

preservation of landscape features

Charles R. Anderson
Maryland Department of
Transportation

Preservation of landscape features is not a new notion. "Roadside development must conserve, enhance, and effectively display the natural beauty of the landscape through which the highway passes." That statement was issued 40 years ago by a joint committee of the Highway Research Board and the American Association of State Highway Officials to define the subject of the committee's concern.

Although preservation of landscape features is not a new idea, it is certainly a more important consideration today than it ever was before. Why? For one reason, we have denuded the earth and reworked natural features in an unnatural way to the point that landscape features are so scarce that they must be given more than token consideration. They must be given an increasingly higher weight among the various considerations in locating and designing highways.

It is one thing to be aware of landscape features; it is another thing to do something about their preservation. What are some specific landscape features? What is the first step toward their preservation when a highway is planned?

An inventory of all natural and scenic features should be made during the early planning and location phases of highway development. If an existing highway is to be improved, the inventory should be made before design starts. The inventory should gather available data from other agencies and field check and expand those data as necessary. Field trips with natural resource personnel may also be necessary.

The landscape features to be inventoried will vary depending on the region of the country. Features may be large or small areas including individual features such as specimen trees or rock outcrops.

Woodland is important because it takes several generations to create. Once destroyed, it may never be reestablished. Not only do woodlands provide scenic beauty but they also aid highway drainage and abate, screen, or reduce air, visual, and noise pollutants. Farmland and changes in types of vegetation should also be noted in the inventory, and existing species of plants should be recorded for future reference.

Every effort must be made to minimize any alteration to the natural state of streams, rivers, and other surface water features. They should be treated as inviolable features that are either preserved in their natural state or disturbed only with utmost care. Retaining the natural habitat for fish and wildlife in and along such waters is extremely important. Shortening the length of a meandering stream steepens the stream gradient, increases water velocity, and causes downstream troubles.

More consideration should be given to maintaining water courses in their natural channels rather than to placing them in man-made structures or channels. Bridges and in special cases viaducts may be required to retain streams and stream valleys in their natural state and to ensure the highway's compatibility with the natural environment. Artificial channels have been constructed for great distances in the past, and that action has resulted in immediate destruction of the natural ecology of streams. Such artificiality is in no way compatible with life systems and must be avoided as much as possible. Instead of solidly paving stream beds, vegetation, gabions, riprap, and other natural or near natural liners should be used. We must find ways to expand the use of vegetation in drainage courses. By not using natural means, we forego great absorption and energy-dissipation benefits that are provided by vegetation (grass, trees, and shrubs).

Wetlands, one of the most important natural resources, should be included in the inventory. In the past, some people thought of wetlands as wasteland and considered them to be of value only if they were filled in for some man-made use. Today we realize their great value as habitats for basic flora and fauna systems and as nature's aquifer. Their preservation is paramount.

Floodplains must also be respected as never before. As man continues to pave so many natural water-absorbing areas, the floodplains are needed more than ever. If a highway must pass through a floodplain, high viaduct sections should be used so that harmful effects on the water table will be minimized and plant and animal growth can occur beneath the structure. Permitting some sunlight and rain beneath the structure is beneficial and can be accomplished with separate structures for each direction of traffic. Along a section of Interstate highway in Baltimore, we are also placing viaduct structures at different elevations.

Special attention should be given to inventorying urban and suburban landscape features such as vegetation and near or distant views of lakes, rivers, or ocean fronts. Urban highways are usually thought of solely as hard-surfaced routes along which buildings are placed. But those highways provide a great opportunity to protect the environment and to provide open and green spaces so desperately needed in urban and suburban areas.

Adequate and generous acquisition of land is required to preserve landscape features and to create necessary buffer and transition zones between the highway and adjacent areas. Wherever possible, right-of-way acquisition, particularly in wooded areas, should not be limited by the requirements of construction but should include a natural buffer strip. Too often, the policy is to acquire only the construction area—a policy that may be detrimental to the environment and the environmental compatibility of the highway. We should think of highways as a means to provide open space and greenery and not just paths on which motor vehicles travel. Land acquired along highways should serve a dual purpose: scenic beauty to motorists and open space or greenbelts for the communities traversed. Costs for acquiring those scenic lands are a logical highway construction cost and should be treated as such.

The toll section of Interstate 95 in Maryland traversed scenic woodlands, but the state owned only a narrow band of land beyond the construction area. Very little of the natural beauty lay within that band. Five years ago, the state, realizing that some day the area between Baltimore and Philadelphia would be developed, started using toll funds to acquire scenic lands along the entire expressway. I am sure the public will appreciate the natural beauty along this road in future years and will realize the wisdom of that action.

Highway alignments often sever properties, resulting in remnants of land that the state is compelled to acquire in the initial taking. Those parcels may have little value to the original owner but may be very valuable to the highway department because they

have scenic qualities, may be excellent buffers between the traveled lanes and adjacent properties, and may be good sites for future rest areas or overlooks.

In Maryland, a procedure was established several years ago to ensure the retention of any such land parcels until the Bureau of Landscape Architecture inspected the land and determined whether it has any existing or future landscape or scenic value. If it has, the parcels are included as part of the highway right-of-way. We have acquired several hundred acres of scenic land each year by this method.

The landscape features preserved during location and design must be protected during construction. That means protecting existing growth from excessive clearing or fire and protecting stream beds from equipment damage, pollutants, and sediment.

Sediment from highway construction can destroy streams, woodland, wetlands, and wildlife habitat. That destruction is unnecessary, for we have the technical capability to prevent it. Sediment control should not be the sole responsibility of construction personnel. In Maryland, we consider it to be a design and not a construction problem. The designer prepares the plans with control measures clearly shown and addressed in the specifications. In this way, we have done most of the job in advance so that it will be a relatively routine matter during construction.

Landscape features preserved during location, design, and construction should be given proper care during maintenance. Scenic views should be kept open by selective thinning, stream debris should be removed, and other maintenance should be performed to encourage or help nature.

Preservation of landscape features is not limited to highways on new locations. As time goes on, we will be providing fewer highways on new locations and upgrading more highways on existing locations. We must make every effort to preserve landscape features in the upgrading process. That may mean building of retaining walls, acquisition of additional right-of-way, or restoration.

We must maintain continual contact with all state and local planners and natural resource agencies so that we are aware of their plans and they are aware of ours. Only through such an awareness can we see beyond the roadway right-of-way to the entire environmental picture. We should be ready to give our expertise and to receive theirs. We often hear about the use of a team of various disciplines within a highway organization to develop a highway; we now have an opportunity to be part of a team to preserve the environment.