

**REPORT OF THE
DEPARTMENT OF TRANSPORTATION ON**

**ROAD DESIGN STANDARDS IN
SCENIC AND HISTORIC AREAS**

**TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA**



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PREFACE

This study is a result of Senate Joint Resolution 61, adopted by the Virginia General Assembly of 1994. The Virginia Department of Transportation (VDOT) assigned the study to Gerald E. Fisher, Research Scientist at the Virginia Transportation Research Council (VTRC) in Charlottesville. The study team included Richard V. Taylor, a Research Scientist at the VTRC, who led the research and writing of the report.

The study team wishes to acknowledge a number of citizens and employees of other state agencies for their assistance in helping the study team develop its report. Of special note are the members of the Advisory Committee on Highway Safety and Design Standards in Scenic and Historic Areas (see Section 3.1). The team would also like to give special recognition to Janit Potter with the Department of Conservation and Recreation.

Assistance was also received from the following people in VDOT's Central Office: Cooper Wamsley with the Environmental Division; Calvin F. Boles and Mohammad Mirshahi with the Location and Design Division; Mary Lynn Tischer with the Policy Analysis office; James S. Givens, K. Charles Rasnick, and David L. Camper with the Secondary Roads Division; and Steven D. Edwards, Traffic Engineering Division.

EXECUTIVE SUMMARY

Findings

The study team made a number of findings in its work on the issues included in SJR 61. Many of these findings were suggested by the ongoing work of the Virginia Department of Transportation's (VDOT's) Advisory Committee on Highway Safety and Design Standards in Scenic and Historic Areas. The findings in this report, however, are those of the study team and not necessarily those of the Advisory Committee.

1. The American Association of State Highway and Transportation Officials (AASHTO) highway design standards are the model highway design standards for roads in the United States of America. These standards are usually adopted, in turn, by the states as their own design standards. The Federal Highway Administration recognizes and accepts AASHTO standards for federally-funded projects. Courts generally recognize AASHTO standards as the accepted norm when trying tort liability cases.
2. The Commonwealth Transportation Board (CTB) adopted AASHTO standards as those acceptable for use by VDOT or other parties when designing improvements to the state's highway systems. The CTB also adopted subdivision street standards based substantially on AASHTO standards.
3. The protection of exceptional scenic and historic areas is necessary to preserve the heritage and scenery that citizens enjoy, and is also essential to continuing tourism and economic development in the Commonwealth. Highway designers are frequently asked to deviate from adopted standards to protect scenic and historic areas.
4. Deviation from accepted design standards may increase the risk to motorists if their expectations about the road ahead are not met. For example, highways with higher design speeds and gentle curves should not abruptly change into highways with lower design speeds, restricted sight distance, and extreme curvature. Further, roadways that are too narrow for trucks restrict commerce, and congested or unsafe roadways can restrict tourism.
5. Deviation from accepted design standards increases the risk of tort claims against the Commonwealth, and increases the risk of such claims against VDOT employees who authorize or approve such deviations. While there are statutory limits to the dollar amount of tort claims against the Commonwealth, there are no such limits on claims against employees or other individuals.
6. VDOT currently authorizes exceptions to AASHTO design standards on a project-by-project basis, where motorist safety is not endangered and where substantial public values may be protected by so doing. This "design by exception" process requires that

the reasons for deviation from standards be well documented. This documentation is intended to provide a rationale for design deviations in the event of a tort claim arising from an accident. The design by exception process is generally considered successful by VDOT designers (who point to a number of successful designs), but citizens and some state agencies continue to express their concerns about the current process.

7. Current environmental and historic preservation laws, both state and federal, provide VDOT engineers substantial guidance in determining which areas of the Commonwealth are historic areas, wetlands, and parks. The designation of these areas, by processes set forth in law and regulation, gives designers prior information about the location of resources that are protected. The coordination of highway projects with other state and federal agencies offers opportunities for design mitigation or avoidance.
8. Exceptional scenic areas, however, are not formally designated by any state or national process, and they have no recognized boundaries. Designers have little prior information about important scenic resources to be protected. Discussions regarding the protection of scenic areas often do not take place until after designs are completed, during public review. Even then, there is often little public consensus as to what are the most important scenic areas along a highway.
9. The *Code of Virginia* provides little protection to designers or other responsible persons who deviate from accepted design standards in order to preserve and protect scenic or historic areas.
10. Protecting scenic areas will take more than making highway designs more flexible, because changes in land use also affect scenic qualities. Often, roadside development changes scenic vistas and creates additional traffic congestion and safety problems. Protection of scenic areas must be a coordinated effort involving landowners, local governments, and the state.

Recommendations

The study team has three major recommendations for action to help deal with the issues raised in SJR 61. These recommendations are as follows:

1. Because there is little consensus as to what is scenic, if the General Assembly of Virginia desires to protect *exceptional scenic areas* from intrusion by private or public entities, a process must be created to define, evaluate, designate, and protect exceptional scenic areas. In general, the more selective the Commonwealth is in identifying exceptional scenic areas, the greater the protection each can be afforded. A designation process could be based on the process for listing historic properties on the Virginia Landmarks Register and the National Register of Historic Places.

2. It is recommended that the General Assembly of Virginia consider the enactment of statutes to increase protection of highway designers and roadbuilders when *non-standard designs* are used to protect exceptional scenic or historic areas of the Commonwealth.
3. Many highway designers and others involved in the approval, construction, and maintenance of highways are concerned by the potential of tort liability claims against them as individuals. If the General Assembly of Virginia desires to encourage greater flexibility in the application of highway design standards, it may be desirable to give *individuals* who design, approve, construct, and maintain public highways greater protection against tort liability claims which could arise. Such protection may be afforded by revising statutes to limit the dollar amount of such claims against individuals, or by enhancing the state's insurance program to provide greater protection to individuals.

CHAPTER 1 -- INTRODUCTION

This report is prepared in response to a resolution adopted by the 1994 Virginia General Assembly. Senate Joint Resolution 61 (SJR 61) requests that the Virginia Department of Transportation study the state's highway design standards. More specifically, the resolution asks VDOT to "study the need for establishing more flexible design standards for the Commonwealth's highways to ensure that such standards reflect the special needs of historical districts and facilities as well as the special needs for protection and conservation of environmentally sensitive areas." The use of the term "environmentally sensitive areas" is, for the purposes of this report, related to the definition of *environment* in the *Code of Virginia*, Section 10.1-108: "the natural, scenic, scientific and historic attributes of the Commonwealth."

The wording of the joint resolution raises a number of issues related to roads in scenic or historic areas, as well as subdivision streets. An important question raised in the joint resolution is whether VDOT's design standards are appropriate for every jurisdiction in the Commonwealth. Another statement in SJR 61 is that when roads are not accepted into the state system due to their not meeting minimum design standards, undue financial burdens are placed on local governments for maintaining those roads.

The ability of state road designers to make exceptions to design standards for roads in scenic and historic areas is restricted due to safety and cost, and to some extent, tort liability issues. However, there is mention in ISTEA (the Intermodal Surface Transportation Efficiency Act of 1991) of special measures for roads that pass through areas with historic and scenic values.

If a proposed project . . . involves a historic facility or is located in an area of historic or scenic value, the [U.S.] Secretary [of Transportation] may approve such project . . . if such project is designed to standards that allow for the preservation of such historic or scenic value and such project is designed with mitigation measures to allow preservation of such value and ensure safe use of the facility. (102nd Congress, 1991)

VDOT designers currently do this, on a project by project basis, on both federally-funded and state-funded construction.

This report includes a discussion of the major issues involved with the request of SJR 61. Also, much of the work called for in SJR 61 is currently being studied by the VDOT Commissioner's ad hoc Advisory Committee on Highway Safety and Design Standards in Scenic and Historic Areas. A summary of the work of that committee to date, and its preliminary results, is also included.

A number of the regulations referred to either directly or indirectly in the joint resolution are currently being reviewed or revised by various state agencies. These regulations, and their current status, are discussed in Chapter 4. The final chapter presents the conclusion, findings, and recommendations.

CHAPTER 2 -- ISSUES

Of the important issues in this study, some are stated directly in the joint resolution and some were derived from the work of the Advisory Committee on Highway Safety and Design Standards in Scenic and Historic Areas. These issues are described below; the remainder of the report provides information on how these issues are being handled by VDOT, other state agencies, and/or nationally.

Design Standards.

The major issue presented in the joint resolution deals with highway design standards and their use in a number of situations, including roads in scenic and/or historic areas. A major question dealt with in this report is whether or not any perceived lack of flexibility in design standards is the source of the problems stated in the joint resolution. There is an existing "design by exception" process used by VDOT designers in situations where non-standard designs are necessary. There are also other issues that affect when and how the "design by exception" process can be used.

Safety of the Public.

Those in state government should keep in mind not only the provision of services that citizens request, but also the safety of those services. Taking precautions to ensure the safety of the public, while also providing cost-effective and appropriate programs, is a priority of state employees. For highway designers, it is an especially important issue.

Highway designers are trained to provide safe highways. A major concern for designers is deciding which public values, if any, merit deviation from nationally-accepted design standards. They are often reluctant to deviate from generally accepted design standards, absent clear indication of other very important public considerations. Many such designers (whether in VDOT or in private firms) are also Professional Engineers, licensed by the Commonwealth to protect the safety of the public; this responsibility is uppermost in their minds when designing public highways.

If designers are requested to deviate from accepted design standards by the General Assembly, they need guidance as to what standards should be changed (and under what circumstances) and should be provided statutory protection when making these changes.

Statute.

The state of Arizona, in creating its scenic and historic road program, included language in statute that gives its Department of Transportation the ability to make exceptions to standards when constructing or maintaining a road that was designated in its scenic and historic road program (see Section 3.2). Such a statement in statute appears to give designers

more latitude to take into account the public values associated with the scenic and historic qualities of a road with less fear of tort liability.

Economic Development and Tourism.

Roads are an important resource in the economic development of the Commonwealth. Developers need a set of design standards that create safe and maintainable roads without adding too great a financial burden. It is also important that roads in scenic and historic areas maintain those qualities (in combination with appropriate land use decisions) that attract tourists to the state and provide for the recreational driving pleasure of the residents of the Commonwealth.

Tort Liability.

