occurring that are large enough to accommodate a left-turning movement is considered. Because of the large peak-hour volumes on the Georgetown Pike, gaps in the opposing traffic are few, requiring left-turning vehicles to wait to complete their desired turn. Left-turn lanes provide storage and are therefore needed even when the number of vehicles turning left is small.

Requirements for Right-Turn Lanes

The main criteria used for determining if a right-turn lane is needed are the volume on the mainline and the number of trips expected to be generated into the site. The average running speed of the mainline traffic should also be a consideration. The differential between the speed of the traffic and the speed of a right-turning vehicle is a critical indicator of the frequency and severity of conflicts at intersections.[45] By providing right-turn lanes, the turning movements can be made at greater speeds, thereby reducing the speed differential. At suburban and high-speed rural intersections, design concerns should focus on right-turn lanes as a solution to potential rear-end conflicts.[46]

The VDOT guidelines for determining the treatment for right-turn movements are included in the *Minimum Standards of Entrances to State Highways*. These guidelines are based on a study published in 1981 that addressed rural areas specifically and was based largely on safety concerns.[47] The guidelines were developed through an analysis of field data, a survey of other state DOTs, and professional judgment.[48] The report stated that there are other factors of concern not addressed in the guidelines since the influence of these factors was not measurable from the field data. These factors include sight distance, grade, delay, availability of right-of-way, and angle of turn. The study emphasized the need for

flexibility in applying the guidelines as they were designed simply to be an aid in the selection of right-turn treatments.[49] This emphasis was carried over into the standards adopted by VDOT for statewide use and are stated clearly in the *Minimum Standards of Entrances to State Highways*. These guidelines also state that where a full right-turn lane is not warranted on a primary road, a taper is recommended for all entrances unless the amount of turning traffic is less than 10% of the total. In that case, the recommended treatment is a radius.[50]

In VDOT's Northern Virginia District, the use of the *Minimum Standards of Entrances to State Highways* is limited as it is felt that these standards are applicable only in rural areas. The district follows higher standards for warranting deceleration lanes. For subdivisions, the Northern Virginia VDOT engineers will generally request a right-turn lane into the subdivision if there are more than three dwelling units. This helps to ensure that the mainline traffic is not disrupted and drivers are not delayed by traffic generated by a new development.

Length of Turn Lanes

The length of auxiliary lanes consists of three components: deceleration length, storage length, and entering taper length.[51] The optimum length for deceleration is based on the distance it takes to brake when traveling at the average running speed. The coefficient of friction of the tires on the pavement is assumed for wet conditions, and an average braking rate for the design vehicle is used. The amount of storage needed depends on whether the lane is a right-turn or left-turn lane, the type of traffic control, the number of turning vehicles, and the approach volume.[52] The taper provides room for a vehicle to make a comfortable transition into the turning lane and is determined by the design speed and the lateral distance a vehicle must traverse.

For all roads within its jurisdiction, the VDOT Northern Virginia District has adopted a standard length for all turn lanes based on the design speed. This policy was also adopted in the mid-1980s by the county transportation agencies within the Northern Virginia District. The full-turn lane length is less than the deceleration length recommended by AASHTO, and the 100-foot taper required by the Northern Virginia District policy is also less than the taper lengths suggested by AASHTO.

Application of Access Management to the Georgetown Pike

The Georgetown Pike has narrow lanes and often no shoulders. The changes in horizontal and vertical alignment help create a rural environment. It is these same characteristics that residents find so endearing that move VDOT engineers to recommend turn lanes and other road enhancements. VDOT engineers feel justified in requesting road enhancements, such as turn lanes, as the road already provides a low level of service to the traveling public and these additions can help provide relief. Deceleration lanes on such a highway are also important as they provide a factor of safety for avoiding conflicts with turning vehicles. VDOT's Land Development Section sees its role as maintaining the safety

and capacity of the highways. In making its recommendations, the VDOT engineers do not use a single chart or table. They use the tools discussed previously and feel that engineering judgment is an essential aspect of the decision-making process.

It might seem that a set of warrants for entrance treatments developed specifically for all Virginia byways that was agreed upon by the state, the local jurisdiction, and the citizens would be a tremendous benefit. However, one definitive standard can never be appropriate for all conditions. Inadequate sight distance may require that more be done to denote an entrance, whereas the proximity of a historic site to the roadway may warrant a shorter turn lane so as not to encroach on the historic property. On a byway, it may be reasonable to sacrifice some capacity to maintain the character of the corridor.

Since new development along the corridor appears inevitable, steps must be taken to ensure that the increased traffic does not aggravate roadway hazards. Auxiliary lanes must be provided where warranted to maintain safety. As the 1981 report by the Virginia Transportation Research Council bases its guidelines for providing right-turn lanes on safety, this would appear to be the logical standard for Virginia byways as it would require the minimum amount of change. Where a stopping sight distance of at least 300 feet can be provided, implementation of these guidelines would mean that a taper be provided if there were to be 30 to 60 residential units in a subdivision. A full-width turn lane would be provided if there were to be 60 units or more. Below 30 units, large radii (60-foot minimum) should be provided so that the turns can be made at greater speeds. The driveway geometrics should also be such that vehicles can leave the travelway at high speeds. Engineering judgment must maintain a significant role in the recommendation process.

There are several ways in which other access management techniques can be applied to the Georgetown Pike to maintain the nature of the environment while maximizing safety. The first step should be to minimize the number of access points on the Georgetown Pike by requiring access to another existing street if at all possible. Spacing between driveways has not yet been a major factor because of large-lot development, but all efforts should be made to consolidate as many new access points as possible. By planning and designating the location of access to undeveloped parcels now, regardless of future subdividing, the county can place these entrances where maximum sight distance is achieved and the least disruption occurs. If sight distance is insufficient, visual cues of the driveway can be provided. Recommended cues include warning signs, contrasting pavements, reflectorized treatment, entrance lighting, or a combination of any of these.[53]

A combination of these access management techniques could improve the overall roadway operation without necessitating major construction. In addition, the implementation of written guidelines for entrance treatments would likely ease the conflicts that frequently occur between transportation officials and the residents of the Georgetown Pike. If disagreements continued to arise, mediation could be considered to settle those that could not be resolved through normal means. This technique involves regular meetings between representatives from all involved groups with a trained mediator and has proven effective in other parts of the state.

Funding Sources

The main source of local funding for secondary road improvements used by Fairfax County are local bond issues. These bonds have been used by the county to build sections of the Fairfax Parkway and to make improvements to West Ox Road, among many other projects. Although the county receives allocations from the state, the county has found it necessary to finance some of its own roads in order to have then built in a timely fashion to ease traffic congestion.

Comprehensive Plan

Fairfax County's comprehensive plan includes a section on transportation, and also a specific statement regarding the Georgetown Pike. In the policy plan portion of the comprehensive plan, the county defines its road system and explains the classifications that designate each road.

Fairfax County classifies the Georgetown Pike as a minor arterial (Type B). According to the text of the county's comprehensive plan, minor arterials "usually carry an even mix of local and through traffic. They link collectors, and sometimes local streets, with principal (major) arterials."[54] The Type B designation is used on roads "which are somewhat shorter in length, traverse a less densely developed area, or are located in more mature areas and consequently were built to a somewhat older design standard."[55] The transportation map in the comprehensive plan, which details desired improvements to Fairfax County roads, shows the Georgetown Pike as a two-lane improved road.[56]

The comprehensive plan also includes specific language on the Georgetown Pike:

> Georgetown Pike should be maintained within its existing right-of-way. Center turn lanes and deceleration and acceleration lanes should be discouraged and curb cuts not be allowed unless no other alternative exists. Georgetown Pike is commonly acknowledged to contain some traffic hazards. However, it is generally acceptable in its present condition to local residents. It has been designated a Virginia Byway. Major changes in alignment, or to widen the road, would damage the scenic and historic character and the historic integrity of the byway and have been strongly opposed by residents of adjacent areas. Planning efforts should focus on other means of dealing with traffic volume in order to maintain this byway. Scenic and conservation easements should be sought along Georgetown Pike wherever practical for the preservation of the historic and scenic significance and beauty of the corridor.[57]

The county assumes that VDOT and other agencies dealing with the county will follow, to the extent possible, the policies and plans outlined in its comprehensive plan.

SECTION 2.3 -- VIRGINIA BYWAY DESIGNATION

A road through an area with great scenic beauty and/or cultural and historic resources is often considered a road worth treasuring in America. These roads frequently follow their historical routes and often have grand views and vistas that can be seen when they are traveled. The generic term that has come to encompass these roads is *scenic byway*. This term, or one similar to it, has been applied to roads in many states throughout the country.

A national scenic byways program, which is in the process of being organized, will establish a network of roads that will include National Scenic Byways and All-American Roads. Under ISTEA, the U.S. Department of Transportation has set up an Interim National Scenic Byways Program and a Scenic Byways Advisory Committee, which is in the process of defining national minimum criteria and standards for such roads.[58] Without national standards, states have been relatively free to set up their own scenic road programs -- with varying degrees of success.

Virginia's Scenic Highway and Virginia Byway Program is based on criteria that are somewhat different from those used in states such as California or New York. The one thing that all these programs do have in common is the recognition of the scenic qualities of these roads and the importance of recognizing them. Measures for protecting these scenic qualities, however, are not consistent.

This section focuses on Virginia's program and compares it with those of other states. Protection techniques are included in Chapter 3 -- these can help protect scenic roads and corridors from visual and other significant degradation.

Virginia's Designation Process

A single, universal definition of *scenic byway* does not presently exist. Each state with a program, and the federal government, has its own definition. Two examples follow:

> A road is considered to be a scenic highway when it has been designated though legislation or some other official declaration for its scenic, historic, recreational, archeological, or cultural values. Scenic highways are roads designated through State or Federal actions along the Federal, State, and local highway systems. They can be classified as parkways, greenways, trails, heritage highways, drives, roads, byways, backways, or highways.[59]

> A "Virginia byway" is defined as a road, designated as such by the Commonwealth Transportation Board, having relatively high aesthetic or cultural value, leading to or within areas of historical, natural or recreational significance.[60]

The first definition is from the FHWA's *Interim Scenic Byways Program: Policy and Grant Application Procedure* of 1992, which defines terms for the interim process of funding scenic roads under ISTEA. The second is the definition of a *Virginia Byway* from the *Code of Virginia*.

Enabling Legislation

The Virginia General Assembly passed the Scenic Highway and Virginia Byways Act in 1966. The act authorized the Commonwealth Transportation Board to designate appropriate roads as either a "Scenic Highway" or a "Virginia Byway." The "Virginia Byway" designation could be applied to roads in the state that met specific criteria for designation (see Appendix D). The "Scenic Highway" designation was meant for special roads -- such as the Blue Ridge Parkway and Skyline Drive -- and is defined as "a road designated as such by the Commonwealth Transportation Board, within a protected scenic corridor located, designed and constructed so as to preserve and enhance the natural beauty and cultural value of the countryside."[61]

The legislation authorized what are now the Virginia Department of Conservation and Recreation (VDCR) and VDOT to develop criteria for designating roads in the Commonwealth. Significantly, the legislation included no provision for protecting the roads after they were designated.

> The Virginia Byways Legislation was designed as a recognition act and as such, places no land use restrictions or controls upon a designated byway corridor. . . . The state obtains no land use controls, implied or otherwise, through the process of designating state roads as Virginia Byways.[62]

However, the legislation does spell out one important criterion for designation -- that preference will be given to corridors controlled by zoning or other techniques.[63] There have been no studies to determine what level of protection is afforded by this criterion.

Criteria for Designation

The criteria for designation, which were adopted in 1973 -- a year prior to Georgetown Pike's designation -- and revised in 1988, are largely associated with the scenic and cultural characteristics of the roads. The criteria (see Appendix D) call for diversity of experiences, linking of important points, bypassing of major roads, and provision of features that will enhance motorist safety and state that a preference is given to those corridors controlled by zoning.[64] The road must meet these criteria before being designated a Virginia byway.

According to VDOT/VDCR policy (established in 1988), each Virginia byway is to be reviewed periodically. The review involves a look at each byway to determine if "the qualities which caused the road(s) to be designated are still evident and that there has been no substantial change in the character of the corridor."[65] Presently, this review process is

being revised. In the near future, it is anticipated that these reviews will be conducted periodically by VDOT district personnel (there are nine VDOT districts throughout the Commonwealth), while reviews for the designation of roads will continue to be made jointly by VDOT's Environmental Division and VDCR.

Revocation

The review of a byway may be used in the process for revoking a road's designation. If the review indicates that the byway no longer meets the designation criteria, an investigation takes place to determine if changes can be made to meet the designation criteria or the road's designation should be revoked.[66]

VDOT Policies

VDOT policies regarding scenic highways and Virginia byways are consistent with its policies for other roads of the same functional classification. Although no established VDOT policies treat Virginia byways differently from other similarly classified roads, VDOT's "Management Objectives for Scenic Highways and Virginia Byways" states: "When planning improvements for existing Virginia Byways, the Department of Transportation will pay careful attention to the aesthetic, environmental and cultural resources related to road corridors."[67]

In terms of funding for Virginia byways, VDOT's management objectives state that ". . . as special funds become available, a priority will be placed upon using part of those funds to provide enhancement features within the right of way of existing Virginia Byways."[68] VDOT will also, as funding permits, consider the provision of pull-offs -- where safety is not an obstacle -- for viewing important historic or scenic sites.

Federal Guidelines/Reports

Many federal regulations affect scenic byways, either directly or indirectly. Federal requirements for all state highway projects paid for with any federal funds are also applicable to scenic byways (or Virginia byways). The requirements include planning, environmental assessments, economic impacts, design and safety standards, relocation assistance, right-of-way acquisition, energy conservation, and accounting practices; the states must also follow construction requirements and agree to follow maintenance requirements after construction of the project.[69]

FHWA's *Scenic Byways* categorizes the elements of scenic roads and scenic corridors under the following headings: water, topography, fauna, vegetation, historic & cultural, and recreation.[70] More information on scenic road and corridor elements can be found in Appendix E. Regarding the designation of scenic byways, states must keep in mind that

> Highway safety improvements might well be needed and required in connection with any particular segment of scenic byways. Integration of highway safety improvements with scenic enhancement programs are an essential part of a coordinated highway planning process.[71]

Examples from Other States

Many other states have scenic byway programs. Two states, California and New York, add steps to the designation process that might strengthen Virginia's program. The New York designation process requires a rigorous evaluation of the nominated road. The overall goals of the New York Scenic Roads Program are the following:

> Protect, preserve and enhance the natural and man-made scenic beauty of New York state; promote a greater awareness and appreciation of the state's scenic, ecological, cultural and historical attributes; and provide economic benefits by stimulating tourism.[72]

The New York program, however, does not restrict land use in or around the designated scenic highway but does provide technical assistance to local jurisdictions in these matters.

The stringent requirements of New York's program come directly from its nomination process, which involves a survey of the road. This survey compiles scenic components, both positive and negative, for each mile of roadway. "If the road has an average of ten or more positive scenic components in each mile, it is probably worth further consideration."[73] After this survey, the designation process is completed by the Department of Environmental Conservation, which has the final say in designating a road. The scenic component evaluation is a strong tool in determining whether a road merits a scenic designation, especially under New York's system where the economic benefits of tourism are deemed quite important.

The California Scenic Highways Program dictates that local governments must support the designation in a specific manner. The California Department of Transportation (Caltrans), prior to designation, requires localities to "adopt a program to protect and enhance the appearance of the scenic corridor."[74] An example of a local jurisdiction's protection program for a scenic highway comes from the National Trust for Historic Preservation's contribution to the 1990 National Scenic Byways Study:

> Ventura County protects Highway 33, a state-designated scenic highway, through a Scenic Highway Protection Overlay Zone, the requirements and restrictions of which are detailed in the zoning ordinance. All development along the road -- which includes grading more than 1,000 square feet of ground or removing native vegetation -- must be approved by permit.[75]

The Scenic Corridor

The importance of the scenic corridor cannot be ignored when designating a scenic byway. With most scenic byways, it is important to protect not only the road itself, but also the surrounding landscape and views with which the scenic quality of the road is associated. For example, even though a portion of the Georgetown Pike is urbanized (or suburbanized), this does not necessarily mean that it is an inappropriate byway. As the American Society of Landscape Architects stated in its contribution to the National Scenic Byways Study of 1990:

> Scenic Byways through and near urban environments are most difficult to design and manage due to high volumes of traffic, commercial value of adjoining properties, and urban clutter. And yet, they present a great opportunity both in terms of community involvement, protection of community values, service to large numbers of people, and relatively large budgets.[76]

The protection aspect of this statement is very important to the scenic corridor of any designated roadway.

FHWA's *Scenic Byways* discusses the importance of the scenic corridor in relation to the scenic road. The elements of a scenic road and its corridor are numerous. The scenic corridor itself consists of the designated road and its right-of-way plus "the scenic, recreational, historic or cultural area traversed, extending out to variable distances beyond the right-of-way."[77]

The scenic corridor may include among its elements ". . . outstanding scenic vistas, unusual geologic formations, dramatic urban scenes, scientific features, or other elements -- all providing pleasure for the highway traveler."[78] The obvious need for protecting these elements for the "pleasure of the highway traveler" is discussed in Section 3.3.

CHAPTER 3 -- GEORGETOWN PIKE: THE CORRIDOR

SECTION 3.1 -- GROWTH

An issue of great importance to the Georgetown Pike corridor and to the Georgetown Pike itself is the amount of growth that has occurred there since the road was designated as a Virginia Byway in 1974. This section demonstrates the amount of growth in the corridor between 1970 and 1990 through an analysis of population, housing, and vehicles.

Population

The populations of Loudoun County, Fairfax County, and the Georgetown Pike corridor within Fairfax County have all grown significantly since 1970.[†] Table 3-1 details this growth.

Table 3-1. Population

Year	Loudoun County	Fairfax County	Georgetown Pike Corridor
1970	37,150	455,021	14,368
1980	57,427	596,901	22,244
1990	86,129	818,584	30,860
% Change 1970-1990	+131.84	+79.90	+114.78

Source: U.S. Census (1970, 1980, 1990).

With the number of people in the Georgetown Pike corridor increasing almost 115% in 20 years, the number of automobile trips generated from within the corridor has also increased significantly. This increase has most likely been accommodated to a great extent by the Georgetown Pike, since it is the main artery of the corridor. The huge population growth in Loudoun County -- mainly in the eastern section closest to the Georgetown Pike -- has placed great demand on the roads leading from Loudoun County to Washington, D.C., and other

[†]The Georgetown Pike corridor, as defined for this demographic analysis, includes the following 1990 Census Tracts: 4701, 4705, 4801, 4802, 4803, and 4804. These tracts are bordered by the Loudoun County line on the west; Route 7 (Leesburg Pike) on the south; the Capital Beltway, Old Dominion Drive, Dolley Madison Boulevard and Chain Bridge Road on the east; and the Potomac River on the north.

employment centers. The traffic from Loudoun County has most likely added significantly to the traffic volumes on the Georgetown Pike.

Housing

Most of the Georgetown Pike corridor is zoned for residential use; housing in the corridor is abundant. Data from the 1990 Census are presented in Table 3-2. The housing structures are broken down by decade, showing when they were built.

Table 3-2. Housing

Year Structure Built	# of Structures	% of Total
1980 to March 1990	4,174	35.3
1970 to 1979	4,055	34.3
1960 to 1969	2,023	17.1
1950 to 1959	940	8.0
1940 to 1949	236	2.0
1939 or earlier	389	3.3
TOTAL	11,817	100.0

Source: U.S. Census (1990).

The numbers in this table provide further proof of the growth and development pressure in the Georgetown Pike corridor since 1970. The decade in which the largest number of structures were built was the 1980s. From 1970 through March 1990, almost 70% of the currently existing housing structures in the Georgetown Pike corridor were constructed. This indicates the major role development has played in the increase of traffic on the Georgetown Pike.

