

# MARYLAND BYWAYS



*Sustaining the roads less traveled*

## **Context Sensitive Solutions** For work on Maryland Byways



February 2008

## Acknowledgments

Thank you to the Working Group for their thoughtful advice and participation in the development of this guidebook. Special thanks to Mr. Charles Adams and Mr. Terry Maxwell for their overall vision and support for preserving, maintaining and enhancing Maryland's Byways.

### Please Note:

The purpose of this publication is to serve as a planning, design and management tool and to provide general information that will assist the Maryland State Highway Administration (SHA) in their efforts to preserve, maintain and enhance Maryland's Byways. The guidelines are intended for use by SHA staff to be consulted as they develop individual projects or implement broad programs and activities, recognizing the scenic values, historic significance and overall character of the state's byways and the need to gain concurrence from the relevant regulatory agencies, while at the same time considering safety, operations, maintenance, constructability, stakeholder input, impact on the route's users and neighbors, and cost. The authors, their employees and agents shall bear no responsibility for any use of the contents of the publication.

The organization and development of these guidelines began as an outgrowth of the Maryland Historic National Road Corridor Partnership Planning effort conducted from January of 2000 to May of 2001 and in the Maryland State Highway Administration's ongoing efforts at encouraging Context Sensitive Solutions (CSS) as a way of doing business for all projects following the 1998 "Thinking Beyond the Pavement" Workshop. The concept of developing CSS principles and treatment guidelines for Maryland's Byways was first suggested as a parallel to the framework provided in the field of historic preservation by the Secretary of the Interior's Standards for Rehabilitation which provide a framework for understanding the significance of historic resources and for guiding treatment decisions that will preserve the physical fabric and character-defining features of these resources. While these broad guidelines are intended for use for all of the state's byways, ideally each byway would have a CSS guide tailored to preserving its resources, maintaining its overall character and enhancing the byway. Such a guide has been developed for the Maryland Historic National Road Byway to provide specific guidance for this nationally designated All American Road.

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# Introduction

## Maryland's Byways Program

The Maryland State Highway Administration (SHA) has established the Maryland Byways Program to enhance quality of life for Maryland's citizens, engender pride, and improve visitor appeal of the state's most scenic, cultural and historic roads. Byways help residents express their values of place, contribute to the state's economy through tourism development, and provide unique experiences for all. This document is intended to build awareness about Maryland's collection of byways and understanding that their scenic qualities and the visual environment of the road are especially important to maintain. The document is provided as a tool to help SHA staff make informed decisions about all types of projects or maintenance along Maryland's designated byways. SHA seeks to identify, designate, promote, and encourage stewardship of the state's byways and their surrounding resources while providing safe routes for travel.

SHA has designated 19 byways that encompass 1595 miles. Of this mileage 84% is owned by the State, nearly 15% is owned by local jurisdictions, and a small percentage is owned by the National Park Service. About 34% of the routes are currently classified as arterials, 50% are classified as collector routes, and about 15% are classified as local roads. While all of these routes have been designated as State Byways by SHA, two of them have achieved additional designation by the Federal Highway Administration (FHWA). In 2002 FHWA designated the Historic National Road as an All American Road and the 2005 Catocin Mountain Highway as a National Byway.

## The Purpose of the Guidelines

The function and appearance of a road corridor are the result of many separate actions taken over time to address specific needs. While each of these actions - repair of a drainage culvert, changing the approach to an intersection which has become a high accident location, or adding signage to alert travelers to a nearby historic museum - has a valid purpose, the result of all of them can either support or degrade the experience of traveling a byway route for both local residents and visitors. The cumulative effect of a series of individual actions, if undertaken without reference to protecting and

enhancing the special qualities of the byway, can be far greater than anticipated.

SHA has been a national leader in implementing Context Sensitive Solutions (CSS) for transportation development. Context Sensitive Solutions result from a collaborative, interdisciplinary approach to developing and implementing transportation projects, involving all stakeholders to ensure that transportation projects are in harmony with communities and preserve and enhance environmental, scenic, aesthetic, and historic resources while enhancing safety and mobility. While the CSS approach applies to all of SHA's projects, Maryland's Byways, designated for their acknowledged scenic, cultural and historic qualities, merit additional care in decision-making to preserve and enhance their special qualities. SHA's CSS Policy Framework and Goals are included in Appendix A (see page 15).

### Maryland Byway Statistics

- Maryland Byways: 19 routes, 1595 miles
- Ownership
  - 84% State
  - 15% local jurisdictions
  - Less than 1% National Park Service
- Nationally designated byways: 3
  - Historic National Road
  - Catocin Mountain Highway
  - Chesapeake County

The purpose of this guidance is to help project staff and other stakeholders understand the special qualities of a byway and make project and operational decisions that will reinforce and enhance these qualities. It is understood that actions by SHA regarding preserving, maintaining and enhancing the special features of the byway are only a portion of all actions that will affect the appearance of the byway corridor. Actions on privately or publicly held land along the byway corridor but outside the right-of-way can either support or erode the visual quality and character of the corridor, but guidance regarding these actions is outside of the scope of this document. In a number of places in these guidelines, however, reference is made to areas for cooperation between the SHA project team and local officials to achieve project and community objectives.