Highway designers must also protect themselves against tort claims. In Virginia, public officials are immune from liability for negligence in performing governmental duties involving the *exercise of judgement and discretion*. In other situations, such as where an employee's job is providing services to the public, those employees can be sued for an *unlimited* amount of money. While there have been a number of lawsuits brought against VDOT and its employees for the design of highways, most of these have been successfully defended. However, designers are concerned that they may not be so fortunate should they further deviate from accepted design standards in order to protect undefined and undesignated scenic areas.

The factors involved in tort liability make risk management an important aspect of any public official's job, and protection afforded under the law could help officials balance public values and serve the Commonwealth's citizens better. Road builders may also want guidance and protection to avoid becoming targets of tort claims.

The issues presented here (and others identified in the report) will be discussed as they relate to the work of the Advisory Committee on Highway Safety and Design Standards in Scenic and Historic Areas and as they relate to a number of regulations currently being reviewed or revised by various state agencies. The final section of the report will include the conclusion, findings, and recommendations for action on the issues.

CHAPTER 3 -- ADVISORY COMMITTEE

In late 1992, VDOT Commissioner Ray Pethel asked State Secondary Roads Engineer Gerald Fisher to review safety and design issues associated with improving roads in scenic and historic areas, including those concerns dealing with roads in subdivisions (see Section 3.2 for the Advisory Committee's charge). The first meeting of this committee, which was named the **Advisory Committee on Highway Safety and Design Standards in Scenic and Historic Areas**, was held in January 1993.

Selection of committee members, appointed by the commissioner, took place prior to the first meeting and was supplemented over the following months with representatives from various state agencies, local officials, and a number of interested citizens who became "friends" of the committee.

Section 3.1 -- Membership

The current official membership list of the Advisory Committee is shown below. The committee's meetings have been conducted over a considerable number of months, and this has contributed to some turnover in representatives from various organizations over time. The effect on the learning curve and the ability of the committee to continue its work to a common conclusion is somewhat hindered by this turnover. Efforts will be made to continue these meetings to a logical conclusion. A list of the original twenty-eight members of the committee follows.

ORIGINAL MEMBER	ORGANIZATION
Mrs. Raymond P. Ohmsen	Virginia Federation of Garden Clubs
Patricia A. Jackson	Lower James River Association
Joseph H. Maroon	Chesapeake Bay Foundation
Hugh C. Miller	Department of Historic Resources
Tyson B. VanAuken	Virginia Outdoors Foundation
Harvey L. Hinson	Henrico County, representing the Va. Association of Counties
John R. Marling	Council on the Environment
Howard Newlon	Citizen Member, Charlottesville
Major John B. Scott	Virginia State Police
Susan Shaw, P.E.	Representing the VA Society of Professional Engineers
Jewell Emswiller	Citizen Member, Loudoun County
James P. Wheeler	Office of Attorney General
Dr. Jonathan L. Gifford	Institute of Public Policy, George Mason University
P. Dale Bennett	Virginia Trucking Association
Keith Bull	Chesapeake Bay Local Assistance Department
R. Michael Amyx	Virginia Municipal League
David O. McAllister	Department of Motor Vehicles
Robert Gordon	Loudoun County Planning Commission
Wayne S. Ferguson	Va. Transportation Research Council
B. H. Cottrell, Jr.	Va. Transportation Research Council
Brenda R. Waters	VDOT Public Affairs

J. Lynwood Butner	VDOT Traffic Engineering Division
M. Scott Hollis	VDOT Urban Division
Earl T. Robb	VDOT Environmental Division
E. C. Cochran, Jr.	VDOT Location and Design Division
Andy V. Bailey	VDOT Maintenance Division
Mal T. Kerley	VDOT Structure and Bridge Division
Gerald E. Fisher, Chair	VDOT Secondary Roads Division

Since the first meeting in January of 1993, the committee membership has changed. New members have been added, either at their request or at the request of other committee members, representatives from various agencies and organizations have changed in the past year and a half, and one member has asked to be removed from the committee. The current list of committee members (30, plus 4 friends) is shown below.

CURRENT MEMBER	ORGANIZATION
Patricia A. Jackson	Lower James River Association
Joseph H. Maroon	Chesapeake Bay Foundation
Bill Crosby	Department of Historic Resources
Sherry Buttrick	Virginia Outdoors Foundation
Harvey L. Hinson	Henrico County, representing the VA Association of Counties
Mrs. W. Tayloe Murphy, Jr.	The Garden Club of Virginia
John R. Marling	Council on the Environment
Howard Newlon	Citizen Member, Charlottesville
Major John B. Scott	Virginia State Police
Susan Shaw, P.E.	Representing the VA Society of Professional Engineers
Jewell Emswiller	Citizen Member, Loudoun County
James P. Wheeler	Office of Attorney General
P. Dale Bennett	Virginia Trucking Association
Keith Bull	Chesapeake Bay Local Assistance
Stephen R. Martin, P.E.	City of Williamsburg, representing the VA Municipal League
David O. McAllister	Department of Motor Vehicles
Robert Gordon	Loudoun County Planning Commission
Wayne S. Ferguson	Va. Transportation Research Council
Lester A. Hoel	Va. Transportation Research Council
Donna Purcell Mayes	VDOT Public Affairs
J. Lynwood Butner	VDOT Traffic Engineering Division
M. Scott Hollis	VDOT Urban Division
Earl T. Robb	VDOT Environmental Division
E. C. Cochran, Jr.	VDOT Location and Design Division
Andy V. Bailey	VDOT Maintenance Division
Mal T. Kerley	VDOT Structure and Bridge Division
Gerald E. Fisher, Chair	Va. Transportation Research Council
Elizabeth S. David	Fairfax County, Heritage Resources Branch
Jolly de Give	Piedmont Environmental Council
Janit Potter	Department of Conservation and Recreation

CURRENT FRIENDS OF THE COMMITTEE

Elizabeth Smith	Loudoun County, Virginia
Margaret Reynolds	Chesapeake Bay Local Assistance Department
Karen Hancock	Roanoke, Virginia
Kathy Mitchell	Bluemont, Virginia

A few state agencies have sent several different representatives to different meetings. It is difficult to reach a consensus on a number of issues when membership changes. Reaching consensus is also made more difficult because not all committee members attended all of the meetings. When new committee members came on board, however, they received copies of minutes from previous meetings.

Section 3.2 -- Summary Of Meetings

There have been ten meetings of the Advisory Committee through April, 1994. Each of the meetings of the Advisory Committee on Highway Safety and Design Standards in Scenic and Historic Areas is summarized briefly below.

Design Standards January 12, 1993

The first meeting of the committee opened with an introduction of the committee and its members and a broad outline of the charge and goals of the committee from VDOT Commissioner Ray D. Pethel and State Secondary Roads Engineer Gerald E. Fisher. The charge to the committee is as follows:

The question before the committee is this: How can we, as responsible citizens, associations, and agencies, better resolve the genuine public issues that arise when the need for increased highway capacity, or reduced public risk, comes into conflict with areas of significant historic or scenic interest? **Is there a better way to reduce traffic flow restrictions, and improve safety, while retaining our historic and natural treasures?**

The Location and Design Division of VDOT then presented information on the Design Standards used by VDOT in constructing and improving highways.

Presentation:

Design Standards

The purpose of design standards was discussed, with the main reasons being highway capacity, the efficient use of the highway system, improvement of safety, and the reduction of maintenance costs. The two sets of design standards used by VDOT were presented next.

The first standards are the minimum guidelines for new highway construction and reconstruction, found in the *Road Design Manual*. The second standards are called the RRR guidelines (RRR stands for Resurfacing, Restoration, and Rehabilitation). RRR projects are used primarily to extend the safe service life of highways but not to increase their capacity (see Section 4.3 for more on RRR guidelines). The Location and Design Division is responsible for development of geometric design standards; they follow the American Association of State Highway and Transportation Officials (AASHTO) national standard guidelines as the basis for design standards in Virginia.

The major factors in developing standards include the following: functional classification, design speed, traffic, terrain and topography, and clear zone guidelines. At this point, a presentation of design standards for roads of different functional classifications was made.

Flexibility

The importance of flexibility when applying these design standards was discussed next. Design by exception is a flexible process built into VDOT's design process. These exceptions from minimum standards may be granted by the State Location and Design Engineer, given proper justification. The presentation ended with a brief discussion of liability considerations.

Discussion:

Following the presentation, discussion and comments revolved around the following issues:

1. Possible use of non-standard materials, i.e., guardrail, lamp posts, etc., and the fact that these non-standard materials can increase maintenance costs.
2. The importance of adding landscaping to highway projects.
3. The feasibility of using specific highway projects as case studies in future committee meetings to help in deciding what to do. It was generally decided that no specific projects should be used -- a "generic" example might be used at some point, however.

Historic Resources March 26, 1993

The second meeting of the committee included presentations by the Virginia Department of Historic Resources on the designation of historic resources.

Presentation:

The title of the presentation was, "The Identification and Registration of Historic Properties in Virginia." The Virginia Department of Historic Resources (VDHR) has primary responsibility for the identification and survey of historic resources in the Commonwealth, evaluation of and application of criteria for designation, registration of important properties, and the protection of them.

A description of the evaluation of properties under a number of different programs followed. The National Register of Historic Places has four criteria for evaluation, in addition to the significance and integrity of the property. The Virginia Landmarks Register includes those properties in the National Register as well as other properties of statewide and local significance.

The process for having properties listed in these programs was then briefly described as follows: 1) preliminary information form; 2) review by VDHR staff; 3) review by advisory board; 4) National Register nomination form; 5) review by VDHR staff; 6) approval by State Historic Preservation Board -- property is automatically placed in Virginia Landmarks Register; and 7) sent to National Park Service for National Register listing.

The effects of designation were discussed, and common misconceptions of the process were dispelled.

Discussion:

Following the presentation, discussion and comments revolved around the following issues:

1. The importance of a property versus the property's significance. Significance is a yes or no proposition, whereas importance can vary widely. This demonstrates the value system inherent in preservation.
2. It is important to designate a historic road's corridor, not just the road's pavement. It is usually what is next to the road, rather than the pavement itself, that gives the road historic significance.
3. When road projects are reviewed for their effect on a historic site, options for mitigating harmful effects include moving the highway, gathering data by means of an archaeological investigation, and covering the site to allow for a study in the future.

