INTRODUCTION

Most people think of aesthetic impact in terms of review of specific project proposals such as construction of dams, roadways (Figure 11.1), structures, or some other massive undertaking involving public or private expenditures and much controversy. The controversy may be generated by the nature of the project or by the landscape on which it may have an impact. This chapter addresses basic legal procedural issues and approaches for reviewing the aesthetic impacts of such projects. Much of the information in the Chapters 9 and 10 is useful because one of the major issues in aesthetic impact assessment is the effect on recognized or sensitive scenic landscape resources. Chapters 12, 13, and 14 will address particular kinds of projects and activities that bring about specific aesthetic impacts on the landscape. That portion of environmental review involving aesthetics is now often called aesthetic or visual impact assessment (VIA). Methods for VIA are becoming well developed and are treated in detail in another volume (Smardon, Palmer, and Felleman 1986).

This chapter will first look at some important court cases and projects that set procedural guidance for review of major federal projects and clarified the issue of standing—who individuals or groups have the ability to intervene to review or stop major projects. Second, the chapter covers major federal and state programs for aesthetic project review. Third, the chapter provides a section on procedural and methodological advances for aesthetic project review.

PROJECT REVIEW HISTORY: DEVELOPMENT OF PUBLIC INJURY AND STANDING

Beginning in 1966 procedural obstacles to environmental suits, such as standing to sue, were reduced. Courts abandoned the requirement that plaintiffs suffer significant personal damages before they had standing to bring a suit. The issue culminated in the U.S. Supreme Court decision in Association of Data Processing in 1970, and now plaintiffs can have standing by proving injury in fact, economic and otherwise. The “otherwise” includes recreational, conservational, and aesthetic harm. The breadth of the Court’s language swung the doors of the federal courts open to individual and organizational environmental plaintiffs.

The Supreme Court stated that, the Administrative Procedures Act allows individuals or groups standing in order to sue for damage to the public aesthetic interest.

The “legal interest” test goes to the merits. The question of standing is different. It concerns, apart from the “case” or “controversy” test, the question whether the interest sought to be protected by the complainant is arguably within the zone of interests protected or regulated by the

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2 Id.
statute or constitutional guarantee in question. Thus the Administrative Procedures Act grants standing to a person “aggrieved by an agency action within the meaning of the relevant statute” 5 U.S.C., s. 702 (1964) ed., Supp IV). That interest at times may reflect “aesthetic, conservational, and recreational” as well as economic values.4

In addition, the plaintiff must assert an injury to a value (“right,” “concern,” or “interest”) that is within the zone of interest protected by law. Especially note that the Supreme Court has further elaborated that this value may be aesthetic, conservational, or recreational.5

STANDING RULE ANALYZED

The test for standing devised in the Mineral King6 case may be legally and administratively desirable, but it causes some serious conceptual problems from an environmental aesthetic perspective. The standing test restated is that one who is “injured” “in fact” also had to prove “injury” by proof of “use” of the area in question.

The first conceptual dilemma is whether individuals have a stake in publicly owned resources, like Yosemite Valley or Mineral King Valley, even if they do not use these areas personally, that is, existence value. Was not the court in the Mineral King (Sierra Club v. Hickle) case really using a personal injury test for a “public” environment? The court’s concept of “use,” to some critics, caters to special interest groups who have caused problems in managing public areas by exerting an excessively unrepresentative influence on managing agencies. Thus the courts have limited the “user” who may claim “injury” to minority special interest groups, even though there may be a larger group (the American public) who may claim injury due to the degradation of the “public” resource and to future possibilities of experiencing the resource in a relatively undegraded state. With the advent of media exposure, through films and documentaries of publicly owned resources, the potential number of indirect public “users” has increased dramatically.

The second conceptual dilemma is that present standing requirements encourage tours, camping, and an unspecified number of uses of a landscape, which may potentially physically degrade the area and/or perceptually degrade it in the eyes of many existing and potential users. In order to have standing to preserve an

area must we degrade the area? The actuality of this happening is minimal, but the logic is nevertheless disturbing.

Professor Stone’s solution to these dilemmas is that natural objects themselves should have standing to sue on their own behalf and should have “rights” of their own. In his landmark paper, Stone (1972) outlined his arguments in detail. It should be noted as an important element in the sociology of law that this paper was purposefully and timely written to influence the Supreme Court justices in their review of Mineral King (Stone 1973, pp. xii–xv).

Stone points out that some natural objects and landscapes are treated differently under common law from other natural objects or landscapes. For instance, river, lakes, oceans, dunes, air, streams (surface and subterranean), and beaches are held in common trust under the “public trust doctrine” for the public to have legal access to or enjoy certain uses of the area. These common trust resources are treated quite differently from natural objects on traditionally private land — for instance, a pond in a farmer’s field or a stand of trees on a suburbanite’s lawn. However, communal resources notwithstanding, Stone, (1973, p. 16) maintains:

None of the natural objects, whether held in common or situated on private land, has any of the three criteria of a rightholder. They have no standing in their own right, their unique damages do not count in determining outcome, and they are not beneficiaries of awards.

Stone laments that even when measures have been taken to conserve natural objects, it is for “our benefit” or “our use,” an anthropocentric philosophy. He advocates that the environment gain recognition for its own injuries through use of a guardian appointed solely to represent its interests. Stone’s arguments have ecological merit in their implications for the “rights” and “benefits” of the environment but do little directly for environmental aesthetics. The reason is that environmental aesthetic values are dependent upon the interaction of people with the environment, that is, we must feel it, see it, experience it, and so on. However, the argument does make sense if we think about how we would be better able to account for cumulative adverse effects (costs) on the environment if it were a holder of rights and could receive awards. Continuing this line of reasoning, suppose we were able to “buy,” in some sense, cumulative “benefits” from the environment in the form of aesthetically pleasing experiences for “consumption” by present and future generations.

As Stone (1973) points out, “traditional legal institutions have a more difficult time ‘catching’ and confronting themselves with the social costs of our activities.” This is why such innovative legal concepts as the “public trust doctrine” and “nature having rights of its own” are needed to enable the legal system to better address (some of the difficult environmental aesthetic valuation issues presented in this book). It is somewhat disheartening that we have not progressed beyond the level of Stone’s thinking in 1972. There have been some uses of Stone’s arguments though, the most famous application appearing in Justice Douglas’s dissent to the Supreme Court decision on Mineral King:

The critical question of “standing” would be simplified and also put neatly into focus if we fashioned a federal rule that allowed environmental issues to be litigated before federal agencies or federal courts, in the name of the inanimate object about to be despoiled, defaced, or invaded by roads and bulldozers and where injury is subject to public outrage. Contemporary public concern for protecting nature’s ecological equilibrium should lead to the conferment of standing upon environmental objects to sue for their own preservation. (See Stone, “Should Trees Have Standing? Toward Legal Rights for Natural Objects,” 45 S.Cal. L. Rev. 450 (1972). This suit would therefore be more properly labeled as Mineral King v. Morton.

There are court cases where the environment has sued on its own behalf, for example, Death Valley National Monument et al. v. the Department of the Interior. Aesthetic issues figured prominently in this case (Figure 11.2), in which disfigurement of desert landscapes from mining activities is one of the major issues. Generally, however, individuals who can document “injury in fact” through actual use of a landscape affected by proposed projects is still required for standing to intervene on behalf of the environment.

FEDERAL AND STATE STATUTES GUIDING AESTHETIC PROJECT REVIEW

Probably the National Environmental Policy Act, which affects federal agency actions and statewide mini-NEPA’s, has had more potential for affecting aesthetic considerations than any other statute. NEPA acts as a wide-ranging net, catching many other appli-

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8Sierra Club v. Morton, 405 U.S. 727, 741 (1972); J. Douglas, Dissenting opinion.
cable statutes when it assesses the environmental impacts of projects and activities. A federal agency not only has to comply with NEPA itself but with many other interconnected federal statutes as well as executive memoranda and federal regulations.