## When to Use these Guidelines

These guidelines have been developed to help project managers, private development project representatives, design team members, environmental managers, access permit managers, contractors, district maintenance workers, resource and related permitting agency staff, and interested citizens to apply the Maryland Byway CSS guidelines during project planning, design, construction and operations for projects undertaken along Maryland's designated byways.

Whether you are responsible for a safety improvement along a byway, roadside planting, a request for an access permit, or roadside maintenance, before proceeding with the work, you need to acquire some knowledge of the Maryland Byway as a whole and why it was designated.

The principal expertise about Maryland's Byways is found in SHA's Office of Environmental Design (OED). OED's staff will be involved in projects in the SHA's Primary Construction Program and Secondary Construction Program that have project overview from SHA's central office in Baltimore. Most projects on Maryland's Byways, however, will be ones that SHA refers to as System Preservation Minor Projects, such as Safety/Spot Improvements, Resurface/Rehabilitation, Traffic Management Signage/Signals, Bridge Replacement/Rehabilitation, Intersection Capacity Improvements, and Pedestrian/Bicycle Facilities. System Preservation Minor Projects are performed mostly at the District level and typically have not involved OED review. When any project is proposed that is on the state's designated byways, District Office staff should consult with OED staff to make the required assessments of significant byway features and so that OED staff can represent the byway interests on the project team.

## Approach to Work

SHA's program criteria for designating byways require that all corridors must possess important scenic qualities, be representative of a heightened visual experience, distinctive with respect to the composition of features associated with a byway corridor, or showcase unique traits of that particular region. In addition to scenic qualities, many byway corridors also possess natural, historical, cultural, and/or archeological features and resources and may provide access to significant recreational or tourism opportunities.

In addition, SHA's Environmental Policy calls for SHA staff to incorporate and integrate smart growth, environmental protection and enhancement measures in planning, design, construction and operations; and to protect and enhance all aspects of the natural and human environment whenever possible.

The basic approach to work along a byway is to **identify, preserve, maintain** and to **enhance** the features that contribute to a resident's or visitor's special experience when traveling along the byway. The next section explains CSS principles for Maryland's byways that embody these actions to provide a framework for understanding the byway as a resource and for preserving and/or enhancing its significant qualities. The final section of this guide reviews fifteen project elements and makes suggestions for treatments aimed to meet the goal of preserving, maintaining and enhancing Maryland's Byways.

### What to do When Your Project is Located on a Maryland Byway

- Check the Maryland Byways Map to identify byway routes. If you are unsure if the project is on a byway, call the Byways Coordinator at SHA's Office of Environmental Design (410 545-8637).
- Determine if SHA is the only road manager or if other jurisdictions also hold responsibility.
- Follow MD Byway CSS Principles
- Determine appropriate treatments to preserve character-defining features, maintain the byway character and/or enhance the special character of the road.

# Principles

## Identifying the Byway's Character-defining Features

Understand the overall significance of the roadway as a byway.

### ■ What is the nature of the scenic qualities?

What is the nature of the scenic qualities for which the road was designated – views of distant scenery, rural views close to the road, views of historic buildings, etc.?

### ■ What are other notable resources?

What types of other resources (natural, historical, cultural, archeological, recreational) contribute to the overall significance? How and where are these represented along the byway?

Understand the positive quality of the experience that a traveler has along this byway within the context of a typical length of trip. Identify elements of the road design and roadside that contribute to this positive experience.

### ■ What is the quality of the traveling experience?

Is the traveling experience one that conveys the character of a small town? Is the experience one that is characterized by open spaces and broad views? Is the experience one of traveling through an overhanging canopy of trees? Is the experience one of traversing a two-lane route with relatively narrow shoulders and closely spaced trees?

### ■ What is the character of the road and roadside?

What are the elements of the road and roadside design that establish the character of the road and the traveler's experience as you have identified it? Roadway design elements would include both its alignment and the associated structures used in the construction of the road. Such elements might include paved or turf shoulders, sidewalks, hiker/biker trails, landscaped medians, traffic signage, lane and edge pavement, striping and underground utility facilities (no poles) or a bridge design which provides water views from passenger vehicles.