Tort Liability
May 4, 1993

The third meeting of the committee included presentations by the Office of the Attorney General, the VTRC, and the Programming and Scheduling Division of VDOT.

Presentation:

Risk Management

A brief description of VDOT's Risk Management Program was given. It was mentioned that the VTRC did a study on tort liability and produced a report on risk management for all VDOT employees. VDOT also formed a Risk Management Group to deal with research and policies.

Tort Liability

A detailed description of tort liability was presented next. The following is a summary of that description.

A *tort* can be defined as a civil wrong or civil injury. A tort is not a criminal wrong or injury, that occurs when someone commits a criminal act against a person. A tort action seeks damages for some harm to property or injuries to a person. In a case involving a transportation agency, 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 has not performed its duties properly, or nonfeasance, where the party fails to perform its duties.

There is a cap of \$75,000 when suing the state government in Virginia; however, there is no cap when suing individuals who work for state government. The action that the individual is being sued for must be a *ministerial action*, or an action that is performed in a prescribed manner and does not involve discretion on the part of that employee. An example of a ministerial action might be a VDOT employee driving down the road and seeing a huge pothole -- that employee would have to take note of it and would have to correct it.

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 the defendant 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 study of tort claims in Virginia from 1983 through April 1, 1992 showed that VDOT was sued for \$137 million in at least 682 claims; and had paid out over \$2.5 million. These claims were in the following categories: 1) maintenance claims; 2) general hazards; 3) operations claims; 4) work zone claims; and 5) miscellaneous claims.

In the conclusion, it was pointed out that these court cases are a great strain on resources. Therefore, managing the risk of tort liability is both a safety issue and a cost saving issue. (A further discussion of tort liability can be found in Section 4.6.)

Transportation Enhancement Program

A final presentation was made on VDOT's new Transportation Enhancement Program, which is a program mandated by ISTEA and includes funding for a variety of preservation and environmental projects related to transportation.

Discussion:

Following the presentations, discussion and comments revolved around the following issues:

1. The importance of highway safety was stressed.
2. Speed limit reductions were discussed; it was said that reducing a speed limit does not necessarily increase safety.
3. Flexibility in designing roads in scenic and historic areas was discussed. The importance of continuity of driver expectation when designing a road was stressed.

Scenic Qualities September 15, 1993

The fifth meeting of the committee included presentations by the Virginia Department of Conservation and Recreation (VDNR) and by the Virginia Outdoors Foundation (VOF).

Presentation:

The presentation at this meeting was titled, "Value & Protection of Scenic Areas." The presentation began with a description of the VDNR, which plans and runs the following programs: state parks, soil and water conservation, and natural heritage programs. VDNR is also responsible for producing the *Virginia Outdoors Plan*.

Scenic Resources

The scenic environment in Virginia is a valuable resource for a number of reasons. One is the economic benefits from the diversity of natural, historic, and cultural resources -- largely from tourism. Driving for pleasure is a top-ranked recreational pursuit nationwide and in Virginia. The presentation then continued with a brief description of Virginia Byway and Virginia Scenic Rivers programs

Visual Resource Assessment

A technique known as a visual resource assessment was presented to the committee. The steps involved the following: 1) each person is asked to rank various scenic qualities (historic home, river crossing, strip commercial, etc.) on a scale of 1 to 5; 2) rank same qualities as above while viewing slides of each type; 3) compare rankings -- outcome shows how scenic qualities are often tied to local conditions and people's opinions.

Visual Quality Along Highways

A brief presentation on visual quality along highways followed. The historic perspective (the rubber-band design, or straight line between two points approach) up to the recent early environmental review of projects was presented. The importance of open railings for bridge parapets to allow for views was also mentioned.

Consideration of scenic resources when designing roads was discussed. A number of important things to remember were presented: 1) the character of the visual environment; 2) the visual experience; 3) orientation of scenes along the roadway; and 4) defining the road edge and its place in the landscape.

Protecting Scenic Values

Techniques for the protection of scenic values were mentioned, including setbacks, screening, buffers, landscaping, access control, and signage, to name but a few. Finally, a brief look at the work of the VOF was presented. Examples of open space easements held by VOF and their requirements were shown.

Discussion:

Following the presentations, discussion and comments revolved around the following issues:

1. The importance of comprehensive planning in identifying scenic resources.
2. Committee members discussed their definitions of *scenic values*. Some prominent terms included harmony, nature, trees, drama, a view, diversity, and pleasure.

3. A discussion of the users of scenic roads also took place, with varying opinions expressed about trucks, tourist buses, recreational vehicles, and local residential users. It was said that competition between users (heavy traffic) can render a scenic road "non-scenic."

4. The review of VDOT projects by VDCR was discussed, noting the early review (through the Interagency Environmental Coordination Committee) now carried out by the following thirteen state agencies:
 - Dept. of Conservation and Recreation
 - Dept. of Environmental Quality
 - Marine Resources Commission
 - Chesapeake Bay Local Assistance Dept.
 - Dept. of Transportation
 - Dept. of Health
 - Dept. of Agriculture & Consumer Services
 - Virginia Outdoors Foundation
 - Dept. of Historic Resources
 - Dept. of Game and Inland Fisheries
 - Dept. of Mines, Minerals and Energy
 - Dept. of Forestry
 - Virginia Museum of Natural History

5. A discussion of byways and how they are designated here and in other states.

VDOT Design Process
October 20, 1993

The sixth meeting of the committee featured a presentation by the Location and Design Division of VDOT on a typical new highway construction design process.

Presentation:

This meeting dealt solely with the issue of "The Design Process for New Highway Construction." The presentation consisted of the steps in the design process outlined below. Special emphasis was placed on all steps that dealt with environmental or other federal regulation reviews. An outline of the design process with an approximate time table follows:

- I. Preliminary Planning (12-18 Months + or -)
 - A. Allocation hearings, project added to six-year plan.
 - B. Preliminary engineering, early review by state agencies.
 - C. Scoping project by federal agencies, initiation of National Environmental Protection Act (NEPA)/404 study.

- D. Concurrence by federal agencies on purpose and need.
 - E. Public information meeting.
 - F. Develop alternatives, receive concurrence, comments from VDOT divisions.
 - G. Public information meetings, prepare environmental impact statement and 404 permit application.
 - H. Preliminary environmental impact statement reviews, draft environmental document.
- II. Alternatives Analyzed and Chosen (6-12 Months + or -)
- A. Location public hearing.
 - B. Comments on environmental document from state, federal agencies.
 - C. Commonwealth Transportation Board (CTB) approval of alternative.
 - D. Pre-final and final approval of environmental document, federal concurrence on mitigation concepts.
 - E. The Federal Highway Administration (FHWA) signs record of decision.
- III. Final Design Stage (18-24 Months + or -)
- A. Detailed survey of proposed alignment, preliminary design of roadway, preliminary plan review, VDOT approval of design scope.
 - B. Early permit coordination, updates to environmental documents, detailed plan development, project field inspection.
 - C. Value engineering process for projects over \$2,000,000.
 - D. Interagency coordination meeting, incorporate recommended changes.
 - E. Design public hearing.
- IV. Final Approvals (36 to 48 months + or -)
- A. CTB approval of design.
 - B. Public Hearing plan changes.
 - C. Environmental permits issued, right-of-way acquisition.
 - D. Contract advertisement.
 - E. Project construction and environmental monitoring.

Discussion:

Following the presentations, discussion and comments revolved around the following issues (but no decisions were reached):

1. A member asked how a scenic or historic area can be protected through the current VDOT design process. The design by exception process was mentioned as the current means for doing this. There are currently no "engineer guidelines" for exceptions. Only after all alternatives are reviewed does an engineer request an exception to the standards.

2. The fact was stressed that nearly all highway construction projects are identified and prioritized at the local government level; local governments can suggest designs or features for the consideration of VDOT designers.
3. A strong local comprehensive plan and historic survey could identify scenic or historic areas. This would allow the design process to incorporate any special considerations and allow VDOT to consult with appropriate agencies very early in the process.
4. The private Dulles Toll Road extension was mentioned and its design process was compared to a typical VDOT design process. The road must meet VDOT standards since VDOT will eventually take it over, but in certain review processes and the right-of-way process, the private company was not as tied to a procedure as VDOT.

Committee Recommendations and Follow-Up
December 7, 1993

The purpose of this meeting was to follow up on a few questions from the previous meeting and to begin discussing possible recommendations that the committee could make in its final report to the commissioner.

Presentation:

Bridge and Guardrails

The meeting began with a follow-up presentation on bridge rails and guardrails. An FHWA video was shown on aesthetic bridge rails and guardrails, that showed a number of different federally-approved rails that were especially designed to be aesthetically pleasing in scenic and/or historic areas. The main strike against these particular rails was that they were more expensive than normal traffic barriers. It was pointed out that a number of these rails lacked federally-approved end treatments, that is, terminal ends to the rail that are also crash-tested.

State Environmental Review Process

The next presentation was on the State Environmental Review Process (SERP), and specifically the early notification and review of VDOT projects by state environmental and preservation agencies. The two early steps involved an early notification and then a preliminary environmental inventory (PEI), where the agencies are asked to concur with a project, or to request specific changes. The process was greeted favorably both by those involved and those who were hearing about it for the first time. Some questioned the timing of the PEI, saying it was too early in the process and not enough information was always available. VDOT's environmental division and the other agencies are continuously reviewing this process, however, so the timing of the PEI is being discussed.

Open-Forum Public Hearings

The next presentation was on VDOT's new open-forum public hearings. A video was presented describing the process, which differs from a traditional public hearing in that comments can be made one on one in a variety of different ways -- no public speaking in front of large groups is involved. A large amount of information is presented in an open area where interested parties can move around and make their statements at any point.

Options Paper

The last and major portion of the meeting dealt with options for committee recommendations. An options discussion paper had been sent to committee members prior to the meeting. A brief summary of the options presented in the discussion paper follows:

- ▶ new design standards: including a discussion of the potential risks of reduced design standards and the problems of applying dual design standards;
- ▶ review of the "design by exception" process: should the system be changed or remain the same?