The entrances onto the Georgetown Pike for subdivisions, where a number of these houses are located, have also had an effect on the road because of the large number of entrances required and the standards to which they must be built. This growth in housing has affected the scenic qualities of much of the Georgetown Pike corridor. Where once there were large open fields, there are now housing subdivisions, which change the aesthetic and historic character of the corridor.

Automobiles

These results are based on the number of vehicles available to households in the Georgetown Pike corridor. The numbers presented in Table 3-3 are minimum totals, since

one of the census categories was "3 or more" vehicles available; the study team chose to calculate the totals based on three vehicles available.

Table 3-3. Minimum Number of Vehicles Available in the Georgetown Pike Corridor

Year	# Vehicles Available	% Change from 1970
1970	6,857	n/a
1980	14,512	+112
1990	22,944	+235

Source: U.S. Census (1970, 1980, 1990).

The number of vehicles available to households in the Georgetown Pike corridor has increased by at least 235% since 1970. This again demonstrates that, while not all of the trips on the Georgetown Pike are taken by residents, the use of the road by residents of the corridor has increased greatly as the number of people and the vehicles available to them have grown.

SECTION 3.2 -- LAND USE

Land use in the Georgetown Pike corridor is primarily large-lot residential use, although a commercial area does exist at Great Falls. Development of the area has been rapid since 1970 (see Section 3.1). The nature of the Georgetown Pike has become much more suburban; some vestiges of its rural nature are still visible, especially in the western section. The large amount of public park land along the Georgetown Pike and within its corridor helps to alleviate the suburban character the newer developments have created.

The current and proposed regulation of land use for the Georgetown Pike corridor is reviewed in this section, as are the viewsheds and other important landscape features.

Zoning and Other Policies

The majority of the Georgetown Pike corridor is zoned in relatively low-density residential categories. According to Fairfax County's comprehensive plan, the current and/or recommended zoning of the planning sectors in the Georgetown Pike corridor are the following:

- **Balls Hill Community Planning Sector** (bounded by the Georgetown Pike on the north, Route 123 on the east, Dulles Airport Access Road on the south, and the Capital Beltway on the west): This southeastern section of the corridor is zoned for

one or 0.5 acre per dwelling unit, although there is some zoning allowing 0.25 to 0.33 acre per dwelling unit near the road.

- **Potomac Palisades Community Planning Sector** (bounded by the Potomac River on the north, Arlington County on the east, the Georgetown Pike on the south, and Difficult Run on the west): This northeastern portion of the corridor is zoned not less than one acre per dwelling unit east of the Beltway and five acres per dwelling unit west of the Beltway.

- **Spring Hill Community Planning Sector** (bounded by the Georgetown Pike on the north, the Capital Beltway on the east, the Dulles Airport Access/Toll Road and Route 7 on the south, and Old Dominion Drive and Towlston Road on the west): This south-central portion of the corridor is primarily zoned at one acre per dwelling unit except in the western portions, which are zoned either large-lot (two acres per dwelling unit) or estate (five acres or more per dwelling unit).

- **Riverfront Community Planning Sector** (bounded by the Potomac River on the north and east; Route 193 and Beach Mill Road on the south; and River Bend Road, Seneca Road, and the Loudoun County line on the west): This northernmost section of the corridor is composed of large portions of park lands. The remaining land is currently zoned at two acres per dwelling unit but is proposed to be zoned to five to ten acres per dwelling unit.

- **Springvale Community Planning Sector** (bounded by Beach Mill Road on the north, Seneca Road and River Bend Road on the east, the Georgetown Pike and Route 7 on the south, and the Loudoun County line on the west): This northwestern section of the corridor is primarily zoned at two acres per dwelling unit, with some sections proposed for five to ten acres per dwelling unit. Some existing subdivision land is zoned at 0.5 to one acre per dwelling unit.

- **Hickory Community Planning Sector** (bounded by the Georgetown Pike on the north, Old Dominion Dr.; Towlston Road, and Difficult Run on the east; Route 7 and the Dulles Access/Toll Road on the south; and Hunter Mill Road and Route 7 on the west): This section of the corridor is proposed to be rezoned mainly at two to five acres per dwelling unit, although sections in the corridor are currently zoned at one to two acres per dwelling unit.[79]

The zoning in the Georgetown Pike corridor protects the Difficult Run watershed, especially in the central and northern sections, by requiring a minimum of two acres for each dwelling unit. This protection by the county is now required under the Chesapeake Bay Preservation Act, which does not allow any construction on steep slopes in important watersheds whose waters eventually feed into the Chesapeake Bay. The rest of the corridor is zoned at this large-lot level or to the level of the existing development, anywhere from 0.2 dwelling unit per acre to four dwelling units per acre.

A number of other county policies affect development in the corridor. Right-of-way requirements in the site plan review process require that 90 feet be dedicated when new subdivisions are placed on a minor arterial (two-lane). So, the dedication of a right-of-way of 45 feet from the centerline of the Georgetown Pike is required of any development with land fronting on the road. Setbacks from the right-of-way line are additional; these setbacks are required under the Fairfax County Zoning Ordinance.

Other policies include provisions in the county's *Public Facilities Manual.* Countywide requirements for service drives along primary highways and for street lights have been lifted for roads designated as Virginia byways in the county -- at the moment, the only byway is the Georgetown Pike. The Board of Supervisors passed these changes so that neither street lights nor service drives are required along the Georgetown Pike. This action keeps each development that is planned on land adjacent to the Georgetown Pike from having to apply for a waiver of these regulations.

Landscapes and Viewsheds

The Great Falls National Park, Riverbend County Park, and the Northern Virginia Regional Park Authority's park lands along the Potomac River all act as important regional recreational and scenic resources. The park land the Georgetown Pike traverses lends the road a forested quality, especially near the Difficult Run and Scott's Run. These park lands are protected from development, but often lands right across the road can be developed or redeveloped.

There are very few truly rural agricultural views remaining along the Georgetown Pike. At the intersection with Springvale Road there is a barn and a field that can be seen from the Georgetown Pike. The horse pastures at Madeira School and other locations remind the traveler of the road's rural history. Any or all of these lands could be developed -- the remnants of the rural character of the corridor could still be erased.

The special character of the Georgetown Pike as a road and as a corridor is in large part provided by these rural scenic features. While some protective measures to maintain these special characteristics are in place, many others need to be implemented to truly protect the integrity of the Georgetown Pike corridor.

SECTION 3.3 -- PROTECTION TECHNIQUES

Many techniques have been used or suggested for use in maintaining the specific qualities that make a scenic road and its corridor special. Sources for the protection techniques presented here include The National Trust for Historic Preservation's *Saving America's Countryside* and The Conservation Foundation's *Creating Successful Communities: A Guidebook to Growth Management Strategies.*

Comprehensive Planning and Zoning Techniques

> The aesthetic quality of scenic roadways is easily compromised. Billboards, garish signs, poorly designed residential development, strip commercial development, and incompatible uses . . . can irreparably mar an otherwise attractive landscape.[80]

The dangers of unregulated, or poorly regulated, development in the corridor of a scenic road or byway are great. The most effective tool in allaying these dangers is strict zoning ordinances used in tandem with overlay districts. Comprehensive planning, which illustrates how a municipality sees itself developing in the near future, can be an effective way of protecting a scenic corridor's aesthetic qualities if it is implemented in the proper way.

Zoning devices such as large-lot or low-density residential zoning can help to keep a once rural landscape from becoming urban; however, a poorly designed or executed large-lot subdivision can still be damaging to the aesthetic qualities of a scenic corridor.

> To work effectively, large lot zoning must usually be used in combination with regulations that accommodate market demand in other more suitable areas. Over-reliance on large lot zoning, however, often encourages land consuming and inefficient low-density sprawl.[81]

Cluster zoning is another technique that could be used in areas of the Georgetown Pike corridor that are zoned primarily as large-lot residential. With the appropriate regulations, cluster zoning could be used to protect or screen the viewsheds of the Georgetown Pike from additional residential development. Cluster zoning allows "flexible design and clustering of development in higher densities on the most appropriate portion of a parcel in order to provide increased open space elsewhere on the parcel."[82] So, in a scenario concerning the Georgetown Pike, a subdivision development could be clustered together at a higher density away from the road, with a screen of trees and/or open space to preserve existing views along the road. Open space areas, however, need to be preserved through perpetual easements or other similar means lest they become targets for future development.

Among the most effective zoning technique is the use of overlay districts. These districts add further restrictions and/or regulations to the development of land covered by the overlay. The overlay district's regulations do not replace those of the conventional zoning on the land but merely add to the existing ordinance. Three types of protective overlay districts are discussed further on: the traditional historic district, the corridor overlay district, and the agricultural/forestal district.

Currently Used Techniques

These protection techniques are already in use to some degree by Fairfax County in the Georgetown Pike corridor. The county's use of some of these techniques could be more formalized to make it easier for residents to understand their purpose and their benefits.

Agricultural/Forestal Districts

Protecting land by using agricultural/forestal districts temporarily places the land under conservation and reduces its property tax assessment. This program is used by Fairfax County with approximately 323 acres of land in the Georgetown Pike corridor.[83] The main problem with this protection technique is that it does not put permanent restrictions on the use of land. Also, it is a voluntary program -- a property owner could at any time request removal from the district and, if the request were granted, have the property developed according to its current zoning.

Historic District

A historic district is often established by a jurisdiction to attain architectural review authority over a number of significant historic structures that are in danger of being aesthetically degraded. "Historic district significance can be ascribed to a collection of buildings, structures, sites, objects and spaces that possess integrity of location, design, setting, materials, workmanship, feeling, and association."[84]

In the Georgetown Pike corridor, one such historic district already exists. The Langley Fork Historic District was established between 1980 and 1982 to protect not only the structures within its boundaries but also the portion of the Georgetown Pike that ran through it. One of the factors listed in the request for designation was: "the need to protect the area from adverse environmental influences including inappropriate improvements to the Georgetown Pike."[85] While there are other significant sites in the Georgetown Pike corridor, there do not seem to be any other concentrations of such buildings or sites that would warrant the establishment of other historic districts. A voluntary program of property inclusion along the Georgetown Pike could be used to create a linear historic district, but a more fitting technique might be the creation of a corridor overlay district.

Conservation and Preservation Easements

Conservation and preservation easements can also be used to place restrictions on land use. An easement "is an agreement between a property owner and the holder of the easement governing treatment of the property by current and future owners."[86] An easement is recorded in local land records (and with the state agency accepting the easement) so that no development occurs except that which is allowable under the easement's deed restrictions.

In Virginia, preservation easements can be donated to the Virginia Department of Historic Resources (VDHR), and conservation easements can be given to VDCR or the Virginia Outdoors Foundation. These easements often allow for federal and/or state income tax incentives, often in addition to a lowering of the value of a property so that property taxes are not such a burden.

Techniques for Future Use

This section provides additional protection techniques that could be used by Fairfax County to protect the scenic quality of the Georgetown Pike corridor. However, some of these techniques are not currently allowed under Virginia law -- enabling legislation would have to be written and passed into law for municipalities to use them.

Corridor Overlay District

In 1988, Virginia passed legislation permitting local jurisdictions to establish urban and architectural design standards for major routes of tourist access to historic districts or sites (Section 15.1-503.2 of the *Code of Virginia*, which can be found in Appendix F). The town of Leesburg was the first to take advantage of this provision. The town designated a portion of Route 15 leading to Leesburg as a historic corridor overlay district.

> The purpose of these historic corridor regulations is to implement the Town Plan goal of ensuring quality urban design compatible with Leesburg's historic, architectural and tourist resources through architectural control along the town's arterial routes to the Old and Historic District.[87]

Fairfax County could adopt a similar ordinance and implement a corridor district for the Georgetown Pike.

Important components of a scenic corridor overlay district include architectural guidelines, setbacks, height limitations, signage, vegetation control, and any other regulations that pertain to the protection of the special scenic qualities of that corridor.[88] While some of these components are already dealt with satisfactorily in the present Fairfax County Zoning Ordinance, a thorough look at the Georgetown Pike corridor to analyze these components and to create a corridor overlay district could greatly strengthen the existing protective measures.

Especially appropriate in the Georgetown Pike corridor would be a plan for county, VDOT, and adjoining property owners to set up vegetation guidelines for the corridor. The importance of trees to the scenic nature of the roadway is great -- a formal way of protecting future views and providing for the continued existence of trees along the corridor is crucial. This plan could include the agricultural/forestal district as an option for large parcels of land.

Tax Incentives

There are many forms of tax incentives that provide property owners with additional inducement to protect their land. Among them are federal charitable contribution tax deductions and various local property tax incentives. The federal charitable contribution deduction can be used in the following instances:

> Taxpayers may deduct from their federal income tax the value of historically important land areas and certified historic structures donated to governments and other appropriate recipients for preservation purposes. Donation of partial interests in such properties, e.g., easements, are also deductible.[89]

In order to receive this tax deduction, the gifts must be given in perpetuity.

In many states, property tax benefits a local jurisdiction could offer range from lowering the valuation of historic properties to lowering property tax rates for land under conservation or preservation easements. In Virginia, the constitution authorizes the General Assembly to pass a general law for localities "to provide a partial exemption from local real property taxation . . . of real estate whose improvements, by virtue of age and use, have undergone substantial renovation, rehabilitation or replacement."[90] Otherwise, the General Assembly is not authorized to enact any "local, special, or private law . . . for the assessment and collection of taxes . . . ."[91]

The Constitution of Virginia also gives the General Assembly the power to pass laws allowing localities to lower property tax rates for real estate devoted to agriculture, horticulture, forest, or open space uses. The agricultural/forestal district is an example of this -- a General Assembly act that allows for a lower tax rate on real estate placed in a district.

However, any reduction in value or tax rates can cost a jurisdiction much-needed revenue. In order for these tax incentives to work, they must be part of an overall plan that protects certain important scenic corridors from degradation while providing additional benefits in more appropriate locations within the jurisdiction. This would help to balance revenue and ensure the corridor's protection.

Transfer of Development Rights

The transfer of development rights (TDR) has been used as a preservation technique both for agricultural land and in association with the air rights above existing buildings in cities such as New York and San Francisco. The concept of the use of TDRs as a preservation tool is that "unused development rights of a parcel containing a historic building could be transferred to another site."[92] A system of TDRs in the Georgetown Pike corridor could consist of landholders selling the excess development rights of their property to a developer in another area specifically designated to receive these development rights. The receivers of the development rights could, therefore, build more on their land then the

present zoning allows, while the senders would profit from the transfer but also conserve the undeveloped portion of their land.

TDRs do require a high level of staff expertise to design and administer.[93] They also require a market -- there must be areas with development pressure where development rights are needed or else the program will not work. Before the TDR technique could be used in Virginia, the General Assembly would have to pass into law enabling legislation that would give municipal governments (or certain municipal governments) the right to set up TDR programs.

The protection afforded by TDRs is not in perpetuity -- a future change in the zoning of the conserved land could effectively negate the preservation of the property. As long as the municipality continued its current zoning and preservation practices, however, this land would be protected. TDRs have not been a very popular preservation technique in the United States because weak real estate markets and the availability of other zoning techniques often diminish their value.[94]

Land Acquisition

As a protection technique, land acquisition is often the best protection that can be afforded a scenic corridor. Acquisition of lands in a scenic corridor by local, state, or federal governments, or with the help of a private interest, can place sensitive land in the hands of those that are best able to control its development for the benefit of the public. For example, land in urban areas may be acquired or designated for open-space use by municipalities. This interest in open-space lands must be held for a minimum of five years but can also be in perpetuity.[95] Governments can also work with land trusts to acquire land. "A land trust holds land and other property rights for the benefit of the public and often undertakes educational, recreational, and scientific activities."[96]

A revolving fund, which is usually a private endeavor but sometimes is organized by a state or local historic preservation agency, uses funds to purchase lands or properties -- usually those that are in imminent danger of degradation or destruction -- on which strict limits are imposed. These limits usually include deed restrictions that limit development on the land. The properties are then sold to "sympathetic buyers who agree to manage, develop, or restore the properties in accordance with deed restrictions."[97] The Virginia Historic Preservation Foundation provides such a revolving fund.

CHAPTER 4 -- GEORGETOWN PIKE: TRANSCENDENT ISSUES

SECTION 4.1 -- HISTORIC PRESERVATION

> *Historic properties provide communities with a sense of identity and stability. Preserving these properties significantly contributes to the vitality of today's communities and ensures that tangible reminders of the past will remain for future generations.*[98]

Historic preservation in the United States has been associated mainly with the saving of important historical structures (i.e., buildings). As the field has grown, additional types of properties have been considered worthy of preserving. Archaeological sites, landscapes, and important uninhabited structures such as bridges, railroads, and roadways have been preserved. It is in this last category that the Georgetown Pike falls. The history of the Georgetown Pike as a transportation corridor is what proponents feel makes it worthy of preservation.

The main preservation obstacle in many minds has been the standards to which VDOT adheres when dealing with the Georgetown Pike. The first of these obstacles is the continued, but mistaken, belief by some that VDOT plans to expand the Georgetown Pike to four lanes. A Commonwealth Transportation Board resolution from 1979 clearly states that the Georgetown Pike is to remain a two-lane road. In addition, the 20-year subregional plan for Northern Virginia lists the Georgetown Pike as a two-lane road. This plan, the *Northern Virginia 2010 Transportation Plan*, was created in 1987-88 by citizens and local officials from every northern Virginia jurisdiction.

Many aspects of historic preservation can and do affect the Georgetown Pike. The eligibility of the road for listing in the National Register of Historic Places affects what can be done to the road and its right-of-way, both of which are owned by VDOT. The treatment of historic properties, the laws that enable and govern preservation, and sources of funding for preservation activities are all discussed in this section.

Virginia/National Register Listing

Preserving a historic property presumes actions to retain its special character. Before preserving a property, it may be wise to designate it -- usually this means listing it in the National Register of Historic Places. This listing provides recognition of the importance of the property to the history of the United States as a whole or to a state or locality.

Definitions of Preservation

Preservation is a broad term and is used in conjunction with other terms to form various meanings. The term *preservation* by itself can be defined as the act of keeping alive or in existence, of making lasting; as the act of keeping safe from harm or injury, of saving; and as the act of keeping up or maintaining. A definition of *preservation* put forth by the National Trust for Historic Preservation follows:

> Generally, saving from destruction or deterioration old and historic buildings, sites, structures, and objects and providing for their continued use by means of restoration, rehabilitation, or adaptive use.[99]

According to the wording of the General Assembly resolutions initiating this study, the importance of "preserving the historic character" is how preservation is addressed. A definition of *historic preservation*, on the other hand, takes the definition of preservation and attaches the importance of the past to it:

> Historic preservation is the process of ensuring that places significant in the past are protected and integrated into places for the present and future.[100]

This definition is interesting because of its emphasis on compatibility between the historic character -- or nature -- of a place and its applicability to the present and future. The historic character of a property is what can make it eligible for listing in the National Register.

The National Register

The National Register of Historic Places is a nationwide inventory of properties that are important because of their place in the history, architectural history, archaeology, engineering, and/or culture of the United States. To be listed in the National Register, a property must go through a designation process that is administered by each state's State Historic Preservation Officer (SHPO). In Virginia, the director of the Department of Historic Resources is the SHPO, and VDHR is the agency that reviews and accepts nominations to the National Register (and to the Virginia Landmarks Register).

The nomination of a property -- which can be a building, a structure, a site, an object, or a group of properties that form a district -- to the National Register is guided by four criteria for eligibility:

> **Criterion A**: Properties that are associated with events that have made a significant contribution to the broad patterns of our history.
>
> **Criterion B**: Properties that are associated with the lives of persons significant in our past.

Criterion C: Properties that embody the distinctive characteristics of a type, period, or method of construction or that represent a significant and distinguishable entity whose components may lack individual distinction.

Criterion D: Properties that have yielded, or may be likely to yield, information important in prehistory or history.[101]

In addition to meeting at least one of these criteria, a property must also have integrity in the following areas: location, design, setting, materials, workmanship, feeling, and association.

