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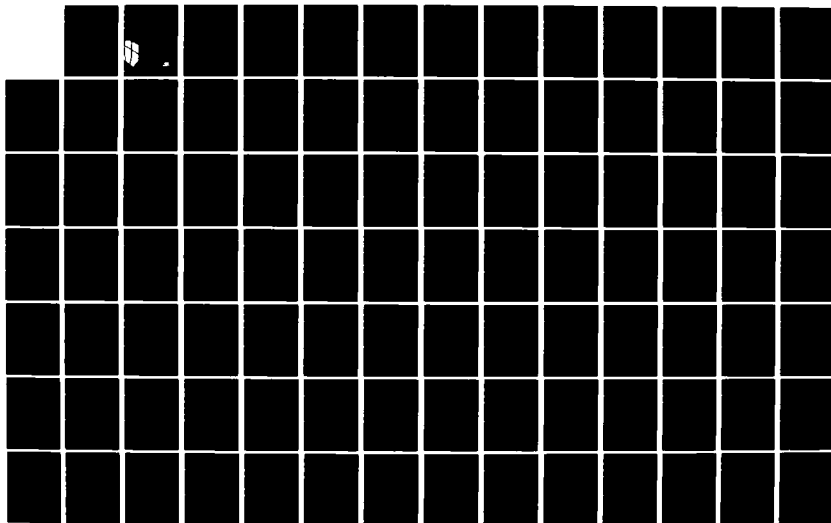
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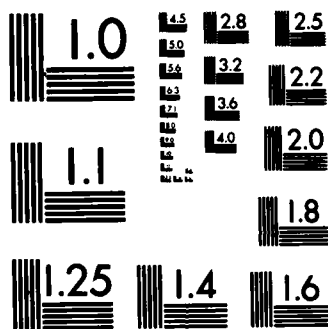
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TECHNICAL REPORT N-130
October 1982

PROCEDURES FOR ENVIRONMENTAL
IMPACT ANALYSIS AND PLANNING

by
John Fittipaldi
Susan Thomas
Robert Lacey
Robert Baran
Lynn Engelman
Robin Goettel



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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER CERL-TR-N-130	2. GOVT ACCESSION NO. AD A122417	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) PROCEDURES FOR ENVIRONMENTAL IMPACT ANALYSIS AND PLANNING		5. TYPE OF REPORT & PERIOD COVERED FINAL
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) John Fittipaldi Robert Baran Susan Thomas Lynn Engelman Robert Lacey Robin Goettel		8. CONTRACT OR GRANT NUMBER(s) FAD No. MP-79-6 FAD No. RMO-80-1
9. PERFORMING ORGANIZATION NAME AND ADDRESS U.S. ARMY CONSTRUCTION ENGINEERING RESEARCH LABORATORY P.O. BOX 4005, CHAMPAIGN, IL 61820		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS		12. REPORT DATE October 1982
		13. NUMBER OF PAGES 207
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES Copies are obtainable from the National Technical Information Service Spring, VA 22151		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Environmental impact statement environmental management		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The information in this report was gathered to help Army personnel comply with National Environmental Policy Act and Army requirements, to perform environmental analysis, and to prepare environmental documents. This report contains information designed to answer the most commonly asked questions of personnel who must respond to environmental regulations.		

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This report identifies the requirements for planning, scoping, timing, preparing environmental documents, and identifying monitoring and mitigation techniques. In addition, it identifies the various required environmental documents and describes staffing and coordination requirements.

The most commonly used environmental analysis methods are described, and their positive and negative aspects identified. Guidance has been provided for writing Environmental Assessments and Environmental Impact Statements.

For the reader's convenience, appendices have been provided which identify public participation procedures requirements, provide examples of environmental documents, define environmental terminology, and list Federal agency contacts.

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FOREWORD

This research was conducted for the Directorate of Military Programs, Office of the Chief of Engineers (OCE) under FAD No. MP-79-6, dated 20 June 1979 and FAD No. RMO-80-1, dated 20 August 1980. The work was performed by the Environmental Division (EN) of the U.S. Army Construction Engineering Research Laboratory (CERL). Messrs. James J. Bickley and Gary W. Robinson were the OCE Technical Monitors.

Dr. R. K. Jain is Chief of CERL-EN. COL Louis J. Circeo is Commander and Director of CERL and Dr. L. R. Shaffer is Technical Director.

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CHAPTER 1

INTRODUCTION

1-1. Background

Since the mid-1960s, concern for the nation's environmental resources has increased significantly, as shown by the number of Federal environmentally related regulatory acts, statutes, and executive orders.

NEPA

The most significant environmental legislation is the National Environmental Policy Act of 1969 (NEPA). NEPA set environmental goals for the nation and specifically declared a national environmental policy. In addition, it provided a means of implementing this policy and established the Council on Environmental Quality (CEQ) to help the President enforce the Act. Section 102(2) of NEPA identifies provisions which all Federal agencies must implement to comply with the law. In 1970, the CEQ, under the direction of Executive Order 11514, issued guidelines to implement the provision for Environmental Impact Statements (EISs) [NEPA, Section 102(2)(c)]. These guidelines were revised in 1973.

Problems With Implementing NEPA

In the 11 years since NEPA was enacted, the environmental assessment process has been in constant evolution, shaped by legislation, administrative regulations, court decisions, and practical experience in environmental analysis and documentation. However, much of this evolution has led to inconsistent practices and interpretations of the law among the approximately 70 Federal agencies required to comply with NEPA. Furthermore, even the CEQ guidelines for EISs, which CEQ intended to be applied uniformly, were sometimes viewed as only advisory. As a result, the environmental assessment process created excessive paperwork and delay for most agencies, and EISs often became encyclopedic, non-analytic documents which often were not linked to the decision-making process.

Additional CEQ Regulations for Implementing NEPA

To address these concerns, CEQ, under the direction of Executive Order 11991, issued "Regulations for the Implementing of the Procedural Provisions of the National Environmental Policy Act" on 29 November 1978. In accordance with the Executive Order, these regulations are not simply guidance, but are binding on all Federal agencies. The regulations are far more extensive and explicit than the earlier guidelines and deal with all of the procedural provisions of Section 102(2) of NEPA, not just subsection (c). The intent of the regulations is to reduce paperwork, reduce delay, and insure that the environmental assessment process produces better, more environmentally sensitive decision-making.

Applicable Army Regulations

To more effectively reflect the ramifications of the new CEQ regulations, Army Regulation (AR) 200-1,¹ was revised. The revision divided the existing AR into two regulations. AR 200-2² states policy, assigns responsibilities, and establishes DA procedures for implementing the new CEQ regulations. This regulation was published as a final rule in the Federal Register in October 1980 as "Environmental Quality; Environmental Effects of Army Actions" (AR 200-2). The second part, currently under revision, will cover all other environmental responsibilities, e.g., pollution abatement and management, historic preservation, noise abatement, reporting requirements.

1-2. Purpose

The purpose of this report is to help Army personnel (1) perform environmental analysis, (2) prepare environmental documents, and (3) meet the requirements of AR 200-2, "Environmental Quality; Environmental Effects of Army Actions," and the Council on Environmental Quality's (CEQ) "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA)."³ The handbook provides clear, concise answers to many questions which will be faced by personnel who must respond to DA regulations. Among these questions are:

- a. What is NEPA?
- b. What are the CEQ NEPA regulations?
- c. What are the steps required to comply with NEPA?
- d. What types of records and documents are required?
- e. What are the roles of the preparer and proponent in the environmental analysis process?
- f. What kinds of information should these documents contain?
- g. How can this information be gathered?
- h. How should this information be presented?
- i. What type of analytic methods should be used?
- j. What should be done with the documents after they are prepared?
- k. What else is required after the documents are prepared?

¹ Environmental Protection and Enhancement, Army Regulation 200-1 (Department of the Army, December 1973).

² Environmental Quality; Environmental Effects of Army Actions, Army Regulation 200-2 (Department of the Army, November 1980).

³ National Environmental Policy Act Implementation of Procedural Provisions; Final Regulation (Council on Environmental Quality, November 29, 1978).

1-3. Approach

The environmental assessment process (Chapter 2) and the environmental evaluation and decision-making process (Chapter 3) were analyzed. The various environmental documents required, when they are required, and how they are staffed and coordinated were identified (Chapter 4). The most commonly used environmental analysis methods and their positive and negative aspects were established and the most appropriate method for various types of actions was identified (Chapter 5). Format guidance for writing the Environmental Assessment and Environmental Impact Statement were summarized (Chapter 6), and information on how to identify and implement impact monitoring and mitigation procedures was compiled (Chapter 7). Public participation procedures useful for satisfying various requirements for public involvement were identified (Appendix A), and examples of environmental documents, letters of invitation to scoping meetings, news releases, etc., were assembled for the reader's use (Appendix B). A Glossary of Terms used in the environmental evaluation process was drawn up, and a list of Federal agency NEPA contacts having legal jurisdiction or special expertise on environmental quality issues was compiled (Appendices C and D).

1-4. Mode of Technology Transfer

The information in this report will be disseminated as a DA Pamphlet in the 200 Series.

CHAPTER 2

THE ENVIRONMENTAL ANALYSIS PROCESS

2-1. Introduction

NEPA, the CEQ Regulations, and AR 200-2

The CEQ NEPA regulations emphasize the interdisciplinary concept in environmental assessment and require proponents of an action to improve their consideration of alternatives, including improving their presentation in environmental documents. The regulations encourage early interagency cooperation and public involvement, with the latter formalized in a process called scoping; in addition, they provide a variety of specific means to streamline both the assessment process and the environmental documents produced. CEQ's overall goal was to allow more informed decisions to be made about proposed projects in order to better protect the environment.⁴ Table 2-1 shows how the goals and concepts of NEPA have been incorporated into the CEQ regulations and how AR 200-2 further implements the procedural requirements.

Outline of This Chapter

This chapter provides information about the following major topics.

- (1) General considerations in the environmental analysis process.
- (2) Army actions -- what they are, and how they relate to the requirements of NEPA and to the Categorical Exclusion (CX), EA, and EIS lists in AR 200-2.
- (3) Who does the evaluation and how this is related to Army organization.

2-2. General Considerations

The Environmental Assessment Process

Environmental assessment must be incorporated into all of the Army's normal planning and decision-making processes.

Army activities occur after a planning process that is common to and fairly standardized for all Federal agencies:

- (1) Over a period of time, some problem or need is tentatively identified.
- (2) The planning and analysis process begins with a more detailed analysis of the identified problem, agency needs, and those goals or objectives which any eventual action should meet.

⁴ Nicholas Yost, CEQ Regulations Workshop (Institute for Environmental Studies, University of Washington, Seattle, 14 June 1979).

Table 2-1. Major Goals and Implementing Practices of NEPA CEQ/Army Regulations

NEPA Goals and Practices	CEQ Goals and Practices	Implementing Guidance in AR 200-2
Preserve and protect the physical and cultural environment and public health	Emphasizes goal of better decisions through improved procedures: • Emphasize options among alternatives • Interdisciplinary preparation of documents • Improve public/agency access -early interagency cooperation -scoping • Streamline the documentation process -time limits -shorter documents -must identify required permits -interagency cooperation, scoping -tiering -eliminate duplication -must incorporate consultations for other laws in overall NEPA process -allows exclusion of activities with no cumulative significant environmental effects	Provides additional detail on scoping procedures
Elevate environment to equivalent importance with other evaluative criteria in decision-making	Record of Decision required; must specify how tradeoffs are made in decision between environmental and other factors. Mitigation measures must be specified.	Provides list of "categorical exclusions" for Army which require no NEPA documentation.
Begin environmental evaluation as early in project planning as possible to better enable environmental protection measures to be incorporated.	Reemphasizes incorporation of environmental factors by specifying EIS is a decision document.	Defines major NEPA responsibilities within Army.
Requires consideration of environment be documented for proposals for legislation and other major Federal actions with significant effects.	Defines "major actions," "significant," and "effects." Requires agencies identify actions which would normally be major and significant.	Lists Army activities normally requiring an EIS, and criteria for using list.

Table 2-1. (Cont'd)

NEPA Goals and Practices	CEQ Goals and Practices	Implementing Guidance in AR 200-2
Requires consideration of project alternatives to protect environment when there are conflicts about alternative resource uses.	NEPA documents and agency planning must emphasize options among project alternatives. Requires agencies identify actions needing alternatives consideration (in an EA).	Lists Army activities normally requiring an EA, and criteria for using list.
Evaluative procedures must be interdisciplinary, including both biophysical and social sciences.	Emphasizes need for interdisciplinary assessment; requires EIS contain list of preparers and their qualifications.	
Unquantified amenities must be incorporated in evaluations; methods and procedures to do so must be developed and used.	Requires methodologies used in impact evaluation be explained or referenced (footnotes or appendices).	
Other agencies must be consulted.	Specifies procedures for early interagency cooperation and for solving disputes among agencies.	
Requires environmental information be made available to agencies, other organizations, and public.	Early interagency cooperation, scoping, public/agency review, and comment on documents.	
Help anticipate and prevent decline in world environment.	(Executive Order 12114)	Adopts DOD 6050.7, specifically Inclosures 1 and 2, for protection of environment in foreign countries and global commons.

(3) Study boundaries are set, and the current institutional, social, and physical setting is defined.

(4) The changes needed to meet the agency's objectives are defined, and the capacity of the institutional/social/physical setting to absorb these changes is investigated.

(5) Alternative methods of making the necessary changes are proposed.

(6) The specific probable effects of each alternative are analyzed.

(7) The "best" alternative is eventually chosen.

(8) The plan is reviewed internally.

(9) After the plan is approved, details for carrying it out are drawn up.

(10) The plan is executed.

The plan's success and how well its objectives are met are usually monitored both during and after the action. As a result, modifications for future actions of the same type may be proposed; modifications may also be made in an action as it occurs.

NEPA requires that Army activities be conducted in a manner that protects the environment. Incorporating environmental considerations into the planning process described above is usually the best way to fulfill this mandate.

Documenting the Process

NEPA requires that the Army document how a proposed action will affect the environment. This procedural requirement combines generalized project planning with specific planning and evaluation of environmental effects. As with a set of interlocking gears (see figure 2-1), the more efficiently an EIS or EA can be produced, the smoother the general project planning and the planning for environmental protection will be. The major goal is not the document, but rather a thorough environmental planning process whose documentation enables non-participants to evaluate the success of the process and use the resulting information. The EA or EIS has three primary roles:

(1) Provides the decision-maker with environmental information about a project which can be used along with any other decision-making factors.

(2) Provides the planners with information that will help them include environmental protection measures in each alternative and design alternatives that will cause less environmental impact.

(3) Allows other agencies, organizations, and affected individuals to participate in the planning process by (1) sharing in alternatives development and impact evaluation (scoping), and (2) commenting on the document's adequacies (public review of the draft EIS).

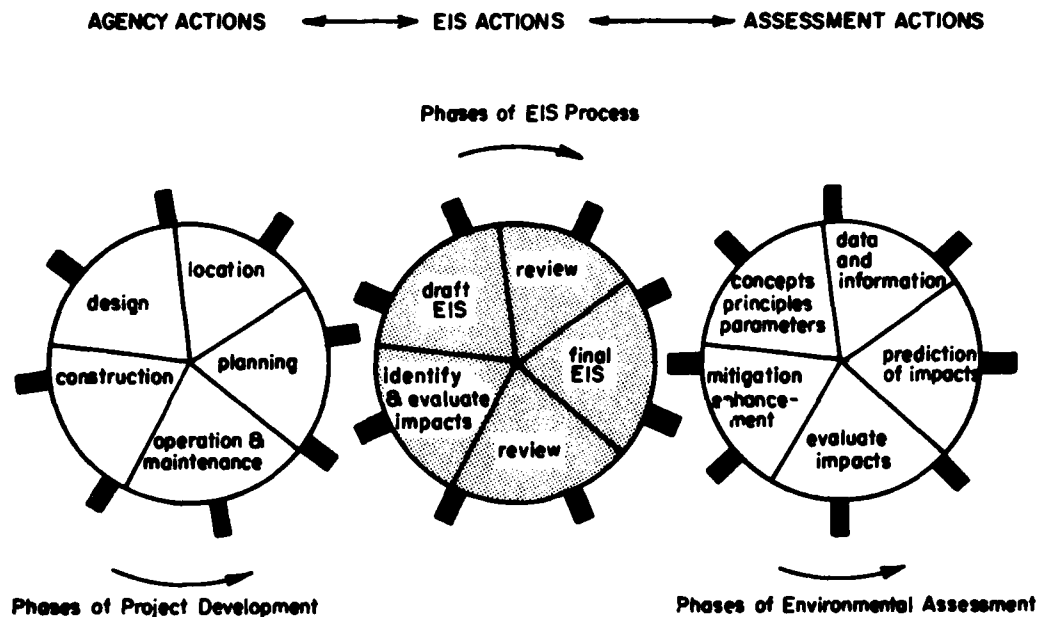


Figure 2-1. Overview of NEPA: Coupling project development with environmental assessment.

As part of the environmental planning process, the EA or EIS will:

- (1) Document the planned environmental considerations for a proposal and its alternatives.
- (2) Predict the environmental effects of project alternatives and provide conclusions about their significance.

Relating the Assessment Process to Army Planning

The following considerations are of practical consequence for Army planning officials.

(1) The office or official responsible for planning Army actions must insure that environmental assessment is actually done when appropriate. The designated environmental office may be able to help with this requirement. Although planners often fear a need for extra report-writing, it is unlikely that any one project will require new environmental documentation, because some actions can be categorically excluded from assessment and because existing documents for similar actions can often be used.

(2) Proposals for both on-going and future actions must be evaluated; however, new documentation is not required if these actions have been adequately documented previously and the new or changed project or location does not differ appreciably. Often, only the differences not covered by the earlier assessment, rather than the entire project, need to be documented.

(3) The decision-maker must use the EIS or EA when making a decision. This means that when a new person becomes decision-maker, he/she should be furnished a copy of any EA or EIS cited as the "adequate document[ation] elsewhere" when a Record of Environmental Consideration (REC) has been produced as the only document specific to an action.

(4) The responsible office, official, or employee should regard the agency or installation environmental office or environmental point of contact as a valuable source of assistance which can and should be obtained as early as possible in planning.

(5) Even when there is insufficient time, money, or personnel for completing a written assessment properly, the proponent must still try to meet the responsibilities NEPA has defined for serving as trustee of the environment, assuring safe and healthful surroundings, using the environment without degradation, preserving important historical, cultural, and natural features, and enhancing the quality of renewable resources and recycling depletable resources [42 U.S.C. 4321, et seq.]

2-3. Defining the Action To Be Evaluated

Introduction

NEPA's substantive* goal of incorporating environmental awareness into agency decision-making is supplemented by its procedural requirements for documenting evaluations of proposed projects. NEPA's three major procedural requirements are discussed below. The general types of Army functions which may apply to these categories are then reviewed, followed by an overview of the specific types of actions designated by CEQ to relate NEPA requirements to agency functions.

NEPA's Actions To Be Evaluated

NEPA requires a statement (the EIS) documenting the agency's environmental evaluation in two major cases. It also requires an environmental assessment (EA) in a third, usually minor, case. These three cases are discussed in the following text.

(1) "Proposals for Major Federal Actions Significantly Affecting the Human Environment"

(a) Major and significant actions. The most well known NEPA criterion for determining when an EIS is necessary is the existence of a proposal for a major Federal action significantly affecting the quality of the human environment. The courts have established that "significant effects" and "major action" are not separate criteria; i.e., if the action's environmental effects are significant, the action is automatically a "major" one. (See 40 CFR 1508.18 for further details about "major Federal action.")

* "Substantive" goals relate to the substance or intent of the law, as opposed to the "procedural" requirements, which are the physical tasks measuring the extent to which that intent is made real.

(b) Proposals. It is not as clear what level of consideration Congress intended by use of the term "proposal." But since the EIS must be "included in every recommendation or report on proposals," the current interpretation is that decision points already built into current agency procedures are the point at which a "proposal" is defined. Determining just when those points occur depends on the type of project, so it is not always easy to be definite about when an EIS should be prepared. However, evaluation should be initiated as early as possible in the planning process so that no particular approach to the problem becomes set, and to make sure the (final) EIS is issued and accompanies the "recommendation or report" already required by the organization. (CEQ defines "proposal" in 40 CFR 1508.23.)

(c) Human environment. The courts and CEQ have resolved the meaning of the "human environment" which might be significantly affected: changes in the physical environment must be significant enough to generate the need for the EIS. However, once that threshold is met, all aspects of the human environment, including social and economic considerations, must be included in the written evaluation [40 CFR 1507.14].

(2) Proposals for Legislation

An EIS is required in the case of DA proposals for changes in or additions to laws pertaining to the Army or DOD if a significant environmental effect is predicted to result from that change. However, a draft EIS is usually sufficient, and public involvement processes are limited. Project authorizations, especially for new projects, are the major concerns in Army military activities. The requirement does not apply to appropriations requests. EISs for legislative proposals are the responsibility of the HQDA staff proponent, the office responsible for legislative liaison, and the Department of Defense.

(3) "Unresolved Resource Conflicts"

NEPA makes no specific statements about the need for Environmental Assessments. However, Section 102(2)(e) does require the agency to study, develop, and describe alternatives to recommended courses of action when a proposal "involves unresolved conflicts concerning alternative uses of available resources." In practical terms, this means that evaluations are required if there are alternative courses of action with differing environmental impacts. This is true even when those environmental impacts are not sufficiently "significant" to require an EIS.

For both legislative proposals and other major actions significantly affecting the quality of the human environment, the EIS *must* include a detailed discussion of the items listed in NEPA Section 102(2)(c)(i-v), including discussion of alternative courses of action. For an EA, however, the information need not be at the same level of detail. Nonetheless, even an EA must include alternatives when appropriate and must discuss all relevant portions of the human environment. Further information on EA requirements is given on p 115.

Army Missions and Functions

Environmental evaluation may be required for five major mission areas of Army activities. One type, directed toward people (the Army soldiers and officers), involves training and force development and maintenance. (TRADOC and FORSCOM are the major commands with responsibility for this mission area.) Another, directed toward equipment, involves research, development, and acquisition, maintenance, and sometimes production, of military materiel (generally the responsibility of DARCOM). A third area is provision of facilities, and is particularly involved with combat engineering (Corps of Engineers). A fourth area -- policy -- involves developing plans and programs for using those personnel, equipment, and facilities in national security and defense. Finally, a variety of functions classified under the general heading of "support" help accomplish the other four major missions.

How the NEPA impact assessment categories discussed on pp 23-24 are actually applied at the working level depends on what functions and implementing activities an office is performing for these five major missions. Table 2-2 gives examples of some activities related to the Army mission/function structure that might require environmental evaluation. The following section generally discusses how the CEQ and Army regulations allow the proponents of these activities to tell if a proposal requires written environmental documentation.

Categories of Actions Specified by CEQ

(1) Major Categories

To allow agency organizations to better relate their own activities to NEPA requirements, CEQ required each Federal agency to review its own actions and, based on past experience, to develop a list of the types of activities which "normally" have proved (or ought) to require an EIS. Similarly, they require a list of "activities normally requiring an EA." Finally, CEQ specified that agencies must officially designate types of actions they perform which individually and cumulatively have no significant environmental effect, and for which no EA or EIS would ordinarily have to be prepared (Categorical Exclusions). The agencies also had to provide for exceptional cases in which a normally excluded activity might have significant impacts and require environmental documentation.

AR 200-2 lists for each of these major categories of action are provided in 32 CFR 651.28 (normally requires an EIS), 32 CFR 651.21 (EA), and Appendix A to the regulation (Categorical Exclusions). The AR also provides criteria for comparing any item on the lists with an agency's specific proposal. (See also Steps 4 and 5, pp 46-48.)

(2) Exemptions

CEQ also provided for special cases in which certain exemptions might apply to a proposed action. If an existing law applicable to the Army or DOD prohibits or makes impossible compliance with the NEPA requirements, that law takes precedence and no documentation is required. Responding to an emergency is another case in which it is not necessary to wait until a NEPA evaluation

Table 2-2. Army Mission/Function Structure

MAJOR MISSION AREA	EXAMPLE FUNCTIONS
Training and Force Development	Individual basic advanced training Unit training Schools Joint training exercises Range control
Research, Development, and Acquisition, and Industrial Operations	Basic applied research Materiel development, test, and evaluation Major procurement Ammunition plants, depot operations
Facilities Development	Combat engineering Major military construction
Policy	Military planning and programming Logistics planning
Support	Administration Master planning Public relations Personnel administration PX and commissary Recreation and welfare activities Real estate acquisitions, excess, grants Minor facilities procurement Operations and maintenance Buildings, roads, and grounds maintenance and repair Minor construction Pollution control Safety programs Range development and maintenance Special programs Forest management Pest control Hunting/fishing programs

is completed. In addition, the public involvement procedures for classified or partially classified actions may be limited to preserve security. (See Steps 1 through 3 [pp 43-44] for further details about exemptions.)

(3) Previous Evaluation

CEQ has specified that no further documentation is required when a similar action has been adequately evaluated in previous environmental documents. This assumes that the decision-maker for the current action had approved the document for the previous action or will now have access to it. Therefore, new or supplemental EAs or EISs are needed only when environmental conditions or Army activities are new or are significantly changed compared to the past situation. (See Step 6 [p 50] for application.)

(4) Tiering

Since many programs usually go through several planning stages, agencies may use a process called "tiering." Under this process, the Army can first prepare -- for an entire program -- an overall, general EIS which analyzes the various policy/program alternatives. This "programmatic" EIS should discuss environmental impacts in general terms, since details about exact locations where the impacts would occur would not yet be available. Later, when specific actions within the program are being planned, site-specific EAs or EISs should merely refer to the general discussions in the programmatic EIS and need only discuss in detail the additional information necessary to evaluate site-related alternatives. For example, a program for developing a new weapon could follow this sequence. In this case, the programmatic EIS could evaluate overall general effects to be expected if the Army converted to the new weapon. Later, after the R&D was completed, site-specific evaluations would only need to evaluate specific local effects.

The tiering concept is also useful for analyzing several actions with "relevant similarities, such as common timing, impacts, alternatives, methods of implementation, or subject matter" [40 CFR 1502.4(c)]. Generic EISs of this nature are usually better for describing and evaluating cumulative environmental effects than large numbers of site-specific EAs/EISs.⁵

An example of this type of application is writing a single environmental assessment of an installation's range management plan for the year, rather than preparing several EAs of specific management activities, such as fire lane maintenance. Another example would be preparing a single document for mission realignments proposed simultaneously for two military facilities in the same general location.

2-4. Who Does the Environmental Evaluation? The Factor of Army Organization

The Proponent and the Preparer

(1) The Proponent of the Action

The proponent of a proposed continuing action may be either:

⁵ U.S. Fish and Wildlife Service, NEPA Planning and Documentation Handbook (November 1980), p 27.

(a) The organization or office which will be responsible for carrying out the action if it is approved ("the performers"), or

(b) The organization or office which institutes a requirement for an action -- that is, for developing and evaluating ("the initiators"). Sometimes the initiator may ask or assign a third group -- "the planners" -- to do the planning for a particular project or for general groups of actions that are of a particular type.

Since the proponent is responsible for insuring that all necessary environmental evaluation and documentation are carried out properly, one of the primary considerations early in the project planning is determining specifically who the proponent is; that is, what office within the proponent has both the knowledge and the authority to initiate the environmental assessment process? (The lowest-level decision-makers ordinarily take precedence as proponents for all types of Army actions, although this may vary with the stage of planning.)

Although determining the appropriate proponent may seem to be relatively simple, in practice it is often difficult. This is because some responsible official must make a decision at a particular time, whereas in well-established planning processes, individual planners may initiate and perform some of the planning tasks routinely without being told. Personnel who realize that some environmental evaluation is necessary often do not have the authority to assign personnel resources for environmental evaluation tasks at the earliest stages of planning. Later on, for example at some decision point already built into the planning process, it may become clear that an assessment is required, but that someone should have directed it to begin much earlier.

In addition, when the offices establishing the requirements and performing the eventual action are different, there is a natural tendency for each office to assume that the evaluation responsibility is the other's. The performers may be closer to the facts about environmental conditions and Army activities required for an evaluation; however, the initiators are the only ones who can select an alternative action. This makes it difficult to decide who should be responsible for the evaluation.

The ideal, of course, would be for all persons within the proponent organization who are planning an action to incorporate environmental considerations automatically. In this way, they already have performed a preliminary assessment (not necessarily a written one) by the time one of the decision points arises. These preliminary environmental considerations can be incorporated into that decision, and then documented later in the appropriate form. Since this voluntary assumption of responsibility occurs infrequently, especially in highly vertical hierarchies like the military, organizations that wish to be "ahead of the game" have assigned internal responsibility to or created specific offices for environmental matters. Sometimes they have created environmental committees whose members represent the range of actions for which the organization is responsible. Other procedures may also be developed to structure the organization's responsiveness to NEPA.

(2) The Preparer of Environmental Documents

The proponent is ultimately responsible for deciding that an evaluation process should be incorporated into the planning of an action. However, the assessment preparer documents the detailed considerations reported in an EA or EIS. The preparer, who may or may not be part of the proponent organization, performs the following duties:

- (a) Organizes and/or manages an interdisciplinary evaluation team.
- (b) Reviews previous environmental documents.
- (c) Prepares a Record of Environmental Consideration, where appropriate.
- (d) Conducts early public involvement processes.
- (e) Prepares an Environmental Assessment, if appropriate, and
 1. Either a Finding of No Significant Impact (FNSI), or
 2. A Notice of Intent (NOI) to prepare an EIS.
- (f) Conducts or participates in scoping procedures.
- (g) Prepares the draft EIS.
- (h) Responds to comments by the public.
- (i) Prepares a final EIS and, if necessary, any supplements.

Depending on the complexity of the proposal and the documentation requirements, the role of the preparer may be assigned to several different offices or persons during the planning period; the same is true for the proponent. Tasks applicable to both roles may sometimes be executed by the same office or person.

(3) When the Proponent Is Not the Preparer

Quite often within a proponent organization, one group or office will establish the requirement for an action (the initiators), another will perform the planning for the action (planners), and still another will actually carry it out (the performers). This division of responsibilities may create problems in deciding whether there should be written environmental documentation. Each group may have valid reasons regarding why it is not the appropriate office to conduct the evaluation and prepare written documentation.

When the initiator, planner, and performer are all at different levels within the organization, the initiators should do an evaluation the first time the requirement is established. The planners should assess all general cases of the action being performed under their direction. The performers should assess management options and siting alternatives the first time they actually perform the action. The performers should also identify situations in which the original evaluation or any higher-level evaluation should change; i.e., either the environment or the action under their control changes.

The above discussion assumes that the initiator, the planner, and the performer are at different levels within the military hierarchy. However, even if any two or all three are at the same level, personnel from all groups should still participate in environmental planning and preparation of environmental documents.

There are cases in which the proponent office or offices do most of the planning for an action, but select another group inside or outside their organization to do the environmental assessment. Proper timing and proper creation and operation of the assessment team tend to be most important in avoiding these problems if an outside group does the evaluation.

(a) Timing. An outside group selected to do an evaluation should perform its work at the same time that other types of planning for the action are being done. If not, the group is put in a position of "rubber-stamping" an action for which many pertinent decisions have already been made. Environmental documents which are written only to support decisions already made are not in compliance with NEPA.

(b) Selecting the evaluation team. Sometimes the designated preparer is neither the initiator, the planner, nor the performer of the action. The proponent, being responsible for the evaluation, must insure that an outside preparer has the expertise and capabilities necessary to perform the evaluation. This usually requires that some person(s) from the proponent group actually be part of the preparing group. If possible, he/she should be an active participant, not just an advisor. Ideally, at least one planner and one performer should participate. (Or, at least one initiator and one planner should participate for first-time actions or for developing proposals that set policy, such as ARs.)

(4) Use of Consultants

In addition to proponent personnel, outside persons can and should be used as appropriate to the needs of the evaluation team. They can give management or support assistance, act as technical experts on aspects of the environment or the project, gather information or field data, perform a variety of other functions, and may even participate as active members of the evaluation team. Several means of obtaining such assistance are available.

(a) In-house. Persons within the proponent organization but from another office, or from some office associated with but not reporting to a proponent, may be used for short periods in advisory or support capacities (for example, a chemical engineer or a technical editor). In addition, some in-house personnel may have knowledge unrelated to their jobs that may be useful for the evaluation. For example, a person assigned to the Procurement Office may have interest and several years' experience in local hunting groups, and might be a useful source of short-term help in evaluating the condition of the installation's deer herd for a project that may affect deer habitat.

(b) Out-of-house

1. Personnel from other DA or DOD organizations. These people may have expertise in pertinent areas. For example, the Army Environmental Hygiene Agency does water quality studies for other Army organizations.

2. Other Federal agencies. Other Federal agencies can provide experts in various fields (see appendix D). If on-site assistance is needed and is not expensive, officials of agencies in the immediate area are usually willing to provide some assistance without additional funding by the proponent. Where

more extensive help is desirable and funding is necessary but not available, consider first whether the information can be obtained by telephone or letter. (Be prepared to furnish considerable information, such as maps or photographs, by mail or telefax.) Costs may also be cut by furnishing written and mapped information early to personnel of other agencies, before they make any on-site visits, to reduce travel time as much as possible. An entirely different approach might be to have the organization made a cooperating agency (see p 35).

3. State and local agencies. The comments in the previous paragraph also apply to State and local agencies. Since the preparer will eventually have to contact these agencies to obtain information relevant to a project's environmental impacts, it is much more efficient to get their input early. Assistance in identifying pertinent agencies is available from local A-95 Clearinghouses through which Federal-State coordination is arranged (see AR 200-2, 32 CFR 651.12(e), for definition of A-95 Clearinghouse).

4. Universities and colleges. Universities and colleges are sources of expertise in specific scientific fields. Professors may be willing to provide data collection assistance, particularly when the task can be made part of a class exercise or longer-term field work for graduate students. The information provided by this source will be useful not only for the immediate project, but also for future evaluation.

5. Consulting firms. Consulting firms have often been used to prepare EAs, EISs, or reports for these documents. Generally, it is best to avoid having consulting firms do the entire evaluation document; instead, they should:

a. Collect specific field information or data after a preliminary in-house evaluation identifies areas where such information is lacking, insufficient, or needs updating.

b. Predict likely future conditions in specific technical areas, using models or other techniques.

c. Identify alternative mitigation techniques and specify in detail how they could be implemented (including comparisons of probable cost).

d. Provide evaluation team management expertise.

6. Environmental or other groups. These groups, which may be local, state, or national, are often sources of expertise and information. Under the supervision of an in- or out-of-house professional, members of environmental groups may be useful volunteer field workers. Some groups may maintain data registries which can be consulted at minimal or no cost. For example, local Chambers of Commerce can sometimes provide summaries of local business activity that are more detailed and up-to-date than those available from the U.S. Bureau of the Census.

7. Knowledgeable individuals. Useful assistance can be obtained from individuals residing in local communities or counties or elsewhere in the state. These people can usually be identified through offices of the State agencies or organizations identified above. It is not necessary that such persons be "experts" in the sense that they have extensive formal education and numerous publications; especially in early evaluation stages, practical experience is more important. However, individuals who supervise collection of specific field data will usually need specific training, including knowledge about experimental design.

Specific Army Proponents and Consultants

There are generally three major levels within the Army at which a project or policy change can be initiated: the Department of the Army level, the Command level, and/or the installation or agency level. Each is discussed briefly below.

(1) Department of the Army Headquarters

(a) Assistant Chief of Engineers for the Environment (DAEN-ZCE). Although the Assistant Secretary of the Army for Installations, Logistics, and Facilities Management is the responsible official for NEPA matters in general (32 CFR 651.5 in 45 Federal Register 69217, 20 October 1980), DAEN-ZCE is the effective proponent (usually as both the "initiator" and the "planner") of all major Army environmental regulations. In addition, DAEN-ZCE serves as environmental consultant (or provides referral to other consultants) in the areas of regulation assessment, other policy issuances, or proposals for legislation by other Army offices at HQDA.

(b) DA offices with specific assigned NEPA responsibilities. The Judge Advocate General, the Comptroller of the Army, the Surgeon General, the Adjutant General, and the Chief of Public Affairs are coordinators and consultants for other proponents as specified in AR 200-2 (32 CFR 651.5), and also are proponents of their own activities.

(c) Other HQDA staff agencies. These agencies are proponents for the Army-wide and agency-specific regulations and other policy guidance which they issue. They are also proponents for the actions or major planning procedures which they initiate.

(2) Command Headquarters

Offices in the headquarters of major commands and subcommands are proponents and/or consultants for areas in which they are assigned responsibilities, e.g., a major responsibility of TRADOC is its training mission. They are also proponents for actions or major planning procedures which they initiate, e.g., studies for proposed realignment actions.

(3) Installations

The installation level is the one at which most major Army actions physically occur. Also, when a proposal is initiated at higher levels, an installation office is often asked to prepare various reports or studies related to whether and where the proposed action should take place.

(a) Installation support functions. Typically, environmental responsibility is vested at the installation level in the Environmental Committee, staffed by appropriate designees of the Commander, and in an Environmental Office located within the Facilities Engineering Directorate (FE). Formerly, the Environmental Office was responsible for the installation Ongoing Operations Environmental Impact Assessment (EIA) produced under the earlier CEQ Guidelines in accordance with the 1978 version of AR 200-1. Now it prepares any update of these EIAs; reviews, coordinates, and approves assessments produced by other offices on base; coordinates public participation processes with the proponent of an action and the Public Affairs Office; and produces or reviews Environmental Assessments and/or portions of other documents required by on- or off-base directives.

Other offices within Facilities Engineering are proponents, for environmental purposes, for activities such as timber sales, agricultural outleases, ordinary installation construction projects, pollution control activities, and activities organized in yearly management plans, such as forestry, pest management, and land management plans, oil spill contingency plans, toxic chemical management plans, etc. These offices are appropriate points of contact (or consultants) for technical assistance in their areas of expertise.

A variety of other support offices may be proponents, consultants, or otherwise participate in environmental assessment. For example, the Public Affairs Office helps the Environmental Office with public contact activities. The Public Affairs Office and the Environmental Office could be joint proponents, for example, of a regular, structured public information program proposal for considering alternative methods of involving the public. The Master Planning Office, with or without direct Environmental Office assistance, would be responsible for environmental assessment of the Installation Master Plan and other major planning documents and their yearly update.

(b) Major installation missions. Organizations conducting activities related to the installation's major mission are usually proponents for actions that are new or that will supplement current operations (i.e., actions which will have significant changes in location, types of participating personnel, amounts or types of equipment or materials, timing or season of year, frequency or duration of activity, or likelihood of environmental impact for any other reason).

Depending on the installation's preferences, the Environmental Office may prepare the EAs using proponent personnel as parts of or consultants to the evaluation team. In other cases, the proponent's environmental point of contact may be the preparer, with analysis and documentation guidance and review supplied by the Environmental Office. The latter is preferable for most EAs, since the proponent is more familiar with how its own activities are normally carried out.

(c) Installation tenants. Installation EAs and EISs often ignore or provide insufficient evaluation of installation tenants' activities because they are outside the normal installation chain of command and because the installation itself does not perform those activities. However, in the absence of installation authority to prevent tenants from creating environmental problems, the installation Environmental Office should include tenant activities in any future updates of installation operation EAs or EISs, even though it is clearly the tenants' responsibility to prepare information for the evaluation. The installation should help with this task as much as possible to avoid developing an adverse relationship with the tenant. Without such assistance, tenants may assume that they are already covered in the installation EA. Tenants should also be responsible for evaluating their own new projects.

(4) Laboratories and Other Army Agencies

A variety of Army organizations are separate entities which may be located as tenants on an installation (e.g., AEHA at Aberdeen Proving Ground); see section (3c) above. Other organizations may be entirely separate facilities (e.g., Waterways Experiment Station, Vicksburg, MS). Both separate and tenant agencies are responsible for assessing their own activities. All these organizations are good sources of technical expertise and can be considered as possible consultants for other proponents' projects.

Relationship of Army Organization and Type of Action

Although specific situations cannot always be categorized easily, the typical locations within the Army of proponents for various actions can be generalized as follows:

(1) The proponents of policy issuances are generally located within headquarters organizations. The more of the Army to which a particular policy applies, the higher up within the Army chain of command the proponent will be located. Furthermore, the higher the policy originates, the more generalized it tends to be, and therefore any environmental evaluation of it must be more generalized. A specific policy issuance would ordinarily be evaluated only once. However, guidance for implementing that policy may be issued at successively lower levels; if implementing guidance contains considerably more detail than the original policy, and if implementation may cause significant environmental effects, the lower-level guidance may require additional evaluation. (This is one instance in which a Categorical Exclusion [No. 19] [AR 200-2] would not properly apply; however, only the environmental impacts resulting at the additional level of detail would have to be assessed.)

(2) Army programs and other types of actions occurring throughout the Army or particular commands may have proponents at more than one level. (See the discussion of tiering and programmatic or generic assessments on pp 27.) The proponent of the overall program is typically at command or DA headquarters; the proponent of individual, site-specific projects within the program is typically at the installation or agency level. One example would be the division between TRADOC headquarters (the overall proponent of Army military training program) and an individual installation (the proponent of the

physical training activities which implement its specific training mission). Another example is the division between headquarters' propensity of mission realignments among several installations, and the installation's propensity of individual construction projects to support the new or increased mission.

(3) Proponents of on-going actions may be different from those of one-time actions, even when they are both at the same level of Army organization. For example, installation headquarters or its Facilities Engineering Directorate may be the proponent of the overall installation EIS (or EA) covering on-going actions, whereas an individual tenant organization should be proponent of its own new project.

Joint Propensity and the Cooperating Agency Concept

(1) Cooperating Agencies

CEQ's new regulations allow the proponent or "lead agency" (the Army) to request some other Federal, State, or local agency or agencies to participate as a "cooperating agency" [40 CFR 1501.6] in preparing an EIS for a proposed project. The primary purpose of this was to allow agencies with legal jurisdiction over or expertise in a particular subject to contribute to an environmental analysis early in the process. This avoids their having to wait to comment or to provide information until after the draft EIS is issued. Use of cooperating agencies should help avoid or reduce delays in project planning, promote efficiency in the use of agency resources, reduce costs, and produce better EAs and EISs. (Appendix D lists some possible cooperating agencies.)