Discussion of Options Paper:

The discussion of the options paper covered a number of topics, some being reiterations of discussions of topics previously presented to the committee. The main issues discussed regarding the committee's eventual recommendations included the following (no consensus was reached on these issues):

1. The need for better planning. Are road projects that affect scenic and/or historic areas always necessary in the first place? The land use and planning decision-making process could also help protect the roads in scenic and/or historic areas. Can the trend that is creating these problems in the first place be reversed?
2. The possibility of rerouting commercial (i.e., truck) traffic off of roads through scenic/historic areas.
3. The minimum width for new subdivision streets may be too great; it is expensive for landowners to build these large roads for very small developments in scenic, rural areas.
4. Is there a need for scenic byways to have special wording in legislation or regulation saying that any improvements to the roads must take into account the scenic and/or historic nature of the roadway? No consensus was reached.

5. Historic designations were discussed, and how designating a historic district affects (or doesn't affect) the ability to improve roads in that district. The idea of a department of transportation using historic or scenic values as a reason for departing from design standards was mentioned. Case history on that subject is inconclusive.
6. A possible recommendation was discussed, with much positive feedback: "When transportation facility improvements or modifications are proposed to a facility that has a designation of historic or scenic, those qualities will be given consideration during the design and construction of that facility."
7. Could there be a process designed to inventory the scenic areas in Virginia over the next 20 years or so, so that when a road needs improvement in a scenic area, there is a record of what makes the area scenic in the first place that can be considered in the road design?
8. Accepting permanent easements as a way of protecting roadways (and reducing future traffic volumes) in scenic areas.
9. Could there be a more aesthetically pleasing guardrail available in subdivisions?
10. A possible recommendation was suggested: "In areas of historic or scenic importance, there should be a certain percent increase in the budget for more aesthetically pleasing design options."

Roads in Scenic and Historic Areas
March 24, 1994

The purpose of this meeting was to look at various cases of how roads that are in scenic or historic areas have been handled in the past or should be handled in the future.

Presentations:

Report on the Georgetown Pike

The meeting began with a presentation on a report to the General Assembly on the Georgetown Pike in Fairfax County, the first Virginia Byway. Among the important findings and recommendations in the report are the following:

- ▶ The road, which is often 20 to 22 feet wide with little or no shoulder, should have improved shoulders constructed of grass-covered aggregate/soil mix (for aesthetic reasons). Having 6 foot grass shoulders could reduce run-off-the-road accidents by as much as 35 percent.

- ▶ The number of entrances onto the Georgetown Pike should be minimized; this would reduce the number of turn lanes or tapers necessary.
- ▶ The area around the Georgetown Pike has been heavily developed over the years since its designation as a Virginia Byway; measures to protect the remaining scenic qualities of the corridor should be considered by Fairfax County.
- ▶ The Georgetown Pike is eligible for listing in the National Register of Historic Places, which automatically invokes more reviews by state agencies (especially VDHR) with regard to any work done on the road.

Scenic and Historic Roads in Arizona

The next presentation was on the designation of historic and scenic roads in Arizona. The main point presented here is that the roads that are designated in Arizona are protected under legislation. The Arizona system is comprised of an advisory committee that both nominates roads to the system and protects those roads already in the system. Part of the legislation for the program follows:

To ensure the protection and enhancement of the special features for historic roads, parkways, and scenic roads, the Department of Transportation . . . may allow an exemption from the standards normally applied to the construction and maintenance of the roads and parkways. Revised construction and maintenance procedures for such designated roads and parkways may be developed to reasonably provide for the safety and service of the traveling public. (Arizona Department of Transportation, 1993)

Defining Scenic Areas

The meeting ended with a discussion of how to define scenic areas in Virginia and with a formation of a subcommittee to deal with issues involving subdivision streets. The results of the discussion on defining scenic areas are presented below.

Discussion of Scenic Areas in Virginia:

1. However scenic areas are defined, they need to be carefully selected and officially designated. In this way, designers and builders can deviate from standards without affecting safety.
2. Various thoughts on who should designate these scenic areas were presented, with no consensus reached.

Draft Findings and Follow-Up
April 22, 1994

The purpose of this meeting was to discuss a set of draft findings among the full committee to ascertain in what areas there was agreement and what areas still needed further discussion.

Presentations:

Scenic Roads Map

The first presentation of this meeting regarded Virginia's Scenic Roads Map, which is nearing completion. The map includes all designated Virginia Byways and Scenic Highways as well as proposed byways and connector roads. The main purpose of this map is to promote tourism; important historic and scenic sites will also be highlighted on the map.

Other States' Scenic Byway Programs

Information on some scenic byway programs in other states and their differences from Virginia's program followed. A few important differences from other states' programs follow:

- ▶ **California** -- is one of the only states that requires local jurisdictions to have a protection program in place for a scenic highway's corridor. After receiving a preliminary approval from a statewide advisory committee, a local jurisdiction must prepare and adopt a program to protect and enhance the scenic corridor.
- ▶ **New York** -- has an interesting designation process. The process involves a very thorough inventory of the road; it compiles scenic components, both positive and negative, for each mile of roadway, and if the road has an average of ten or more positive scenic components, after subtracting the negatives, then it is probably worth further consideration.
- ▶ **North Carolina** -- presented an opposite view of scenic byways in a 1990 report that was part of the National Scenic Byways study. In the report, it was stated that, "A scenic byway does not provide a means to preserve or protect the lands in its view. It does not prohibit changes to the road. A scenic byway is a way to recognize the people of North Carolina, their heritage, their culture, their history, and the land which drew them here in the first place."

Secondary Roads

The next presentation was a discussion statement on roads in the secondary system of state highways (see Appendix A for full statement). There are three possible ways that county governments can control the design of secondary road projects within its jurisdiction. First,

counties objecting to the use of normal design standards can ask that road construction projects be designed to the lowest design level for the traffic volume and functional classification of the road. Second, if they want no improvements to a secondary road, they can choose not to fund any improvement (unless the state finds a major safety problem). Finally, some counties may wish to seek reversion of secondary roads responsibilities so that they would have the flexibility to accomplish local priorities; currently, the state has the responsibility (both financial and legal), which often creates tensions. It was stated that this option (reversion) would take a lot of thought, discussion, and time.

Discussion of Statement Regarding Secondary Roads:

The following are comments from committee members regarding this idea of reversion of secondary roads.

1. In municipalities, local roads must be 30 feet wide and have a 50-foot right-of-way. However, legislation was passed in 1994 (House Bill 488) that allows exceptions to this rule in special circumstances where the protection of the affected local government's water supply is necessary or where such action would not compromise the health, safety, or welfare of the public. It was stated that there are a lot of questions about the implementation of this legislation.
2. A variety of "arrangements" for how a possible reversion could happen were put forward (i.e., county constructs, state maintains; counties take over all roads; counties start with new roads while state continues with existing, etc.)
3. It was mentioned by one state environmental agency that as far as environmental and preservation reviews are concerned, it is easier for them to deal with one client (VDOT) than 95 counties.
4. It was stated that any change or reversion would have to be done by a referendum in each locality that wants to take over its roads.

The final portion of the April 22nd meeting was a presentation of a set of draft findings for discussion by the committee. These findings included most of the issues that have been discussed by the committee. The findings and status of these issues is presented in the next section of the report.

Section 3.3 -- Status of Issues

DRAFT Findings of Advisory Committee

The following section includes the text of the draft findings presented to the Advisory Committee at the April 22, 1994 meeting. Comments and the status of the issues represented in each finding follow the text.

1. **The Importance of Preservation:** Preserving exceptional historic and scenic areas is very important. Highway designers need to take historic and scenic values into consideration when designing construction projects. Landowners, local governments, and other responsible persons and agencies must also recognize the importance of preserving historic and scenic areas.

Comments: There was a very positive reaction from the committee to this proposed finding. Another comment was that the economic advantages of addressing these factors should be mentioned.

2. **The Importance of Safety:** Maintaining highway safety is very important, and highway designers must not take actions likely to endanger motorists, cyclists, or pedestrians.

Comments: It was suggested that the concept of driver expectancy and the concept of the aging driver population be added to this finding. It was also suggested that goods be added to the list at the end of the statement, to recognize the importance of freight movement on roadways.

3. **The Importance of Tourism:** The designation and signing of appropriate scenic and historic highways, and the preservation of their scenic and historic qualities are very important to the state's current and future economy.

The Virginia Department of Transportation's state highway map identifies the designated Scenic Highways and Virginia Byways that are on primary routes. A number of secondary routes have also been designated as Virginia Byways, but practical considerations prevent their inclusion on the state map.

Comments: It was suggested that the new Scenic Roads map be included in this statement. It was also suggested that instead of "designation and signing" it should read "designation and *promotion of.*"

4. **The Importance of Tort Liability:** Protecting against tort liability claims is important because:

- ▶ Claims are filed when a motorist or pedestrian has been injured or killed, thus claims indicate a failure of some part or parts of the driver-vehicle-highway system.
- ▶ Litigating claims diverts effort and funds from serving future needs to defending past actions.
- ▶ Paying claims diverts state funds from needed public facilities.

Comments: It was suggested that property damage claims be included in the statement. Speed limits and accidents on rural roads were discussed, in the context of liability.

5. **Standards Provide Protection:** Consistent use of nationally-accepted highway design standards provides protection to the motorist, the state, and the designer. Deviating from nationally-accepted highway design standards may increase to some degree the risk to the motorist and the risk of tort liability claims against the state.

Comments: It was suggested that the finding be changed to "the state *and its employees*." All of these standards are useful, but there can be a considerable cost to local identity and character. It was also suggested that the first sentence might be changed to read that "standards *are intended* to provide protection," since protection can also mean protecting the scenic qualities, which the design standards do not take into consideration.

6. **Statutes:** No provisions have been found in the *Code of Virginia* that authorize highway designers to give priority to scenic or historic values over those of safety, comfort, and convenience of the motoring public.

Comments: In VDOT policy and federal law (ISTEA), the scenic and historic qualities of roads and the areas they pass through will be considered in the design process. It was suggested that reference be made to federal statutes -- ISTEA, Section 106 and Section 4(f) -- that require that scenic and historic qualities be taken into account in designing a road or improvement. It was also suggested that the Virginia Byway statute be included in this statement.

7. **Limited Risk May Be Acceptable for Exceptional Areas:** It is often possible to modify a highway construction project's design to protect both the safety of the motoring public and the quality of exceptional scenic and historic values without unacceptable risk of tort liability claims.

However, to minimize risk of tort claims, the state must be able to demonstrate in a compelling manner that there are very special and widely-recognized public values to be protected. These public values must be recognized and documented before the designer undertakes a design modification to protect them.