If a project were to be undertaken within Chestertown which is part of the Chesapeake Country Byway, for example, the specific intrinsic qualities or resources would include historic buildings of the National Register Historic District and scenic

## Maryland Byway CSS Principles

- **Identify** Character-defining features.
  - Identify specific intrinsic qualities or resources.
  - Identify elements of the road and roadside that contribute to the byway's scenic and/or historic character.
- **Preserve** Character-defining features where possible.
- **Maintain** the overall character of the roadway.
- **Enhance** the Byway to Support its Special Character.
  - Where character-defining features are missing, develop solutions to meet goals in a manner to complement characteristics of the byway.
  - Include roadside enhancement projects to add value to the traveller's experience.

views of the historic streetscape. The elements of the road and roadside context that contribute to the byway's scenic and historic character could include brick sidewalks, street trees which provide a partial canopy over the street, and elements of the streetscape that convey a sense of community scale and encourage slower vehicle speeds and multi-modal use including use by bicycles and pedestrians. In a more rural environment, the elements of the road and roadside context that contribute to the byway's scenic and/or historic character might include the drainage accommodated through swales, horizontal and vertical alignments that follow the natural contours of the land, and the proximity of trees to the roadside.

The list of intrinsic qualities or resources and the elements of the road and roadside context that contribute to the byway's scenic and/or historic character are called "character-defining features."



*Character-defining features of this streetscape in Westminster include both intrinsic resources and road and roadside elements.*

**Intrinsic resources:** historic buildings and the scenic character of the streetscape. **Road and roadside elements:** lighting standards, street trees, and brick sidewalks. *Intrinsic resources of the rural roadway on the right include the pastoral equestrian landscape, and extensive views. Road and roadside elements include the 2-lane narrow cross-section, one-foot gravel shoulders, continuous fencing the evenly spaced row of mature trees alongside, and gentle dip of the swale.*

## Preservation of Character-defining Features

Preservation is defined as the act or process of applying measures necessary to sustain the existing form of identified character-defining features of a byway. In some instances preservation will apply to road features that are judged to be historically significant. Where a historic feature is identified, work will generally focus on the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. Preservation would apply to the old alignments of the western section of the Historic National Road, for example, including alignments that are no longer used but have remains of the original road and related structures. Preservation might also be appropriate to retain a specific scenic view that has been recognized and valued by travelers for many years along a byway.

At times it may not be possible to preserve the physical fabric of a character-defining byway feature due to safety issues or issues of durability of materials. In these cases it may be possible to design a new feature that replicates the physical character of the historic feature but with needed modern materials. For the Historic Columbia River Highway in Oregon, for example, the guardrail used along much of the byway's perimeter was considered so important to defining the byway's character that a modern guardrail was designed as a close replica of the historic rail and crash tested to ensure it met safety requirements.

In other cases it may be possible to work with a project element that was an important character-defining feature in the past but is now beyond repair, to support a new use that

allows it still to contribute to the character of the byway. For example, the 1920's concrete bridge over the Monocacy River that is falling apart could be stabilized as a pedestrian bridge and overlook to view the adjacent tollhouse that is a character-defining feature of the Historic National Road.

## Maintaining the Byway Character

Maintaining the character of the byway is a key concept. The character of the byway derives from the distinctive qualities, attributes or characteristics of the road and right-of-way as well as from the specific intrinsic qualities found outside the right of way. It may derive from physical attributes such as the vertical and horizontal alignment of the road or from the relationship of the alignment to scenic views of dramatic natural features or of pastoral farm scenes. Concern for maintaining the character-defining features applies to planning and design phases of a project, to project construction, to access permit decision-making, to traditional maintenance activities of planting, mowing and snow removal along a byway – in essence to all actions that affect the context of the byway.

The positive experience of traveling along a byway whether by auto, bicycle or on foot is the essence of why the state has designated the byway. The traveler may be commuting to work, on a pleasure trip to visit nearby attractions, or enjoying physical exercise along the byway. The physical character of the byway will enhance the traveler's experience. However, if individual actions are undertaken without reference to protecting and enhancing the overall character of the byway, the byway's appealing qualities may be lost.



*This recently reconstructed bridge over Meadow Run illustrates how small structures similar in scale and proportion to an older structure can be designed to maintain the character of the roadway. In this case some original materials were reused. These are photos of the same bridge, one from the side, looking up and one from the road level view.*

## **Enhancing the Byway to Support its Special Character**

These CSS Guidelines for byways encourage two forms of enhancement for Maryland's byways, developing project solutions that complement the characteristics of the byway in areas where character-defining features have been lost, and including roadside enhancement projects to add value to the traveler's experience.

Where a proposed action does not affect an identified character-defining feature, consideration should be given as to how the action undertaken can complement the byway's character-defining features. Can the project be done in a manner to enhance the visual and physical quality of the byway? For example, although the physical character and appearance of the Historic National Road in the commercial area of LaVale has changed greatly from the historic appearance of the road in this area, actions could be taken to support the resources that do remain from the historic period and to make this section of the road less out of character with historic sections of the road. Improvements could be made in LaVale to make it easier for pedestrians to walk to the historic Toll House. Traffic calming goals could be accomplished by narrowing the look and feel of the road.