For a property such as the Georgetown Pike, for which federal funds may be used, listing in the National Register would invoke federal review processes. The Georgetown Pike was declared eligible for designation to the National Register at the August 17, 1993, meeting of the State Review Board -- VDHR's advisory body. The Georgetown Pike was deemed important regionally in the area of significance of transportation. Even though the road has not actually been entered in the National Register, all review processes have been invoked because of the eligibility ruling, including the various ways it can be treated.

Treatment of Historic Properties

The purpose of "treating" a historic property is to physically safeguard it from harm or ruin. A *treatment* is the guiding philosophy of how to preserve a specific property. There are generally four types or areas of treatment for a historic property. These range from total reconstruction of a nonexistent structure from drawings, documents, and other records, to the rehabilitation of a property for present and future use. The four treatments suggested in the Secretary of the Interior's Standards for the Treatment of Historic Properties are the following: (1) *preservation*, which focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time; (2) *rehabilitation*, which acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character; (3) *restoration*, which is undertaken to depict a property at a particular period of time in its history, while removing evidence of other periods; and (4) *reconstruction*, which recreates vanished or nonsurviving portions of a property for interpretive purposes.[102]

In the case of restoration, there is no one particular time period in the road's history to return to -- the road continues its historic use at the present time. As for reconstruction, Georgetown Pike is very much alive and existing today -- the rebuilding of an Indian trail would obviously not be appropriate. The treatments of preservation and rehabilitation seem worthy of further examination.

The Secretary of the Interior's definition of *preservation* (as a treatment) is

the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the

> ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction.[103]

There do not seem to be any "historic" materials and/or features on the Georgetown Pike (excluding its lay on the land) that would require maintenance and repair. The physical features of the road -- its roadbed, pavement, guardrail, bridges, markings, and signs -- are twentieth-century creations with no specific reference to the historical physical nature of the road.

The only feature of the road that seems to meet this definition of preservation as a treatment is the "historic character" of the road. The way Georgetown Pike lays on the land -- its relationship to the natural topography -- is what defines its historic character. The relationship to the natural and rural views and the mature trees directly beside the road define the scenic character of the Georgetown Pike.

Further, the Secretary's standards state that "when a continuing or new use does not require additions or extensive alterations, Preservation may be considered as a treatment."[104] This statement seems to suggest that another treatment might be more appropriate for the Georgetown Pike, because its continuing use is as a primary highway and, as such, the road will most likely require additions or alterations over time.

With this in mind, rehabilitation seems to be appropriate as a treatment for the physical features of the Georgetown Pike.

> Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.[105]

The Secretary's standards recommend rehabilitation as a treatment "when alterations or additions to the property are planned for a new or continued use."[106] It seems improper to assume that no changes are necessary for the Georgetown Pike's use as a road; the modern use of roads is always changing. For the Georgetown Pike's continued use as a road, changes will be necessary -- for safety, maintenance, the types of vehicles using the road, and possible implementation of advanced vehicle/highway system components.

After reviewing the range of treatments available for use on the Georgetown Pike, it seems that the rehabilitation treatment, regarding the safety of the traveled way and roadsides, would be the most appropriate. Although preservation of the road's rolling nature is also important, this does not require treatment as much as a "hands off" approach. As a treatment is applied to the Georgetown Pike, the project will be subject to a number of federal preservation laws and their associated regulations.

Effects of Eligibility -- Preservation Laws

There are a number of federal laws that regulate the effects that federal undertakings can have on historic properties. Of these laws, Section 106 of the National Historic Preservation Act of 1966 (NHPA), Section 4(f) of the Department of Transportation Act of 1966, and the National Environmental Policy Act of 1969 will impact many projects proposed for the Georgetown Pike, now that it has been declared eligible for listing in the National Register.

National Historic Preservation Act of 1966

The National Historic Preservation Act of 1966, the most far-reaching preservation law, established a number of programs to help save historic properties in the United States. The main components of NHPA are the creation of the National Register of Historic Places and the National Historic Landmarks Program; the recognition of state programs and the designation of SHPOs; preservation fund allocations; creation of the Advisory Council on Historic Preservation (ACHP) and its Section 106 review process; and Section 110, which governs the preservation of federally owned properties. The most important facet of NHPA as it affects the Georgetown Pike is Section 106.

Section 106 is "the provision of the National Historic Preservation Act of 1966 that requires the head of a federal agency financing or licensing a project to make a determination of the affect of the project on property in or eligible for the National Register of Historic Places."[107] (See Appendix G.) An overview of the procedures for this process provides an insight into the method of review of projects proposed for the Georgetown Pike by VDOT. The main source for this overview was Veronica M. Kelly's report for the Virginia Transportation Research Council entitled, *Virginia Department of Transportation Compliance with Section 106 of the National Historic Preservation Act.*

The agencies that will usually be involved in the Section 106 process are VDOT, VDHR, the state FHWA office, and possibly the ACHP. The main goal of this review process is to keep any National Register or National Register-eligible properties from being damaged. So, the first step involves locating any of these properties. If no properties are located, the review process is complete. If there are significant properties, the next step is to determine whether or not the project will have any effect on these properties.

Using the Criteria of Effect in Section 106 (see Appendix H), the agency (FHWA or VDHR) will determine if there is an effect:

> An undertaking has an effect on a historic property when the undertaking may alter characteristics of the property that may qualify the property for inclusion in the National Register. For the purpose of determining effect, alteration to features of the property's location, setting, or use may be relevant depending on a property's significant characteristics and should be considered.[108]

If no effect is found, then the Section 106 process is complete with the approval of the SHPO. If effects are found, then a further review is necessitated.

This further review involves applying the Criteria of Adverse Effects (see Appendix H) to the project and property:

> An undertaking is considered to have an adverse effect when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.[109]

Again, if no adverse effect is found, the review process ends by sending a summary of the process to the ACHP or by having the ACHP review the results in a 30-day time period.

If one or more adverse effects are found, a mitigation process is activated involving the FHWA and the SHPO. This usually results in a compromise solution that keeps the adverse effect of the project from harming the property. The agencies develop a Memorandum of Agreement (MOA) delineating what steps will be taken to avert the adverse effect. If all parties (including the ACHP) agree to the MOA, then the process is complete.

The most common mitigation procedures are avoidance and data recovery. *Avoidance* means redesigning a project so that it does not affect the historic property. *Data recovery* usually means collecting archaeological data before construction commences -- in other words, collecting as much information about the history of the property as is possible before it is disturbed. This is the process, more or less, that VDOT will have to follow when using federal funding. An agreement between the Secretary of Natural Resources and the Secretary of Transportation requires VDOT projects to go through the state's environmental review process to identify any impact on historic properties.

Section 4(f) of the Department of Transportation Act of 1966

Section 4(f) of the Department of Transportation Act of 1966 does not allow federal funding or approval of any transportation project that makes use of a significant historical site (or parks, wildlife areas, recreation areas, etc.) unless there is no feasible alternative to doing so and the project has been planned to minimize the damage to the property to the utmost extent. (See Appendix I.) In this act, the "use" of a site includes indirect effects that would substantially impair its value. Compliance with Section 4(f) is usually coordinated with the Section 106 review process.

For instance, if the Section 106 review process showed that there would be an effect on a property due to a transportation project, Section 4(f) would kick in and planning for its provisions would be triggered. Much like the Section 106 review process, certain regulatory and administrative measures were implemented that limit the number of cases which require a full undertaking of the Section 4(f) compliance procedures.

National Environmental Policy Act of 1969

The National Environmental Policy Act of 1969 clearly states that it is the policy of the federal government, in cooperation with state and local governments, to "preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and a variety of individual choice."[110] (See Appendix J.) The main means for achieving this policy directive is requiring all major federal actions to have an environmental impact statement (EIS).

The regulatory aspect of this law is carried out by the national Council on Environmental Quality, which requires that a draft EIS be prepared as part of the Section 106 review process.

Virginia's Role

The integration of the EIS, the Section 106 review process, and the Section 4(f) compliance process is well established. This integration is necessary so that major projects are not delayed indefinitely. Integration of these processes usually occurs at the state level. The Commonwealth of Virginia is a key player in most of the federal preservation-related review processes. VDHR is the lead agency for review of a project that might affect a property listed in or eligible for the National Register.

> Pursuant to federal law, the Department reviews all federally funded, licensed or sponsored projects in Virginia to assess the impact of these projects on significant cultural resources. The timely review, discussion and negotiation that are at the heart of this process most often produce a mutually satisfactory solution that minimizes any harmful effects the federal project might have on historic and archaeological resources.[111]

In addition, VDHR acts under state law to review any project involving state-owned landmarks, which would include the Georgetown Pike.

The review processes are generally not adversarial. Rather, they serve as examples of groups working together to form a solution amenable to all. The length of the processes can be quite short when no real disagreements occur.

Preservation Funding

There are a number of sources available to fund preservation projects. Many of these sources are aimed primarily at the rehabilitation or renovation of historic buildings, not the preservation of roads. The following sections look at only those sources that could provide funding for preservation work on the Georgetown Pike.

National Trust Funding

The National Trust for Historic Preservation offers grant and loan programs for various preservation activities.

> The National Trust, a private, non-profit organization, is the only national preservation organization chartered by Congress (in 1949) to encourage public participation in the preservation of sites, buildings, and objects significant in American history and culture. The National Trust acts as a clearinghouse of information on all aspects of preservation, assists in coordinating efforts of preservation groups, provides professional advice on preservation, conducts conferences and seminars, maintains 17 historic properties as museums, administers grant and loan programs, and issues a variety of publications.[112]

The technical/professional assistance and advice offered by the National Trust is an invaluable resource for those interested in preservation, including those working on the Georgetown Pike.

The National Trust's Preservation Services Fund is intended to help increase the flow of information and ideas related to preservation. These grants are small, averaging $1,000 to $1,500, to a maximum of $5,000. Eligible activities for these grants include: hiring consultants to undertake preservation planning or design projects, obtaining professional advice to strengthen management capabilities, sponsoring preservation conferences, designing and implementing innovative preservation education programs targeted to a specific audience, and undertaking other planning activities that will lead to implementation of a specific preservation project.[113]

Many of these activities could spur the implementation of protection techniques in the Georgetown Pike corridor. One important aspect of these grants is that they must be matched at least dollar-for-dollar, requiring additional funding sources.

ISTEA Funding

A new and popular source of funding for transportation projects is the Transportation Enhancement Program. This is a funding source created by ISTEA. Through ISTEA's Surface Transportation Program, 10% of the funds allocated to each state must be used for transportation enhancements. In Virginia, this amounts to about $7 million a year through 1996.

Funds from the historic preservation categories (see Section 2.1, Enhancement Funding) can be used to inventory sites or to rehabilitate a historic property. This could be especially useful when working on the Georgetown Pike. For additional information, one can contact the Programming and Scheduling Division, VDOT, 1401 East Broad Street, Richmond, VA 23219.

State Funding

The Commonwealth of Virginia has a Threatened Properties Fund from which grants are awarded to owners of landmarks that are seriously threatened -- which can include anything from deterioration to the sale and/or destruction of a property. This program is carried out by VDHR. VDHR also receives an annual subsidy from the federal government's Historic Preservation Fund, which is funded through the leasing of off-shore oil drilling. A part of these funds are funneled directly to the Certified Local Governments (CLGs) Program.

CLGs originated with the 1980 amendments to the National Historic Preservation Act of 1966. Local governments can be "certified" if they have set up a historic preservation commission and a preservation program that meets the requirements set by the National Park Service and the state SHPO. Once a government is certified, it assumes a more formal role in identifying, evaluating, and planning for the protection of the community's cultural resources -- the National Register listing process. CLGs are also eligible for technical assistance from the SHPO to help carry out their preservation programs.

Special funding for CLGs is another benefit for local communities that are certified. At least 10% of Virginia's federal preservation funding must go to CLGs:

> Certified local governments may apply for grants from a share of Virginia's annual federal appropriation to carry out approved preservation projects, such as additional survey of resources or preparation of local design guidelines for historic areas.[114]

Fairfax County is not currently a CLG, although interest has been expressed to VDHR by the county. For more information on CLGs, contact the Virginia Department of Historic Resources, 221 Governor Street, Richmond, VA 23219.

Other Funding Sources

Preservation can involve a number of tasks, from publishing a simple brochure or oral history interview to conducting a full-fledged inventory and master plan for a historic district. The many federal and state sources of funding cover a variety of preservation activities but often do not fully fund these activities. A local government often must assist the funding of preservation projects in order to have them completed.

A source that can help to fill funding gaps is a local preservation group. These groups can sponsor fund-raising activities, whether it be direct mail solicitations, historic property tours, or other community or tourism-related events. For example, the village of Waterford in Loudoun County has several fund-raising festivals. The proceeds of these events go directly toward the continued preservation of their historic village and the farmland that surrounds it.

A final source that could be used for a number of different preservation activities is grants from foundations. It is helpful to have contacts with these foundations; even without contacts, a well-written, pertinent grant request can help to achieve the funds necessary for preservation activities. For more information, one can contact The Foundation Center, 1001 Connecticut Avenue, N.W., Washington, D.C. 20036.

SECTION 4.2 -- SAFETY AND TORT LIABILITY

The major concern for VDOT when designing and maintaining roadways is the safety of the traveling public; any accident is a failure of the driver-vehicle-highway system. Also, the constant threat of being sued by an accident victim compels VDOT and the Commonwealth to adhere to certain standards and risk management strategies that keep the safety of the public and the state's tax coffers from peril.

This section provides a brief description of tort liability and its related terminology, a look at safety and tort liability as they relate to the roads under VDOT's jurisdiction, a description of risk management and the strategies adopted by VDOT in order to make itself less liable in tort actions, and the relationship between tort liability and compliance with historic preservation laws.

Description of Tort Liability

(The following description of tort liability is based on a presentation given by Wayne Ferguson and Janice Alcée of the Virginia Transportation Research Council and Jim Wheeler of the Attorney General's office to the Advisory Committee on Highway Safety and Design Standards in Scenic and Historic Areas in Richmond, Virginia, on May 4, 1993.)

A *tort* can be defined as a civil wrong or civil injury. A tort is not a criminal wrong or injury, which occurs when someone commits a criminal act against a person. A tort action "seeks repayment for damage to property and injuries to an individual."[115] In a case involving VDOT, a party (plaintiff) could seek damages for an accident that occurred on a highway. This tort liability involves a party or parties (defendant) charged with being negligent. Negligence can be through either misfeasance, where the party improperly performs its duties, or nonfeasance, where the party fails to perform its duty.[116] So, to avoid liability in a suit seeking damages, VDOT must prove that it was not negligent in its duty of care -- which includes providing safe roads for the traveling public.

In Virginia, the principle of contributory negligence is exercised. Under contributory negligence, if the plaintiff is found to be partly negligent in causing an accident -- whether or not VDOT is also negligent -- the plaintiff is awarded no damages. Other states have a system of comparative negligence, where a damage award is granted to the plaintiff only at the percentage at which the defendant was found to be negligent.

A number of court cases have further defined what is necessary to bring a successful tort action against a person or an agency. In order to have a valid tort action, the following elements must exist:

1. The defendant must have a legal duty to the plaintiff.

2. There must be a breach of duty; that is, the defendant must have failed to perform or to properly perform that duty.

3. The breach of duty must be a proximate cause of the accident that resulted.

4. The plaintiff must have suffered damages as a result.

Proving that these four elements apply is the burden placed on the plaintiff in a tort liability case.[117]

Tort Liability and Road Design Factors

A tort action is usually undertaken because of an accident on a highway that resulted in injuries and/or damages. The action is predicated on the fact that the highway was defective or not safe enough and that this caused the accident. For VDOT, this means that an existing highway could be faulted for tort liability purposes if it was determined by a court to be unsafe. In a case VDOT might face, a plaintiff could not merely state that the highway or highway feature was unsafe. The plaintiff would have to prove that the highway was unsafe or defective.

> Specifically, to hold VDOT liable for a roadway defect, the plaintiff must prove that the defect was a dangerous result of a VDOT employee's breach of care; the defect caused the plaintiff's injury; and VDOT had constructive or actual knowledge of the defect.[118]

One area that will be under scrutiny in such a case is the design of the highway.

Highway Design

The design of a highway is often the basis for tort liability suits against VDOT. The general rule in court cases involving design issues is that the highway needs to have been built according to the accepted standards (usually the standards set by AASHTO) at the time the highway was built. These standards change over time. So, for example, if a highway was built or reconstructed in 1967, it does not have to meet the 1990 AASHTO standards.

There are other sides to the issue of an appropriate design for a highway. A case in California demonstrates that changes in use can also affect liability:

> Even when a highway has not been reconstructed, the adequacy of the existing design may be challenged when conditions have changed substantially such that a clear danger exists. For example, the state of California lost a tort case (*Baldwin v. State*) in which the omission of left-turn lanes was known to be dangerous. Although the highway was designed in accordance with applicable standards, traffic conditions had changed over time.[119]

This case demonstrates that it is not always enough for a highway to have been built to the appropriate standards of the time, but that DOTs have the responsibility of keeping their roads safe in instances of deterioration, changes in use, and other factors that affect safety. One option is to reconstruct a highway, which in essence is building a new highway using new highway design standards.

For example, if VDOT were reconstructing a two-lane rural highway designed in the 1940s, there would be certain safety features the designers would want to consider. Increasing lane width, shoulder width, and clear zone areas; straightening horizontal curves; and cutting or filling vertical curves to increase sight distance are just a few of these. Not all of these safety features need to be corrected in every situation. That could end up costing VDOT -- and the taxpayers -- a considerable sum. An example of an option follows:

> At traffic volumes greater than 750 vehicles per day, reconstruction of horizontal curves can be more safety cost-effective than lane and shoulder widening and can reduce vehicle operating costs and travel time.[120]

This example demonstrates that a full reconstruction of an "unsafe" road is not always necessary to make it sufficiently safe for the public and to defend against liability in a tort action.

An Alternative Approach

An approach that seems appropriate for use on the Georgetown Pike is to keep the traveled way itself unchanged, with the exception of spot safety improvements where accident data or other relevant evidence warrants them. Improvements would be made to the roadsides to reach a reasonable level of safety -- all for the benefit of preserving the road's historic character for future generations. This approach could raise a number of problems, uincluding an effect on the nature of VDOT's duty of care. However, taking no action could raise more problems. The idea for taking this approach is based on the wishes of citizens and other governmental agencies (the Fairfax County Board of Supervisors and VDHR) that the roadway be modified as little as possible.

The desires of Fairfax County and VDHR are based on historic and aesthetic considerations. The idea of aesthetics being part of the police powers of government -- that is, providing for the health, safety, and welfare of the public -- appeared in the 1954 U.S. Supreme Court case *Berman v. Parker*, which dealt with urban renewal in the District of Columbia. Justice Douglas wrote in his opinion:

> Public safety, public health, morality, peace and quiet, law and order -- these are some of the more conspicuous examples of the traditional application of the police power to municipal affairs. . . . The concept of public welfare is broad and inclusive. The values it represents are spiritual as well as physical, aesthetic as well as monetary. It is within the power of the legislature to determine that the community should be beautiful as well as healthy.[121]

This grant of power to municipal governments to control aesthetics has been applied through architectural review boards in historic districts. However, instances of governments placing higher priority on aesthetic values than public safety are difficult to find.

Risk Management

Recognizing that there is no way to eliminate tort liability claims, many states have adopted risk management programs. The main reasons for a DOT to have a risk management program is to better provide for the safety of the users of highways and to protect the taxpayers from uncontrolled damage awards in tort actions.

While a risk management program takes time and money to administer, the time needed by staff members to prepare for and take part in defending against a tort action could be much greater. The costs involved in staff salary and legal fees for court cases are also high, so a well-defined program that tries to minimize liability is a logical and cost-effective step.

A simple way of looking at a risk management program is that it is a sensible means of increasing safety and reducing liability with a relatively minor addition of work for agency staff members. VDOT currently has a risk management process in place, so that it better serves the public and keeps them -- and their pocketbooks -- safer.