Also, specially-designed projects often introduce higher than normal design and construction costs, and funds are limited.

To limit risks and to contain costs, custom or modified designs should be reserved for use only in exceptional historic or scenic areas.

Comments: There was a discussion of standards, their meaning, and their applicability in a number of situations. There was also a discussion of the idea of defining

exceptional areas, which is covered in two findings discussed later in the meeting. It was suggested that the third paragraph be struck because not all specially-designed projects are going to involve increased construction costs. It was also suggested that the phrase "and to contain costs" be struck from the fourth paragraph. A discussion of local input into the designation process occurred, with a thought stated that local jurisdictions should not have a veto power over designating a scenic or historic area. It was suggested that earlier in the findings there should be a statement recognizing the perspective that design standards are just an important component in what needs to be a coordinated effort. Another comment on this subject was received after the meeting, as follows:

Scenic values can be documented through town meetings, agency review and an interactive design process [i.e., the current Interagency Environmental Coordination process]. The preservation of scenic values is a mindset in the design process. If the visual environment is incorporated as a component in the design of highway projects from the inception of the projects, the overall additional costs can be minimized. If all scenic considerations are treated as enhancements, opportunities will be lost and the costs will be increased due to amendments that will need to be made to the previously conceived design.

- 8. Designation of Exceptional Areas:** Highway designers, to protect the motoring public, the state, and themselves, request that exceptional scenic and historic areas be officially designated and carefully delineated by responsible agencies. Files documenting the specific values to be preserved must be provided by the designating agency to the designers in the early planning stage of any construction project.

The designers further request that these designated areas be:

- ▶ Limited to areas of state or national significance;
- ▶ Protected by suitable measures to ensure against changing land uses that create additional traffic and safety problems;
- ▶ Permanently designated (i.e., not likely to be changed in 25 years).

Comments: It was suggested that point two have the local review of plans mentioned when referring to changing land uses. It was also suggested that the last point be changed from "not likely to be changed" to "not likely to be irretrievably altered." It was also suggested that the first point might need to include local significance; the National Register for Historic Places includes properties that are of local significance. An additional comment was received after the meeting, as follows:

If all scenic and historic areas were officially designated and delineated, this would be a major effort. Addressing scenic values on a project by project basis

may be most appropriate until funds are available for such a statewide designation of these resources. The established review process (SERP) could be used in part to designate local, regional and state resources of significance on a project by project basis. It is important to remember that scenic resources are often significant based on their regional context and on the entire surrounding landscape.

9. **Designation of Exceptional Historic Areas:** Defining exceptional historic areas sufficiently to protect against tort liability claims appears possible, using existing designation procedures. Exceptional historic locations are now designated by the Director of the Department of Historic Resources as "Eligible for listing in the National Register of Historic Places."

Such designations typically are limited to one or several properties, the boundaries of which can be established so that designers know what to protect. Where larger areas are designated, boundaries are also specified.

The designation process includes a review of each property under national standards, documentation of the property's condition and historic values, and a public hearing conducted by the State Review Board.

It appears to this committee, subject to review by legal experts, that such designation may be sufficient to provide guidance to highway designers, and possibly also to the courts, when the state defends against any tort liability claims that may arise from a highway design modified to protect recognized and well-documented historic values.

Comments: It was suggested that "National Landmarks" be added to this finding. It was also suggested that the section 106 process be mentioned to cover that aspect of protection.

10. **Designation of Exceptional Scenic Areas**

Exceptional scenic locations along highways are not as clearly designated as historic sites are. Current statutes (Section 33.1-64) provide for the designation of a Scenic Highway, that 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. (*Code of Virginia*, 1950)

Scenic Highways are special parkways such as the Blue Ridge Parkway, Skyline Drive, the Colonial Parkway, and the George Washington Parkway.

For all other highways in Virginia, the only designation currently available is a Virginia Byway (Section 33.1-63), that 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. In selecting a Virginia byway, the Commonwealth Transportation Board and the Director of the Department of Conservation and Recreation shall give preference to corridors controlled by zoning and otherwise, so as to reasonably protect the aesthetic or cultural value of the highway. (*Code of Virginia*, 1950)

Neither agency is authorized to take action to protect a byway once it has been designated.

Unlike historic designation, there is no current national standard to use for Virginia Byway designation.

A national standard is in the making (see Section 4.4). The new national standard is expected to recognize routes of national significance, and will probably include fewer than ten roads in Virginia, possibly those already designated as Scenic Highways.

Designation of a Virginia Byway is initiated by a local request for designation, and each route is reviewed by state officials using state standards. However, for the purposes of this committee's work, the current process has the following limitations:

- ▶ Some arguably very scenic highways have not been designated as Virginia Byways, due to lack of any request to do so;
- ▶ Some designated byways are very narrow, local roads, the condition of which are not conducive to tourism (e.g., by elderly nonresidents driving oversized recreational vehicles);
- ▶ Some previously designated byways were not protected from changing land uses, and their scenic qualities have deteriorated;
- ▶ No Virginia Byway has ever had its designation removed as its scenic qualities have deteriorated;
- ▶ A few Virginia Byways were designated by the General Assembly when these routes were rejected by state agencies as not qualifying for designation.

Accordingly, using the current Virginia Byway designation as the sole criterion for identifying exceptional scenic roadways will likely result in the following controversies:

- ▶ Demands that "scenic" but undesignated highways are also deserving of special consideration;
- ▶ Demands that highway designers deviate from national design standards on some designated byways that are of primarily local importance, thus increasing risk of tort liability claims against the state where only a small state interest exists;
- ▶ Requests that hundreds (perhaps thousands) of additional miles be designated as Virginia Byways. A public expectation that they will be so designated, and that such designation will automatically make these roads eligible for major modification of highway design standards, could result in severe political problems;
- ▶ Requests for designation that are refused for cause by responsible state agencies will likely increase pressure for designation by the General Assembly.

The lack of national standards for designation, the lack of scenic protection of designated roadways, and the fact of a parallel designation process, renders the program indefensible as the sole means of identifying exceptional scenic areas, i.e., those that merit protection at the cost of deviating from national highway design standards. The tort liability risk is too great.

Open Space easements, and perhaps other forms of easements, were suggested as possible means of defining "scenic areas." However, such easements are initiated only by the landowners, and there is no guarantee that all, or even most, of the exceptional scenic areas in the state have been so designated. No other criteria are readily available for defining exceptional scenic areas.

To proceed further on protecting exceptional scenic areas along highways, the state needs a new, as yet undefined, selection and designation process.

Comments: This particular finding was not discussed at the April 22nd meeting of the Advisory Committee due to lack of time. However, some comments were received from a committee member on this finding, as follows:

A list of potential Virginia Byways is published in the *Virginia Outdoors Plan*. This list has been developed in part by VDCP and VDOT staff as well as from public meetings and recommendations from the localities. This list *could* be definitive in indicating potential roads that warrant scenic consideration.

Because some Virginia Byways do not attract as much tourist traffic as others should not limit them from aesthetic considerations given to other scenic resources.

Land use is subject to change in all areas of scenic consideration unless protected by local ordinances or an overlay district, easement or other planning tool.

11. **What Other States Are Doing** -- A brief review indicates that some states appear to have more selective standards for designating scenic byways, and more protection for those byways and the lands along them, once they are designated.

In promoting tourism, designation of a limited number of longer routes, over adequate roadways, is one important consideration. Also important is the careful control of signs, development and construction activities, and access.

At least one state (Arizona) incorporates statutory protection for its highway agency when it modifies design and maintenance standards in the interest of protecting designated scenic byways.

Comments: Committee members recommended that a few other states and/or localities be contacted regarding their scenic roads.

Several members of the Advisory Committee wrote a proposed recommendation for the committee's discussion regarding bridge railings. This proposal, not yet presented to the full committee, follows:

Whereas, rivers or other bodies of water constitute by their nature scenic resources;

Whereas, bridges over water constitute a regular and frequent feature of Virginia's rural road network, which represents an important component in the scenic quality of the Commonwealth so important to the tourist industry;

Whereas, open bridge railings of various designs have been crash tested and approved for use by AASHTO and the FHWA;

In recognition of the foregoing, members of the Advisory Committee on Highway Safety and Design Standards in Scenic and Historic Areas representing VDCR, VOF, and VDOT have jointly developed the following recommendation, and request that the Committee adopt the recommendation as its own and forward it to the Commissioner for his consideration:

- I. For bridges that cross rivers and all other bodies of water, VDOT adopt as *standard* for all new bridges and bridge replacements one of the *open* bridge rail designs approved by the FHWA.

- II. Railings on existing bridges over bodies of water be replaced with open railings as specified in Paragraph I, as funding permits. Existing bridges over state Scenic Rivers receive first priority.

Funding [should] be sought through the budgetary process and through grant programs such as ISTEA and, where interest exists, through partnerships with concerned citizens and organizations, to retrofit existing bridges having solid railings with new open railings.

CHAPTER 4 -- RELATED TOPICS

Separate from the activities of the SJR 61 study team, reviews have been undertaken of regulations and requirements within VDOT and other state agencies that relate, either directly or indirectly, to the topics being reviewed under SJR 61. The current status (and possible effect on roads covered in this study) of the subdivision street requirements, entrance standards, RRR guidelines, environmental regulations, and preservation regulations is presented below. Risk management is also addressed.

Section 4.1 -- Subdivision Street Requirements

The Secondary Roads Division of VDOT is currently undertaking an assessment of the Subdivision Street Requirements (SSR) to see if modifications are needed. The assessment began with a review of the issues identified by all nine VDOT district administrators and the Secondary Roads Division in Richmond. These reviews included getting input from local and state government officials and local and state development industry officials.

Following a review by the Secondary Roads Division, it was decided that revisions to the SSR are necessary and an action plan for completing the revisions was developed. A plan for public hearings around the state was proposed and will be carried out as required under the Administrative Policy Act (APA). The target date for implementation of the revised SSR is early 1996.

