

sions as witnesses or advocates. In highly controversial cases, the agency prepares and presents a formal case under the direction of an attorney.

The state has attempted to stay clear of purely local issues and to confine itself to aspects of a project over which it has specific regulatory control such as water and air quality. However, where it appears that a development will have effects reaching beyond the locality, the agency may intervene and has done so when it was felt that a development would have serious adverse impact on a state road, scenic area, or stream. Usually the agency simply raises issues to alert the community and other parties of interest that an application may present problems that should be considered such as effect on local roads or school facilities. There have been a number of instances where towns have actively participated in the evaluation of land use proposals after having an issue raised by the state.

In addition to an Act 250 permit, a developer or subdivider usually has to obtain permits from other state agencies that have specific statutory jurisdiction. Although technically these agencies' jurisdictions overlap with those of the Act 250 agency, in practice, as mentioned above, district commissions have accepted their reviews as evidence of satisfactory compliance with Act 250 criteria pertaining to the same subject matter. Thus, for instance, if a subdivider obtains a subdivision permit from the agency under the subdivision regulations, commissions have found that the applicant has satisfied the sewage disposal and water supply requirements of the act; and if a subdivision permit has not been obtained, an Act 250 permit may be issued conditioned upon the applicant's obtaining a subdivision permit. Except in unusual instances, the agency does not have any position on whether Act 250 permits should proceed or follow other permits as long as the applicant clearly understands and accepts that they must be applied for and the applicable standards satisfied.

Act 250 has been in effect a little more than 2 years. As of June 1, 1972, 812 applications had been filed with district environmental commissions, and 682 had been acted on. Of these, 27 were denied, mostly for technical deficiencies such as inability to dispose of sewage adequately. The other denials are largely attributable to poor planning or application preparation that could be or has been remedied by modification of the proposed project or development of more comprehensive engineering analysis.

I would like to cite several observations relative to our Vermont experience. The course we have embarked upon is not easy; there are many levels of perception among the citizens of our state. All do not wholeheartedly agree with the primary environmental ethic. Many applaud the principles and decry the programs that bring them into practice. Government itself resists some of the organizational changes necessary to administer these programs. Fair, equitable, and competent administration requires time-consuming dedication and patience from our staff members. Our role is by necessity educational as well as administrative; the innovative nature of our programs means that the latter cannot proceed without the former. In reaching for these novel solutions, we have created some problems, and now we are in the process of rectifying mistakes, upgrading our techniques, and refining our input.

But through it all, Vermonters, from the executive level down to the municipal, believe that their environment deserves a higher priority than it has ever received. Our commitment to a quality environment demands no less than vigilance, energy, creativity, and consistency of belief that is exemplary and forward-thinking. I believe we have put this ethic into practice in Vermont, and I hope this will serve as inspiration to the rest of the country.

biological values

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Since 1953 Wisconsin has had something akin in principle to Vermont's Act 250. At that time the legislature modified existing (state, county, and local) road statutes to in-

clude the then Conservation Department in the agencies to receive formal notice of actions. It quickly became apparent that a specifically designated means of contact between both agencies was necessary, so we designated a highway liaison team of a district engineer and an experienced conservationist who was acquainted with and worked within the district. The district engineer's charge was to protect the environment while building and upgrading the road system. The conservationist's charge was to prevent material damage to fish and wildlife. When the field team was unable to agree on a plan, matters were to be referred to me. In the course of some 15 years, only 3 cases were not resolved in the field, and during that time the entire Interstate System in Wisconsin was planned, designed, and built—in some cases through very fragile environments. For example, any stream that is crossed by I-94 and is less than 30 ft wide is a trout stream of as high a caliber after construction as it was before.

How do we protect these fragile units? We could do so through our many laws. Wisconsin adheres strongly to the trust doctrine for navigable waters, and we could probably arrest contractors or enjoin the Department of Transportation. But you will note my charge was to prevent material damage to fish and wildlife. I have yet to see a roadway built that did not do some damage to some habitat, but in Wisconsin that damage is minimal because the transportation and natural resources departments at the local level planned it that way.

Sometimes plans go awry, of course, and occasionally the game warden may have rather firm words with a contractor or even the project engineer. And occasionally the conservation member of the liaison team leans too heavily on the design expertise of his highway counterpart without really spelling out how a particular niche could be damaged, and then we lose something valuable.

About 3 years ago, the 2 departments by agreement formed an environmental liaison committee consisting of members of their top-level administrative staffs. This group is designed to prevent trouble, discord, and dissension at both field and staff levels and to air problems at an early date. To date it has worked remarkably well.

The Department of Natural Resources found the correlation, collating, and integration of its numerous and sometimes rather separate (or independent) disciplines into one position required the creation of a district impact coordinator. That coordinator consults with all appropriate agencies before commenting on an environmental impact statement for a proposed project.

In addition, the legislature created special statewide integrators. A prime example is the Natural Resources Committee of State Agencies, which handles research on run-off nutrients and salts, special procedures to minimize construction damage in colloidal "red clay" areas, weed and brush control, and statewide interests in matters such as the rather rare projects of the U. S. Corps of Engineers.

Also, local individuals and groups such as the elected Conservation Congress look to our district staff for advice and counsel on proposals ranging from dam construction to highway development. In addition, the Scientific Area Preservation Council has a trained staff of botanists and ecologists who look with jaundiced eye on those types of proposals. Similarly various independent organizations such as the Southeastern Wisconsin Wetlands Association, Nature Conservancy, Trout Unlimited, and many others look to the Department of Natural Resources for information and counsel.

Thus, our highway liaison team, having learned sometimes by bitter experience and hindsight and always by team appraisal, is in a position to weigh and evaluate most of the probable effects on the environment of any proposal to change the physical characteristics of a particular environmental niche. In turn, the district highway engineer and his staff have learned that their counterparts are there not to stop them but to keep things from going wrong.

Something one must see to believe is a district engineer proposing a new corridor through a heavily wooded area and finding that his natural resource counterpart heartily endorses extensive cutting because an overage stand of poplar is involved. Similarly, one should see the shock the district engineer exhibits when he proposes borrow pit lakes and is asked what he is trying to produce—boating ponds, reflecting pools, or fishing lakes? To him a lake is a lake! He is horrified to find that Wisconsin's fertile waters will not keep a reflecting pond reflecting long because a crop of aquatic plants

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

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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