

will develop or that our harsh winters require a fishing lake to be 20 ft deep if winter-kill is not to be a problem or that lakes that produce duck habitat will not necessarily produce fish. But after working with the conservationist for a number of years, the highway engineer learns either by his own experience or by advice from his predecessor that "these people" know what they are talking about.

In addition, they are backed by an experienced technical staff and top administrators who are prepared to go to court if necessary. Thus, for the past 17 years Wisconsin has in effect carried out the spirit if not the letter of the National Environmental Policy Act long before that act existed.

recreational values

David L. Jervis

U. S. Department of the Interior

The human need for recreational areas is a function of many factors such as population density, health, amount of leisure time available, and individual genetic makeup and social values. The specific motivations for recreation can be a social occasion, a need to escape from pressures, an attraction to an outstanding resource, or a desire to learn or relearn about nature. Whatever the motivation or the type of activity or area, our increase in numbers and our ever-urbanizing life style create an urgent need for establishing and preserving recreational amenities so that people—especially those in cities—can recreate (more properly pronounced re-create) and maintain a sense of balance and well-being away from surroundings that are increasingly artificial and in which they are less and less self-sufficient.

Highway planners are involved with recreation values in both positive and negative ways. The positive aspects include provision of reasonable and necessary access to recreation areas or of highways for pleasure driving. The negative aspects arise primarily from situations where someone took too little care to avoid imposing the physical presence of a highway in or near an area that should have been kept in a more natural state or where too much access caused an area to deteriorate from overuse.

I would like to propose three action strategies relating to recreational and aesthetic values. Two involve areas of conflict between those values and highway programs, and the third involves an area of more common goals.

1. The first and most straightforward strategy is simply to avoid highway alignments that degrade recreation resource areas. The Federal Highway Administration has within the past year or two developed administrative procedures to carry out the intent of the National Environmental Policy Act of 1969 and Section 4(f) (as amended) of the Transportation Act of 1966. The impacts of those pieces of legislation and pertinent court decisions are just beginning to be felt, and it is hoped that the incidence of highway projects affecting publicly owned recreation, wildlife, and historic areas will drop significantly. The values of recreation areas cannot be quantified in monetary or other terms that allow one to numerically balance them with highways in a benefit-cost ratio or other mathematical mechanism. Recreational resource values must be judged subjectively on the basis of their social merits and the degree to which retention of such areas is in the best public interest.

2. The second strategy concerns not recreation but aesthetics in general. It is that aesthetics and geometrics often do not mix, and aesthetics should occasionally take precedence. Examples of situations I have in mind are (a) projects in which a row of trees or some other natural feature must be removed or degraded not so that a roadway can be built or widened but that requirements for obtaining federal-aid funding can be met or (b) projects in which deep cuts must be made so that an existing roadway can be replaced by one having a higher design speed.

I understand that the geometric standards used for federal-aid funding and other purposes are contained in a publication of the American Association of State Highway

Officials called the AASHO Blue Book. If I may be permitted a small sacrilege, I would like to question the breadth of thought that has gone into the Blue Book and geometric standards in general. It is a rather sensitive area, for highway safety has been awarded sainthood by so many. My views involve the question of how far society is obligated to go to protect the individual against his own negligent conduct or that of others. Drivers impaired by alcohol or by other conditions, speeding, and inadequately maintained vehicles are nonhighway factors leading to accidents. Is it because of those factors that geometric standards are as rigid and inflexible as they now are? Could there be situations where we should tolerate that row of trees or that winding road because the retention of desirable aesthetic values outweighs the lower safety factor? I think there are. I would encourage highway engineers to mull over that idea when they put on their AASHO hats and sit in session. I cannot speak for the Department of the Interior on the question of balancing accident potentials against aesthetics, but my own answer is, "Yes, I am willing to live with the knowledge that compromising geometric standards without altering other factors such as degree of speed enforcement or vehicle design will cost in terms of accidents and human suffering. But the retention of aesthetic values affects a vastly larger number of people and is worth that price."

I do not mean to be arbitrary on this point at all or to give you the impression that I have gone off the deep end for "poor" highways. I do urge, though, that highway engineers give thought to the degree to which they pursue geometric standards and consider whether in a wider view more discretionary latitude should exist in providing for natural beauty and aesthetic values. It seems to me that an undue share of the burden for highway safety is being assumed by highway planners, with the result that geometrics has been pursued beyond a reasonable point.