The impetus for this review of the SSR came from concerns expressed over the years by local officials and those in the development industry, as well as SJR 61. Some of the major issues raised include the following:

- ▶ The minimum width of roads functionally classified as local -- where the use of curb and gutter is selected -- is currently 38', assuming space for two lanes with on-street parking. It was suggested that this be more flexible.
- ▶ Reduction in width of street's typical section for curb and gutter sections of minor streets without frontage lots, driveways, etc., thereby not requiring on-street parking space or driveway entrances.
- ▶ Design criteria for "boulevard type entrances" to subdivisions should be addressed.
- ▶ All subdivision streets, regardless of terrain, should be designed for 30 mph since they will likely be posted at 25 mph.
- ▶ Clarification is needed regarding terrain classifications (e.g., what constitutes "mountainous").

- ▶ Redesignation of the classification for subdivision streets functionally classed as local and a reduction in standards. Classification would be based solely on the street's length and overall configuration with projected traffic, terrain, etc., being irrelevant.
- ▶ Whether superelevation (the banking of a roadway in a curve) should be a requirement in the SSR for "local" subdivision streets. If so, when should superelevation be required and to what extent?
- ▶ In Neo-Traditional subdivisions, the streets should be permitted to be designed in accordance with mountainous terrain standards; some additional modifications to current standards should be made to allow for reduced widths in some curb and gutter sections where parking is prohibited.
- ▶ A reduction in design criteria for all "major" subdivision streets with a projected traffic of less than 4,000 ADT and for all "tertiary" streets.

The SSR were last revised in 1989. The main impetus for those changes was interest from the development industry and local officials in revising the SSR. VDOT Commissioner Ray Pethel held a meeting with approximately 50 representatives from the development industry on January 9, 1987. After that meeting, an action plan for revision was created and the new SSR was approved by the CTB on August 17, 1989. This SSR became effective on January 1, 1990. The major revisions to the 1990 SSR included the following:

- ▶ Priority Review -- Provided for expeditious review of plans resubmitted for approval following minor corrections.
- ▶ AASHTO Standards -- Incorporated revisions since 1980.
- ▶ Appeals Procedure -- Modified to allow subdivider the right to appeal an unresolved issue through three levels, to the Commissioner.
- ▶ Functional Classification -- Incorporated as a criterion in determining street design standards for subdivisions.
- ▶ Phased Development -- Provided for the acceptance of certain streets prior to their complete development, and established conditions for their acceptance.
- ▶ Traffic Generation Projections -- Incorporated revised traffic projections for single-family detached residences and provided that projects for other land uses are to be based on standards developed by the Institute of Transportation Engineers (ITE).
- ▶ Pavement Width -- Reduced minimum pavement width for the lowest traffic volume tertiary streets.

- ▶ Sidewalks -- Increased moderately the length of sidewalks that will be accepted for maintenance.
- ▶ Cul-de-Sac Streets -- Decreased the required radius for a cul-de-sac of minor residential streets.
- ▶ Maintenance Fees -- Increased moderately the fee charged for maintenance of a street added to the system at any time other than July 1 of any year.
- ▶ Format -- Revised format of document to comply with requirements of the APA.
- ▶ Table I-A (Tertiary Subdivision Street Standards) was revised to increase the number of homes that may be served by this type of street from 40 to 100. Since superelevation is not required on this classification of street, the change reduced the number of streets requiring superelevation.
- ▶ Allowed the utilization of lower design speed for more streets than earlier proposed.
- ▶ Somewhat relaxed the requirements for "phased development" of certain streets to permit approval of unusual situations on a case-by-case basis.

Periodic review of the SSR is necessary to ascertain the development industry's needs, the needs of local government officials, and to incorporate any changed standards or regulations that have direct impact on subdivision streets.

Section 4.2 -- Entrance Standards

There is currently a committee -- made up of rural and urban resident engineers, traffic engineers, and those who deal with permit processing -- reviewing the entrance standards. The intent of the committee is to make the existing designs more user-friendly under various conditions and to provide more flexibility to the permit sections within VDOT. The committee has proposed calling the new manual "Standards for Commercial Entrances to State Highways."

Beyond the VDOT-initiated committee to review the entrance standards, Executive Order #15 and Mandate #5 (from Executive Memorandum 5-94) called for looking at entrance standards. Executive Order #15 is a statewide mandate to conduct a comprehensive review of all existing regulations. Mandate #5 was an earlier request to review entrance standards from the Governor's office. These reviews include recommending termination, retention or revision of each regulation, and developing a process for ongoing review of the regulation.

This review of the entrance standards will probably not be complete for some time. The requirements of the Executive Order and Mandate are not due to be completed before, at the earliest, mid-1995. VDOT's committee will present a draft document to the CTB when its

work is complete; however, that document would still need to follow the Administrative Procedures Act process for revising a regulation.

Section 4.3 -- RRR Guidelines

The Resurfacing, Restoration, and Reconstruction standards (also known as RRR or 3R) are used for improvements to a road that prolong its usable and safe lifetime, but use of these guidelines does not significantly increase its capacity. Where highways are congested, RRR standards generally do not apply (because they are not meant to increase the capacity of a road). These guidelines have been reviewed by VDOT, specifically by the Location and Design division. The proposed revisions are intended to provide more flexibility to Resident Engineers and designers when improving low volume roadways. The issues that were identified during this revision included the following:

- ▶ the impacts of the RRR standards on environmentally sensitive areas;
- ▶ providing the means to address historic areas with reduced impacts;
- ▶ providing more "diversity" in these design standards; and
- ▶ providing more flexibility in the selection of projects using these design standards.

The revised RRR guidelines were implemented in October, 1994.

Section 4.4 -- Environmental Regulations

The Virginia Department of Conservation and Recreation (VDNR) has a number of programs and regulations that influence or directly affect the building or improvement of roads. These include the writing and updating of the *Virginia Outdoors Plan*, administration of the Scenic Rivers program, a partnership with VDOT in administering the Scenic Highways and Virginia Byways program, a partnership with VOF in accepting open space easements, and involvement with and membership in the State Environmental Review Process and the Interagency Environmental Coordination Committee, respectively. These programs, as they relate to the topics in SJR 61, are presented below.

Virginia Outdoors Plan

The *Virginia Outdoors Plan* contains a number of references to scenic and historic areas in Virginia, as well as roads through these areas. In the section of the draft plan on visual resource assessment, there are some recommendations regarding road design:

New roadways and highway planning should include the assessment of the scenic environment. Both the impacts to the existing landscape and the scenery planned [for] the proposed roadway should be evaluated during the highway planning process. A

methodology for incorporating scenic areas and visual resources into highway design could be adopted into the current highway planning process by the Department of Transportation.

Bridges are important design elements in the creation of visually interesting highways. Water is both an aesthetic and recreational resource that can greatly enhance the attractiveness of the highway experience. Older bridges were generally designed to allow a view to the water as well as to provide a unique architectural or engineering component that enhances their structural appeal. In recent years, bridges have been designed without a primary consideration for aesthetics, but with the sole purpose of providing a safe crossing. The installation of numerous jersey barrier type bridge parapets precludes views to the water and results in a lack of variety and interest in highway design at the crossing of numerous [bodies of water].

In planning bridge replacements, localities should begin to budget funds to provide recreational access at appropriate [bodies of water] and attractive bridge designs that provide a safe alternative to the jersey barrier parapet bridge design. The Department of Conservation and Recreation comments on all highway projects including all state and federally funded bridge projects. If a locality informs [VDCR] of their desires for an alternative bridge design at a particular location, [VDCR] will incorporate this in their comments to the Department of Transportation.

For the most part, the protection of visual resources is not regulated either by local land use ordinances, development and architectural guidelines or state legislation. However, this does not diminish their importance to the average citizen. In fact, citizens who may be unaware of environmentally damaging actions often remain keenly aware of the visual component of the environment. A good example of how the visual perceptions of citizens effect the implementation of existing regulations are the number of citizens filing complaints on stormwater management and erosion and sediment control based on their visual impressions of infractions in the regulations controlling these areas. (Virginia Department of Conservation and Recreation, 1993.)

Scenic Rivers Program

Virginia's Scenic Rivers program is included in this report as an example of a program that identifies, protects, and preserves a scenic entity. In this program, the protection is afforded "rivers or segments of rivers that possess natural or pastoral beauty of high quality." (VDCR, 1993.) This process is similar to the National Register of Historic Places, in that it provides a designation of a river (or segment) for the public good and for public recognition, but does not impose any additional federal controls, rules, or regulations (for private landowners). The onus for protecting the river still lies primarily with local governments through their comprehensive planning and development controls.

Scenic Highways and Virginia Byways Program

The Scenic Highways and Virginia Byways program was discussed in a number of the meetings of the Advisory Committee on Highway Safety and Design Standards in Scenic and Historic Areas (see Section 3.2). A separate ad hoc Steering Committee, chaired by Dan McGheehan of the VTRC, recently reviewed Virginia's byway program. The recommendations of the steering committee speak both to the problems and potential of the current program. The committee's recommendations for the enhancement of the Virginia Byways program are as follows:

- ▶ It is recommended that a Virginia Byways Advisory Committee be appointed by the VDOT commissioner to advise the commissioner on the enhancement of the Virginia Byways program, and nomination of roads to the National Scenic Byways and All-American Roads programs.

More specifically, recommendations were made for this advisory committee to carry out, and they are as follows:

- ▶ Develop designation criteria, including themes and minimum roadway characteristics, requisite for designation as a Virginia Byway;
- ▶ Define a preliminary marketable statewide byway network;
- ▶ Develop a working partnership with local government;
- ▶ Review designation requests from localities; and
- ▶ Review designations periodically.

National Scenic Byways Committee

The National Scenic Byways Committee sent a report to Congress on its work on the National Scenic Byways program in November, 1993. The program includes both a network of National Scenic Byways and All-American Roads. Designation criteria and other details of the program's structure are included in the report. Of interest to this study are the sections on design standards and safety on these nationally designated roads.

The comments on design standards and safety for both the National Scenic Byways and the All-American Roads are as follows:

- ▶ A primary factor in setting design criteria for National Scenic Byways and All-American Roads should be to protect the intrinsic values of the road. Both AASHTO and State standards are acceptable, but should be used flexibly so that both safety and intrinsic values are maintained.

- ▶ The Committee supports the FHWA efforts to examine design flexibility within AASHTO standards as it relates to scenic, historic, natural, cultural, recreational, and archaeological areas. The Committee recommends the preparation of manuals and training for both professionals and lay people on design flexibility as it relates to these areas. The Committee supports the principle of using maximum flexibility in design standards in order to preserve intrinsic values without sacrificing safety.
- ▶ The Committee urges the States to apply AASHTO standards in ways that support scenic byways objectives. National Scenic Byways and All-American Roads should, for example, provide certain amenities not normally considered for other roads, including such features as improved see-through guard-rails on bridges, vehicle turning bays on narrow two-lane roads, or information kiosks with interpretive facilities.