Historic Preservation Laws

The need for understanding the relationship between tort liability and historic preservation laws is especially apparent in the case of the Georgetown Pike. Since the Pike has recently been declared eligible for designation in the National Register of Historic Places and the Virginia Landmarks Register (see Section 4.1), both state and federal review processes for historic properties have come into effect. These review processes require that any project affecting a historic property must not damage the property's historic character or that such damage be mitigated.

The effect of these reviews could mean a disparity between the requirements of highway construction standards and the opinions expressed in the historic preservation review process. The question this raises is which set of standards or opinions is the one to follow

to best protect the safety of the traveling public and the historic character of the road without opening up VDOT to liability and risk of tort actions.

> The existence of requirements based on laws promoting historic preservation does not change the transportation agency's obligation to build and operate highways that are safe to use. Nor can it relieve the agency of liability for negligence in performing that mission. It can, however, affect a definition of the agency's duty of care to highway users by sharpening the focus on the character of the property involved, and so helping identify the range of measures that are available to rehabilitate the structure or mitigate the effects of rehabilitation.[122]

Requesting a DOT to look at a range of measures is the ultimate effect of the preservation review process. This has already occurred with a project on the Georgetown Pike.

VDOT had a project underway to make structural improvements to a nonhistorical bridge on the Georgetown Pike when the National Register designation process was initiated. As a preemptive move, VDOT asked VDHR to review the project (a step that is required once the road is declared eligible). VDHR responded by recommending -- not requiring -- that VDOT place stone cladding on the bridge parapets that would harmonize with the stone piers sitting next to the bridge.

This idea mirrors a solution that was recently used for the reconstruction of bridges on the George Washington Memorial Parkway, a road listed in the National Register. In this situation, VDHR did not tell VDOT not to change the bridge but instead asked it to take into account the historic nature of the road and put a historical enhancement into the project. This step did not affect the safety implications of the project, so VDOT's duty of care in this situation was not changed. The cooperation shown between VDHR and VDOT on this one project bodes well that future reviews will be a cooperative process -- not an adversarial one.

The continuing research on tort liability identified another important factor:

> The most recent revisions and republications of "nationally recognized highway safety standards" show a preference for avoiding establishment of precise and mandatory criteria (or standards) for the design, construction, maintenance and operations of highway systems, and for providing ranges of suitable options from which engineering discretion can select the one to achieve a program objective.[123]

The engineer's discretion and options alluded to require that even more stringent records of the process used to determine the appropriate design of a highway improvements be made and that a transportation agency define and follow its duty of care in an appropriate manner.

The processes involved when a property is placed in the National Register are not intended to keep VDOT from keeping the roads safe. Instead, the preservation review

processes will add another facet to VDOT's design process -- that of keeping the historic character of this property intact while planning and designing safety improvements for the roadway.

CHAPTER 5 -- CONCLUSION AND RECOMMENDATIONS

If we believe that everyone who enters a neighborhood, whether as a tourist or as a resident, is a temporary occupant, the length of the stay being the only discernable difference between the two, the importance of concentrating preservation efforts on the physical fabric of the place is clear.[124]

During the course of this study, the right-of-way of the Georgetown Pike was designated by VDHR as eligible for listing in the National Register of Historic Places. No other VDOT-maintained highway has been so designated. Accordingly, issues concerning this designation were incorporated into this study.

In the field of historic preservation, there are several treatment philosophies for the preservation of a historic property, depending on the circumstances and uses of the property. Of the major options available, *it is recommended that "rehabilitation" be the accepted treatment philosophy for the Georgetown Pike.*

Rehabilitation acknowledges the possibility that a historic property still in active use may require alteration or addition to meet continuing or changing uses while retaining its essential historic character. The essential historic characteristics of the Georgetown Pike are its location and its meandering alignment over rolling terrain.

The following specific recommendations are offered.

1. Configuration of the Georgetown Pike

A. *The Traveled Way*

Since 1979, it has been the position of the Commonwealth Transportation Board that the Georgetown Pike remain a two-lane facility. The traffic volume on this road would normally indicate a need to widen it to four lanes, at least in some locations. However, there is a strong consensus among persons interested in historic preservation that such widening is not desirable. Angle and rear-end collisions, the most common types of accidents on the Georgetown Pike, are not associated with inadequate road width, but are more typically the result of inadequate intersection design.

For these reasons, it is recommended that maintaining a good two-lane roadway, in its current location, continue to be the position of the Commonwealth Transportation Board and VDOT, Fairfax County, and VDHR. No general widening, realignment, or relocation of the traveled portion of the road is recommended, except as provided below.

B. *The Roadside*

The inadequate shoulders of the Georgetown Pike cannot be ignored. Due to a lack of shoulders, an accident or disabled vehicle may block the road for extended periods, and police, fire, and rescue personnel have few safe places to position vehicles for emergency response situations. Speed limit enforcement is also hampered. VDOT maintenance personnel have nowhere to push snow off the road, but keeping the road open is a high priority for citizens who use it.

Because there are many run-off-road accidents involving fixed objects, an increased clear zone would provide an opportunity for drivers to recover control of vehicles.

It is strongly recommended that plans be developed to improve the shoulders of the road. In lieu of conventional paved shoulders, it is recommended that planning be undertaken by VDOT and Fairfax County, in cooperation with VDHR, to provide parkway-like grass-covered aggregate and soil shoulders along both sides of the road.

Such grass shoulders would provide many of the safety benefits of paved shoulders, would be more attractive, would discourage their use as alternate travel lanes, yet would provide sufficient support for occasional vehicular use. Analysis indicates that adding six feet of grass shoulders to each side of the road would yield as much as a 35% reduction in nonintersection accidents.

In planning for shoulder widening, these related roadside provisions should be included:

- Pull-offs for tourist use to be provided at areas of unusual scenic or historic value (very important in making the road tourist-friendly);

- Landscape plans for planting selected native tree species behind the relocated ditches (to maintain the character of the corridor past the life expectancy of existing mature vegetation and well into the twenty-second century); and

- A path for cyclists and pedestrians, preferably separated from the road (this is not as important as pull-offs and tree planting but may also be desirable).

Partial funding of the design and implementation of these nonshoulder improvements may be available through the enhancement provisions of ISTEA.

C. *Spot Safety Improvements*

Periodic analysis of accidents occurring on the Georgetown Pike should be continued to insure the early identification of safety problems. The accident history should also be used by decision-makers to determine the most appropriate entrance treatments for specific conditions.

Specific locations are identified in this report, and will continue to be identified through regular analyses of accident data, where spot improvements will be required to reduce localized hazards to the traveling public. All parties must recognize that such spot improvements will be needed and that their design must be undertaken in a way to minimize the adverse effects of these improvements on the character of the roadway.

Where controversies arise over the design of a particular improvement, it is recommended that mediation, which has been used successfully in Virginia for some road improvements, be considered for use in the design process.

2. Street Entrances

It is recognized that the connection of new subdivision street entrances (and the measures that provide for safe turning movements at these new intersections) creates strong opposition from many citizens. *It is recommended that several actions be taken to minimize the number and the adverse effects of new entrances, in the priority order listed below.*

A. *Alternate Access*

Where feasible, it is recommended that Fairfax County and VDOT work together to ensure that new subdivisions have no direct access to the Georgetown Pike but connect instead to existing secondary roads in the area.

B. *Joint Access*

Where new subdivision street entrances are unavoidable, it is recommended that Fairfax County and VDOT take strong measures to minimize the number of new entrances, by requiring joint entrances, by requiring that new subdivisions accommodate the future access needs of adjacent undeveloped lands, and by using any other appropriate means.

C. *Rural Entrance Standards*

Because some new subdivisions will have no other lawful access, new entrances to the Georgetown Pike will be required. However, as shoulders are widened, intersection sight distance will improve. Therefore, the need for deceleration lanes and tapers for such street entrances should be reduced.

Provided the Fairfax County Board of Supervisors so requests, and provided that VDHR formally concurs, it is recommended that VDOT engineers, where a minimum stopping sight distance of 300 feet is available or can be provided at no cost to the Commonwealth, adhere to VDOT's Minimum Standards for Entrances to State Highways (1989 edition) for new entrances to the Georgetown Pike.

This document, intended primarily for application for rural highways, is considered inadequate for use in urban areas such as Northern Virginia, where higher entrance standards are employed. *In consideration of Fairfax County's desire to maintain the road's existing character, and in consideration of VDHR's designation of this road as eligible for listing in the National Register of Historic Places, it is recommended that VDOT engineers recognize and employ these "rural" standards on this road,* ***on a trial basis.***

This change would require most new cul-de-sac subdivision streets serving fewer than 30 residential units (which is believed to include most subdivision activity in the area) to have only an entrance radius, with no right-turn deceleration lane or taper.

VDOT's engineers, concerned for public safety and traffic capacity, prefer higher standards. They have not recommended this course of action, nor have they recommended against it. However, with a formal request from the Fairfax County Board of Supervisors to initiate this change, and with formal concurrence of VDHR, VDOT could accede to the wishes of these governmental agencies on a trial basis, for this road only.

However, should accident or other information show that the application of these minimum standards led to safety or other traffic problems, their application should be discontinued at the discretion of VDOT's Northern Virginia District Administrator.

D. *Existing Entrances*

Earlier evaluation of entrances resulted in a 1979 recommendation by the Virginia Department of Highways, and supported then by the Georgetown Pike and Potomac River Association, that the entrance from Langley Lane to the Georgetown Pike be closed.

Although the major construction project proposed at that time was dropped, this minor street, with its very limited sight distance, is still a problem entrance. *It is recommended that Fairfax County, with the cooperation of VDOT, give strong consideration to closing or abandoning the Langley Lane entrance.*

3. The Corridor

Fairfax County has requested, and VDHR has concurred, that only the right-of-way of the Georgetown Pike be designated as eligible for listing in the National Register of Historic Places. Some observers of this process note that, while preservation of the right-of-way may serve a useful purpose, the roadway structure is not very historic. Instead, it is a mid-twentieth-century adaptation of what probably began as an animal trail.

The preservation of the road itself does little to preserve the scenic characteristics of the corridor, which include the public and private properties within view of the road. Without action to preserve and protect these lands, all that might remain of the scenic and historic Georgetown Pike could be the roadway's lay on the land.

The preservation of private lands is much more difficult than the preservation of lands owned by public agencies. However, as these lands continue to develop, the accommodation of increased traffic volumes and increased turning movements will continue to modify the Georgetown Pike's roadway.

It is recommended that Fairfax County, in cooperation with VDHR, seriously consider additional corridor protection schemes that would control and preserve the views along the corridor. Only by preserving the scenic qualities of the land is preservation of the road likely to succeed.

4. Alternative Transportation Corridors

Current VDOT and Fairfax County plans include highway improvements on:

- Route 7 (widening to six lanes from Leesburg to the Dulles Toll Road);
- Interstate 495 (adding a fifth lane, most likely an HOV lane);
- Fairfax County Parkway (widening to four and six lanes from the Dulles Toll Road to Route 7); and
- Dulles Toll Road (adding an HOV lane from Route 28 to I-495).

In addition to these improvements planned by public agencies, an extension of the Dulles Toll Road to Leesburg is scheduled for construction by a private corporation.

Each of these improvements would improve conditions for motorists in the affected areas and could have an effect on traffic volume on the Georgetown Pike. However, from a brief evaluation of these planned improvements viewed in the context of the continued residential and commercial development in western Fairfax and Loudoun Counties, it appears that none of them alone, nor all of them together, is likely to have a significant, long-term effect in reducing traffic on the Georgetown Pike.

It is recommended that Fairfax County, VDOT, and the Virginia Department of Rail and Public Transportation continue to examine alternatives for improving highways, transit, and ridesharing opportunities and to work to broaden the acceptance of telecommuting as an alternative to commuting.

5. The Administrative System

Suggestions have been made that the Georgetown Pike be transferred from the Primary System to the Secondary System of State Highways to provide opportunities for restricting through-truck traffic or to limit other traffic.

Historically, this road was designed and constructed for commercial hauling between Leesburg and the port of Georgetown. For most of its considerable history, the road served primarily for the mobility of through traffic, and only in the past few decades has access to local lands become a significant traffic volume factor.

Route 193 is functionally classified as a rural major collector (west of Bullneck Run) and as an urban minor arterial to its eastern end. It meets criteria for a primary highway, and it accommodates a traffic volume upwards of 20,000 vehicles per day.

It is not appropriate, either from a historical perspective or from the perspective of today's transportation needs, that through traffic be restricted. It is recommended that the road remain in the primary system.

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APPENDICES

Appendix A. Functional Classification Definitions

Rural Collector System

The rural collector routes generally serve travel of primarily intracounty rather than statewide importance and constitute those routes on which (regardless of traffic volume) predominant travel distances are shorter than on arterial routes. Consequently, more moderate speeds may be typical (AASHTO, p. 12).

- **Major Collector Roads**. These routes (1) serve county seats not on arterial routes, larger towns not directly served by the higher systems, and other traffic generators of equivalent intracounty importance, such as consolidated schools, shipping points, county parks, and important mining and agricultural areas; (2) link these places with nearby larger towns or cities, or with routes of higher classification; and (3) serve the more important intracounty travel corridors (AASHTO, p. 13).

Urban Minor Arterial Street System

The minor arterial street system includes all arterials not classified as principal. This system places more emphasis on land access than the higher system does and offers lower traffic mobility. Such a facility may carry local bus routes and provide intracommunity continuity but ideally does not penetrate neighborhoods. This system includes urban connections to rural collector roads where such connections have not been classified as urban principal arterials for internal reasons (AASHTO, p. 16).

Source: *A Policy on Geometric Design of Highways and Streets*, American Association of State Highway and Transportation Officials, Washington, D.C., 1990.

Appendix B. Criteria for Transferring Secondary Roads to the Primary System

Criteria

Roads may be transferred from the Secondary System to the Primary System if:

- the road...
  - constitutes a link of interstate or intrastate highway;
  - serves a place of great historical or scenic interest;
  - connects county seats;
  - has a minimum traffic volume of 750 vehicles per day.

- the road carries a minimum of...
  - 7 percent foreign vehicles;
  - 20 percent light and medium trucks;
  - 2 percent tractor-trailers and buses.

- 20 percent of the traffic on the road is on trips of 25 miles or more in length;

- 5 percent of the traffic on the road is on trips of 100 miles or more in length.

Degree of Conformance

The degree of conformance with each of the criteria should be considered.

Those roads suited for additions to the Primary System should fully conform to at least a majority of the criteria.

Source: *VDOT Department Policy Memoranda Manual*, "Criteria For Transferring Secondary Roads To the Primary System," DPM Number 8-1, adopted May 6, 1991.

Appendix C. Accident Analysis Figures

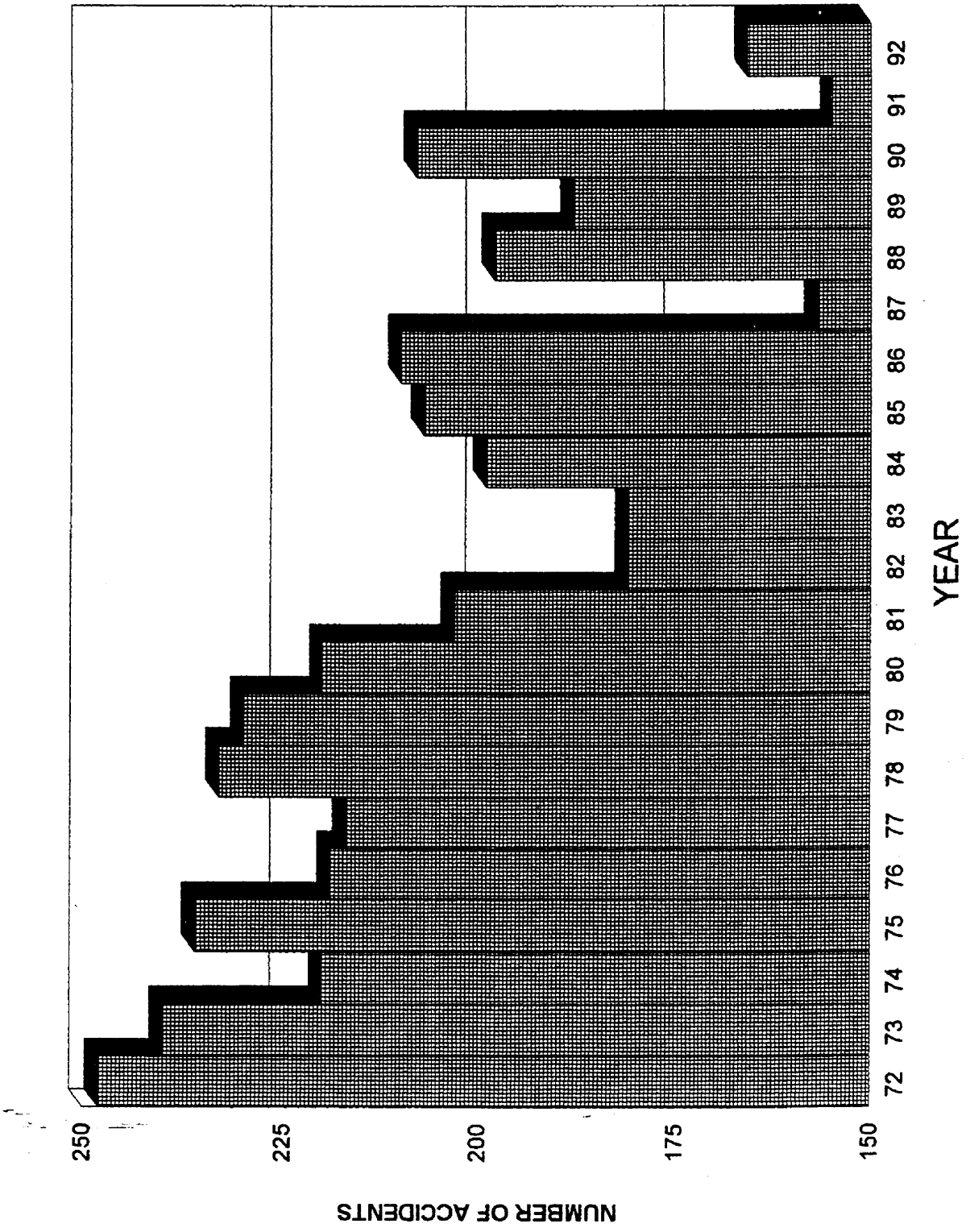

Figure C-1. Total Number of Accidents per Year.

