

## **CHAPTER 2.0 NATIONAL ENVIRONMENTAL POLICY ACT OF 1969**

This chapter recounts the passage of the National Environmental Policy Act of 1969 (NEPA) and then progresses to a discussion of NEPA's intent as described in the Act itself, followed by a recounting of how the NEPA process, in order to comply with the Act's "intent," has expanded and evolved over the last 27 years. The NEPA process has expanded and evolved in scope through Executive Orders; Council on Environmental Quality (CEQ) memoranda, guidelines and regulations; the outcomes and interpretations of court decisions; federal agency policies and procedures; and critical articles within the literature.

Before proceeding further, this chapter interjects a historical perspective of NEPA's impact on U.S. Forest Service planning and management practices since the Act's enactment. This section has been included here because it was important for the reader to understand the Forest Service's interpretation and incorporation of the NEPA process within the context of the discussion of NEPA's intent and evolution as described in the previous sections.

Chapter 2.0 then synthesizes the discussion of NEPA's intent and the NEPA process into a list of "ideal" NEPA criteria. This synthesis of NEPA documents and literature demonstrates how the scope of the NEPA process has broadened and evolved over the last 27 years, while the overall goal of NEPA has remained substantively the same—to "encourage the productive and enjoyable harmony between humans and the environment" (Section 2). The chapter concludes with a set of NEPA goals developed from the list of NEPA criteria. The goals, in turn, were used to formulate the NEPA evaluation questions for the analytical case studies (Chapters 4.0 and 5.0).

### **2.1 An Environmental Policy for the Nation**

#### **2.1.1 Passage of the National Environmental Policy Act of 1969**

The National Environmental Policy Act was passed by Congress in December of 1969 and signed into law by President Nixon on January 1, 1970. The purpose of the Act was to compel federal decisionmakers to consider the environmental consequences of their actions (McGarity 1977) and to reverse the national environmental decline contributed to, in large part, by the federal government itself (Blumm 1990). NEPA, in the words of the Senate committee report, was to establish a "clear statement of the values and goals . . . a set of resource management values which are in the long-range public interest and which merit the support of all social institutions . . . in short, a national environmental policy" (U.S. Congr., National Environmental Policy Act of 1969, Sen. Rept. 91-296, July 9, 1969, Washington, DC, p. 13, as cited in Andrews 1976:153).

NEPA declared that the federal government would no longer be a leading contributor to environmental degradation. In fact, the federal government, through the passage of the Act, would become an example to other governments and other countries. The federal government “recognizes the worldwide and long-range character of environmental problems and, where consistent with foreign policy of the United States, lends appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation and anticipation and preventing a decline in the quality of mankind’s world environment” [Section 102(2)(F)].

Prior to the passage of NEPA, not only was the federal government a major contributor to environmental decline, but it was also widely criticized for administrative fragmentation (Dreyfus and Ingram 1976) and an incremental decisionmaking process (Anderson 1974; Liroff 1976) in the handling of natural resources and environmental concerns. Anderson (1974:321) stated that, “In the environmental world of highly interactive components, . . . small decisions almost invariably produce more aggregate harm than good.” And as Senator Henry Jackson declared in the introduction to a report to his committee on a national environmental policy:

Throughout much of our history, the goal of managing the environment for the benefit of all citizens has often been overshadowed and obscured by the pursuit of narrower and more immediate economic goals. . . . This report proposes that the American people, the Congress, and the Administration break the shackles of incremental policymaking in the management of the environment. [S. Comm. on Interior and Insular Affairs, 90th Congr., 2d Sess., “A National Policy for the Environment” (Comm. Print 1968), cited in “Hearing on S. 1075, S. 237 and S. 1752 before the Senate Comm. on Interior and Insular Affairs,” 91st Congr., 1st Sess. 30, 1969, as cited in Liroff 1976:82]

Thus, the challenge of Congress in formulating NEPA was to approach environmental management in as comprehensive a way as possible. NEPA provides a comprehensive approach to environmental planning policy, i.e., “utilize a systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning and decisionmaking” [Section 102(2)(A)]. An interdisciplinary approach requires federal agencies to promote active cooperation among engineers, planners, landscape architects, ecologists, economists, lawyers, and representatives of other disciplines, many of whom never worked together prior to NEPA (Adams 1993).

The Act also was designed to supplement and reinforce other federal legislation (Liroff 1980). According to Senator Jackson, “The present problem is not simply the lack of a policy. It also involves the need to rationalize and coordinate existing policies” (115 Congr. Rec. S. 12127, daily ed. Oct. 8, 1969, from prepared statement by Sen. Jackson, as cited in Anderson 1973:223). A lack of environmental information and the need for established environmental expertise were

recognized as other impediments to substantive environmental decisionmaking prior to the passage of NEPA (Caldwell 1982a).

In order to ensure that the goals of NEPA were actually implemented by federal agencies, Congress included “action-forcing” procedures in the Act [Sections 102(1) and 102(2)(C)] (Anderson 1973; Dreyfus and Ingram 1976; Barney 1981; Yost 1990). As a 1969 Senate report conveyed it:

If the goals and principles are to be effective, they must be capable of being applied in action. S. 1075 thus incorporates certain “action-forcing” provisions and procedures which are designed to assure that all Federal agencies plan and work towards meeting the challenge of a better environment. [Senate Committee on Interior and Insular Affairs, 1969, as cited in Anderson 1973:2]

Section 102(2)(C) requires all federal agencies to prepare detailed, written statements of the environmental impacts which major proposed actions may cause, including alternative actions and their impacts. The environmental impact statement (EIS) is to be used in conjunction with other relevant material to plan actions and to make decisions [Section 101(b)]. The impact statement was not intended merely to provide data or description, but to provide a document containing relevant environmental information for consideration during the decisionmaking process (McGarity 1977), and more specifically to force a change in the administrative decisions affecting the environment (Dreyfus and Ingram 1976). NEPA was viewed by its formulators and supporters as a means of exerting “strong pressure on those agencies that have an impact on the environment . . . to reorient them toward a consciousness of and sensitivity to the environment” [E. Muskie, 1969, U.S. Congr. Rec. 40, 425, Washington, DC, as cited in Bausch 1991:96].

The EIS has become the “heart of NEPA and has had a profound impact on agency decisionmaking” (Anderson 1973:v). Sections 101 and 102(1) together with Section 102(2)(C), have been interpreted as “interlocking”—Sections 101 and 102(1) direct the implementation of the Act, while Section 102(2)(C) relates the directive to specific legislation and actions, provides a mechanism for coordinating reviews from other federal, state, and local agencies with environmental expertise or jurisdiction, and assembles information on impacts and alternatives for use in the decisionmaking process (Anderson 1973; Yost 1990).

NEPA's environmental mandates were to be substantially self-enforcing—the Act provided no explicit guidance for agency implementation and compliance (Wichelmann 1976). Federal agencies were to take environmental considerations into account in their decisionmaking and were to make the changes necessary to integrate environmental values into agency decisionmaking, and to review their statutes for inconsistencies with NEPA [Sections 102(2)(B) and 103]. External pressures from the public and from other federal, state, and local agencies

with environmental expertise were included in NEPA. The Act specifically requires comments from these sources on environmental impact statements prepared by federal agencies (Anderson et al. 1969). While some in Congress thought the Office of Management and Budget would oversee NEPA (Anderson 1974), the CEQ, established as part of NEPA, was to assist federal agencies in carrying out the policies and procedures of the Act [Section 209(d)(6)].

The passage of the Clean Air Act in 1970 provided further support toward complying with NEPA's mandates. Section 309 of the Act gave the Environmental Protection Agency (EPA) the authority to review and comment on EISs. If the EPA, as a result of its EIS document review, determines that the proposed activity is unsatisfactory from the perspective of public health, welfare, or environmental quality, the agency is authorized to refer the matter to the CEQ for resolution.

Congress also intended the impact statement to play a significant role in informing the public of the environmental consequences of, and alternatives to, proposed agency actions (McGarity 1977). NEPA specifically required that copies of environmental statements with appropriate federal, state, and local agency comments and views be "made available to the President, the CEQ and to the public . . ." [Section 102(2)(C)(v)]. NEPA has been interpreted by Cahn (1979) and Bregman and Mackenthun (1992) to require both the sharing of information with the public and the involvement of the public in developing information. According to Anderson (1973:204), the legislative history recognizes that "NEPA was in itself a response to a public demand, with Congress trying to catch up rather than lead." The EIS requirement was to ensure that environmental considerations were placed before the public before federal agencies undertook environmentally damaging action (McGarity 1977).

## **2.1.2 Expansion of NEPA Requirements**

### ***2.1.2.1 Executive Orders, and CEQ Guidelines and Regulations***

Despite its lack of regulatory oversight authority, the CEQ began to draft NEPA compliance guidelines soon after its members were appointed (Fogleman 1993). The CEQ's authority to issue such guidelines was broadened through the issuance of Executive Order 11514 on March 5, 1970 by former President Nixon.

The Executive Order added two requirements not found in the text of the NEPA. First, the order authorized the CEQ to issue guidelines for the preparation and use of environmental impact statements. NEPA had authorized the CEQ simply to "review and appraise" federal programs and activities (Andrews et al. 1977). Second, the Executive Order directed all agencies to "ensure the fullest practicable provision of timely public information and understanding . . . in order to obtain the views of all interested parties." Agencies were to hold public hearings whenever appropriate, and to promote public involvement in the development of federal plans

and programs with environmental impact. This emphasis on public involvement was not found in the language of NEPA (Andrews et al. 1977).