(2) Joint Propensity

In some cases, another agency (including a State or local agency) may be very deeply involved with an Army project because it "(1) proposes or is involved in the same action; or (2) is involved in ... [another action] directly related to [the Army proposal] because of their functional interdependence or geographical proximity." In such cases, the Army and another group or groups may become joint lead agencies [40 CFR 1501.5]. It may also choose to define one of the agencies (the Army, if it is the only Federal agency involved) as the lead agency, and the other as a cooperating agency. Procedures and time limits to follow if there are any difficulties or disagreements concerning lead agency designation are prescribed in 40 CFR 1501.5(c-f) and summarized in figure 2-2.

(3) "Joint Propensity" and "Cooperating Agency" Designation Within the Army

To the greatest extent possible, various organizations or offices within the Army can pursue goals and generally follow the same procedures for designating lead and cooperating agency status among different major Federal agencies. The Assistant Chief of Engineers (DAEN-ZCE) would resolve any conflicts or difficulties resulting from designation of lead and cooperating agencies or offices entirely within the Army. DAEN-ZCE also designates agencies within

the Army when non-DA agencies are involved. However, CEQ designates the overall lead or cooperating agency (the entire Army) in such cases.

(4) Organization and Procedures

The division of labor between the lead and cooperating agency can be quite varied, depending on project needs. At the minimum, a cooperating agency/lead agency agreement might be used to formally define the extent to which individual personnel from the cooperating agency might act as expert consultants to or participants in the proponent's evaluation team. At the maximum, the cooperating agency might contribute major portions of the required resources and manpower and might even contribute to the final selected proposal. For example, if mitigation plans detailed in an EIS call for restocking a lake with fish, the U.S. Fish and Wildlife Service may agree to provide both the fish and the personnel to do the restocking. In cases where an agency could have been a joint lead agency, but was designated a cooperating agency, it would automatically have jurisdiction over the portion of the action it is performing.

Specific assignments within the lead and cooperating agencies for producing portions of the EIS will depend on the particular project being examined. Generally, however, members of the evaluation teams or other relevant personnel at each agency should insure that each organization has defined its relative responsibilities in the following areas:

- (a) Choosing the preparers and organizing the evaluation team.
- (b) Defining the evaluation and project schedule.
- (c) Notifying the public and conducting scoping procedures.
- (d) Determining the scope of the EIS.
- (e) Conducting the evaluation, including:
 - 1. Gathering information and data.
 - 2. Analyzing and integrating the data.
 - 3. Predicting impacts, including magnitude, duration, and significance.
- (f) Preparing and issuing the draft and final EISs.
- (g) Responding to public comment.
- (h) Making the decision and issuing the Record of Decision.
- (i) Taking the action.
- (j) Accomplishing and monitoring mitigation plans.

CONSULTING CEQ ABOUT LEAD AGENCY DESIGNATION

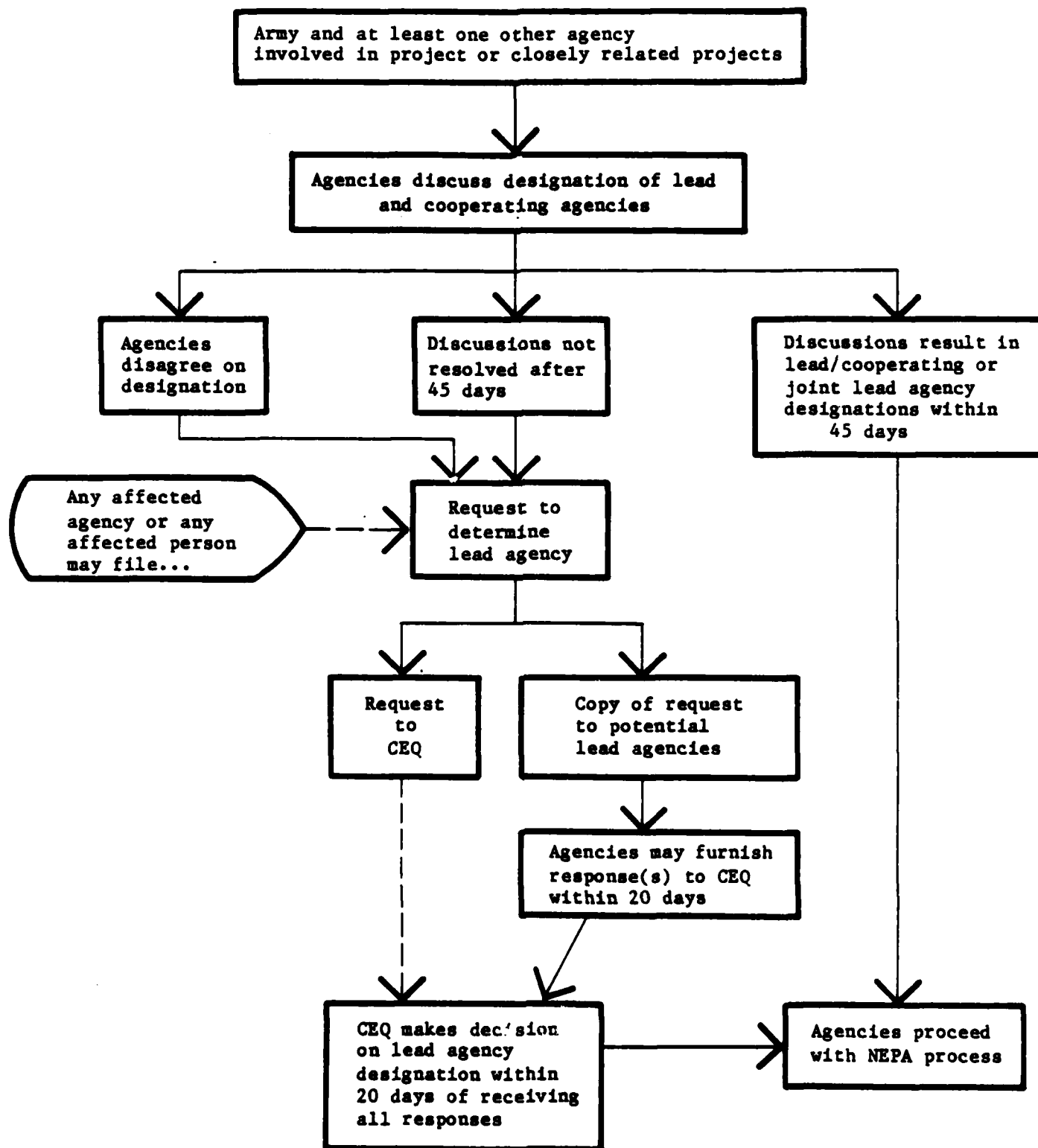


Figure 2-2. CEQ consultation on lead agency designation.

CHAPTER 3

ENVIRONMENTAL EVALUATION AND DECISION MAKING

3-1. Doing an Environmental Evaluation

Outline of This Chapter

This chapter provides information about the following major topics:

- (1) Doing an environmental evaluation.
 - (a) The evaluation team.
 - (b) The evaluation process.
 - (c) Release and review of the document.
- (2) Making the decision: how it is reached, who makes it, and what happens next.
- (3) Taking the action.

Relationship to Overall Environmental Program

Most Army organizations have designated some office to organize and manage a general environmental program. NEPA responsibilities of this office include performing environmental impact analysis and documentation, helping others write EAs or EISs, and/or reviewing such documents. The office may or may not have other major duties, such as pollution control assistance, endangered species management, archaeological or historic site investigation, etc.

Because these offices must perform so many duties in addition to NEPA-related tasks, it is extremely important that they collect needed data only once and as early as possible; this will avoid duplication of efforts if the same data is needed later to evaluate separate projects. Information should be obtained initially from the organization's environmental programs, thereby making it easier to determine if an action has already been covered in previous documentation (see Step 6, p 49), because the appropriate background information on which those earlier EAs/EIFs were based will be available. Figure 3-1 gives examples of the types of information and data that well-organized environmental programs can gather at irregular intervals as resources become available to aid in initial environmental evaluation (Steps 1 through 10, pp 43-53) and impact analysis (Steps 11 through 13, pp 53-70) of future projects.

One of the best ways to obtain information, when it is not already being prepared for other Army requirements, is to develop informal relationships with outside persons and organizations. They can provide, at little or no cost, information already prepared for their own purposes. Often, voluntary assistance in collecting new data can also be obtained. If such assistance is

Examples of
Information Useful for Both Environmental Programs and Impact Evaluation

- U.S. Soil Conservation Service soil maps
- Aerial photographs of installation and adjacent areas
- Names, phone numbers, and addresses of national, State, and local environmental, commercial, and other organizations
- National Wildlife Federation Conservation Directory
- Names, phone numbers, and addresses of Federal, State, and local agencies with jurisdiction or expertise in various subjects (see appendix D)
- Local contacts for identification of members of unorganized publics
- Local census studies or other local business data; U.S. Bureau of Census reports; DA Pamphlet 200-2 (The Economic Impact Forecast System)
- Contacts with university departments of biology, ecology, engineering, sociology, economics, geography, agronomy, geology, landscape architecture, etc.
- U.S. and State Geological Survey topographic maps, ground and surface water quality/quantity data and maps, mineral and other resource maps
- Water, air, or other environmental quality studies by State agencies, U.S. EPA, U.S. Geological Survey, U.S. Fish and Wildlife Service, U.S. Army Environmental Hygiene Agency, etc.
- Hospital use data
- Data on local school attendance and capacities, planned consolidations/expansions, and military dependents
- Transportation studies on and off post
- Explosives, ammunition, and toxic/hazardous substances inventories and transport data
- Installation NPDES permit information and data, including information on discharges by other sources upstream of installation
- Information on recreation (locations, numbers of people, types of activity), especially outdoor recreation, both on- and off-post
- Water conservation and use data
- Energy sources, conservation/usage data
- Noise contours for military activities, or noise data for equipment
- Information and data on installation and local market forestry and agricultural practices, including timber sales and agricultural outleases
- Installation range management practices
- Installation and local market mineral resources
- Specific information on current military activity, by performing organization and on- or off-post location
- Presence and legal status of installation or local endangered or threatened species (official/unofficial, Federal/State, listed or proposed)
- Information on use of specific environmental evaluation methods
- Persons in/on installation, organization, or command who can participate in assessment studies or environmental program

Figure 3-1. Early information gathering.

obtained regularly as part of an environmental program, requests for information will not generate unnecessary public speculation before the public is officially notified that an evaluation for a proposed project has been initiated.

Although information gathered in this manner may sometimes not be precisely what is needed for an EIS, it will provide a good background. This will allow later data-gathering efforts to be as specific as possible, and therefore less costly. To improve early data collection, one should gather information dealing not just with the presence of environmental attributes, but also with their functions in the overall environment. For example, you don't want just "dandelion counts"; you want to know what the dandelions, other plants, animals, and physical components of the environment are doing. In summary, one should try to determine the existing and on-going impacts that all human activities (not just the Army) are having on the environment as well as those that would occur if the activities continue.

The following practical considerations are suggested for information and data development in an environmental program.

(1) Develop a file of information sources -- persons and organizations at national, State, and local levels. The installation or agency librarian can help develop national and State information and give advice on organizing a filing system. Army laboratories familiar with environmental problems and research can also help with developing information sources. Include the type of information, the location, and the point of contact's name in the file. The Public Affairs Office will be the initial contact for local resource information.

(2) Develop a similar file on information sources within the installation or agency; include persons, offices, and regular reports that might be used. Include the type of information, the location, and the point of contact's name in the file.

(3) The files [paragraphs (1) and (2) above] do not have to be "official." Procedures for obtaining the information in these files should be documented for use by future personnel.

(4) Maintain a file for all EISs, EAs, environmental reports, Records of Environmental Consideration, etc., produced by the organization or agency. Maintain another which contains or lists all information and reports gathered from in-house and outside points of contact.

The Evaluation Team⁶

One of the most important parts of the environmental evaluation process is the selection, organization, and operation of the team of people who actually do the environmental analyses. This group should include the actual preparers of any environmental document, but need not be restricted to them.

⁶ Much of the information in this section (pp 40-43) is adapted with permission from Paul A. Erickson, Environmental Impact Assessment: Principles and Applications (Academic Press, 1979).

(1) Interdisciplinary Concept

NEPA, CEQ, and AR 200-2 all specify that environmental evaluation incorporate interdisciplinary procedures. This requires that a variety of scientific disciplines be represented on the evaluation team, including the various biological sciences, physical sciences, social sciences, and the design arts. The balancing of these disciplines is discussed on pp 61-63. The evaluation team should also include experts in the technical aspects of project proposals. The team members need not all be Army employees; a number of formal or informal consultants can participate if certain areas are not adequately represented in the preparing or proponent organization. (See the discussion of consultants beginning on p 30.)

It is extremely important to remember that team members representing these different fields should not perform their evaluation tasks alone, turning in separate reports that will be inserted into a document and called an EIS or EA. NEPA calls for interdisciplinary rather than multidisciplinary evaluation. This means that the group members should operate as a team. That is, they must "interact with one another and the public to provide technical planning information to project decision-makers."⁷

The reason for this approach is that the environment itself is not divided into separate areas, and all parts affect or can be affected by each other. Effects can even increase as they transfer from one area, medium, or organism to others. No scientist can be aware of all these interactions; becoming an expert in one or several areas necessarily means knowing others inadequately. Therefore, any environmental evaluation team whose members have no regular direct, interactive discussions may miss important potential environmental problems.

(2) Organizing and Operating the Team

The interdisciplinary team may be, but does not have to be, the entire evaluation team. The interdisciplinary component "... may be relatively small in-house group that directs the activities of other members of the total assessment team." In that case, interdisciplinary team members can usually concentrate on the coordination and assimilation of diverse information and data generated by others. The interdisciplinary team therefore functions in an executive capacity with respect to the overall evaluation team.⁸ The Venn Diagram (figure 3-2) shows how the different groups of people come together and form the interdisciplinary group. The darkly shaded area represents the interdisciplinary team, while the shaded areas represent the entire evaluation team. Note the interaction that occurs among groups even outside the "interdisciplinary" team.

⁷ U.S. Soil Conservation Service, "Guide for Environmental Assessment," 42 Federal Register [FR] 152, Part IV, 1977, quoted in P. A. Erickson, Environmental Impact Assessment: Principles and Applications (Academic Press, 1979), p 302, emphasis added.

⁸ All quotes from Paul A. Erickson, Environmental Impact Assessment: Principles and Applications (Academic Press, 1979), p 307.

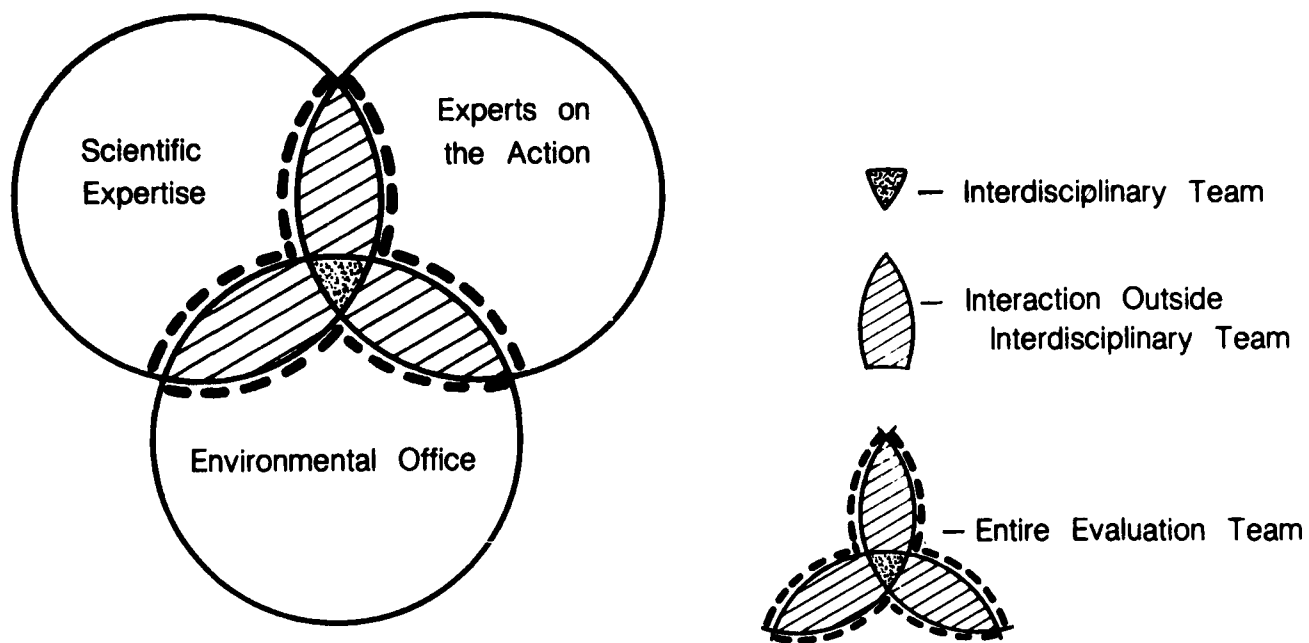


Figure 3-2. Interdisciplinary team concept.

The following⁹ are suggested as operating guidelines, especially for EISs:

- (a) Discuss findings and directions frequently during in-house team meetings.
- (b) Distribute summaries of technical interpretations of collected and generated data to all team members, regardless of their areas of expertise.
- (c) Periodically organize ad hoc subgroups to review progress and direction.
- (d) Make maximum effort to organize work schedules, maintain files, and encourage informal interaction among team members.

(3) Skills Needed

Persons who assign impact evaluation tasks to some separate group, or who are organizing one themselves, should be very careful to insure that certain skills are present within the evaluation team. First, there must be a proficient manager who can organize the team, plan and conduct meetings, arrange editorial, graphic, and other support, assign work, etc. If the person

⁹ Erickson, p 201. Additional information on organizing and operating the evaluation team is also available in John E. Heer, Jr., and D. Joseph Hager-ty, Environmental Assessments and Statements (Van Nostrand-Reinhold Co., 1977), pp 172-199.

responsible for managing an environmental evaluation passes the duties on to a subordinate with no managerial experience, both the team members and the document quality will suffer.

Second, even having team members with extensive backgrounds (either academic or practical) may not insure a good assessment. These people must have skills in written communication, analysis, and integration, and must have both theoretical and practical training in their fields.¹⁰

The Evaluation Process

This portion of this report discusses the specific steps to be followed in impact evaluation. The sequence of steps provided here is only a suggested order; in some cases it may be appropriate to carry them out in a different order.

Figure 4-1 in chapter 4 (modified from figure 3-1 in AR 200-2) summarizes the steps leading to a decision on the proper type of documentation; these are described below as Steps 1 through 8. Note that the security classification determination is described below as occurring later in the evaluation sequence than is shown in the figure. This is because security classification only changes the public involvement portions of the process, rather than avoiding the process altogether.

(1) Step 1. Problem Identification

This first step begins when:

- Some office or official in the Army identifies a problem to be corrected; or,
- Some normal planning process begins for a particular time period; or, sometimes,
- On-going activity previously evaluated for its environmental effects or the environmental setting in which that activity occurred has changed in some way.

(2) Step 2. Emergencies

The appropriate Army authority must take all immediate actions necessary to meet an emergency, regardless of what kind of environmental impacts may result. However, after the emergency is eased, subsequent actions are subject to NEPA review. When the emergency is in progress, the Department of the Army staff proponent notifies the Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics (ASD(MRA&L)) as soon as possible; this office consults with CEQ (as required by 40 CFR 1506.11) if those immediate actions have significant environmental impact. CEQ and ASD(MRA&L) would then consult about any agreements needed to replace the normal NEPA processes for which emergency response obviously could not wait.

¹⁰Erickson, p 272.

(3) Step 3. "Exempt by Law"

The proponent should determine whether a project is exempt, explicitly or implicitly, from laws applying to the Department of Defense or the Army. (If explicit, the law will say the action is exempt. If implicit, something about the law, often time limits, makes it impossible to comply.)

To make this determination, follow the steps shown in figure 3-3.

(4) Step 4. Using the Categorical Exclusions (CX)

Figure 3-4 lists steps for determining if an action may be categorically excluded from compliance with NEPA (i.e., whether it has been determined to have no individual or cumulative significant environmental impacts).

Note that some parts of a project may be categorically excluded, while other parts may not. In this case, evaluate the entire proposal, as shown in the lower left area of the figure. In practical terms, this usually means that one need only name categorically excluded activities as such in any documentation. However, the proponent should consider whether any part of those activities, when combined with others that are not excluded, will produce environmental impacts that must be mentioned in an EA or EIS.

References for sections of AR 200-2 needed to use figure 3-4 are as follows:

CX list	--	32 CFR 651, Appendix A
CX criteria	--	32 CFR 651.15
"Extraordinary Circumstances (EC)"	--	32 CFR 651.17(b)(1-6)
EA criteria	--	32 CFR 651.20
EIS criteria	--	32 CFR 651.27

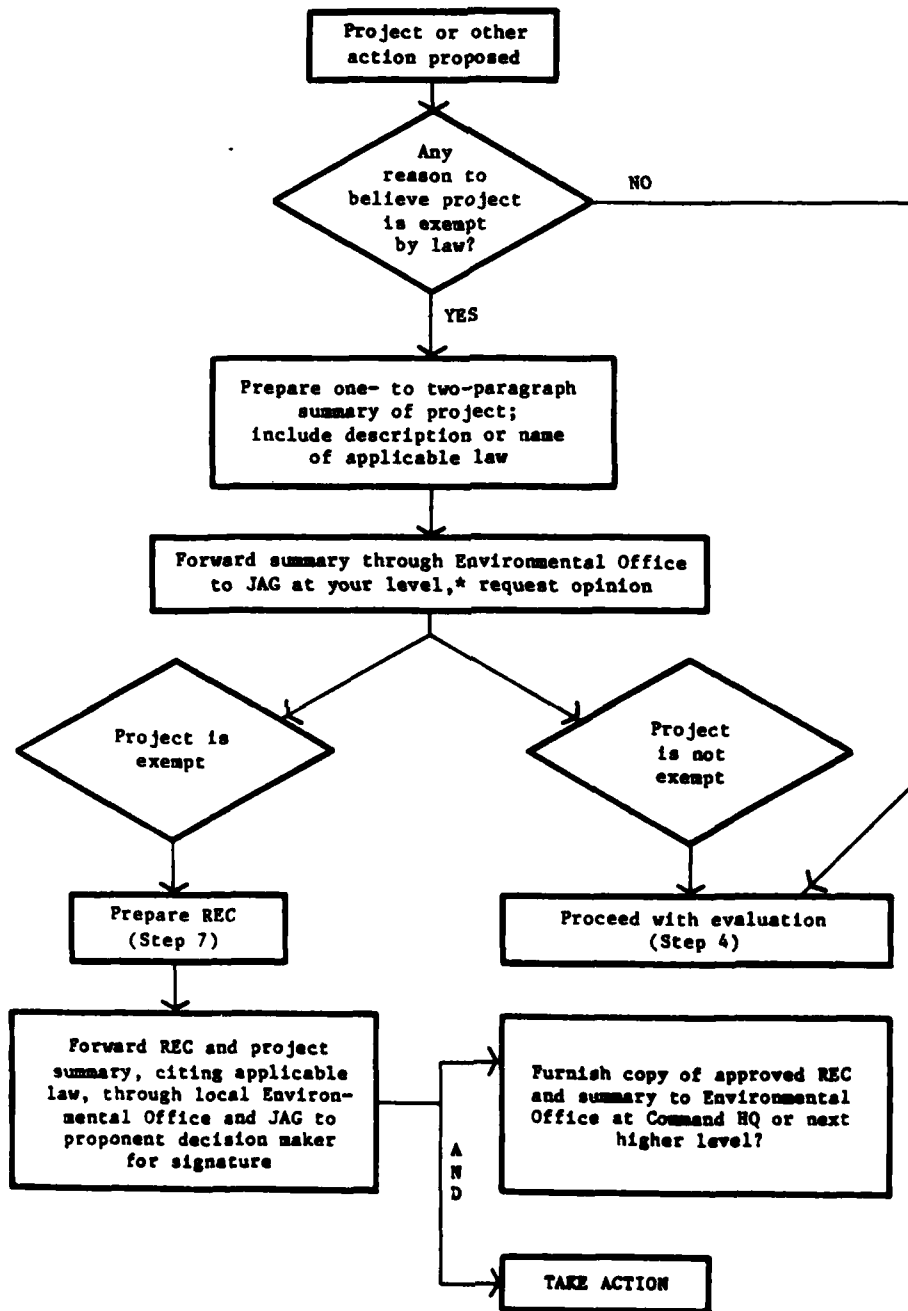
(5) Step 5. Using the "Normally Requires an EA or EIS" Lists and Criteria

Refer to figures 3-5 and 3-6 for the steps to follow. The following lists from AR 200-2 must be available:

Actions normally requiring an EIS	--	32 CFR 651.28
EIS criteria	--	32 CFR 651.27
Actions normally requiring an EA	--	32 CFR 651.21
EA criteria	--	32 CFR 651.20

STEP 3

DETERMINE "EXEMPTION BY LAW"



*Or discuss with both offices by telephone; use DA Form 751.

Figure 3-3. Step 3: Determine "Exemption by Law."

STEP 4
DETERMINE APPLICABILITY OF CATEGORICAL EXCLUSIONS (CX)

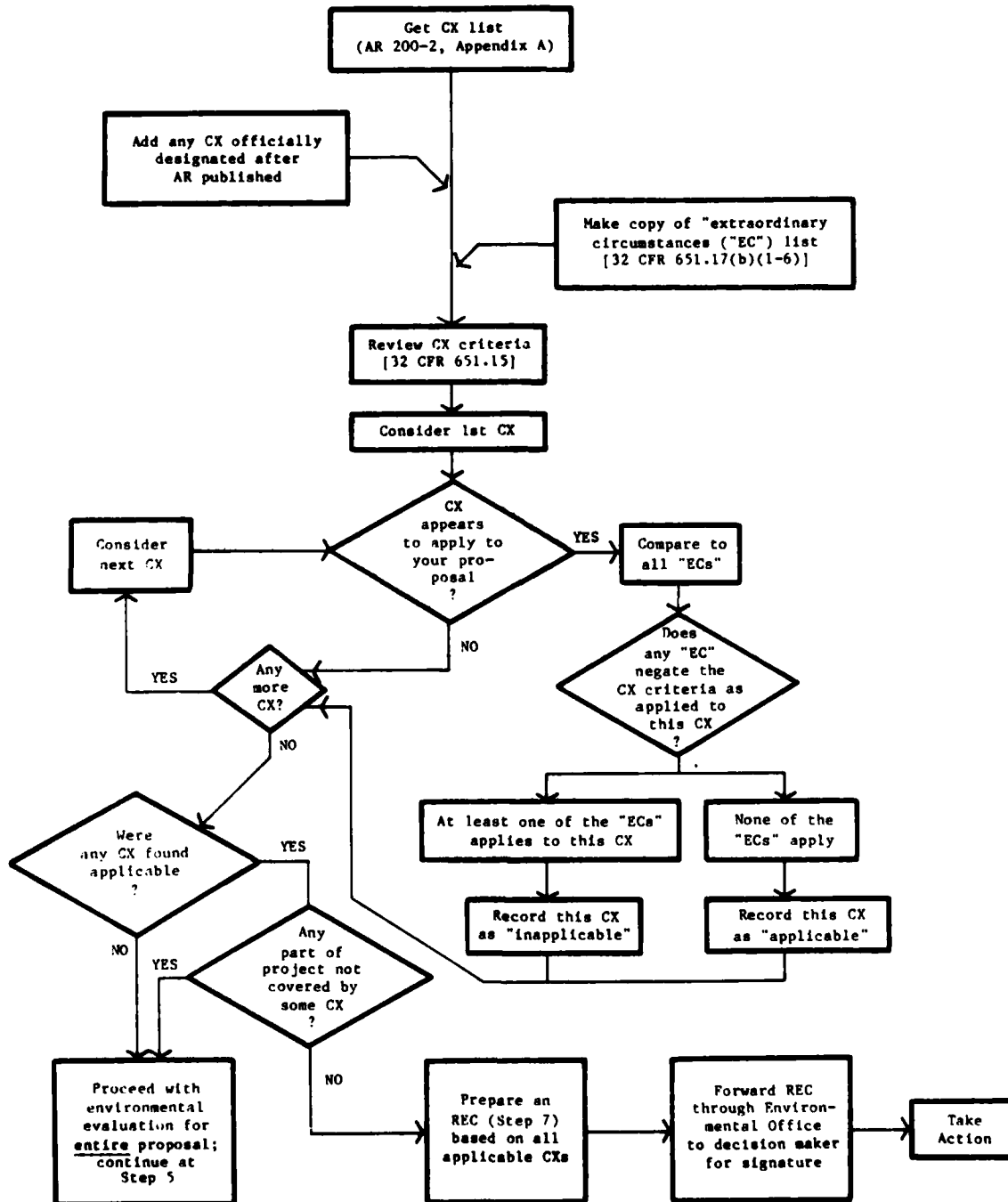


Figure 3-4. Step 4: Determine applicability of Categorical Exclusions (CX).

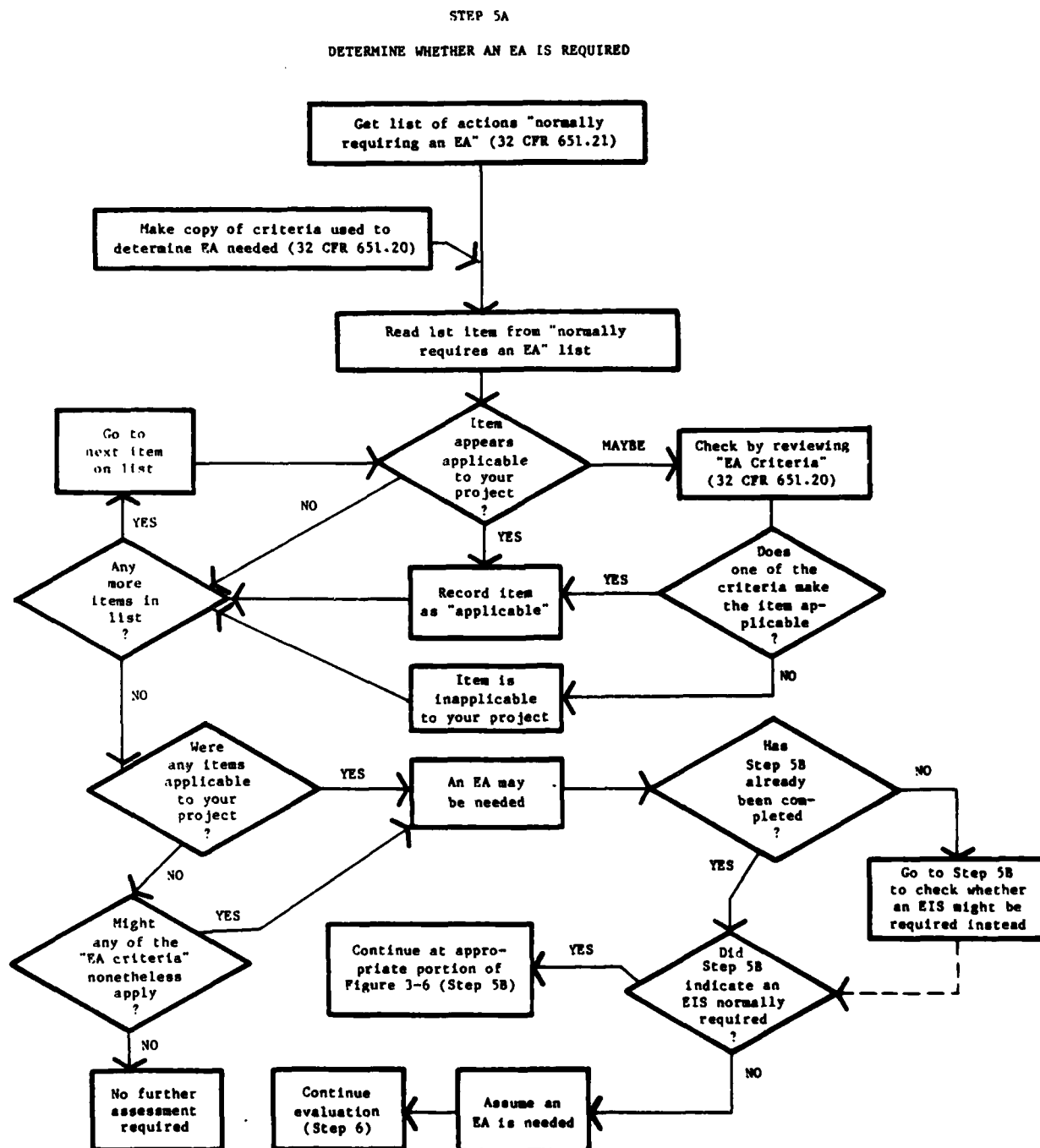
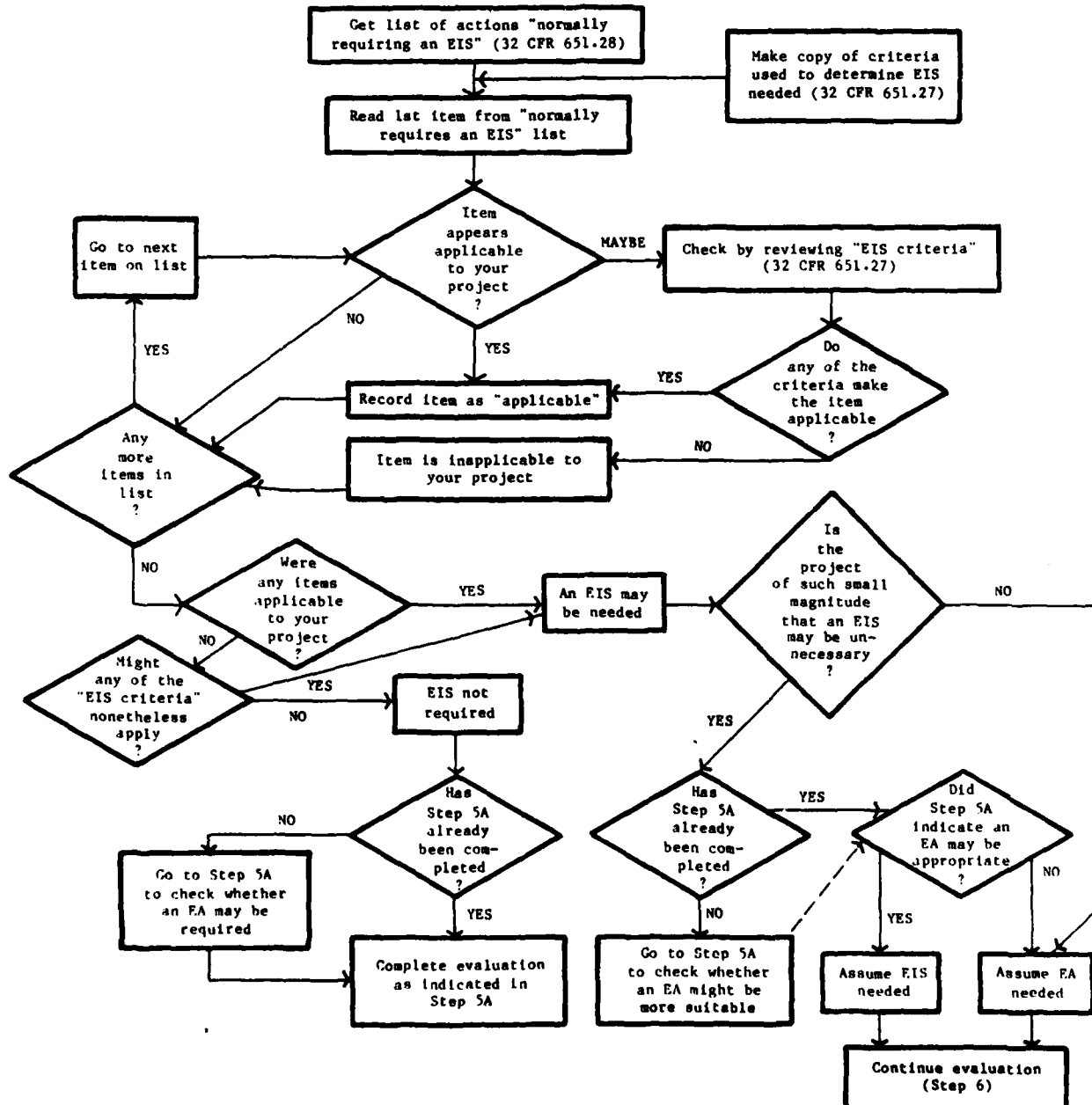


Figure 3-5. Step 5A: Determine whether an EA is required.

Make copy of criteria
used to determine EIS
needed (32 CFR 651.27)



(6) Step 6. Identifying and Reviewing Previous Documents

At this point, the project should fit into one of the following six categories. The parenthetical reference after each category indicates the next step to be taken.

- (a) Exempt by law -- prepare REC (Step 7).
- (b) Categorically excluded -- prepare REC (Step 7).
- (c) Normally requires an EIS -- continue with Step 6.
- (d) Normally requires an EA -- continue with Step 6.
- (e) Was not exempt or excluded and did not fit one of the "normal" EIS or EA listings, but did appear to meet one of the EIS or EA criteria -- continue with Step 6.
- (f) Did not fit any items listed in 1 through 5 above -- complete Step 6 and prepare an REC (Step 7).

For Step 6, locate and compare the proposal to any previous EA, EIA, or EIS documents prepared for similar proposals at the same general or specific locations or for a group of actions of which this proposal is a specific example.* Follow steps 6a and 6b (figures 3-7a and 3-7b).

If copies of these documents are not on hand, investigate their availability through the following points of contact.

- (a) Installation or agency Environmental Office.
- (b) Command HQ Environmental Office.
- (c) DAEN-ZCE (installation or agency EIAs, EAs, and EISs only).
- (d) Department of Defense Environmental Office (major EISs only).
- (e) The original proponent office.
- (f) Local A-95 Clearinghouse.
- (g) State Environmental Protection Agency, Natural Resources office, or other office responsible for State review of Federal EISs.
- (h) Office of Environmental Review, U.S. Environmental Protection Agency (EISs).
- (i) EIS: Digest of Environmental Impact Statements, which contains digests of Environmental Impact Statements. Information from the publisher on

* Locating these documents should be a part of the regular environmental program to avoid wasting time and effort when they are needed immediately. Documents from both Army and non-Army agencies may be reviewed.

STEP 6A

IS THE PROJECT ALREADY COVERED IN
EXISTING ENVIRONMENTAL DOCUMENTS?

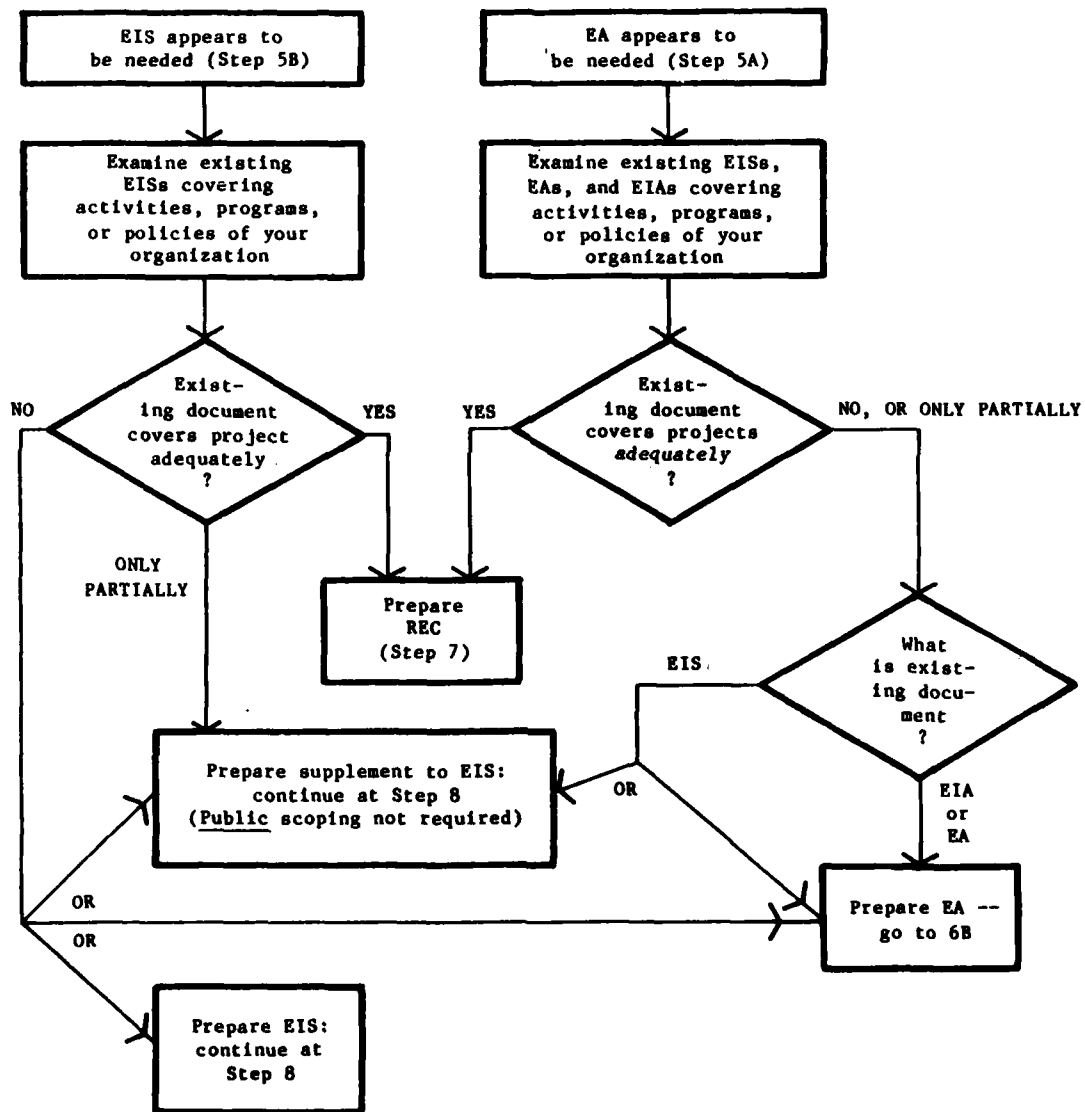


Figure 3-7. Steps 6A and 6B: coverage by existing documents.