Appendix C (continued)

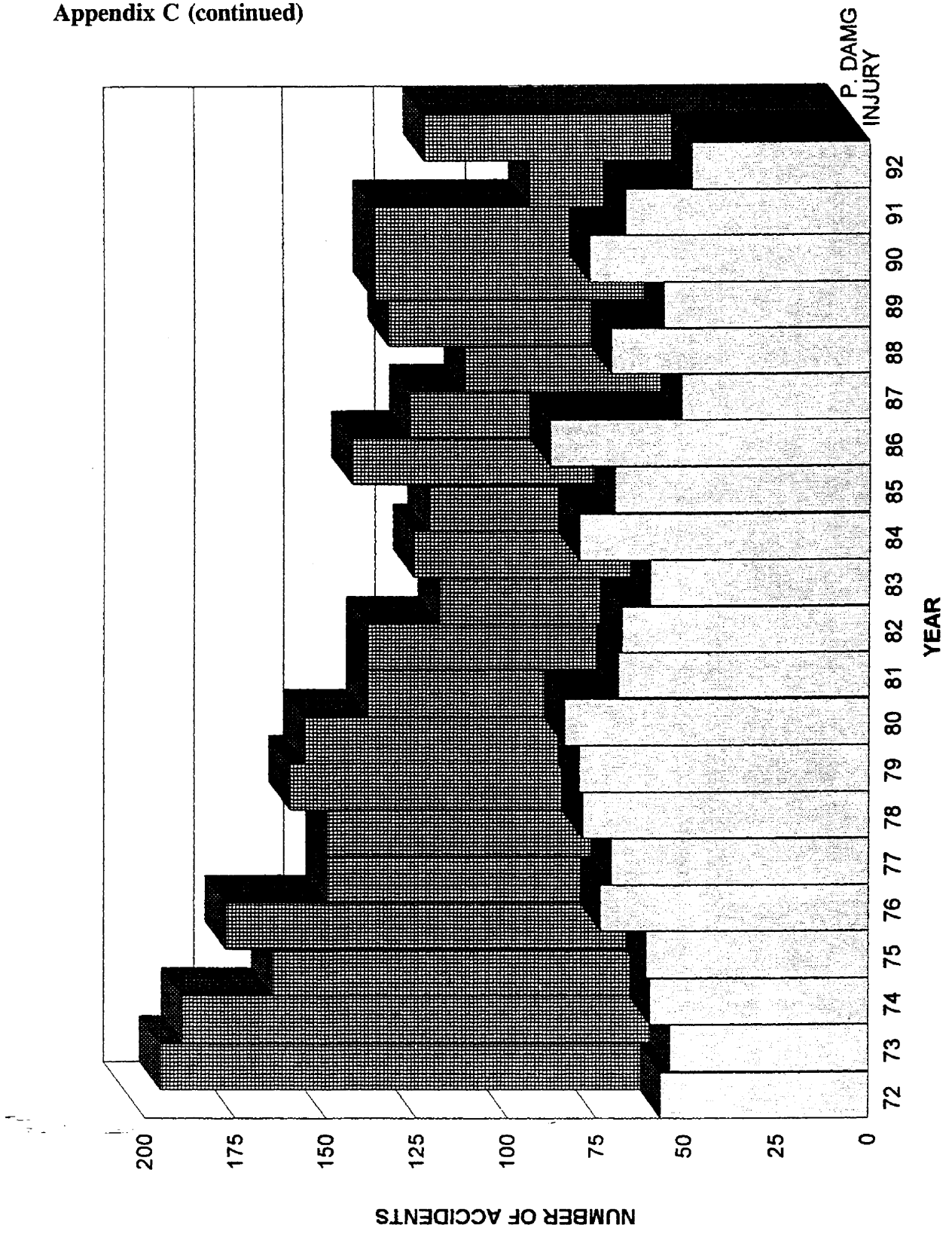

Figure C-2. Number of Injury and Property Damage Accidents per Year.

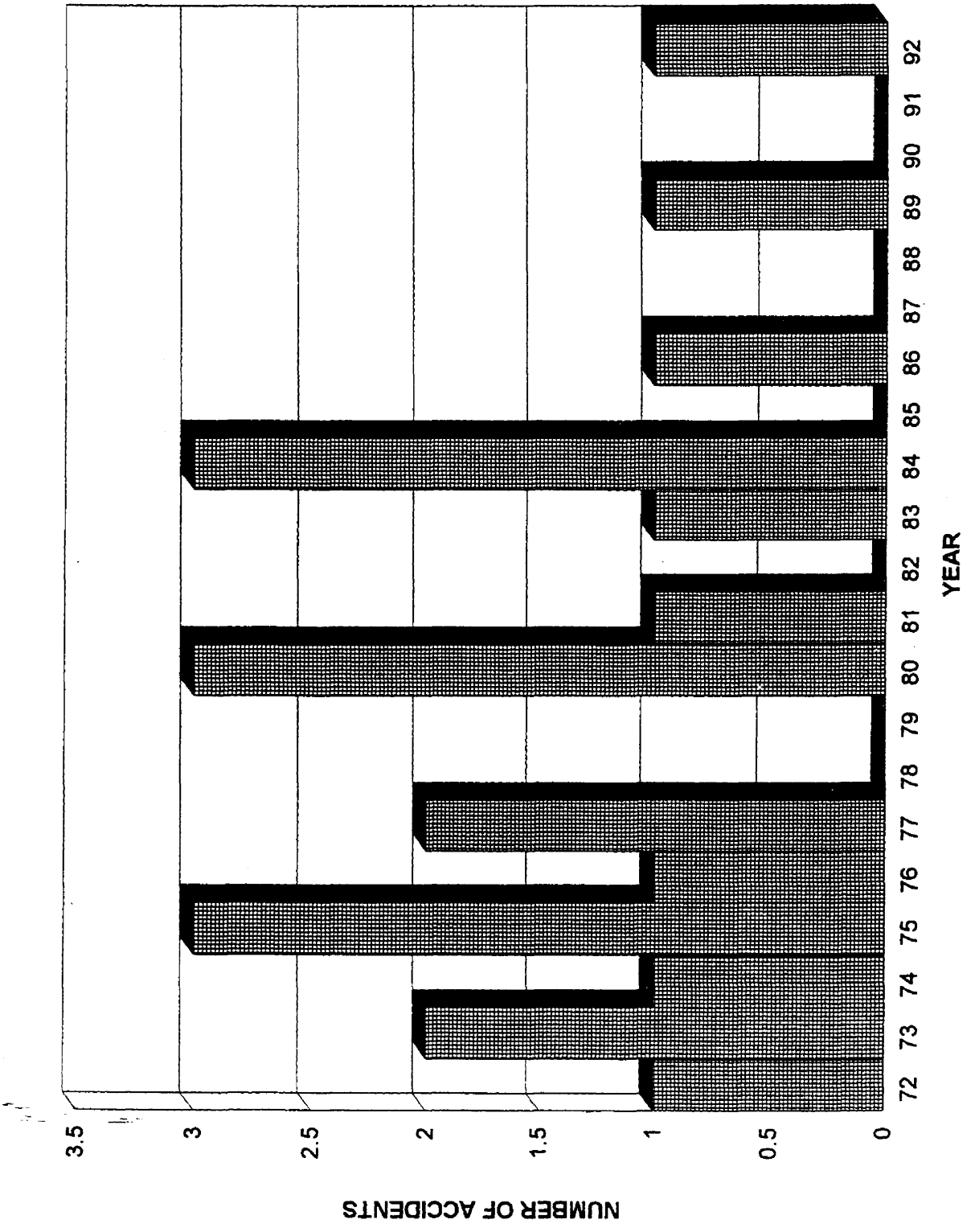

Figure C-3. Number of Fatal Accidents per Year.

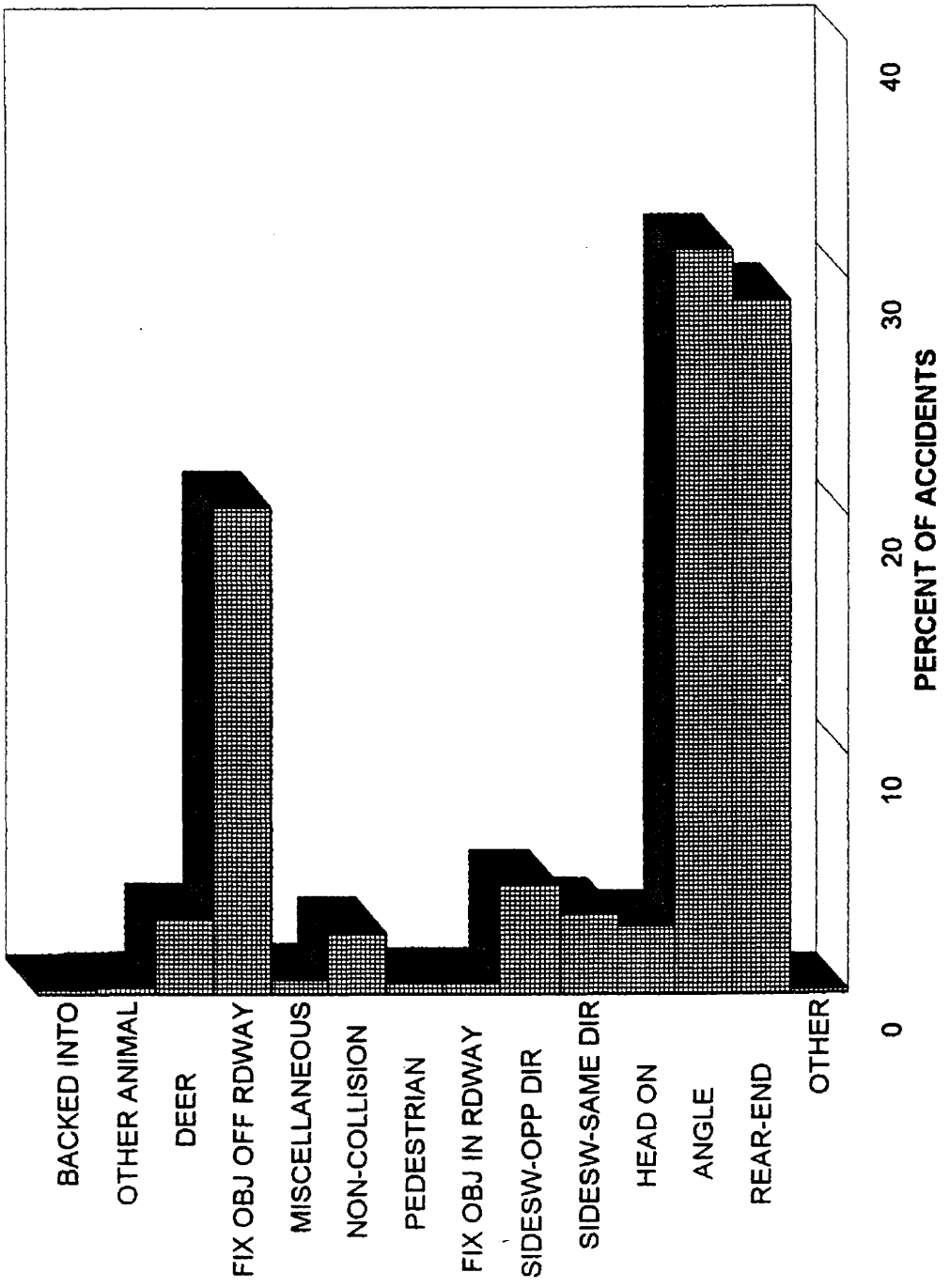

Figure C-4. Percentage of Accidents by Collision Types.

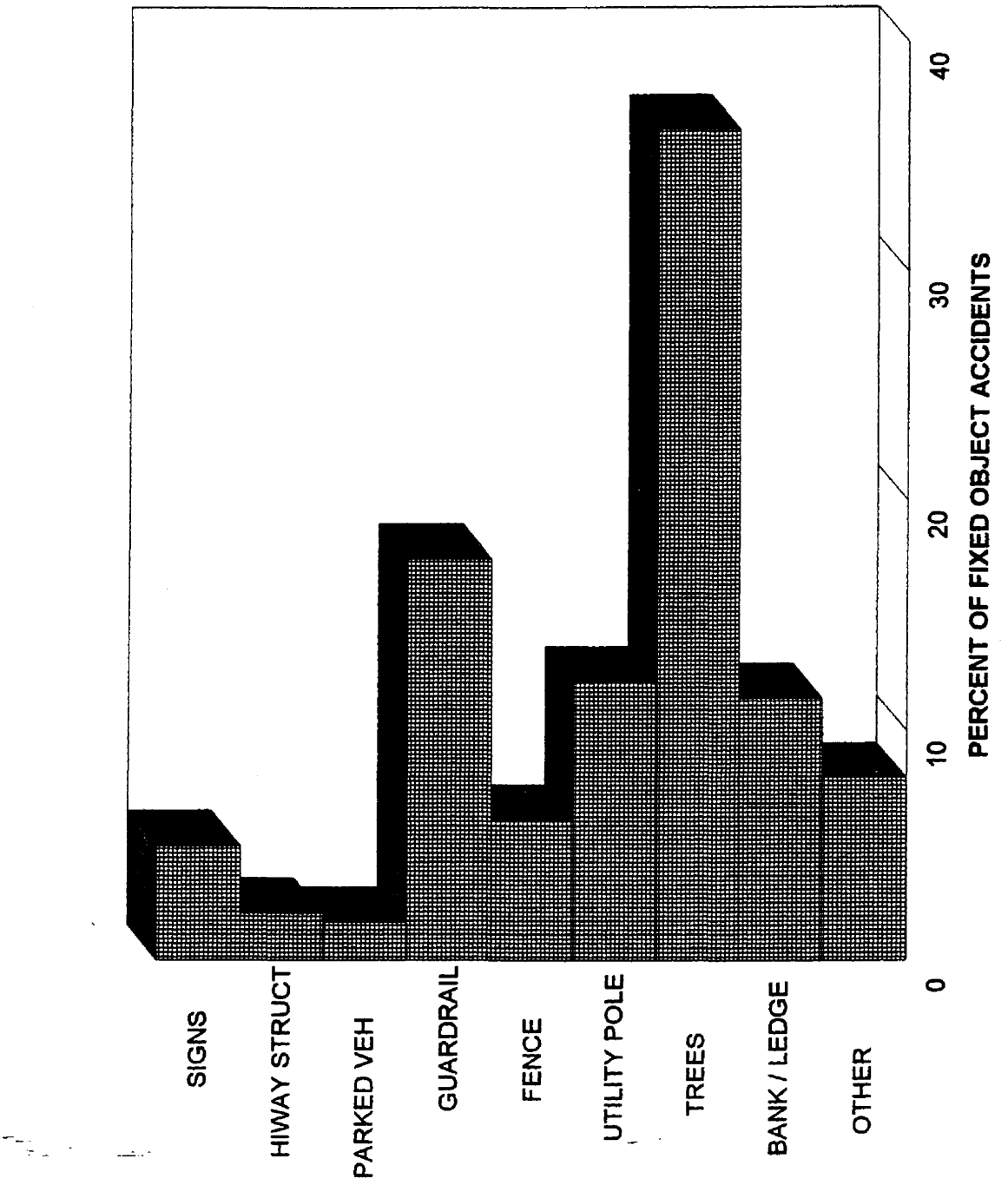

Figure C-5. Types of Fixed Objects Hit in Accidents.

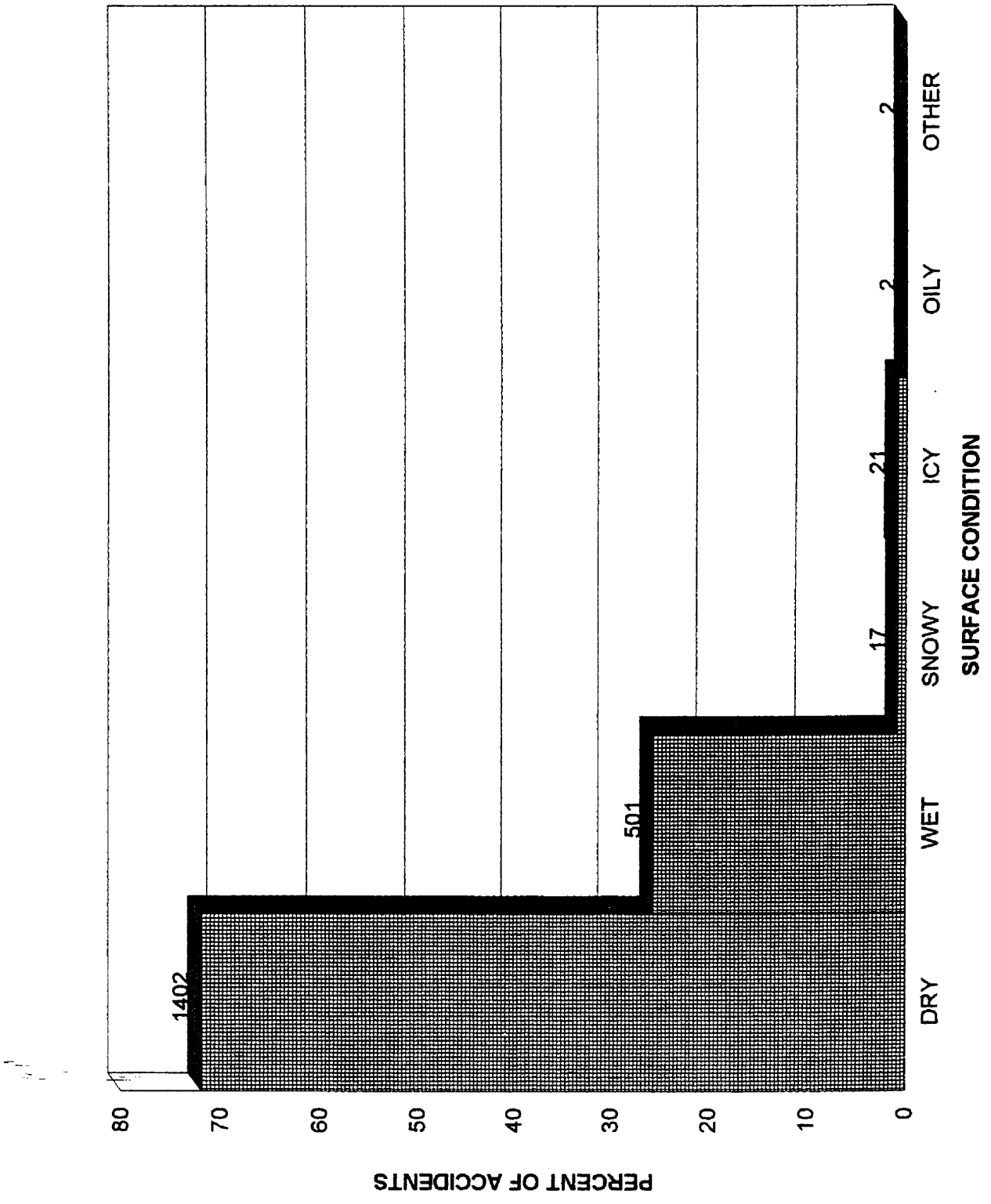

Figure C-6. Percentage of Accidents Occurring by Surface Condition.