In April of 1970, the Environmental Quality Improvement Act further enhanced the status of the CEQ by making the Chairman of the Council, Director of the Office of Environmental Quality within the Executive Office. Among the initial functions of the Office of Environmental Quality was provision of professional and administrative staff and support for the CEQ; promotion of the advancement of scientific knowledge of the effects of actions on the environment and encouragement of the development of the means to prevent or reduce adverse effects; and assistance in coordination among federal departments and agencies.

Following a review of agency NEPA practices in 1971 and pursuant to Executive Order 11514, the CEQ established Guidelines for the purpose of building into the federal agency decisionmaking process, “an appropriate and careful consideration of the environmental aspects of proposed action and to assist agencies in implementing not only the letter, but the spirit, of the Act.” Although the Guidelines were not legally binding, most federal agencies adhered to them for establishing their own impact statement procedures (Anderson 1973). The CEQ gave the Guidelines national impact by codifying judicial precedent and by asserting its own interpretation of NEPA into the Guidelines (Fogleman 1993). Federal court decisions also gave significant weight to the Guidelines (Anderson 1973).

NEPA contains no reference to “draft” environmental impact statements, nor to any waiting period between the submission of an environmental impact statement and the accomplishment of the action described in it (Andrews et al. 1977). Without these important provisions, other reviewing agencies and the public would not have access to agency decisionmaking until a final document was published. Both of these important elements were created through the CEQ Guidelines, under strong pressure from Congressional oversight committees which threatened to create them by law if the CEQ did not do so administratively (Andrews et al. 1977). The Guidelines also directed that an EIS be prepared for any project that generated controversy, regardless of whether the agency believed that its effects would be significant (Andrews et al. 1977). The public information provisions of NEPA were redefined by the Guidelines. The Guidelines expressed a general policy in favor of public involvement.

After a two-year review period, the Guidelines were revised by the CEQ in August 1973. The Revised Guidelines reflected the language of NEPA and, to a large extent, court decisions concerning NEPA (Hill and Ortolano 1978). In the Revised Guidelines, the Council mentioned that the purpose of the EIS was to ensure the full implementation of the law’s substantive policy goals (Andrews et al. 1977). Other provisions added by the 1973 Revised Guidelines included: a discussion of nonenvironmental considerations that CEQ staff saw as sufficient to override the environmental impacts documented in an EIS; an outline of the content of an EIS; a discussion of

the categories of impacts that should be considered and the kinds of actions and alternatives that should be developed; and the relationships between the EIS requirement and other provisions of the law (Andrews et al. 1977).

There is one other noteworthy provision of the Revised Guidelines—the expansion of Section 102(2)(A) of NEPA, “. . . utilize a systematic, interdisciplinary approach . . .”:

The interdisciplinary approach should not be limited to the preparation of the environmental statement, but should also be used in the early planning stages of the proposed action. Early application of such an approach should help assure a systematic evaluation of reasonable alternative courses of action and their potential social, economic, and environmental consequences. [Hill and Ortolano 1978:289]

In 1975, the CEQ again reviewed agency implementation after receiving responses to a detailed questionnaire sent to all federal agencies (CEQ 1975). A pattern was set early on in the history of the laws implementation: as the guidelines were revised, important new elements were added (Andrews et al. 1977). However, any new elements created by CEQ guidelines and memoranda were advisory and not legally binding, and therefore, could be ignored or changed by implementing agencies as each saw fit (Andrews et al. 1977).

In 1977, to overcome the limitations inherent in advisory Guidelines, and to extend the CEQ’s administration of NEPA, President Carter granted the CEQ regulatory authority through an executive order (Executive Order No. 11991). One year later, the CEQ issued detailed regulations for meeting NEPA’s intent that were mandatory for all federal agencies (CEQ 1978a). The 1978 Regulations reiterated the purpose of NEPA’s directives: “NEPA is our basic national charter for protection of the environment. It establishes policy, sets goals (Section 101), and provides means (Section 102) for carrying out the policy . . . . The President, the federal agencies, and the courts share responsibility for enforcing the Act so as to achieve the substantive requirements of Section 101.”

In the 1978 Regulations, the CEQ stressed the linkage between NEPA procedures and the intent of the Act (Yost 1990). The regulations covered all nine subsections of Section 102(2) of NEPA, while the earlier guidelines covered only one subsection, Section 102(2)(C) (Yost 1984). This change had several implications (Yost 1984). It meant the regulations applied to the whole environmental review process—from planning to assessment, to EIS, to decision, and to follow up:

. . . by tying the process more closely to the decision, the regulations furthered the purpose of the Act whereby the procedures of Section 102 were to be “action-forcing” devices to achieve the environmental policies stated in Section 101. In brief,

environmental factors were to be built into the whole process whereby decisions are made and implemented. [Yost 1984:416]

In adopting the 1978 Regulations, the CEQ sought the view of concerned individuals, organizations, and public officials (CEQ 1977). Problem areas identified included: how to focus on real issues and alternatives; how to make impact statements more useful to decisionmakers and the public; and how to emphasize substance over procedure and thus implement NEPA's purpose—protecting the quality of our environment (CEQ 1977). To respond to these identified problems, the Regulations established a new procedure called “scoping.” Scoping was to ensure that (1) everyone is identified who will ultimately be involved in the NEPA process; (2) the important issues are selected from the beginning of the planning process; (3) an early consensus on what is significant and not significant is agreed upon by all parties, including proposal opponents; and (4) there is better integration of environmental considerations by down-playing the “proposed action.” Scoping was aimed at making a better planning document—and not simply a formal process tacked on at the end of actual planning efforts simply to satisfy requirements (CEQ 1978b).

Another major element of the 1978 Regulations was the emphasis on interagency cooperation, which makes commenting agencies into cooperating agencies, before the EIS is drafted. “. . . an agency other than the lead agency with jurisdiction or expertise will not just sit back and criticize somebody else's EIS. It will help write it in the first place” (Yost 1984:418). By stressing interdisciplinary preparation, the Regulations placed renewed emphasis on the statutory command to “utilize a systematic, interdisciplinary approach . . .” to decisionmaking (Yost 1984).

The Regulations also emphasized follow-up and post-verification. Prior to the 1978 Regulations, the NEPA process many times ended with the EIS or an agency decision. The CEQ wanted to ensure that what the EIS had discovered was reflected in the decisionmaking process and what the decision concluded about environmentally protective measures was in fact, implemented. For this reason, the Regulations stipulated that a Record of Decision (ROD) be prepared with the Final EIS that outlined mitigation and monitoring procedures (Yost 1984).

In 1980, in response to requests from the affected agencies and other participants in a survey, CEQ's General Counsel, in consultation with EPA's Office of Federal Activities, compiled a list of the 40 questions most frequently asked about NEPA. The General Counsel then prepared answers that reflected CEQ advice to agency staff and consultants in their day-to-day application of NEPA (CEQ 1981b).

In 1981, the CEQ issued a memorandum called, “Scoping Guidance.” The Scoping Guidance contributed to several of the objectives outlined in the 1978 Regulations, including making

impact statements more understandable, linking the environmental analysis more closely to agency planning processes, and reducing the likelihood of legal challenge by improving the focus and quality of the impact statement (Pease and Smardon 1984). The scoping process was not intended to provide the public with an opportunity to debate the merits of a project, but instead to give it an opportunity to participate in identifying the environmental issues that needed to be addressed in the EIS (CEQ 1981b).

During 1983, the CEQ issued a guidance document regarding six topics in the NEPA process: scoping, categorical exclusions, adoption procedures, contracting provisions, selection of alternatives in licensing and permitting situations, and tiering. The guidance document arose from public and agency comments concerning a series of questions developed by the CEQ to provide information on the manner in which federal agencies were implementing the 1978 Regulations. The guidance document did not make any changes in the Regulations. Rather it clarified their intent by providing information on various ways to carry out activities under NEPA (CEQ 1983).

#### **2.1.2.2 NEPA in the Courts**

Murchinson (1984) has pointed out that NEPA was silent with respect to one critical point—how Congress intended to enforce the provisions of the Act. NEPA implicitly required two forms of administrative change—internal reform and external oversight of affected agencies (Liroff 1980). In its 1978 annual report to the President, the CEQ stated that the President, federal agencies, and the courts shared responsibility for overseeing enforcement of the Act (CEQ 1978a). In practice, oversight of agency actions has generally been split between agency and judicial reviews. Agency review involves two steps: interagency review and comment during scoping and draft EIS review and formal review by EPA. EPA, under authority of Section 309 of the Clean Air Act, is the only federal agency that has the right to review and determine whether another agency's action is environmentally sound (Fogleman 1993). The requirement for interagency and NEPA review and comment was to provide a guarantee against the potential of excessive agency bias (Dreyfus and Ingram 1976). Judicial review has been limited to whether an agency has followed NEPA's procedures and considered the environmental consequences of its proposed actions.

In early instances of judicial review, courts recognized that NEPA's substantive policy goals were only enforceable through the procedural environmental analysis and impact statement duties outlined in Section 102(2)(C) of the law (Miller 1991). Judge Skelly Wright, in *Calvert Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Commission*, described the action-forcing provisions of Section 102 and the authority granted all agencies in Section 105 to consider environmental factors in their decisionmaking as "procedural" protections that "established a strict standard of compliance" [*Calvert Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Commission*, 449 F.2d 1109 (D.C. Cir. 1971)]. As Judge Wright interpreted



NEPA, the purpose of the EIS was to aid federal agencies in their decisionmaking and to inform interested state and local agencies and the public of the environmental consequences of planned federal action (Anderson 1973).