STEP 6B

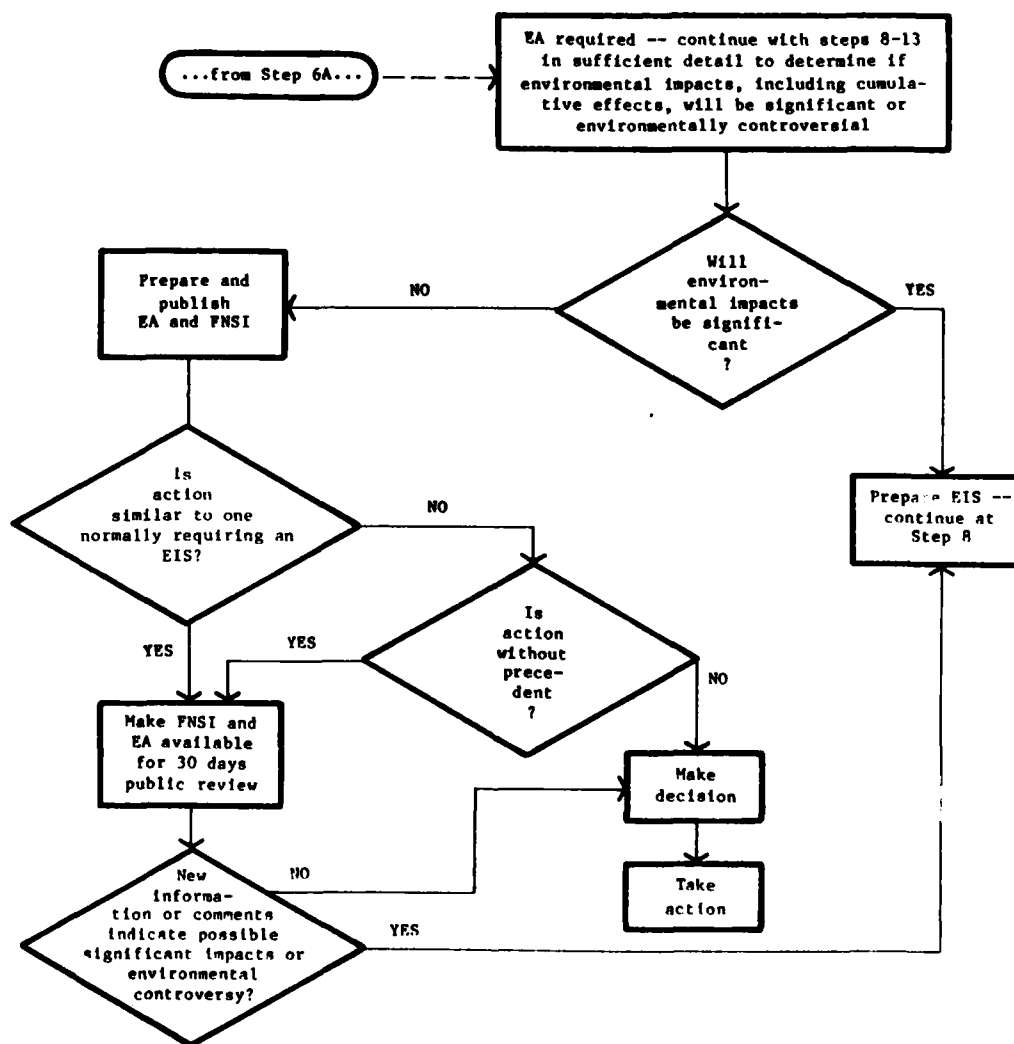


Figure 3-7. (Cont'd)

ordering single copies of EISs (microfiche or hard copy), computer searchable tapes, and copies of the magazine is available from:

Information Resources Press
1700 N. Moore Street
Arlington, VA 22209
[Commercial: (703) 558-8270]

(7) Step 7. Using the Record of Environmental Consideration (REC)

If the proposal was determined to be exempt by law (Step 3), categorically excluded from further consideration (Step 4), or adequately evaluated in previous documentation (Steps 5 and 6), the only remaining documentation required is the Record of Environmental Consideration (REC). This is an internal Army document created for recordkeeping purposes and to assure that projects not requiring environmental documentation are identified properly. Appendix B includes the format for an REC (p 163).

If the REC is based on previous adequate documentation, a copy of the completed and signed REC must be attached to the proponent's record copy of that document; a copy is also attached to DAEN-ZCE's copy if the document was an EIS of national interest. If the decision-maker signing the REC was not the decision-maker for the "adequate" document cited, a copy of the relevant parts of that document should be attached to the REC for his/her review prior to approval.

(8) Step 8. Security Classification

If, after completion of Step 6, it has been determined that an EA or an EIS is required, two questions must be answered:

- Who should be and who can be part of the evaluation team (the preparers), and how should it be organized?
- What is the required and allowable extent of public involvement in the evaluation process?

If the entire project, portions of the project, or any supportive information needed for the evaluation is classified, answering these questions becomes a little more complicated. CEQ [40 CFR 1507.3(c)] and AR 200-2 [32 CFR 651.11(c)] point out that required environmental evaluation must proceed regardless of security classification. However, restrictions on public access to documents, if properly applied in accordance with AR 380-5, must also be observed. Thus, it will be worthwhile to begin answering the above questions as early as possible so that procedures which conform with security requirements can also be developed early. For example, it will take time to implement CEQ and AR 200-2 suggestions to prepare separately unclassified portions of classified documents. It will also take time to organize an evaluation team having both a proper security classification and an appropriate mix of scientific backgrounds.

Identification of possible interdisciplinary experts with proper security classification should be part of an organization's regular environmental program. This will make it relatively easy to obtain their assistance through

channels when it is needed. Persons outside the Army may also be involved if they have received security approval because they were employees of another agency or were contractors on classified projects in the past. Requests for these arrangements will be made through DAEN-ZCE and the Assistant Chief of Staff for Intelligence (ACSI). These offices prefer that requests for assistance, approval in setting up any external review teams, or obtaining team members from outside the Army be done routinely within an environmental program, rather than at the last minute.

(9) Step 9. Notify the Public

Once it is known that an EIS or an EA should be prepared, the proponent must notify other agencies, organizations, members of the public which might be affected by the proposed action, and other interested parties that a document will be prepared. The CEQ regulation [40 CFR 1506.6, 1501.7(a)(1)] and AR 200-2 [32 CFR 651.30(a), 651.32] describe the procedures to follow, including use of a Federal Register Notice of Intent (NOI). Chapter 4 describes the content of an NOI, and appendix B provides the format (p 165).

(10) Step 10. Identify Other Consultation Requirements

The NEPA process provides the overall procedure during which the proponent must prepare to meet the requirements of other environmental laws (40 CFR 1502.25), including any required permits or licenses. However, these laws may go further than NEPA in requiring agency action. Therefore, this is another area for taking early action to identify specific requirements as part of an overall environmental program.

In implementing Section 1502.25 of the NEPA regulations, the proponent must determine both: (a) how documents required to be prepared for applicable environmental review and consultation requirements are to be integrated (or prepared concurrently) with NEPA documents, and (b) how the applicable consultation or commenting process is to be undertaken concurrently with circulation of the EIS. In general, compliance with NEPA is not per se compliance with applicable environmental review and consultation requirements. However, compliance with both NEPA and applicable environmental review and consultation requirements can be greatly simplified by showing how the two fit together.

(11) Step 11. Begin Organizing the Evaluation Team

Selecting the group of people responsible for preparing environmental documentation is one of the more critical steps of the evaluation process. Since the preparers are "responsible for the accuracy of the document" [32 CFR 651.7(d)], insuring the quality and qualifications of those persons is a primary role of the proponent.

The organizer or leader of an EA evaluation team must be prepared to obtain assistance elsewhere through formal requests to other offices, informal requests to State agencies or universities, etc. Identifying likely assisting offices or personnel or outside "experts" early should already be part of the organization's environmental program. Later, when documentation is required, internal assistance may be quickly requested by letter or phone conversation and outside assistance by other appropriate means. Standard Memorandums of Understanding and draft Purchase Orders (for services of individual experts)

should be partially prepared in advance so that if outside offices or experts are required, processing can begin immediately.

For EISs, selection of the preparers has often been delayed, even until after informational or scoping public meetings. Such delay is extremely wasteful, especially since projects requiring an EIS typically have already had other studies underway long before the need for an EIS is identified. The proponent should make the evaluation represented in Steps 1 through 8 very early and immediately thereafter organize an evaluation team, which can help define information requirements for other parts of the planning process.

When an EIS is being prepared, the team or at least some of its members should participate in organizing and conducting scoping procedures. Defining what project alternatives will be considered is one scoping determination required of the proponent. Some part of the environmental team should already be in place, ready to evaluate the environmental merits of the alternatives suggested during the scoping, and then should participate with other proponent elements in deciding which alternatives to evaluate.*

Also, the proponent and the preparers should each remember that it is the decision-maker's choice to eliminate or select reasonable alternatives. Even if the proponent plans to recommend a particular alternative to the decision-maker, the effort expended in preparing evaluation documents should treat the alternatives with substantial equivalence. It is not the preparer's job to make that decision, nor is it the proponent's job to make the decision before environmental considerations are taken into account.

More information on setting up evaluation teams is provided in the discussion on pp 40-43 and in Erickson, 1979,¹¹ Heer and Hagerty, 1977,¹² and Roberts, 1975.¹³

(12) Step 12. Scoping

The preliminary "impact analysis process," including scoping (see glossary), is the portion of the process in which the preparers describe:

* The Federal courts have held that early decisions to eliminate alternatives on grounds that they do not include environmental factors among their considerations (i.e., decisions that do not at least have access to environmental portions of public scoping, and interdisciplinary evaluation of environmental considerations associated with all reasonable alternatives) are "arbitrary and capricious" and cannot be supported. See "Charting the Boundaries of NEPA's Substantive Mandate: Stryker's Bay Neighborhood Council, Inc. v. Karlen," 10 Environment Law Reporter, 10039-44, February 1980, for a discussion.

¹¹ Paul A. Erickson, Environmental Impact Assessment: Principles and Applications (Academic Press, 1979), pp 300-308.

¹² John E. Heer, Jr., and D. Joseph Hagerty, Environmental Assessments and Statements (Van Nostrand-Reinhold Co., 1977), pp 172-197.

¹³ James A. Roberts, "How to Prepare an EIS," Environmental Impact Assessment, Ruthann Corwin and Patrick H. Hefferan, eds. (Freeman Cooper & Co., 1975), pp 197-217.

- What is known about the project proposal (including specific activities).
- What is known about the environment at the general or specific location of the project.
- What can be assumed about the project's environmental impact.
- What must be known to (1) refine, clarify, and substantiate whether those assumptions are correct; (2) quantify or otherwise describe in detail those impacts that can actually be predicted; and (3) determine the significance of those impacts.
- How to define the scope of and significant issues to be analyzed in any environmental documentation associated with project planning.

(a) Define and formulate the proposal, including alternatives. This step starts with a more formal description of the problem to be solved and/or goals to be reached, and should improve the planning/assessment team's ability to propose reasonable and useful alternative solutions and plans.

After the alternative proposed plans have been outlined generally, the details of carrying them out should be stated explicitly. This is because members of the evaluation team (and persons who participate in formal or informal scoping later on) must know specific activities which will occur in order to estimate environmental effects or describe their environmental concerns. More detail will be needed when the Army activities are military-specific (e.g., training exercises) than when the activities are very similar to those occurring in the public sector (housing construction, for example).

It will be helpful to organize the activity descriptions in several categories. For example, activities should be described for the planning/evaluation team according to performing organizations, sequential timing, and location. This should be done separately for each alternative.

(b) Establish the affected environment. To estimate a proposal's impacts, one must know what activities are already occurring,* what

* The following publications contain some generalized definitions of specific Army activities. In the absence of a prepared detailed description, use them as a checklist for describing each "performer" organization.

- (1) L. V. Urban, et al., Computer-Aided Environmental Impact Analysis for Construction Activities: User Manual, Technical Report E-50/ADA008988 (U.S. Army Construction Engineering Research Laboratory [CERL], 1975), pp 42-46.
- (2) E. Novak and R. Riggins, Computer-Aided Environmental Impact Analysis: Mission Change, O&M, and Training: User Manual, Technical Report E-85/ADA022698 (CERL, 1976), pp 13-15, 34-43, 45-57, and 75-80.
- (3) S. Thomas, et al., Computer-Aided Environmental Impact Analysis for Industrial, Procurement, and Research, Development, Test, and Evaluation Activities: User Manual, Technical Report N-43/ADA056997 (CERL, 1978), pp 43-51, 53-54, 79-81, and 106-125.
- (4) J. Fittipaldi, et al., Computer-Aided Environmental Impact Analysis for Army Real Estate Actions: User Manual, Technical Report N-70/ADA068746 (CERL, 1979), pp 36-41 and 43-45.

environmental conditions already exist, and what impacts have already occurred. If the team is evaluating any site-specific proposal, it should begin by gathering together a variety of documents available for use at this stage. Installation maps, Master Plans, land management plans, transportation studies, noise contours, previous installation EAs, EIAs, and EISs and other documents will be useful in defining both the current activities and their environment. This will save time when written assessments are being prepared, especially if a contractor will prepare all or major portions of it. The proponent can thus avoid paying high prices for the technical expertise to collect this information.

(c) Choose (an) assessment technique(s). Chapter 5 describes in detail the types of techniques available; however, a few words of caution are necessary before using them.

1. Some techniques are most properly applied at an early phase of assessment. They tend to be rather generalized and subjective and are oriented toward impact identification rather than impact measurement and interpretation.¹⁴ They can logically be integrated into the scoping process, and they should be used to help define the scope of the documentation and cut down on the work required later. For site-specific evaluations, they are not substitutes for the more specific, objective methods requiring actual data, but are used during detailed analysis to measure and interpret impacts. (Some methods, of course, encompass both preliminary and detailed analysis stages of evaluation.)

2. Any method chosen for detailed impact analysis must conform to established scientific principles and standard techniques, so that one can state the degree of uncertainty associated with its results. In practical terms, this means that the interdisciplinary team and its consultants must together include persons who have disciplinary expertise and are therefore familiar with and capable of applying those principles and techniques in their fields.¹⁵

3. Since the public, State agency personnel, the decision-maker, and other persons who may not be part of the evaluation team must be consulted during the assessment process, it is important to consider the extent to which any particular evaluation technique and its results can be communicated. Techniques, especially those used for scoping, which already incorporate (or are easily adaptable to) clear presentation are preferred.

(d) Conduct public involvement (PI) processes. The CEQ regulations have emphasized a process that always occurs during impact analysis by giving it

¹⁴For a summary of suitability considerations and review criteria that can be used to evaluate a particular assessment method's usefulness in a particular situation, see R. K. Jain, L. V. Urban, and G. S. Stacey, Environmental Impact Analysis: A New Dimension in Decision Making (Van Nostrand-Reinhold Co., 1977), pp 71-76; Larry W. Canter, Environmental Impact Assessment (McGraw-Hill Book Co., 1977), pp 175-178; or M. L. Warner and E. H. Preston, A Review of Environmental Impact Assessment Methodologies (U.S. Environmental Protection Agency, April 1974).

¹⁵Paul A. Erickson, Environmental Impact Assessment: Principles and Applications (Academic Press, 1979), pp 275f.

the name "scoping." CEQ has designed specific steps leading to certain specific defined decisions. In addition, the regulations specify that persons and organizations potentially affected by a proposal must be included in the process. The scoping process has more formal requirements and more extensive public involvement requirements for EISs than for EAs. In fact, the emphasis CEQ places on the public aspect of scoping often gives the impression that the term applies only to the public interaction stage of project evaluation. However, it actually includes all the stages described here as "preliminary impact analysis" (Step 12, pp 54 through 67). Because the public involvement (PI) portions are such a large part of this preliminary stage, especially for projects requiring an EIS, this report lists them separately. Earlier parts of the scoping process should be initiated in-house (pp 54 to 55 and section 1 below) as preparation for the PI stages. Later stages of scoping essentially cannot occur until after public input is received (discussion begins on p 58).

The discussions below summarize and indicate special considerations for using the PI procedures (32 CFR 651.32-3) of AR 200-2 and the more detailed discussion in appendix A.

1. "Preliminary scoping." When formal public scoping is required, the members of the evaluation team should first (a) begin the steps described above in sections (a) through (c), plus (b) plan how to notify the appropriate parties of the results of those steps and how these results will be included in the planning process. Sections 651.32 and 651.33 [through paragraph (b)(1)(vii)] of AR 200-2 discuss this preliminary phase.

2. Public scoping

a. In the public interaction phase of PI, the proponent or evaluation team leader must:

(i) Notify the appropriate parties, by letter and/or by Notice of Intent (the latter is required as a minimum when an EIS is being prepared) of the results of the preliminary phase.

(ii) Prepare materials to be used by outside participants.

(iii) Organize the procedures by which affected parties will participate.

(iv) Actually conduct those procedures.

(v) Record the results or input obtained.

The PI procedures used in the past have often been public meetings, but these are not required. In fact, large public meetings may generate an antagonistic atmosphere rather than a more useful forum in which all public scoping participants (including both the proponent and the public) are actually consulting members of the overall evaluation team. Appendix A (Section A-7) gives the advantages and disadvantages of several methods for obtaining public input during an environmental evaluation.

b. Regardless of which method is chosen, the person in charge of the agency evaluation team (the preparers) has a great deal of managerial responsibility throughout the preliminary impact evaluation stage, particularly when

the preparers are in a separate office from the initiators and the planners. The following reminders are suggested:

(i) Members of the proponent's technical staff should be actively involved in scoping. At least one planner and at least one technical employee from the performing organization must be included throughout the stages described in Step 12. Or, if the proponent planners are directing the scoping procedures, they should arrange for the leader of the evaluation team to participate, along with at least one scientist each from a biological, a physical, and a social science field.* The interdisciplinary nature of the evaluation team must be established at the scoping (preliminary impact evaluation) stage. Otherwise, much time will be wasted later in getting the evaluation team to begin obtaining information without addressing more issues than necessary.

(ii) Make arrangements for clerical assistance as early as possible so that materials about the project alternatives, their environmental setting, and potential impacts can be ready as they are needed for in-house and public participants.

(iii) On an installation or at a Government facility, have the Public Affairs Office help organize and notify the public of scoping procedures. In fact, consider having the Public Affairs Officer or someone from that office actually participate in scoping for an EIS; these persons should be familiar with how the local community responds to issues associated with the Army presence.

(iv) During the PI procedures for an EIS, make sure that the CEQ lists of required scoping determinations are available to all participants. Table 3-1 compares required and optional determinations.

3. Scoping Determinations and Other Decisions. After public input has been obtained on a proposal requiring an EIS, the proponent must make certain determinations about the document's scope (table 3-1). If the proponent and the preparers are not the same office, they should make the determinations jointly. Similar decisions are made for an EA, even though the scoping procedures prior to the determinations may be modified. The CEQ regulations (40 CFR 1501.7 and 1508.25) and AR 200-2 (32 CFR 651.33(b)(3)) discuss the basic requirements of this stage. Some additional considerations are discussed below.

* Persons in these scientific fields may be available from the following offices:

1. Master Planning, Public Affairs, Recreation, Personnel Support -- urban planner, sociologist, or landscape architect.
2. Forestry, Wildlife Management, Environmental Office (all in FE) -- forester, biologist, etc.
3. Facilities Engineering -- engineers with training in air and water pollution control.

Table 3-1. Required and Optional Scoping Determinations

REQUIRED CONSIDERATIONS [40 CFR 1508.25]	REQUIRED DETERMINATIONS [40 CFR 1501.7(a) and (c)]	OPTIONAL DETERMINATIONS [40 CFR 1501.7(b)]
<u>Types of actions</u>	1. Scope (column 1)	1. Page limits (except maximum limits set by CEQ in 40 CFR 1502.7)
1. CONNECTED (closely related and should be discussed in same EIS)	2. Significant issues to be analyzed in depth	2. Time limits
a. automatically trigger other actions which may require EIS(s)	3. Issues which can be eliminated from detailed consideration in EIS (other than statement of why no significant effects are expected, or reference to discussion elsewhere) because:	3. Procedures to combine scoping with FA preparation
b. cannot or will not proceed unless other actions are taken previously or simul- taneously	a. the issues are not significant, or	4. Decision on any particular scoping method which should be followed in a specific situation (e.g., public meetings, workshops, questionnaire, etc.)
c. are independent parts of a larger action and depend on it for their justification	b. they were covered by prior environmental review	
2. CUMULATIVE (when viewed with other proposed actions have cumulatively significant impacts, and should be discussed in the same impact statement)	4. Assignments for EIS preparation to (and within) lead and cooperating agencies	
	5. Public EAs and other EISs related to but not part of the EIS under consideration	

Table 3-1. Required and Optional Scoping Determinations (Continued)

REQUIRED CONSIDERATIONS [40 CFR 1508.25]	REQUIRED DETERMINATIONS [40 CFR 1501.7(a) and (c)]	OPTIONAL DETERMINATIONS [40 CFR 1501.7(b)]
3. SIMILAR (when viewed with other reasonably foreseeable or proposed agency actions, have similarities which provide a basis for evaluating their environmental consequences together, such as common timing or geography)	6. Other environmental review and consultation requirements (to be pursued concurrently) 7. Relationship between timing of environmental analyses and agency's(ies') planning and decision-making schedule	
<u>Types of alternatives</u> 1. NO ACTION 2. OTHER REASONABLE COURSES OF ACTION 3. MITIGATION MEASURES (not already in the proposed action)	8. Revisions to other required or optional determinations, if substantial changes are made in the proposed action, or if significant new circumstances or information arise which are relevant to proposal or its impacts	
<u>Types of impacts</u> 1. DIRECT 2. INDIRECT 3. CUMULATIVE		

a. Science and the EIS. There have been some justifiable criticisms¹⁶ of agencies' use of "quick and dirty" studies to support environmental impact predictions in their EISs. Such studies often have been flawed by inadequate or inappropriate data or data collected over inadequate time periods; performance by persons whose credentials and scientific competence are questionable; and review processes inadequate to determine the studies' scientific validity.

The CEQ regulations recognize this difficulty and spell out the preferred approach. An EIS is not supposed to be a scientific document, but rather a planning document. However, any studies done in association with preparing an EIS should be performed in a scientifically valid manner. Methods used must be identified, and scientific or other sources of conclusions must be referenced by footnote [40 CFR 1502.24]. Specific EIS projects do not necessarily require new basic research or generation of new data; instead, the proponent should support these activities as part of the agency's overall environmental program, or by helping fund other agencies' environmental research.¹⁷ However, sometimes an experimental approach to data gathering, which may be classified as either basic or applied research, can provide relatively useful information, even though the study may not be as extensive as desired.¹⁸ The summary of study results in the EIS should state the uncertainty associated with any predictions or statements of current conditions. Also, a "worst case" analysis should be performed when there is scientific uncertainty in particular subject areas, especially those identified during scoping as controversial or of major importance to the affected area or the nation. Even if a worst case analysis is not necessary, the limitations of the particular evaluation methodology should be spelled out and an explanation given of what changes in the impact predictions would result if the limitations were exceeded in that particular case.

b. Biophysical Versus Socioeconomic Considerations. The degree to which social and economic considerations influence the assessment process has been an area of conflict among the various publics and proponents of assessment documents. In the past, the courts have ruled that socioeconomic impacts alone, even if significant, are not sufficient to generate the need for an EIS. On the other hand, if biophysical impacts are expected, documentation must consider the socioeconomic impacts as well. The wording of the new CEQ regulations supports this approach [40 CFR 1508.8 and 1508.14]. To clarify:

(1) CEQ requires that both direct and indirect environmental impacts be examined. If the only direct effects are socioeconomic, but some resulting

¹⁶Richard N. L. Andrews, "Substantive Guidelines for Environmental Impact Assessment," in Ravinder K. Jain and Bruce L. Hutchings, Environmental Impact Analysis: Emerging Issues in Planning (University of Illinois Press, 1977), p 40; Sally K. Fairfax, "A Disaster in the Environmental Movement," Science, 199:745 (17 February 1978); Russell W. Peterson, "The Impact Statement -- Part II," Science, 199:193 (16 July 1976); D. W. Schindler, "The Impact Statement Boondoggle," Science, 192:509 (7 May 1976); and Diane V. Ward, Biological Environmental Impact Studies: Theory and Methods (Academic Press, Inc., 1978), pp 127f.

¹⁷Richard A. Carpenter, "The Scientific Basis of NEPA -- Is It Adequate?" Environment Law Reporter (March 1976).

¹⁸Diane V. Ward, Biological Environmental Impact Studies: Theory and Methods (Academic Press, Inc., 1978), pp 81f.

indirect effects are biophysical, then both types require NEPA examination. This applies to both EAs and EISs.

(ii) If the direct effects are biophysical but "not significant," an EIS may be required if cumulative biophysical and socioeconomic effects together, both direct and indirect, are significant.

(iii) Even though the only significant environmental effects are found to be beneficial, this does not eliminate the necessity for environmental evaluation (which may identify adverse effects of lesser significance).

c. Social Versus Economic Considerations.¹⁹ The typical use of the term "socioeconomic" to express both social and economic effects conceals the fact that most descriptions of social impact in EISs are not really social, per se, but economic. This is natural, because economic considerations are usually much easier to quantify, and can be evaluated by attention to "factual" information about organizations and publics. Nonetheless, social impact analysis must incorporate information about social conditions and processes, some of which may not, or may not appear to, lend themselves to quantification. In particular, social analysis must evaluate the ways affected persons and organizations interact and the values they attach to existing and possible future conditions. Quantification of such factors is difficult; in addition, evaluation team members and even decision-makers may consider unquantified statements about social interactions to be undesirably subjective rather than objective. They may feel uneasy dealing with "facts" or "reality" that may logically have varying interpretations, particularly interpretations subject to moral judgments. Nonetheless, where social impacts are significant issues, the evaluation team's duty is to present such value-loaded unquantified information as an aspect of the social well-being of those who will bear any social impacts.

d. Eliminating Non-Significant Considerations. One scoping responsibility is defining areas in which so little environmental impact is expected that including large amounts of explanatory material in the EIS would be wasteful of the reviewers' and decision-maker's time. In such cases, discussion may be limited to brief explanations about why the document does not discuss these topics further. However, adequate justification is required before deciding that an issue is "not significant." This determination applies to the EA or EIS, not necessarily to the environmental investigations preceding a document. The preparers should use the public scoping process as guidance in this area; however, failure of an issue to reach major (or even minor) proportions during scoping cannot be their only consideration. The evaluation team must continue its interdisciplinary review at this final stage of scoping, estimating what issues may be less significant by using both their technical knowledge and the scoping input. Because determination of environmental significance often depends on cumulative effects, no scoping determination regarding significance can be considered final until all detailed studies and analyses are completed. (See CEQ's definition of "significant" in 40 CFR 1508.27.) Following is an

¹⁹Raymond L. Gold, "Linking Social With Other Impact Assessments," in R. K. Jain and Bruce L. Hutchings, Environmental Impact Analysis: Emerging Issues in Planning (University of Illinois Press, 1977), pp 105-116; Paul A. Erickson, Environmental Impact Assessment: Principles and Applications (Academic Press, 1979), pp 237f.

example of the distinction between eliminating "non-significant issues" and the requirement to reserve judgment on "environmental" significance until after the analyses are completed.

Suppose that a training exercise for a new type of tank will occur in the middle of a 50,000-acre installation in the Southwest, and that local residents question possible noise impacts. It might be logical to assume that since the exercise was located behind a topographic barrier and more than 20 miles from any "areas of critical environmental concern" and local communities, and since developmental tests had found the tank's new guns to be no more noisy than earlier tank weapons, the environmental documentation for this project could eliminate noise considerations as relatively insignificant.

On the other hand, suppose scoping did not generate any questions about air quality impacts. Because of the degree of dust production known to be associated with tank movement on dry or sandy soils, it would be much more difficult to make a case for eliminating air quality considerations from the analysis. The evaluation team might discover during impact analysis that the only significant air quality problem related to dust was along a road at the installation boundary over which the tanks would travel on their way to the range area. The evaluators could then define dust production elsewhere, as well as other types of air pollution, as insignificant in the EA or EIS.

e. Establishing Alternatives for Detailed Study

(1) For EISs, the public scoping process must specifically consider project alternatives. Alternatives can range from alternate mitigation methods, to alternate locations, to alternate management plans, etc. The scoping methods should reserve time for discussing options and for requesting proposals and comments from the participants. No major alternatives should be final until scoping is complete.

Sometimes, alternatives develop within the proponent organization, especially at the last minute, which are not included in the EIS. The courts have not allowed this practice in the past, and the new CEQ regulations now prohibit it. The EIS or a supplement must properly evaluate all of the alternatives actively considered by the decision-maker [40 CFR 1502.2(e)].

The evaluation team and the proponent planners are not authorized to limit consideration of reasonable alternatives. Even alternatives that would have to be performed by other organizations should be included if one of them would accomplish the proposal's objectives [40 CFR 1502.14(c)]. An EIS may state whether practical considerations dictate that a reasonable alternative may be rejected. However, the decision-maker(s), not the planners or preparers, decide whether to accept or reject an alternative, and can do so only if all alternatives are discussed in the evaluation. If some alternative is developed and discussed by either the public or the proponent, even late in the preparation of the draft EIS, it should be included in the document.

(ii) For EAs, the necessity for including alternatives is less clear. Consideration of alternative mitigation methods or sites, where applicable, may reduce impacts in the best alternatives to insignificant levels and result in the eventual preparation of an FNSI. The requirement for this and other types of alternative considerations rests in Section 101(2)(e) of NEPA for

"... any proposal which involves unresolved conflict concerning alternative uses of available resources." However, the exact meaning of "unresolved conflicts" is not clear. In the past, the courts have upheld the necessity to consider alternatives even when they (the courts) supported an agency's decision not to prepare an EIS.²⁰ Therefore, the prudent course would be to evaluate at least alternative locations when an EA is being prepared and one or more of the "EA criteria" apply (32 CFR 651.20), or when an EIS may be needed but an EA is being prepared to evaluate impact significance.

(iii) The "no action" alternative is required for EISs [40 CFR 1502.14(d)]. It ordinarily represents the status quo; in other words, existing Army activities would continue at their present levels and locations (or would continue to use a variety of levels or locations much as they usually do over a year's time). However, in some cases, "no action" has been described as the alternative in which all current activities would be entirely eliminated. (Thus, no Army action would be occurring.) In these cases, "status quo" has been treated as a separate alternative. Since this would make "no action" equivalent to major reductions in force or closures, many of which themselves have been the sole cause of an EIS being prepared, this report recommends not using the term with this connotation. However, if local policy prefers this approach, make sure that the distinction between the "status quo" and "no action" alternatives is clear.

f. Information and Data* Collection -- How Much Is Enough? It is neither cost-effective nor useful to identify and indiscriminantly collect all information available about a particular environmental parameter and then insert it unchanged into the EIS along with a few guesses about impacts. Instead, reserve the major effort for analyzing the proper data and information and for predicting and evaluating impacts and their probable significance. Environmental evaluation should start early in the project planning to allow enough time for these analyses, predictions, and evaluations. Thus, another task at the time of scoping determinations is defining what data and information will be needed to make those predictions.

To illustrate the way questions about necessary kinds and amounts of information and data can be developed and answered, consider the tank training example again. During preliminary in-house scoping, a major question was:

What kinds of biophysical impacts will result from tank training in the center of the non-cantonment area at Installation X?

During public scoping, this question may be expanded to:

What kinds of air quality, water quality, ecological, and noise effects will result from 6 months of tank training by three companies in either the western, or alternatively, the northern training areas on Installation X?

²⁰Environment Law Reporter (February, 1980), pp 10042ff.

* "Data" is used in the sense of quantitative evidence, as opposed to "information," which is qualitative knowledge.

By its conclusion, public scoping may reveal even more detailed questions; for example, in air quality, one might ask:

Are there any significant changes in local air quality due to dust production from use 5 hours daily over either April through September, or October through March, of 20 XM1 tanks by three companies in training at either Training Ranges B-25 and 26, or at Ranges H, J-50, and R-93?

(Some of the above questions could be asked and answered in earlier stages, of course.)

Now the preparer can decide what kinds of information and data to obtain in order to examine air quality at Installation X. For instance:

1. What are national and State air quality standards regarding dust (particulates)? Also, is the installation now in compliance with these?
2. What other dust-producing activities occur at the installation at those locations in those seasons? What is their frequency and duration?
3. What are the prevailing winds at the two locations during the two seasons? Are there barriers to wind movement between those locations and any local communities or any on-base housing or recreation facilities? What distance would dust travel under various wind conditions?
4. What kinds of soils are in those locations, and what is their tendency for dust production? What kind of vegetative cover exists in those locations, and how does that vegetation influence dust production?
5. What is the precipitation in those areas for those months? How does precipitation influence dust production in that soil? How would monthly or daily variation in winds or precipitation influence the ability of dust production to exceed the standards or cause annoyance to persons off-post?
6. How will the tanks' weight and their distribution affect soil disturbance? What is the frequency and duration of tank use during an "average" day?
7. Can any studies done during the tank's development be used? Are there any models on dust production from heavy vehicles that could be applied to tanks? Or, can any actual data from previous studies be applied at this location?

g. Are Field Studies Required? Begin by assuming that there are studies that could be applied to the particular situation.²¹ Contacts with previously established consultants, particularly those at colleges and universities, can help identify such studies.* Even if that assumption is incorrect, contacts will have been made with people who could do any necessary field studies; however, existing information should be used if possible. (This is another reason why environmental programs should try to obtain data on existing conditions whenever possible. In these cases, "existing conditions" should include environmental and social processes, not simply data on population or community structures.)

h. Environmental Standards and Permits. If the preparer is not already aware of standards specified in and permits required by all environmental regulations applicable to the proposed project, scoping is the time to become familiar with them. These standards and permits must be stated in the EA or EIS. The same is true for impact analyses, surveys, or studies required by other environmental review laws and Executive Orders [40 CFR 1502.25]. Also, keep in mind that just because an activity is currently in compliance with a particular standard or permit does not mean that environmental impact is not occurring. Nor does it mean that the activity would remain in compliance after a proposal was implemented. Therefore, current compliance cannot be the sole basis for deciding to eliminate issues related to such a topic from detailed consideration in an EA or EIS.

i. Informing a Separate Preparer About Scoping Determinations. Although the preparers should be involved in scoping, sometimes they will not be. In that case, the proponent planning group should provide the evaluation team with its scoping determinations. The proponent should insure that determinations not required for the public phase, such as timing, are conveyed to the preparers, and should try to verify that all members of the evaluation team have been informed of them. A written listing of determinations should be prepared for each member of both groups.

Conversely, the preparers should obtain from the proponents at least a transcript or detailed summary of any public scoping meetings, copies of letters sent, and all background internal documentation. In fact, in all cases in which the proponent and preparer are separate, it is preferable that the evaluation team make the determinations -- even if no member of the team can participate in the earlier phases of scoping. This will help insure that significant issues are not misidentified.

(e) Define the document "scope of work." The scope of work for the environmental document can be defined after making the scoping determinations and deciding the extent to which further data gathering is necessary. "Scope of work" definition is really only necessary if detailed impact analysis and EIS preparation will be entirely contracted out or detailed to a different Army organization. On the other hand, the "scope," as defined by CEQ, must always be specified. The difference between "scoping determinations" and the "scope of work" is that the scope of work covers all those additional decisions or considerations discussed under Step 12 (pp 57-63) that are not part of

²¹Paul A. Erickson, Environmental Impact Assessment: Principles and Applications (Academic Press, 1979), p 110.

* Use your organization's library to help obtain published reports.

the formal "scope" (40 CFR 1501.7, 1508.25). For the scope of work, one would specify the techniques and protocols to be followed during field data collection, as well as topics such as:

1. How the proponent and preparer will interact.
2. When progress reports will be required.
3. How and when in-house review will be accomplished, and
4. What format conventions will be followed in the document.
5. In addition, a detailed outline for the document should be created which reflects all current decisions on "scope."

(f) Complete the organization of the evaluation team. Complete arrangements for assigning in-house personnel to the evaluation team, arrange for the specific tasks that the paid and volunteer consultants identified earlier will perform, and contact other organizations or persons if scoping indicated that assistance in other areas was necessary. For an EIS, establish a group work area for the team, obtain temporary space for storing usable reference documents, new incoming reports, and any maps, figures, and tables that may be used in the EIS/EA, and find a place where the environmental document can be put together.

If possible, hold an orientation meeting for the entire team so that members or consultants added recently can be informed of previous activities, scoping determinations, and "scope of work" decisions. At this meeting, inform participants how the team will be organized and what internal reporting procedures will be used, and set up a schedule for interdisciplinary impact prediction discussions, etc. Encourage the participants to discuss in future meetings any factors identified during scoping as "not significant issues," but which appear much more important as more data is obtained. And, if it has not been done previously, have the technical project consultants or team members (from the proponent or performing organization) describe what specific activities would be performed for each alternative, how they are typically performed, and any constraints that might limit the proponent/performers in implementing certain types of mitigation measures.

(13) Step 13. Detailed Impact Analysis

The real work of impact analysis begins with this step. Possible or probable environmental problems identified during formal or informal scoping are now investigated in detail; Army personnel and consultants will gather specific information, perform field studies if necessary, and begin forming conclusions about the environmental effects of the proposed project alternatives. Specific evaluation methodologies (chapter 5) appropriate to this stage, such as models, are set in motion. The interdisciplinary team, or portions of it, should be holding regular working conferences to exchange their discoveries and identify cumulative or interacting effects that may be environmentally significant. The following guidelines are suggested.

(a) Information and data collection. Try to develop a method to record the nature and titles of reports, studies, and background information as they

are collected. A listing of these titles and the location of each document can be circulated regularly among team members. This will allow documents to be available to all who need them.

(b) Correspondence/communication.²² During the data collection phase of the project (or for that matter, during scoping), the proponent will often request baseline data and/or solicit agency or organization input by letter. Each initial contact should explain the request, describe the project, and clearly state what information is requested. Such correspondence should be prepared and sent early in the data collection process to allow addressees enough time for research and response.

Keep original responses in a master file; if appropriate, they can be reproduced in an EIS appendix as supporting documentation. Route copies to team members who are dealing with the specific impacts referenced in each letter. Telephone conversations are another source of information. All team members should document calls and important information received by phone or discussed in person. Copies of DA Form 751, "Telephone or Verbal Communication Record," should be distributed to all team members. When possible, obtain a telephone book for the project area to facilitate direct agency and community contacts; provide each team member who is not already familiar with the area with a copy.

If an EIS is being prepared, records should be made of all scoping and impact evaluation meetings held during the study. Project file memoranda should include date and location of each meeting, purpose of the meeting, attendees, meeting highlights, and action taken.

(c) Site visits. Visits to the specific site(s), if known, of proposed project alternatives are essential for persons investigating biological impacts, "design of the built environment," and, quite often, physical environmental categories such as air quality. Often, an initial site visit can quickly identify likely problems that otherwise would not be identified until the last minute, if at all. This is why it is important to include technical persons from the performing organization in the evaluation team; indeed, it is why the performing organization should produce the assessment document (at least for EAs). Persons who are familiar with the locations often do not have to revisit the sites; this reduces the effort necessary for initial impact evaluation. Also, when these persons are consultants to some other preparing organization, some preparer personnel may avoid trips to the site.

(d) New factors. The team can establish procedures which will allow members to suggest adding a topic to the significant issues determined during scoping, or deleting one that is proving not to be nearly as important as anticipated. The interdisciplinary team should make decisions on any scope changes as a group.

(e) Predicting impacts. When defining the activities for various alternatives, information such as the duration, frequency, numbers of troops (or civilians), times of day, season, and severity (e.g., tanks vs. jeeps) of

²²Environmental Assessment of Airport Development Actions, FAA-AD-77-1 (Federal Aviation Administration, March 1977), pp VII-1-8.

those activities will be needed to aid in impact prediction. The validity of conclusions relating to the significance of environmental impacts will partially depend on (1) how appropriate the predictive methods used are for determining the probability, magnitude, duration, frequency, and time or season of those effects, (2) whether they are used properly, and (3) the degree to which these effects induce secondary or indirect effects in other parts of the environment. When there is major scientific uncertainty about those effects, a "worst case" analysis is required [40 CFR 1502.22(b)] which assumes that activities are at their greatest or most damaging level and that the environment is at its most sensitive level. The analysis should also state the probability or improbability of that situation occurring.

(f) Possible mitigation measures. Mitigation can be accomplished by structural changes (physical or organizational), design changes, management improvement or control, choice of alternate sites, etc. The team should identify all of the possible, reasonable mitigation measures for various impacts and describe them in as much detail as possible; later, they can be presented and discussed with the proponent organization or office, which will decide which ones are feasible.

(g) Organizing for documentation. As the team develops and refines its impact predictions, conclusions should be recorded in a form relevant to NEPA requirements and the CEQ regulation. If records are kept in each of the following categories as the work progresses, it will be easier to organize them in the EIS or EA. (Chapter 4 lists and discusses the contents of these documents.)

1. Beneficial vs. adverse effects.

2. Direct vs. indirect effects.

3. Cumulative effects, including the combined effects resulting from the proposal and other Federal projects proposed for the same time frame by other agencies.

4. Significant effects and unavoidable or irretrievable commitments of resources.

5. Controversial effects. Include controversies related to public concerns, those related to debate within a particular scientific discipline, and those whose significance may be the subject of controversy among several disciplines; i.e., the evaluation team cannot agree on how significant they are. Particularly note any controversies related to the "significant issues" brought out during scoping.

6. Regional vs. local effects. For example, remember the tank training example (p 63). Identify effects important to the general area or region: e.g., "There will only be a minor effect of intermittent, temporarily increased particulate levels in the southeast part of the county." Then compare them to specific local effects: e.g., "However, approximately 30 to 50 local households directly off-post will be exposed to a 20 percent increase in dust production (based on duration and frequency of tank passage), which could reach an annoyance level previously experienced only infrequently."