Large paved parking areas serving local shopping centers in LaVale that degrade the visual quality of the road corridor could be improved visually with the support of creative funding. For example, the owners of these centers could work cooperatively to seek non-point source pollution funding

from the Environmental Protection Agency to improve the water quality and appearance of the creek and parking lots, thus providing an additional means to improve the overall visual quality of the Historic National Road through this section of LaVale. In some of these projects SHA would have a direct role. In others as SHA staff bring stakeholders together to provide input to transportation projects, SHA staff and consultants may serve as a catalyst to advance creative ideas among local business people and encourage their efforts.

The second type of enhancement addresses roadside enhancement projects such as streetscape improvements (gateways, traffic calming, pedestrian safety measures, landscape, lighting and signs), trailheads to provide recreational access along the byway, wayfinding for directional and visitor information or interpretive signs. Such projects may add significant value for both residents and visitors.

While some enhancement actions will fall within the scope of SHA's project, others may be the responsibility of local planning officials. For this reason it is important to include local planning officials in project working groups. Some strategies to enhance the byway that emerge from the transportation project working group may not be a direct responsibility of SHA to implement, and may need to be implemented through zoning, requirements for screening in areas, removal of blight or eyesores along the roadway, and other actions that can be taken at the local planning level.



Before



After

*The Mount Rainier Roundabout, although not on a byway, illustrates the type of roadside enhancements that would add significantly to a byway's character. Brick pavers reference early 20th century trolley tracks, bus shelters echo the historic trolley shelter designs, a bas relief of faces of residents tops the shelters and surrounds planting areas.*

## Information Resources

When undertaking any action that will affect one of Maryland's roads, it is important to know if SHA has designated the road as a Maryland Byway. SHA's Office of Environmental Design (OED) maintains the list of designated routes. SHA's Byways Coordinator can be reached at (410) 545-8637. It will be helpful to determine if SHA is the only road manager or if there are others responsible who need to be consulted as well. If other road managers are involved, they should be encouraged to use these CSS principles and guidelines.

SHA encourages local governments citizens interested in a byway to develop a Corridor Management Plan (CMP) for that byway. A CMP is a written document that lays out the goals, strategies, and responsibilities for conserving and enhancing a byway's most valuable qualities. It can address issues from tourism development, roadway safety, highway signs, the preservation of historic structures and natural features to plans for a new archeological museum. If a CMP has been completed for a byway, it will include or reference documentation on the significance of the byway and provide a list of character-defining features. It will likely be fairly complete in identifying scenic, historic and other specific resources. It may or may not articulate the character-defining features of the road and roadside that contribute to the byway's scenic and/or historic character. However, future CMPs will include this information. The CMP may also include recommendations about roadway design, maintenance and operation. The SHA Byways Coordinator can tell you if a CMP has been completed or is underway for a specific byway.

If a CMP has not been completed, SHA's Byways Coordinator will assist you in understanding the significance of the byway as a whole and in identifying the character-defining features along the length of the project area. Sources of information he will draw on include:

- SHA's documentation prepared for the designation.
- Information compiled by county or local jurisdictions. For example, Anne Arundel County has compiled video and GIS-compatible information on the character-defining features of most of its identified scenic routes.
- Other completed studies of the route.
- SHA's cultural resources staff.
- Maryland's Department of Natural Resources
- The Maryland Historical Trust.

Just as every byway is unique, every project will pose different challenges in terms of identifying, preserving, maintaining and enhancing the character-defining features of the byway. The byway design, maintenance and management guidelines that follow have been developed to provide a framework to guide SHA's and other stakeholders' actions that affect Maryland's Byways.

## Determining Appropriate Treatments

Once the team and involved stakeholders have determined project goals and have identified the byway's character-defining features, an assessment should be made as to which of these features will be impacted and which features can be preserved. If it is not possible to preserve all the character-defining features of the road and right-of-way, it will be very important nevertheless to maintain the overall character of the traveler's experience on the byway. With understanding of the features that make up this experience and creative approaches to meeting project goals such as those suggested in these guidelines, it should be possible to preserve, maintain and enhance the byway's special character.



## Elements that Affect a Byway's Character-defining Features

1. Safety
2. Alignment and Geometry
3. Roadside Barriers
4. Grading and Drainage
5. Traffic Control Devices
6. Utilities
7. Landscape
8. Bridges and Small Structures
9. Signs
10. Lighting
11. Access
12. Roadside Enhancements
13. Bicycles
14. Maintenance
15. Management of Publicly Owned Land

The Context Sensitive Solutions process will be aided by implementing a highly interactive process involving all stakeholders along the byway with an interest in the project. A cooperative working arrangement whereby all of the interested points of view are included from conception to implementation is a hallmark of CSS. Designers aiming to employ flexible approaches to design on byways can make use of several tools: FHWA's "Flexibility in Highway Design" published in 1997; AASHTO's "A Guide for Applying AASHTO Policies to Achieve Flexibility in Highway Design" published in 2004; the Transportation Research Board's Special Report 214 "Designing Safer Roads: Practices for Resurfacing, Restoration and Rehabilitation;" and SHA's guide "When Main Street is a State Highway."