The language in NEPA incorporates aesthetic considerations. The act requires the “Federal government to use all practical means . . . to . . . assure all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings . . . and to . . . preserve important historical, cultural, and natural aspects of our national heritage, and maintain, whenever possible, an environment which supports diversity and variety of individual choice” (emphasis added).

Furthermore to accomplish this, federal agencies are directed to “utilize a systematic, interdisciplinary approach which will insure the integrated use of natural and social sciences and the environmental design arts, in planning and in decision making which may have an impact on man’s environment” (emphasis added).

Besides NEPA itself, the Council on Environmental Quality and individual agencies have regulations that furnish further direction. Most of these regulations produce little specific guidance for consideration of aesthetic effects, if they are mentioned at all. From the authors’ own experience, most agency regulations are given minimal consideration by agency personnel or consultants because of their lack of specificity. Some federal agencies have developed their own methods to facilitate incorporation of aesthetics into their environmental impact assessments or statements as well as into general planning. Some of the leading agencies in this regard are the U.S.D.A., Forest Service (1973, 1974), U.S.D.O.T., Federal Highway Administration (1971, 1981), U.S.D.L., Bureau of Land Management (1975, 1980), U.S.D.A., Soil Conservation Service (1979), and the U.S. Corps of Engineers (Smardon et al. 1988). The U.S. Environmental Protection Agency (1979) and the U.S. Department of Energy (Jones et al. 1975) have sponsored research that may lead to assessment methods. The Stanford Research Institute’s EPA report (Bagley et al. 1973) included an earlier review of many agency procedures in relation to NEPA and aesthetics. A more recent review has been done by the co-author (Smardon 1986).

Some states have mini-NEPA’s or statewide environmental quality/protection/policy acts. Many are similar to NEPA and include language that addresses consideration of aesthetics in impact assessment. State mini-NEPA’s exist for the states of Arkansas, California, Connecticut, Florida, Hawaii, Indiana, Maryland, Massachusetts, Michigan, Minnesota.

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FIGURE 11.2 Mining activity in Death Valley National Monument. Photo credit: National Park Service
Meeting Legal Issues — The National Environmental Policy Act

A few NEPA cases have dealt with substantive aesthetic issues. One such case was Public Service Company of New Hampshire v. NRC.\footnote{Minnesota Environmental Policy Act, Minn. Stat., Ann. ss. 116D.01 to 07 (West 1977 and Supp. 1981).} In this case, the NRC had placed the condition for the Seabrook nuclear power plant’s permits on the rerouting of power transmission lines around the Pow Wow Cedar Swamp (the utility’s proposed route was right through the swamp). NRC justified the rerouting condition in the permit under NEPA because transmission lines through the swamp would cause significant environmental damage to increasingly scarce and valuable stands of Atlantic white cedar, and to the wildlife habitat of this important river-marsh ecosystem. NRC also determined that the 200-foot-high steel lattice work towers would constitute a “visual insult” to the relatively pristine area; and that practical alternative routes existed. Citing NEPA Section 101(b), the court held that: “Once having found that the Commission has jurisdiction over the transmission lines, we think it clear that, under the dictates of NEPA, it was obliged to minimize adverse environmental impact flowing therefrom.”\footnote{Montana’s Environmental Policy Act of 1971, Mont. Code ss. 75-1-101 to 75-1-105; 75-1-201 (1981).} This is significant in that aesthetic issues were directly addressed, and that it was recognized that ancillary parts of projects, such as transmission-line impacts, need to be addressed and mitigated as well.

Under NEPA, court decisions concerning the obligation of federal agencies to evaluate the visual beauty impact of their projects have ranged from requiring thorough consideration\footnote{New Jersey’s Exec. Order No. 53 (1973).} to flat statements such as “aesthetic considerations alone may (not) be used as a basis for requiring an [environmental impact statement].”\footnote{New York State Environmental Quality Review Act, NY Envtl. Conserv. Law ss. 8-0101 to 8-0117 (McKinney 1984).} A fairly recent case illustrates some of the typical problems. In River Road Alliance, Inc. v. Corps of Engineers\footnote{North Carolina Environmental Policy Act of 1971, N.C. Gen. Stat. ss. 13A-1 to 10 (1978).} the plaintiff attempted to compel the...
U.S. Army Corps of Engineers to prepare an environmental impact statement (EIS) in connection with the grant of a permit to construct a barge fleeting facility, or “maritime parking lot,” along the Illinois shore of the Mississippi River north of St. Louis. The Corps conceded that the proposed site and surrounding area “clearly provide some of the most impressive and unique vistas of any area along the Mississippi River.” Opponents of the project wanted a full EIS prepared and not just an environmental assessment, but the judge found that the costs of preparing the impact statement would outweigh its benefits because “aesthetic values do not lend themselves to measurement or elaborate analysis.” In addition to obviously ignoring specific provisions of NEPA, the judge felt that aesthetics was subjective to the perceiver, not subject to rigorous analysis and, as Linder (1990) has suggested, the judge did not feel it was a weighty enough issue to merit preparation of a full EIS. The situation is ironic because at the time this case was in court, the author was developing an elaborate visual impact analysis methodology for the U.S. Corps of Engineers (Smardon et al. 1988). This is a sad commentary on interpretation of acts such as NEPA when judges use their own biases to prejudge substantive issues without knowledge that methods of aesthetic analysis do exist.

LEGAL REQUIREMENTS: SECTION 4(f) LANDS

The Federal Highway Administration (FHWA) has provided much of the funding to states for construction of interstate, primary, and secondary roads, using different cost-sharing formulas. As part of this process, FHWA has had to respond to a number of federal environmental legislative mandates.

The Federal-Aid Highway Act of 1966 which contains Section 4(f) of the 1966 Department of Transportation Act in conjunction with the National Environmental Policy Act provide that no highway project requiring the use of publicly owned land from parks, recreation areas, and wildlife and waterfowl refuges, or any land from historical sites of national, state, or local significance, (called section 4(f) lands) can be approved unless there are no feasible and prudent alternatives to use of such land, and unless all possible planning to minimize harm to such land is taken.

Under federal law, any transportation project that requires the use of “Section 4(f) lands” must undergo a stringent review procedure, provided the lands affected or used are significant in the opinion of the officials having jurisdiction over them. A letter is sent by the project-initiating agency to officials having jurisdiction over these areas, requesting the information necessary to start a formal review process.

The Section 4(f) report will be included as part of the draft EIS required by the EPA. The combined EIS/Section 4(f) statement will then be circulated to appropriate public agencies and private groups for comment. Following the public hearing on the various transportation alternatives, one will be selected for implementation, and a final EIS/Section 4(f) statement will be prepared that responds to all comments received on the draft report and at the public hearing.

Some 4(f) statements were required before NEPA was implemented and set some major precedents in terms of aesthetic impact review of transportation projects. After NEPA, Section 4(f) areas combined with housing relocation had major impacts on the feasibility of highway projects in general, especially in urban areas.

In addition to the statement of significance, those preparing the 4(f) statement must contribute enough information about the area in question to permit those not acquainted with the project to understand the relationship between the proposed facility and the 4(f) area and the extent of impact. In the case of a highway, the federal Department of Transportation requires at minimum the following information:

1. Size (acres or square feet) and location (maps or other exhibits such as photographs, slides, and sketches, as appropriate).
2. Type (recreation, historic, etc.).
3. Available activities (fishing, swimming, golf, etc.).
4. Facilities existing and planned (description and location of ball diamonds, tennis courts, etc.).
5. Usage (approximate number of users for each activity if such figures are available).
6. Patronage (local, regional, and national).
7. Relationship to other similarly used lands in the vicinity.
8. Access (both pedestrian and vehicular).
9. Ownership (city, county, state, etc.).
10. If applicable, deed restrictions or reversionary clauses.
11. The determination of significance by the federal,

\[^{47}\text{Id. at 447.}\]
\[^{48}\text{Id. at 451.}\]
\[^{49}\text{23 U.S.C. s. 138 (1988).}\]
\[^{50}\text{49 U.S.C. s. 1653 (f) (1988).}\]
\[^{51}\text{42 U.S.C. s. 4321 et seq. (1988).}\]
state, or local officials having jurisdiction of the Section 4(f) land.