7. Conflicts with local, State, regional, Federal, or Indian tribe land use plans, policies, and controls for the area concerned.

8. Natural and depletable resource and energy requirements and conservation potential.

9. Effects on urban quality, historic and cultural resources, and the built environment, including reuse and conservation potential.

10. The relationship between short-term benefits of using the environment and the ability to maintain and enhance its long-term productivity.

11. Mitigation measures which will be adopted and implemented by the proponent and/or the performers of the action or by a cooperating agency; and, details of any monitoring program which will be adopted (chapter 7). Identify mitigations of impacts which might be performed, but to which the proponent cannot or will not commit itself, and why; also identify mitigations that could reduce impacts but which would be the responsibility of some other agency.

12. References and appendices. Begin identifying specific information and data which should be included in appendices to an EIS and which can be referenced. Maintain a list of both, so that editorial personnel can keep track of them within the document. Begin arranging with the appropriate Public Affairs Office to have referenced documents available for public review as required by 40 CFR 1502.21.

Methodologies of any field studies whose conclusions are used in the EIS should be summarized in an appendix, whether or not the appendix contains the actual collected data. If it does not, the data should be available as a "referenced document."

13. Affected environment and impacting activities. As the conclusions about impacts are identified, the evaluation team can also begin to identify specific activities and conditions likely to cause those impacts as well as aspects of the existing environment which will be changed. These particular aspects of the proposal and the existing environment are the only ones that require a detailed description in an EIS. To reduce the size of environmental documents, summary-type descriptions of any remaining aspects/activities should be substituted for vast amounts of excess information culled from other reports.

(h) Alternatives. As the analysis and evaluation processes are reaching their conclusion, the preparer must identify that alternative which is the proponent's preferred action and the environmentally preferred alternative; i.e., the alternative to be recommended to the decision-maker. Alternatives should be ranked in terms of their relative degree of environmental impact, even though this may be difficult. The decision-maker will need to know the relative environmental significance of any particular choice among the alternatives, especially for an EIS. In that case, the decision-maker, among other things, must identify in the Record of Decision what considerations of national policy overrode the "environmentally preferable" alternative, if it was not the one chosen.

(14) Step 14. Document Preparation

Figure 3-8 shows the various types of NEPA documents connected with environmental analysis. These documents are discussed in chapter 4 and formats for some of them are shown in appendix B. Content of the EIS is discussed in detail in chapter 6. Following are a few additional suggestions for preparing EISs:

(a) One person should be designated to keep the "official" first draft. This person should prepare a three-ring binder with a tabbed divider for each basic section of the EIS and for all subsections identified at the conclusion of scoping. The document outline can be further broken down, and space for texts can be provided, as appropriate, during impact evaluation. As sections of the draft are prepared, they should be circulated among team members for review. Both during and after this internal review, as well as during subsequent technical editing, the person appointed to keep the first draft should be responsible for keeping a copy of the most current versions of all parts of the document. This person can also maintain a record of all documents "incorporated by reference," footnote or other citations, page and chapter cross-references, figure and table locations and titles, and the status of all

Major NEPA Documents

Environmental Assessment (EA)
Environmental Impact Assessment (EIA)*
Environmental Impact Statement (EIS), Draft (DEIS) and
Final (FEIS)
Supplement to EIS or EA**

Minor Recordkeeping

Record of Environmental Consideration (REC)

Public Notification

Notice of Intent (NOI)

Summarizing Decisions

Finding of No Significant Impact (FNSI)
Record of Decision (ROD)

* Produced under previous CEQ Guidelines.

** Usually an EA should be revised, or a new or additional EA written, rather than a supplement issued, because either would be about the same size.

Figure 3-8. NEPA-related document.

typing and graphics work. He/she can make sure that all explanations concerning why certain topics are not discussed in detail tally with the earlier scoping decisions on "insignificant issues."

(b) Be sure that the list of preparers of the document (see chapter 6, p131) indicates the actual role of each person who helped prepare the document and lists his/her technical training or experience rather than just a job title or project-related description, such as "project investigator." Only those persons who maintained managerial positions in the assessment team should be identified with more generalized titles.

(c) Technical and editorial consistency should be maintained. If editorial resources are not available, make sure that one or more team members reviews the entire document for (1) technical consistency, and (2) grammar and punctuation errors. Sometimes the latter are ignored due to lack of time. At the minimum, correct typographical and punctuation errors which change the meaning of the document.

(d) The presentation of the alternatives and their consequences (see chapter 6, p 120) is the most important part of the entire document. It should clearly show how the probable effects on the environment will vary, depending on the choice of alternatives. At least one table of effects is almost a necessity. This table should list the alternatives across the top or down the side; the other axis of the table can vary, depending on the situation. One very common method lists environmental categories (e.g., air quality, aquatic life, local business, etc.) down one side; then, under each alternative listed across the top of the page, coded signs indicate positive and negative effects, their general likelihood, and whether the effects are major or minor, unavoidable or mitigable, significant or insignificant, short- or long-term, etc. Other tables could give more detail for the individual environmental categories, including as many quantified predictions of effects as possible. Be sure to indicate cases in which new impacts, when added to existing ones, would push the total impact past any significance thresholds.

(15) Step 15. Document Issuance and Review

Figure 3-9 shows the general sequence of document issuance and review, and figure 3-10 indicates overall timing for a typical EIS. The documentation portion of the process is well covered by the CEQ regulations and AR 200-2. Chapter 4 describes the various documents, and Table 3-2 provides references to the appropriate portions of both regulations.

3-2. The Decision

The appropriate decision-maker for environmental assessment purposes is the same person who would normally approve a particular proposal. Of course, when an EA shows that an FNSI can be issued, the decision-maker should be made aware of any mitigations and/or monitoring plans adopted by the proponent. Therefore, the decision-maker should actually see the FNSI, which itself would summarize the results of the EA. The summary should include any mitigations which cause the total impacts to be less than significant; the decision-maker can then initiate any necessary steps to implement those mitigation plans.

The same comment also applies in the case of an EA or EIS; however, the EA or EIS is a planning and decision document. No summary of an EIS that was not circulated and reviewed as part of the draft EIS can be substituted for the EIS itself. The decision-maker may rely on summaries circulated with the EIS only if they accurately reflect the EIS content.

After a decision has been made on the proposal, the decision-maker (not the EIS preparers) must issue a Record of Decision. Chapter 4 (p 81) describes what that document must contain.

3-3. Taking the Action

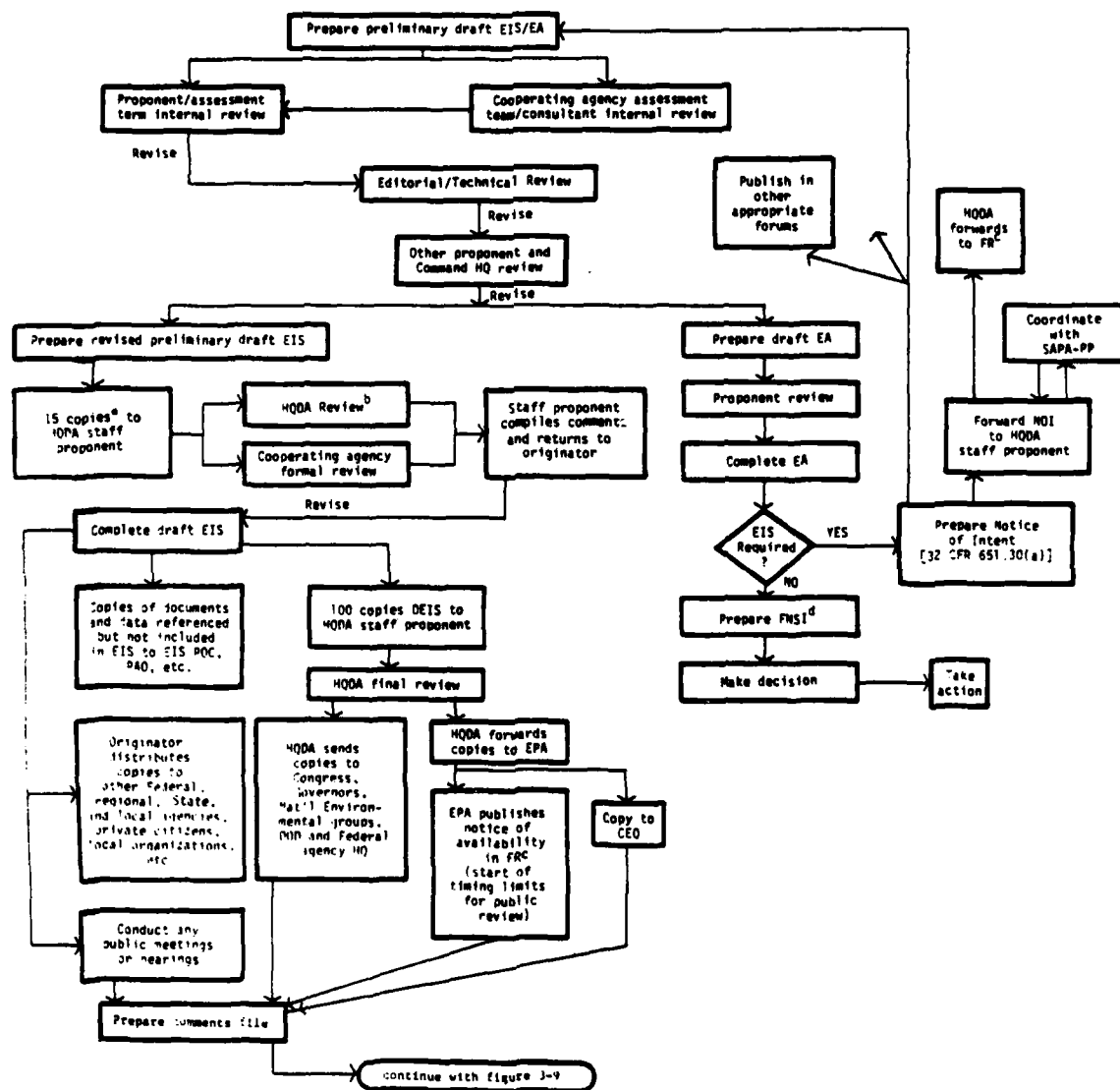
Thirty days (normally) after a decision on the proposal has been made, the proponent may begin implementing it. Any mitigations and/or monitoring to which the proponent committed itself in the EIS will be implemented concurrently. (See chapter 7 and the CEQ regulation [40 CFR 1505.2(c), 1505.3, 1503.3(d), 1508.20] in regard to mitigation and monitoring; 40 CFR 1506.1, 1506.10(b), and 1501.4(e)(2) indicate time restrictions on taking an action.)

Finally, when is further written evaluation required? And, what happens if the mitigations cannot be or are not followed, or impacts are different from those predicted by the EIS or EA? The Army is obligated to prepare and issue a Supplemental EIS or EA if the project or the environment substantially changes so that the actual impacts differ significantly from those discussed in the original document. This relates to the proponent's obligation to inform the decision-maker and the public of a project's probable impacts. The predictions may not have been correct, but if they were made based on information obtained through the best available techniques and expert judgments, they did inform the decision-maker and the public of the relative environmental impacts of the various alternatives. The agency has the prerogative to modify its plans, as appropriate, while the project is being implemented; however, these modifications must be environmentally evaluated through normal NEPA processes, such as a supplemental EIS or EA document.

Table 3-2. Cross References for Document Issuance and Review

<u>Issuance/Review Topic</u>	<u>CEQ Regulation (40 CFR Section)</u>	<u>AR 200-2 (32 CFR Section)</u>
Prepare Record of Environmental Consideration	----	651.6(q), 651.7(b), 651.10(a)(4)(1) 651.10(a)(5)(1)
Prepare EA	1501.3, 1501.4(c), 1501.7(b)(3), 1506.4, 1506.5(b), 1508.9	651.5(q), 651.10(a)(4), 651.19-25, 651.33(d)(2)
Prepare FNSI	1501.4(e), 1508.13	651.5(b)(6), 651.12(a)(4), 651.23(b)
Public review	1501.4(e)	651.5(h), 651.12(a)(4)(1), 651.23(c,d), 651.33(d)(2)
Take action or Public notice of EIS	1506.11	651.12(a)(4)(11)
NOI (<u>Fed. Reg.</u>)	1501.7(1st par.), 1507.3(e), 1508.22	651.5(h), 651.30(a) 651.33(d)(1)
Other notice	1506.6	
Prepare EIS	1501.4(c), 1501.5(a,b), 1501.7(2,4), 1502.4, 1502.9, 1506.4, 1506.5(c), 1506.8, 1508.11	651.5(b)(6), 651.5(a), 651.10(a)(2,5), 651.26-33, 651.40(a)
Draft EIS	1502.9(a)	651.5(b)(7)
Preliminary internal review	----	651.30(d)(1,2)
Public notice of DEIS	1506.6, 1506.9	651.5(h), 651.12(a)(2)(1)(A-C), 651.30(d)(2), 651.40(c)
Public/agency review	1502.19, 1503.1	651.5(h), 651.30(e)
Response to DEIS comments	1500.4(m), 1503.2-4, 1505.1(c-e)	651.30(f)
Final EIS	1502.9(b)	651.5(b)(7), 651.30(d)
Public notice of FEIS	1506.6, 1506.9	651.5(h), 651.30(a), 651.40(c)
Supplements	1502.9(c)	651.30(k), 651.31
Environmentally unsatisfactory actions	1504	651.30(j)
Decision and Record of Decision	1505.1(d,e), 1505.2, 1506.1(a), 1506.6, 1506.10	651.5(h), 651.13(b), 651.30(h,1)
Take action	1502.2(f), 1505.3, 1506.1, 1506.11	----
Mitigation/Monitoring	1503.3(d), 1505.2(c), 1505.3, 1508.20	651.13, 651.30(1)

SEQUENCE OF DOCUMENT ISSUANCE AND REVIEW



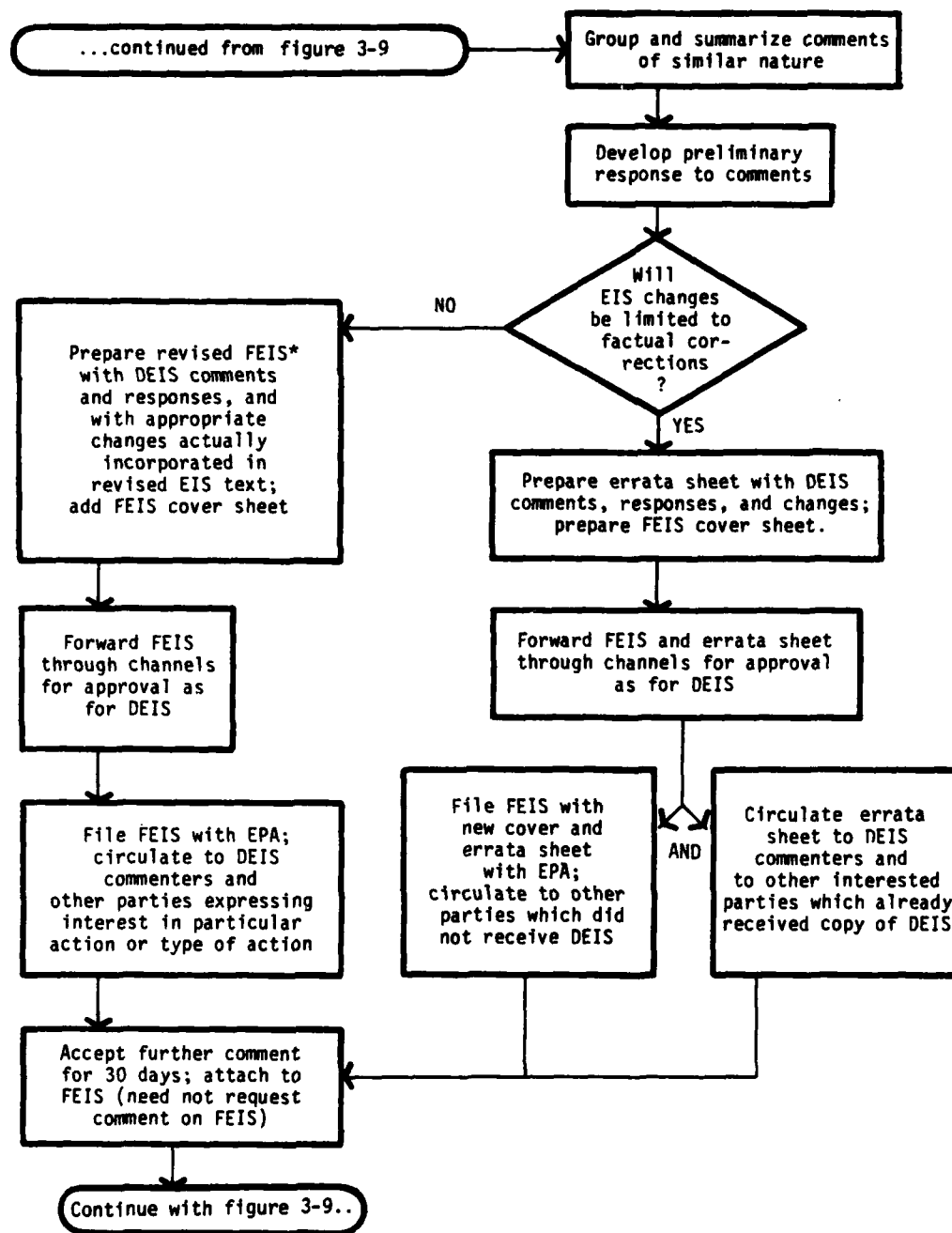
^aProvide additional copies for cooperating agency.

^bCirculates to OASA[ILPM], NAEN-ZCE, OTJAG, OTSG, other interested parties.

^cFederal Register.

^dSee Step 5b (figure 3-7b) for FNSI public review requirements.

Figure 3-9. Sequence of document issuance and review.



*If comments indicate DEIS has major flaws, a supplement (Figure 3-9) may be prepared and circulated at this stage; otherwise revise and reissue DEIS for further review.

Figure 3-9. (Cont'd)

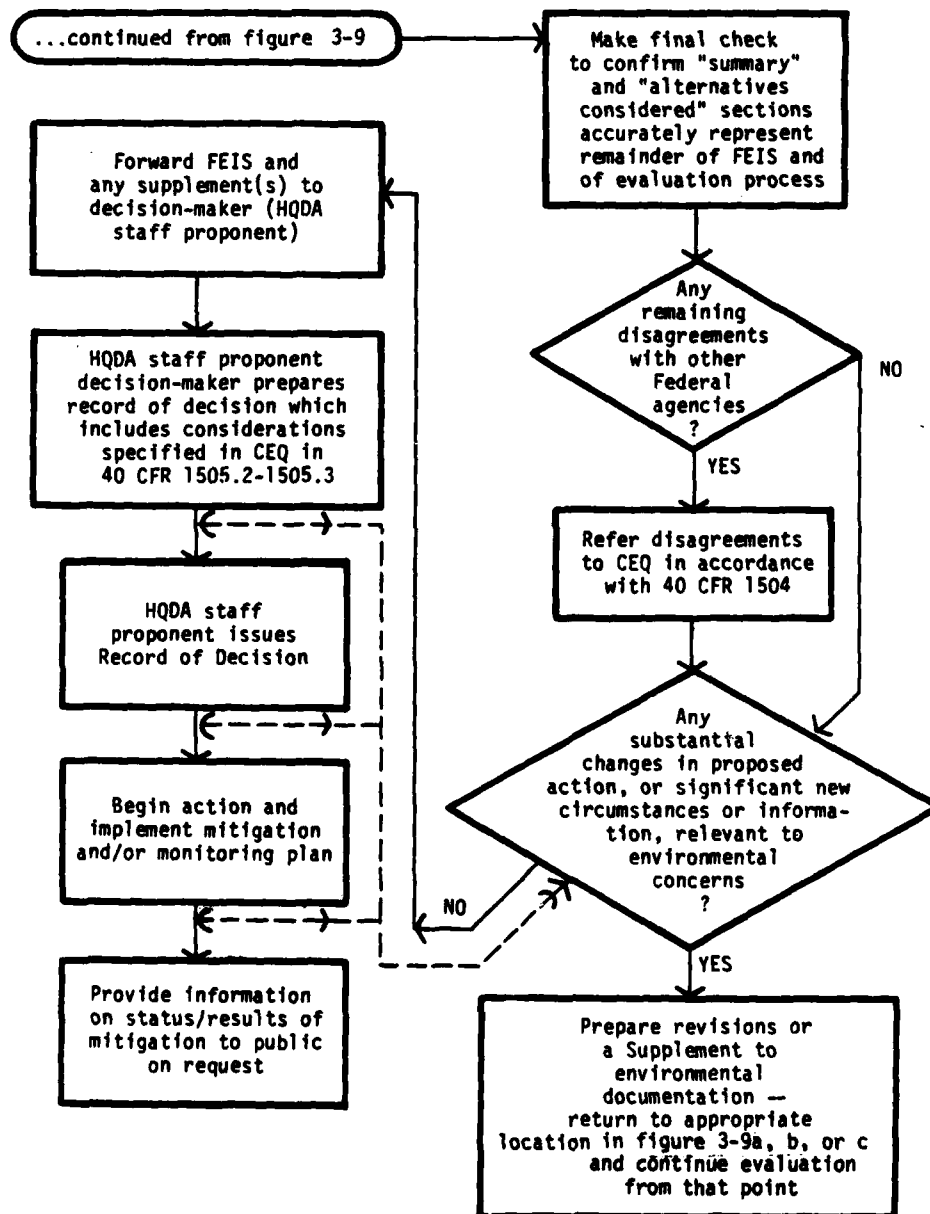
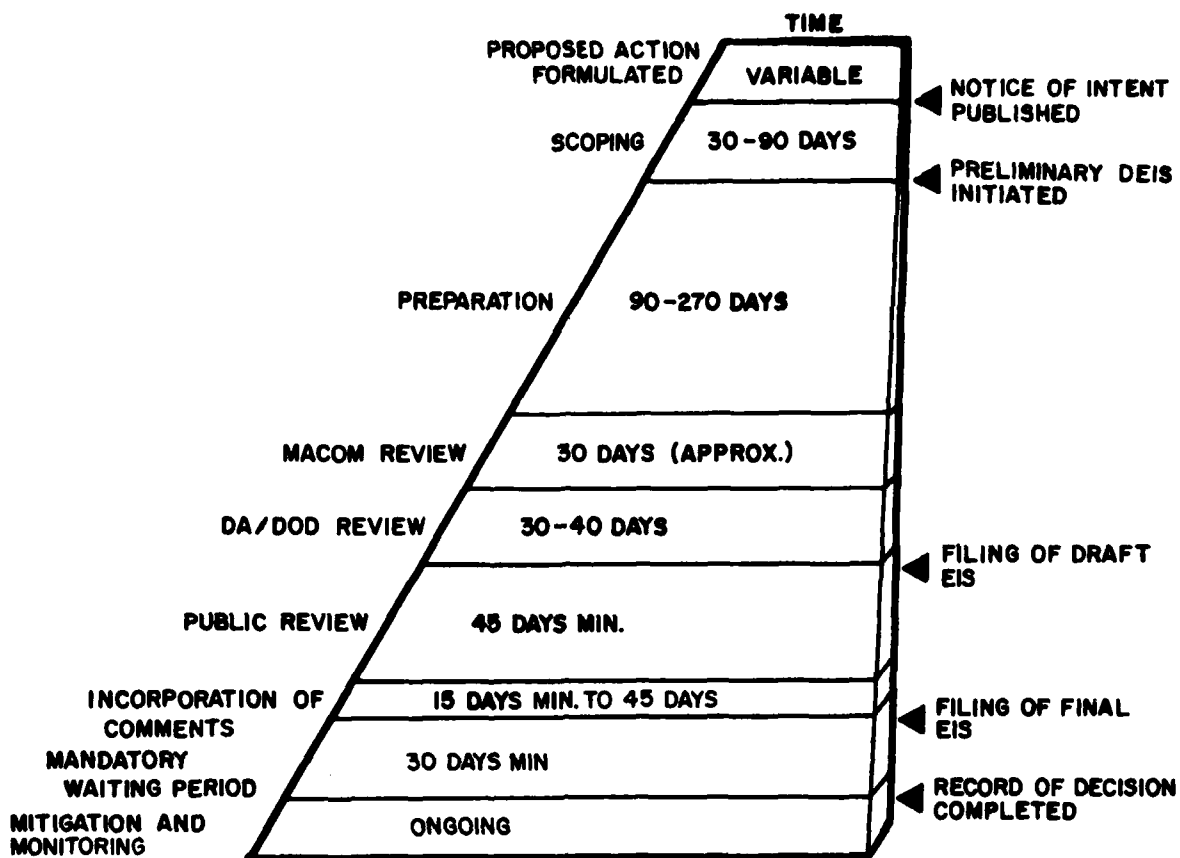


Figure 3-9. (Cont'd)



TIME INVOLVED FOR PREPARING AND PROCESSING AN EIS

Figure 3-10. Timing for environmental analysis with a typical EIS.

CHAPTER 4

DOCUMENTATION PROCEDURES

4-1. Key Elements

This section characterizes the key elements which AR 200-2 requires in each record or document. Figure 4-1 demonstrates the relationships among the records and documents themselves and within the environmental analysis process. This flowchart is a good procedural outline to follow after a proposed action is formulated. Appendix B provides example forms of various required records.

4-2. Categorical Exclusion

This type of proposed action qualifies as a category of action which does not, either individually or cumulatively, significantly affect the human environment and which consequently does not require preparation of an EA or EIS.

4-3. Record of Environmental Consideration

This is a DA record which briefly describes a proposed action and its expected timeframe; it accounts for the level of environmental analysis that the action requires and identifies the responsible proponent.

4-4. Environmental Assessment (EA)

An EA is a concise public document which briefly discloses analysis details sufficient for determining possible effects on the environment from the proposed action. The results of the EA will subsequently lead the proponent to a "Finding of No Significant Impact" or to a "Notice of Intent" for preparation of an EIS.

4-5. Finding of No Significant Impact (FNSI)

This is a brief public document which states why an action analyzed within an EA will not significantly affect the quality of the human environment and therefore will not be the subject of an EIS. The FNSI should contain: (1) the proposal, (2) a summary of the assessment, (3) mitigations or limitations planned, if any, (4) relationship to other environmental documents, if any, (5) why the impacts are not significant, and (6) the point of contact.

4-6. Notice of Intent

This is a public notice that an EIS will be prepared and considered. This notice will help the proponent determine the significant issues related to the proposed action by seeking affected and interested parties early in Army planning. The notice briefly (1) describes the proposed action and possible alternatives, (2) describes the agency's proposed scoping process, and

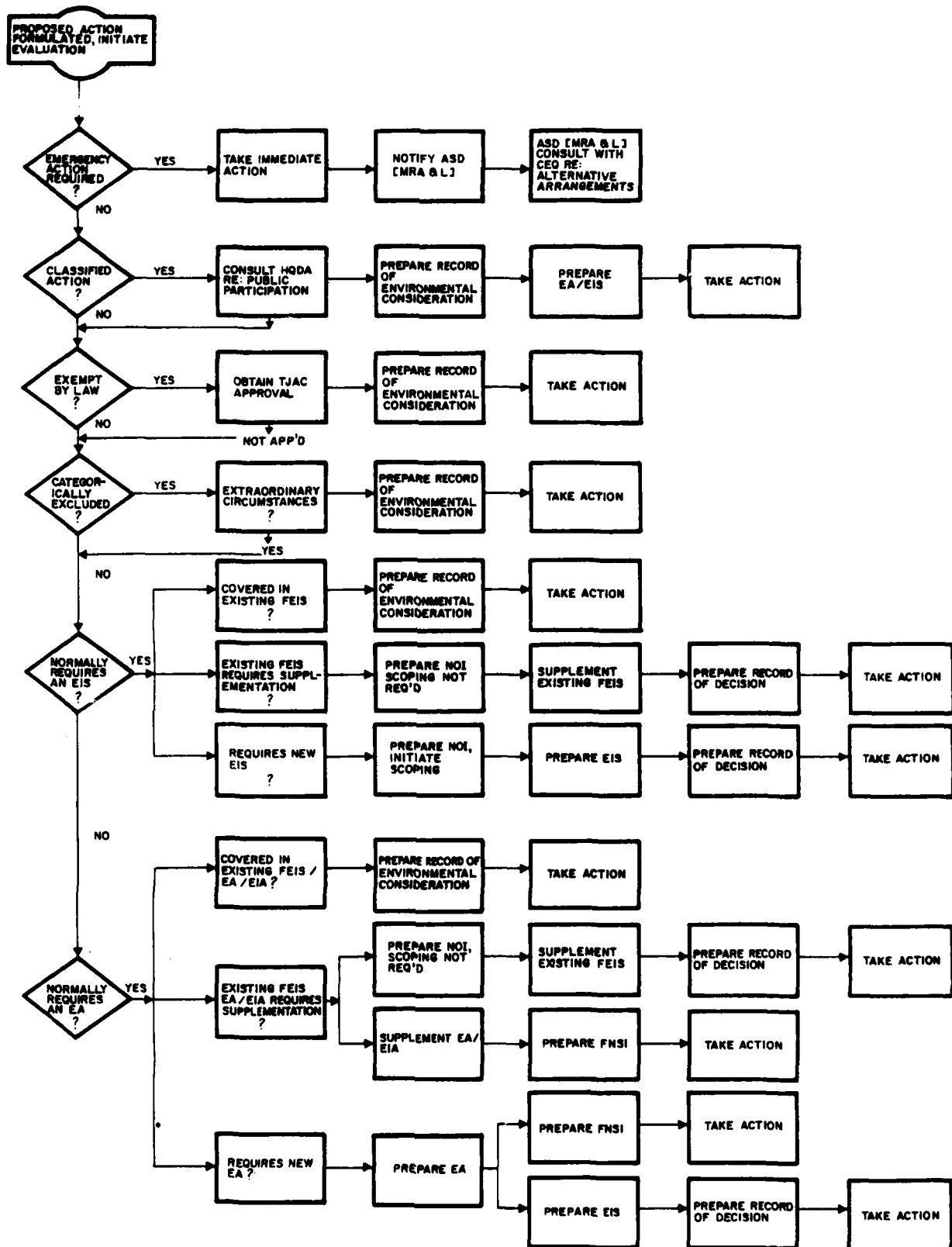


Figure 4-1. Records and documents in the environmental analysis process.

(3) provides the name and address of agency personnel who can answer questions about the action and the EIS.

4-7. Environmental Impact Statement (EIS)

This is a full-disclosure public document which will adequately inform decision-makers and the public of an action's environmental consequences and help guide agency decisions.

4-8. Record of Decision (ROD)

This is a public statement prepared by the proponent agency which states the agency's final decision reached after reviewing environmental documentation. The Record of Decision should contain a clear discussion of the following:

- a. Project description.
- b. Description of alternatives.
- c. Associated impacts.
- d. Basis or rationale for the decisions.
- e. Discussion of environmentally preferred alternatives.
- f. Considerations given when implementing the decision.
- g. Conclusion.
- h. Mitigation, monitoring, and enforcement.

The record of decision resulting from a proposed action, plan, or program follows appropriate agency predecision consideration (in the form of an EA or EIS) given to its environmental effects. Many points (particularly, points a, b, and c above) required in an ROD may be developed from the EIS summary section. An EA which follows similar format guidance may also be a useful source of this information. The agency should insure public availability of the ROD. For example, the ROD's cover sheet should indicate its availability; also, agencies should note the interested parties to whom the ROD has been sent. In certain cases, the agency may choose to publish the full ROD text in the Federal Register.

CHAPTER 5

IMPACT PREDICTION METHODS

5-1. Introduction

Impact prediction methods are tools used to identify impacts and organize results for analysis. They are important in four basic aspects of environmental impact analysis: impact identification, description, measurement, and interpretation. The data gathered from these techniques can be identified, described, measured, and in some cases, interpreted and evaluated according to the guidelines of a particular method. These methods enable planners to assess the results of specific impact assessments collectively in terms of an overall or summary evaluation.²³ The method chosen should be appropriate to the specific analysis. Some methods are more commonly used because of their adaptability to several types of projects or actions. For example, the Leopold matrix tends to be used often because it is very flexible.

Some techniques compare and evaluate relative environmental impacts of alternative project designs and sites. These techniques do not indicate the project's actual impact on the environment. For instance, a method can indicate that using a certain site as a training area will produce less habitat destruction than using another proposed site. However, the method will not indicate the specific impacts (e.g., how much habitat will be lost, what species will be affected). Conversely, some procedures are more of an inventory approach to assessing environmental impacts rather than a tool for choosing the best alternative. Generally, the relationship of the type of project activity to its surroundings will determine the best procedure to follow. The data obtained will enable the decision-maker to identify, describe, measure, and in some cases interpret and evaluate impacts according to the guidelines of the prediction method being used.

5-2. Impact Identification

Impact identification is the process of determining what the impact will be and where it will occur. The method chosen should establish the socioeconomic or natural elements that an action will affect. The identification process needs to consider the full range of environmental factors to insure that no relevant element is excluded. A method should:

- a. Define the class of events or changes that might affect the environment.
- b. Categorize areas of the activities through which such impact might occur.
- c. Match the classes of action to areas of human activity.

²³ John G. Rau and D. C. Wooten, Environmental Impact Analysis Handbook (McGraw-Hill, 1980), p 8-1.

Environmental factors determined to be unaffected by a project alternative should not be considered further. Identification of these impacts should be as specific as possible to avoid generalizations that will result in subjective and disputable assessments.

5-3. Impact Description

a. Express identified impacts in terms of identifiable units, e.g., number and types of people, geographic areas affected, timeframe, etc. (see figure 5-1).

b. Describe potential impacts in terms of positive and negative changes observable by people or monitoring equipment.

MATRIX

A SIMPLIFIED ILLUSTRATION OF IMPACT SIGNIFICANCE											
Impact Dimension Impact Types		Time Frame		Geographic Area (Affected)				Observations	Impact Significance		
		Short Term	Long Term	Project Site	Project Vicinity	Service Area	City as a Whole		Minor	Moderately major	Major
Direct Impacts	Construction	X		X				Impact short-term, affects a small area	X		
	Maintenance & Operation		X	X	X			Impact long-term, covers a small area		X	
Indirect Impacts	Impact of Induced Growth or Secondary Impact		X		X	X	X	Impact long-term, affects a larger area			X

Figure 5-1. A simplified illustration of impact significance. (From How to Apply the CEQ Regulations to Implement the Impact Statement Process for Agency Decision-Making [Comprehensive Planning Institute, 1979], p 68.)

5-4. Impact Measurement

Impact measurement defines the dimension or magnitude of the impact (how much or how long), while impact significance indicates its importance. Methods used to measure impact are:

- a. Selecting specific observable characteristics to be used as a measure of specific impacts (e.g., turbidity, soil erosion, airborne particulates).
- b. Selecting quantitative methods to answer the questions about the impact's dimension or magnitude. The methods chosen will depend on the availability of scientific expertise (on-post IAD or through contract). Lack of scientific knowledge will limit the use of quantitative methods.

5-5. Impact Interpretation

The next step is classifying an impact's significance as minor, intermediate, or major in terms of beneficial or adverse effects. Impact significance is the basis for comparing and rating alternative actions. The factors influencing impact significance are discussed below.

Sensitivity of the Environment

This is the environment's ability to deal with impacts while still maintaining a given quality level. For example, a small action in an extremely sensitive environment can create a higher level of significance than a larger action in an environment capable of absorbing adverse impacts.

Impact Duration

Primary impacts often lead to indirect or secondary impacts which can also be of major concern. Long-term impacts are generally more significant than short-term impacts.

Population Impacted

An impact occurring in a heavily populated area will be more significant than one occurring in a sparsely populated region.

Size of the Affected Area

The size of an affected area can have far-reaching effects on impact significance; i.e., the larger the area, the greater the significance.

5-6. Assessment Methods

This section discusses and gives examples of seven methods chosen as being the most effective means of assessing a project's overall effect; i.e., the collective impact of the project's good and bad effects. These methods are: matrices, checklists, map overlays, networks, interdisciplinary team approach, trend extrapolation, and models. These methods are discussed in terms of their applicability to different project actions and in terms of their strengths and weaknesses.

Matrices

The matrix method cross-references environmental characteristics with project activities affecting the environment. Environmental descriptors (e.g., air quality, economics, noise) are arrayed along the side of a table, and the activity descriptors (e.g., road building, landscaping, construction of a landfill) are listed at the top of the table (see figures 5-2 through 5-5). The matrix is a commonly used method, second only to the checklist approach. It differs from the checklist approach in that it represents an environmental assessment procedure and is therefore a somewhat systematic approach to predicting impacts.²⁴ The most familiar matrix was developed by Leopold and his associates in 1971.²⁵ The Leopold matrix, which uses 100 specific actions and 88 environmental items, identifies an impact whenever an interaction occurs between an action and an environmental item. Using the matrix requires consideration of each action and its potential to impact on an environmental factor. Each matrix intersection should first be divided with a line in areas of anticipated impacts (e.g., modification of habitat) to separate the magnitude and importance ratings in the interaction square (see figure 5-5). The matrix then denotes the interaction in terms of its magnitude and importance.

(1) Magnitude

After an objective evaluation of available facts, the evaluator can describe an interaction's magnitude by assigning it a number, usually from "1" to "10"; "1" represents an interaction of small magnitude or minor effect, and "10" represents an interaction of large magnitude or major effect.

(2) Importance

The relevance or importance of an interaction is related to the significance of the anticipated impacts effect. Importance is ranked from "1" to "10." "1" indicates an interaction of relatively low significance, and "10" indicates a highly significant interaction. Assignment of this number should be based on the subjective judgment of the interdisciplinary assessment team.²⁶

(3) Other

In addition to the numerical values for magnitude and importance, the matrix can include other information. Symbols can be used to describe types of impacts (positive, negative, or neutral) and to indicate whether the impact will be long-term or short-term. In addition, scale can be used to indicate the degree of potential reversibility associated with a beneficial or detrimental impact. The Leopold matrix can also be used to identify impacts resulting from various temporary phases of an action. Leopold's matrix treats ecological, physical, and chemical impacts comprehensively, but does not fully incorporate social and indirect impacts and does not consider economic and

²⁴E. Whitlach, Jr., "Systematic Approaches to Environmental Impact Assessment: An Evaluation," Water Resources Bulletin, Vol 12, No. 1 (1976), p 126.

²⁵Luna B. Leopold, et al., A Procedure for Evaluating Environmental Impact, Geological Survey Circular 645 (U.S. Government Printing Office, 1971).

²⁶L. Canter, Environmental Impact Assessment (McGraw-Hill, 1977), pp 182,186.

MATRIX

Illustrative Matrix Approach to Comparing Environmental Impact
of Actions on Existing Characteristics and Conditions of the Environment

Existing Environmental Conditions \ Proposed Actions	Modification of Habitat	Alteration of Hydrology and Drainage	Surface Paving	Noise and Vibration	Urbanization	Cut and Fill (Land Fill)	Erosion Control	Landscaping	Traffic Circulation
Land Form	B	C	B	A	B	C	C	D	B
Water Recharge	A	B	B			B	A	D	
Climate	A				A				
Floods - Stability	C	C	B			B	A	D	
Stress - Strain (Earthquake)	B	C			A	B	A		
Open Space	D		D	B	C			D	B
Residential	D				D				
Health and Safety	D	B	B		B	B	A		C
Population Density	B			A	B				
Structures	B	B	B		B	B	A		B
Transportation	B		C		B				C
TOTAL COMPUTATIONS	B	C	B	A	B	B	A	D	B,C

LEGEND: A - Insignificant low impact not injurious to land and environment.

B - Measurable impact, but with proper planning and building is not injurious to land.

C - High impact on environment, but can be curbed by taking proper precautionary measures.

D - Impact on environment, but considered good.

E - Impact that will be detrimental to environment.

Figure 5-2. Illustrative matrix approach to comparing environmental impact of actions on existing characteristics and conditions of the environment. (From John G. Rau and D. C. Wooten, Environmental Impact Analysis Handbook [McGraw-Hill, 1980], p 8-1.)

MATRIX

ENVIRONMENTAL FACTORS	POTENTIAL ALTERNATIVES				
	Future without a plan	Single purpose impoundment	Land treatment	Channel alteration	Multiple purpose impoundment
BASIC RESOURCES					
LAND					
Cover type	o	o		o	o
Erosion hazard	o		o	o	
Flood hazard	o	o		o	o
WATER					
Lake quantity		o			o
Lake quality		o			o
Stream length	o	o		o	o
Stream quality	o	o	o	o	o
Ground-water quantity		o		o	o
Ground-water quality				o	o
AIR					
Particulates & toxic gas					
Odor		o			o
Noise		o		o	o
RESOURCE USES					
Crop production	o		o		
Pasture production		o			o
Woodland production		o	o	o	o
Wildlife production	o	o		o	o
Recreation	o	o		o	o
Municipal & industrial water	o				o
Mineral extraction					o
Low-flow augmentation					o
Irrigation water					
Fish production	o	o		o	o
Economic development-National		o		o	o
Economic development-Regional	o	o		o	o
Social values		o			o
Unique cultural/historical/ natural		o			o
Visual	o	o	o	o	o

RELATIONSHIP

o Slight o Moderate o Important

(From Soil Conservation Service, Guide for Environmental Assessment, U.S. Dept. of Agriculture, Washington, D.C.)

Figure 5-3. Example matrix showing environmental factors versus potential alternatives. (From Soil Conservation Service, Guide for Environmental Assessment, [U.S. Dept. of Agriculture, March 1977].)

secondary impacts at all. In addition to these gaps, the original matrix was designed to test only one particular proposal in order to determine whether the project was environmentally satisfactory.

Another matrix method (the Khan Husain method)²⁷ refines Leopold's matrix model to include not only a wide variety of competing alternatives, but also

²⁷Khan M. Husain, Step-by-Step Procedures for Preparing Environmental Impact Statements for Wastewater Treatment Plants (U.S. Environmental Protection Agency, Environmental Evaluation Branch, Office of Water Programs Operation, October 1975); Khan M. Husain and Jeff Harkinson, A Municipal Guide for Preparing Environmental Impact Statements for Community Development Block Grant Projects, Volume II, Impact Statement Assistance Program (University of Texas at Arlington).