## Design, Maintenance and Management Guidelines Safety

When considering safety-related design changes to a scenic or historic roadway, any changes should strive to retain, to the maximum extent possible, the scenic and historic character of the roadway. The traditional methods of trying to improve safety on state highways may not be possible or appropriate for scenic roads. These methods have concentrated on physical modifications to the roadway and roadside such as widening lanes and shoulders, adding guardrail, cutting trees, and changing the vertical and horizontal geometry.

These techniques will often destroy the visual quality that led to the scenic designation. In addition, by creating a more wide-open look to the road, these techniques, while attempting to reduce the apparent dangers for the driver, usually result in higher vehicle speeds. This is especially problematic for scenic roads, since a substantial proportion of the users of these roads are new to the road, wish to drive slowly to enjoy the view, and may include bicyclists as well. For byways, therefore, an increase in accidents could possibly be the result of traditional strategies to improve safety, since these techniques would be likely to increase the speed differential between users.

### ■ Addressing Identified Safety Concerns

To address an identified safety concern consider the following: traffic calming measures; increase visibility of a potential hazard, rather than removing it; increases in sight distance; traffic control and regulation signage; lowering design speed; pavement striping and marking; raised pavement markers; and street lighting.

### ■ Compatibility of Safety Features

Safety related design changes to a byway should be compatible with the byway's character-defining features by minimizing the visual contrast between the safety feature and its setting. For example:

- By using steel backed wood guardrails in a rustic or natural setting; or
- By using weathering steel guardrail.

### ■ Reinforce Desired Driver Behavior

When confronting problems associated with travel speeds well in excess of posted speeds, consideration should be given to improving the driver's behavior through appropriately scaled traffic calming techniques as a means to maintain the character-defining features of the byway.

### ■ The Value of Direct Observation

Direct observation in the field to understand the causes of a safety problem may assist in identifying means to address the problem that will not alter the scenic and historic character of the roadway.

## Alignment and Geometry

The natural topographic characteristics of the roadway and how it fits into the landscape – its alignment and geometry – should be preserved to the maximum extent practical.



*Introduction of street trees planted at increasingly closer spacing gives drivers additional clues that they should slow down when approaching a rural village as shown approaching Poplar Springs. Gateway signs (right) also help to define the beginning of the hamlet or village area.*

### ■ Future Increased Capacity Needs

When addressing increased capacity needs, consider whether an existing alternate or parallel route can carry increased capacity to allow the byway to continue to serve its current function without need for redesign to carry anticipated higher traffic volumes in the future.

### ■ Reinforcing Safe Travel Speeds

A reconstructed section of roadway should match the cross section of the existing road sections in order not to create false driver expectations about safe travel speeds.

For an example, when a new subdivision was planned along Riva Road south of the South River Bridge, the county called for building a standard section. The resulting road section, due to its increased width and straighter alignment, leads drivers to accelerate, resulting in their reaching the adjacent older road section –one that probably will not be widened in the foreseeable future– at a higher than desirable speed.

### ■ Examples of Compatible Design

When considering changes to the roadway geometry and alignment, compatibility can be achieved by utilizing techniques that strive to more closely match the design speed with the desired posted speed, allowing the road to “lay lightly on the land,” rather than cut through the landscape “like a knife through butter.”

For example:

- Splitting the profile of a four-lane divided section around a topographic feature.
- Seeking reduced lane and shoulder widths to minimize the need for cut and fill.

### ■ The Visual Treatment of Shoulders

The visual treatment of shoulders is extremely important on byways. Turf shoulders increase the pastoral quality of the roadway. Contrasting paving materials and various patented

or traditional methods of turf reinforcement can be used to differentiate parking and non-roadway areas from the traveled way. This will minimize the visual impact of broad expanses of asphalt, and will provide greater safety by clearly delineating vehicular circulation.

## Roadside Barriers

Roadside barriers are typically used along a roadside when it is not economically or environmentally feasible to remove a fixed object or other area of concern from the roadside clear area. Standard “W-beam” guardrail systems are generally not a desirable treatment on byways due to their visual prominence and contrast that detracts from the byway’s character. A Cor-ten “rusting” steel or a color galvanized box beam may be a good choice. The dark color of rusting steel provides less visual contrast with the landscape than standard galvanized steel. The box beam has a thinner profile allowing for more transparency to views beyond the road.

Steel W-Beam with weathering steel finish is in use on I-68 and may be an appropriate guardrail for some of Maryland’s byways. Steel backed timber guardrail is another aesthetic alternative. This was used along the Historic National Road as part of the recently completed reconstruction of the Meadow Run Bridge (see photo on page 7).

## Grading and Drainage

Grading and drainage should be undertaken in a manner to reinforce the existing character of the roadway when the byway was designated. Direct observation in the field can be extremely valuable in determining compatible approaches.