A major element added to NEPA by judicial interpretation was the “full disclosure” test. In a 1971 decision against the Corps of Engineers, the federal court held that NEPA was “at the very least . . . an environmental full disclosure law” [Environ. Defense Fund v. Corps of Engrs., 325 F. Supp. 728 at 759 (ELR at 20141), as cited in Andrews et al. 1977:9]. To support the interpretation of full disclosure, the court required EISs to be comprehensive documents, asserted the right of the courts to ensure their “adequacy,” and required a discussion of all reasonable alternatives to a proposed action, including alternatives outside the jurisdiction of the initiating agency (Andrews et al. 1977). According to Anderson (1973), court-enforced full disclosure has led to fundamental changes in the patterns of federal environmental decisionmaking:

Both NEPA and the evolving standards of judicial review call for the establishment by the agencies of procedures for principled decisionmaking, for the articulation in the record of the reasoning which supports the decision taken, for the elaboration of the risks which proposed action entails, for discussion and consideration of alternatives as a test of the soundness of decisions taken, for a wider view of the public interest under long-standing agency missions, and for increased public participation. [Anderson 1973:18]

Judicial interpretation has required agencies to demonstrate not only full disclosure of impacts, but also a reasonable “balancing” of environmental and other considerations (such as economic justifications) in selecting a proposed action over other alternatives (Andrews et al. 1977). The judicially enforceable “balancing” requirement that agencies actually consider environmental impacts when final decisions are made “is an important bridge between NEPA’s informational requirements and its goal of changing the outcome of agency decisions” (Anderson 1973:256). The court’s endorsement of the balancing approach means that the agencies have to comply in earnest with Congress’ intent to affect final agency decisionmaking (Anderson 1973). However, in 1989, Justice Stevens in *Robertson v. Methow Valley Citizens Council* stated: “If the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs” (as cited in France 1990:135).

Early litigation sought to assure agency compliance with NEPA and, therefore, concentrated on challenges to the adequacy of agency EISs (Barney 1981). Even recent Supreme Court decisions have held NEPA to be essentially procedural, “ignoring the high-minded aspirations contained in Section 101 and apparently considering NEPA to require just the paperwork and public disclosure specified in Section 102” (Blumm 1990:450). However, without the close scrutiny of

the courts, federal agencies may not have adopted the NEPA procedures proposed by CEQ (Fogleman 1993).

The federal district courts have been active in reviewing agency compliance with NEPA, in large part because private citizens interested in the law's enforcement have been granted standing to sue (Anderson 1973). Hundreds of NEPA actions brought by citizens in federal courts have contributed substantially to setting standards for agency and judicial interpretation of the EIS requirement (Miller 1991). The duties NEPA imposes, to a great extent defined by litigation, have led over time to increased awareness of environmental factors and have changed the approaches to environmental problems taken within federal agencies (Miller 1991). "Courts are not managing our public lands. Increasingly, however, they are requiring federal agencies to comply with the law, and in doing that they are changing forever the way the agencies manage our lands" (Parker 1995:209).

### **2.1.3 Criticisms of NEPA**

Over the last 27 years, there has been much praise and criticism in the literature of NEPA and its mandated EIS process. Adams (1993:472) endorsed NEPA's "attempts to meld disparate and often competing and conflicting interests into some cohesive whole." According to Yost (1985), NEPA has succeeded in making environmental considerations part of federal decisionmaking. Friedman (1985:43) concluded that, "NEPA, overall, has not only increased the focus on environmental issues in projects, but has instituted environmental analysis as part of project planning."

NEPA has been criticized for being flawed and several critics feel it should be abolished or substantially amended (Bardach and Pugliese 1977; Fairfax 1978; Renwick 1988; Tweiker 1990). Many reviewers have focused their criticism on the procedural requirements of NEPA contained in Section 102(2)(C), that all federal agencies must prepare a "detailed statement" (EIS) for "major federal actions significantly affecting the quality of the human environment" (Blumm 1990; Culhane 1990; Dreyfus and Ingram 1985; Ensminger and McLean 1993; Friedman 1985). Yet other critics feel that NEPA has fallen short of its intent because the substantive goals and objectives stated in Sections 101 and 102 have largely been ignored (Bartlett 1986; Bausch 1991; Bear 1993; Caldwell 1985, 1990; Liroff 1980; Ortolano and Shepherd 1995; Yost 1990). For example, the NEPA process has been generally separated from planning and development of a project (Bausch 1991; Bear 1989; Holling 1978; Ortolano and Shepherd 1995).

Three key themes have arisen from the NEPA criticisms:

1. A lack of engagement with the NEPA process early in the planning process through interdisciplinary collaboration.
2. A lack of rigorous science and the incorporation of ecological principles or techniques as appropriate mechanism for enriching “our understanding of the ecological systems and natural resources important to the Nation” (Section 2).
3. NEPA has fall short of its intent because its substantive goals and objectives have largely been ignored.

## **2.2 Discerning the Intent of NEPA—An Evolutionary Process**

From my review of the NEPA documents and literature, four broad NEPA categories or themes emerged: (1) environmental protection; (2) interdisciplinary/ environmental planning; (3) public involvement; and (4) social/cultural/economic welfare. The following sections are presented accordingly.

### **2.2.1 Environmental Protection**

#### ***2.2.1.1 Environmental Preservation/Enhancement***

NEPA represents the government’s “expressed determination to move the Nation in a comprehensive manner toward accommodation of the disparate goals of economic growth and preservation of a ‘quality’ environment” (Congressional Research Service, Environmental Policy Division, 1971, as cited in CEQ 1990:191). Senator Frank Church stated that, “NEPA marked an effort for the first time to impress and implant on the federal agencies an awareness and concern for the total environmental impact of their actions and proposed programs . . .” [115 Congr. Rec. 29,059, 1969 (statement of Sen. Church), as cited in CEQ 1990:190]. However, NEPA was never intended to be a mandate applied only to federal agencies. Instead, NEPA recognizes that “each person has a responsibility to contribute to the preservation and enhancement of the environment.” In 1989, the CEQ reiterated the Act’s intent by stating that, “NEPA’s effectiveness, therefore, requires the diligence of both the federal government and society as a whole, and any judgment of its performance is a reflection on the nation’s overall environmental ethic” (CEQ 1989:15).

Preservation and enhancement of the environment now include the conservation of biodiversity as it is currently a major focus of ecological research and application (CEQ 1993b). According to the CEQ (1993b), the full potential of NEPA as a means to address the conservation of biodiversity lies in the effective linkages of Sections 101 and 102. “NEPA’s combination of broad consideration of environmental impacts and a specific mechanism to address them provide an opportunity for significant improvement in biodiversity protection” (CEQ 1993b:15). The

procedures set forth in Section 102(2)(C) and subsequent implementing regulations issued by CEQ provide the framework under which federal agencies evaluate the effects of their programs and projects on the environment. Section 102(2)(H) specifically states that agencies are required to use ecological information in their planning and decisionmaking processes.

#### ***2.2.1.2 The Role of Science***

The successful implementation of the NEPA process relies upon data collection and interpretations derived from science, and science was a driving force behind the formulation of NEPA (Caldwell 1989a). NEPA was influenced by scientific concepts, particularly ecology and systems theory (Bartlett 1986). According to Caldwell (1993:15), “The clear intent of NEPA was to draw upon science as an informant and corrective for public policies impacting [sic] upon the environment.”

NEPA’s requirement for a systematic integrated use of “all sciences” was to address the significant, complex and interrelated effects of agency actions on the environment (Caldwell 1982a; Bartlett 1986). The integrated use of the sciences thereby broadened the informational base of environmental policy, and new uses of science were introduced into policymaking (Caldwell 1993). However, even when science is used to its fullest extent, the EIS is not, and never was intended to be, a scientific or technical document (CEQ 1975; Caldwell 1993). The EIS can reveal gaps and contradictions in science, and can potentially make for better science (Caldwell 1989b). As stated by Caldwell (1982a:2), “The critical procedure—the environmental impact statement—became the vector, carrying integrated interdisciplinary sciences into the shaping of public policy.”

Science was made an integral part of the NEPA process through the “action forcing” procedures of Section 102(2) (Caldwell 1982a). According to Caldwell (1982a), to incorporate science in environmental assessment, two instrumental reforms were required: first, a reordering of assumptions regarding the relevance of scientific knowledge and methodology to federal planning and decisionmaking; and second, a restructuring of administrative procedures to ensure that the implications of the reordered view of science were considered in agency planning and decisionmaking, consistent with the purposes of the Act. The integration of environmental analysis into agency planning and decisionmaking requires continued improvement in both content and quality of the EIS (CEQ 1975). Hence, the EIS forced a restructuring of the use of information—notably scientific information—in the process of agency planning and decisionmaking (Caldwell 1982a).

#### ***2.2.1.3 Environmental Impacts***

NEPA requires federal agencies to identify and consider the cumulative environmental impacts accompanying their proposed actions. The 1978 Regulations define the concept of “cumulative impact” to mean “the incremental impact of the action when added to other past, present, and

reasonably foreseeable future actions regardless of what agency . . . or person undertakes such other actions” (40 CFR 1508.7). To the extent that connected or cumulative actions are reasonably foreseeable and likely to occur, NEPA obligates agency officials to review the matter as a whole and not as segmented or discrete decisions (Keiter 1990). NEPA encourages serial proposed actions to be analyzed aggregately at the outset and not after an agency is committed to a course of action (Keiter 1990).