12. Unusual characteristics of the Section 4(f) land (flooding problems, terrain conditions, or other features that either reduce or enhance the value of portions of the area).

13. Consistency of location, type of activity, and use of the Section 4(f) land with community goals, objectives, and land use planning.

14. If applicable, prior use of state or federal funds for acquisition or development of the Section 4(f) land.

Also required is a description of the manner in which the highway will affect the Section 4(f) land, such as:

1. The location and amount of land (acres or square feet) to be used by the highway.

2. A detailed map or drawing of sufficient scale to discern the essential elements of the highway/Section 4(f) land involvement.

3. The facilities affected.

4. The probable increase or decrease in physical effects on the Section 4(f) land users (noise, fumes, etc.).

5. The effect upon pedestrian and vehicular access to the section 4(f) land.

Another requirement is a specific statement (with supporting reasons) that no feasible and prudent alternative is available as well as information to demonstrate that all possible planning to minimize harm is or will be included in the highway proposal. Such information should include:

1. The agency responsible for furnishing the highway right-of-way.

2. Provisions for compensating or replacing the Section 4(f) land and improvements thereon, including the status of any agreements. (Include agreed-upon compensation, replacement acreages, and type land, etc. when known.)

3. Highway design features developed to enhance the Section 4(f) land or to lessen or eliminate adverse effects (improving or restoring existing pedestrian or vehicular access, landscaping, esthetic treatment, etc.).

4. Coordination of highway construction to permit orderly transition and continual usage of Section 4(f) land facilities (new facilities constructed and available for use prior to demolishing existing facilities, moving of facilities during off-season, etc.).

The most important Section 4(f) case was *Citizens to Preserve Overton Park v. Volpe*, in which the district court granted a motion for summary judgment in favor of the defendants. The question raised in this case was whether the district court should have made its decision on the basis of the administrative record rather than affidavits as it did. Stated another way, can the court find that the Secretary of Transportation was not arbitrary and capricious in determining that there was no other “feasible and prudent alternative” route than the one through the park without reviewing the administrative record upon which that decision was based? The Federal-Aid Highway Act provides:

*It is hereby declared to be the national policy that special effort should be made to preserve that natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites. The Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the states in developing transportation plans and programs that include measures to maintain or enhance the natural beauty for the lands traversed. After the effective date of the Federal-Aid Highway Act of 1968, the Secretary shall not approve any program or project which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local officials having jurisdiction thereof, or any land from a historic site of national, state or local significance as so determined by such officials unless (1) there is no feasible and prudent alternative to use of such land, and (2) such program includes all possible planning to minimize harm to such park, recreational area, wildlife and waterfowl refuge or historic site resulting from such use.*

(Emphasis added.)

The Supreme Court indicated unusual interest in this case by allowing oral argument on petitioner’s request for a stay, which was granted. Right-of-way acquisition was authorized in 1967 prior to the passage of 23 U.S.C. s. 138, and most of it was purchased and cleared. The city of Memphis was paid $2 million for the 26 acres of needed parkland, and $1 million has been invested to acquire a 160-acre golf course. The highway was not built.

In *San Antonio Conservation Society v. Texas Highway Department, Volpe et al.* a case factually similar to *Overton Park*, the state of Texas contended it has the right to proceed with construction of the project in the face of a Supreme Court stay order. Since the states own, build, and maintain the roads, and the federal government only participates in the cost of construction, the question arises: Can a state choose to proceed with

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54 446 F.2d. 1013 (1971).
the project utilizing only state money and thereby avoid federal requirements?

This question was substantively answered in a California case, *La Raza Unida v. Volpe*, which involved the construction of the Foothills Freeway. California highway officials had failed to comply with the NEPA, DOT, and Federal-Aid Highway acts. The court held that the highway project had become subject to federal law at the time the DOT approved the location design for the highway. Federal involvement was deemed to commence even prior to any DOT authorization for federal funding, the event that was considered critical in *Conservation Society*. The *La Raza* court stated:

> [C]ommon sense dictates that the federal protective devices apply before federal funds were sought. It does little good to shut the barn doors after all the horses have run away. If the federal statutes and regulations are to supply any protection at all it must be prior to the time the residents have left and the deleterious effects to the environment have taken place. All the protections that congress sought to establish would be futile gestures were a state able to ignore the spirit (and letter) of the various acts and regulations until it actually received federal funds.

One other Section 4(f) case that the co-author was involved with set a major substantive threshold for adequacy of 4(f) analysis. In the *Louisiana Environmental Society v. Claude Brinegar*, the federal appeals court told the district court and defendants that “appropriate analysis of equivalent magnitude to potential harm” needed to be done as part of the 4(f) statement.

**LEGAL ISSUES: STATE AND MINI-NEPA’S AND PROJECT REVIEW**

At least one case under a state mini-NEPA statute dealt specifically with aesthetics. In *Urban Council on Mobility v. Minnesota DNR*, substantial evidence supported the determination that the highway route selected was superior to routing the highway across a lake because the selected route would have less of an impact on water quality, wildlife habitat, aesthetics, and area quietude.

No state has struggled more consistently with the issues of defining aesthetic standards for project development review than Vermont (Figure 11.3). Beginning in 1971, Criterion 8 of Act 250 required that in the review of proposed developments subject to its regulations, a district commission or the state environmental board must make a finding that a proposed development “will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites or rare or irreplaceable natural areas.” The state is still being assaulted by development, and there is a current effort to prepare proposed guidelines for interpretation of Criterion 8 (Williams et al. 1990).

Section 6042 of the “Capability and Development Plan” adopted by the legislature to implement Act 250 spells out legislative intent in more detail:

**6042. Capability and Development Plan**

**(2) UTILIZATION OF NATURAL RESOURCES**

Products of the land are the stone and minerals under the land, as well as the beauty of our landscape are principal natural resources of the state. Preservation of the agricultural and forest productivity of the land, and the economic viability of agricultural units, conversation of the recreation opportunity afforded by the state’s non-renewable earth and mineral reserves, and protection of the beauty of the landscape are matters of public good. Uses which threaten or significantly inhibit these resources should be permitted only when the public interest is clearly benefited hereby.

**(4) PLANNING FOR GROWTH**

(B) Provision should be made for the renovation of village and town centers for commercial and industrial

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57 446 F.2d 1013 (1971).
60 289 N.W.2d 729 (1980).
61 Vt. Act 250, Title 10, Ch. 151.
62 Id.
development, where feasible, and location of residential and other development off the main highways near the village center on land which is other than primary agricultural soil.

(12) SCENIC RESOURCES

The use and development of lands and waters should not significantly detract from recognized scenic resources including river corridors, scenic highways and roads, and scenic views. Accordingly, conditions may be imposed on development in order to control unreasonable or unnecessary adverse effects upon scenic resources.

The Vermont Environmental Board's summary of the legislative charge also provides guidance to the effort of developing guidelines for Criterion 8:

The term undue generally means that which is more than necessary—exceeding what is appropriate or normal. The word adverse means unfavorable, opposed, hostile. Scenic and natural beauty pertain to the pleasing qualities that emanate from nature and the Vermont landscape. In short, through Criterion 8 the legislature has directed that no project within our jurisdiction be approved if it has an unnecessary or inappropriate negative impact on the enjoyment of surrounding and scenic qualities (emphasis added).

The terms "adverse" and "undue" are further spelled out by the board via the Quechee decision. The process outlined in the Quechee decision requires that reviewers determine first if a proposed project has any adverse effects. In the words of the board, "will the proposed project be in harmony with its surroundings—will it fit the context within which it will be located?" If there are indeed efforts to determine if the impact is adverse, then it must be determined whether or not the adverse impact is "undue." Not all adverse effects are undue. Any of three conditions may make the adverse effects of a proposed project undue: (1) violation of an expressed community standard regarding aesthetics, (2) effects that are potentially "offensive or shocking to the sensitivities of the average person," and (3) failure to reasonably mitigate adverse effects.