3. My third strategy relates to pleasure driving—the use of highways and byways for recreational purposes. Driving for pleasure is one of the forms of outdoor recreation in greatest demand today. The Outdoor Recreation Resources Review Commission, which was established by Congress in 1958, reported that in 1960 driving for pleasure was the most popular outdoor recreation activity in the nation. We can say with reasonable certainty that it will probably be among the most popular outdoor activities through the year 2000. The preliminary results of the Federal Highway Administration's nationwide personal transportation survey showed that 33.3 percent of automotive travel is for social and recreational purposes, including vacations, visiting friends and relatives, and pleasure rides. Even after mileage by persons wishing to "make time" is discounted, there remains an appreciable amount that is driven each year by people who are not in a hurry and who view their drives in whole or in part as recreational experiences. So the third action strategy I offer is to consider what should be done to provide greater pleasure driving opportunities.

During the years 1965-67 the then Bureau of Public Roads conducted a study of scenic roads and parkways. The proposed scenic road system was not implemented; it was expensive and placed too much emphasis on road construction and not enough on scenic enhancement. In the Department of the Interior, we view pleasure driving as a recreation activity and are more concerned with the scenic corridor through which travelers pass than with the roadway itself; the roadway is simply a means to an end. Why not shift the emphasis in meeting pleasure driving needs from road-building to preserving and enhancing the corridor that travelers see and to emphasizing the natural and historic values of the area? We can all think of some pleasant secondary or possibly even primary roads we have traveled that would be worth preserving for such use.

Aspects to be considered in planning such leisure driving facilities—which would have to be limited to only a few of America's byways in each state—include preserving scenic corridors through easement or other means, developing complementary facilities such as trails and picnic sites, documenting historic or other heritage areas, and controlling traffic volume and speed. As indicated earlier, the engineer would have to leave intact that row of trees or that winding roadway and to rely on speed limit enforcement as the means of safety control.

To summarize, I propose action strategies with respect to recreation and aesthetic values:

1. Avoid highway alignments that would degrade recreation resource areas;
2. When aesthetics and geometrics do not mix, occasionally give precedence to aesthetics; and
3. Consider what should be done to provide greater pleasure driving opportunities.

historic and prehistoric values

Joan E. Freeman
State Historical Society of Wisconsin

Interest in preserving historic and prehistoric sites has been increasing in recent years. That may be partially due to increased mobility of the population. More people visit restored historic sites throughout the country and become more interested in local history. Urban sprawl also increases concern for both the physical and cultural environment. People in urban areas are more vocal about destruction than those in rural areas simply because change is more rapid in the urban areas.

It is impossible to establish guidelines as to which sites need protection because personal views vary. Local people may be concerned about the destruction of Indian mounds, for they feel that the mounds are a local asset. A study of all mounds in the state may show that a particular mound group is not highly significant. However, both state and local views must be considered before changes are made in the land.

For environmental impact statements that must now be written for federal-aid highways, historic and prehistoric sites must be evaluated if they are in the path of a highway. Sites listed in the National Register of Historic Places have prime consideration because they have been declared to be of national, state, or local significance.

All states are working as fast as possible to list and evaluate sites for possible inclusion in the National Register. There are many types of historic sites ranging from houses that are still standing and Indian burial mounds to historic and prehistoric sites that have long since disappeared beneath the farmer's plow. As an archeologist I am more attuned to those sites that now appear as a corn field, a pasture, or fallow land. I feel that those nonvisible sites are more easily neglected than others. There are no written records by Indians as to the location of prehistoric sites and often few written records on historic sites that are now partially destroyed.

Archeologists are hesitant to evaluate sites. They can make a few statements about a prehistoric site from surface collections of pottery and arrowheads, but only full-scale excavation can tell the significance of a site. Because archeological excavation actually destroys a site, we archeologists are perhaps more concerned about destruction by other means than are most people.

Another problem is that archeologists do not know the location of every prehistoric site in a state. In Wisconsin we have records of site locations, but only an exhaustive field survey will reveal the location of every site. Last summer we initiated the first survey for prehistoric sites for evaluation for the National Register. In 5 weeks, about 55 miles along the Mississippi and Wisconsin rivers in Crawford County were covered. About 70 burial mound groups and some 50 camp or village sites were located. Of these, 3 were felt to be of such significance as to be nominated for the National Register.

Although only 3 sites may be placed in the Register, there are many sites in the area that could be destroyed by construction. Archeologists are concerned about all sites because each site has a unique combination of artifacts that show the unique human activities that were carried on.

When there is highway construction and a site cannot be preserved we do have a backup plan in the highway salvage program, which makes it possible for data to be collected through excavation. Although the Federal-Aid Highway Acts of 1956 and 1966 provide for the highway salvage program, it has not been established by all states.

Those who are concerned with environmental impact statements should check at an early date in planning with agencies and people who are knowledgeable about the state's