The 1978 CEQ Regulations also required federal agencies to evaluate the full geographical scope of impacts accompanying land and resource management decisions. This action suggests that jurisdictional boundaries do not relieve land agencies of their obligations to assess the impact of resource management decisions on shared ecosystems (Keiter 1990). According to the Regulations, each environmental impact analysis should address the regional implications of the proposal, and it should consider effects that may be “farther removed in distance” (40 CFR 1508.8). Additionally, the analysis should evaluate the indirect and cumulative impacts traced to decisions or actions that may be expected to occur on federal and nonfederal adjacent lands, including “effects related to induced changes in the pattern of land use, . . . and related effects on air and water and other natural systems, including ecosystems” (40 CFR 1508.7, 1508.8). Keiter (1990:52) concluded that, “NEPA, therefore, endorses the view that environmental analyses on the public domain should take account of the full ecological ramifications of resource management decisions regardless of existing boundary lines.” The courts, however, have not expanded NEPA obligations beyond traditional jurisdictional boundaries. The Supreme Court decision in *Kleppe v. Sierra Club* held that the Secretary of the Interior was not obligated to prepare a comprehensive EIS addressing the impact of coal development on the Northern Great Plains Region. The Interior Department was only obliged to consider coal development on its lands (Keiter 1990).

#### **2.2.1.4 Resource Sustainability**

According to Bear (1993:86), the NEPA process was “intended to be, and should be viewed as, an important means to achieve the goal of integrating environmental values into decisionmaking in a wise and balanced manner.” The CEQ (1977, 1978a) encourages the use of innovative methods for the preservation, enhancement, and restoration of the environment and to make decisions based on understanding of environmental consequences.

NEPA contains many references to resource preservation, enhancement and restoration. Section 2 states that the purpose of the Act is to “encourage productive and enjoyable harmony between man and his environment.” Section 101(b)(5) declares that in order for humans to enjoy a high standard of living and to share in life’s amenities necessitates the achievement of a balance between population and resource uses. Section 101(b)(6) further states that we must “enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.” Again, Section 102(2)(C)(iv) mandates that agencies take into account the “the

relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity." Specifically, the EIS must include a discussion of any irretrievable commitments of resources which would be involved in the proposed action should it be implemented [Section 102(2)(C)(v)].

## **2.2.2 Interdisciplinary/Environmental Planning**

### **2.2.2.1 NEPA and the Planning Process**

NEPA has been viewed by Congress as providing "a framework for the formulation of specific legislative measures to deal with a wide variety of environmental problems" (Environmental Affairs of the 91st Congress, xv, as cited in CEQ 1990:191). As viewed by the CEQ (1989), the NEPA process is a mechanism to provoke thought and to promote open and well-informed decisionmaking among federal agencies and society as a whole.

Taken together, NEPA's legislative history, its statutory language, CEQ guidelines and regulations, and judicial interpretations indicate that NEPA's intent is to incorporate a system requiring federal agencies to integrate environmental factors, meaningfully and efficiently, along with other pertinent issues to agency planning and decisionmaking (CEQ 1971a, 1973a, 1978a, 1990; Anderson 1973; Randolph and Ortolano 1976). This system relies upon three features that distinguish effective planning—time, coordination, and scope of view—all of which are essential to achieve integration under NEPA (CEQ 1990). As stated by Randolph and Ortolano (1976:214), "Only if environmental information is considered in making the earliest planning decisions, can agency actions fully reflect the intent of the Act. For only then will agencies generate alternatives conceived in the light of environmental as well as technical and economic considerations and criteria."

From Andrews et al.'s perspective (1977), Section 101 of NEPA suggests a solution to overcome the fragmented planning and management approaches used prior to NEPA's passage. The concept of man and nature co-existing in productive harmony intimates that man and nature are linked and are a functional entity (Andrews et al. 1977). This interpretation of Section 101 calls for a holistic approach to the consideration of natural environments (Andrews et al. 1977). This holistic, or ecosystem approach, provides an understanding of the functional dynamics of biological systems by focusing on the whole system and on those properties which are characteristic of the whole system (Andrews et al. 1977).

### **2.2.2.2 Interdisciplinary Planning**

Addressing environmental problems requires an interdisciplinary synthesizing approach for which multidisciplinary planning alone is inadequate in concept and method (Caldwell 1982a). The term "systematic" as used in Section 102(2)(A) was intended to indicate that the dimensions of planning corresponded to the dimensions of the problem it directed (Caldwell 1982a). In

other words, planning should take into account the complexity and the scope of the total system upon which the planning would have an impact (Caldwell 1982a). In Caldwell's view (1982a:89), "Without the integrated use of the natural and social sciences and environmental design arts, systematic and interdisciplinary approaches could be no better than the compromises incorporated into many interagency comprehensive plans, which were largely composites of the special mission projects of the participating agencies." The concept of integration is at the heart of NEPA from its mandate for federal agencies to integrate environmental data and considerations into their decisionmaking processes, to its directive that the CEQ act as public educator on environmental issues (CEQ 1990).

NEPA also facilitates interagency relationships and cooperation, even among agencies who operate under fundamentally different legal mandates. Keiter (1990) discussed four ways NEPA facilitates interagency relationships and cooperation. First, NEPA mandates consultation in the beginning stages of the environmental review process [Section 102(2)(C)(v)]. Second, NEPA provides that federal agencies must identify and evaluate the potential impact of projects at the earliest stages in the environmental review process (40 CFR 1501.2), and that "affected" agencies must be notified of the proposed action and afforded an opportunity to comment on the proposal (40 CFR 1503.1). Third, NEPA requires that the EIS include a discussion of "possible conflicts between the proposed action and the objectives of federal, regional, state, and local . . . land use plans, policies and controls for the area concerned" (40 CFR 1502.16). Finally, NEPA authorizes the CEQ to mediate interagency disagreements through a referral process that can be initiated by either agency (Section 201). In summary, the NEPA environmental review requirements establish an elaborate procedure for interagency consultation and interagency cooperation (Keiter 1990).

In several legal decisions, courts have relied upon information or comments submitted by other agencies to question the adequacy of environmental documentation supporting a challenged development proposal (Keiter 1990). By giving legal significance under NEPA to the concerns of other agencies, these decisions further acknowledge the importance of interagency consultation and coordination in public land management (Keiter 1990).

### ***2.2.2.3 Monitoring and Evaluation***

Generally, laws are static and prescriptive, while the environment, the scientific understanding of it, and the technologies available to protect it are constantly changing (CEQ 1983). Thus, while NEPA definitively "links" knowledge, policy and action, "these linkages are necessarily loosely coupled ones" (Caldwell 1982a:12). Congress wrote NEPA to require agencies to create and use knowledge, meaning that Congress could not, in the Act itself, define precisely what the substantive end results would be (Caldwell 1982a). According to Boggs (1993), this strategy allows for the widest possible extension of NEPA's mandates, encourages reform of the basic

conceptual frameworks in place for decisionmaking, permits all needed flexibility, and helps open the policy process to a wider range of ideas and perspectives.

In this light, the 1978 Regulations included a provision for agencies to monitor their actions to assure that their decisions are carried out as intended and have the results anticipated (40 CFR 1505.3). Federal agencies are to include a monitoring and enforcement program for each mitigation measure proposed in the ROD [40 CFR 1505.2(c)] and to make available to the public the results of the monitoring and enforcement program [40 CFR 1505.3(d)]. According to Yost (1984:420), the CEQ wanted to ensure that “what the EIS has discovered is reflected in the decision and what the decision concluded about environmentally protective measures is, in fact, implemented.” However, largely because monitoring was not specifically mandated, but only suggested as appropriate, Canter’s (1993:77) research showed that, “Only minimal attention has been given to comprehensive or targeted environmental monitoring . . . .”

#### **2.2.2.4 Mitigation of Impacts**

One important component of an EIS is the discussion of steps that can be taken to mitigate adverse environmental effects. The requirement that an EIS contain a detailed discussion of possible mitigation measures comes from both the Act itself [Section 102(2)(C)(ii)] and, more explicitly, from the CEQ’s 1978 Regulations. Implicit in NEPA’s demand that an agency prepare a detailed statement on “any adverse environmental effects which cannot be avoided should the proposal be implemented” [Section 102(2)(C)(ii)] is an understanding that the EIS will discuss the extent to which adverse effects can be avoided (Anderson et al. 1990). Indeed, Anderson et al. (1990) have argued that omission of a reasonably complete discussion of possible mitigation measures would undermine the “action-forcing” function of NEPA. Because without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of potentially adverse effects (Anderson et al. 1990). To guarantee that agencies take a “hard look” at the environmental effects of proposed federal action, 1978 Regulations require that the agency discuss possible mitigation measures in defining the scope of the EIS [40 CFR 1508.25(b)], in discussing alternatives to the proposed action [1502.14(f)], and its consequences [1502.16(h)], and in explaining its ultimate decision in the ROD [1505.2(c)].

The ROD, as discussed in the 1978 Regulations, must specifically identify which mitigation measures were selected and adopted as part of the agency’s action. The agency must also include in the ROD a monitoring and enforcement program for each mitigation measure. However, Anderson et al. (1990), concluded that NEPA does not require a fully developed plan detailing what steps will be taken to mitigate adverse environmental impacts. This position was supported in *Robertson v. Methow Valley Citizens Council* (1989) in which the U.S. Supreme Court ruled that it was not necessary for federal agencies to adopt a mitigation plan—a discussion of feasible mitigation options was ruled sufficient (Findley and Farber 1992).



### **2.2.2.5 NEPA as a Decisionmaking Tool**

Under both NEPA's substantive policy and its action-forcing provisions, agencies must modify their processes to take environmental values into account (Anderson 1974). The CEQ (1989) cautioned against simple adherence to established NEPA administrative procedures, which do not ensure that federal agencies will confront the difficult choices created by their responsibility to fulfill their primary mission and their responsibility to minimize environmental degradation. Of greater importance is an understanding by federal agencies of the purpose and goals behind NEPA and of methods for making environmental analyses and assessing the significance of the results generated (CEQ 1974, 1989). In essence, the NEPA process mandates a deliberative decisionmaking cycle: the formulation of a goal and an idea about the means of achieving that goal; discussion by interested persons; information collection and analysis of the proposed action and reasonable alternatives to achieving the goal; additional discussion; and final decision (Bear 1993). NEPA ensures that the decisionmaking cycle includes environmental information in this process and in a wise and balanced manner (Bear 1993).