Five areas of questioning were identified by the board in an effort to determine if effects of the Quechee proposal were adverse. They are in brief:

1. What is the nature of the project's surroundings?
2. Is the project's design compatible with its surroundings?
3. Are the colors and materials selected for the project suitable for the context within which the project will be located?
4. Where can the project be seen from? and
5. What is the project's impact on open space in the area?

Based on initial guidance and the Quechee regulatory decision, a design issues study committee, under the direction of Professor Norman Williams, is currently developing a evaluative process and guidelines for aesthetic review of projects under Vermont's Act 250.

Another ongoing struggle for clarification of aesthetic standards relates to Maine's Site Location of Development Law. As part of the review process for large new developments (Figure 11.4), the Maine Department of Environmental Protection regulations contain a section on "No unreasonable effect on scenic character." The preamble to this section states: "The board considers scenic character to be one of Maine's most important assets. The Board also feels that visual surroundings strongly influence people's behavior."

The key part of the regulations is the scope of review:

In determining whether the proposed development will have an unreasonable effect on the scenic character of the surrounding area, the Board shall consider all relevant evidence to that effect, such as evidence that:

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Id., p. 18.
Id.
Me. Stat., Title 38, s. 481 et seq.
Maine Board of Environmental Protection.
1. The design of the proposed development takes into account the scenic character of the surrounding area.
2. A development which is not in keeping with the surrounding scenic character will be located, designed and landscaped to minimize its visual impact to the fullest extent possible.
3. Structures will be designed and landscaped to minimize their visual impact on the surrounding area.66

The rest of the regulations contain guidelines for landscaping, parking lots, and planting specifications.

The co-author, Smardon, with Dr. James Palmer gave a informational legislative briefing to a group charged with studying the issue of developing more detailed guidelines in 1989. In 1990 there was a suit pending, Diamond Cove Association v. Board of Environmental Protection et al.,67 which challenged among other things, the scenic impact provision of the site law as an unconstitutional delegation of authority and as unconstitutionaly vague as applied.

As can be seen from the definitional struggles for Vermont’s Act 250 and the Maine’s Site Location and Development Law standards and guidance for aesthetic impact project review for such programs and legislation will continue to be debated at the State level.

**VISUAL/AESTHETIC IMPACT ASSESSMENT: THE STATE-OF-THE-ART**

We have NEPA, mini-NEPA’s, Section 4(f)’s, and development review statutes. The question is: What type of aesthetic analyses have been done, and of what quality? Project site-scale studies have attempted to assess the detailed visual impact of project alternatives in environmental assessments, environmental impact statements, or in other similar studies that include visual impact mitigation. Rarely is any other aesthetic sense than visual dealt with in such studies. The co-authors have examined more than fifty projects in the United States, Australia, Canada, and the United Kingdom.

Project types for which detailed visual impact studies have been done include: coal strip mines, hard rock quarries, oil and gas development, oil pipelines and pumping stations, nuclear and conventional fossil-fueled power plants, refuse-burning power plants, windpower generators, electric power transmission lines, dams and reservoirs, flood control alternatives, coastal structures and dredging, mountaintop observatory, ski area development, highway development, urban development, port development, and industrial redevelopment. This is a limited sample of detailed visual impact assessment reports that have appeared in the literature and are executed mainly by private firms.

<table>
<thead>
<tr>
<th>Agency</th>
<th>Number of EIS's</th>
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<tbody>
<tr>
<td>U.S. Army Corps of Engineers</td>
<td>77 (80%)</td>
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<tr>
<td>U.S. Department of Agriculture</td>
<td>2</td>
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<tr>
<td>Forest Service</td>
<td></td>
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<tr>
<td>Soil Conservation Service</td>
<td>2</td>
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<tr>
<td>U.S. Department of Energy</td>
<td>3</td>
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<tr>
<td>Federal Power Commission</td>
<td></td>
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<tr>
<td>Tennessee Valley Authority</td>
<td>1</td>
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<tr>
<td>U.S. Department of Interior</td>
<td></td>
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<tr>
<td>Bureau of Land Management (OCS)</td>
<td>2</td>
</tr>
<tr>
<td>Bureau of Outdoor Recreation</td>
<td>1</td>
</tr>
<tr>
<td>Bureau of Reclamation</td>
<td>5</td>
</tr>
<tr>
<td>Environmental Protection Agency</td>
<td>2</td>
</tr>
<tr>
<td>Ohio River Basin Commission</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>96</td>
</tr>
</tbody>
</table>

A content analysis of ninety-six EIS abstracts from the Water Resource Abstracts from 1968 to 1977 was done to see the types of aesthetic impacts identified, whether alternatives were considered, and whether measures to minimize harm were considered. The basic results of this analysis can be seen in Tables 11.1 and 11.2. The majority of the EIS’s were done by the Corps of Engineers, which is not surprising since Water Resources Abstracts would key into water resource projects. Fifty-eight percent of EIS’s described adverse aesthetic impacts. The degree of adversity generally increases as you read down Table 11.2. However, the vague and general terms used to describe visual impacts in most cases made judgment almost impossible in regard to severity of visual impact. The reader should also note that very few EIS’s considered visual quality alternatives or detailed measures to minimize harm. Note that the three major types of adverse visual impacts encountered in these EIS’s were: (1) unnatural intrusion of man-made appearance of disfigurement, or the general criterion of naturalness in relation to context; (2) partial degradation, reduction, or impairment of the existing level of visual quality; and (3) the complete loss of the visual resource, whether a natural stream, marsh, stand of trees, and so forth.

What can be seen from this analysis and other reports (Andrews and Waits 1978) is that, procedurally, visual considerations as treated in EIS’s have rarely met the requirements as stated in NEPA and CEQ (Council of Environmental Quality) regulations. Thus, the treatment of visual and aesthetic considerations has not advanced, with a few notable exceptions in cer-
TABLE 11.2 Treatment of Aesthetic Impacts. Source: John Wiley and Sons

<table>
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<tr>
<th>I. Identification of Impacts</th>
<th>% of EIS’s Actual #</th>
<th>Sampled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrichment of Aesthetics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environment unspecified</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Improved view</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Improved aesthetic appeal/improvement in aesthetic conditions/elimination of unsightliness/increase in recreational potential</td>
<td>12</td>
<td>15%</td>
</tr>
<tr>
<td>Subtotal</td>
<td>14</td>
<td>15%</td>
</tr>
<tr>
<td>Adverse Effects on Aesthetics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adverse effects unspecified</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Temporary/short term</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Partial degradation/impairment</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Unnatural intrusion/man-made</td>
<td></td>
<td></td>
</tr>
<tr>
<td>appearance/disfigurement</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Unsightliness</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Scale incompatibility</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Restriction of views</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Complete loss of resource</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Long-term irreversible effect</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Unavoidable adverse effect</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>57</td>
<td>58%</td>
</tr>
<tr>
<td>II. Consideration of visual alternatives/design treatments</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>III. Consideration of measures to minimize harm</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>12</td>
<td>13%</td>
</tr>
</tbody>
</table>

The need for development of VRM systems can be traced to certain public concern with aesthetic and environmental issues related to specific land management activities, for example, wilderness designation (as reviewed in Chapter 9), timber harvesting and strip mining practices (to be covered on Chapters 12 and 13), highway funding and construction (the 4(f) issues covered earlier in this chapter), park maintenance, and so forth. This concern is exemplified by several major federal court cases (see Table 11.3) in the last twenty-five years (Smardon 1982 and 1984). It is also exemplified by several major pieces of environmental legislation that call for explicit consideration of aesthetic or visual resources as part of environmental decision-making. (See Chapters 9–13 and Smardon 1982.)