ACTIONS WHICH MAY CAUSE ENVIRONMENTAL IMPACT

- 1) Identify all actions (located across the top of the matrix) that are part of the proposed project.
- 2) Under each of the proposed actions, place a value at the intersection with each item on the side of the matrix if an impact is possible. A zero may be used when no impact is expected. Positive and negative values from one to three are to be used where impact is expected. Positive values indicate a beneficial impact. The number 1 indicates a minor impact, 2 indicates a more serious impact which may need consideration and 3 indicates a major impact which will require special planning.
- 3) Having completed the matrix, all rows and columns which contain values should be added and these sums entered in the COMPUTATIONS space.
- 4) A text should accompany the completed matrix. This text should be a discussion of the rows and columns which received high numerical values. In addition, those individual boxes with high numerical values should be examined.

CHARACTERISTICS AND CONDITIONS OF THE ENVIRONMENT			MATRIX FOR ENVIRONMENTAL IMPACT ASSESSMENT INSTRUCTIONS									
CHARACTERISTICS AND CONDITIONS OF THE ENVIRONMENT			INSTRUCTIONS									
			Identify all actions (located across the top of the matrix) that are part of the proposed project. Under each of the proposed actions, place a value at the intersection with each item on the side of the matrix if an impact is possible. A zero may be used when no impact is expected. Positive and negative values from one to three are to be used where impact is expected. Positive values indicate a detrimental impact. The number 1 indicates a minor impact, 2 indicates a more serious impact which may need consideration, and 3 indicates a major impact which will require special planning. Having completed the matrix, all rows and columns which contain values should be added and these sums entered in the COMPUTATIONS space. A text should accompany the completed matrix. This text should be a discussion of the rows and columns which received high numerical values. In addition, those individual boxes with high numerical values should be examined.									
PHYSICAL AND CHEMICAL CHARACTERISTICS			MODIFICATION OF REGIME									
EARTH			ALTERATION OF GROUND COVER									
WATER			ALTERATION OF SURFACE WATER HYDROLOGY									
ATMOSPHERE			ALTERATION OF GROUNDWATER HYDROLOGY									
PROCESSES			EROSION CONTROL									
FAUNA			NOISE AND VIBRATION									
FLORA			RESIDENTIAL SITES AND BUILDINGS									
LAND USE			COMMERCIAL SITES AND BUILDINGS									
HUMAN INTEREST			AIRPORTS									
CULTURAL STATUS			HIGHWAYS AND BRIDGES									
OTHERS			TRANSMISSION LINES									
COMPUTATIONS			PIPELINES									
			BARRIERS									
			CANALS									
			DAMS AND IMPOUNDMENTS									
			SURFACE EXCAVATION									
			SUBSURFACE EXCAVATION									
			CLEAR CUTTING AND OTHER LUMBERING									
			WELL DRILLING AND FLUID REMOVAL									
			AGRICULTURE									
			ENERGY GENERATION									
			INDUSTRIAL PROCESSING									
			PRODUCT STORAGE - COVERED									
			PRODUCT STORAGE - UNCOVERED									
			LAND TRANSPORTATION									
			AIR TRANSPORTATION									
			WATER TRANSPORTATION									
			COMMUNICATIONS									
			LANDFILL									
			EMPLOYMENT OF TAILINGS, SPILL, OVERBURDEN									
			LIQUID EFFLUENT DISCHARGE									
			SEPTIC TANKS									
			DEEP SUBSURFACE DISPOSAL									
			COOLING WATER DISCHARGE									
			STACK AND EXHAUST EMISSION									
			FERTILIZATION									
			HERBICIDES									
			PESTICIDES, INSECTICIDES									
			EXPLOSIONS									
			SPILLS									
			OPERATIONAL FAILURE									
			OTHERS									

Figure 5-4. Example of environmental characteristics versus impacting actions. (From Environmental Impact Assessment by Use of Matrix Diagram [Alabama Development Office, State Planning Office, June 1974].)

				PROPOSED ACTIONS WHICH MAY CAUSE ENVIRONMENTAL IMPACT							
				Modification of Regime		Land Transformation and Construction		Changes in Traffic		Accidents	
				Modification of Habitat		Roads and Trails	Transmission Lines and Corridors	Trails		Operational Failures	
KEY: x/y x = magnitude y = importance (+) = beneficial change (blank) = adverse change 1 = least adverse impact 10 = greatest adverse impact											
EXISTING CHARACTERISTICS & CONDITIONS OF THE ENVIRONMENT	Physical Characteristics	Earth	Erosion			4/4					
			Deposition			2/4					
	Biological Conditions	Flora	Flora	2/2		1/1					
		Fauna	Birds	+1/+1			1/1	2/2			
			Land Animals	+1/+1				2/4			
		Land Use	Forestry	1/1		2/2		1/1			
			Grazing	+1/+1		+1/+1		1/2			
			Agriculture				3/5				
			Industrial				+2/+3				
		Recreation	Hunting			+1/+2					
		Aesthetics and Human Interest	Scenic Views & Vistas	1/1		5/5	6/7				
			Wilderness Qualities			2/5	3/7	6/6			
			Open Space				2/2				
			Parks & Reserves				1/2				
			Historical & Archeological	1/7		3/7		5/8			
			Health & Safety								
			Employment				+1/+1			1/10	
		Man-Made Facilities	Utility Net				+5/+7				
		Other	Fire Protection					1/1			

Figure 5-5. Example of a matrix approach to assessing the environmental impact of an electric transmission line. (From E. Whitlatch, Jr., "Systematic Approaches to Environmental Impact Assessment: An Evaluation," Water Resources Bulletin, Vol 12, No. 1 [1976], p 126.)

social, economic, and secondary impacts of alternative actions. These refinements make the matrix a comprehensive model useful for identifying all types and sizes of impacts resulting from alternative proposals. Several publications provide a detailed discussion of this methodology.²⁸

DA PAM 200-1 provides a specific matrix method that lists Army activities. Descriptions of the environmental attributes affected by these activities have been updated in Appendix B of Environmental Impact Analysis -- A New Dimension in Decision Making²⁹ (see figure 5-4).

(4) Strengths of the Matrix Approach

The major strengths of the matrix approach are:

(a) Assuming that a detailed matrix was developed at the beginning of the assessment process, this method assures that virtually all potential impacts will be considered.

(b) It is universal in its application, in that it is not specific to any type of action.

(c) It is highly applicable to complex or multiple actions.

(d) It forces consideration of direct impacts on each environmental parameter resulting from each project component.

(e) It incorporates consideration of an impact's magnitude and importance and identifies a project's positive and negative aspects.

(f) It serves as a concise summary of the assessment text.

(g) It is flexible in that the number of actions and environmental factors can be increased or decreased.

(h) The visual display of the impacted items and major actions is useful for presenting causes of the impacts.

(i) It can be used to identify impacts for the project's various temporal phases, such as construction, operation, and post-operation.

²⁸Luna B. Leopold, et al., A Procedure for Evaluating Environmental Impact, Geological Survey Circular 645 (U.S. Government Printing Office, 1971); Khan M. Husain, Step-by-Step Procedures for Preparing Environmental Impact Statements for Wastewater Treatment Plants (U.S. Environmental Protection Agency, Environmental Evaluation Branch, Office of Water Programs Operation, October 1975); Khan M. Husain and Jeff Harkinson, A Municipal Guide for Preparing Environmental Impact Statements for Community Development Grant Projects, Volume II, Impact Statement Assistance Program (University of Texas at Arlington).

²⁹R. K. Jain, et al., Environmental Impact Analysis -- A New Dimension in Decision Making (Van Nostrand Reinhold, 1977), pp 168-316.

(5) Weaknesses of the Matrix Approach

The following are problems that may occur when using the different types of matrices.

(a) No matrix provides the evaluator with adequate systematic guidance for consistently rating each cell.

(b) Some matrices assume that beneficial effects will be minor and concentrate entirely on adverse effects.

(c) Some matrices are difficult and time-consuming to use. For example, Leopold's matrix uses a master sheet with 8700 cells for each alternative.

(d) Matrices account for only first-order environmental impacts; a network or feedback type of system would actually be more appropriate because it considers lower-order and cumulative impacts.

(e) Matrices involve a lengthy evaluation which identifies the impacts but does not quantify them.

Checklists

Checklists are one of the most common environmental evaluation methodologies. They range from a simple listing of evaluation variables to descriptive lists which include information on measuring, predicting, and interpreting changes in identified evaluation variables. There are four basic types of checklists.

(1) Simple Checklist

The simple checklist describes impacts associated with a particular project, but provides no detailed information for measurement and interpretation (see figure 5-6).

(2) Detailed Checklist

This checklist describes each environmental factor in detail and provides information useful for actual measurement and data interpretation. The Environmental Impact Computer System (EICS)³⁰ developed by the U.S. Army Construction Engineering Research Laboratory is one example of a detailed checklist (see figure 5-7). This computer-aided system assesses the environmental effects of Army military activities (e.g., construction, training, mission change, RDT&E, and real estate transactions).

(3) Scaling Checklist

The scaling checklist indicates affected factors, sometimes with a brief description, and provides a scaling or rating system. For example, a method developed for use with transportation projects scales impacts from -5 to +5 relative to their status before the project. The ratings of each alternative

³⁰R. Baran and R. D. Webster, Interactive Environmental Impact Computer System (EICS) User Manual, Technical Report N-80/ADA074890 (CERL, 1979).

Typical Project Checklist by Impact Area

POTENTIAL IMPACT AREA	CONSTRUCTION PHASE			OPERATING PHASE		
	Adverse effect	No effect	Beneficial effect	Adverse effect	No effect	Beneficial effect
A. LAND TRANSFORMATION AND CONSTRUCTION						
a. Compaction and settling						
b. Erosion						
c. Ground cover						
d. Deposition (sedimentation, precipitation)						
e. Stability (slides)						
f. Stress-strain (earthquake)						
g. Floods						
h. Waste control						
i. Drilling and blasting						
j. Operational failure						
B. LAND USE						
a. Open space						
b. Recreational						
c. Agricultural						
d. Residential						
e. Commercial						
f. Industrial						
C. WATER RESOURCES						
a. Quality						
b. Irrigation						
c. Drainage						
d. Ground water						
D. AIR QUALITY						
a. Oxides (sulfur, carbon, nitrogen)						
b. Particulate matter						
c. Chemicals						
d. Odors						
e. Gases						
E. SERVICE SYSTEM						
a. Schools						
b. Police						
c. Fire protection						
d. Water and power systems						
e. Sewerage systems						
f. Refuse disposal						
F. BIOLOGICAL CONDITIONS						
a. Wildlife						
b. Trees, shrubs						
c. Grass						
G. TRANSPORTATION SYSTEMS						
a. Automobile						
b. Trucking						
c. Safety						
d. Movement						
H. NOISE AND VIBRATION						
a. On-site						
b. Off-site						
I. AESTHETICS						
a. Scenery						
b. Structures						
J. COMMUNITY STRUCTURE						
a. Relocation						
b. Mobility						
c. Services						
d. Recreation						
e. Employment						
f. Housing quality						
K. OTHER (List as appropriate)						

Figure 5-6. Typical project checklist by impact area. (From John G. Rau and D. C. Wooten, Environmental Impact Analysis Handbook [McGraw-Hill, 1980]), p 8-1.)

These refer to the attributes for the Technical Specialty Ecology.

attributes[illegible]

These refer to numbers for the basic activities to implement Army programs (BAAPs) for the Functional Area Mission Change

These codes refer to
texts of Ramification
— Remarks and Mitigation
Statements that apply
to the possible impacts.

MYTE

The names of the BAAPs and attributes are also listed with the matrix.

These letters (A, B, C) are the "scores."

are summed for each environmental factor used. The overall evaluation summary is based on the number of positive and negative ratings and on the algebraic average rating (see figures 5-8 and 5-9).

This system, developed by Battelle Laboratory for the Bureau of Reclamation,³¹ describes the environmental factors included in checklists as well as directions for scaling the values of each parameter and assigning importance units. The major feature of this system is its ability to express different environmental impacts in similar units (see figure 5-10); these units, referred to as importance units, describe each impact in terms of its relationship to the affected environment.

The major strengths of the checklist approach are:

- (a) It is simple and to the point.
- (b) It is useful for single actions of a similar type which occur in essentially the same location.

³¹L. Canter, *Environmental Impact Assessment* (McGraw-Hill, 1977), p 207.

Factor	Definition or explanation	Rating alternative			Comments
		1	2	3	
A Community (local area)					
1 Noise pollution	Relation to present levels, Policy and Procedures Memorandum 20-8 (PPM 20-8)				
a Adjacent to freeway		-2	-1		Relief of street traffic helps offset improves due to relief of street traffic
b General area		+3	+1		
2 Air pollution					
a Adjacent to freeway		+2	+1		Relief of street traffic
b General area		+5	+2		Relief of street traffic
3 Drainage	Effects on chances of flooding, etc.	+1	0		Route 1 will help slightly
a Adjacent to freeway		0	0		
b General area					
4 Water supply					
a Water pollution	PPM 20-8, permanent or serious temporary interference with movement or level of groundwater	0	0		Little, if any, effect
b Water quantity					Little, if any, effect
5 Waste disposal	PPM 20-8, access to, interference, etc.	0	0		Little, if any, effect
6 Flora effects	NEPA and PPM 20-8, irreplaceable losses, etc.	0	0		Little, if any, effect
7 Fauna effects	NEPA and PPM 20-8, breeding or nesting, etc.	0	0		Little, if any, effect
8 Parks	PPM 20-8, improvement or damage to	+5	+2		Improves access to
9 Playgrounds	PPM 20-8, improvement or damage to	+5	0		Route 1 improves access to
10 Archeological sites	NEPA and PPM 20-8, loss of or access to, etc.	0	0		None affected
11 Historical sites	PPM 20-8, loss of or access to, etc.	+2	+1		Improves access to
12 Open spaces		+3	+1		Opens area by removing structures, some undesirable
13 Visual aspects	PPM 20-8, community view of freeway	+3	+1		Through proper treatment area improved
a Adjacent to freeway		+2	0		Route 1 would help, route 2 not likely to help
b General area					
14 Safety	PPM 20-8, any change of hazards				
a Traffic		+3	+1		Route 1 gives more relief to streets and removes railroads
b Pedestrian		+5	+1		Route 1 gives more relief to streets and removes railroads, route 1 more persons involved
c Other		--	--		
15 Other	PPM 20-8, e.g., other resources				
B Freeway motorist experience					
1 View of freeway	Appearance and security	+3	+1		Route 1 clearer and nicer view
2 View of adjacent area	Aesthetics or special sights	0	+1		Route 2 could give special views on curves
3 Panoramic views	Vistas	+1	+3		Route 2 good, route 1 downtown area
4 Area hazards	Hazards to freeway users and vehicles	+3	-1		Route 1 would give displace hazards, route 2 would expose motorists to industrial smog, etc.
Summary rating					
		Alternative			
		1	2	3	
No. of ratings	15	12			
No. of minus ratings	1	2			
Ratio of plus ratings	0.94	0.86			
		Algebraic sum of ratings			44
		Average of ratings			2.75
					1.00

Figure 5-8. Example of Adkins-Burke method in environmental category. (From W. G. Adkins and D. Burke, Jr., Social, Economic and Environmental Factors in Highway Decision Making, Research Report 148-4 [Texas Transportation Institute, November 1974].)

SCALING CHECKLIST

Adkins-Burke Method: Overall Comparison of Ratings

Parameters	No. of plus ratings	No. of minus ratings	Total no. of ratings	Algebraic sum of ratings	Ratio of plus ratings	Average ratings
Transportation						
Local area						
Alt.1	7	6	13	18	0.54	1.38
Alt.2	4	2	6	1	0.67	0.17
Alt.3						
Metropolitan area						
Alt.1	8	0	8	34	1.00	4.25
Alt.2	6	1	7	7	0.86	1.00
Alt.3						
Environmental						
Alt.1	15	1	16	44	0.94	2.75
Alt.2	12	2	14	14	0.86	1.00
Alt.3						
Sociological						
Community						
Alt.1	9	2	11	27	0.82	2.46
Alt.2	6	3	9	-1	0.67	-0.11
Alt.3						
Metropolitan						
Alt.1	9	0	9	31	1.00	3.44
Alt.2	6	1	7	7	0.86	1.00
Alt.3						
Economic						
Alt.1	15	14	29	27	0.52	0.93
Alt.2	14	14	28	-11	0.50	-0.39
Alt.3						
All ratings						
Alt.1	63	23	86	181	0.73	2.10
Alt.2	48	23	71	17	0.68	0.24
Alt.3						

Figure 5-9. Adkins-Burke method: overall comparison of ratings.
(From W. G. Adkins and D. Burke, Jr., Social, Economic and Environmental Factors in Highway Decision Making, Research Report 148-4 [Texas Transportation Institute, November 1974].)

(c) It adds comprehensiveness to the study, thus insuring that no environmental impact is overlooked.

(6) Weaknesses of Checklist Approach

The major weaknesses of the checklist approach are:

(a) It may ignore items that are of special interest but which are not included on a standard checklist form.

(b) It is not readily applicable to multi-action projects or to large-scale projects in which potential impacts are difficult to identify.

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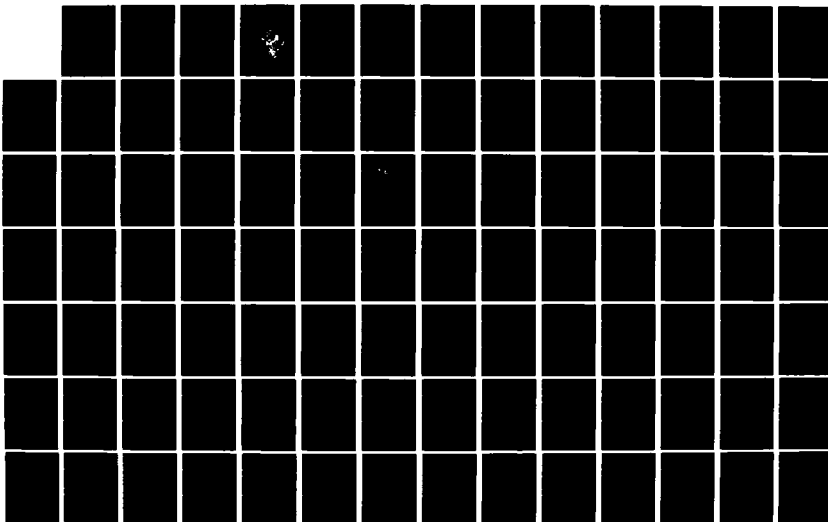
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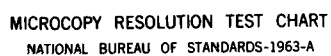
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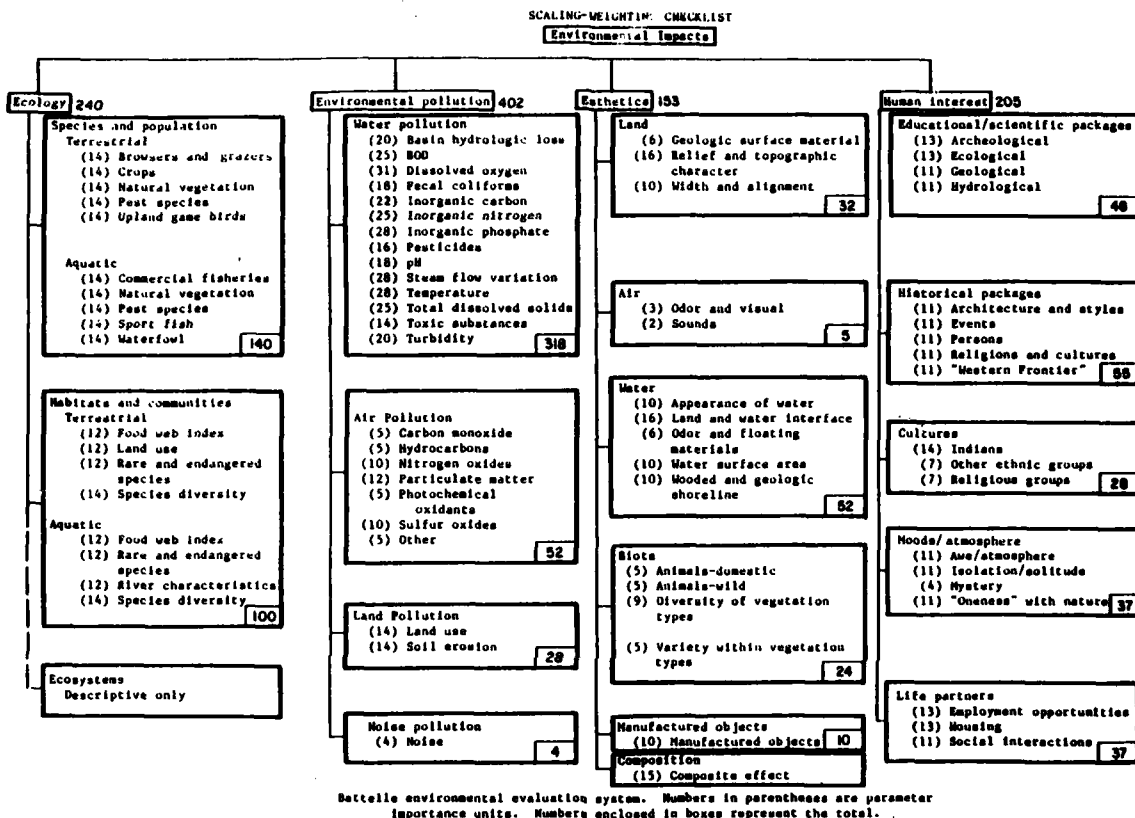


Figure 5-10. Scaling-weighting checklist. (From L. Canter, Environmental Impact Assessment [McGraw-Hill, 1977], pp 182,186.

Map Overlays

This method uses maps which display the project area's environmental characteristics (physical, social, ecological, and aesthetics). These maps are overlaid on a base map to produce a composite map of the environment. The environmental characteristics that fall within the project boundaries can then be identified as those that will potentially be impacted. Typically, some sort of value is assigned to the characteristics inventoried. The values may range from high to medium to low and may involve anything from monetary values to use suitability.

The characteristics and their different values are generally shown on the map with different shades of grey or intensities of colors. High values are in dark shades, and lower values are indicated in gradually lighter shades or intensities of colors. These maps are most useful when all the inventoried

characteristics can be systematically defined, weighted, and mapped. This method is especially well-suited for determining and screening alternate project sites or routes.

Use of this method in a military context is shown in figure 5-11. The parameters shown in this example of a map overlay are land-use related. They include slope, soil limitations, unique visual features, and water bodies. This example is a composite map that does not incorporate the value concept; however, it gives the reader an idea of what an overlay map might look like.

(1) Strengths of the Overlay Approach

The major strengths of the overlay approach are:

(a) It is a simple, effective means of visually displaying environmental, economic, and other technical considerations.

(b) There are fewer data-gathering requirements because the data is not quantified directly, but rather categorized by levels.

(2) Weaknesses of the Overlay Approach

The major weaknesses of the overlay approach are:

(a) Analysis of trade-offs between parameters (social values) is not well accounted for.

(b) This method is not well adapted for analyzing types of projects that are fixed in location, but whose environmental impacts vary with design. This is because overlays show only the area of least impact, not what the actual impacts will be.

(c) There is a limited range of informational content, and the level of analysis possible is severely limited by the technique's inherent nature.

(d) This method cannot quantify specific environmental impacts.

(e) A high degree of skill is necessary to prepare overlays.

Networks

Networks are a tool used to outline and describe cause and effect sequences that can lead to significant impacts. A network resembles a decision tree; impacts are displayed as a flow diagram whose branches indicate the effect that would result from each alternative (see figures 5-12 through 5-17). They are applied in the following sequence:

(1) Existing conditions and probable effects of the operation or activity are estimated.

(2) Environmental data useful for documenting the affected environment of the condition is collected.

(3) Each alternative is analyzed to determine potential impacts.

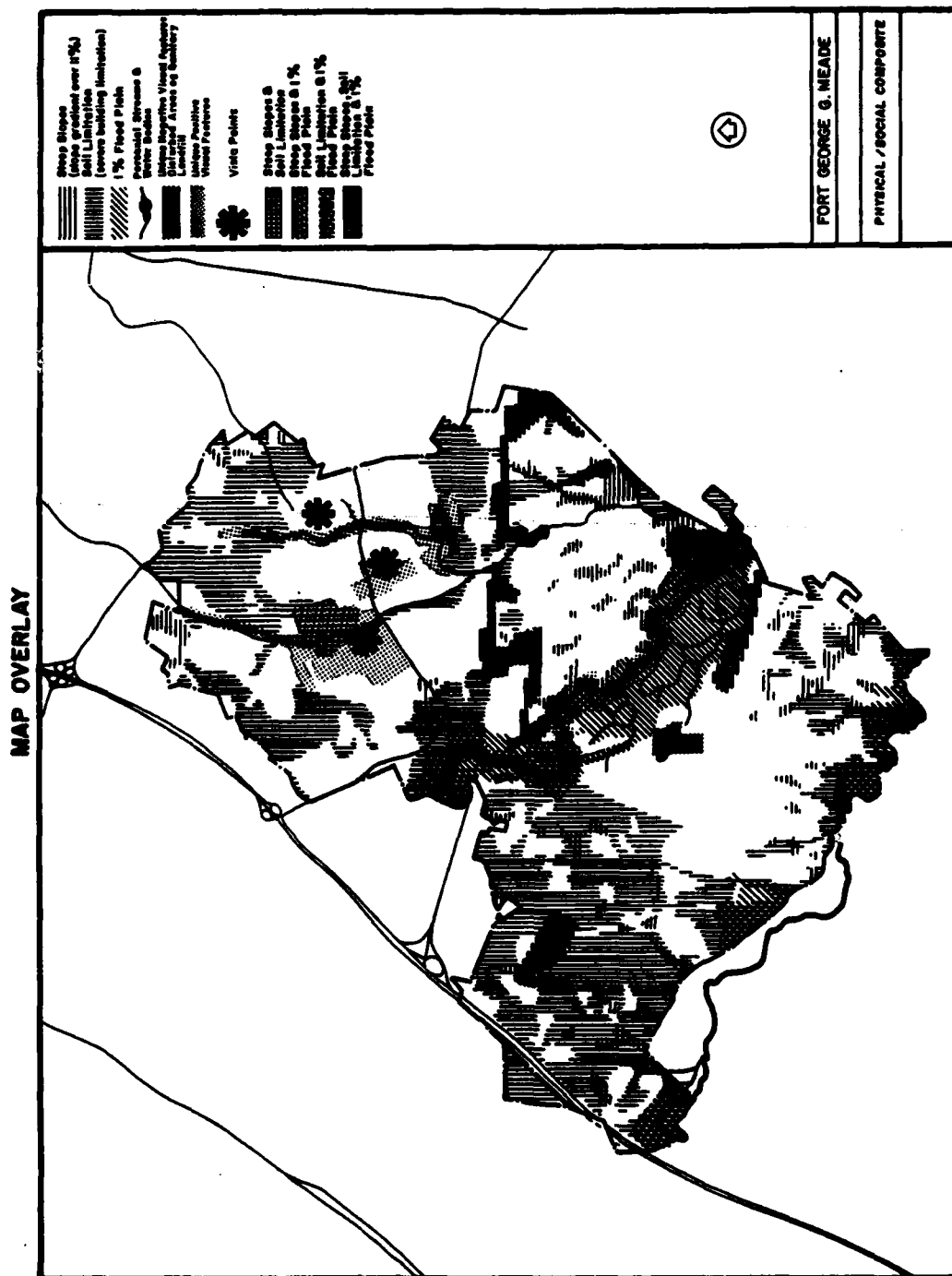


Figure 5-11. Example of composite map.

(4) Evaluation factors that would change as a result of developing each alternative are determined.

The basic premise of the "cause-condition-effect" method is that project components produce biological and physical conditions that may substantially affect the environment. Networks indicate that these environmental concerns are present and pinpoint the data needed to measure their effects. Networks should make all significant impacts of the first, second, and third orders apparent (see figure 5-17 for specific examples).

(1) Strengths of the Network Approach

The major strengths of the network approach are:

(a) It summarizes impacts in an overview format and identifies pathways by which primary and secondary impacts are created.

(b) It allows the analyst to be very specific when identifying a chain of interactions.

(c) It enables decision-makers to review the effects of a specific project action quickly and thus facilitate corrective measures to alleviate their impacts.³²

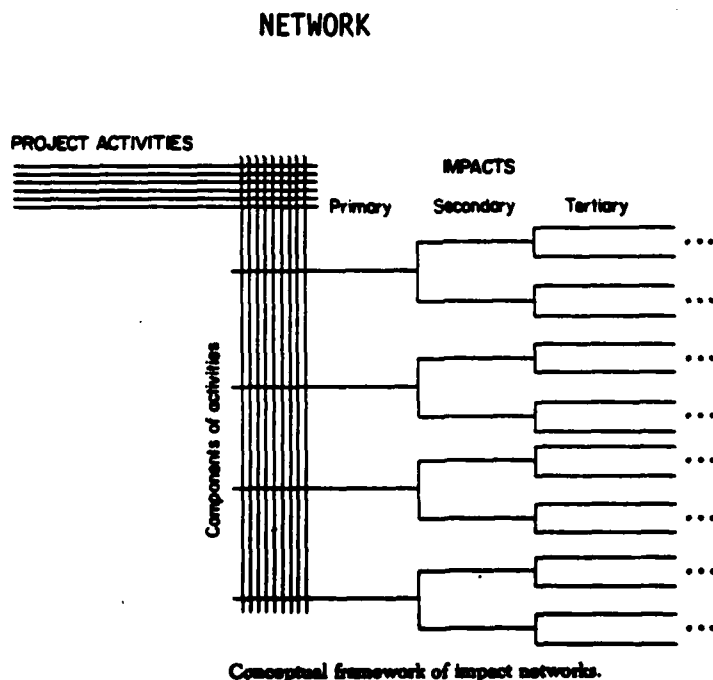


Figure 5-12. Example network. (From John G. Rau and D. C. Wooten, Environmental Impact Analysis Handbook [McGraw-Hill, 1980], p 8-1.)

³²E. Whitlatch, Jr., "Systematic Approaches to Environmental Impact Assessment: An Evaluation," Water Resources Bulletin, Vol 12, No. 1 (1976), p 126.

NETWORK

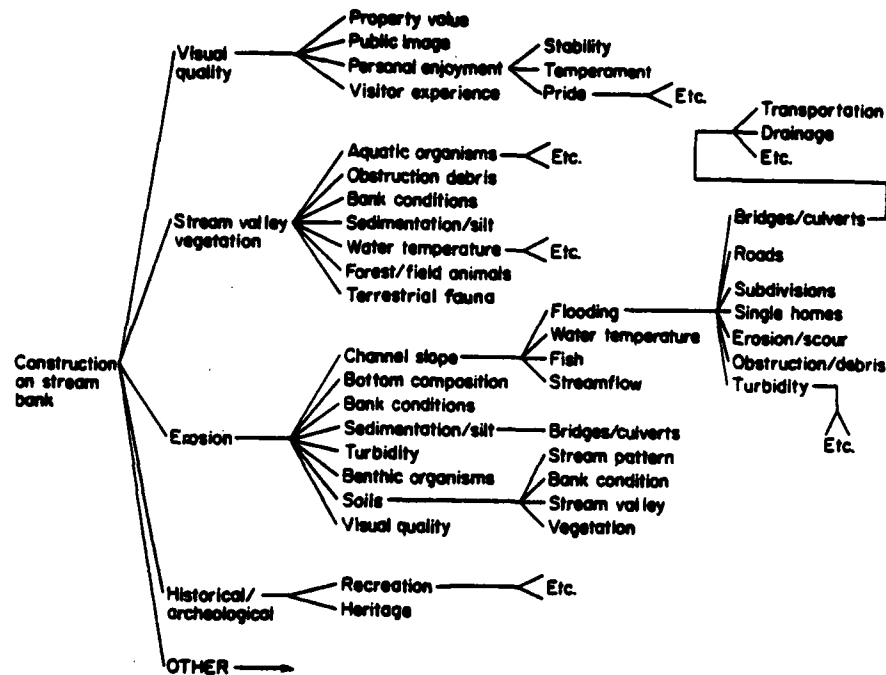


Figure 5-13. Impact tree for a hypothetical bank stabilization project. (NOTE: (1) The line in this illustration is to be read as "has an effect on." (2) It is emphasized that the cause-and-effect chain presented here should be viewed as only a small part of a larger overall impact tree, which would address the full range of economic, social, and environmental categories of human interest and concern. (From "Environmental Considerations: Proposed Policies and Procedures," Federal Register, Vol 42, No. 36 [23 February 1977].)

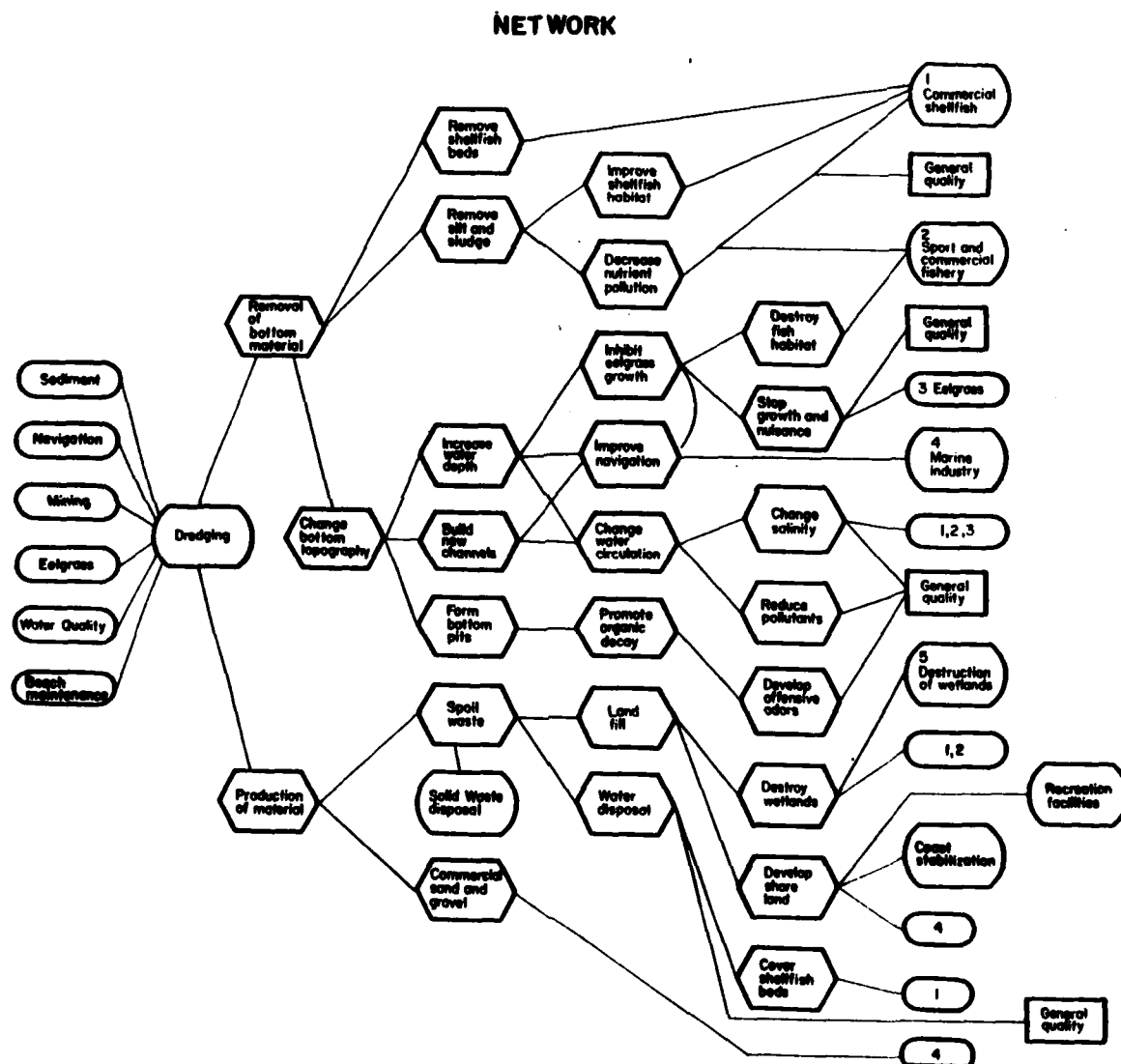
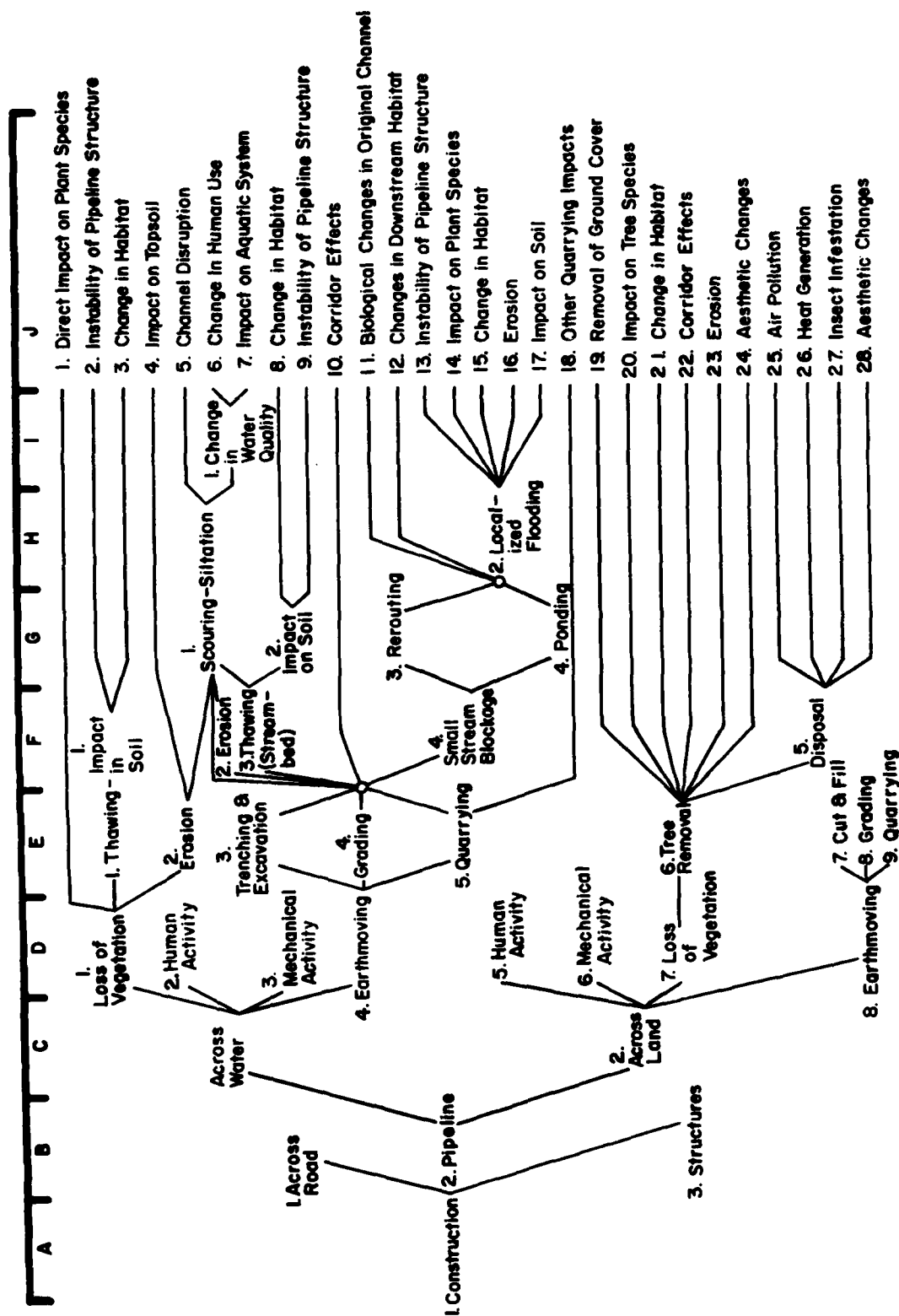


Figure 5-14. A network analysis of dredging. (From J. C. Sorensen, A Framework for Identification and Control of Resource Degradation and Conflict in the Multiple Use of the Coastal Zone (University of California, Berkeley, June 1971].)

NETWORK



Construction Effects Chain

Figure 5-15. Construction effects chain.