Hill and Ortolano (1978) have argued that NEPA's effect on the consideration of alternatives represents one of the single best measures of the Act's effectiveness in achieving the policy objectives articulated in Section 101 of NEPA. They premised this position on the following: (1) the legislative intent reflected in NEPA required agencies to take account of environmental, economic, and technical considerations in all phases of planning and decisionmaking; (2) if NEPA is to be effective in the long run, fundamental changes must be made in agencies' planning and decisionmaking processes; and (3) the consideration of a wide range of alternatives is central to "good" planning (Hill and Ortolano 1978). From these premises, Hill and Ortolano (1978:286) concluded that "... in order for environmental considerations to be fully integrated into planning and decisionmaking, and thereby satisfy the intent of NEPA, the opportunity must exist for environmental considerations to influence both the selection of the alternatives to be considered (formulation) and the selection of the plan which is ultimately recommended for implementation (evaluation or plan ranking)."

## **2.2.3 Public Involvement**

### **2.2.3.1 The Public's Right-to-Know**

Public involvement has become an important component of the NEPA process. The success of NEPA as an environmental disclosure and problem-solving law is based on open decisionmaking (Bass and Herson 1993). It is important to note that "public involvement" is not specifically found in the language of NEPA. However, it can and has been inferred from language such as, "fulfill the responsibilities of each generation as trustee of the environment," "... each person has a responsibility to contribute to the preservation and enhancement of the environment" [Sections 101(b)(1) and 101(c)]. President Nixon's March 5, 1970, Executive Order 11514 explicitly expanded NEPA's text with regard to public involvement. The Executive Order

directed all agencies to “ensure the fullest practicable provision of timely public information and understanding . . . in order to obtain the views of all interested parties.” As stated earlier, the federal courts also added a major element through judicial interpretation of NEPA as a “full disclosure” policy.

### ***2.2.3.2 The Public as Decisionmaker***

The 1978 Regulations further expanded NEPA’s intent with regard to public involvement by stating that federal agencies, “shall make diligent efforts to involve the public *in preparing and implementing* their NEPA procedures” (40 CFR 1506.6) [*italics are mine*]. NEPA, through the regulations, provides for public involvement at various steps in the environmental review process, particularly when a federal agency prepares an EIS. Opportunities for public involvement exist during scoping and public review of a draft EIS. Additionally, public hearings on environmental documents may be held if a project is controversial or when otherwise requested by another federal agency with jurisdiction over the action (40 CFR 1506.6).

The 1978 Regulations define scoping “as an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action” (40 CFR 1501.7). The innovative approach to scoping in the regulations is that the process is open to the public and state and local governments, as well as to affected federal agencies. This open process gives rise to important new opportunities for better and more efficient NEPA analyses, and simultaneously places new responsibilities on the public and agency participants to express their concerns early in the NEPA process (CEQ 1981a). According to Friedman (1985:42), “The area where the NEPA regulations work best is in the scoping process, which is the most critical factor in making NEPA, and indeed the whole federal permitting process, function.” According to Pease and Smardon (1984:254), “The key to whether scoping is effective in these ways . . . lies in the extent to which interests and expertise outside the agency are made part of the process”—including the public.

As expressed by Murthy (1988:5), the NEPA process “has created a powerful medium for all societal entities to express and enforce their concern for the preservation and enhancement of environmental quality through an orderly process of public participation.” Senator Henry Jackson in a 1969 speech to Congress, stated that,

Behind the President and Congress stands the public as ultimate decisionmaker. NEPA has been interpreted to require both the sharing of information with the public and the involvement of the public in developing information. The legislative history recognizes that NEPA was itself a response to a public demand, with Congress trying to catch up rather than lead. [115 Congr. Rec. S. 17452 (daily ed. Dec. 20, 1969) (statement of Mr. Jackson), as cited in Anderson 1974:379]

## **2.2.4 Social/Cultural/Economic Welfare**

### ***2.2.4.1 Consideration of Unquantified Environmental Amenities***

More than economics and technology must be considered in an adequate environmental impact analysis. Under Section 102(2)(b), federal agencies are authorized and directed to “identify and develop methods and procedures in consultation with the CEQ—which will ensure that presently unquantified environmental amenities and values be given appropriate consideration in decisionmaking along with economic and technical consideration.” By implication, the EIS should reflect these values (CEQ 1973b).

Unquantified environmental amenities and values include aesthetic, historic and cultural considerations. As a policy goal, NEPA seeks to ensure “aesthetically and culturally pleasing surroundings” [Section 101(b)(2)], and to “preserve important historic, cultural, and natural aspects of our national heritage” [Section 101(b)(4)]. The 1978 CEQ Regulations specifically include unquantified environmental amenities and values as part of the environmental analysis process. When measuring the “effects” of a proposed action, federal agencies must consider direct and indirect “aesthetic, historic, and cultural” impacts (40 CFR 1508.8); and when determining the “significance” of an environmental impact, agencies must consider the “unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, [or] wild and scenic rivers . . .” (40 CFR 1508.27). The courts have found NEPA violations when federal agencies have neglected unquantified environmental amenities and values when undertaking an environmental analysis (Keiter 1990).

### ***2.2.4.2 Environmental, Technical and Economic Partnership***

As viewed by Hill and Ortolano (1978:286), “The legislative intent reflected in NEPA is that agencies be required to take account of environmental, economic, and technical considerations in all phases of planning and decisionmaking.” Specifically, Section 102(2)(B) of NEPA mandates such an *integrated* decision process: it requires appropriate consideration of environmental amenities and values along with economic and technical considerations. NEPA, therefore, advocates a “balanced triad” of technology, environment, and economics (Murthy 1988). According to Andrews et al. (1977:24), NEPA was to avoid “the pursuit of narrow economic goals that had obscured the need to weight environmental impacts.” The 1978 Regulations stated that it was critical that identified environmental effects and values be described in sufficient detail so they can be easily compared to economic and technical analyses during alternative development and the selection of the proposed action [40 CFR 1501.2(b)].

## **2.2.5 NEPA’s Intent**

Although NEPA has not been substantively amended by Congress since it was signed into law over 25 years ago by President Nixon, the Act has been given new meaning by

administrative rulemaking, court action, Presidential order, and agency operations. Nevertheless, the CEQ 20th Annual Report states that the basic message of NEPA has remained unchanged. The statute requires all federal agencies to take the following steps (CEQ 1989:26):

- Think about the environment when planning any major action.
- Closely examine the need for and objective of projects, especially resource-sensitive projects.
- Diligently search for alternatives that will not degrade the environment.
- Evaluate anticipated environmental effects to the extent necessary to delineate choices to decisionmakers and the public.
- Keep the federal decisionmaking process open, honest, and cooperative.

One way to evaluate the impact of NEPA's intent is to examine federal agency policy and decisionmaking practices. Ortolano and Shepherd (1995) have asserted that NEPA has significantly influenced both federal projects and the federal agencies themselves—e.g., an EIS requirement may discourage projects that are detrimental to the environment from being proposed; federal agencies have redefined their goals and responsibilities and have reformulated their planning processes to accommodate NEPA requirements. The CEQ (1990:189) has stated that, “NEPA dramatically changed that one-dimensional approach to environmental management by requiring that the totality of environmental quality concerns be integrated comprehensively into federal policymaking and decisionmaking. NEPA is an integrative tool . . . .” According to Cahn (1979:50010), “Probably NEPA's foremost contribution to public perception has been forcing federal agencies to provide information about major actions affecting the environment.” Cahn (1979:50012) has further stated that, “NEPA . . . has provided the institutional base for publicizing the cause of a better environment. Little known issues have received national attention through environmental impact statements, and especially from court decisions regarding those statements. And the environmental spectrum has been broadened.”

Other NEPA critics have noted that one way that NEPA has affected decisionmaking is through its impact on and interaction with other environmental statutes, e.g., the Endangered Species Act, the Clean Air Act, the Clean Water Act (Murchison 1984). Murchinson (1984:611) has also pointed out that the impact statement process has assisted environmental groups “in their political struggles against agency decisions by providing two indispensable prerequisites to effective political action: information and time.” In the view of Ortolano and Shepherd (1995), NEPA has also indirectly influenced the decisionmaking processes of hundreds of nonfederal

jurisdictions. For example, many of the 50 U.S. states have environmental statutes similar to NEPA, often referred to as “little NEPAs.” Moreover, the influence of NEPA has not been limited to the United States. By the early 1990s, over 40 countries had EIA programs based substantially on NEPA (Ortolano and Shepherd 1995).

One area where NEPA’s intent has been amplified substantially over the last 25 years, is public involvement. As stated earlier, NEPA only directs that copies of environmental statements be made available to the public for review. An executive order and CEQ regulations and memoranda required agencies to provide the public with information early in the EIS process and to allow public substantive input into the decisionmaking process. But, it was Senator Jackson, in 1969, who stated that the public was the “ultimate decisionmaker” that required “the sharing of information” and public involvement “in developing information” [115 Congr. Rec. S. 17452 (daily ed. Dec. 20, 1969) (statement of Mr. Jackson), as cited in Anderson 1974:379].

So, NEPA implementation over the last quarter century has resulted in a law that is aimed at the following goals:

*[From the original statute]*

- To declare a national policy which will encourage productive and enjoyable harmony between man and his environment.
- To promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man.
- To enrich the understanding of the ecological systems and natural resources important to the Nation (Section 2).

*[From Executive Order 11514]*

- To recognize the public as the ultimate decisionmaker by facilitating direct public involvement in all levels of federal agency policy, planning and decisionmaking processes.