Development of VRM systems have occurred only recently for five federal agencies in the United States. In fact, most developmental work was done in the 1970s and 1980s. Generally these systems were developed quite rapidly with little time for in-house research to meet multiple-resource management decision needs. However, incorporation of aesthetics into agency decision-making processes was often enthusiastically supported by key agency administrators (Smardon 1982 and 1986).

VRM systems were developed by federal agencies to deal with three classes of problems: (1) visual inventory and analysis systems for large areas needing landscape planning; (2) systems for scoping of potential visual impact or determining thresholds; and (3) systems for detailed evaluation of visual impact.
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Legal Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highway Project</td>
<td>394 F. Supp. 105 (1975)</td>
</tr>
<tr>
<td>Scenic Hudson, New York; Proposed Pumped</td>
<td>354 F.2d 608</td>
</tr>
<tr>
<td>Storage Power Plant</td>
<td>(2nd Cir. 1965)</td>
</tr>
<tr>
<td>Mineral King, California; Proposed Ski</td>
<td>Sierra Club v. Morton</td>
</tr>
<tr>
<td>Resort</td>
<td>405 U.S. 727 (1972)</td>
</tr>
<tr>
<td>Rainbow Bridge; Reservoir</td>
<td>Friends of the Earth v. Armstrong</td>
</tr>
<tr>
<td>Walton v. St. Clair, Minnesota; Boundary</td>
<td>Walton v. St. Clair</td>
</tr>
<tr>
<td>Waters Canoe Area: Mining Activity</td>
<td>313 F.Supp. 1312 (1970)</td>
</tr>
<tr>
<td>East Meadow Creek; Colorado</td>
<td>Parker v. U.S. 448 F.2d 793 (1971)</td>
</tr>
<tr>
<td>Timber Cutting Activity</td>
<td>Cert. denied 92 S. Ct. 1252 (1971)</td>
</tr>
<tr>
<td>Death Valley Monument, California; Proposed</td>
<td>Death Valley National</td>
</tr>
<tr>
<td>Proposed Power Line</td>
<td>Ogunquit, Maine; Dune Reconstruction Ogunquit Village Corp. v. Davis. C.A. 76-1426 (First Cir. April 26, 1977)</td>
</tr>
<tr>
<td>Santa Barbara Oil Spill, California</td>
<td>County of Santa Barbara v. Hickel Civil No. 69-636 D.C. Cal., filed April 14, 1969</td>
</tr>
</tbody>
</table>
TABLE 11.3  Major Court Cases and Hearings Involving Aesthetic Issues. Source: John Wiley and Sons (Continued)

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Legal Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hells Canyon Dams.</td>
<td>Presiding Examiners Initial</td>
</tr>
<tr>
<td>Private Shoreline Development</td>
<td>571 P.2d. 196 (1977)</td>
</tr>
<tr>
<td>McCormick</td>
<td>McCormick et al. v. Lawrence</td>
</tr>
<tr>
<td>Oseetah Lake</td>
<td>83 Misc.2d 64,</td>
</tr>
<tr>
<td>New York; Private Shoreline Development</td>
<td>72 N.Y.S.2d 156,</td>
</tr>
<tr>
<td>Miners Ridge Case</td>
<td>App. Div. 54 A.D.2d 153,</td>
</tr>
<tr>
<td>Wilderness; Proposed Mining</td>
<td>387 N.Y.S.2d 919 (1975)</td>
</tr>
<tr>
<td>Grand Central Terminal; Proposed Highrise</td>
<td>Penn Central Transportation Co. v. New York City; 438 U.S. 124 (1978)</td>
</tr>
<tr>
<td>Green County Nuclear Power Plant</td>
<td></td>
</tr>
</tbody>
</table>

VRM Methods for Landscape Planning

VRM systems were utilized within the Forest Service (1973, 1974) and the Bureau of Land Management (1980) as part of broad regional planning and assessment. In the Forest Service, these exercises are known as regional guides and are prepared as part of the Resources Planning Assessment Act of 1974.70 Regional assessments for BLM were either for special uses, for example, energy development in the state of North Dakota (USDI, BLM and ND 1978), or special areas, for example, the Desert Conservation Area Plan, which covers the southwestern one-third of California.

VRM was utilized forestwide for the preparation of ten-year timber management plans for the Forest Service. These plans were multiple-resource plans that arrayed the major resource groups against different goals of timber output from the forest. Timber management plans are supposed to (but do not always) interface with land use planning for specific geographic subareas of national forests. The VRM practitioners prepared their own visual inventory evaluations, sensitivity analyses, and visual management objectives for these specific land areas (see Figure 11.5). Decisions concerning development and maintenance of the visual management objectives were worked out by an interdisciplinary land use planning team of which the VRM

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practitioner was a member. The ultimate decision regarding visual management objectives rests with the forest ranger or a forest supervisor, depending on the scale of land area involved. Forest Service VRM practitioners also do visual corridor analyses for roads and visual absorption capability analyses for visual impacts for a range of activities.

BLM, like the Forest Service, is heavily involved with permit-processing activity to determine whether private parties should be allowed to do many different kinds of activities on federal lands. These activities include timber harvesting, vegetation conversion, recreational activities, water resource development, energy development and mining activity, agriculture, and range-related activities. For each permit action, both the Forest Service and the BLM need to check the existing visual quality or management objective of the site in question (see Figure 11.6) and do a visual impact analysis via an environmental assessment. A full environmental impact assessment may be needed if the project may cause significant environmental impact or is controversial. Even after the visual impact assessment work is done, visual mitigation work may have to be done to remedy the severity of visual impact. This is the range of situations in which the Forest Service and BLM would use VRM.

The U.S.D.A. Soil Conservation Service (1979) uses its landscape management system (LMS) on a similar geographic range of project scales, from very large to very small, but the activity types are much more restrictive. The landscape resource management system is used for water resource planning projects under the Small Watershed Development Projects Act of 1966, or for local agricultural or soil conservation projects sponsored by a local conservation district. The LMS is used to identify visual resources of a land area that may be affected by planning alternatives, or those areas that need to be considered in an environmental assessment or environmental impact statement. These identified high-priority areas would then be analyzed by a landscape architect.

The U.S. Corps of Engineers has recently developed a visual resources assessment procedure (Smardon et al. 1988). VRAP includes a management classification system (Figure 11.7) that is utilized to map and classify large landscape areas by their inherent characteristics. Such a system would be used for broad brush studies, called reconnaissance studies, that the Corps often does initially, or for management of existing Corps reservoirs and other facilities. As part of VRAP each landscape area or zone ends up with a management objective similar to the Forest Service or the Bureau of Land Management.

Scoping the Visual Impact Assessment

A scoping approach is intended to help agency personnel identify visual effects, if any, that are likely to be significant on a particular project. This identification was intended to help determine the scope of visual impact assessments under NEPA as well as state mini-NEPA’s and to suggest appropriate mitigation measures for study.

CEQ Regulations and Scoping

In 1983 revised regulations were issued for the implementation of NEPA by the Council for Environmental Quality (CEQ). These are designed to increase the usefulness of environmental analysis in project decision-making as well as to reduce the paperwork and delays sometimes associated with the preparation and review of EIS’s.

The regulations employ several means to achieve these purposes. The statute limits preparation of a full EIS to projects that are likely to have significant environmental effects. If the significance of a project’s environmental effects is in doubt, agencies can perform a brief environmental assessment to determine whether a finding of no significant impact (FONSI) can be issued or a full EIS is needed. The regulations also allow agencies to establish categorical exclusions for actions that do not require environmental review except under extraordinary circumstances.

Another set of measures governs EIS preparation. Every EIS is to be “concise, clear and to the point.” To this end, “there shall be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to the pro-

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MANAGEMENT CLASSIFICATION SYSTEM

VISUAL RESOURCE SUMMARY/DESCRIPTION
Complete for each zone

VISUAL RESOURCE INVENTORY/FORECAST

ASSESSMENT SUMMARY
Total assessment value for each zone

ASSESSMENT FRAMEWORK
Each evaluator completes for each zone

PUBLIC ASSESSMENT

MANAGEMENT CLASSIFICATION SUMMARY

FIGURE 11.7 Corps of Engineers Visual Classification System

posed action. This process shall be termed scoping” (CEQ 1979, p. 763).