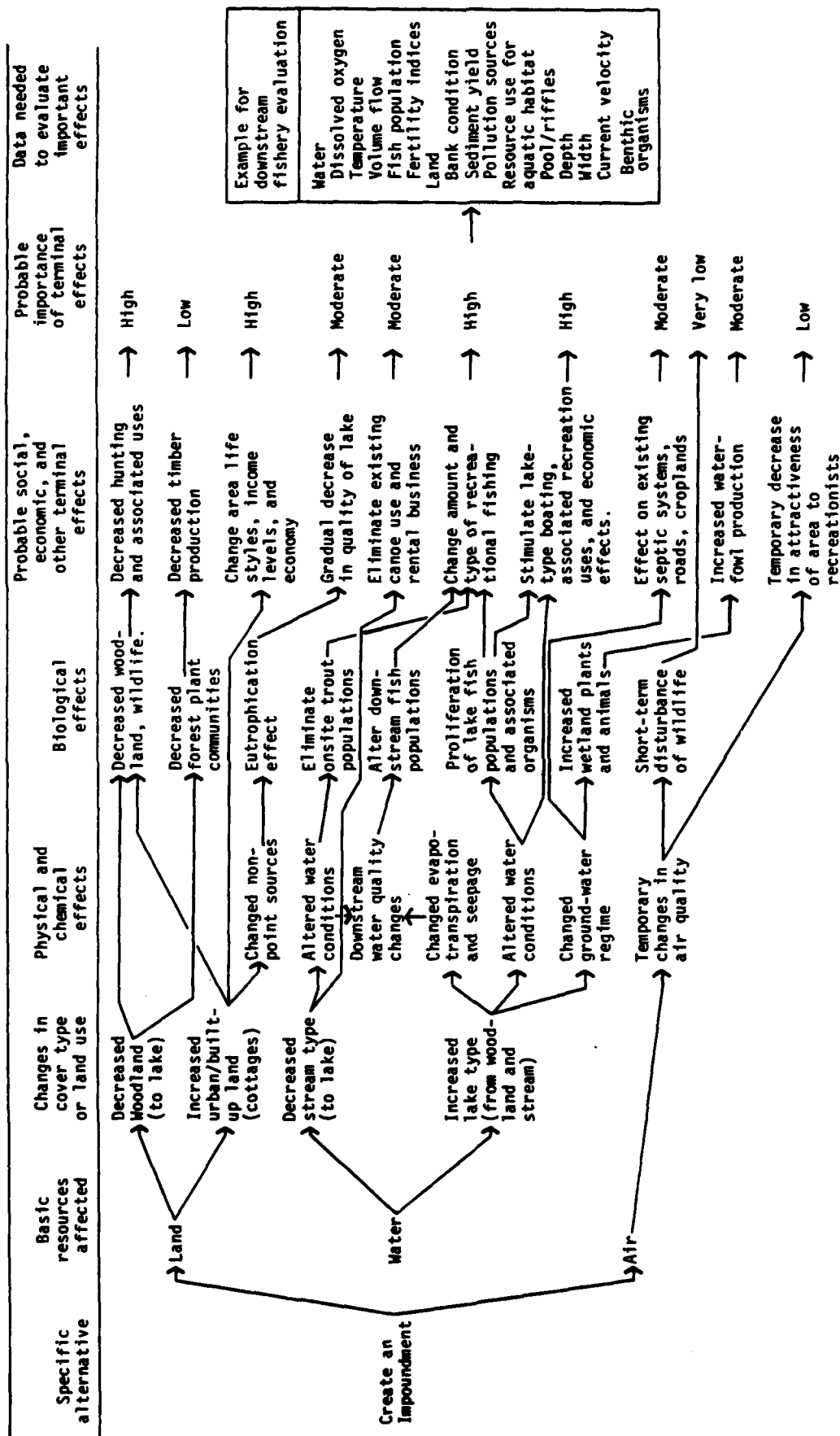


Figure 5-16. Detailed network. (From Soil Conservation Service, Guide for Environmental Assessment [U.S. Department of Agriculture, March 1977].)

(2) Weaknesses of the Network Approach

(a) Preparing the required detail is often time-consuming.

(b) Too much detail can produce very complex network diagrams that may be hard to work with.

Interdisciplinary Team - Expert Committee

Use of on-post expertise to determine a project's possible environmental impacts is highly recommended. For example, the water quality impact analysis would be done by engineers familiar with water quality analysis procedures; recreation impact analysis would be done by on-post recreation office personnel, etc. The following is a list of on-post resources that could provide expertise for predicting different types of impact.

DFAE

Environmental Management Office

Consultation/coordination

Engineering Plans & Services Division

Analysis of noise, air, surface and ground water, transportation, energy, land use analysis

Building and Grounds Division

Analysis of impacts affecting buildings and grounds

Buildings and Structures Branch
Grounds Maintenance

Roads and Pavement Branch

Fish and Wildlife
Forestry

Analysis of ecological impacts

Directorate of Plans and Training

Plans and Operations Division
Range Division
Training Division

Analysis of impacts on ranges, training facilities, and maneuver areas

Directorate of Resources Management

Analysis of economic impacts

Directorate of Personnel and Community Affairs

Analysis of sociological impacts

Health Services Command

Analysis of impacts affecting health and safety

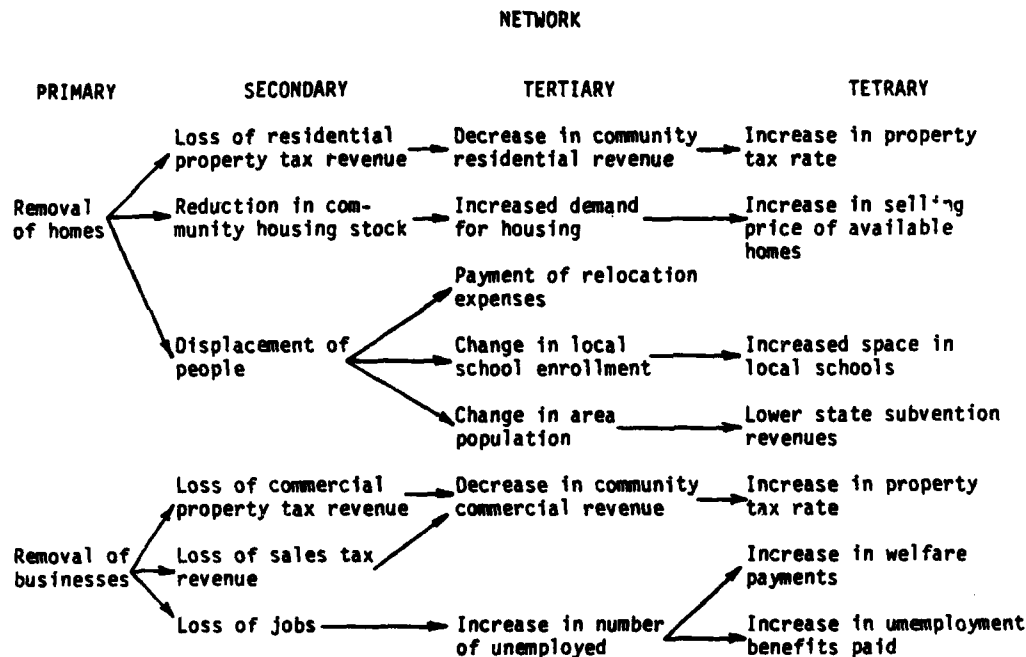


Figure 5-17. Example of impact tree for new freeway construction in established downtown business district. (From John G. Rau and D. W. Wooten, Environmental Impact Analysis Handbook [McGraw-Hill, 1980], p 8-1.)

In addition to the various organizations on-post, many agencies outside the installation have the expertise to help with impact prediction. For example, the USDA Soil Conservation Service can predict soil erosion, the USDI Fish and Wildlife Service can predict impacts on threatened and endangered species, and the State's Department of Natural Resources can predict air and water quality impacts. (See appendix D for a detailed list of these agencies.)

(1) Ad Hoc Approach

In an ad hoc approach, an expert committee designates broad areas of likely impact by listing composite environmental parameters that the project is most likely to affect.³³ For example, impacts on the regional economy may be interpreted as long-term or short-term, whereas effects on air quality may be classified as reversible or irreversible.³⁴ (See figure 5-18.) If there is enough time, committee/team members should prepare written reports identifying the likelihood and nature of impacts in their areas of expertise. These

³³ B. Clark, R. Bisset, and P. Wathern, Environmental Impact Assessment -- A Bibliography with Abstracts (Manselo, 1980), p 17.

³⁴ John G. Rau and D. C. Wooten, Environmental Impact Analysis Handbook (McGraw-Hill, 1980), p 8-1.

reports should be discussed in a series of deliberative sessions until a mutual agreement is reached.³⁵ This gathering of experts may be referred to as a brainstorming session. The basic rules for these sessions are:³⁶

- (a) State the problem in basic terms.
- (b) Do not stop to explore an idea or challenge it when it arises.
- (c) Reach for any idea even if its relevance superficially appears to be remote.
- (d) Provide the climate and support necessary to liberate participants from inhibiting attitudes.
- (e) Provide an uninhibited atmosphere.

The ad hoc method provides a qualitative decision, based on subjective or intuitive assessments, or qualitative interpretations of quantitative results.³⁷

(2) Delphi Session

A Delphi session is another way for team members to assess potential impacts. This Delphi technique is a sort of "interactive brainstorming session," involving continuous questions and answers to produce a general group consensus. Responses are assessed statistically to find the mean value; the mean values are then revealed to the participants, allowing them to change their original responses. This method, which allows each "expert" to weigh the strength of his/her convictions against the group mean, allows consideration of divergent views. Anonymity is required to avoid the influence of dominant individual views.³⁸

(3) Strengths of an Expert Committee/Interdisciplinary Team³⁹

The major strengths of the expert committee approach are:

- (a) It is most useful for helping to solve difficult problems in the committee members' areas of expertise.
- (b) It forces each team member to think in a structured fashion using explicit assumptions.
- (c) It minimizes the dominance of a few individuals by requiring consensus or convergence.

³⁵L. Canter, Environmental Impact Assessment (McGraw-Hill, 1977), pp 182,186.

³⁶R. N. L. Anderson, Approaches to Impact Assessment: Comparison and Critique, presented at Short Courses on Impact Assessment in Water Resources Planning, Amherst, MA (May/June 1973).

³⁷L. Canter, Environmental Impact Assessment (McGraw-Hill, 1977), p 8-1.

³⁸J. Golden, R. Ouellette, S. Saari, and P. Cheremisinoff, Environmental Impact Data Book (Ann Arbor Science, 1979), p 34.

³⁹J. Golden, et al., p 34.

Environmental Area \ Environmental Impact	No Effect	Positive Effect	Negative Effect	Beneficial	Adverse	Problematic	Short-term	Long-term	Reversible	Irreversible
Wildlife			X			X	X			
Endangered Species	X									
Natural Vegetation			X			X			X	
Exotic Vegetation	X									
Grading			X			X		X		X
Soil Characteristics	X									
Natural Drainage	X									
Groundwater		X		X						
Noise			X				X			
Surface Paving						X				
Recreation	X									
Air Quality			X		X			X		X
Visual Disruption	X									
Open Space			X		X			X		X
Health and Safety	X									
Economic Values		X		X				X		
Public Facilities (includes schools)						X	X	X		
Public Services	X									
Conformity to Regional Plans		X		X				X		

Figure 5-18. Illustrative ad hoc approach to environmental impact versus environmental area. (From John G. Rau and D. Wooten, Environmental Impact Analysis Handbook [McGraw-Hill, 1980], p 8-1.)

(d) The Delphi technique provides for systematic use of expert speculations.

(4) Weaknesses of an Expert Committee/Interdisciplinary Team

The major weaknesses of the expert committee approach are:

(a) Biases and prejudices of team members may be inserted into the discussions.

(b) The time and money necessary to supply an individual for an expert committee may be limiting factors.

(c) Smaller installations do not have enough personnel available to form an interdisciplinary team.

(d) This approach provides minimal guidance for total impact assessment, revealing only broad areas of possible impacts.

Trend Extrapolation

A trend can be defined as "an influence on human affairs that increases/decreases noticeably over time."⁴⁰ Trend extrapolation, which is a way to predict project impacts, assumes that past and present trends (patterns of development) will continue. Trends can be identified intuitively, graphically, or mathematically, using methods based on statistics. These methods include moving averages, substitution and growth curves, envelope curves, and simple and multiple regression. The U.S. Army Engineer Institute for Water Resources' Handbook of Forecasting Techniques provides a detailed discussion of these techniques. In using methods based on trend extrapolation, it is assumed that:

(1) The important variables in a persistent phenomenon can be identified.

(2) Sets of data can be assembled that describe the interrelationships among the important variables at any one time, as well as successive intervals of time.

(3) Data representing each point in time are (or can be converted to a form that is) directly comparable to data representing other points of time for the same variables.

(4) Underlying causal factors are responsible for variations in data values; therefore, persistent patterns in the directions or rates of data variations provide the basis for significant cause-effect explanations.

(5) The direction and rate of data variations in preceding time intervals are likely to persist in successive time intervals.⁴¹ Trend extrapolation can predict parameters such as population rates, water demand, recreation demand, limits of habitat, and flood damage probabilities.

The major strengths⁴² strengths of trend extrapolation are:

(a) Opportunities for trend projections based on existing data are widely and readily available because of the increasing documentation of man/environmental interrelationships.

⁴⁰J. Golden, et al., p 34.

⁴¹U. S. Army Engineer Institute for Water Resources, Handbook of Forecasting Techniques (U.S. Army IWR, 1975), pp 43-44.

⁴²Handbook of Forecasting Techniques, p 45.

(b) Computers have encouraged the use of diverse and sophisticated methods to project and analyze trends rapidly and inexpensively.

The major weaknesses⁴³ of trend extrapolation are:

(a) Extrapolation methods cannot deal with unanticipated changes in the historical pattern of data.

(b) Data bases are often limited, because information on key variables has been recorded over too short a time to permit clear analysis of trends.

(c) Because this method requires technical competence and expertise, there may not be qualified personnel available to use this method effectively.

Models

A model is a representation of the environment useful for simulating environmental conditions. Models can often predict a project's effects or impacts and help establish alternatives. Modeling is being used to develop and assess alternative strategies for resource management. The three main types of models are:

(1) Mathematical - a series of equations representing environmental interactions.

(2) Physical - an actual scale model of a study area, used when the physical situation is too complex to be analyzed mathematically.

(3) Analog - use of mechanical or electrical principles.

A model may be either "dynamic," in that it provides information on variations as a function of distance and time, or "steady state," which assumes that no variations exist over time. Steady-state models are usually less expensive to operate and easier to construct. The parameters to be modeled should be determined when the study begins. The type of model chosen should reflect the precision required and the resources available (money, manpower, computers). For example, computer simulation models based on a few variables, assumptions, and on-site information (e.g., the biota and habitat of an area) are well suited for testing the impact of a new highway on animal migration, habitat destruction, and rare or endangered species. Alternate sitings for the proposed highway can also be tested using these models.⁴⁴

(1) Strengths of Models

The major strengths of models are:

(a) Model use is a primary means of quantifying impacts.

(b) Some models are designed to be flexible and easily generalized and can therefore be used for many problem areas.

⁴³Handbook of Forecasting Techniques, p 42.

⁴⁴John G. Rau and D. C. Wooten, Environmental Impact Analysis Handbook (McGraw-Hill, 1980), p 8-1.

(2) Weaknesses of Models

The major weaknesses of models are:

- (a) The modeling approach is at an early stage of development, so it cannot cope with a wide diversity of impacts.
- (b) Results of an impact prediction analysis using a modeling approach are only as good as the input data.
- (c) It may be expensive in terms of manpower and computer time.

5-7. Summary

Each method discussed in section 5-6 has apparent strengths and weaknesses. For example, checklists are useful for identifying impacts and communicating results. The matrix and network methods can measure and interpret impacts, as well as identify impacts and communicate the results. However, numerical techniques used to derive an impact score in the matrix method cannot easily be modified to time differences between impacts (e.g., short-term versus long-term).

An organized format for recording impacts does not eliminate the difficulties of actually determining what they are and then assessing the degree of impact. In figures 5-19 through 5-21, each method has been rated according to how well it meets the criteria for predicting impacts during the environmental impact analysis process. A rating is given according to whether the method completely neglects (Column 1), inadequately accounts for (Column 2), partially fulfills (Column 3), or completely fulfills (Column 4) the criterion in question.⁴⁵ Several criteria have been established for selecting appropriate prediction methods.⁴⁶

Comprehensiveness

The method should account for all significant alternatives, critical aspects, and major points of view.

Simplicity

The method should be simple enough to be learned and applied by a small staff working under the constraints of limited technical knowledge, a small budget, and a short period of time.

⁴⁵E. Whitlatch, Jr., "Systematic Approaches to Environmental Impact Assessment: An Evaluation," Water Resources Bulletin, Vol 12, No. 1 (1976), p 126.

⁴⁶J. Golden, R. Ouellette, S. Saari, and P. Cheremisinoff, Environmental Impact Data Book (Ann Arbor Science, 1979), p 34.

Comparison of Methods

Criteria	Impact Assessment Procedure					
	Checklists	Matrix Approaches	Networks (Stepped Matrices)	Overlays	Linear Vector Approaches	Nonlinear Evaluation Systems
1. Display of Information	X	X	X	X	X	X
2. Comprehensiveness	X	X	X	X	X	X
3. Comparison of Alternatives	X	X	X	X	X	X
4. Systematic and Interdisciplinary	X	X	X	X	X	X
5. Balanced Evaluation of Project	X	X	X	X	X	X
6. Flag Critical Impacts	X	X	X	X	X	X
7. Account for Uncertainty	X	X	X	X	X	X
8. Short-term vs. Long-term	X	X	X	X	X	X
9. Indirect Effects	X	X	X	X	X	X
10. Nonlinear Severity of Impacts	X	X	X	X	X	X

Figure 5-19. Criteria versus impact assessment procedure.
(From E. Whitlatch, Jr., "Systematic Approaches to Environmental Impact Assessment: An Evaluation," Water Resources Bulletin, Vol 12, No. 1 [1976], p 126.)

Graphic Potential

Conclusions must lend themselves well to visual presentation to enable maximum communication to the public, thereby obtaining maximum public participation in the project.

Flexibility

The methodology should be flexible enough to permit either an overview analysis or a detailed examination of impacts.

COMPARISON OF METHODS

SUMMARY EVALUATION OF ASSESSMENT METHODOLOGIES																
Type Of Method	Addresses Impact								Ease Of Application			Resource Requirement				
	Identifi- cation		Measure- ments		In- terpre- tation		Evaluation					Staff Needed		Computer Needed		
	YES	NO	YES	NO	YES	NO	YES	NO	Difficult	Moderately Difficult	Not Difficult	Highly Skilled	Moderately Skilled	YES	Desired	Not Needed
Ad Hoc	X			X		X		X			X		X			X
Overlays	XX			X		X		X		X		X				X
Checklists	XXX			X		X		X			X		X			X
Matrices	XXX		X		X		XX			X			X			X
Networks	XXX		XXX		XX		XXX		X			X			X	

X = Fair
 XX = Good
 XXX = Excellent

Apply to "Yes"
 Categories Only

Figure 5-20. Summary evaluation of assessment methodologies.
 (From How to Apply the CEQ Regulations to Implement the Impact Statement Process for Agency Decision-Making [Comprehensive Planning Institute, 1979], p 68.)

Explicitness of Criteria

An explicit statement of all relevant criteria should be included; these criteria should be set up systematically and weighted to reflect the relative importance of impacts.

Separation of Effects

The method should help determine both the long- and short-term environmental effects of project alternatives; it should also reflect the changes that would occur as a result of moving from a "without the alternative" to a "with the alternative" selection.

Classification of Assessment Techniques

Model Elements	Techniques	Definition of Impact	Impact Determination	Impact Allocation	Measurement of Impact	Transformation of Scale	Rank Ordering/Weighing	Impact Integration	Sensitivity/Validation	Treating Uncertainty
Averaging										
Brainstorming										
Check List										
Classifying										
Commercial Value										
Commons Techniques										
Conservative Value (Worst Case)										
Correlation Tests										
Cost/Benefit										
Curve Fitting From Benchmark										
Decision Tree										
Delphi Technique										
Demand Level										
Differentiation										
Direct Sensing or Measurement										
Discounted Cash Flow										
Distance										
Equivalence										
Expected Value										
Expert Judgment										
Factor Analysis										
Flow Charting										
Fuzzy Sets										
Goals Structuring										
Imputed Worth										
Indicators/Indices										
Indifference Curve										
Lattice Theory										
Lexicographic Ranking										
Linguistic Analysis										
Mapping										
Matrix, Allocation										
Matrix, Cause-Effect										
Matrix, Cross Impact										
Matrix, Goal										
Matrix, Utility										
Most Courts										
Morphological Analysis										
Most Likely Value										
Multiple Accounting										
Network										
Objective Function										
Objective of a Specific Action										
Option Weighing										
Overlay										
Patterns Comparison										
Parametric Variation										
Preference Index										
Preferential Ordering										
Probability Distribution										
Public Meetings										
Range of Values										
Regression Techniques										
Reliance Numbers										
Reliance Trees										
Scenarios										
State of Nature										
Structured Value Analysis										
Simulation										
Subjective/Objective Measure										
Subjective Probability										
Subjective Grouping and Cross Comparison										
Surrogate or Proxy Measure										
Survey Techniques										
Technology Assessment										
Threshold Testing										
Trend Extrapolation										
Utility Assessment										

Figure 5-21. Classification of assessment techniques. (From J. Golden, R. Ouellette, S. Saari, and P. Cheremisinoff, Environmental Impact Data Book [Ann Arbor Science, 1979], p 34.)

Integrated Structure

The method should provide a balanced consideration of a project's economic, technical, and environmental aspects and should provide a means of documenting these data easily.

Emphasis of Major Impacts

The method should highlight the most important environmental effects, so that they may be addressed early in the planning stages.

Account for Uncertainties

The method should account for the uncertainties inherent in an estimation of a project alternative's effects.

Consideration of Indirect Impacts

The method should account for secondary or indirect environmental effects, such as induced growth in an area's population.

No one method is clearly appropriate for measuring or predicting the impacts of any project; therefore, these criteria should be used only as guidelines for selecting methods which will provide the best analysis, given limited time and resources.

CHAPTER 6

FORMAT GUIDANCE

6-1. Introduction

This chapter clarifies and expands the format requirements of AR 200-2 for an EA/EIS. The following points are discussed: (1) cover sheet, (2) summary, (3) table of contents, (4) purpose of and need for the action, (5) courses of action considered, (6) affected environment, (7) environmental consequences, (8) list of preparers, (9) distribution list, (10) index, and (11) appendices.

6-2. Cover Sheet

A protective sheet will precede the cover sheet. The protective sheet will contain the statement, "The material contained in the attached (final or draft) Environmental Impact Statement is for internal coordination use only and may not be released to non-Department of Defense agencies or individuals until coordination has been completed and the material has been cleared for public release by appropriate authority."⁴⁷ This sheet would be removed before the document is filed with the EPA. Figures 6-1 and 6-2 are examples of cover sheets filed under the regulations; as shown, there may be some deviation from the cover sheet described in AR 200-2. Essentially, the cover sheet can be two different sheets. The first contains the title of the action, the date of filing, the preparer, and the approval. The second fulfills the NEPA requirements (40 CFR 1502.11) and should be entitled "cover sheet."

Agency Designation

The responsible or lead agency and the cooperating agencies will be identified separately. Cooperating agencies should include both DOD and non-DOD agencies. Cooperating agencies may be a Command, an agency within the Department of Defense (e.g., the Facilities Engineering Support Agency), or another Federal agency (e.g., the Department of the Interior, Fish and Wildlife Service).

Title

The title of the action may include the affected jurisdiction, or the affected jurisdiction can be listed separately. If only a single installation is involved, it is acceptable simply to list the affected jurisdiction in the title. However, if more than one installation is involved, it is better to list the affected jurisdictions separately.

⁴⁷"Environmental Quality; Environmental Effects of Army Actions (AR 200-2)," Federal Register, Vol 45, No. 24 (20 October 1980), p 64230.

DEPARTMENT OF THE ARMY
US ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND

DRAFT ENVIRONMENTAL IMPACT STATEMENT

CANDIDATE ARMY REALIGNMENT: CONSOLIDATION OF
ARMY AIRCRAFT DEPOT MAINTENANCE MISSION AND FUNCTION

NOVEMBER 1980

PREPARED BY:

US ARMY TOXIC AND HAZARDOUS MATERIEL AGENCY
ABERDEEN PROVING GROUND, MARYLAND
WITH
US ARMY CONSTRUCTION ENGINEERING RESEARCH LABORATORY
CHAMPAIGN, ILLINOIS

APPROVED BY:


W. H. SCHNEIDER
Brigadier General, USA
Chief of Staff
HQ, US Army Materiel Development
and Readiness Command

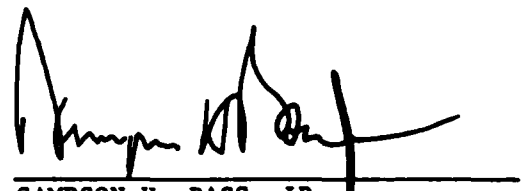

SAMPSON H. BASS, JR.
Major General, GS
Director of Supply
and Maintenance
HQ, Department of the Army

Figure 6-1. Example cover sheet #1.

Lead Agency: Department of the Army - US Army Materiel Development and Readiness Command

Cooperating Agencies: Department of the Army - US Army Forces Command and US Nuclear Regulatory Commission

Title of Proposed Action: Candidate Army Realignment: Consolidation Army Aircraft Depot Maintenance Mission and Function

Affected Jurisdiction: State of Pennsylvania, York, Cumberland, Dauphin, Lancaster, Lebanon and Perry Counties
State of Texas, Nueces, Kleberg and San Patricio Counties

Point of Contact: Robert R. Jameson, Directorate of Plans and Analysis (202) 274-8155

Documentation Designation: Draft Environmental Impact Statement (DEIS)

Abstract: The contents of this DEIS address the realignment of the aircraft maintenance mission, except air delivery equipment, from New Cumberland Army Depot, Pennsylvania, to Corpus Christi Army Depot, Texas (Alternative 2). Three other courses of action are considered: (a) status quo (Alternative 1), (b) close Corpus Christi Army Depot and transfer its maintenance workload to New Cumberland Army Depot (Alternative 3), and (c) close Corpus Christi Army Depot and transfer its maintenance workload, along with the aircraft maintenance mission at New Cumberland Army Depot, to Harrisburg International Airport (Alternative 4). There are no significant environmental consequences for any course of action except for the economic impact in the Corpus Christi, Texas, region for Alternatives 3 and 4.

Review Comment Deadline: 19 January 1981

Figure 6-1. (Cont'd)

DEPARTMENT OF THE ARMY

FORCES COMMAND

DRAFT ENVIRONMENTAL IMPACT STATEMENT

CANDIDATE ARMY REALIGNMENT

FORT INDIANTOWN GAP, ANNVILLE, PENNSYLVANIA

July 1980

Prepared by
Environmental Office of the Engineer
Headquarters, Forces Command
Fort McPherson, Georgia

Approved by



Richard S. Kem
Brigadier General, USA
Acting Assistant Chief of Engineers
HQ, Department of Army

Approved by



Charles P. Graham
Major General, GS
Deputy Chief of Staff, Operations
HQ, FORSCOM

Figure 6-2. Example cover sheet #2.

COVER SHEET

Responsible Agency: Headquarters Department of the Army

Cooperating Agencies: Headquarters US Army Forces Command, Ft McPherson, GA
Headquarters US Army Materiel Development and
Readiness Command (DARCOM)

Title: Draft Environmental Impact Statement, Candidate Army Realignment, Fort
Indiantown Gap, Annville, Pennsylvania

Point of Contact: Point of contact for additional information:

Questions on Army Policy

Major F. M. Nataluk, HQ Department of the Army
ATTN: DAEN-ZCI, Wash DC 20310. Telephone - Area Code 202 694-3986

Questions on this document

Mr. Corbett H. Gregory, HQ US Army Forces Command
ATTN: AFOP-FSS, Ft McPherson, GA 30330. Telephone - Area Code 404
752-4414

Draft Environmental Impact Statement filed 5 Dec 1980.

Abstract:

This document deals with the Headquarters US Army Management Proposal to reduce the work load and transfer specified functions from Ft Indiantown Gap, PA to Ft Meade, MD. Alternatives considered include:

1. Terminate Army occupancy and return to state control.
2. Reduce to semi-active status as a sub-installation of Ft Meade, MD.
3. Maintain Status Quo.

No significant environmental impact was found to result from the action. No significant economic effects are anticipated on the region as a result of this action, but some localized impacts may result for individuals or local areas. No environmentally preferred alternative is indicated from the data.

Comments must be received by 26 Jan 1981 by the lead agency point of contact.

Figure 6-2. (Cont'd)

Points of Contact

The preparers and the approvals should also be listed on this page. The approval must include the staff proponent, e.g., the Director of Training. Next, list the point of contact's name, address, and phone number. In some cases, the point of contact may be divided; for example, an individual at the command level may answer all policy questions, while an installation environmental coordinator may answer specific questions about the action.

Document Designation

The document designation may also be included in the title. The designation "Draft" or "Final" Environmental Impact Statement Concerning (topic) is sufficient.

Abstract

The abstract is a very brief, one-paragraph description of the action, including the alternatives considered, the more dominant positive and negative environmental effects, and any preferred alternative.

Review Deadline

The last section of the cover sheet gives the deadline for receipt of review comments, which is computed in cooperation with the EPA. This section lists the name, address, and phone number of a point of contact for sending comments. To facilitate the review process, all comments should be received at one address.

6-3. Summary

The summary section of the statement gives a decision-maker and the public a very concise discussion of the action, the alternatives considered, and the various environmental effects of the alternatives. Since the courts can review this section, it must be both adequate and accurate. Adequate implies that coverage should be complete enough that the effects of the action are understandable, but not so detailed that the main points are lost. AR 200-2 requires that the summary not exceed 10 pages. The summary covers all major conclusions, all areas of controversy, and questions raised by agencies or the public; it also highlights the issues to be resolved. It lists all Federal and State permits, licenses, and other entitlements necessary for the action to proceed and the actions being taken to obtain them. AR 200-2 suggests using a graphical format to keep this material within the 10-page limit. Graphics can range from a simple listing to matrices, maps, or tables. Figure 6-3 is an example graphic summary of the effects of alternative actions. The vertical column headings list all alternatives, including the no action alternative, the preferred alternative (if there is one), the environmentally preferred alternative, and any other major alternatives being considered. The horizontal columns are titled as shown in figure 6-3. The "plan description" column can briefly discuss each alternative. The "satisfaction of need" column should list the need for each action entered under it. The "environmental effects" column should list the major positive and negative environmental effects resulting from each alternative.

ALTERNATIVES

PLAN DESCRIPTION	NO ACTION	PREFERRED ALTERNATIVE	ENVIRONMENTALLY PREFERRED ALTERNATIVE	ALT 3	ALT 4	ALT 5	ALT 6	ALT 7
SATISFACTION OF NEED								
1. _____								
2. _____								
3. _____								
4. _____								
ENVIRONMENTAL EFFECTS								
1. _____								
2. _____								
3. _____								
4. _____								
ISSUES TO BE RESOLVED								
1. _____								
2. _____								
3. _____								
4. _____								

Figure 6-3. Example graphic summary of the effects of alternative actions.

There are several ways to represent the information at each intersection, e.g., environmental effect versus the preferred alternative. Where quantified effects are postulated, such as for economics, the appropriate numbers (e.g., number of man-years of employment lost or gained) should be inserted. A brief discussion here can highlight the effect. Shaded or cross-hatched graphs can illustrate varying degrees of impact. A positive or negative sign (+ or -) is another way to indicate the type of impact expected. This type of presentation can be modified to suit the situation.

Figure 6-4 is an example taken from the Final Environmental Impact Statement, Formation of U.S. Army Electronics Research and Development Command, August 1976. Figures 6-5 through 6-8, which are also taken from this source, illustrate a good use of graphics to delineate various alternatives and their effects. Figure 6-9, taken from the Air Force's Richard Gebauer Realignment Action, is a series of maps which illustrate, by means of different thickness of arrows, the different weights given to different alternative moves from one post to another. The use of the graphics should highlight the main effects of the action, but should be simple enough so as not to obscure the main conclusions.

6-4. Table of Contents

The table of contents should include all subheadings and separate lists of figures, tables, and reference documents. The list of reference documents should include a bibliography of any documents referenced within the EIS or EA. The table of contents should be of sufficient detail that finding a section in text is fairly easy; however, it should not be so detailed that the reader will have difficulty using it.

6-5. Purpose and Need of the Action

This section indicates the nature of the problem, e.g., lack of a training area, lack of necessary manpower, building to save money, or a reduction in force. State the problem clearly so that a new ~~the~~ reader can understand both it and the desired action and/or range of solutions (alternatives considered). This section should highlight the benefits of the actions. If a cost/benefit analysis has been done, it should either be included here or referenced and placed in an appendix. Any other benefits (better training, increased environmental benefits) resulting from the action should also be discussed.

This section should examine any background information relevant to understanding the problems to be solved. It should summarize not only the goal of solving the problem, but also the operational requirements constraining the problem. It should also discuss the problem's relationship to other goals. Social goals, such as improving quality of life, and environmental goals, such as better air quality, should be discussed, and the problem's effects on economic goals should be indicated. These should include not only military goals, such as dollars saved, but goals relating to the local economy, e.g., increasing employment in the area.

**SIGNIFICANT ENVIRONMENTAL CONDITIONS AND IMPACTS
FORT BLISS**

Environmental Factors	Current Conditions	I-1	I-2	I-3	I-4	II-1	II-3
Physical							
Soil & Geology	Erodible Soils	-	-	-	-	-	-
Water Resources	Declining Aquifers	-	-	-	-	0	0
Wastewater Treatment	At Capacity	-	-	-	-	0	0
Energy	Natural Gas	-	-	-	-	0	0
Air Quality	Poor	-	-	-	-	-	-
Noise	No Problem	0	0	0	0	0	0
Solid Waste	Adequate Landfill	0	0	0	0	0	0
Biological							
Terrestrial Ecosystems	Fragile Desert	-	-	-	-	-	-
Aquatic Ecosystems	None	0	0	0	0	0	0
Threatened Species	2-Plant, 1-Animal Many Potential	-	-	-	-	-	-
Social & Economic							
Land Use	Several Conflicts	-	-	-	-	-	-
Economy	Growing-Low Income	-	-	-	-	0	0
Housing	Existing Vacancies	+	+	-	-	0	0
Schools	Excess Capacity	+	+	-	-	+	+
Health/Public Safety	Army Physician Shortage	-	-	-	-	-	-
Archeological	Numerous Potential Sites	-	-	-	-	-	-

+ denotes a beneficial impact
 - denotes an adverse impact
 0 denotes no known impact
 () denotes an impact which may be locally or regionally significant

Figure 6-4. Summary -- significant environmental conditions and impacts -- Fort Bliss. (From Final Environmental Impact Statement, Formation of U.S. Army Electronics Research and Development Command [U.S. Army, August 1976].)

ALTERNATIVE DESCRIPTIONS	FORT BLISS		FORT BENNING		FORT DRUM		FORT DIX		FORT DEVENS	
	I-1	I-2	II-1	II-1 & 2	I-2	II-2	III-1	IV-1 & 2	IV-1 & 2	IV-2
STATUS	[(+ Div (-))] ^a	[(+ Div (-) - ACR ^b]	(+ 197) ^c	[(+ Div (-) - OSUT ^d - 197]	(+ ACR)	(+ 197)	[(+ Div (-)) Training]	(+ BT) ^e	(+ Div Hq and Bde ^f - SPOT ^g - BT)	(+ Mech Bde - Intell. School - M. Signal School)
Present Strength	Military 38,601	18,220 38,601	18,220 38,601	25,445 46,605	373 931	373 931	373 931	12,184 20,203	12,184 20,203	5,819 14,400
Civilian Jobs	4,606	4,606	4,606	5,160	808	808	808	2,528	2,528	1,979
Proposed Strength	Military 73,196	28,996 63,706	22,723 47,611	23,103 52,895	6,570 15,324	5,331 11,173	16,065 37,453	14,171 22,755	12,614 30,462	7,876 19,154
Civilian Jobs	5,844	5,565	5,051	4,990	1,848	1,737	2,774	2,599	2,987	2,076
Net Change	Military Total	+14,890 +25,105	+4,503 +9,100	-2,342* +6,290	+6,197 +14,393	+4,958 +10,242	+15,692 +36,522	+1,987 +2,552	+430 +10,259	+2,057 +4,754
Civilian Jobs	+1,238	+959	+445	-170	+1,040	+929	+1,966	+71	+459	+97
										+272

a. Division minus a brigade.
b. Armored Cavalry Regiment
c. 197th Infantry Brigade

d. One Station Unit Training
e. Basic Training
f. Division Headquarters and Brigade

g. Self-Paced One Unit Training
h. Mechanized Brigade
* See text in 2.3.1 for explanation of net change number.

Figure 6-5. Population changes at major installations affected by restationing of the second Infantry division minus one brigade [div (-)]. (From Final Environmental Impact Statement, Formation of U.S. Army Electronics Research and Development Command [U.S. Army, August 1976].)

SUMMARY OF ALL POTENTIAL ADVERSE ENVIRONMENTAL IMPACTS

TECHNICAL SPECIALTIES

ALTERNATIVES

	A	A-1	B	B-1	B-2	B-3	B-4	B-5	B-6	C
ECOLOGY	AD ^{FB} WB AP ^{FB} BP	AD ^{FB} WB AP ^{FB} VH	AP ^{FM} LH FM ^{FB} LH	AP ^{FM} LH FM ^{FB} LH	AP ^{FM} LH FM ^{FB} LH	LH	VH LH	AP ^{FB} FM	AP ^{VH} FB	AP ^{WB} FB
AIR QUALITY	BP AD	VH AD	FM LH	LH	LH FM	LH FM	VH LH	FM	VH	
WATER QUALITY	AD FB	VH AD FB	FB	FB	FB		VH	FB	VH FB	AD FB
LAND USE	FM BP AD AP	FM AD VH AP	LH FM AP	LH AP	LH AP	LH FM	LH VH	FM AP	VH AP	AP
TRANSPORTATION	AD*	AD* VH*	FM				VH*		VH*	
ELECTROMAGNETIC SPECTRUM	AD BP	AD VH	FM LH	FM LH	FM LH	FM LH	VH LH		VH	AD
HISTORY / ARCHEOLOGY	AD BP*	AD	BP*	FM	FM	FM		FM		FM
REGIONAL ECONOMICS	FM* VH	FM*	AD VH	AD VH	AD VH FM	AD VH	FM* AD	VH FM	FM*	FM* VH
EDUCATION		VH*					VH*		VH*	
SOCIOLOGY	FM*	FM*	AD*	FM AD	FM AD	FM AD	FM*	FM	FM*	FM*
HEALTH & SAFETY										

KEY: AD - Adelphi
WB - Woodbridge
FM - Ft. Monmouth
VH - Vint Hill Farms
LH - Lakehurst N.A.S.
BP - Blossom Point
AP - Ft. A.P. Hill
MD - Ft. Meade
FB - Ft. Belvoir
AH - Arlington Hall
WS - White Sands Missile Range

* INDICATES POTENTIALLY SIGNIFICANT IMPACT

Figure 6-6. Summary of all potential adverse environmental impacts. (From Environmental Impact Statement, Formation of U.S. Army Electronics Research and Development Command [U.S. Army, August 1976].)

SUMMARY OF SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

TECHNICAL SPECIALTIES	ALTERNATIVES										
	A	A-1	B	B-1	B-2	B-3	B-4	B-5	B-6	C	
ECOLOGY											
AIR QUALITY											
WATER QUALITY											
LAND USE											
TRANSPORTATION											
ELECTROMAGNETIC SPECTRUM											
HISTORY / ARCHEOLOGY											
REGIONAL ECONOMICS	FM*	FM*	AD		FM		FM*	FM	FM*	FM*	
EDUCATION											
SOCIOLOGY	FM*	FM*	AD	AD	FM FM	AD	FM*	FM	FM*	FM*	
HEALTH & SAFETY											

KEY: AD - Adelphi
 WB - Woodbridge
 FM - Ft. Monmouth
 VH - Vint Hill Farms
 LH - Lakehurst N.A.S.
 BP - Blossom Point

AP - Ft. A.P. Hill
 MD - Ft. Meade
 FB - Ft. Belvoir
 AH - Arlington Hall
 WS - White Sands Missile Range

* INDICATES IMPACTS WITH
POTENTIAL FOR REGIONAL
SIGNIFICANCE

Figure 6-7. Summary of significant unavoidable adverse impacts. (From Final Environmental Impact Statement, Formation of U.S. Army Electronics Research and Development Command, [U.S. Army, August 1976].)

INSTALLATIONS	Baseline 30 June 76*	A	A-1	B	B-1	B-2	B-3	B-4	B-5	B-6	C
Fort Marmouth	54-1615	0-0 (-54-1615)	0-0 (-54-1615)	66-2055 (+12+440)	62-1394 (+8-221)	52-1278 (-2-337)	65-1487 (+11-128)	36-1015 (-18-600)	52-1236 (-2-379)	38-875 (-16-740)	39-869 (-15-746)
Adelphi	9-1290	62-2282 (+53+992)	44-1947 (+35+657)	2-290 (-7-1000)	6-1024 (-3-266)	16-1155 (+7-135)	6-1047 (-3-243)	16-1179 (+7-111)	16-1200 (+7-90)	15-1255 (+6-35)	35-1531 (+26+24)
Arlington Hall	6-32	0-0 (-6-32)	0-0 (-6-32)	0-0 (-6-32)	0-0 (-6-32)	0-0 (-6-32)	0-0 (-6-32)	0-0 (-6-32)	0-0 (-6-32)	0-0 (-6-32)	0-0 (-6-32)
Fort Belvoir	34-480	48-574 (+14+94)	48-574 (+14+94)	43-614 (+9+134)	43-580 (+9+100)	43-568 (+9+88)	40-471 (+6-9)	41-464 (+7-16)	43-568 (+9+88)	38-552 (+4+72)	37-471 (+3+91)
Vint Hill Farms	8-28	0-0 (-8-28)	18-380 (+10+352)	0-0 (-8-28)	0-0 (-8-28)	0-0 (-8-28)	0-0 (-8-28)	18-385 (+10+357)	0-0 (-8-28)	23-373 (+15+345)	0-0 (-8-28)
WSNR	471-418	471-390 (0-28)	471-390 (0-28)	471-390 (0-28)	471-390 (0-28)	471-390 (0-28)	471-390 (0-28)	471-390 (0-28)	471-390 (0-28)	471-390 (0-28)	471-390 (0-28)
Meade	21-29	21-29 (0-0)	21-29 (0-0)	21-29 (0-0)	21-29 (0-0)	21-29 (0-0)	21-29 (0-0)	21-29 (0-0)	21-29 (0-0)	21-29 (0-0)	21-29 (0-0)
Woodbridge	1-109	2-122 (+1+13)	2-122 (+1+13)	1-97 (0-12)	1-94 (0-15)	1-94 (0-15)	1-94 (0-15)	1-94 (0-15)	1-94 (0-15)	1-94 (0-15)	1-94 (0-15)
TOTALS:	64-4001	604-3397 (0-604)	604-3442 (0-559)	604-3475 (0-526)	604-3511 (0-490)	604-3514 (0-487)	604-3518 (0-483)	604-3556 (0-445)	604-3517 (0-484)	607-3568 (+3-433)	604-34 (0-51)

EXAMPLE (+1-29) = Gain of 1 military
Loss of 29 civilians

* = Authorized Spaces

F = Part of Fort Marmouth Development Center

Figure 6-8. Gross manpower changes for each proposed ERADCOM alternative. (From Final Environmental Impact Statement, Formation of U.S. Army Electronics Research and Development Command [U.S. Army, August 1976].)