Stakeholder and agency interpretation and understanding of NEPA’s intent have taken more precise shape since 1969 while remaining consistent with the original Act’s broad aspirations. To support my interpretation of NEPA’s intent, I developed a set of clear goals, based in large part on my review of the NEPA documents and literature, for achieving the overall goal of NEPA—to encourage the productive and enjoyable harmony between humans and the environment.

1. To promote efforts which will prevent or eliminate damage to the environment—explore alternative actions that avoid or minimize adverse impacts; use innovative methods to prevent damage to the environment.
2. To enrich the understanding of ecological systems and natural resources—make decisions based on an understanding of ecological systems; recognize impacts on interrelationships of all natural components; promote accurate scientific analysis; exchange scientific data and research results.
3. To identify and estimate the magnitude and significance of relevant environmental impacts of alternative actions—identify relationship between short-term uses and long-term detriment to the environment; evaluate magnitude of short- and long-term implications of alternatives.
4. To enhance renewable resources and recycle depletable resources—restore and maintain environmental quality; identify irreversible and irretrievable commitments of resources; restore environmental quality previously lost.
5. To integrate NEPA into policymaking and the planning process—incorporate environmental considerations into decisionmaking process; incorporate scoping to identify environmental problems early in the planning process; demonstrate that the EIS is to assess impacts of an array of alternatives and this assessment determines project outcome.
6. To utilize a systematic, interdisciplinary approach in planning and decisionmaking—institutionalize systematic, integrated, scientific-based policy analysis; cooperate with state and local governments and the public; coordinate plans, programs, and resources.
7. To monitor and evaluate agency activities to protect and enhance the quality of the environment—provide monitoring to assure project decisions are carried out as planned with predicted results; make monitoring and evaluation information available to other agencies and the public.
8. To mitigate unavoidable impacts—mitigate to avoid or lessen adverse, unavoidable environmental impacts.
9. To provide the public with relevant information—provide the public with relevant information on alternatives and issues of concern; provide for public disclosure with regard to agency actions; obtain views of all interested parties.

10. To encourage and facilitate public involvement in the decisionmaking process—issue Final EISs that respond clearly to comments received; encourage and facilitate early public involvement in agency decisionmaking processes; include citizens and agencies working together around a conference table.
11. To identify and develop methods and procedures which will ensure unquantified environmental amenities and values are given appropriate consideration—assure evaluation of social, cultural, environmental factors along with economic factors; assure safe, healthful, productive, aesthetic and cultural surroundings.
12. To elevate environmental considerations to full partnership with technical and economic factors—present impacts in a comparative form thus sharply defining issues; assess environmental impacts with initial technical and economic factors.

The 20th Annual Report of the CEQ (1989:26) asserted that, “In the final analysis, the effectiveness of NEPA will be judged by the extent to which the nation puts its environmental ethic into practice. One way to measure that is to examine past federal agency decisions and assess how those decisions were shaped by the NEPA process.” Having clarified the intent and aspirations of the Act as well as having explained how the literature suggests that intent has evolved over the years, what follows is an assessment of two sets of Forest Service EIS documents to ascertain how the Forest Service’s NEPA process has evolved over a 10-year time frame in order to suggest whether and in what specific ways this broad image agrees with actual agency EIS experience and practice.

### **2.3 NEPA and the U.S. Forest Service—A Historical Perspective**

During the 1960s and 1970s, social, economic, and political forces led to the passage of the Multiple-Use Sustained Yield Act of 1960 (MUSYA), the National Environmental Policy Act of 1969 (NEPA), the Resource Planning Act of 1974 (RPA), and the National Forest Management Act of 1976 (NFMA). These acts, particularly NFMA, were the catalyst for the Forest Service’s extensive effort to develop long-term, comprehensive land and resource management plans for all units of the National Forest System (Ackerman 1990; Kraft 1996). NFMA was largely modeled after NEPA (CEQ 1974; Ackerman 1990; Kraft 1996). NEPA was never intended to alter the Forest Service’s mission, narrow the agency’s management and regulatory authority and discretion, nor mandate certain mixes or combinations of resource values, but it has had an extensive, multi-tiered effect on national forest management nonetheless (U.S. Congress, Office of Technology Assessment 1992). According to Ackerman (1990), NEPA “accelerated” and “stimulated” change within the Forest Service.

Historically, the Forest Service was a decentralized organization with a tradition of independent decisionmaking at the lowest levels of the hierarchy (Ackerman 1990). Additionally, the Forest Service enjoyed virtually uncontested stewardship of National Forest lands (Ackerman 1990). Passage of NEPA forced the Forest Service not only to change its decentralized decisionmaking process but also to open up its previously insulated decisionmaking process to public scrutiny, involvement and challenge (Ackerman 1990). In contrast to many other federal agencies, the Forest Service, at the policymaking level, recognized that acceptance of NEPA's mandates was crucial to the agency's survival because it was being pressured by the same social and political forces that inspired Congress to enact NEPA (Ackerman 1990).

NEPA has affected Forest Service planning and decisionmaking in many substantive ways: consideration of environmental impacts over and above the MUSYA requirement to maintain productivity of the land; increased public awareness of forests and agency awareness of public demands; advancements in the agency's knowledge of forest conditions because of increased data collection for the forest plans; implementation of monitoring procedures as part of the forest plans; hundreds of thousands of acres protected through administrative designation as research natural areas, scenic areas, etc.; consideration of a much wider range of possible uses for a forest area; a shift away from an overwhelming emphasis on timber or commodity production; stimulation of substantive review of Forest Service management practices, especially timber management; and the diversification of Forest Service personnel needed for environmental impact analysis (Ackerman 1990; Kennedy 1991; U.S. Congress, Office of Technology Assessment 1992; CEQ 1974; Kessler and Salwasser 1995; Brunson and Kennedy 1995).

When NEPA was enacted, many Forest Service personnel saw it as supportive of the Service's conservation ethic and fully consistent with its existing responsibilities as contained in the Organic Act of 1897 and the Multiple-Use and Sustained-Yield Act of 1960 (MUSYA) (CEQ 1974; Ackerman 1990). Many others in the Forest Service had difficulty adapting to the intents of NEPA and other environmental legislation (Ackerman 1990; Brunson and Kennedy 1995).

Reasons why many Forest Service personnel had difficulty adapting to the NEPA process included: the Forest Service's traditional focus on commodities vs. amenity values; the agency had adapted so well to the older order; the Forest Service's culture instilled a self image of stewardship, of objective and scientific professionalism, and guardianship of public forests; the Forest Service had seen itself as managing for multiple use from the beginning (the difficulty lay in discrepancies between the agency's definition of multiple use and the emerging public definition); the public and scientific community had begun to see timber as one element among many values that included not only other commodities, but an increasing number of noncommodity resources; the Forest Service tended to embrace the traditional notion that "proper" timber management is generally compatible with other forest uses; many foresters believed in the ignorance of "the public," and saw it as unprofessional to choose societal



preference over science; moreover, they misjudged the scope and scale of publics to whom they needed to listen—e.g., the Forest Service’s tended to stress local rural concerns at the expense of more distant urban ones (Magill 1983; Ackerman 1990; Kennedy 1991; Congressional Research Service 1993; Brunson and Kennedy 1995; Kessler and Salwasser 1995).

NEPA itself also precipitated two events within the Forest Service that gradually affected the quality of environmental assessment and initially caused internal dissension among agency personnel. A belief in rational solutions led the Forest Service to rely on a computer model called FORPLAN to drive its NEPA planning process (Brunson and Kennedy 1995). FORPLAN compared alternatives through a linear programming process in search of a solution that would optimize present net value (USFS 1985, 1986). According to Brunson and Kennedy (1995), this approach sustained and disguised the Forest Service’s commodity orientation. Resources that did not fit neatly into the model—those not traded in markets and therefore not easily converted into dollars—were treated as “constraints” on timber production, or else ignored altogether (Kessler and Salwasser 1995). The model also showed little sensitivity to local ecological and social conditions; it could not consider the juxtaposition of activities, nor many cumulative effects (Brunson and Kennedy 1995). Likewise, the models failed to address many of the conditions, values, and uses of national forests that really mattered to people (Shands et al. 1990). Furthermore, after two decades (1970s and 1980s) of shifting funds away from monitoring and inventory, the data fed into the model only cursorily resembled actual conditions in the national forests (Brunson and Kennedy 1995).

The second event was the need to diversify Forest Service personnel to include wildlife biologists, landscape architects, planners, engineers, ecologists, soil scientists, etc. (Kennedy 1991). In the early 1970s, the agency adopted the policy of using interdisciplinary teams of resource specialists to prepare environmental impact assessments. In ideal circumstances, members of “ID teams” would complement each others’ skills, but cooperation too often gave way to competition (Brunson and Kennedy 1995). Members became advocates for their special interests. Such a dynamic had been expected, even intended, as a way to promote exchange of diverse values and management responses. What was not expected was that advocates for amenity resources would be forever losing out to commodity specialists (Brunson and Kennedy 1995). As internal arguments gained external attention, the public’s perceptions were reinforced that the Forest Service was not interested in protecting all resources (Brunson and Kennedy 1995).

There were also external difficulties that have hindered the Forest Service from adapting to the intent of NEPA, NFMA, and other environmental legislation. Historically, the decentralized organizational management of individual National Forests was based primarily on local needs and interests because National Forests were used almost exclusively by local people (Ackerman 1990). However, changing political, social, and economic forces shifted the focus of Forest

Service decisionmaking from the local level to regional and national levels (Ackerman 1990). In response, Congress placed additional constraints on how the Forest Service managed National Forests (Ackerman 1990). Resulting difficulties included conflicts between what Congress mandated in law and what Congress expected the Forest Service to produce in terms of timber production. The emphasis of the Reagan administration and powerful legislators in the Congress on supplying public resources for the U.S. economy created pressures to increase timber harvest levels provided for in the draft forest plans of the early 1980s (Kraft 1996). FORPLAN models were adjusted to meet “timber targets” (Kessler and Salwasser 1995), and annual harvests doubled between 1982 and 1989 (Rosenbaum 1991). Consequently, environmentalists as well as industry interests regularly contested forest plans and their accompanying EISs (Kraft 1996). The number of appeals of Final EISs increased from 133 in 1987 to 636 in 1991 (Kraft 1996).