### ■ Suitable Slope Designs

When considering changes that require modifications to the

adjacent slopes (cut and fill) or modifying drainage patterns, compatibility can be achieved through the use of biological slope stream bank stabilization rather than structural methods.

### ■ Blending Road Design with the Natural Landscape

The “knife through butter” look of a precisely engineered and constructed slope has a super-highway character, and should be avoided. Uphill cut slopes needed to accommodate additional roadway width or drainage should look like they are a part of the natural landscape. This approach means accentuating a natural drainage swale, or steepening or relaxing a slope according to the specific soil and rock materials found. In some cases this will require agreements with abutting owners since some additional land may be involved. The result, however, can be more stable and less expensive, as well as better looking.



*Soil bio-engineering concepts were used by SHA and Maryland Department of Natural Resources to restore Porter Run adjacent to the Historic National Road near Clarysville. Willow whips were interplanted to help stabilize the streambank.*

### ■ Location Specific

#### Stormwater Management Facilities

Stormwater management facilities should be designed to be an integral part of the natural landscape structure associated with their location. A landscaped pond in a pasture would not be an appropriate means for handling storm water management whereas such a feature might be quite appropriate in a neighborhood.

## Traffic Control Devices

Traffic control devices including signs and traffic barriers should not detract from or overwhelm the visual character of the natural or constructed landscape.

### ■ Appropriate Traffic Control Devices

When considering traffic control devices, compatibility can be achieved by selecting appropriately scaled signs, barriers, signal control boxes, and other devices designed to be no larger than necessary and to have minimal visual contrast with the setting. For example, traffic signs at an intersection may be smaller on an intersecting lower volume street than on the higher volume cross street. In terms of color, consider using dark colors in a forested environment for the device frames or support structures as a means of reducing visual contrast.

### ■ Integrating Regulatory Signs

Regulatory signs are guided by the manual of Uniform Traffic Control Devices. Along a byway, warning signs and reflective markings are often used as a means of warning travelers of upcoming curves, speed zones, intersections, and steep grades. It may be possible to reduce the number of signs by using other techniques for warning drivers. In addition, the cumulative visual impact of necessary signs can be reduced by specifying dark colors on the back of the signs similar to what is done on National Park Service roads, such as the George Washington Parkway.

### ■ Preserve, Maintain, and Enhance

Where some choice in placement is available, traffic control devices should be planned to preserve, maintain and enhance the character-defining features of the byway. Signal control boxes, for example, should be placed in a visually unobtrusive location. Likewise, traffic control devices should not impede pedestrian or bicyclists' use of the road corridor where project goals seek to accommodate these modes.

## Utilities

Utilities should be placed or relocated so as to preserve or enhance the character of the byway.

### ■ Overhead and Underground Utilities

When work on overhead or underground utilities is required, compatibility can be achieved by finding ways to minimize tree removal and pruning requirements. Spacer bars can be specified that minimize the width of the required clear area. These bars hold individual utility wires together as a single unit without touching and can reduce the right of way clearing requirements.

### ■ Limitation of Underground Utilities

Requests for underground utilities are often made for scenic byways. Underground placement of electric, telephone, and cable utilities can be cost effective within towns and built up areas when coordinated with an ongoing construction project. Problems can occur, however, if plans call for adjacent property owners to upgrade their service connections at their own cost and if they are unwilling or unable to do this. This is often the biggest constraint to underground placement of utilities.

### ■ Minimizing Visual Intrusion of Lines

It is also possible to minimize the visual intrusion of overhead utility lines by moving utility poles to the rear of building lots, by adjusting the location of poles to avoid having to compromise specimen trees or obstruct attractive views, or by consolidation of lines on a single pole.

A useful reference for utility issues is SHA's "Design Guidelines: Utility Coordination Using Thinking Beyond the Pavement Principles."

## Landscape

Natural landscape features, particularly native and traditional plant materials and tree cover, should be preserved and maintained to support the visitor's experience envisioned in designating the byway.

### ■ Landscape as Screening Device

Landscape materials may serve as a useful screening device to accomplish enhancement goals for the project.

### ■ Landscape as Contributing Resource

In historic areas, street trees, stone walls, and gardens are often associated with a listed site and should be preserved as a contributing resource.

*SHA's Office of Traffic and Safety and Maryland Department of Tourism have initiated an effort to relate all way-finding and directional signs to themed travel routes, rather than to specific destinations or attractions. One goal of the program is to reduce sign clutter. Here are photos of signage at Havre de Grace before and after implementing this approach.*

### ■ Landscape Can Help to Calm Traffic

Landscape designs may serve as an important tool to accomplish both safety and traffic calming objectives. Street trees narrow the look and feel of a roadway environment and increase the amount of "visual friction" along the roadside leading drivers naturally to slow their operating speed.

### ■ Native Plants can Address Erosion

Plantings of roadside grasses or native ground covers may be used to address erosion problems on shallow slopes. Erosion problems on steeper slopes should be addressed, where applicable, by the planting of vines, ground cover, or other lower-growing herbaceous or woody plants.