A similar consideration applies to mini-NEPA’s as well. The following section outlines New York State’s visual scoping process under the state’s Environmental Quality Review Act. New York has one of the most comprehensive scoping approaches of all the states, and the basic forms and processes are broadly applicable.

New York’s State Environmental Quality Review Act: Visual Scoping Process
The New York State Environmental Quality Review Act (SEQR) process calls for an EIS when an action may have a significant effect on the environment. The visual aspects of the environment, both manmade and natural, are an important resource value. It is commonly held that determining significance based on aesthetic values is hopelessly subjective. Thus, one is discouraged from addressing the visual resource when considering potential environmental effects.

The following regulatory guidelines offer a model process by which to preserve and enhance the visual resources of a community. The process is flexible, recognizing the inherent diversity in community values across the state. The process provides simplified, practical tools for a lay person to evaluate potential visual impacts and make a defensible determination of significance under SEQR. There are three basic stages:

Stage 1: Conduct an inventory of visual resources to establish or clarify community values, policies, and priorities related to existing visual resources before controversial projects arise.

Stage 2: Establish practical visual criteria to guide decisions related to the undertaking, funding, or approval of future projects.

Stage 3: Use the visual-environmental assessment form addendum to supplement SEQR’s full Environmental Assessment Form (EAF) and focus on a project’s potential visual impacts. Such impacts may require preparation of a draft EIS. The form is an orderly method that can be used to support a determination of nonsignificance.

Stage 1: Suggested Visual Inventory Process
A. Identify Community Visual Resource Values
1. Describe and define the general character of the existing area.
2. Document visual resource and/or visually sensitive land including:
   a. State parks or state forest preserves, municipal parks.
   b. wild, scenic, or recreational water bodies designated by a state government agency.
   c. publicly or privately operated recreation areas.
   d. publicly or privately operated areas (including areas used for recreation) primarily de-
voted to conservation or the preservation of natural environmental features.
e. hiking or ski-touring trails designated as such by a state or municipal government agency.
f. architectural structures and sites of traditional importance.
g. historic or archeological sites designated as such by the National Register of Historic Places.
h. parkways, highways, or scenic overlooks and vistas designated as such by a federal, state, or municipal government agency.
i. important urban landscapes including visual corridors, monuments, sculpture, landscape plantings, and urban "green space."
j. important architectural elements and structures representing community style and neighborhood character.

B. Public Participation
1. Notify the public of the proposed inventory process and its purpose.
2. Conduct a survey of local resident/viewer perceptions:
   a. identify positive visual attractions.
   b. identify visual detractors or "misfits" (car dumps, gravel pits, waste disposal areas, and so forth).

   Results of the survey should indicate a preliminary consensus of the public's perceptions and values regarding its visual resources.
3. Conduct public meeting(s) to inform residents of the public's perceptions and values regarding its visual resources.
4. Adopt the municipal visual resource inventory.
5. Formalize community visual standards through creation of sign ordinances, architectural boards of review adopted standards, or other appropriate techniques.

C. Establish "Critical Areas of Environmental Concern" in Accordance with SEQR

Special visual resources that are considered highly valued by the community and are sensitive to change may be established as Critical Areas of Environmental Concern under SEQR. Thereafter, any action that takes place within, partially within, or adjacent to the critical areas would be treated as a significant impact and receive a fully coordinated environmental review process.

Stage 2: Practical Visual Criteria

Agency decision makers can protect the visual character and quality of a project and its environmental setting by early consideration of the general siting and design criteria listed below. Municipalities and agencies may wish to use these suggested criteria as a base, adding their own criteria to reflect community values.

1. Locate new facilities where they are intrinsically suitable to their visual environment.
2. Insure that agency decisions prevent the exposure or creation of visual misfits (such as car dumps or waste disposal areas adjacent to scenic vistas) unless visual mitigation measures are adequate.
3. Whenever possible protect the visual privacy of residential sites.
4. Actively preserve future access to public viewing points.
5. Emphasize shared infrastructure space for utilities.
6. In areas of high scenic quality, avoid commercial advertising, overhead utility service, and other manmade distractions.
7. Avoid development on steep slopes.
8. Take special care to enhance the visual quality of the physical entranceway to a community. The entranceway, usually a public roadway, sets the tone for the perceived visual expectation of the community.
9. Protect the integrity of visually important building facades by utilizing transfer of development rights techniques.
10. Promptly remove, refurbish, or replace abandoned facilities.
11. Be aware that visual spaces can be as important as physical objects. In this sense, air pollution can affect the visual quality of important spaces by obscuring or diminishing views.
12. Insure that transmission line corridors are not silhouetted against the skyline and traverse slopes on a diagonal rather than perpendicular basis.
13. As appropriate, either remove existing vegetation along travel corridors in order to create or enhance views or vistas, or retain existing vegetation along travel corridors to enhance natural character.
14. Consider all possible mitigation measures. Use vegetation, landforms, or structural techniques to screen visually intrusive characteristics of a proposed development.
15. Enhance views to bodies of water.
16. Avoid adverse visual effects caused by the introduction of materials, colors, and forms incompatible with the surrounding landscape.

Stage 3: Visual EAF Addendum

The following Visual EAF Addendum (Figure 11.8) is to be completed by the lead agency to provide information for determining whether a proposed action may have significant impacts on the visual resources.

The EAF Addendum focuses on four categories for measuring the visual significance of a project:
VISUAL EAF ADDENDUM

This form is to be used in conjunction with the SEQR Full EAF. Once the potential visual impacts have been identified by the following questions, proceed to Step 2 of the EAF.

**Step 1**

1. Is the project within or adjacent to a Critical Area of Environmental Cancer established under the State Environment Quality Review Act (see 617.4(j))?  
   Yes [ ] No [ ]

**Description of Existing Visual Environment**

2. Area surrounding project site can be identified by one or more of the following terms:
   - Within 1/4 mile
   - Within 1 mile
   - Essential undeveloped [ ]
   - Forested [ ]
   - Agricultural [ ]
   - Suburban residential [ ]
   - Industrial [ ]
   - Commercial [ ]
   - Urban [ ]
   - River, Lake, Pond [ ]
   - Cliffs, Overlooks [ ]
   - Designated Open Space [ ]
   - Flat [ ]
   - Hilly [ ]
   - Mountains [ ]
   - Other [ ]

3. Are there visually similar projects within:
   - *One Mile* Yes [ ] No [ ]
   - *Two Miles* Yes [ ] No [ ]
   - *Three Miles* Yes [ ] No [ ]
   - Adjacent [ ]

   *Distances from project site are provided for assistance. Substitute other distances as appropriate.*

**Degree of Project Visibility**

4. Will the project be visible from outside the limits of the project site?  
   Yes [ ] No [ ]

5. The project may be visible from:
   - Site or Structure on the National Register or State Register of Historic Places [ ]
   - Palisades [ ]
   - State or County Park [ ]
   - Parkway [ ]
   - Interstate Route [ ]
   - State Highway [ ]
   - County Road [ ]
   - Local Road [ ]
   - Bridge [ ]
   - Railroad [ ]
   - Existing Residences [ ]
   - Existing Public Facility [ ]
   - Adjacent Property Owners(s) [ ]
   - Designated Scenic Vistas [ ]
   - Other [ ]

6. Will the project eliminate, block, partially screen, or detract from views or vistas known to be important to the area?  
   Yes [ ] No [ ]

7. Is the visibility of the project seasonal? (For example, screened by summer foliage, etc. but visible Fall/Winter/Spring)  
   Yes [ ] No [ ]
   If yes, which season(s) is project visible:  
   - Summer [ ]
   - Winter [ ]
   - Spring [ ]
   - Fall [ ]