Numerous issues were raised in forest plan appeals, but Kessler and Salwasser (1995) discerned a common thread—Americans were not only concerned with the products and services provided by the national forests, they also cared deeply about the *condition* of these special lands and resources. The appeals discussed issues that the plans often neglected—issues such as the health, beauty, and ecological integrity of forests and rangelands; the cumulative effects of management actions on air and water quality; the diversity and viability of plant and animal species; the special “sense of place” afforded by wildland settings; and questions of responsibility to future generations (Kessler and Salwasser 1995).

The Forest Service in recent years has undergone significant changes as it adjusts to new expectations for sustainable resource management and ecosystem protection (Kessler and Salwasser 1995; Kraft 1996). At the end of the Reagan years, disaffected foresters formed an Association of Forest Service Employees for Environmental Ethics to press for greater emphasis on environmental values and norms of stewardship through the so-called “new forestry” (Kessler and Salwasser 1995). In 1992, the Forest Service developed its “New Perspectives” program incorporating some elements of ecosystem management (Kraft 1996). Chapter 3, *Ecosystem Management*, discusses the development of “New Perspectives” and the incorporation of ecosystem management into Forest Service policy in greater detail.

## **2.4 NEPA Criteria, Goals and Questions**

This section synthesizes NEPA’s intent and the NEPA process evolution over the last 25 years into a list of “ideal” NEPA criteria followed by the development of 12 NEPA goals. The goals, in turn, were used to formulate the questions for the case study evaluations of the George Washington and Francis Marion National Forests.

### **2.4.1 NEPA Criteria and Goals**

For this research, I reviewed the National Environmental Policy Act of 1969, as amended, CEQ annual reports, guidelines and regulations, other environmental legislation and relevant executive orders, court decisions, and the NEPA literature to delineate NEPA's intent. Overall, I found much consistency within the Act, CEQ and other documents, and the literature. Where authors' differed, the conflict generally centered on interpretation of specific points, such as, the definitions of "human environment" or "irretrievable commitment of resources," or explicit methodologies for fulfilling the NEPA process, e.g., "what minimal level of public involvement in the scoping process is acceptable to fulfill NEPA requirements."

As discussed in Section 2.2.5, four broad categories or themes emerged from my evaluation of the NEPA documents and literature—environmental protection, interdisciplinary/environmental planning, public involvement, and social/cultural/economic welfare. The themes were derived through a synthesis of an extensive list of NEPA criteria gleaned from the NEPA document and literature reviews. The NEPA criteria for each theme were analyzed and synthesized further, resulting in 12 NEPA goals. Table 2.1 lists the 12 NEPA goals. Appendix A lists the NEPA goals along with the specific criteria that led to the formulation of each of the goals. The document and/or literature sources for each of the criteria have been included for reference.

### **2.4.2 NEPA Evaluation Questions**

A suite of NEPA questions was developed to evaluate two sets of U.S. Forest Service environmental impact statements and their accompanying Forest Plans. The purpose of the evaluation was to ascertain how and to what extent NEPA's intent has been incorporated into the Forest Service EIS process and, by implication, what effect this has had on overall Forest Service planning practices.

Evaluation questions were formulated from the NEPA goals, which were based on the specific NEPA criteria that resulted in those goals. The NEPA questions and the range of possible responses are listed in Table 2.2. Each NEPA question not only incorporates the specific objectives of each goal, but the question also attempts to capture the broader, holistic intent of NEPA. This is illustrated through the matrix presented in Table 2.3. The matrix shows the integrated relationship of the 13 NEPA questions to the NEPA criteria.

From a practical perspective, it was imperative that the question responses be discernible through an examination of the EIS and Forest Plan documents. From an evaluation perspective, the 13 NEPA questions were formulated for their ability to contribute to the defined "ideal" set of NEPA criteria. Therefore, the range of responses for each question was designed to ascertain this "ideal." In order to estimate the relative differences among the range of responses for each

NEPA question, a measurable criterion indicator was devised to depict the differences between the “ideal” and “real” elements for each criterion type. The criterion indicators were assessed relative to one another using a heuristic scale (adopted from Kennedy 1992):

- Does not satisfy the criterion.
- Partially satisfies the criterion.
- Satisfies the criterion (“ideal” element).

Table 2.2 includes the range of responses for each of the NEPA questions based on the heuristic scale described above. Several of the questions (Questions 6, 7, 8, 10, and 11) have a fourth possible response to either the low or mid-range response (“does not satisfy the criterion” or “partially satisfies the criterion”). This additional response was necessary because of the specific nature of one or more of the particular EISs evaluated.

**Table 2.1. The Goals of NEPA.**

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1. To promote efforts which will prevent or eliminate damage to the environment.
2. To enrich the understanding of ecological systems and natural resources.
3. To identify and estimate the magnitude and significance of relevant environmental impacts of alternative actions.
4. To enhance renewable resources and recycle depletable resources.
5. To integrate NEPA into policymaking and the planning process.
6. To utilize a systematic, interdisciplinary approach in planning and decisionmaking.
7. To monitor and evaluate agency activities to protect and enhance the quality of the environment.
8. To mitigate unavoidable impacts.
9. To provide the public with relevant information.
10. To encourage and facilitate public involvement in the decisionmaking process.
11. To identify and develop methods and procedures which will ensure unquantified environmental amenities and values are given appropriate consideration.
12. To elevate environmental considerations to full partnership with technical and economic factors.

**Table 2.2. The NEPA Questions Based on the NEPA Goals and Criteria.**

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1. When and by whom were critical environmental impacts identified in the EIS?
  - other federal agencies, local and state government agencies, citizens, and/or environmental groups identified critical environmental impacts during Draft EIS review.
  - other federal agencies, local and state government agencies, citizens, and/or environmental groups identified critical environmental impacts during Scoping.
  - critical environmental impacts were identified during interdisciplinary planning and decisionmaking sessions or in programmatic EIS.
2. How were identified critical environmental impacts dealt with in the EIS?
  - identified critical impacts were not fully discussed; no critical impacts were avoided, mitigated, etc.
  - some identified critical impacts were discussed; some critical impacts were avoided, mitigated, etc.
  - all identified critical impacts were fully discussed; all identified critical impacts were avoided, mitigated, etc.
3. How was ecological information integrated into the document and into the alternative selection process?
  - minimally or not at all.
  - integrated in some areas, but not in others.
  - integrated throughout document and in alternative selection process.
4. How were the magnitude and significance of relevant environmental impacts of alternatives identified and estimated (including indirect and cumulative effects)?
  - magnitude and significance of relevant environmental impacts of alternatives not identified.
  - partial identification and estimation of magnitude and significance of relevant environmental impacts of alternatives.
  - thorough identification and estimation of magnitude and significance of relevant environmental impacts of alternatives (including indirect and cumulative effects).
5. How were identified irreversible or irretrievable commitments of resources addressed?
  - not addressed.
  - marginally; from a narrow perspective.
  - substantially.
6. To what extent was an integrated, systematic, interdisciplinary approach used?
  - project completed using in-house personnel from same disciplinary background.
  - project completed using in-house personnel from numerous disciplinary backgrounds; other agencies or specialists only consulted on a needs basis (e.g., permit required).
  - interdisciplinary committee, composed of Forest Service and non-Forest Service members, formed at onset of this planning effort.
  - ongoing interdisciplinary committee, composed of Forest Service and non-Forest Service members, involved in policymaking and planning processes.

**Table 2.2. The NEPA Questions Based on the NEPA Goals and Criteria  
(continued).**

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7. What provisions were made for monitoring and evaluation?
  - none.
  - importance of monitoring and evaluation discussed; no monitoring or evaluation plan delineated in the EIS/ROD.
  - monitoring and evaluation plan outlined as part of the Final EIS/ROD; no specific monitoring or evaluation techniques given.
  - monitoring and evaluation plan developed as part of the Final EIS/ROD; forest-wide and site-specific standards delineated.
8. How did the EIS/ROD address the mitigation of unavoidable impacts?
  - not addressed.
  - general mitigation measures discussed, but no detailed mitigation plan developed as part of the Final EIS/ROD.
  - mitigation plan developed as part of the Final EIS/ROD; only general mitigation measures proposed (Guidelines and Standards).
  - mitigation plan developed as part of the Final EIS/ROD; site-specific and detailed mitigation measures delineated.
9. How was input sought from citizens, local and state government agencies, and environmental groups?
  - no input sought.
  - input through informational meetings, open houses, letters, public hearings.
  - representatives of the general public, local, state and other federal agencies, and organizations involved in ongoing Forest Service planning committees.
10. Was the project changed to reflect comments/concerns of citizens, local and state government agencies, environmental groups? How were the comments/concerns addressed?
  - not at all; no reasons given or comments ignored.
  - acknowledged comments/concerns; no or minimal changes made to the project.
  - project moderately changed, but not to the level of comments/concerns.
  - project changed during Scoping or after DRAFT EIS review to reflect comments/concerns.
11. How has the environmental information influenced the selection of the final plan of action as evidenced in the ROD?
  - not at all.
  - minimal evidence of influence of environmental information.
  - environmental information integrated in some parts of planning and decisionmaking more than others as evidenced through selection of the final plan of action.
  - environmental information integrated throughout the planning and decisionmaking process as evidenced through the selection of the final plan of action.