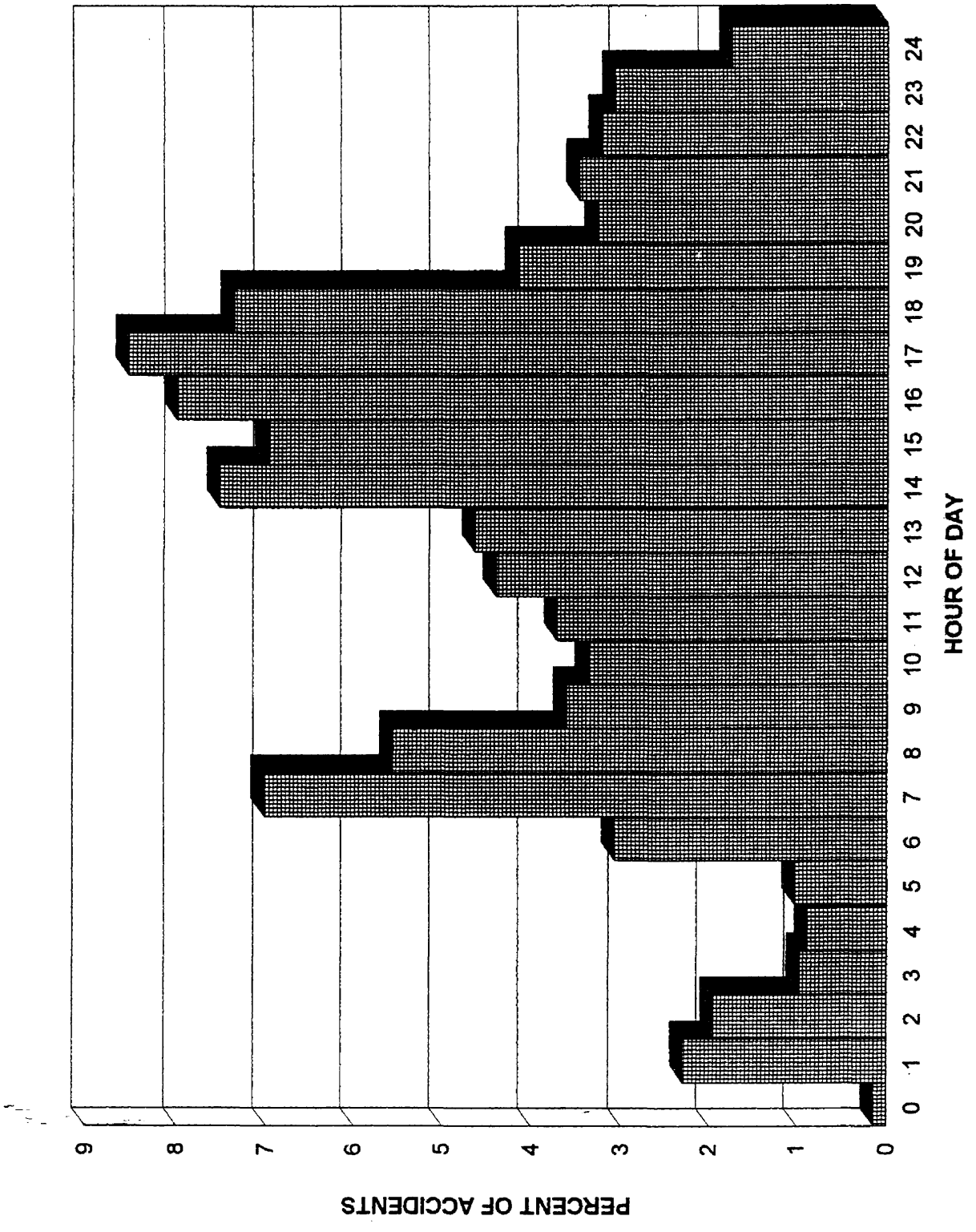

Figure C-7. Percentage of Accidents by Hour of Occurrence

Appendix C (continued)

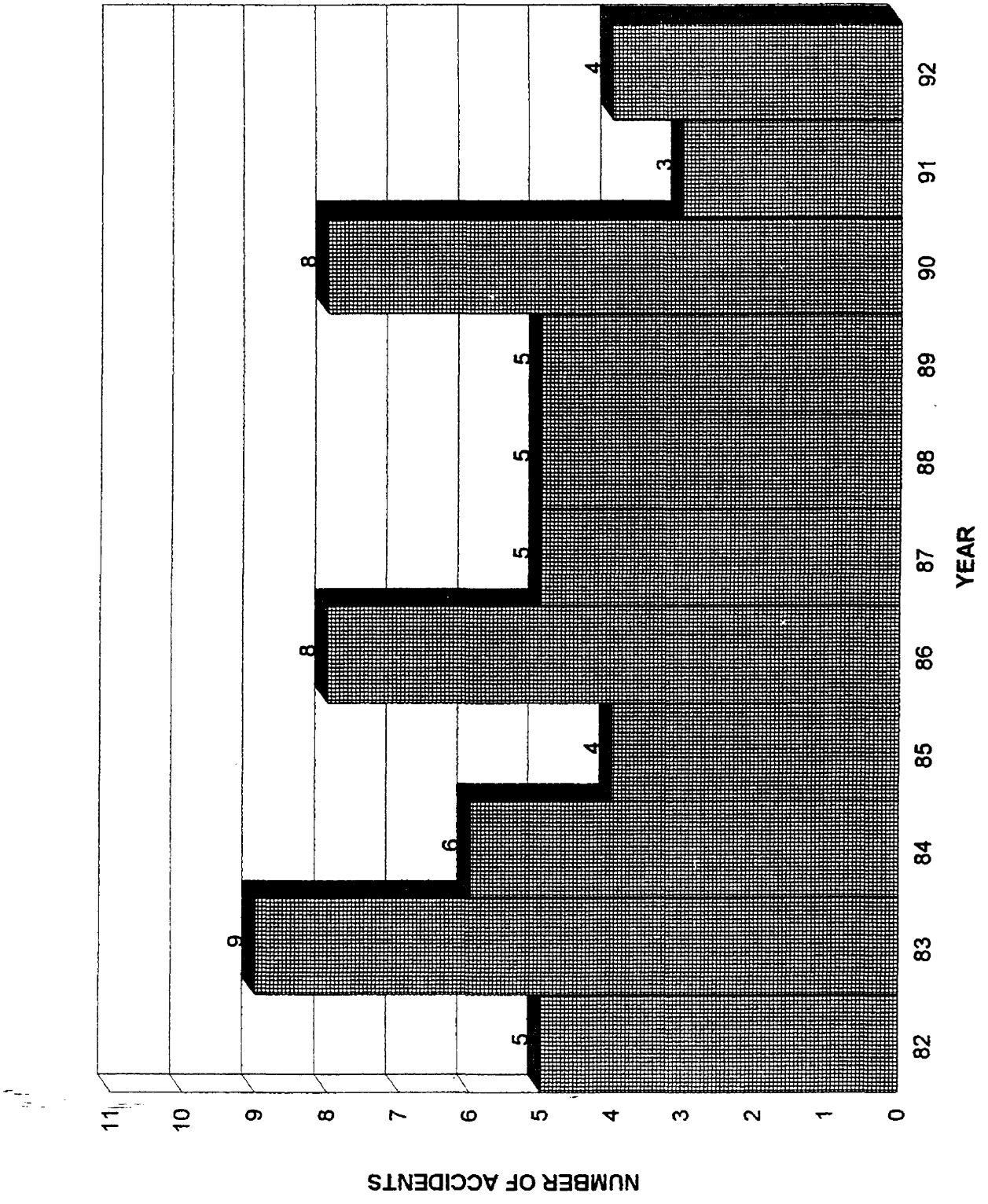

Figure C-8. Number of Accidents per Year at the Intersection of Old Dominion Drive.

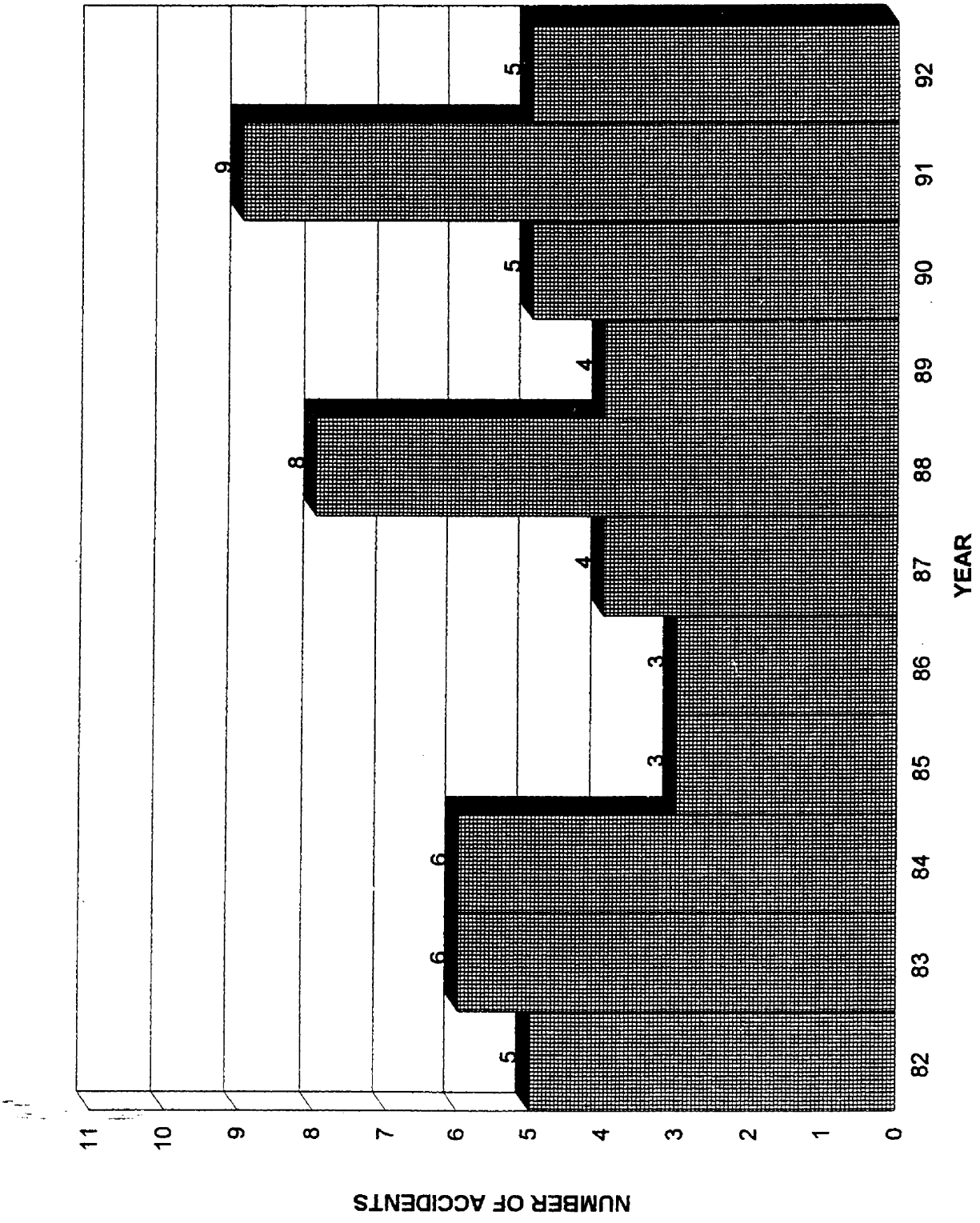

Figure C-9. Number of Accidents per Year at the Intersection of River Bend Road.

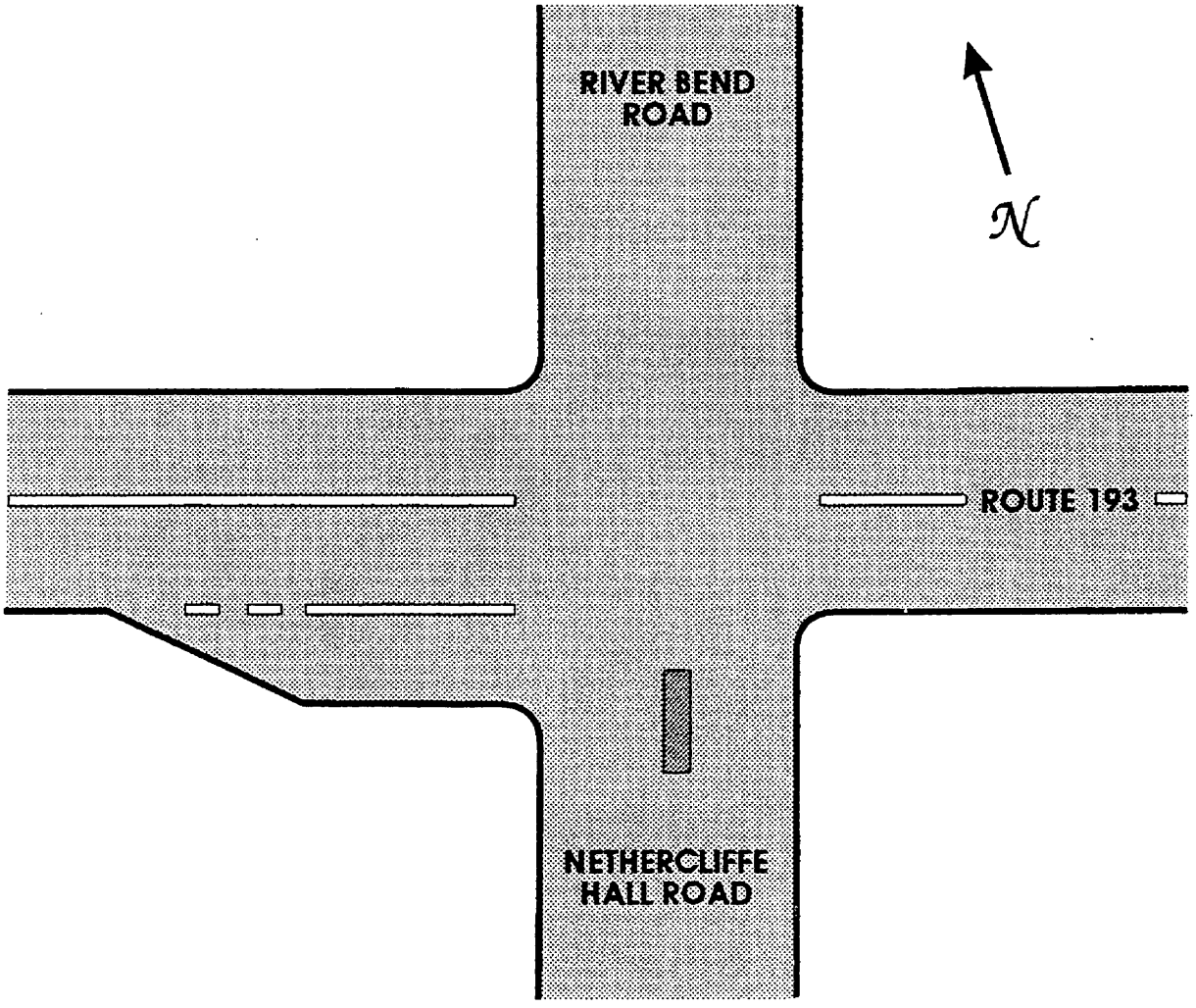

Figure C-10. Suggested Positive Barrier to Decrease Accident Occurrence at the Intersection of River Bend Road.

Appendix C (continued)

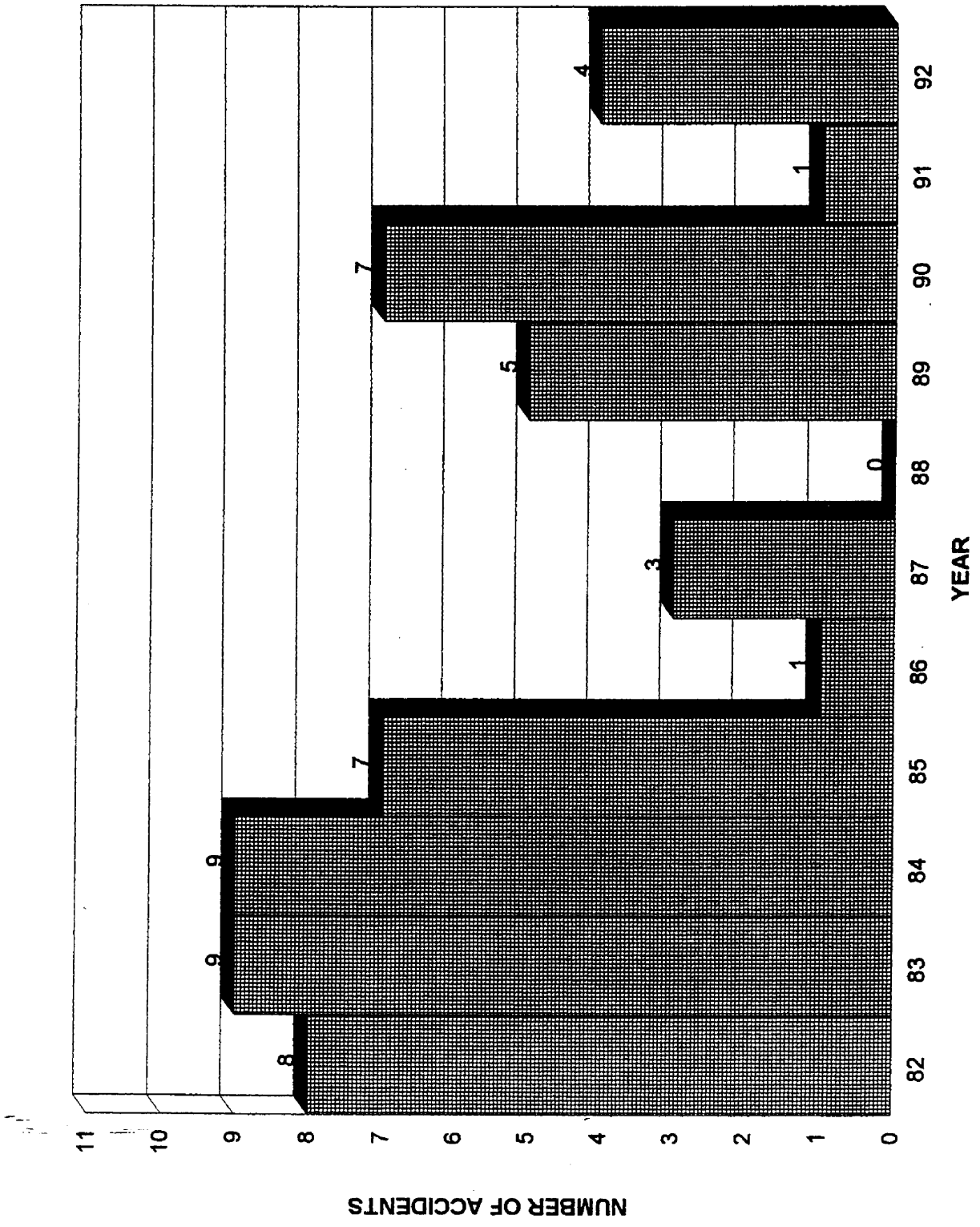

Figure C-11. Number of Accidents per Year at the Intersection of Swinks Mill Road.

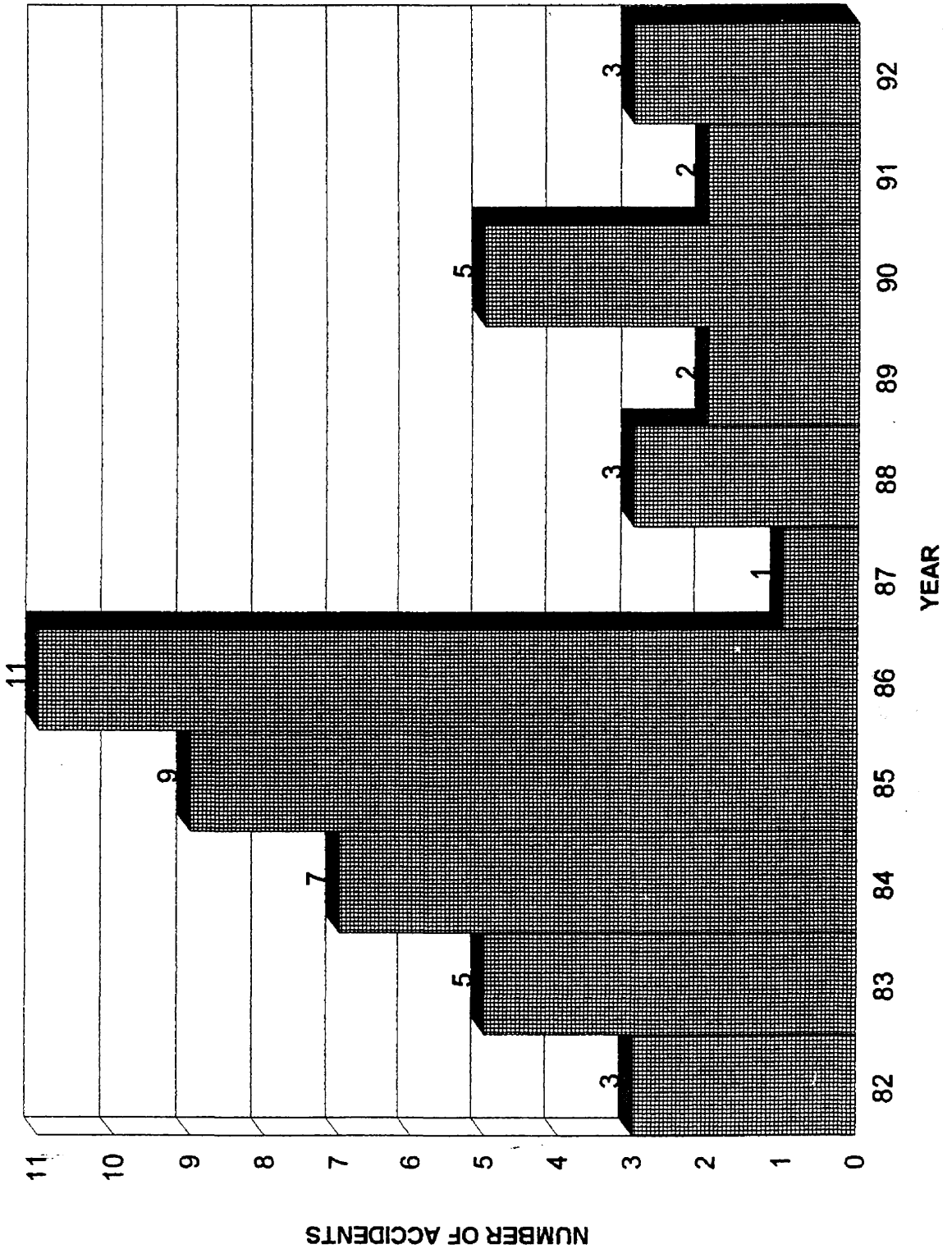

Figure C-12. Number of Accidents per Year at the Intersection of Harvey Road.