## Bridges and Small Structures

If a bridge or small structure is considered a character-defining feature of the byway, it should be preserved through maintenance and repair if possible.

When a bridge must be replaced, compatibility can be achieved by replacing the structure in kind with what was originally there or by reconstructing a bridge with similar types of details. If, however, the existing bridge is of a style that detracts from the byway's character, a replacement bridge can enhance the byway by selecting a design that is more compatible with the character of the byway.

### ■ Replacement Bridge Design

For an example of a design detail that could enhance a replacement bridge design, one might use the two tube open steel bridge rail developed by the Wyoming DOT or a Texas Type C411, crash tested for urban streets with 45 mph speed



limits or less. The Texas rail looks like open concrete rails with parapet wall openings and is particularly useful for recreating the appearance of historic bridge rails. The open steel bridge rail improves views to the waterway below.

#### ■ **Visual Compatibility of Bridge Abutments**

Greenways and trails are often an integral part of a byway travel experience. Bridge abutments should be designed to be visually compatible with the rock types and soil color of the adjacent streambank. Form-liners can be used on concrete walls to achieve an attractive design at less cost.

## Signs

Signs should be limited in number and size to be effective in communicating necessary information while minimizing their impact on the scenic and other values of the byway.

### Guidelines for Compatible Signage

- Signs should be appropriately sized for the design speed of the road.
- Signs should be consolidated where possible to minimize sign clutter and a proliferation of sign poles.
- Existing billboards should be considered for removal to improve the scenic quality of the road.
- New billboards are not allowed to be permitted or constructed along designated scenic byways that are on the National Highway System or old Primary system.
- Local planning and zoning officials should be included in project working groups to coordinate project strategies for signage with local jurisdictions' codes and enforcement plans.

## Lighting

Street lighting where installed along byways should minimize glare and light pollution. Light standards should be compatible with the character of the area being served and be scaled to serve project goals, whether for pedestrian or vehicular use.

#### ■ **Use of Street Lighting**

Street lighting may be required along byways where necessary at major access points, where there are security problems or poor vertical and horizontal alignments or when traffic accident data or traffic volumes warrant street light installation.

#### ■ **New and Replacement Street Lighting**

New and replacement street lighting should be scaled appropriately to meet project goals.



*Increasing development pressures have resulted in the addition of turn lanes along the Historic National Road. The two-lane cross-section with narrow shoulders is a character-defining feature of this portion of the National Road. As pavement is widened it affects the perception of the road as a byway.*

#### ■ **Minimizing Light Pollution**

New and replacement lighting along scenic byways should use full cut-off optics luminaries to minimize light pollution.

## Access Management

Approval of access permits and decisions regarding requirements for acceleration or deceleration lanes should be made carefully taking into consideration the importance of maintaining and enhancing the character-defining features of the roadway.

#### ■ **Access Management Decisions**

Access management decisions should be made in coordination with local planning officials as they affect local land use.

#### ■ **Adjusting Accel/Deceleration Lanes**

It may be desirable to shorten or narrow acceleration and deceleration lanes to maintain character-defining features of the roadway. Field observations may be very useful to determine if a reduced acceleration and deceleration lane will suffice to meet project needs.

For example, Anne Arundel County denied access to a large planned unit development in South River Colony onto Brick Church Road in order to preserve the character-defining features of this scenic road and to focus circulation and access to Routes 214 and 2. In the county's Martha's Vineyard subdivision off of Mill Swamp Road, acceleration and deceleration lanes were reduced in size to protect the character-defining features of this scenic road and to reduce the need for grading which would have diminished the scenic qualities of the road.

## Roadside Enhancements

The roadside enhancement projects that are likely to be constructed within SHA right-of-way include measures that support the byway travel experience or make those portions of the byway that no longer retain their intrinsic qualities more attractive. At a minimum, any work should not overwhelm nor detract from the distinctive character of the roadway and should be compatible with the existing road features in size, scale and proportion.

### ■ Landscape and Signs

Landscaping and appropriately scaled signs can be used to create a gateway to a community helping to establish the community's sense of place.

### ■ Interpretative Signage

Interpretive signage can be added to pull off areas to tell the stories of the byway and provide information about the byway's significance.

### ■ Native Plant Materials

Where appropriate, the use of native plant materials in natural planting patterns and historically traditional plant materials, especially street trees, should be emphasized to enhance the character of the roadway.

### ■ Special Decorative Treatments

In urban areas, where possible, consideration should be given to using special decorative treatments that reinforce the character of the area. For example, higher quality materials can be used such as brick or decorative stone work for bridges, overpasses, and sidewalks, etc.

## Bicycles

The accommodation of bicycles on Maryland's byways often presents challenging issues. On the one hand enjoying a byway while traveling by bicycle can be very appealing. On the other hand, an important character-defining feature of many byways is the size of the cross-section which may change substantially if bicycle lanes are added.