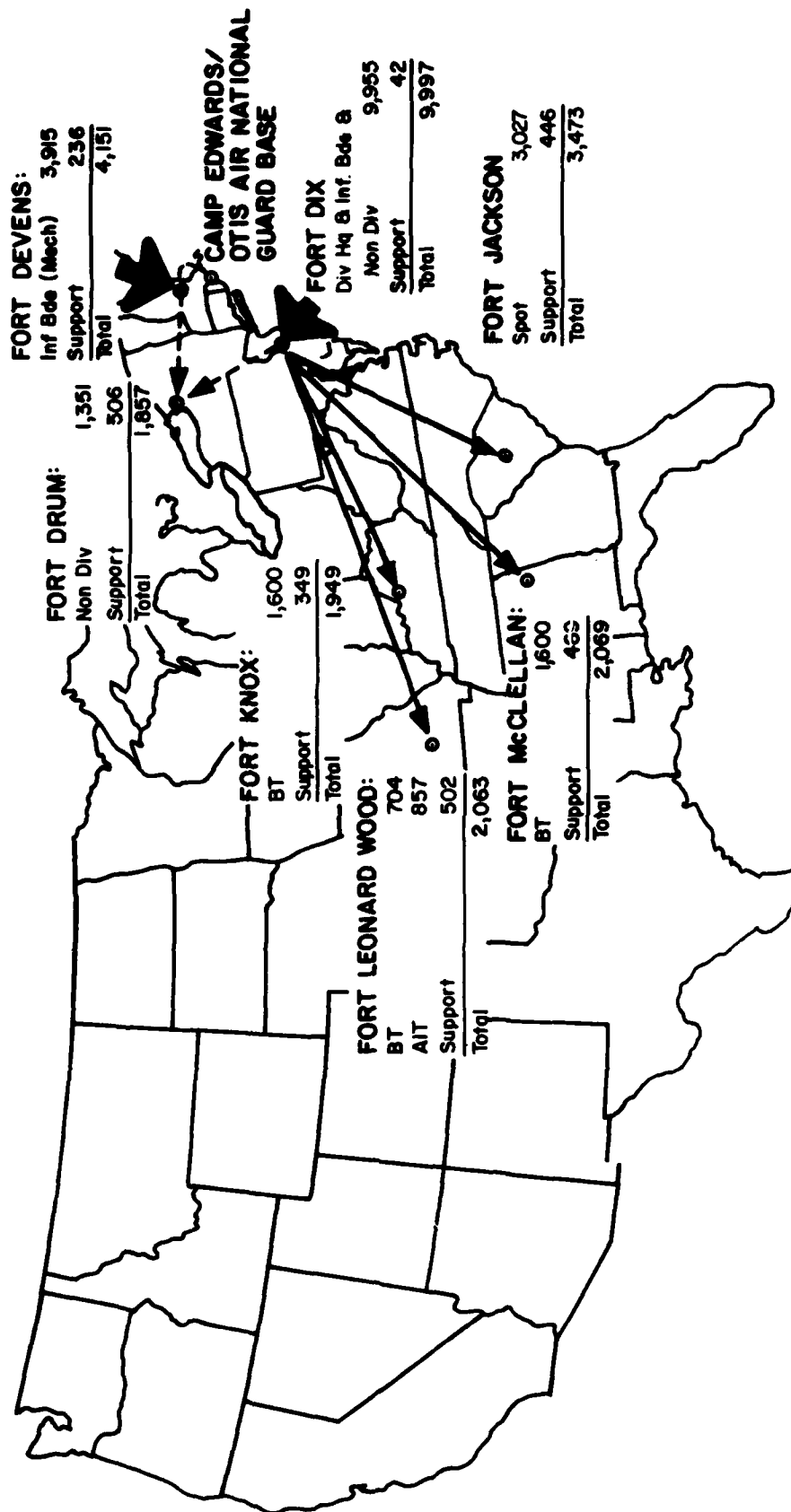


Figure 6-9. Fort Dix/Devens Alternative IV-2. (From Environmental Impact Statement, Richard Gebauer Realignment Action [U.S. Air Force].)

6-6. Affected Environment

The affected environment includes environmental conditions -- either natural or manmade -- which will actually be influenced, impacted, or created by a proposed action. The regulations require that documents describe only the environment or environmental conditions affected or created by an action. The importance of a potential effect to a particular environmental element (e.g., soil or local income) will determine the amount of space and detail devoted to a description of an existing environmental condition. Environmental conditions which will receive relatively little effect or impact should be summarized and/or simply referenced. Environmental elements or conditions which may be subject to a significantly larger effect should be described in detail.

6-7. Environmental Consequences

This section of the EIS forms both the scientific and analytic foundation for comparing environmental effects. Consider the following requirements:

Direct Effects and Their Significance

Discuss, when appropriate, direct impacts on human health and welfare and on other forms of life and related ecosystems. Examples of direct effects include noise generated by military helicopter operations, benefits derived from installing wet scrubbers to meet air quality control standards, or unemployment resulting from reduction-in-force actions.

Indirect Effects and Their Significance

Include here those impacts which affect population concentrations and growth. Many major Federal actions attract people to previously unpopulated areas and indirectly induce pollution, traffic congestion, additional loads on community facilities, and haphazard land development. Conversely, other actions may disperse the existing population. Aircraft noise often affects or induces future development patterns. An air pollution abatement operation can often produce secondary water pollution problems. Examining the degree of public institutional and technical recognition of those key environmental effects is the best way to evaluate their significance.

Possible Conflicts Between Proposed Actions and Federal, Regional, State, and Local (Including Indian Tribe) Land-Use Plans, Policies, and Controls for the Area(s) Affected

Compare the proposed land uses with current uses at the various jurisdiction levels. A-95 clearinghouses are often excellent sources of information useful for identifying conflicts between existing or proposed development. Examples of possible conflicts include siting an extremely noisy activity (e.g., placing a small arms range adjacent to a residential area), leasing land for purposes inconsistent with State wildlife management plans, or siting a family housing development within the 100-year floodplain or lands identified as prime and unique farmland.

The Environmental Effects of Alternatives, Including the Proposed Action

Evaluate the impacts of all alternatives (including a worst case analysis where there are gaps in relevant information or scientific uncertainty).

Examine adverse environmental effects which cannot be avoided if the proposal is implemented. Include the relationship between short-term uses of the human environment and the maintenance and enhancement of long-term productivity. The section should discuss the extent to which the proposed action and each alternative involve short-term vs. long-term environmental gains and losses. In this context, the terms "short-term" and "long-term" are relative, depending on the environmental parameter discussed, and do not refer to any rigid time period. "Short-term" can range from the brief time of the action to the expected life of a facility.

Energy Requirements and Conservation Potential of Various Alternatives and Mitigation Measures

Consult the Energy Resource Impact Statement (AR 11-27), when applicable, to satisfy this requirement. Account for the energy consumption of each alternative. Discuss, when appropriate, the uses of renewable and nonrenewable energy resources. Discuss conservation techniques which could reduce energy consumption; for example, orienting buildings to take advantage of sunlight, using earth-covered buildings when feasible, or installing higher R-value insulation for newly constructed family housing. All these techniques would reduce long-term consumption of natural gas or fuel oil and reduce dependence on foreign oil supplies.

Natural or Depletable Resource Requirements and Conservation Potential of Various Mitigation Measures

Discuss any irreversible or irretrievable commitments of resources that might occur if the proposal is implemented. The term "resources" is broad and should include the following meanings:

(1) Materials

Discuss materials which are in short supply (certain metals, wood), but do not include materials which are plentiful or can be used for several different jobs, such as aggregate or fill material.

(2) Natural

Discuss the irrevocable use of natural resources resulting in effects such as loss of prime and unique farmlands, the destruction of wetlands, and the destruction of wildlife and its habitat. Specifically include consumption of dwindling natural energy resources, such as oil or natural gas.

(3) Cultural

Discuss destruction of human-interest sites, archaeological/historic sites, scenic views or vistas, valued open space, or recreation areas. Reiterate lasting social or economic effects that the proposed action might have on the surrounding community. Preliminary public involvement and scoping activities will provide considerable insight into these issues.

Urban Quality, Historic and Cultural Resources, and the Design of the Built Environment (Including Reuse and Conservation Potential of Various Alternatives and Mitigation Procedures)

Discuss how the project will affect quality of life of adjacent neighborhoods and the city at large. Examine its effects on physical design features (also known as the built environment) and resultant impacts on social interaction areas such as privacy, public opinion, personal perceptions, and other aspects of the social environment. Review and discuss the reuse potential of existing building space and its time use allocation (usually called time and spatial management). (Time and spatial management conserves energy and other resources by discouraging new construction and operation until all existing buildings and time use allocations have been examined for alternative or extended use.)

Means To Mitigate Adverse Environmental Effects

Discuss techniques needed to reduce the effects of each impact. Determine the amount and extent of monitoring required for successful mitigation. Finally, discuss any budget arrangements made to insure initial and continuing implementation of the mitigation program.

6-8. List of Preparers

The list of preparers includes all individuals having primary responsibility for preparing the statement or support papers and working on the background. It lists the name and qualifications (experience, degree, profession, and discipline) of each preparer. The list identifies which sections the individuals have worked on. If an outside firm has prepared a portion of the statement, each contributing person and his/her qualifications must be listed; it is not sufficient simply to name the firm. The entire list should not exceed two pages.

6-9. Distribution List

Draft Environmental Impact Statements or Assessments contain a list of all individuals, agencies, and organizations asked to comment on the draft. The final EIS lists the names of those who actually provided comments. Such a list is easily compiled by marking the names on the draft list of those who commented and adding the names of any other individuals who commented.

6-10. Index

The index should enable the reader to easily locate the various effects caused by different alternatives or actions. It should be a topical listing of the alternatives' environmental effects, types of action, and environmental setting. The index can reference the entries by either page or paragraph number.

6-11. Appendices

The appendices contain only material relevant to the major issue discussed in the EIS. They are analytical, not encyclopedic, they do not present peripheral data or issues, and they are no larger than necessary. The appendices can either be circulated with the EIS or made available upon request.

CHAPTER 7

DEVELOPING AND MONITORING A MITIGATION PROGRAM

7-1. Mitigation

Mitigation of an environmental impact can take many forms. The 1978 CEQ regulations for implementing NEPA recognize five means of mitigating an environmental impact: (1) avoiding the impact altogether by not taking a certain action or parts of an action, (2) minimizing impacts by limiting the degree or magnitude of the action and its implementation, (3) rectifying the impact by repairing, rehabilitating, or restoring the effect in the environment, (4) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, and (5) compensating for the impact by replacing or providing substitute resources or environments (40 CFR 1508.20). The intention of mitigation is to reduce the effects of the action on the environment. The following sections discuss the five means of mitigation.

Avoidance

This method avoids environmental impact by not performing certain activities, e.g., allowing tracked vehicles to cross only at designated improved stream crossings. This would reduce the effects on a stream resulting from random access, such as increased turbidity caused by bank erosion and bottom disturbance caused by the tracks.

Limitation of Action

The extent of an impact can be reduced by limiting the degree or magnitude of the action (e.g., changing the firing time or the number of rounds fired on artillery ranges to reduce the noise impact on nearby residents). In the example given in the Avoidance Section above, the number of authorized stream crossings would have been limited or minimized.

Restoration of the Environment

This method restores the environment to its previous condition or better. Movement of troops and vehicles across vegetated areas often destroys vegetation. This impact can be mitigated by either reseeding or replanting the areas with native plants after the exercise.

Preservation and Maintenance Operations

This method designs the action so as to reduce adverse environmental effects. Examples include maintaining erosion control structures, using air pollution control devices, and encouraging car pools in order to reduce transportation effects such as air pollution, energy consumption, and traffic congestion.

Replacement

This method replaces the resource or environment that will be impacted by the action. Replacement can occur in-kind or out-of-kind (e.g., replace deer habitat in the project area with deer habitat in another area and replace fisheries habitat with deer habitat.) This replacement can occur either on the site of impact or at another location. This type of mitigation is often used in water resources projects. For example, if an action were destroying some of the installation's best deer habitat, a potential mitigation would be developing another section of the installation into deer habitat. This is an example of an in-kind replacement at a different site.

7-2. Identification of Mitigation Techniques

Identifying and evaluating mitigation techniques involves using experts familiar with the predicted environmental impacts. A single mitigation measure will often alleviate several different impacts.

Sources of Information

There are many potential sources of information concerning the mitigation of various environmental effects. Table 7-1 lists sources of information available on-post. Several information sources are also available within the Department of the Army: the AEHA, the MACOM environmental office, the Army environmental office, DAEN-ZCE, Corps of Engineers research laboratories (e.g., CERL, WES, and CRREL), Huntsville Division, and the military assistance offices in certain Districts. Appendix D lists other Federal agencies having expertise in various areas. State agencies are another potential source of information. Appropriate points of contact within these agencies may be obtained from the base environmental office. Another source of these contacts is directories, such as CERL Technical Report N-40,⁴⁸ as discussed in Engineering Technical Note 79-6.⁴⁹ Ramification/Mitigation statements from CERL's Environmental Impact Computer System (EICS)⁵⁰ are another potential source of information on mitigation procedures. Local interest groups may also be able to help identify potential mitigation measures.

Example Mitigation Techniques

Several different mitigation techniques have been used on military installations for a number of years. The following examples illustrate the variety of possible measures. There are maneuver restrictions in areas used extensively for tracked vehicle training. These restrictions are not designed to infringe on the military mission, but rather to reduce the amount of damage to the training area. Aerial seeding has been done on some installations to reduce erosion problems. Changing the time and/or frequency of operations has been used. This may involve changing the season of the year, the time of day,

⁴⁸R. Lacey, et al., Compendium of Administrators of Land Use and Related Programs, Technical Report N-40/ADA057226 (CERL, July 1978).

⁴⁹Coordination with Federal and State Land Use Agencies, Engineer Technical Note 79-6 (Department of the Army, 8 February 1979).

⁵⁰L. V. Urban, et al., Computer-Aided Environmental Impact Analysis for Construction Activities: User Manual, Technical Report E-50/ADA008988 (CERL, March 1975).

Table 7-1

On-Post Potential Source of Monitoring and Mitigation Expertise

ECOLOGY

DFE
Post Wildlife Officer
Post Forester
Post Agronomist

HEALTH AND SAFETY

Installation Preventive Medicine Officer
Post Safety Officer
Post Hospital
Post Mental Hygiene or Psychiatry Officer
Chaplain's Office

AIR QUALITY

DFE
Installation Preventive Medicine Officer

WATER QUALITY

DFE
Installation Preventive Medicine Officer

SOCIOLOGY

Personnel Office
Public Information Officer
Staff Judge Advocate

EARTH SCIENCE

DFE

LAND USE IMPACTS

Master Planner

NOISE

Preventive Medicine Officer
DFE
Master Planner

AESTHETICS

Base Historian

ENERGY AND RESOURCE CONSERVATION

DFE

or even day of the week for various activities. This avoids noise impacts as well as aesthetic, transportation, and some ecological problems. Reducing the effects of construction has involved using techniques that keep heavy equipment away from protected trees and quickly reseeding areas after construction.

Mitigation Alternatives

Army regulations require consideration of all practical mitigation alternatives. The emphasis is not on what can be theoretically accomplished, but on mitigations that can and will be attempted for each alternative. Practical mitigations are those that the proponent can accomplish within the project's constraints, e.g., manpower and money. Definition of practical measures must be at the installation level; what may be practical on one post or at one time may not be practical on another. A number of items determine what is practical, including military mission, manpower restrictions, cost, institutional barriers, technical feasibility, and public acceptance. Practicality does not necessarily insure that there will be no conflict among these items; it is rather the degree of conflict which determines practicality. All of the previous examples involved some amount of conflict in all of these areas. Although mission conflicts are inevitable, they are not insurmountable; therefore, the proponent should be cautious about declaring all mitigations impracticable and carefully consider any manpower requirements. This may be a greater restriction than military mission conflicts. There is no standard "rule of thumb" applicable to mitigation activities. The key point concerning both the manpower and cost constraints is that unless money is actually budgeted and manpower assigned, the mitigation does not exist. This will require coordination by the proponent office early in the process to allow enough time to get the mitigation activities into the budget cycle. If the mitigation is not funded on schedule with the action, the action can be judicially stopped. Mitigations that do not fall directly within the definition of "practical" must still be considered, including those to be accomplished by other agencies. The proponent must coordinate with these agencies so that they can plan to obtain the necessary manpower and funds. Mitigations that were considered but rejected must be discussed, along with the reason for their rejection, within the EIS.

7-3. Monitoring

Monitoring is a way to examine an environmental mitigation. There are two basic types of monitoring: enforcing performance, and noting how effectively the mitigation reduces the environmental impact.

Enforcement Monitoring

Enforcement monitoring insures that the mitigation is being performed as described in the environmental document. This includes making sure that mitigation requirements and penalty clauses are written into any necessary contracts. It also means making sure that these provisions are enforced. Any on-post mitigation must be budgeted for, scheduled, and any necessary manpower assigned before it can be considered a mitigation. Any changes required in post regulations must be completed and enforced. The actual mitigation (for example, aerial seeding of a training area) must be performed. Enforcement monitoring involves the monitoring of all these activities.

Effectiveness Monitoring

Effectiveness monitoring measures the success of the mitigation effort and/or the environmental effect. This must be a scientifically based quantitative investigation. Generally, qualitative measurements are not acceptable. By the same token, it is not necessary to measure everything that may be affected by the action; it is only necessary to obtain enough information to judge the method's effectiveness.

7-4. Establishing a Monitoring System

Monitoring is an integral part of any mitigation system. Establishment of a monitoring system must involve all offices which will be involved in its implementation. When evaluating several different potential monitoring systems, the ability to perform the monitoring is the most critical factor. This means that manpower -- both on-post and outside expertise -- must be available. Sufficient funds must also be available for the monitoring process. Figures 7-1 through 7-3 illustrate the steps in establishing a monitoring system. Figure 7-1 is designed to help select the type of monitoring system needed. Figure 7-2 shows the responsibilities of the lead agency in establishing an enforcement monitoring program. Figure 7-3 illustrates the steps necessary to establish an effectiveness monitoring program.

7-5. Type of Monitoring Program

AR 200-1 and other laws and regulations help determine the type of monitoring program needed. There are five basic considerations (figure 7-1).

Legal Requirements

Permits for some actions will require that a monitoring system be established (e.g., dredge and fill permits from the Corps of Engineers). These will generally require both enforcement and effectiveness monitoring programs.

Protected Resources

These include Federal- or State-listed endangered or threatened species, important historic or archaeological sites (whether or not these are included on the National Register of Historic Places), wilderness areas, wild and scenic rivers, and other public or private protected resources. Private protected resources include areas such as Audubon Refuges, Nature Conservancy lands, or any other land that would be protected by law, if it were under government ownership, but is privately owned. If any of these resources are affected, an effectiveness and enforcement monitoring program must be undertaken in conjunction with the Federal, State, or local agency which manages that type of resource.

Major Environmental Controversy

If there is still controversy about the effect of an action or the effectiveness of a mitigation, an enforcement and effectiveness monitoring program must be undertaken. Controversy means not only scientific disagreement about the mitigation's effectiveness, but also public interest or debate.

MONITORING MITIGATION

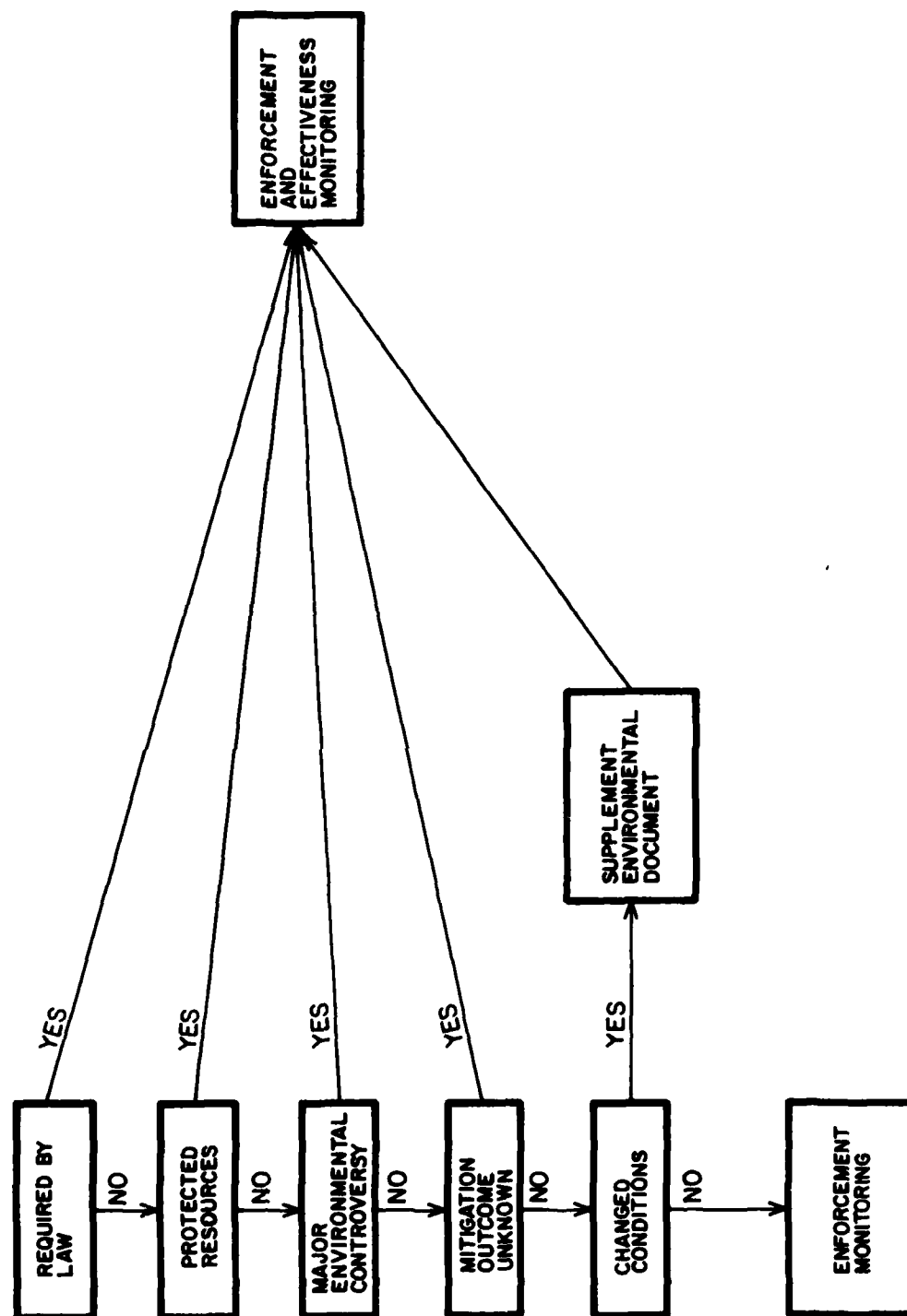


Figure 7-1. Monitoring mitigation.

ENFORCEMENT MONITORING PERFORMED BY

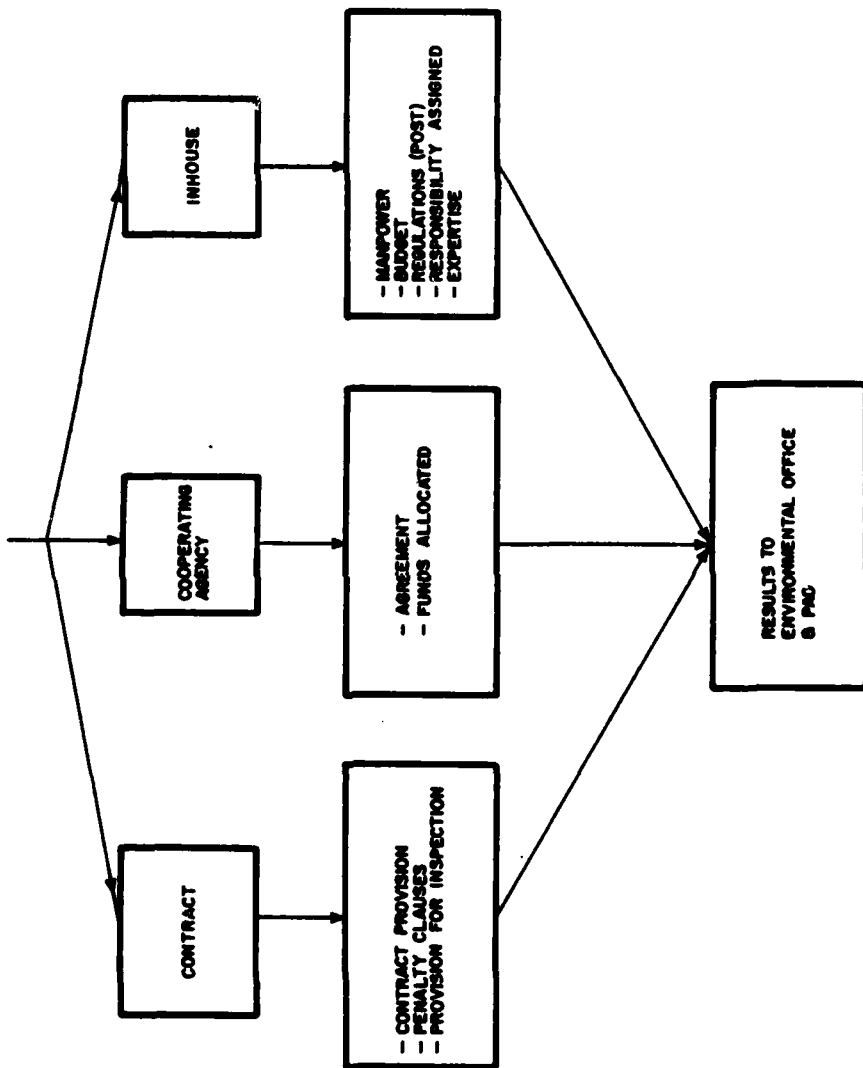


Figure 7-2. Enforcement monitoring.

EFFECTIVENESS MONITORING

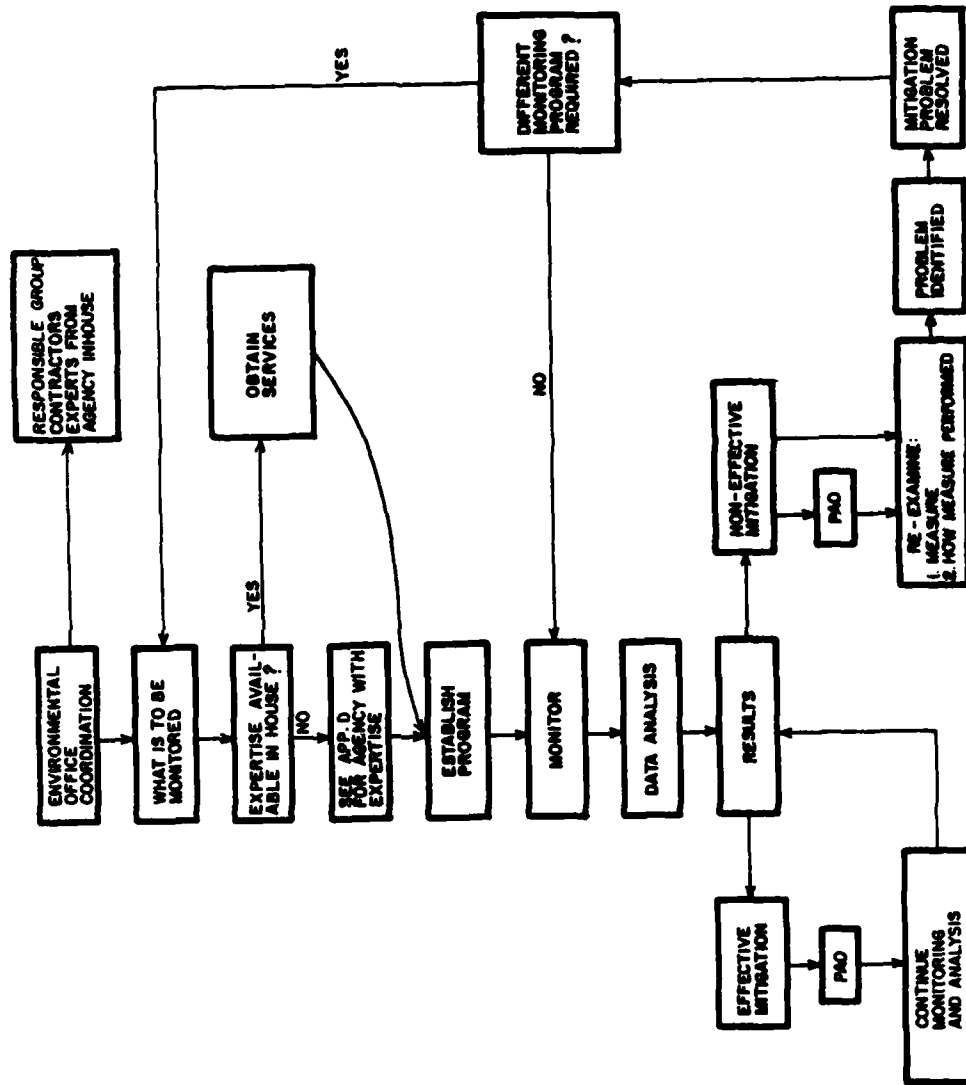


Figure 7-3. Effectiveness monitoring.

Mitigation Outcome

The probability of the mitigation's success must be carefully considered. The proponent must know if the mitigation has been successful elsewhere. The validity of the opinion should be confirmed by expert opinion. However, the proponent should note that a certain technique, such as artificial seeding with the natural vegetation, which may have worked successfully in one area, may not work in another.

Changed Conditions

The final consideration is whether any conditions such as the environmental setting, have changed (e.g., a change in local land use around the area or a change in project activities, such as increased amount of acreage involved or an increased number of troops being moved). Such changes will require preparation of a supplemental impact evaluation and additional monitoring. If none of these conditions are met (i.e., requirement by law, protected resources, no major controversy is involved, effectiveness of the mitigation is known, and the environmental or project conditions have not changed), then only an enforcement monitoring program is needed. Otherwise, both an enforcement and effectiveness monitoring program will be required.

7-6. Enforcement Monitoring Program Development

The development of an enforcement monitoring program is governed by who will actually perform the mitigation (figure 7-2). Three different groups may actually perform the work: a contractor, a cooperating agency, or a lead agency (in-house). However, the lead agency is ultimately responsible for performing any mitigation activities. Several provisions must be made in work to be performed by contract. The lead agency must insure that contract provisions include the performance of the mitigation activity and that penalty clauses are written into the contracts. It must provide for timely inspection of the mitigation measures and is responsible for enforcing all contract provisions.

The lead agency must insure that if a cooperating agency performs the work, it understands its role in the mitigation. The lead agency must determine and agree upon how the mitigation measures will be funded; it must also insure that any necessary formal paperwork, such as cooperating agreements, is complete.

If the lead agency performs the mitigation, the proponent has several responsibilities: insuring that any needed expertise is available; assigning all responsibilities needed to perform the task; providing appropriate funding in the project budget; making arrangements for necessary manpower allocations; and making any necessary changes in the agency (installation) regulations (e.g., environmental or range regulations). In any case, whether the mitigation is performed by contract, by a cooperating agency, or by the lead agency, all results will be sent to the Public Affairs Office and the Environmental Office on post.

7-7. Effectiveness Monitoring Program Development

Effectiveness monitoring is the most difficult to establish (figure 7-3). The responsible agent (e.g., the Director of Training) should coordinate this with the Environmental Office.

Determination of What Is To Be Monitored

The first step in this type of monitoring program is to determine what must be monitored. This determination should be based on criteria discussed during the establishment of the system (i.e., the legal requirements, protected resources, area of controversy, known effectiveness, or changed conditions). Initially, this can be a very broad statement, such as reduction of impacts on a particular stream by a combination of replanting, erosion control devices, and range regulations.

Finding Expertise

The next step is finding the expertise necessary to establish the monitoring system. The expertise may be available on-post; table 7-1 lists potential sources on a military installation. If it is not available, it must be obtained from an outside source. Appendix D lists Federal agencies that have expertise in various areas. Directories such as CERL Technical Report N-40⁵¹ may provide the needed information. In addition, local universities may have specialists and local interest groups who can identify experts within a particular field. This may be particularly helpful if a mitigation is considered controversial.

Establishment of a Program

After a source of expertise is located, the program can be established, using five technical criteria. First, any parameters used must be measurable; i.e., the monitor must be quantitative, and it must be statistically sound. Second, a baseline study must be completed before the monitoring begins in order to identify the actual state of the system prior to any disturbance. Third, the monitoring system must have a control, so that it can isolate the effects of the mitigation procedures from effects originating outside the action. Fourth, the system's parameters and means of measuring them must be replicable. Finally, parameter results must be available in a timely manner so that the decision-maker can take any necessary corrective action before the effects are irreversible.

Program Management

There are several program management considerations. First, not every mitigation has to be monitored separately. The effectiveness of several mitigation actions can be determined by one measurable parameter. For example, the turbidity measurement from a stream can include the combined effectiveness of mitigation actions such as reseeding, maneuver restrictions, and erosion

⁵¹R. Lacey, et al., Compendium of Administrators of Land Use and Related Programs, Technical Report N-40/ADA057226 (CERL 1978).

control devices. However, if a method combines several parameters and a critical change is noted, each mitigation measurement must be examined to determine the problem.

Initiation of Program

The next step is initiating the monitoring program. In most cases, a monitor should be established well before the action begins, particularly when biological variables are being measured and investigated. At this stage, any necessary contracts, funding, and manpower assignments must be initiated.

Sample Collection and Data Analysis

The next step in the monitoring program is sample collection and data analysis. A nontechnical summary of the data analysis should be provided to the Public Affairs Office, as required by AR 200-1. Technical results from the analysis should be sent to the Environmental Office, which will coordinate them with the responsible office.

Continuation of Program

If the mitigations are effective, the monitoring should be continued. However, even if a noneffective result is obtained, a nontechnical summary should still be sent to the Public Affairs Office. The Environmental Office and the responsible group should reexamine the mitigation measures with the experts. The problem may be either inadequacy of the mitigation measure, in how it is being performed, or in the monitoring. Once the problem is identified, the responsible group and the experts should determine whether more detailed information is needed, whether the monitoring is being implemented incorrectly, or whether the mitigation is inadequate. After the problem is resolved, the group must determine whether a different monitoring system should be established. If the old program is adequate, it should simply be continued; however, if a different program is required, then a new system must be established according to the steps described previously.

CHAPTER 8

SUMMARY

This report has analyzed the environmental assessment process, including identification of the type of action being considered by an Army facility, planning, scoping, timing, preparing environmental documents, and identifying monitoring and mitigation procedures. Various required environmental documents which the Army must prepare were identified and described, including staffing and coordination requirements.

The most commonly used environmental analysis methods were described, and their positive and negative aspects identified. In addition, the most appropriate analysis method for various types of actions was identified. Guidance was provided for writing EAs and EISs, and information on mitigation and monitoring procedures was given.

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APPENDIX A

PUBLIC INVOLVEMENT

A-1. Why Public Involvement?

Public participation programs have developed for several reasons. The primary intent of public participation is generally to insure responsiveness and accountability of government to the citizens. Also, public involvement may effect better plans, increase the likelihood of plan implementation, and generate support for the agency.⁵² CEQ regulations require that agencies diligently try to involve the public when preparing and carrying out NEPA procedures. They must provide public notice of NEPA-related hearings and public meetings and of the availability of environmental documents in order to inform interested or affected persons and agencies.

A-2. Application to the Army

For the Army installation, three situations require major public involvement. The first is involved with the writing of an EA. When considering the extent of required public interaction, the proponent should weigh the magnitude of the proposed project/action, the extent of anticipated public interest, the urgency of the proposal, and any relevant questions of national security classification (AR 200-2). The second situation arises when an EIS, which requires more public interaction than an EA, must be written. The third instance occurs when an action does not require an EA or EIS, but does affect the public or some sector of the public.

A-3. Objectives

The general objectives of public participation include idea generation and problem-solving; identification of problems, needs, and important values; evaluation of alternatives; reaction and feedback on proposals; conflict resolution; and education, information, and liaison.⁵³ Figure A-1 identifies the broad activities in impact assessment relative to the objectives listed above. An "X" indicates areas where public participation objectives should be a working part of the study. A well-developed public involvement program should contain three areas of responsibility: (1) dissemination of information on the proposed activity, (2) coordination of proposed actions with other agencies and interested publics, and (3) public input (AR 200-2).

Dissemination of Information -- to Whom

Four groups of agencies and officials plus the general public should be sent information and asked for input:

- (1) Municipal, township, and county elected and appointed officials.

⁵²D. Jordan, et al., Effective Citizen Participation in Transportation Planning, Volumes 1 and 2 (Arthur D. Little, Inc., 1976), pp 6, 164.

⁵³Larry Canter, Environmental Impact Assessment (McGraw-Hill, 1977), p 222.

Objectives	Impact Assessment Activities				
	Plan of Study for Environmental Problems and Issues	Environmental Resource Inventory (Environmental Objectives)	Formulate Plans and Assess Environmental Impacts	Analysis and Evaluation of Plans and Impacts (Draft EIS)	Select Course of Action and Prepare Final EIS
Information, education, liaison	X	X	X	X	X
Identification of problems, needs, and values	X	X	X	X	X
Idea generation and problem solving			X		
Reaction and feedback		X	X	X	X
Evaluation of alternatives				X	X
Conflict resolution				X	X

Figure A-1. Impact assessment activities. (From Larry Canter, Environmental Impact Assessment [McGraw-Hill, 1977], pp222-228.)

(2) State, local, and county government officials and administrative personnel whose official duties include responsibility for activities or environmental effects believed to be related to the proposed action.

(3) Local and/or regional administrators of other Federal agencies who control resources that may be affected by the proposed action, or who may be aware of other Federal actions whose effects must be considered with the proposed Army action.

(4) State, local, and regional A-95 clearinghouses should be contacted as appropriate. Clearinghouses have the authority to review Federal grant applications and Environmental Impact Statements. Generally, these agencies coordinate growth (at any level) and development activity and/or policy. Any Army activity should be coordinated with these clearinghouses, especially those which may increase or decrease employment. Changes resulting from the activity could significantly alter growth and development by affecting local income, housing, services, etc.

General Public

In addition to government officials and agencies, the general public needs to be informed and asked for their input. At least three sectors of the general public should be consulted:

(a) Members of identifiable population segments within the potentially affected environments, whether or not the segments are organized or have clearly identifiable leaders.

(b) Members of identifiable interest groups of local or national scope which may be expected to have an interest in the environmental effects of the proposed action or project.

(c) Persons or groups who have requested to be involved in the specific action or in actions of this general nature.

Dissemination of Information: How

Information can be disseminated to the public in several ways. All contacts should be through the installation Public Affairs Office.

(1) A notice in the Federal Register informs other agencies and the public about the impending preparation of an EIS. The notice usually recommends contacting the responsible agency for more detailed information.

(2) Television, radio, and newspapers.

(3) Mailing lists provide names of people who have requested information on past projects, agencies that are commonly (or must be) contacted, or officials at all government levels.

Agency Coordination

The responsible agency must coordinate its actions with both cooperating agencies and agencies that are not directly associated with writing the EA or EIS. This coordination is more than simple courtesy by the lead agency; it often results in more efficient data collection, thereby saving both time and money and in interagency relations, with the attendant possibility of assistance in future problems. In addition, there must be on-base coordination with the MACOM public affairs officer(s) and with SAPA-PP, as appropriate.

Public Input

This portion of a public participation program is the most complex and the most essential. There should be public input throughout all phases of a project or action, even when no special activities are occurring. The first instance of direct public input is during the scoping process.

A-4. Scoping

Purpose

Scoping is required whenever an EIS will be written. This process must incorporate public involvement as early as possible, usually as early as the environmental assessment stage. Scoping will reduce the number of issues likely to be raised late in the EIS process and will help prevent having to re-do completed work or start new studies late in the process. It may also encourage people who are knowledgeable about a site or proposal to speak out about it, thus saving research time and money. The scoping process, which must continue throughout EIS planning, may involve a series of meetings, telephone conversations, or written comments from different persons or groups.

Phases

The scoping process is comprised of preliminary, public interaction, and final phases.

(1) The Preliminary Phase

The preliminary phase determines how scoping will be accomplished and who will be involved. Specific tasks in this phase include:

- (a) Developing a draft scope for the EIS.
- (b) Identifying lead and cooperating agencies.
- (c) Identifying methods of public participation.

(d) Establishing relationships between the timing of the analysis and the tentative planning and decision-making schedule.

(2) The Public Interaction Phase

During the public interaction phase, the proponent must notify and invite the participation of affected parties and respondents to the filed NOI; in turn, these people will help develop a series of issues recommended for detailed discussion in the EIS. Participants should also include the following:

(a) One or more technical representatives of the proponent who can describe the technical aspects of the actions or alternatives to the other participants.

(b) One or more representatives of any Army-contracted consulting firm(s) retained at this time to help write the EIS or provide information to be used in substantial portions of the EIS.

(c) Specialists in environmental areas or disciplines of probable impacts, in which expertise is not already represented among the scoping participants.

(3) The Final Phase

The final phase incorporates the information obtained during the preliminary and public interaction phases into the final scope for the draft EIS; time limits for completing the work and page limitations for the finished document are also set during this phase.

Information

The scoping participants will be provided with information developed during the preliminary phase. This information should include as much of the following as possible:

(1) A brief description of the environment at the affected location(s). If a specific description is not available, a general one may be used. It should state the extent to which past actions have modified the environment(s).

(2) A description of the proposed alternatives of the action. This should be detailed enough that the participants can reasonably take part in evaluating the alternatives. (These descriptions should not be so firmly set by the agency or proponent that modifying them is impossible. It must be remembered that one purpose of public involvement during scoping is to identify alternatives.)

(3) Identification of public EAs and EISs that have been prepared or will be prepared which are related to, but not part of, the scope of the impact statement under consideration.

In addition, the person or office conducting the scoping process will use the input from the technical representatives and the participants to help develop the conclusions, which become the scope of the EIS.

Suggestions for Scoping

(1) General

It is important to remain flexible during the scoping process. The scope of the EIS/EA may need to be modified if new issues surface. It is the responsibility of the lead agency to assess each significant impact or alternative, regardless of whether it becomes apparent during the scoping or later.⁵⁴

(2) Meetings

There is no absolute requirement for a scoping meeting; however, if they are held, the following must be considered:

(a) A large public meeting will identify interest groups, but will accomplish little productive work.