8. How many linear feet of frontage along a public thoroughfare does the project occupy?  
   [ ]

9. Will project open new access to or create new scenic views or vistas?  
   Yes [ ] No [ ]

10. Does proposed project or action plan to:  
    a. maintain existing natural screening  
       Yes [ ] No [ ]
    b. introduce new screening to minimize project visibility  
       Yes [ ] No [ ]

    If yes, is screening:  
    1.) vegetative [ ]
    2.) structural [ ]

**Viewing Context**

11. Viewers will likely be in which of the following situations when the project is visible to them?  

    *Frequency/Holidays*
    - Travel to and from work [ ]
    - Involved in recreational activities [ ]
    - Routine travel by residents [ ]
    - At a residence [ ]
    - At worksite [ ]
    - Other [ ]

**Visual Compatibility**

12. Are the visual characteristics of the project obviously different from those of the surrounding area?  
    Yes [ ] No [ ]

    If yes, the visual difference is because of:
    - Type of project [ ]
    - Design style [ ]
    - Size (including length, width, height, number of structures, etc.) [ ]
    - Coloration [ ]
    - Condition of surroundings [ ]
    - Construction material [ ]
    - Other [ ]

13. Is there local opposition to the project entirely, or in part, because of visual aspects?  
    Yes [ ] No [ ]

14. Is there public support for the project because of its visual qualities?  
    Yes [ ] No [ ]

FIGURE 11-8 NY SEQRA Visual Environmental Assessment Form
Resource Inventory, there is a potential problem of having to conduct the inventory during a time of public controversy. This would make it even more difficult to establish a true consensus on community values. Conducting a visual resource inventory at an early stage would avoid this potential problem.

The Full EAF, Part 3, provides a series of questions to help determine the importance of each visual impact. These include:

1. What is the probability of the (visual) effect occurring?
2. What will be the duration of the (visual) impact be?
3. Is the nature of the (visual) impact irreversible and will the (visual) character of the community be permanently altered?
4. Can the (visual) impact be controlled?
5. Is there a regional or statewide consequence to this (visual) impact?
6. Will the potential (visual) impact be detrimental to local goals and values?

The answers to these questions will indicate whether or not the potential impact is important. If one or more impact is found to be potentially large and important, sufficient reason exists to require the preparation of a Draft Environmental Impact Statement.

FIGURE 11.8 (Continued) NY SEQRA Visual Environmental Assessment Form.

1. Description of the existing visual/scene environment.
2. Identification of the degree to which the proposed action will be visible.
3. Determination of who will see the project and in what context, for example, worker, tourist, or local resident.
4. Identification of the degree of visual compatibility or incompatibility of the project with the existing environment or the "projected" environment.

While the conceptual approach for determining visual significance relies heavily on objective measurements, there will always remain some degree of subjective discretion on the part of the decision maker. There are otherscoping methods and forms used by the FHWA and the US Housing and Development (HUD) Agency (Smardon 1986b).

Detailed Visual Impact Assessment

There is an additional component to visual resource management that can assess the capability of specific landscape sites to absorb visual impacts of varying severity. BLM (1980) has used its contrast rating procedure for this purpose; the Forest Service has developed a process entitled Visual Absorption Capability (VAC) (Anderson et al. 1979); the FHWA (1981) has a visual impact guidance procedure; and the U.S. Army Corps of Engineers now has their own visual impact assessment (VIA) procedures that are part of Visual Resources Assessment Procedure (VRAP) (Smardon et al. 1988). The philosophy behind the development of each of these systems is quite different.

VAC (Anderson, Mosier and Chandler 1979) is used to determine how much can be done to a landscape site before its visual absorption capability is exceeded. Contrast rating is used by BLM (1980) to determine whether a proposed change in the landscape would cause an acceptable or unacceptable level of contrast with that specific site, according to professional judgment. The FHWA system advocates public reactions to visual impact through simulations of the proposed project. The U.S. Corps VIA system incorporates many aspects of the previous ones but advocates use of multiple viewpoints, multiple raters, and simulations and public reactions to simulations as part of the assessment process to assure adequate reliability and validity.

VAC combines physical factors of the existing landscape, highly changeable perceptual factors, existing visual quality factors (form, line, color, and texture), and proposed activities factors (scale, configuration, duration, frequency, and so forth) to determine the VAC score for that particular landscape (see Figure 11.9). A low VAC score is very restrictive, and a high one means much more activity can be allowed. The VAC score range is then compared to the existing visual management objective(s) for that area (see Figure 11.10).

The contrast rating procedure for BLM operates in the following manner:

1. The landscape character as expressed by existing visual quality factors such as land features, water
bodies, vegetation, and structures is described in terms of form, line, color, and texture.

2. The proposed activity for that particular locale is described in terms of introduced or modified form, line, color, and texture.

3. A contrast rating is then made by multiplying preestablished numerical values of form, line, color, and texture for land features, water bodies, vegetation, and structures by the estimated degree of contrast (strong = 3, moderate = 2, weak = 1, none = 0) to yield subtotals of contrast for land and water, vegetation, and structures (see Figure 11.11).

4. If the contrast ratings exceed “allowable” levels set according to the BLM manual, then the project feature/element of greatest contrast is redesigned, the basic presumption being in most cases that too much contrast is adverse or not desirable.

5. The process is repeated after the redesign.

This process is useful in that it provides a record of the landscape as it is and with the proposed project. It can be used to document which physical portion of the project needs to be reworked or redesigned, for example, landfill cuts reduced, less vegetation disturbed, structures reduced in size. If mitigation measures are not implemented, it can provide the legal documentation for taking action to ensure that they are. Thus, from an administrative point of view, the process has many advantages.

For highway projects the approach suggested by U.S. Department of Transportation (1981) is flexible but is strongly related to the elements of visual experience. There are five general steps:

1. Define the visual environment of the project.
2. Analyze existing visual resources and viewer response.
3. Depict the visual appearance of project alternatives.
4. Assess the visual impacts of project alternatives.
5. Determine ways to mitigate adverse visual impact.

In practice, the content of these steps will depend on the visual issues specific to the project. Special considerations are the linear dynamic experience of the driver and/or passenger, which complicates the VIA analysis. This general approach should not be confused with the detailed Section 4(f) requirements covered earlier in this chapter.

For water resource projects, the U.S. Corps has supported the development of VIA within the new Visual Resource Assessment Procedure (Smardon et al. 1988). The steps for doing a detailed visual impact assessment appear in Figure 11.12, but in summary the procedure is:
Basic Procedure Initiated → FRAMEWORK
Choose representative viewpoints and evaluators

VISUAL IMPACT ASSESSMENT-VIEWPOINT
Each evaluator completes for each viewpoint of with and without plan alternatives

VISUAL IMPACT ASSESSMENT-VIEWPOINT SUMMARY
Each evaluators viewpoints summarized

SIMULATIONS

VISUAL RESOURCE SUMMARY/DESCRIPTION
Complete for each viewpoint

VISUAL RESOURCE INVENTORY/FORECAST
Complete for without and with plan conditions

VISUAL IMPACT ASSESSMENT-ASSESSMENT SUMMARY
Evaluators assessments combined

PUBLIC ASSESSMENT

TOTAL VISUAL IMPACT ASSESSMENT VALUE

FIGURE 11.12 Corps Visual Impact Assessment Process

1. Choose representative viewpoints and evaluators for the project.
2. Do a visual resource summary/description for each viewpoint.
3. Forecast the future landscape condition with and without the project.
4. Simulate both conditions for each viewpoint;
5. Have each evaluator assess landscape quality with and without the project.
6. Have each evaluator’s viewpoint summarized numerically
7. Combine and average evaluator’s assessments.
8. Combine professional assessment with public assessment (if it exists).
9. Obtain a total impact assessment value for the visual impact of the project or the alternative, which can then be compared with a predetermined visual quality management class (if it exists) or with other project alternatives.

Clearly, the U.S. Corps’ approach is more complex than the previous methods discussed. The reason is that as more visual assessments are being challenged in courts and administrative hearings, any method used must be defensible from methodological and legal perspectives. Also, high-quality landscape simulations are being utilized for more and more VIA (Sheppard 1989 and 1986).