The following recommendations are for low-volume, secondary roads that may have design deficiencies, but may still be eligible for one of the national systems:

- ▶ Make the design deficiencies tolerable by reducing the speed limit and by adequately warning drivers of conditions to be expected through the use of caution and advisory signs, maps, and descriptive brochures.
- ▶ Prohibit those types of vehicles that cannot safely use the designated byway. For example, tour buses or large motor-homes might be restricted on sections with curves or grades difficult for them to negotiate safely. (United States Department of Transportation, 1993)

Open Space Easements

Another method of recognizing scenic or historic properties is through open space easements. There are a variety of names and methods under Virginia law for public bodies to acquire easements on properties for the conservation of open space land; these are shown in Table 4-1.

Table 4-1. Statutes Allowing for Acquisition of Easements in Virginia

Statute Section	Title	Description	Time Period
10.1-1009 through 10.1-1016	Virginia Conservation Easement Act	Defines taxation benefits and restrictions to open space easements donated or purchased and held by various state agencies.	In perpetuity
10.1-1700 through 10.1-1705	Open-Space Land Act	Gives public bodies the authority to acquire or designate property for use as open-space land.	No less than 5 years

(Code of Virginia, 1950)

A conservation easement is defined in the *Code of Virginia* as

a nonpossessory interest of a holder in real property, whether easement appurtenant or in gross, acquired through gift, purchase, devise, or bequest imposing limitations or affirmative obligations, the purposes of which include retaining or protecting natural or open-space values of real property, assuring its availability for agricultural, forestal, recreational, or open-space use, protecting natural resources, maintaining or enhancing air or water quality, or preserving the historical, architectural or archaeological aspects of real property. (*Code of Virginia*, 1950)

The VOF (Virginia Outdoors Foundation) and VDHR are two of the state agencies that accept easements to conserve the open space, natural, and/or historic qualities of a property.

The presence of an easement on the land will not necessarily affect a road or a road project proposed by VDOT. Only if the particular land that is under easement is needed for highway right-of-way will the easement prevent VDOT from gathering that right-of-way for any improvement. However, it may be in the interest of VDOT, land-owners, and the public bodies that hold the easements to coordinate their efforts to maintain roads in scenic areas where land is held under open space or conservation easement in perpetuity. While no particular solution is offered here, the idea that easements would hold a property to a defined amount of development (thus limiting future traffic demand) could give VDOT a basis for reducing standards for road improvements. This type of solution would most likely be possible only where all property along a stretch of road is held under permanent easement.

State Environmental Review Process

The State Environmental Review Process (SERP), which includes meetings of the Interagency Environmental Coordination Committee (IECC), was reviewed at the December, 1993 meeting of the Advisory Committee (see Section 3.2). The committee's reaction to this process was generally positive; it allowed all of the natural resource-related departments in state government a chance to review all VDOT road projects early in the design process.

The SERP has allowed for a number of redesigns or design exceptions to protect important historical and scenic qualities, including buildings, very old trees, and even civil war battlefield embankments. The monthly IECC meeting allows department representatives to discuss certain projects together, allowing for creative and appropriate solutions to possible design problems.

Section 4.5 -- Preservation Regulations

A number of federal regulations regarding the preservation of historic properties, especially those listed on or eligible for the National Register of Historic Places, can have an effect on road projects undertaken by VDOT. The Section 4(f) and Section 106 processes are the best known and most often cited examples.

Section 4(f)

Section 4(f) refers to the Department of Transportation Act of 1966. The regulations in Section 4(f) apply to public parks and recreation areas (local, state, or federal), public wildlife or waterfowl refuges, and all properties that are on or are eligible for the National Register of Historic Places.

Section 4(f) was recodified as 49 USC 303 of the Department of Transportation Act of 1983. Section 303(c) states the following:

The Secretary [of Transportation] may approve a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, recreation area, refuge, or site) only if

- 1) there is no prudent and feasible alternative to using that land; and
- 2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

VDOT Environmental Division staff prepares the Section 4(f) documentation, but the FHWA determines whether an alternative is "prudent and feasible." A "prudent and feasible" alternative that avoids a 4(f) property may cost much more and have other major impacts (i.e., residential or business relocations, wetland impacts, etc.) compared to alternatives that use the 4(f) property.

The Section 4(f) process helps to protect lands -- that are designated as historic or are specifically for public recreation or wildlife protection uses -- from damaging road construction. It does not apply, however, to roads that run through scenic areas composed of privately owned lands that are not listed on the National Register of Historic Places.

Section 106

Section 106 is one of the strongest aspects of the National Historic Preservation Act of 1966. The section 106 process requires that the head of any federal agency take into account the effect of a federal project on any property listed in or eligible for the National Register of Historic Places. This process can often affect a road project that passes by or through historic properties. If a road project affects a National Register property, the Advisory Council on Historic Preservation (ACHP) is afforded an opportunity to comment on the undertaking. The steps in the section 106 process are as follows:

1. identify/evaluate historic properties;
2. assess effects to historic properties;

3. consult with VDHR and interested parties (and the ACHP at their option);
4. ACHP comment.

The basic process involves determining if the project, as proposed, has any adverse effects to the property. This process involves consultation between VDOT staff, VDCR staff, the FHWA, and possibly the ACHP. There are a number of steps involved, with the main result being an agreement (in the form of a Memorandum of Agreement) between all parties that adverse effects can be avoided by mitigation measures or else that the project does *not* have any adverse effects on the property.

National Heritage Partnership Initiatives

A proposed program of National Heritage Areas is one way of protecting outstanding scenic or historic corridors (often centered around a road or highway) at the national level. The Heritage Partnership Program Act of 1994 defines a *National Heritage Area* as "a place where natural, cultural, historic, and scenic resources combine to form a cohesive, nationally distinctive landscape arising from patterns of human activity shaped by geography." (103rd Congress, 1994)

An important aspect of the program would be the standards that would need to be met to designate a heritage area. The following criteria would need to be met:

1. The proposed area represents one or more important natural or cultural themes of our nation's heritage;
2. It reflects traditions, customs, beliefs, and folklife that are a valuable part of the nation's story;
3. It provides outstanding opportunities to conserve natural, cultural, historic, and/or scenic features;
4. It provides outstanding recreational and educational opportunities;
5. The resources important to the identified theme or themes of the area retain a degree of integrity capable of supporting interpretation;
6. Residents, business interests, non-profit organizations, and governments within the proposed area have demonstrated strong support for designation of the area and implementation of its management plan;
7. The principal organization and units of government supporting the designation are willing to work in partnership to implement its management plan;
8. The proposal is consistent with continued economic activity in the area;

9. The management plan was prepared with full public participation; and
10. The implementation program recommended in the plan will likely be initiated within a reasonable time after designation and such program will ensure effective implementation of the State and local aspects of the plan. (103rd Congress, 1994)

This proposed program is included in this report to demonstrate one example of how a federal law and program could set the stage for road designers to not only take into consideration historic and scenic qualities of an area, but to have the protection of a federal law helping them lower the risk of tort liability.

Section 4.6 -- Risk Management

VDOT recently released an updated version of its pamphlet titled, *What You Should Know About Risk Management in the VDOT*, that is distributed to VDOT employees. The seriousness of the risk of tort liability is shown by relating the amounts of money already paid out in tort claims and the amounts represented in pending claims against VDOT.

The Virginia Department of Transportation (VDOT) and its employees are at risk because of tort claims being filed against them. Over the past several years, VDOT has paid more than \$2.5 million in claims, and another \$47 million in tort claims were waiting to be resolved. . . VDOT can be sued for up to \$100,000 for injuries or damages caused by its employees. [However,] individual employees can be sued for an *unlimited* amount of money. (Virginia Department of Transportation, 1994)

More specifically, the amounts of claims paid (over the past several years) and the categories they were separated into are shown in Table 4-2, followed by a description of each category.

Table 4-2. Amounts Paid and Amounts Pending From Tort Claims Against VDOT.

Category of Claim	Amount Paid Out	Amount Pending
<i>Maintenance</i>	\$203,000	\$6,700,000
<i>General Hazards</i>	more than \$2,000,000	\$17,000,000
<i>Work Zones</i>	\$64,000	\$1,400,000
<i>Operations</i>	\$214,000	\$22,000,000
<i>Miscellaneous</i>	\$37,000	\$104,000

(Virginia Department of Transportation, 1994)

- ▶ **Maintenance** -- claims have been paid for injuries or damages resulting from loose gravel, potholes, snow-covered medians, loose drain covers, grease on the road, and traffic light malfunctions.
- ▶ **General Hazards** -- claims have been paid for injuries or damages resulting from design issues including inadequate signing, lack of guardrails, unsafe intersections, poor bridge design, and low shoulders.
- ▶ **Work Zones** -- claims have been paid for injuries or damages resulting from motorgraders colliding with other vehicles, dust hazards caused by sweepers, and grader blades hitting cars.
- ▶ **Operations** -- claims have been paid for injuries or damages resulting from blasting, cut telephone lines, mower collisions, grading, injuries to inmates, excavation, drawbridge spans, felled trees, splashed paint, and ferry operations.
- ▶ **Miscellaneous** -- claims have been paid for injuries or damages resulting from trees cut on private property and debris on private property.

The importance of addressing safety concerns before deviating from national standards is one of the largest issues in changing or making exceptions to road design standards in scenic and historic areas. Recognizing this, any push to allow VDOT designers to more readily address public values in scenic and historic areas, and also in subdivisions with a specific design aesthetic, must also address the safety of the public which will use these roads.

CHAPTER 5 -- CONCLUSION, FINDINGS AND RECOMMENDATIONS

Conclusion

The major conclusion reached by the study team was that, in most cases, VDOT is able to take into consideration scenic and historic characteristics when designing road projects, thanks mainly to the State Environmental Review Process (SERP), VDOT's design by exception process, and various federal regulations. It is when dealing with roads through areas that may be scenic, but are not sufficiently designated so, that problems or conflicts can arise between residents, local officials, and VDOT.