**Table 2.2. The NEPA Questions Based on the NEPA Goals and Criteria  
(continued).**

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12. Were unquantifiable environmental values given appropriate consideration in decisionmaking along with economic and technical considerations?
  - not at all.
  - unquantifiable environmental values were quantified (e.g., willingness to pay) and entered into a model as constraints.
  - unquantifiable environmental values were not quantified, as such, and were given appropriate consideration.
13. Did the EIS provide a decisionmaking framework for consideration of all effects of alternatives, including environmental, economic and social effects?
  - no decisionmaking framework provided.
  - decisionmaking framework provided for effects that were quantified.
  - decisionmaking framework provided for consideration of all effects of alternatives, including environmental, economic, and social effects.



**Table 2.3. Matrix Showing the Relationship of the NEPA Criteria to the NEPA Questions.**

NEPA Criteria	NEPA Questions												
	1	2	3	4	5	6	7	8	9	10	11	12	13
<b>Environmental Protection</b>												*	*
Prevent/eliminate damage to the environment.	*	*	*	*	*		*	*			*	*	*
Facilitate preservation/enhancement of the environment.	*	*	*					*			*	*	*
Restore/maintain environmental quality.	*	*	*	*	*		*	*			*		*
Fulfill responsibilities of each generation as trustee of the environment.	*	*	*	*		*				*		*	*
Attain widest range of beneficial uses of environment w/o degradation.	*	*	*	*	*		*	*			*		*
Explore/evaluate alternative actions that avoid/minimize adverse impacts.	*	*	*	*	*		*	*			*	*	*
Identify extent action curtails range of beneficial uses of environment.	*	*	*	*	*		*	*			*		*
Appraise and improve environmental effects of actions.	*	*	*	*	*		*	*			*		
Use innovative methods for preservation/enhancement of environment.	*	*	*	*				*					*
Make decisions based on understanding of environmental consequences.	*	*	*	*							*		*
Establish all practicable means to avoid/minimize environmental harm.	*	*	*	*				*					*
Identify relationship between short-term uses and long-term productivity.	*	*	*	*		*					*		*
Include descriptions of significant primary and secondary consequences.	*	*	*	*		*					*		*
Recognize direct/indirect impacts of significant actions to environment.	*	*	*	*		*					*		*
Evaluate both long- and short-term implications of alternative actions.	*	*	*	*		*					*		*
Assess action of cumulative and long-term effects for each generation.	*	*	*	*		*					*		*
Ascertain range of short-term benefits vs. long-term detriment.	*	*	*	*		*					*		*
Discuss extent proposed action involves trade-offs/forecloses on future.	*	*	*			*		*			*	*	*
Identify any adverse unavoidable environmental effects.	*	*	*	*	*			*			*		*
Avoid or minimize adverse environmental effects.	*	*	*					*			*		*
Include alternative measures to compensate for fish/wildlife losses.	*	*	*					*					*
Indicate what other interests/considerations offset adverse effects.	*	*	*					*					*
Include mitigation measures to avoid/lessen adverse impacts.	*	*	*					*					
Implement mitigation committed as part of decision (ROD).	*	*	*					*					
Enrich understanding of ecological systems and natural resources.		*	*	*									
Initiate/utilize ecological information in planning/development.		*	*	*							*		*
Recognize impacts on interrelationships of all natural components.		*	*	*								*	*
Consider environment as dynamic; incorporate new knowledge.		*	*	*							*		
Promote accurate scientific analysis, scientific integrity.		*	*	*									*
Ensure scientific information is not lost; publish and utilize.			*	*							*		
Identify gaps in relevant information; acknowledge scientific uncertainty.	*	*	*	*									*
Institutionalize systematic, integrated, science-based policy analysis.			*	*				*	*				*
Integrate interdisciplinary use of sciences.			*	*				*	*				*
Create/maintain productive harmony between man and nature.			*	*	*						*		
Enhance quality of renewable resources; attain maximum recycling.			*	*	*			*					
Recognize worldwide/long-range character of environmental problems.			*	*	*								
Identify irreversible/irretrievable commitment of resources.			*	*	*						*		*
Participate in environmental renewal.			*	*	*			*					
Restore environmental quality previously lost.			*	*	*			*				*	
Identify energy requirements and conservation potential.			*	*	*								

**Table 2.3. Matrix Showing the Relationship of the NEPA Criteria to the NEPA Questions (continued).**

NEPA Criteria	NEPA Questions												
	1	2	3	4	5	6	7	8	9	10	11	12	13
<b>Interdisciplinary/Environmental Planning</b>													
Utilize systematic, interdisciplinary approach.	*	*	*	*		*	*	*	*	*	*	*	*
Continue cooperation with state/local governments, and public.	*		*	*	*			*	*			*	
Improve/coordinate plans, functions, programs, and resources.	*		*	*	*				*			*	
Consult with/obtain comments of agencies with jurisdiction/expertise.	*		*	*	*				*				
Lend support to initiatives, etc. to maximize international cooperation.						*			*				
Engage in exchange of data/research results with other nations.						*			*				
Consult with other agencies with regard to assessment of impacts.	*	*	*	*	*	*			*				*
Develop new initiatives to tackle environmental problems.		*	*	*	*	*		*					
Identify and define purpose and scope of the action.	*		*			*							
Discuss relationship of action to land use plans, policies, etc.	*					*			*				
Use interdisciplinary approach in early planning stages.	*		*	*	*	*			*				
Require active cooperation among engineers, planners, ecologists, etc.	*		*	*	*	*						*	
Review policies to determine need for changes affecting entire programs.						*			*				
Integrate requirements of NEPA with other planning/review procedures.						*			*				
Cooperate with state/local agencies through joint planning, etc.	*		*	*	*	*			*				
Promote interdisciplinary learning/mutual exchange of information, etc.	*		*	*	*	*		*	*			*	
Study, develop, describe appropriate alternatives.	*	*	*	*	*	*							
Incorporate environmental considerations into decisionmaking processes.	*	*	*	*	*	*		*	*	*	*	*	*
Explore alternative actions which minimize adverse impacts.	*	*	*		*		*			*	*	*	*
Analyze alternatives with costs and impacts in review process.						*				*	*	*	*
Describe alternatives with information/technical data for assessment.				*						*	*	*	*
Consider environmental factors at earliest possible stage in planning.		*			*								
Explore/evaluate impacts of all reasonable/beneficial alternatives.		*					*		*	*	*	*	*
Begin at earliest point to consider environmental aspects of actions.		*			*								
Develop alternatives not within existing authority or of different nature.							*		*		*	*	*
Include no action alternative or postpone action for further study.	*		*		*	*	*						*
Use experimental techniques to present environmental factors/values.	*	*	*			*	*						
Demonstrate EIS to assess impacts vs. previously made decision.					*					*			
Develop range of alternatives between no action/environmental action.		*								*	*	*	*
Present impacts in comparative form, thus sharply defining issues.									*	*			
Incorporate "scoping" to identify environmental problems early.								*	*				
Elevate environment to full partnership with economic/technical factors.		*								*	*	*	*
Assess environ. impacts of actions w/initial technical/economic studies.		*								*	*	*	*
Identify environ. effects in detail to compare to economic/tech. analyses.		*								*		*	*
Overhaul incremental decisionmaking w/narrow economic goal.						*							
"Balance" environmental/other considerations in alternative selection.	*	*	*		*					*	*	*	*
Monitor and evaluate agency activities.							*						
Make monitoring/evaluation information available to other agencies, etc.							*						
Provide monitoring to assure decisions are carried out.							*						
Develop detailed monitoring/evaluation program.							*						

**Table 2.3. Matrix Showing the Relationship of the NEPA Criteria to the NEPA Questions (continued).**

NEPA Criteria	NEPA Questions												
	1	2	3	4	5	6	7	8	9	10	11	12	13
<b>Public Involvement</b>													
Make copies of EIS comments/views of agencies to President and public.									*	*			
Make available to state/local agencies, public, etc. environ. information.									*	*			
Provide public with relevant information on alternatives.									*	*			
Include early notification for informing public of decision to prepare DEIS.									*	*			
Provide for public disclosure information for analysis of alternatives.									*	*			
Respond to the public's right-to-know.									*	*			
Develop procedures to obtain timely views of interested parties.	*								*	*		*	
Provide provisions for public hearings.	*								*	*			
Discuss problems/ objectives raised by agencies, organizations, and public.	*					*			*	*			
Issue FEISs that respond clearly to comments received.	*								*	*			
Consider comments of agencies/public in decisionmaking process.	*					*			*	*		*	
Encourage/facilitate early public participation/involvement in EIS process.	*					*			*	*			
Incorporate comments recommending modifications, new alternatives.	*								*	*			
Encourage experimentation w/innovative public participation methods.									*	*			
Include citizens and agencies working together around conference table.						*			*	*			
Incorporate early/open process ("scoping") to identify issues.	*					*			*	*			
Make effort to involve public in implementing NEPA procedures.	*					*			*	*			
<b>Social/Cultural/Economic Welfare</b>													
Achieve balance between population and resource use.	*		*					*			*	*	*
Assure evaluation of social, cultural, economic and environ. factors.	*										*	*	*
Include social impact analysis.												*	*
Include analysis for determining environmental justice/equity.												*	*
Identify/develop ways to ensure unquantifiable amenities are considered.											*	*	*
Assure safe/healthful/productive/aesthetic/cultural surroundings.											*	*	*
Preserve historic, cultural, natural aspects of national heritage.								*				*	*
Administer cultural properties in spirit of stewardship/trusteeship.												*	
Assure plans/programs contribute to preservation of non-federal sites.												*	