Case Study: Oregon Inlet Jetty Assessment

Background

Maintaining the Cape Hatteras National Seashore against erosion has always been a battle. This state of constant ecological and physical change is common to the barrier islands along many coastal waterways. The North Carolina barrier islands typically have a low vertical profile, are narrow, have a primarily sandy composition, and are exposed to high wave energy.
The channel at Oregon Inlet (see Figure 11.13) has been maintained by the U.S. Corps of Engineers for years. Concerned with the erosion of the islands to the north and south of this channel, the U.S. Corps proposed and designed a set of twin jetties to stabilize the area. The U.S. Corps prepared an EIS, but the project was appealed to an interagency council by the National Park Service and the U.S. Fish and Wildlife Service. To help settle outstanding questions on the visual and recreational impacts of the proposed project, the National Park Service, Southeast Region office, contacted the co-author, Smardon. We did a visual impact assessment and suggested mitigation measures. Visual impacts were especially critical because the area is a heavily used recreation area as well as a wildlife sanctuary for migrating shore and water birds.

Approach

The approach used for this study combined procedures the co-author was developing for the BLM (Smardon, Sheppard, and Newman 1979) and those used for similar coastal shoreline VIA's (Baird, Sheppard, and Smardon 1979; Mann 1979). It is made up of four steps:

1. Describing the physical and visual environment.
2. Ascertaining the type, number, and characteristics of recreational uses in the area.
3. Simulating the modifications at key viewpoints.
4. Evaluating the visual impact and discussing mitigating measures (Smardon et al. 1980).

The first step was to describe and visually document the visual landscape as it currently exists. The descriptive approach used a standard vocabulary of elements of form, color, line, texture, scale, and spatial dominance (Smardon, Sheppard, and Newman 1984). These same elements were later applied to the proposed modification to give a numerical rating to the impacts. The initial visual inventory was conducted on site through interviews with National Park Service employees and by taking 35-mm. slides. Care was taken to document the camera angles and viewpoint locations, and to provide scale clues so that simulations of the jetty structures would be accurate (see Figure 11.14).

The second step was to describe in detail the various recreational activities in the area and their general zones of occurrence. The recreational activities included swimming, sun-
bathing, charter boat fishing, surf fishing, off-road-vehicle driving, beach walking, bird watching, and camping (see Figure 11.15). This provided a working description of the impact of each user population in terms of annual use, time of day, mode of arrival, and average amount of time per day spent in the activity (see Table 11.4). Much of the information was derived from figures in the U.S. Corps EIS and was adjusted by information gathered from the on-site fieldwork.

The third step was to construct the simulations. The EIS provided for twin jetties built of either rough-cut rock transported by barge from nearby quarries from the north or of concrete dolos (looks like giant jumping jacks) made on site. Because of cost, the co-author assumed that rough-cut rock would be used for construction, and this material was rendered on the simulations.

The study team selected eight possible viewpoints and narrowed the choice to two critical ones (Figure 11.16). These were selected for simulation because they would have the largest number or duration of recreational viewers—the worst-case scenario. They also represented views in which the jetties would be in the viewer's middle ground to avoid biasing the view if the jetty were too close to the viewer.

Because views of Oregon Inlet were found to be panoramic, the simulations were constructed using a series of sequential matched color photographs of the interest area. An artist created the simulations on clear acetate overlays using color dyes, and they were mounted flip-style to provide “before” and “after” views for the evaluation of visual impacts (Figure 11.17).

The fourth step, impact evaluation, was conducted by two team members trained in the BLM (1980) procedure. This procedure involved making professional appraisals as previously described (that is, severe, medium, or no visual impact) with respect to the elements of form, color, line, texture, scale, and spatial dominance (Smardon, Sheppard, and Newman 1979). There were three consecutive steps:
<table>
<thead>
<tr>
<th>Recreational activity (Interdependent with all others)</th>
<th>Viewing duration of activity</th>
<th>Annual use</th>
<th>ORV Average activity</th>
<th>NON per day</th>
<th>Time/day</th>
<th>Time/year</th>
<th>Short-term (3-year) construction</th>
<th>Operation and maintenance</th>
<th>Cumulative long term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camping: Oregon Inlet Campground</td>
<td>Seldom</td>
<td>3.2 hours</td>
<td>1.4 hours</td>
<td>Heavy equipment creates noise and dust. 50% reduction. Attractive nuisance.</td>
<td>Noise associated with dredging for sand bypassing operation.</td>
<td>Additional pressure on NPS to expand campground.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bird watching</td>
<td>Substantial</td>
<td>2.1 hours</td>
<td>1.9 hours</td>
<td>Incompatible noise, dust. Disturbance of wildlife.</td>
<td>Heavy equipment creates noise and dust.</td>
<td>Increased incompatibility to bird watching activity.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beach walking</td>
<td>Substantial</td>
<td>Intermediate</td>
<td>3 hours</td>
<td>All year</td>
<td>Access to some areas restricted or prohibited.</td>
<td>Overcrowding.</td>
<td>Overcrowding.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Off-road vehicle driving</td>
<td>Intermittent</td>
<td>Substantial</td>
<td>6 hours</td>
<td>Spring/Fall</td>
<td>Heavy equipment creates noise and dust.</td>
<td>Overcrowding.</td>
<td>Overcrowding.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surf fishing</td>
<td>Intermittent</td>
<td>12,000 Veh./yr.</td>
<td>8 hours</td>
<td>Access restricted or prohibited to surf-fishing areas.</td>
<td>Access to some areas restricted or prohibited.</td>
<td>Overcrowding.</td>
<td>Overcrowding.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charter boat fishing</td>
<td>Intermittent</td>
<td>80,000 to 100,000 AVD</td>
<td>4.4 hours</td>
<td>Safety hazard to boaters from movement of construction materials by barge. Attractive nuisance.</td>
<td>Heavy equipment creates noise and dust.</td>
<td>Overcrowding.</td>
<td>Encourage illegal ORV use/vandalism.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunbathing</td>
<td>Intermittent</td>
<td>4,164 trips</td>
<td>4.4 hours</td>
<td>Heavy equipment creates noise and dust. Reduced by 50%.</td>
<td>Potential increase in fishing activity with attendant management problems.</td>
<td>Overcrowding.</td>
<td>Potential increase in fishing activity with attendant management problems.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swimming</td>
<td>Intermittent</td>
<td>11,000 AVD</td>
<td>3.8 hours</td>
<td>Heavy equipment creates noise and dust. Reduced by 50%.</td>
<td>Increasing incidence of small-boat accidents.</td>
<td>Overcrowding.</td>
<td>Potential increase in fishing activity with attendant management problems.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FIGURE 11.16 Composite analysis

1. Describing the existing landscape.
2. Describing the landscape with the projects in place using the simulations.
3. Contrasting the ratings for the existing and proposed conditions.

Results

One view had moderate-to-severe visual impact and another had low-to-moderate visual impact. Key visual problems were blocking the ocean horizon and the contrast of the tex-

FIGURE 11.17 Simulation from viewpoint 3. Graphic credit: Dan Sundquist
ture and color of the jetty material to the ocean and beach environment. Measures to minimize harm were suggested such as laying the armor stone flat against the jetty side to reduce contrast, providing guidelines for landscape treatment of spoil areas, (where dredged material is dumped) and paving the top of the jetties to enhance recreational fishing. The key finding was that the project would “urbanize” a natural area by providing more hard surface and encouraging a concentration or recreational users. This project did not go forward in 1980–1981, but it may be reviewed shortly due to economic and political pressures to maintain the Oregon Inlet channel for fishing interests. Although the U.S. Corps did not have a VIA methodology or process at the time the interagency conflict occurred, they now have a Visual Resources Assessment Procedure (VRAP) (Smardon et al. 1988) that includes VIA. Thus, they will be in a better position to address such issues in the future.

References