The desire of many local officials and residents for either lower standards or a simplified exception process for roads in "scenic" areas is both an economic and legal problem. The question involves desires of citizens and developers for aesthetically pleasing development that also may be less expensive, versus the risk of accident to motorists and of tort liability to the Commonwealth if this is not done correctly. A prioritization of these issues may be necessary in order to reach a conclusion amenable to all parties. The recommendations below address this particular dilemma.

Findings

The study team made a number of findings in its work on the issues included in SJR 61. Many of these findings were suggested by the ongoing work of the Virginia Department of Transportation's (VDOT's) Advisory Committee on Highway Safety and Design Standards in Scenic and Historic Areas. The findings in this report, however, are those of the study team and not necessarily those of the Advisory Committee.

1. The American Association of State Highway and Transportation Officials (AASHTO) highway design standards are the model highway design standards for roads in the United States of America. These standards are usually adopted, in turn, by the states as their own design standards. The Federal Highway Administration recognizes and accepts AASHTO standards for federally-funded projects. Courts generally recognize AASHTO standards as the accepted norm when trying tort liability cases.
2. The Commonwealth Transportation Board (CTB) adopted AASHTO standards as those acceptable for use by VDOT or other parties when designing improvements to the state's highway systems. The CTB also adopted subdivision street standards based substantially on AASHTO standards.
3. The protection of exceptional scenic and historic areas is necessary to preserve the heritage and scenery that citizens enjoy, and is also essential to continuing tourism and

economic development in the Commonwealth. Highway designers are frequently asked to deviate from adopted standards to protect scenic and historic areas.

4. Deviation from accepted design standards may increase the risk to motorists if their expectations about the road ahead are not met. For example, highways with higher design speeds and gentle curves should not abruptly change into highways with lower design speeds, restricted sight distance, and extreme curvature. Further, roadways that are too narrow for trucks restrict commerce, and congested or unsafe roadways can restrict tourism.
5. Deviation from accepted design standards increases the risk of tort claims against the Commonwealth, and increases the risk of such claims against VDOT employees who authorize or approve such deviations. While there are statutory limits to the dollar amount of tort claims against the Commonwealth, there are no such limits on claims against employees or other individuals.
6. VDOT currently authorizes exceptions to AASHTO design standards on a project-by-project basis, where motorist safety is not endangered and where substantial public values may be protected by so doing. This "design by exception" process requires that the reasons for deviation from standards be well documented. This documentation is intended to provide a rationale for design deviations in the event of a tort claim arising from an accident. The design by exception process is generally considered successful by VDOT designers (who point to a number of successful designs), but citizens and some state agencies continue to express their concerns about the current process.
7. Current environmental and historic preservation laws, both state and federal, provide VDOT engineers substantial guidance in determining which areas of the Commonwealth are historic areas, wetlands, and parks. The designation of these areas, by processes set forth in law and regulation, gives designers prior information about the location of resources that are protected. The coordination of highway projects with other state and federal agencies offers opportunities for design mitigation or avoidance.
8. Exceptional scenic areas, however, are not formally designated by any state or national process, and they have no recognized boundaries. Designers have little prior information about important scenic resources to be protected. Discussions regarding the protection of scenic areas often do not take place until after designs are completed, during public review. Even then, there is often little public consensus as to what are the most important scenic areas along a highway.
9. The *Code of Virginia* provides little protection to designers or other responsible persons who deviate from accepted design standards in order to preserve and protect scenic or historic areas.

10. Protecting scenic areas will take more than making highway designs more flexible, because changes in land use also affect scenic qualities. Often, roadside development changes scenic vistas and creates additional traffic congestion and safety problems. Protection of scenic areas must be a coordinated effort involving landowners, local governments, and the state.

Recommendations

The study team has three major recommendations for action to help deal with the issues raised in SJR 61. These recommendations are as follows:

1. Because there is little consensus as to what is scenic, if the General Assembly of Virginia desires to protect *exceptional scenic areas* from intrusion by private or public entities, a process must be created to define, evaluate, designate, and protect exceptional scenic areas. In general, the more selective the Commonwealth is in identifying exceptional scenic areas, the greater the protection each can be afforded. A designation process could be based on the process for listing historic properties on the Virginia Landmarks Register and the National Register of Historic Places.
2. It is recommended that the General Assembly of Virginia consider the enactment of statutes to increase protection of highway designers and roadbuilders when *non-standard designs* are used to protect exceptional scenic or historic areas of the Commonwealth.
3. Many highway designers and others involved in the approval, construction, and maintenance of highways are concerned by the potential of tort liability claims against them as individuals. If the General Assembly of Virginia desires to encourage greater flexibility in the application of highway design standards, it may be desirable to give *individuals* who design, approve, construct, and maintain public highways greater protection against tort liability claims which could arise. Such protection may be afforded by revising statutes to limit the dollar amount of such claims against individuals, or by enhancing the state's insurance program to provide greater protection to individuals.

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APPENDICES

Appendix A: Discussion Statement on Secondary Roads

(From the April 22, 1994 meeting of the Advisory Committee on Highway Safety and Design Standards in Scenic and Historic Areas)

Most of the work that [the Advisory Committee] has done has been talking about the principal highways, primary highways, roads that are on the Virginia map, and these are the ones that are most heavily traveled and the ones most frequented by tourists, but the issue of local roads and counties is a very serious one.

Roads in the secondary system of state highways are given route numbers of 600 and over. These routes often are the subject of intense local interest. Counties and citizens who fear that improvement of a secondary road will substantially change its character now have the following options:

To minimize the construction, they can request that designers adopt the lowest design speed and lane widths commensurate with the road's traffic volume, functional classification and terrain. In many instances, designers can and do respond to these requests by following the design criteria in their standards that will produce the least change to the existing road.

The other option where people are strongly determined that they want no change is that they can [chose] not [to] build [a highway improvement]. Counties may establish low priorities for construction funds for a road or exclude it entirely from the county's Six-Year [Secondary] Improvement Plan except where state engineers fear that deferring construction would prolong a severe safety problem or could result in catastrophic failure (of a bridge, for instance). It is rare for the state to insist that a given project be constructed without the county's support.

However, there may be a third alternative: reversion of a county's secondary roads from state ownership to county ownership. As in the case of elected school boards, Virginia may want to examine how the great majority of states handles secondary roads. This alternative would take some time, and no county should undertake this change without thoughtful deliberation and public support.

A discussion of this possible alternative follows:

Under Virginia statutes, small towns are not required to maintain streets and roads that are maintained as part of the state's secondary system. When a town's population reaches 3,500 people, however, that town is required by law to assume responsibility for maintenance of its streets with partial funding from the state. All independent cities are also required to maintain their own streets, regardless of their size.

Appendix A (continued)

Also under Virginia statutes, the 94 counties in the secondary system have no responsibility for maintenance of streets or roads no matter how large their populations. This leads to the striking comparison of small towns of 3,500 people being required to maintain streets while counties of 100,000 and up have no such responsibility.

Experience shows that towns and cities and the counties of Arlington and Henrico do a good job of maintaining local streets, erecting traffic signs and signals, setting and enforcing speed limits, approving development plans, and so forth. Failure to satisfy their citizens results in direct complaints to local officials.

When towns or cities make improvements to local streets, they establish the standards and award the contracts for that work independent of the state. This gives them the responsibility and the flexibility to accomplish many local priorities.

Counties in the secondary system also have local priorities, but the state has the responsibility -- financial and legal -- for secondary roads. This circumstance continues to create tensions, and these tensions grow larger as counties exert more control over land use, economic development, and environmental protection.

When local priorities conflict with state standards, VDOT receives requests to "be more flexible." While its engineers do everything they feel is reasonable, it is not feasible for the state to have established design standards and then waive them every time a local request occurs. Motorists must be protected. Accidents occur, and actions by the state must be defensible. Local priorities cannot always be implemented by the state, but the situation would be different if counties controlled these roads. Were counties to assume responsibility for their secondary roads, as is the case in 46 other states, they could establish speed limits, design standards, maintenance standards, subdivision street standards, erect signs and traffic signals, and control the operation of these roads with little or no state involvement.

For a county that desires to make improvements to the secondary roads or that desires to improve these roads to its own standards rather than to the state's, a longer term solution may be for that county to carefully consider whether it wants to have all of its secondary roads transferred to county ownership.

Except for Fairfax County, which now has authority to hold a referendum on the issue, such action would take time, the cooperation of the Virginia Department of Transportation, and the acquiescence of county voters and the General Assembly. As no county has seriously pursued this option [in recent years], the outcome is unknown.

LD1740749

SENATE JOINT RESOLUTION NO. 61

Offered January 20, 1994

Requesting the Virginia Department of Transportation to study the highway design standards.

Patrons—Waddell and Calhoun; Delegates: Albo, Callahan, Harris, Keating, Mayer and McClure

Referred to the Committee on Rules

WHEREAS, Virginia is one of only three states within the United States wherein state government is primarily responsible for most or all of the state's interstate, urban, primary and secondary highways; and

WHEREAS, the Virginia Department of Transportation, in carrying out its responsibilities for the Commonwealth's highways, has established certain minimum highway standards, including right-of-way width and pavement width, as preconditions for accepting such highways into the highway systems for maintenance and other purposes; and

WHEREAS, the minimum right-of-way width and pavement widths set by the Virginia Department of Transportation may not always be appropriate for every jurisdiction within the Commonwealth, particularly in slow growth areas and historical, recreational, or other special districts; and

WHEREAS, alleged inflexibilities in the Virginia Department of Transportation's minimum standards for such matters as right-of-way or pavement width have resulted in situations where local highways cannot be accepted into the Commonwealth's highway systems for reasons related to historical, environmental, or other local factors which limit those right-of-way or pavement widths; and

WHEREAS, this situation imposes undue financial burdens for maintaining such highways upon local governmental units in the Commonwealth, many of which have inadequate revenue sources to perform such maintenance services; now, therefore, be it

RESOLVED by the Senate, the House of Delegates concurring, That the Virginia Department of Transportation study the need for establishing more flexible design standards for the Commonwealth's highways to ensure that such standards reflect the special needs of historical districts and facilities as well as the special needs for protection and conservation of environmentally sensitive areas. The Department shall complete its work in time to report its findings and recommendations to the Governor and the 1995 Session of the General Assembly as provided in the procedures of the Division of Legislative Automated Systems for processing legislative documents.

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