SHA recently adopted a policy whereby the agency, "shall make accommodations for bicycling and walking a routine and integral element of planning, design, construction, operations and maintenance activities as appropriate." SHA's policy also states that a "minimum four (4) foot-wide outside shoulder is preferred on all roadways with open sections." This policy may apply when doing resurfacing work.

Decisions regarding requirements for bicycle accommoda-

tions should be made carefully taking into consideration the importance of maintaining the character-defining features of the specific scenic byway. Many byways include rural roads with a narrow scale, often with a close proximity of trees and/or other landscape features. In this situation, a design waiver may be requested to minimize or eliminate the proposed bike lane in order to lessen the potential adverse effect. Waivers are especially appropriate when bicycle improvements are not identified as a priority in the stateway bicycle plan, and where the additional lane width would be isolated and therefore raise false expectations of the type of conditions that should be expected by the bicyclist. Byway sections through towns with a narrow street or buildings close to the right-of-way line (such as New Market or Boonsboro) may also require a waiver.

### ■ Reduced Accel/Deceleration & Bike Lanes

Concerning proposals for acceleration/deceleration lanes combined with bike lanes along rural byways with a narrow scale, a design waiver should be considered to shorten, taper or lessen the width of acceleration and deceleration lanes as well as lessen the width or eliminate the proposed bike lane in order to maintain the byway's narrow scale. Field observations may be useful to determine if a reduced acceleration/deceleration lane width will meet bicyclist needs.

### ■ Bike Conditions and Scenic Features

For those locations where bicycle accommodations are a priority and conditions are poor, efforts should be made to both improve bicycle conditions and maintain the character-defining features.

## Maintenance

A byway should receive the level of maintenance necessary for safe public travel by auto, bicycle and agriculture-related equipment while still preserving the character-defining features of the route. The primary purpose of maintenance practices along state highways, including scenic byways, is to maintain appropriate clear areas and sight distances, and remove rapidly decaying and dying branches and trees to minimize the hazard of falling branches along the roadway and along utility easements. Along byways, maintenance programs can also beautify the roadway and roadside environment. Suggestions include:

### Guidelines for Maintenance Along Scenic Byways

- Adjust mowing practices to maximize flowering times of roadside wildflowers.



**Strategically Chosen Maintenance Practices Can Enhance a Byway:** *Grant funding is being pursued to prepare and implement landscape design plans for this area near Clarysville Bridge along the Historic National Road. Invasive plants need to be removed and a new sustainable plant community should be established that reflects the landscape character that would have been found here in the mid-19th century heyday of the National Road.*

- Develop landscape design plans that encourage natural revegetation to minimize mowing requirements.
- Encourage private citizens within towns to adopt the maintenance program for planting areas at community entrances, medians, street tree planting beds, and roadside pull-offs.
- Where feasible, when bridge repairs are necessary, they should be made in such a way as to preserve the scenic and/or historic qualities of the structure.
- Where feasible, when a guardrail is replaced along a byway, it should be of a material that enhances the roadway.
- Tree removal and/or pruning should be selective and follow good arboricultural practices in order to maintain the character of the roadway. Selective tree cutting may be deemed a necessary periodic maintenance technique to maintain the scenic vistas of a designated roadway. Such a determination should be made in consultation with SHA's byways coordinator.

## Management of Publicly Owned Land

Publicly owned land adjacent to a byway should be managed in a manner that supports preserving, maintaining and enhancing the byway.

- SHA or other state agencies that own land adjacent to the byway should consider retaining ownership to maintain the current condition of the land.
- If SHA or other state agencies dispose of such land, they should consider placing a perpetual easement on the land prior to sale that will not allow uses or visual intrusions that would degrade the character of the byway.

# Appendix

## Maryland State Highway Administration CONTEXT SENSITIVE SOLUTIONS (CSS)

### Policy Framework

Context Sensitive Solutions is a collaborative, interdisciplinary approach to developing and implementing transportation projects, involving all stakeholders to ensure that transportation projects are in harmony with communities and preserve and enhance environmental, scenic, aesthetic and historic resources while enhancing safety and mobility.

### Community Satisfaction

SHA will develop projects that are deemed by the community to meet community transportation needs, contribute to community character and values, and are seen as having added lasting value to the community while minimizing disruption to the community to the extent reasonable.

### Mobility and Safety

SHA will develop projects that enhance mobility and safety for users of all modes.

### Environmental Stewardship

SHA will develop projects that protect and enhance all aspects of the natural and human environment, including the scenic, aesthetic, historic and natural resources of the area.

### Project Delivery Process

SHA will deliver projects in collaboration with a full range of stakeholders to establish and achieve transportation, community, and environmental goals within the programmed budget. The process will be tailored to each project and the transition between phases, from planning through construction, will be seamless.

### Economic Impact

SHA will develop projects that have positive economic impacts on the surrounding community and as part of a regional economic development strategy.



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