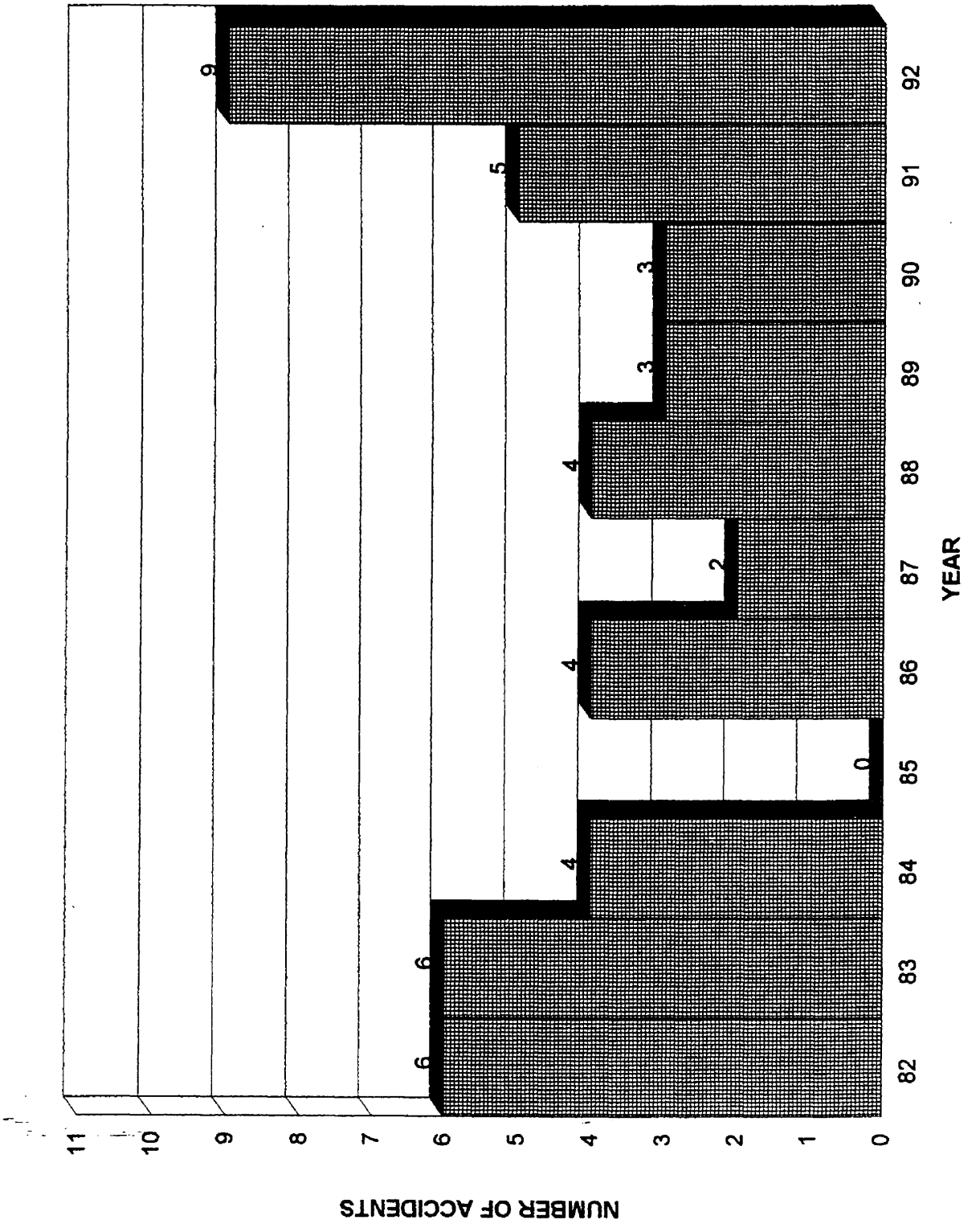

Figure C-13. Number of Accidents per Year at the Intersection of Route 7.

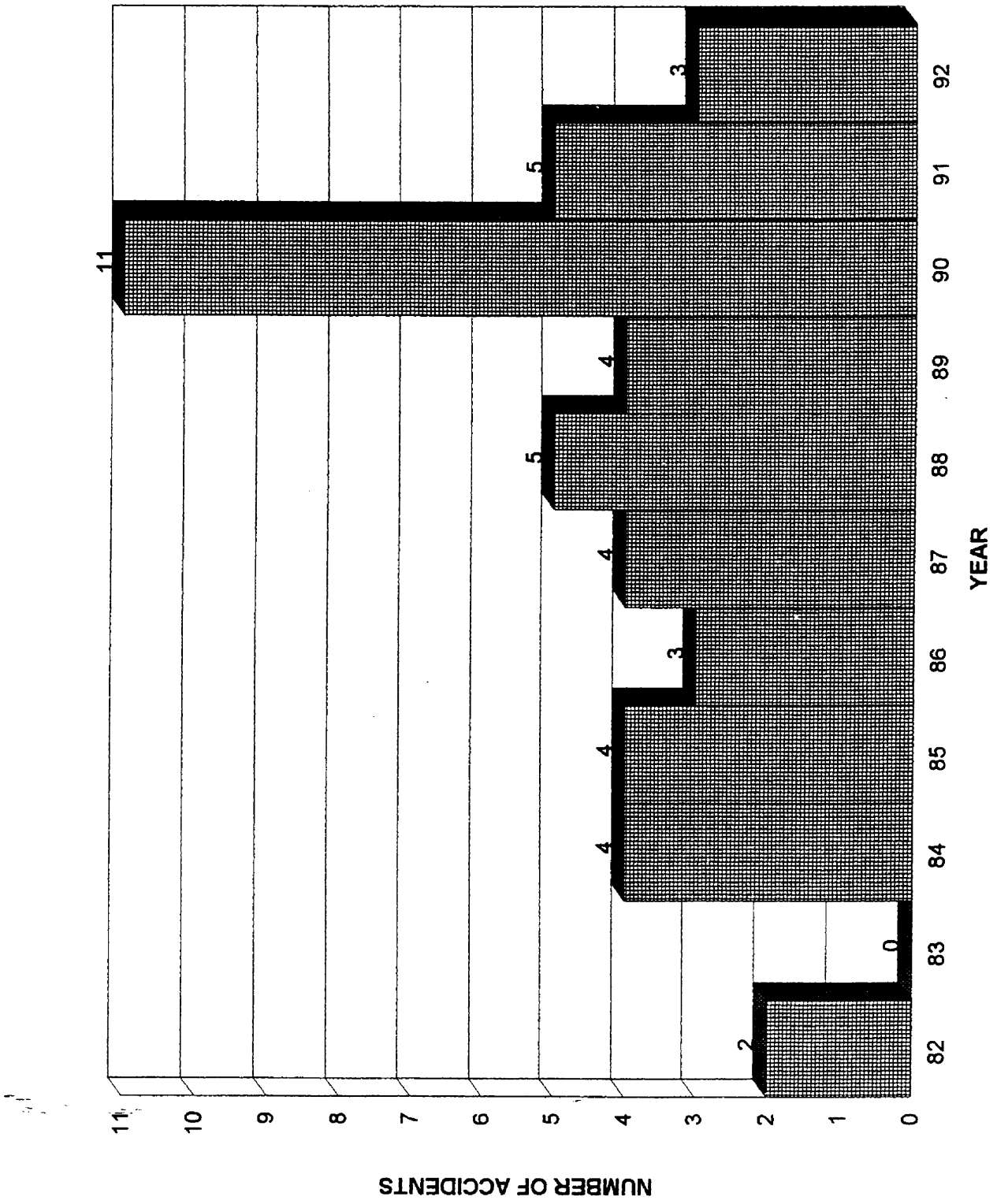

Figure C-14. Number of Accidents per Year at the Intersection of Douglas Drive.

Appendix C (continued)

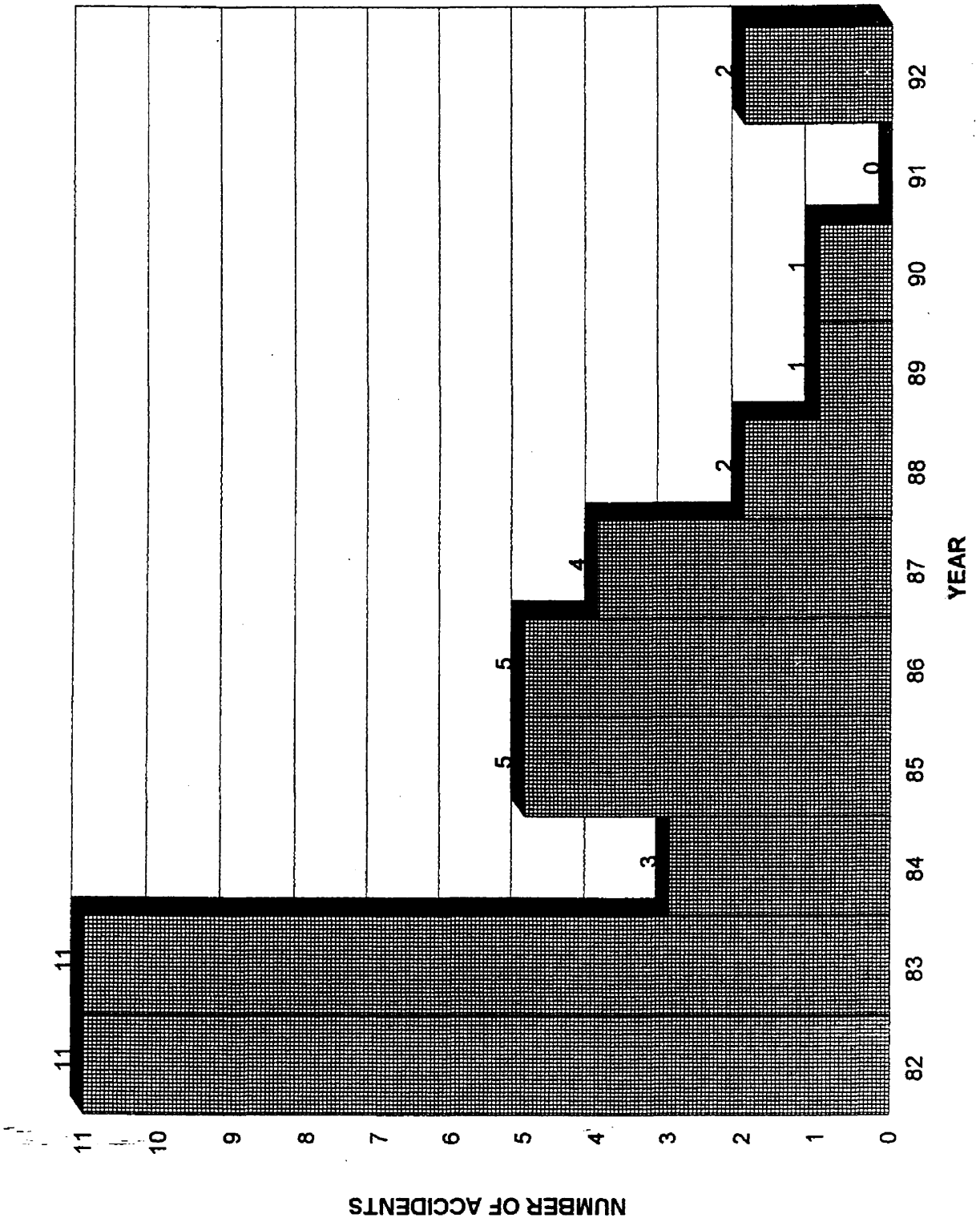

Figure C-15. Number of Accidents per Year at the Intersection of Mackall Avenue.

Appendix C (continued)

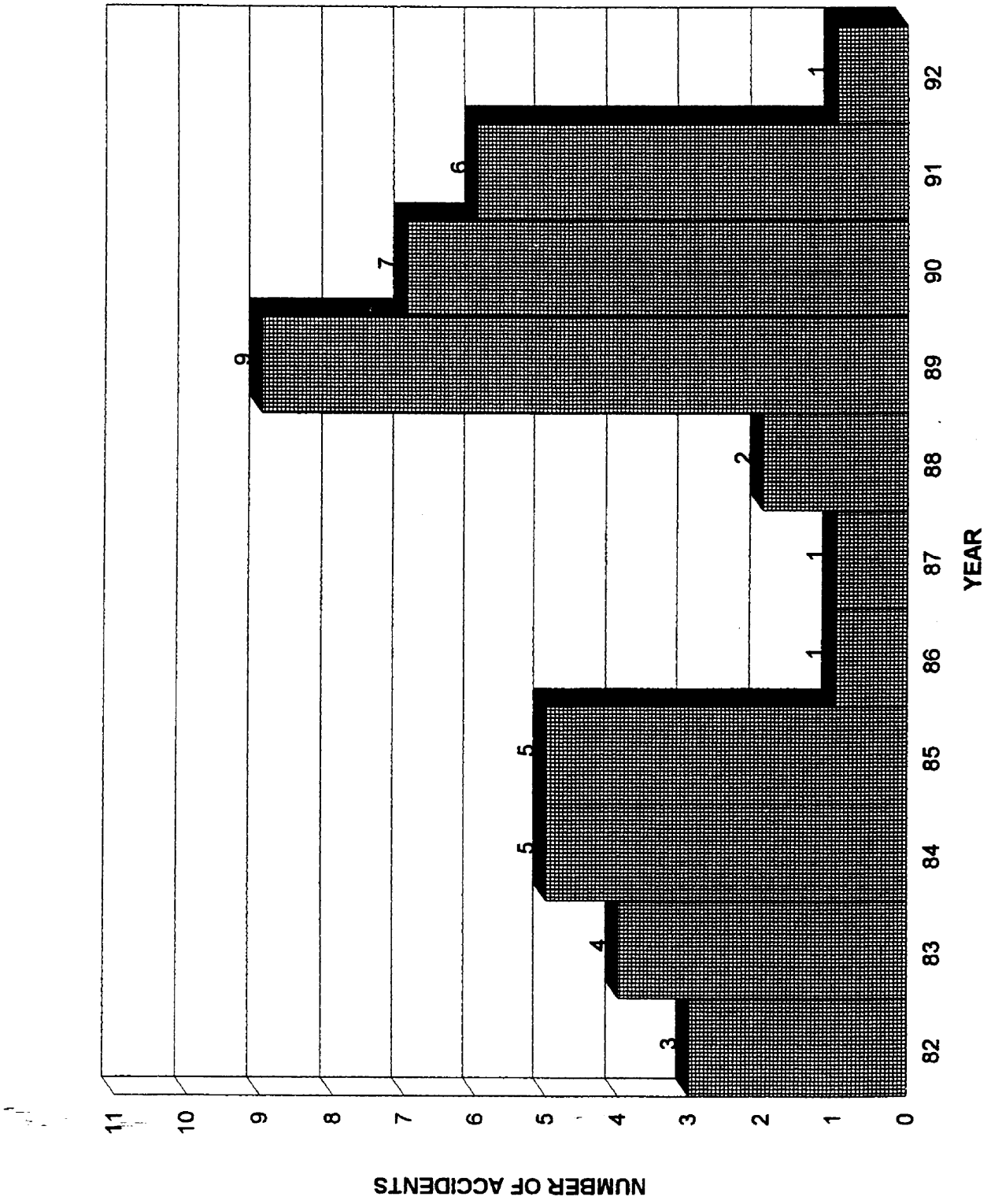

Figure C-16. Number of Accidents per Year at the Intersection of the Ramp from EB Georgetown Pike to NB I-495.

Appendix C (continued)

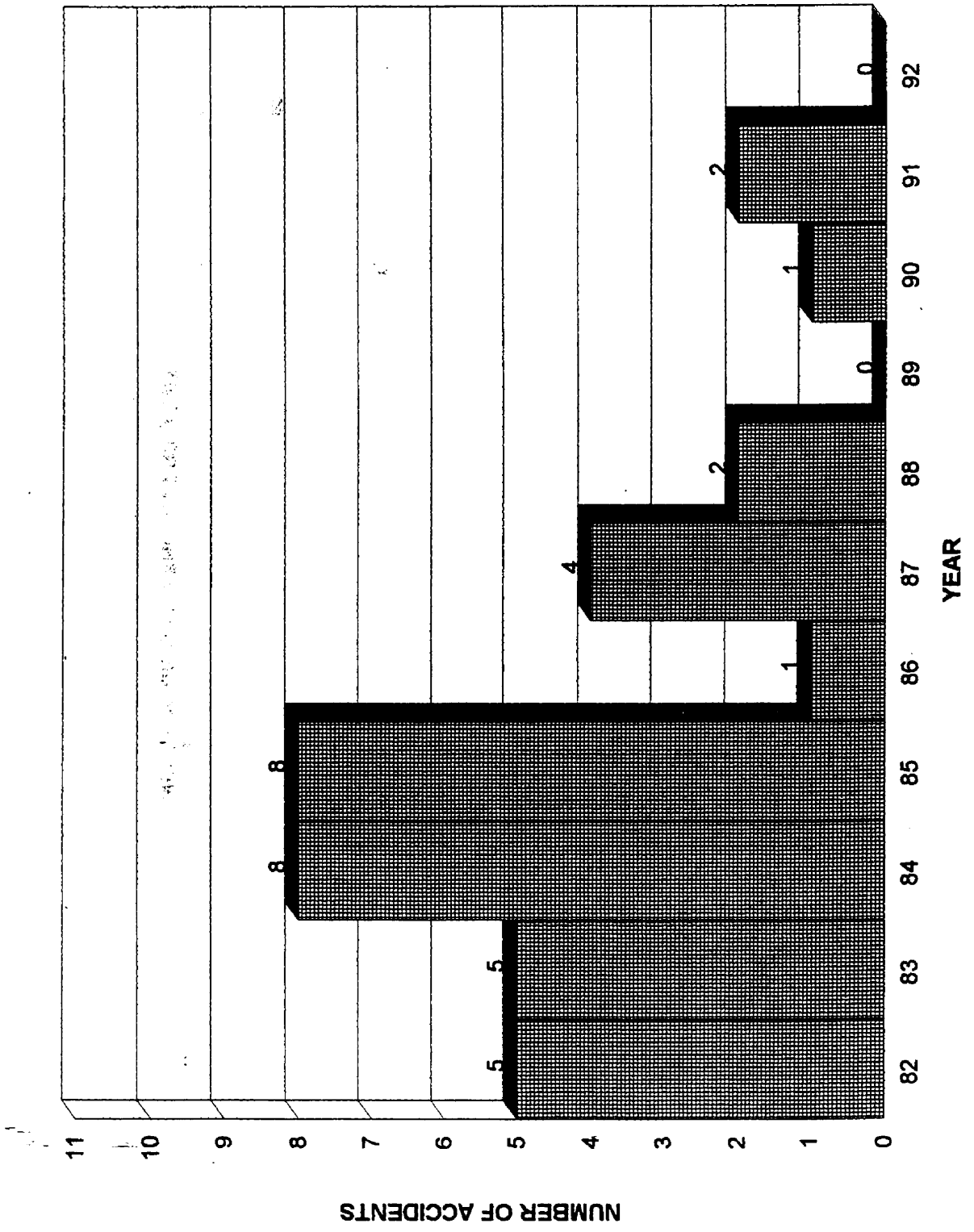

Figure C-17. Number of Accidents per Year at the Intersection of Springvale Road.

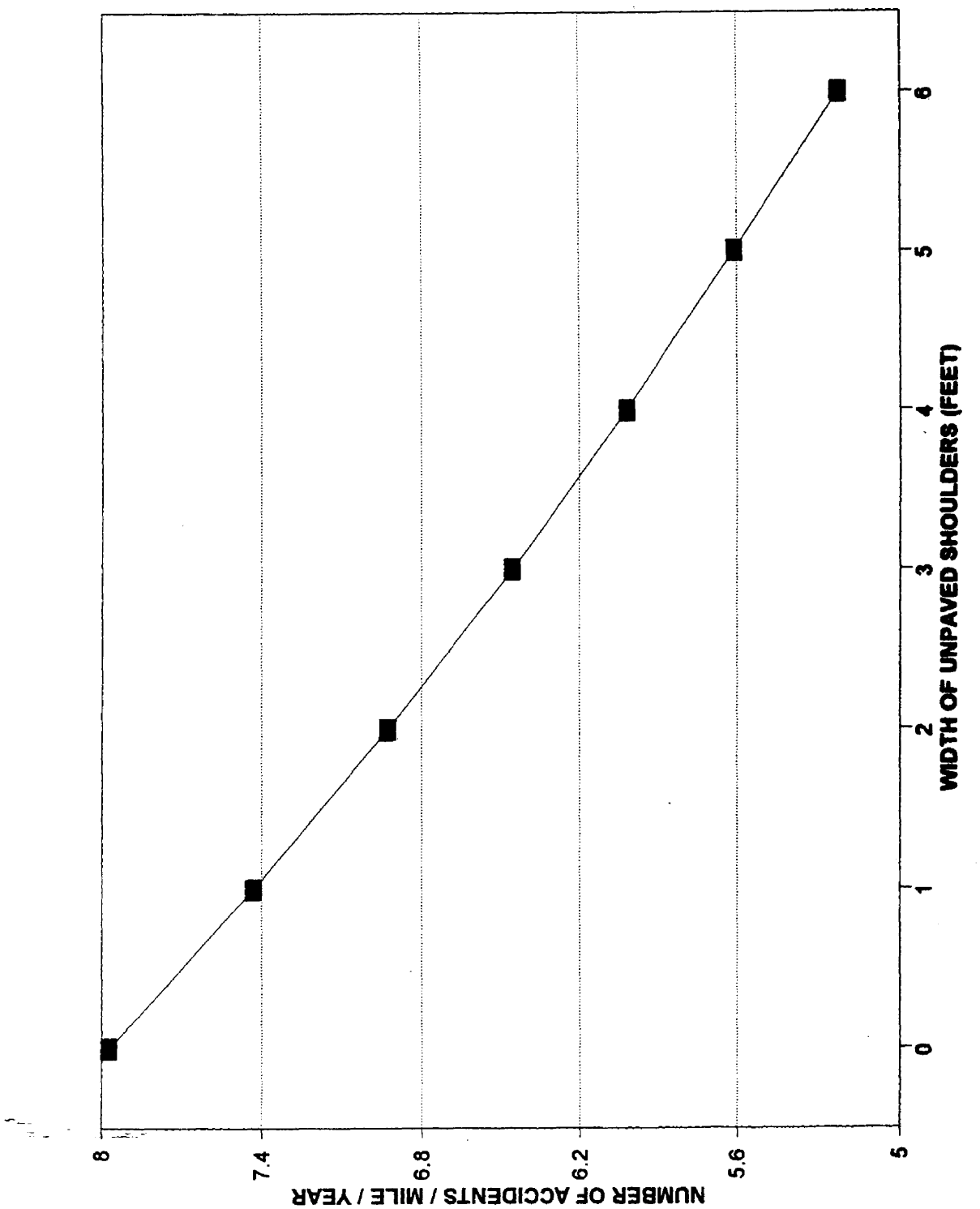

Figure C-18. Predicted Accident Reduction by Shoulder Widening on Two-Lane Roads. Method: Zegeer et al., in *Designing Safer Roads*.

Appendix D. Criteria for Designation as a Virginia Byway

In order to be considered for designation as a Virginia Byway, a segment of road must substantially meet the tests of the following physical criteria:

1. The route provides important scenic values and experiences.

2. There is a diversity of experiences, as in transition from one landscape scene to another.

3. The route links together or provides access to significant scenic, scientific, historic or recreational points.

4. The route bypasses major roads or provides opportunity to leave high-speed routes for variety and leisure in motoring.

5. Landscape control or management along the route is feasible.

6. The route affords opportunities for the provision of features which will enhance the motorist's enjoyment of the byway and provide for the improved safety of the visitor.

7. The route contributes to good distribution within elements of the Scenic Highway and Virginia Byway system.

8. Local government(s) has/have initiated zoning or other land-use controls, so as to reasonably protect the aesthetic or cultural value of the highway.

Source: *A Guide for Virginia Byway Management*, Department of Conservation and Recreation, Commonwealth of Virginia, Richmond, Reprint, July 1993, pp. 4-5.

Appendix E. Federal Guidelines: The Scenic Corridor

Elements

A scenic road and its corridor should have the following elements (though, all characteristics are not required in a single segment):

- **Quality** that deserves local, State, or national recognition, in terms of scenic, historic, or cultural character. The road should justifiably be a destination, in and of itself. Roadside complementary facilities should exist or be developed adjacent to the road. [Complementary facilities can include "roadside rests, picnic areas, camera stops, scenic overlooks, campgrounds, boat-launching sites, trails, and other special facilities," p. 1-2.]

- **Variety** that reflects changes in the landscape, land-use activity, or terrain. The experience offered in one corridor should differ from that in other parts of the locality, State, or region. The corridor should feature the natural or cultural landscape peculiar to that area.

- **Accessibility** that provides connecting links between existing or proposed recreation areas and parks, or points of historic, cultural, scientific or scenic interest.

- **Location and Geographic Distribution** over as wide a geographic area as is possible. A corridor may provide a loop parallel to a major arterial route, allowing the traveler to leave the arterial route and later return to it.

- **Design and Safety** consistent to the maximum possible extent with the scenic corridor. The road should seek ground-fitting, graceful horizontal, and vertical alignment, with appropriate curves and vertical alignment, with appropriate curves and striking vistas. The corridor should safely accommodate the anticipated traffic volumes.

- **Public and Private Development** that is adaptable and consistent with the character of the scenic corridor. Obtrusive or offensive uses should be restricted, eliminated, bypassed or screened from view. Protection devices can be used.

- **Compatibility** that coordinates with other outdoor recreation, conservation, and aesthetic goals. Such byways should be compatible with wilderness areas such as nature, wildlife, and fish preserves and other land and cultural features such as geological, natural and historic elements.

- **Competing Uses** that do not create unsafe conditions or distract from the scenic values. Ideally, users of the scenic road should not interfere with each other (pp. 7-1, 7-2).

Appendix E (continued)

Controls

A variety of devices have been developed and used to control scenic highway corridors:

- Wider than normal right-of-way.
- Outright acquisition of corridor areas.
- Fee acquisition and leaseback to adjacent owners.
- Acquisition of scenic or conservation easement.
- Local zoning (county or city).
- State zoning.
- Scenic highways corridor reservations.
- Designation of special conservation or corridor districts.
- Comprehensive planning.
- Restrictive covenants in deeds (p. 7-4).

Source: *Scenic Byways*, U.S. Department of Transportation, Federal Highway Administration, Washington, D.C., July 1988.

Appendix F. Historic Corridor Ordinance and Enabling Legislation

Enabling Legislation

§ 15.1-503.2. Preservation of historical sites and areas in counties and municipalities. - - A. 1. The governing body of any county or municipality may adopt an ordinance setting forth the historic landmarks within the county or municipality as established by the Virginia Landmarks Commission, and any other buildings or structures within the county or municipality having an important historic, architectural or cultural interest, and any historic areas within the county or municipality as defined by § 15.1-430 (b), amending the existing zoning ordinance and delineating one or more historic districts, adjacent to such landmarks, buildings and structures, or encompassing such historic areas, or encompassing parcels of land contiguous to arterial streets or highways (as designated pursuant to Title 33.1, including § 33.1-41.1 of that title) found by the governing body to be significant routes of tourist access to the county or municipality or to designated historic landmarks, buildings, structures or districts therein or in a contiguous county or municipality. Such amendment of the zoning ordinance and the establishment of such district or districts shall be in accordance with the provision of Article 8 (§ 15.1-486 *et seq.*) of this chapter. The governing body may provide for an architectural review board to administer such ordinance. Such ordinance may include a provision that no building or structure, including signs, shall be erected, reconstructed, altered or restored within any such historic district unless the same is approved by the architectural review board or, on appeal, by the governing body of such county or municipality as being architecturally compatible with the historic landmarks, buildings or structures therein. . . .

Source: *Code of Virginia*, § 15.1-503.2.

Appendix G. Section 106 of the National Historic Preservation Act of 1966

SEC. 106. The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation established under Title II of this Act a reasonable opportunity to comment with regard to such undertaking.

Source: Public Law 89-665, October 15, 1966; 16 U.S.C. 470 *et seq.*

Appendix H. The Section 106 Process: Evaluating Effects

800.9 Criteria of Effect and Adverse Effect

(a) An undertaking has an effect on a historic property when the undertaking may alter characteristics of the property that may qualify the property for inclusion in the National Register. For the purpose of determining effect, alteration to features of the property's location, setting, or use may be relevant depending on a property's significant characteristics and should be considered.

(b) An undertaking is considered to have an adverse effect when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects on historic properties include, but are not limited to:

(1) Physical destruction, damage, or alteration of all or part of the property;
(2) Isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the National Register;
(3) Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;
(4) Neglect of a property resulting in its deterioration or destruction; and
(5) Transfer, lease, or sale of the property.

(c) Effects of an undertaking that would otherwise be found to be adverse may be considered as being not adverse for the purpose of these regulations:

(1) When the historic property is of value only for its potential contribution to archeological, historical, or architectural research, and when such value can be substantially preserved through the conduct of appropriate research, and such research is conducted in accordance with applicable professional standards and guidelines;
(2) When the undertaking is limited to the rehabilitation of buildings and structures and is conducted in a manner that preserves the historical and architectural value of affected historic property through conformance with the Secretary's "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings"; or
(3) When the undertaking is limited to the transfer, lease, or sale of a historic property, and adequate restrictions or conditions are included to ensure preservation of the property's significant historic features.

Source: 36 C.F.R. Part 800 (1987).

Appendix I. Section 4(f) of the Department of Transportation Act of 1966

Sec. 4(f). Maintenance and enhancement of natural beauty of land traversed by transportation lines.

It is hereby declared to be the national policy that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites. The Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the States in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of the lands traversed. After August 23, 1968, the Secretary shall not approve any program or project which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance as determined by the Federal, State, or local officials having jurisdiction thereof, or any land from an historic site of national, State, or local significance as determined by such officials unless (1) there is no feasible and prudent alternative to the use of such land, and (2) such program includes all possible planning to minimize harm to such park, recreational area, wildlife and waterfowl refuge, or historic site resulting from such use.

Source: Public Law 89-670, October 15, 1966; 49 U.S.C. 1653(f).

Appendix J. National Environmental Policy Act of 1969

Sec. 101 (b) In order to carry out the policy set forth in this Act, it is the continuing responsibility of the Federal Government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may

(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

(2) assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;

(3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;

(4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and a variety of individual choice;

(5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and

(6) enhanced the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Sec. 102. The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this Act, and (2) all agencies of the Federal government shall

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on

(i) the environmental impact of the proposed action,

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,

(iii) alternatives to the proposed action,

(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and,

(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Source: Public Law 91-190, January 1, 1970; 42 U.S.C. 4371 *et seq.*

Appendix K. Joint Resolutions

SENATE JOINT RESOLUTION NO. 235

Requesting the Department of Transportation to study Georgetown Pike.

Agreed to by the Senate, February 25, 1993
Agreed to by the House of Delegates, February 23, 1993

WHEREAS, the General Assembly has recognized the importance of preserving the historic character of certain roads and highways within the Commonwealth by passing legislation providing for the designation of such roads and highways as Virginia byways (Article 5 (§ 33.1-62 et seq.) of Chapter 1 of Title 33 of the Code of Virginia); and

WHEREAS, an important part of the character of Virginia byways is their original alignment, adjacent structures, trees and other vegetation; and

WHEREAS, Georgetown Pike, located in Fairfax County, was designated as the first Virginia Scenic and Historic Byway in 1973, and its preservation is now being threatened; and

WHEREAS, the primary purpose of designating Virginia byways is to preserve the aesthetic and cultural character of roads leading to or within areas of historical, natural, or recreational significance; and

WHEREAS, the goals of maximizing traffic flows, improving roadways to meet current highway engineering and safety standards, and requiring certain road improvements in conjunction with adjacent development sometimes conflict with the goal of preserving the character of Virginia byways; and

WHEREAS, the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) has established a committee to review requirements for byways; and

WHEREAS, the Department of Transportation is currently studying criteria for designation of byways and has established an advisory committee; now, therefore, be it

RESOLVED by the Senate, the House of Delegates concurring, That the Department of Transportation be requested to study the Georgetown Pike.

The Department shall consider the following issues as they relate to the Georgetown Pike:

(i) Identification of all statutory, regulatory, or published engineering, construction, traffic, or safety standards that may be inconsistent with the purpose of maintaining the existing or historic character of this byway;

(ii) Identification and recommendation of alternatives to any engineering, legal, or other requirements of standards that, if followed, would degrade the aesthetic, natural, or historic character of Georgetown Pike; and

(iii) Identification of sources of funding available for preservation or improvements to alternative transportation corridors including those sources available under ISTEA and the National Historic Preservation Act of 1966;

The Department shall consider ISTEA, especially the environmental programs and provisions of that act, as well as programs developed by the states of Maryland, Delaware, and Pennsylvania pursuant to ISTEA, in determining what alternatives and options may be available.

The Department shall consult with the County of Fairfax and its office of comprehensive planning, and shall hold at least one public hearing in the County of Fairfax.

The Department shall complete its study of the Georgetown Pike in time to submit its findings and recommendations to the Governor and the 1994 General Assembly as provided in the procedures of the Division of Legislative Automated Systems for processing legislative documents.

GENERAL ASSEMBLY OF VIRGINIA--1993 SESSION

HOUSE JOINT RESOLUTION NO. 411

Requesting the Department of Transportation to study the Georgetown Pike.

Agreed to by the House of Delegates, February 18, 1993
Agreed to by the Senate, February 16, 1993

WHEREAS, the General Assembly has recognized the importance of preserving the historic character of certain roads and highways within the Commonwealth by passing legislation providing for the designation of such roads and highways as Virginia byways (Article 5 (§ 33.1-62 et seq.) of Chapter 1 of Title 33 of the Code of Virginia); and

WHEREAS, an important part of the character of Virginia byways is their original alignment, adjacent structures, trees and other vegetation; and

WHEREAS, Georgetown Pike, located in Fairfax County, was designated as the first Virginia Scenic and Historic Byway in 1973, and its preservation is now being threatened; and

WHEREAS, the primary purpose of designating Virginia byways is to preserve the aesthetic and cultural character of roads leading to or within areas of historical, natural, or recreational significance; and

WHEREAS, the goals of maximizing traffic flows, improving roadways to meet current highway engineering and safety standards, and requiring certain road improvements in conjunction with adjacent development sometimes conflict with the goal of preserving the character of Virginia byways; and

WHEREAS, the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) has established a committee to review requirements for byways; and

WHEREAS, the Department of Transportation is currently studying criteria for designation of byways and has established an advisory committee; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the Department of Transportation be requested to study the Georgetown Pike.

The Department shall consider the following issues as they relate to the Georgetown Pike:

(i) Identification of all statutory, regulatory, or published engineering, construction, traffic or safety standards that may be inconsistent with the purpose of maintaining the existing or historic character of this byway;

(ii) Identification and recommendation of alternatives to any engineering, legal, or other requirements of standards that, if followed, would degrade the aesthetic, natural, or historic character of Georgetown Pike; and

(iii) Identification of sources of funding available for preservation or improvements to alternative transportation corridors including those sources available under ISTEA and the National Historic Preservation Act of 1966;

The Department shall consider ISTEA, especially the environmental programs and provisions of that act, as well as programs developed by the states of Maryland, Delaware, and Pennsylvania pursuant to ISTEA, in determining what alternatives and options may be available.

The Department shall consult with the County of Fairfax and its office of comprehensive planning, and shall hold at least one public hearing in the County of Fairfax.

The Department shall complete its study of the Georgetown Pike in time to submit its findings and recommendations to the Governor and the 1994 General Assembly as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents.

Appendix L. Work Plan

PROPOSED WORK PLAN
for
SJR 235 & HJR 411 (1993)

Study of the Georgetown Pike - Fairfax County

June 1-30:

Initiate contact with knowledgeable VDOT personnel to assemble background documents and state information. Conduct field trip with selected VDOT personnel.

Initiate contact with selected citizens and county officials. Determine issues of special local interest. Conduct field trip with selected community representatives.

July 1-31:

Advertise and conduct public hearing in Fairfax County. Prepare minutes of public hearing, including written communications received.

Identify and categorize issues. Include appropriate VDOT district, residency, and division staff in this process.

August 1 - September 15:

Assess comments of citizens and officials.
Define main issues.
Propose and evaluate alternatives.
Prepare draft report of study.

September 16-30:

Prepare final report.

October 1:

Deliver final report to Policy Analysis.

Appendix M. Public Hearing

PUBLIC HEARING
Route 193, Georgetown Pike, Fairfax County

Thursday, August 5, 1993, 7:00 p.m.
Langley High School
6520 Georgetown Pike
McLean, Virginia

Speakers:

1. David Ogle, VDOT
2. Gerald E. Fisher, VTRC
3. Delegate Vincent F. Callahan
4. Senator Janet D. Howell
5. Supervisor Ernest J. Berger
6. Elizabeth Z. Wertz, McLean
7. Herb Becker, McLean
8. J.C. Censky, McLean
9. Eugene Methvin, McLean
10. Henry Ahari, McLean
11. Ross Rowland
12. Manning Gasch, McLean
13. Frank B. Crandall, McLean
14. John Adams, McLean
15. Mary Ellen West
16. John Chomeau, McLean
17. Michael Gillette, Great Falls
18. Joan Bliss, Great Falls
19. Ray Abbernathy
20. Thomas K. Moore, McLean
21. Cornelius J. Golden, Jr., McLean
22. Allen Muchnick, Arlington
23. Richard Bliss, Great Falls
24. Richard A. Poole, McLean
25. Tim Hall, McLean
26. Brent Clarke, McLean
27. James Frazer, Great Falls
28. Dan Denning, Great Falls
29. Preston Shelton, McLean
30. Sally Oldham, McLean
31. Bert Nye
32. Bruce McJilton, Great Falls

Appendix M (continued)

Written Comments:

1. Richard Peters, President, Great Falls Citizens Association
2. W. Ross Rowland, Great Falls
3. Jane Fragola, Great Falls
4. Thomas K. Moore, McLean
5. Ted G. Berlincourt, McLean
6. John Hamilton, McLean
7. Cornelius B. Kennedy, McLean
8. Edward A. Mainland, McLean
9. Nijole S. Vaitekunas, Great Falls
10. Anna Marie Mulvihill, Vienna
11. Glenn E. Wise, McLean; Millicent T. Lang, McLean, John W. Bowman and Grace Bowman, McLean
12. Otis C. Deal, Jr., VDOT Northern Virginia District
13. Trish Bunn, Springfield, Virginia
14. Marion H. Smoak, McLean
15. Linda Kolodziej, Conservation Chair, Fairfax Audubon Society
16. David Ogle, VDOT Northern Virginia District
17. Nathan H. Olshan, McLean
18. Young H. Chang, VDOT Fairfax Residency
19. Delegate Jerry M. Wood, Warrenton, Virginia
20. Milburn P. Sanders, Great Falls
21. Frank D. Edwards, VDOT Northern Virginia District