(b) The most productive meetings must be those held among cooperating agencies and technical people. (This does not mean that there should not be public meetings.)

(c) Separate meetings can be held, when appropriate, for technical agency people, local government people, project opponents, project proponents, etc. These people will be more likely to communicate their real concerns at such a smaller meeting, rather than using the opportunity as a publicity forum.

(d) Don't expect cooperating agencies to attend large public meetings held many miles away. It is more profitable to hold smaller meetings close to the agencies. In fact, conference calls and written comments may save time and travel money.

(e) The proponent should be as specific as possible with the cooperating agencies, telling them what they should contribute and informing them about the issues and alternatives.

(f) If large meetings are held, better response may be obtained if the meeting is broken into small groups, with each assigned to provide a list of impacts and alternatives for study and inclusion in the EIS.

(g) Participants should be informed that the only decisions being made concern the contents of the EIS. This provides them with a common goal.

(h) Problems with meetings often result from the moderators' lack of experience. The Civil Service Commission and other groups give training courses on facilitation, with specific techniques for minimizing digressions.⁵⁵

⁵⁴Talking Points of CEQ's Oversight of Agency Compliance With NEPA Regulations (Council on Environmental Quality, March 16, 1981).

⁵⁵Talking Points on CEQ's Oversight of Agency Compliance With NEPA Regulations.

Significant Impact and Alternatives

(1) The lead agency has the ultimate responsibility for selecting the issues to be covered in the EIS. This function cannot be relinquished to the public.

(2) If issues are raised and a professional believes that they are not significant, the EIS must briefly and clearly explain why they are not significant. A detailed documentation of these issues in the EIS is not necessary if the proponent can substantiate that they are not relevant to the proposed action.

(3) The proponent should not examine in detail issues of lesser significance; a brief discussion in the EIS about why they were not examined in depth will be sufficient. This explanation will help prevent public fears of a coverup.⁵⁶

A-5. Implementation Responsibilities

The proponent has most of the responsibility for implementing the public participation process. Because of the many different types and levels of Army installations, the proponent will be the office or group of people actually having the action performed, even if they did not originate the idea for the action (i.e., carrying out a command). The proponent should follow installation procedure for arranging meetings and informing the public.

A-6. Holding Public Participation Activities

The installation's Public Affairs Office is the best source of information about the mechanics of holding public meetings and hearings. They can provide guidance on the best type of graphics or other visual aids, setting up the meetings, and running the meetings to get the most out of the public participation process. Table A-1 is a checklist useful for checking last-minute details for meetings or hearings.

A-7. Techniques of Public Input

There is no set method for conducting the public involvement process. Each technique has advantages and disadvantages. The most common techniques include public hearings, public meetings, informal small group meetings, information coordination seminars, workshops, responding to inquiries, and sending letters requesting comments. Techniques useful for maintaining public involvement or for specific actions include public displays, site visits, planning visits, public speakers, and continued response to letters requesting information.

⁵⁶Talking Points on CEQ's Oversight of Agency Compliance With NEPA Regulations.

Table A1. Checklist for Public Meetings

LOCATION AND FACILITIES

- Select location and arrange for suitable meeting place
 - Easily accessible to the public
 - Adequate seating capacity
 - Facility suitable for public meetings

- Arrange for suitable furnishings and equipment
 - Head table
 - Table(s) for stenographer and recording equipment
 - Registration table at entrance to conference room
 - Public address system
 - Electrical recording equipment
 - Podium(s)
 - Graphic equipment (overhead projector/screen, blackboard)
 - Adequate number of chairs for audience and participants
 - Directional signs as may be needed

ANNOUNCEMENTS AND AGENDA

- Prepare and issue invitation letters and notices for public meeting
- Prepare meeting agenda
- Prepare sufficient number of "Public Meeting Attendance Record" cards for attendees.

Public Hearing

The public hearing is the most traditional public participation method. It is a very formal proceeding in which groups of individuals provide "testimony." All comments are recorded by a stenographer (or tape recorded), and an official transcript is prepared. Written material may also be submitted for the record. The "public" includes all individuals, organizations, and agencies (other than the sponsoring agency) which could be affected or might have an interest in the activity and its impact. A hearing is an opportunity for groups or individuals to have a permanent public record made of their views. It also provides them an opportunity to challenge the proponent's actions.⁵⁷

CEQ regulations state that a hearing may not be held until at least 15 days after the Environmental Protection Agency has published the Draft EIS in the Federal Register and the public comment period has begun. This does not mean that other hearings cannot be held; however, it is best to defer them until after the scoping process has been completed or is near completion. The timing of these additional hearings should be geared to the study's needs. Because of the cost and delay involved in developing the hearing record, public hearings should generally be used only when a formal record or transcript is required. The hearing is generally not an appropriate form of public participation for environmental evaluations.

(1) Advantages

- (a) Hearings are highly accepted by the public.
- (b) Citizens can challenge the actions of the public agency.

(2) Disadvantages

- (a) A hearing offers limited, one-way communications: citizens present their views as formal testimony, but cannot interact with the agency representatives.
- (b) Hearings do not guarantee true representation of the entire public; therefore, there is a high potential for bias.
- (c) The public may infer bias in the conduct of the hearing since the chairman is from the agency.
- (d) Open-ended statements typical of hearings are difficult to interpret and use in planning; often, the participants who are testifying do not completely understand the issue or the plan they are discussing.
- (e) When hearings are the only means of public involvement, the public tends to feel that important decisions have already been made and that the hearing is merely a formality.

⁵⁷ Larry Canter, Supplement to Environmental Impact Assessment (McGraw-Hill Book Co., 1978), p 11-5.

(f) The nature of a hearing encourages emotional presentations and polarization of position; as a result, a hearing may actually increase community disagreement about a project.⁵⁸

Public Meetings

Like a hearing, the public meeting provides the opportunity for a wide cross-section of the public to participate. However, the public meeting is usually much less formal and can accommodate interaction between participants. Typically, a representative of the proponent opens the meeting with a presentation that provides verbal or visual summaries of the work accomplished to date or projected for the future. This is followed by a question and answer period and then by a period of time to allow the public to assimilate and react to the material being presented. This portion of the meeting will be conducted by a discussion leader or chairperson who will prevent digressions and disputes. The success of the meeting depends on the discussion leader's effectiveness in encouraging participation, insuring that all public comment is listened to carefully, and communicating to the public that their input was genuinely valued. While no transcript is required from a public meeting, detailed notes should be recorded and kept on file.

(1) Advantages

(a) Public meetings can be held any time during the NEPA process to give the public an opportunity to learn what the Army is doing and to allow the Army to hear the public's opinion about the work accomplished to date.

(b) Public meetings allow the Army to receive public reactions while the work is still in the planning stage.

(c) Because they are more informal than hearings, public meetings are less intimidating to the average citizen.

(d) This type of meeting allows the Army to provide information to a large number of people at a single time.

(2) Disadvantages

(a) Large meetings do not allow for interactions between groups and therefore do not provide opportunities for discussion, negotiation, or dialogue between opposing points of view.

(b) Large meetings may encourage polarization of positions and allow for domination by local minorities.

Using the large- and small-group format will reduce these disadvantages. In this format, the necessary information is initially presented to the entire group; then the meeting is broken down into smaller groups for in-depth discussion. Comments are recorded, and a spokesman reports to the large group the ideas expressed in the smaller meeting. Each small group should include a staff member to answer questions and to insure accuracy of discussion.

⁵⁸Supplement to Environmental Impact Assessment, p 11-4.

Holding the Meeting

- (1) The physical arrangement of the meeting should be informal. For example, this can be done by seating the staff on the same level as the audience. It is also helpful⁵⁹ to seat the participants less formally than they would be in public hearings.
- (2) Keep presentations simple, particularly those containing project or environmental data. The purpose of the presentation is to inform, not to confuse.
- (3) Include in the discussion of any project or alternative information on location, features, general benefits and costs, and possible beneficial and detrimental environmental impacts.
- (4) Simplify visual aids. Using slides of the actual project area has proven to be beneficial.
- (5) Discuss project timing (prior authorizations and resolutions) and the anticipated timing of future required steps prior to the meeting.
- (6) Discuss general concept features and the requirements of benefit/cost ratio or relevant economic analysis.
- (7) Speakers at public meetings should be able to speak on general matters as well as on their individual areas of expertise. A person who can respond quickly and confidently to questions from an audience in which there is mixed sentiment has a better chance of establishing a positive relationship with the audience.
- (8) Avoid using technical jargon or words that are difficult to understand. This is especially important with local groups unaccustomed to engineering or ecological terminology.
- (9) Be familiar with the project area.
- (10) Be willing to work on problems with individual groups.⁶⁰

Information and Coordination Seminars

This technique informs and coordinates with special-interest groups, specific individuals, and groups representing segments of the public. These meetings are important because the public's interests and needs are often disclosed by key individuals, elected and appointed officials, and leaders rather than through involvement of the general public. These seminars are an excellent means of keeping officials up-to-date on a regular basis, providing specialized information to interest groups, clarifying policy and plans to groups or agencies, and helping coordinate with other agencies. This type of seminar can be a good technique for advance preparation of workshops. An important

⁵⁹Supplement to Environmental Impact Assessment (1978), p 11-5.

⁶⁰Larry Canter, Environmental Impact Assessment (McGraw-Hill, 1977), pp 222,228.

advantage is the small amount of time needed to prepare them. They can be organized on a regularly scheduled basis, or held as needed.⁶¹

Workshops

A workshop's success is largely attributable to the degree of advance preparation, which should be as comprehensive as possible. Preparation for a workshop may include distributing brochures, planning visits, providing media coverage, and directly contacting interested parties. There are three basic types of workshops: the open public workshop, the invitation workshop, and the invitational/open format.

(1) Open Public Workshop

An open workshop is open to the public; no invitation is needed to participate. Although this format is the most common, it has several disadvantages. One is the uncertainty about the number of participants and their interests. When large numbers of people attend the workshop, the opportunity for discussion and interaction is more limited.

(2) Invitational Workshop

This type of workshop is geared toward specific individuals and groups and/or around rather specialized issues or alternatives. This format is advantageous because it can be highly interactive, involving only persons interested in specifics or critical issues.

(3) Invitational/Open Workshop

This format combines the procedures of the open and invitational workshops. The initial discussion focuses on statements by an invited interested group (e.g., a panel) and later is opened to the public.

Variations of these three workshop formats have been successful. One such variation is the mini-workshop, which is often helpful in stimulating interaction. The participants are divided into small discussion groups, each having a discussion leader, to trade ideas on different subjects. A second variation uses revolving groups, in which individuals spend a set amount of time discussing one subject and then move to a different group to discuss a different issue. Pre-workshop preparation is important, especially if the revolving mini-type format is used.⁶²

Response to Inquiries and Response to Letters

These activities generally maintain continuous public awareness and good public relations; however, they cannot substitute for required public involvement activities, although they can supplement them. Comments on letters received in response to a draft EIS should be included with the letters in the back of the final EIS.

⁶¹Larry Canter, Supplement to Environmental Impact Assessment, p 11-7.

⁶²Supplement to Environmental Assessment, p 11-12.

Public Displays

Displays inform the public about a specific project or about general activities currently underway at the installation. Such displays can improve the installation's relations with the public by increasing their understanding of installation activities. This understanding is important, since much opposition to projects results from either misunderstanding or misinformation. The best locations for displays are areas of high public use, or areas of high visibility, such as shopping centers, universities or other schools, public centers, municipal buildings, or libraries. The displays may be slide shows, manned project models, or informative pictorial displays. The model displays can also be used as instructional aids at public meetings, workshops, or seminars. An effective display will be clear, to the point, and related to areas familiar to the public.

Site Visits

These visits are generally nonprofessional "show me" trips that provide information to public groups, media, and local officials, who in turn pass the information on to the public. These visits can also be used as advance preparation for a future open workshop or hearing.

Planning Visits

These visits differ from site visits in that they are geared toward a professional, rather than a public relations function. Such visits should try to increase understanding and coordination with cooperating agencies, knowledgeable community interest groups, and individuals. They can also serve the secondary function of providing advice on community or area problems related to the project. Visits should be oriented to community needs or to specific aspects of the project.

Public Speakers

Agency speakers at local group meetings and special events can improve the relationship between the installation and the community by increasing the public's understanding of installation activities. Answering the public's questions will help dispel rumors or misconceptions about specific activities or projects. This is one way of reaching specific areas of the public that could not be reached through normal channels (e.g., the elderly).

A-8. Identifying Potential Participants

Most participants in public meetings, hearings, and other techniques will come largely from organized groups; therefore, the most successful efforts will be with groups affected by or interested in the activity. However, publicity for a public hearing should make an extra effort to interest the general unaffiliated public, because this may be the last chance for the public to speak. To determine interested groups, first categorize the impacts likely to result from the activity. Then, for each category, identify the types of organizations and individuals likely to be affected by or interested in such impacts. Other means of identifying participants include the following:

Self-Identification

People identify themselves by having attended previous meetings, by corresponding with the agency, or by instigating legal action. Newspaper, radio, and television announcements are good ways to notify these people about upcoming meetings.

Advisory Committee

Committee members may list organizations and individuals according to area of interest.

Snowball

Well-known organizations are identified by their interest in specific impacts, and their members or officers are asked to suggest other names. The second group of people is then asked to propose additional names, and so on.

Mailing Lists

Agency mailing lists are a very simple method of identifying certain interested parties.

Other Research

Identify groups and people through the yellow pages of the telephone book and through community information publications and directories. Participants should be identified by geographical areas of interest; e.g., areawide projects should emphasize organizations with local and regional interests. For larger projects, concentration on organizations with statewide interest is advisable.⁶³

⁶³James F. Ragan, The Effective Public Meeting in Water Quality Planning (U.S. Environmental Protection Agency, 1977), p 8.

APPENDIX B

EXAMPLE FORMS

FORMAT FOR A
RECORD OF ENVIRONMENTAL CONSIDERATION

Title: _____

Description of Proposed Action: (Brief description [if not obvious from title]) _____

Anticipated Date and/or Duration of Proposed Action: (Month/year of expected action) _____

It has been determined that the action (choose one):

a. Is adequately covered in the existing EA _____ EIA _____ EIS _____
entitled _____ and dated _____.

b. Qualifies for Categorical Exclusion # _____ Appendix A, AR 200-2.

_____ and no special circumstances require further documentation.

_____ but special circumstances (described on back of record) require preparation of an EA _____/EIS _____.

c. Is exempt from NEPA requirements under the provisions of (cite superseding law).

SIGNED _____
(office responsible for proposed action)

Date: _____

Concurrence: _____
(Installation, office, or agency
designated Environmental Office)

Date: _____

Variation from this format is acceptable, provided basic information and approvals are included in any modified document.

FORMAT FOR A
FINDING OF NO SIGNIFICANT IMPACT (FNSI)

Title: (Same as title of Environmental Assessment upon which the FNSI is based)

Agency:

Action: Notice of a Finding of No Significant Impact

Notice:

1. Proposal, including any alternatives considered.
2. Summary of the environmental assessment (note related environmental documents)
3. The conclusions which have led to the FNSI.
4. A deadline and point of contact for receipt of public comments.

FORMAT FOR NOTICE OF INTENT

Title: (Same as title of proposed Draft Environmental Impact Statement)

Agency:

Action: Notice of Intent to Prepare a Draft Environmental Impact Statement (DEIS) for

- Summary:
1. Description of action. Describe the proposed action(s) to be considered in the EIS alternatives.
 2. Discuss alternatives under current consideration, public involvement, and review.
 3. Describe the agency-proposed scoping process, including whether, when, and where scoping meetings will be held.
 4. Significant issues. Identify what issues have been identified to date and will be analyzed in depth in the DEIS.
 5. Availability of draft EIS. Identify when the DEIS will become available to the public for review and comment.

For further information, contact: (Identify the point of contact [name, address and phone number] for the proposed DEIS).

FORMAT FOR RECORD OF DECISION

(Required in cases requiring Environmental Impact Statements)

Title:

Agency:

1. Statement of the decision reached: (A succinct description of the decision which may be drawn from the EIS summary section.)
2. Identification of all alternatives: (Include in the alternative(s) discussion of those deemed to be environmentally preferable. Weigh all alternatives based on relevant economic, technical, and DA mission considerations. The DA mission is one part of the whole national policy consideration; subsequently, the DA must discuss how conflicting considerations were balanced in arriving at the proposed action.
3. Mitigation, monitoring, and enforcement: Indicate mitigation and monitoring requirements. (Discuss all practicable [feasible] means of avoiding or minimizing adverse environmental impacts by specific mitigation and monitoring provisions. This discussion should be an attachment to the Record of Decision.)
4. Effective Date: Date published in the Federal Register.
5. For further information, contact: Identifies the action officer (name, address and phone number) for the Record of Decision.

APPENDIX C

GLOSSARY

C-1. General

The following glossary of terms and phrases will help the user understand the content of this report. Some of the definitions are brief if they were described in detail in earlier chapters. For convenience, this glossary contains six sections. The first includes general terms and phrases associated with the environmental evaluation process. The remaining five sections include terms and phrases related to distinct concepts or elements of the environmental evaluation process, i.e., types of actions, participants in the NEPA process, public involvement, environmental impacts, and environmental documentation. Terms and phrases are listed in alphabetical order. Since many terms and phrases are interrelated and a clear understanding of one term or phrase is often necessary to clearly understand another, the sections have been designated by number and individual terms and phrases by letter to facilitate understanding of the definitions. The numbers in parentheses in many of the definitions refer the reader to other definitions in this glossary.

C-2. General Environmental Assessment Terminology

a. Affected Environment

The affected environment encompasses environmental conditions, either natural or manmade, which will be changed or created by a proposed action (C-3). Under the former CEQ guidelines, and AR 200-1, Subpart B, environmental documents (C-7b and C-7c) were required to describe the existing environment in and around the area of the proposed action. This description generally increased the bulk of environmental documents. The new regulations require that these documents describe only the environment or environmental conditions affected or created by an action. The importance of a potential effect (C-6j) to a particular environmental element, e.g., soil or local income, will determine the amount of space and detail devoted to describing an existing environmental condition. Environmental conditions subject to relatively little effect or impact should be summarized and/or simply referenced; those subject to a significantly larger effect should be described in detail.

b. Critical Environmental Concern

This is a descriptive phrase which is generally applied to certain environmental conditions. Examples are land areas which contain endangered or threatened species or its habitat, significant scientific, cultural, or historic resources, wild and scenic rivers, parklands, prime or unique farmland, wetlands, floodplains, coastal zones, or wilderness areas. Any proposed action (C-3i) which might have a potential effect (C-6j) on these or similar areas normally requires an Environmental Assessment (C-7b).

c. Depletable Resource

A resource is something having physical or chemical properties useful for a specific purpose, generally to serve man's needs. Resources can be used to

produce something (e.g., paper from timber), or they can have inherent aesthetic, cultural, or historic significance (e.g., a native prairie or wild river). A depletable resource is one which cannot easily or may never be able to be reused, recycled, or redeveloped once it has been used, altered, or destroyed (e.g., coal, petroleum).

d. Environmental Considerations

This is a phrase generally used to describe the concept of accounting for or making concessions for the environmental conditions of a project area before, during, and after a proposed action (C-3i). The theme of the concept is that environmental conditions should be improved, remain the same, or, at the least, be altered so as to have the least impact and greatest public benefit.

e. Environmental Setting

This refers to the sum total of existing conditions in, around, and for a proposed action (C-3i) or project area. It should not be confused with the affected environment (C-2a). In the NEPA process (C-21), the term describes conditions in an area for comparison purposes or for deciding whether an action falls within the scope of an existing Environmental Impact Statement (C-7c).

f. Environmental Review

The term environmental review can have three possible meanings, depending on the context. Environmental review sometimes describes the process of examining the affected environment (C-2a) and allowing for environmental considerations (C-2d). This process ends with the preparation of a Record of Environmental Consideration (C-7i). The term is sometimes used to describe the process of staffing environmental documentation through official channels. Finally, the term sometimes describes the process of preparing comments, conclusions, and recommendations about the adequacy of environmental documents.

g. Extent Practicable

This term refers to the degree of public involvement (C-5a through C-5e) which should be sought as part of the NEPA process (C-21). The degree of involvement actually obtained depends on several factors, including the magnitude of the proposed action (C-3i), the extent of anticipated public interest in the action, the urgency of the action, and the action's classification in terms of national security. Variation in these factors requires flexibility, and the concept embodied in the term "practicable" allows for this flexibility. However, the intent of the NEPA process is to insure that the degree of public involvement is the highest possible.

h. Interdisciplinary

To achieve the goals of NEPA, preparation of environmental assessments must use an interdisciplinary approach. The analyses must be done by a team of professionals representing expertise in different academic, scientific, or technical disciplines. This team approach of professionals working together insures that the natural and social sciences and the environmental design arts

become integrated into the NEPA process (C-21). The new CEQ regulations insure this approach by requiring a list of people who prepared the Environmental Impact Statement (C-7c).

i. Global Commons

Global commons are geographical areas that are outside the jurisdiction of any nation; they include oceans outside of territorial limits and Antarctica. However, global commons do not include contiguous zones and fisheries zones of foreign nations.

j. Mitigation

Mitigation is the implementation of activities to minimize or avoid environmental impacts (C-6) resulting from proposed actions (C-3i). Mitigation, which can involve several actions or techniques, must be identified in Environmental Assessments (C-7b) and Environmental Impact Statements (C-7c). The aim of these techniques is to avoid, minimize, rectify, reduce, eliminate, or compensate for environmental impacts.

k. Monitoring

Monitoring is a process to check, regulate, or control the progress of a proposed action (C-3i) or mitigation procedures (C-2j) which have been implemented. A monitoring program, which is required for mitigation procedures, inspects the program and insures that mitigation is actually occurring. The monitoring program for mitigation procedures should be summarized in EAs and EISs. Another type of monitoring involves checking the actual impacts caused by implementing the proposed action. While such a program is not required, it may promote actual impact mitigation.

l. NEPA Process

The NEPA process commonly refers to the overall act or procedure of integrating environmental considerations (C-2d) into decision-making. The process begins when the need for an action is identified and continues through the release of a Record of Decision (C-7h) and/or the formal monitoring (C-2k) of mitigation (C-2j) procedures. The term "process" encompasses the actual assessment of environmental impact (C-6), the integration of scoping (C-2r), public involvement (C-5), and the timing of the release of all environmental documentation (C-7).

m. Pre-Decisional Consideration

This is the concept behind the NEPA process (C-21). All Federal agencies must comply with the appropriate procedural and provisional requirements (C-2n and C-2o) of the NEPA process before actually deciding to proceed with an action. As a result, any potential environmental impact (C-6) to resources receives consideration early in the planning process.

n. Procedural Requirements

These are tasks specifically required by NEPA which have been strictly interpreted by the new CEQ regulations. Procedural requirements are not only the tasks to be accomplished, but also the methods and timing requirements for completing them.

o. Provisional Requirements

Provisional requirements refer specifically to the timing of the procedural requirements (C-2n) established by NEPA and the CEQ regulations. Procedural requirements must be accomplished in a specific order and before deciding to implement an action.

p. Referrals

An environmental referral is the means by which Federal agencies can express disagreement with all or a portion of the environmental findings and reports for a particular action. Referrals are made to CEQ, must contain specific information, and are governed by certain time limits. The EPA can make referrals related to any Federal activity, but other Federal agencies can only submit referrals to CEQ after the final EIS for a particular action has been released. The lead agency (C-4e) which prepared the EIS must respond to another agency's referrals. 40 CFR, Part 1504, provides more complete information on the timing and content of referrals.

q. Renewable Natural Resources

A resource is something that has physical or chemical properties useful for a purpose, generally to serve man's needs. Natural resources occur naturally in the environment and generally are not produced by man. Resources can be used to produce something (e.g., paper from timber) or have inherent value (e.g., a scenic vista). A renewable natural resource is one that can be restored if lost or decreased and/or can be improved.

r. Scoping

Scoping is the process which identifies the significant and insignificant issues (C-2u) of an action requiring an EIS (C-7c), i.e., the process to determine the scope of the material presented in an EIS. While scoping is required to prepare an EIS, it is also useful for identifying the significant issues to be examined during any environmental assessment (C-7b). Techniques to accomplish scoping can vary, but the minimum requirement is a formal meeting of all identifiable agencies, groups, and persons who may be interested in or affected by a proposed action (C-3i). During this meeting, any actions similar to the one being examined are identified and the schedule, including page and time limits, for preparing the EIS is established. Scoping meeting participants include all parties involved in the action. Therefore, the meeting is also used to allocate assignments for the different agencies and interdisciplinary team members (C-2h) who will be preparing the EIS. Any additional team members who may be required can also be identified during the scoping process.

s. Tiering

In certain instances, proposed actions may be a part of a larger program or a step in the sequence of a larger plan. To eliminate repetition and duplication and to reduce paperwork, the CEQ regulations allow tiering of information contained in earlier or broader-scope EISs (C-7c). In other words, if certain portions of the environmental impact analysis information for a proposed action (C-3i) are contained in a larger, broader-scope EIS or in an EIS that describes the earlier stages of an overall program, then full discussion of this information in the EIS being prepared is not necessary. EIS preparers (C-4g) need only summarize this information and/or reference the earlier document. This allows the current document to focus on issues relevant to the smaller action. However, care must be taken to insure that site-specific issues which have not been addressed in earlier documents are covered adequately.

t. Sensitive Areas

Sensitive areas are land areas or resources that are culturally or ecologically important. Generally, land-related sensitive areas are the same as areas of critical environmental concern (C-2b). Other sensitive areas which may or may not be land- or ecologically-related, but which are certainly culturally-related, are unemployment, business income, fire protection rating, educational institutions, etc. Normally, an environmental assessment (C-7b) should be performed for any action having the potential to affect a sensitive area adversely.

u. Significant Issues

These are actions or impacts which should normally be addressed in any environmental documentation (C-7) associated with a proposed action (C-3i). Determining the relative significance of an issue requires an understanding of both the context and the intensity of the action or impact. In terms of context, the significance of an issue can vary with the action's setting. Intensity refers to the severity of impact. Several considerations must be kept in mind when evaluating intensity as it relates to significance. Most of these considerations are specifically addressed in 40 CFR, Part 1508.27. Most significant issues associated with actions requiring an EIS should be identified through the scoping process (C-2r).

C-3. Types of Actions

a. Alternative Action

Federal agencies are required to develop, study, describe, and seriously consider all reasonable alternative actions. Reasonable alternative actions are those which are both feasible and can meet the planning and development objectives. The alternative actions examined can include actions which are not within the lead agency's (C-4e) scope of responsibility, and must include a "no action" alternative. An EIS shall discuss the range of alternative actions considered, present alternatives in a comparable form, and describe why certain alternatives may not have been chosen over the proposed action (C-3i).

b. Categorical Exclusion

A categorical exclusion is an action determined (1) to have either minimal or no individual cumulative effect on environmental quality, (2) to cause no environmentally controversial change to existing environmental conditions, or (3) to be very similar to an action previously examined and determined to have minimal or no cumulative effect and cause no environmentally controversial change. A categorical exclusion is an action for which an EA or EIS (C-7b and C-7c) is not normally required except under extraordinary circumstances (C-3f). The Assistant Chief of Engineers (DAEN-ZCE), HQDA, maintains a list of categorical exclusions. The purpose of the list is to reduce paperwork and delay and to eliminate preparation of unnecessary EAs/EISs.

c. Classified Action

Classified actions are actions specifically authorized to be kept secret in the interest of national defense or foreign policy. However, a classified action is not exempt from appropriate environmental evaluation. Classified and unclassified materials should be separated and all unclassified material processed as routinely as possible. Public dissemination of environmental documents containing classified information is subject to the provisions of AR 380-5.

d. Emergency Action

Emergency actions are those which must be taken immediately to promote the national defense or security and/or to protect human life or property. In the event of an emergency action, the procedural and provisional requirements (C-2n and C-2o) of CEQ and Army environmental evaluation regulations need not be observed. However, if the action will result in significant environmental impact, the Department of the Army staff proponent (C-4h) must notify the Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics [ASD(MRA&L)], who will consult with CEQ. This consultation is intended to produce alternative arrangements or modify requirements to control the action's immediate impacts.

e. Exempt by Law

Certain actions are exempt, by law, from CEQ and Army environmental evaluation requirements. The law must apply to DOD and/or DA mission and operations, and must prohibit, exempt, or make compliance with NEPA and environmental evaluation regulation impossible. Such actions are uncommon, and an action's (C-3i) applicability to this category is determined through consultation with the Judge Advocate Legal Service Office and with concurrence by DAEN-ZCE.

f. Extraordinary Circumstances

Under extraordinary circumstances, exclusions (C-3b) may require an EA or EIS. Extraordinary circumstances are either special tasks associated with an action which may affect the human environment, or unique environmental conditions which may be affected by an action that is normally categorically excluded. Extraordinary circumstances include: (1) actions of greater than normal size and scope for a particular category of action, (2) the potential

to degrade already poor environmental conditions or areas not significantly modified from their natural condition, (3) employment of unproven technology, (4) the presence of protected resources, (5) the use of hazardous or toxic substances which may come in contact with the environment, and (6) actions affecting areas of critical environmental concern (C-2b).

g. Programmatic

Programmatic actions are broad-based Federal actions, such as new agency programs or regulations, which are related to or will affect an agency's mission. DA agencies are encouraged to perform environmental analysis and to review major programmatic actions; this will eliminate repetitive discussions of issues when site-specific analysis is required at the project level. To eliminate repetition, broad, programmatic EA or EIS documents are prepared for the overall action. In subsequent analysis of site-specific actions that are a part of an overall action, major issues related to the programmatic action need only be summarized and the appropriate programmatic document(s) referenced.

h. Proposals for Legislation

Proposals for legislation are proposals for legislative action by Congress, but do not include requests for appropriations. With certain exceptions, the NEPA process for legislative proposals shall conform to the requirement of CEQ and Army regulations and shall be integrated with the legislative process of the Congress. For guidance regarding preparation of environmental documents for legislative proposals, refer to 40 CFR 1506.8.

i. Proposed Action

The proposed action is action recommended by the proponent (C-4h) to solve a problem or take advantage of an opportunity for development or environmental protection. The proposed action should be the best choice among reasonable alternative actions (C-3a), allowing for environmental considerations (C-2d). The choice of the recommended plan should be based on use of the NEPA process (C-2l) as a pre-decisional consideration (C-2m).

C-4. Participants in the NEPA Process

a. Affected Public

CEQ and Army regulations stress the need to include the public in planning and decision-making, i.e., there are requirements for scoping (C-2t) and public involvement (C-5). "Public" means either the people as a whole or a group of people having common interests or characteristics (population segments). For environmental analysis and assessment purposes, "public" requires even further definition (see also C-4d, e, f, and i). The affected public can be defined as those members of the people as a whole who might be affected by a proposed action. This includes people located in and around a project area and those for which action is being proposed and/or at which an action is being aimed.

b. Cooperating Agency

A cooperating agency can be any Federal agency, other than the lead agency (C-4e), which has jurisdiction by law over or special expertise with respect to any environmental impact or issue resulting from alternative actions or the proposed action. Cooperating agency status can be established at the request of the lead agency or as a result of a request made to the lead agency. Cooperating agencies should participate in the NEPA process, including scoping, at the earliest stage possible. Upon request of the lead agency, they develop information and prepare certain portions of environmental documents and make available any staff support. They normally use their own funds for this purpose. State and local agencies with appropriate qualifications may become cooperating agencies by agreement with the lead agency.

c. Interested Public

(See also C-4a, d, f and i.) The interested public are either members of the people as a whole or of a population segment (organized or unorganized) who might be expected to express an opinion concerning alternative or proposed actions and voluntarily participate in the planning process. Generally, the interested public can be identified as those who showed interest in similar actions or proposals. For actions requiring an EIS (C-7c), additional interested public can normally be identified from responses to a Notice of Intent (C-7e) and through the preliminary scoping phases (C-2r).

d. Interest Group

(See also C-4a, c, f, and i.) An interest group is generally defined as a group of people having common, generally specific interests. Interest groups, which are part of the interested public, can be organized or unorganized. However, interest groups are generally organized, having membership rolls, officials, and specifically stated goals of local and/or national scope.

e. Lead Agency

The lead agency has supervisory responsibility for preparing an EIS (C-7c) if one is necessary. A lead agency will be identified if one or more Federal or DA agencies proposes or is involved in the same action, or is involved in a group of actions related by function and location. Lead agencies are chosen by agreement of all agencies involved or by CEQ if an agreement cannot be reached. If the only agencies involved are DA agencies, the Chief of Engineers assigns lead agency responsibility. Federal, State, and local agencies may act as joint lead agencies. Generally, the lead agency will be the agency with the greatest magnitude, duration, and sequence of involvement in an action, expertise in the action's environmental effects, and/or project approval/disapproval authority.

f. Organized Public

(See also C-4a, c, d, and i.) An organized public are the members of a group of people having common interests or characteristics. An organized public can be part of both the affected and interested public but is almost always part of the interested public. Interest groups are an organized public, especially those with membership rolls and officials. However, an

organized public may also be a group that is not as highly structured, but does have clearly identifiable leaders, e.g., farmers, homeowners, small business owners. An organized public generally has specific explicit or implicit goals.

g. Preparer

Preparers are the personnel, from a variety of disciplines, who actually write environmental documentation. They are responsible for transforming project descriptions, technical information, etc., into clear, concise statements. They are also responsible for the accuracy of documents. Preparers may or may not be the persons who actually perform environmental assessment or evaluation.

h. Proponent

The nature and scope of the action determines the proponent. A proponent can be at almost all levels of the Army hierarchy. A proponent is not necessarily (and should not be considered as) the person or staff who recognized the need or opportunity for an action, nor the preparer(s) of environmental documentation. Generally, the proponent of an action is the lowest-level person, staff, or agency having official authority to propose an action and decide what should be the recommended action. A proponent will also usually have implementation responsibility.

i. Unorganized Public

(See also C-4a, c, d, and f.) The unorganized public can be part of the affected and interested public. The unorganized public may contain recognizable population segments, e.g., farmers or homeowners. It will usually be part of the affected public but will not be represented by an interest group or organized public. Generally, the unorganized public will have a few members who can be categorized with the interested public; however, the goals of these members may or may not be representative of the entire unorganized public.

C-5. Public Involvement

a. Public Hearing

Public hearings are formal, structured meetings held to give all types and segments of the public an opportunity to express their views about an action. Official transcripts record all that is said; statements are considered testimony. Hearings are generally run according to specified rules of order. CEQ regulations require that hearings on proposed actions be held when appropriate and in accordance with the statutory requirements of the proponent agency. Criteria used to determine the appropriateness of a hearing are substantial environmental controversy (C-6e) or substantial interest in holding a hearing. Hearings should also be held if they are requested by a lead or cooperating agency and need is documented. Generally, hearings are held only after a draft EIS has been issued and the public has had sufficient time to review it.

b. Public Interaction

Public interaction is one of the primary concepts of public involvement. As such, the term applies to one of the principal phases of the scoping process or procedure (C-3r). The concept of public interaction is one of mutual or reciprocal influence, i.e., public input should be of the same intensity as scientific and technical input, and public views and interest should receive equal consideration. As a phase in scoping, public interaction helps identify the issues to be addressed in an EIS. To accomplish this, all identifiable public, especially the affected public (see C-4a, c, d, f, and i) is invited to participate in scoping meetings. Other participants are technical representatives of the proponent, contractor representatives, and environmental experts. Prior to this meeting, which is generally held after a Notice of Intent (C-7e) has been issued, all participants should be given adequate time to review information about alternative actions and about environmental conditions surrounding the actions. This meeting should be a working meeting or workshop, rather than a hearing. Results of this meeting are used to develop the scope of the EIS.

c. Public Involvement

Public involvement is the general concept of consulting with and obtaining or considering views of interested and affected public and agencies. Public involvement occurs at various levels of intensity, depending on the type and magnitude of action and the environmental effects. Public involvement procedures include, but are not limited to, disseminating information, coordination, requesting comment and participation, holding workshops, meetings, and hearings, and responding to comments. For actions requiring an EA or EIS, considerable effort should be devoted to public involvement; in fact, this is required during the scoping process as well as the review of the DEIS.

d. Public Meeting

Public meetings are large gatherings of all types of public (C-4a, c, d, f, and i). They are not intended to be as formal or structured as public hearings (C-5a). Public meetings are useful for disseminating information and obtaining the views of affected and interested publics and agencies. To be truly effective, they should not be used to formulate conclusions or findings; this requires a smaller group. Public meetings can be held at any time during the planning process and are generally a very effective way to obtain public involvement and participation (C-5e). However, they are not the same as, and should not be confused with, scoping meetings which identify significant issues and the scope of an EIS.

e. Public Participation

Public participation, in which the public actually participates in the planning and decision process, is similar to public interaction (C-5b). Participation is required to obtain public interaction. In its simplest form, participation can be correspondence providing comments on draft documents. Participation is any documentable public input into the planning, evaluation, and decision process.

C-6. Types of Environmental Impact

a. Commitment of Natural Resources

In the context of environmental analysis, a commitment of natural resources is the use, depletion, or alteration of a resource to a point that it no longer exists or is decreased in value. This will generally always occur if a resource is depletable (C-2c) and sometimes if it is renewable (C-2q). For example, paving over or otherwise altering the soil profile of prime agricultural land is a commitment of this resource. While the land may be tillable at some future time, its value as prime agricultural land is diminished, since it has been committed to another use. If an action commits or significantly affects (C-6k) a natural resource, an EIS is normally required.

b. Cumulative Effect

A cumulative effect is the total environmental effect (C-6f) resulting from the impact of a proposed action together with the impacts of past, present, and future actions. Identifying cumulative effects requires considering the effects of all reasonably foreseeable actions in and around a project area, regardless of the person or agency (Federal, State, or local) undertaking the actions. The individual environmental impacts of one action may be minor, but when added to the impacts of other actions, there may be a significant cumulative effect. An EA or EIS must be prepared if an action, even one which might normally have been categorically excluded (C-3b), has the potential to produce a cumulative effect. In an EA or EIS, the identified cumulative effects can support and enhance discussions of the action's relationship to short-term uses of the human environment and the maintenance and enhancement of long-term productivity. AR 200-2 and NEPA require a discussion of this type.

c. Degradation

In terms of environmental effect, degradation means lowering the productivity or value of a resource at its location. If an action has the potential to produce measurable degradation of a resource, it will require an EA or EIS. Measurable degradation is a reduction in productivity or value that can be expressed in terms of units of measure and/or is considered significant (C-6k), e.g., the loss of a certain number of areas of harvestable timber in an area planned for harvest, or increased and continuous amounts of sediment entering a stream considered to have generally good water quality.

d. Environmental Consequence

Environmental consequence means the sum total of both the beneficial and adverse environmental effects (C-6f) resulting from implementation of alternative actions. Environmental consequences are individual and distinct effects and types of effects. As such, identification and comparison of environmental consequences is the focus of environmental analysis. The major section or chapter of an EA or EIS should outline and discuss possible environmental consequences, including an examination of the following: direct effects and their significance (C-6f and k); indirect effects and their significance (C-6i); conflicts with land use plans, policies, and controls; effects which

cannot be avoided, the relationship between short-term uses of the human environment, and maintenance and enhancement of long-term productivity; short-term versus long-term environmental gains and losses; energy requirements and conservation; natural and depletable resource requirements and conservation; effects on urban quality, historic and cultural resources, and the design of the built environment; and impact mitigation.

e. Environmental Controversy

Environmental controversy over a proposed action may develop when there are opposing views concerning the nature, magnitude, and significance (C-6k) of an environmental effect. Generally, controversy develops when an action actually conflicts or appears to conflict with the goals of an interested public (C-4c) or interest group (C-4d). The intent of public involvement (C-5c) and the scoping process (C-2r) is to reduce environmental controversy by identifying the key issues to be addressed in environmental documentation and to involve the public in developing alternative actions.

f. Environmental Effect

An environmental effect is a natural or environmental resource condition resulting from or caused by an action. An effect can be determined by projecting the future condition of a resource with and without implementation of an action. The difference between these conditions is the effect of the action. Environmental effects can be beneficial or adverse. Beneficial effects are conditions resulting from an action which improve the previous conditions, while adverse effects are conditions which would cause an inferior condition. Environmental effects can be short- or long-term, minimal or insignificant, direct or indirect, etc.

g. Environmental Impact

For purposes of this report and environmental analysis and evaluation in general, the terms "environmental impact" and "environmental effect" (C-6f) are synonymous.

h. Environmental Risk

Risks are possible adverse consequences that might result from an action. Environmental risks are the possibility of results or potential environmental effects (C-6f and j) which would cause the loss of a resource, or expose humans to a hazard or danger (e.g., possible loss of a rare or endangered species, or introduction of toxic wastes into the human environment). If a proposed action or alternative has the potential to result in or is considered to have unique or unknown risks, an EIS must be prepared.

i. Indirect Effect

Indirect effects are environmental effects (C-6f) that result from an action, but occur later, rather than during or immediately after the action. They may also occur in a location removed from the action. While sometimes difficult to identify, indirect effects can be foreseen. The most obvious of these affect socioeconomic elements (e.g., a reduction in force may decrease service-related employment in a local community). Indirect environmental

effects can occur if a proposed action requires or induces additional action by the proponent or another agency. An EIS is normally required if indirect effects are likely to be significant. Indirect effects should be discussed under the "environmental consequences" section of an EA or EIS.

j. Potential Effect

A potential effect is when a proposed action (primary, secondary, or cumulative) or the reaction to it may have untested or unknown consequences on the affected environment.

k. Significant Effect

An environmental effect may be considered significant when both its context and intensity are verified. Context means that the significance varies with the location of the proposed action (society as a whole, the affected region, and the locality). For site-specific action, a significant effect would usually depend on the effects on the local area rather than on the country or world. Furthermore, the effects may be considered significant when the actions, either solely or in combination with another agency, affect areas of critical environmental concern (e.g., endangered species, archaeological resources), or threaten a violation of Federal, State, or local environmental regulations.

APPENDIX D
CEQ's NEPA
POINTS OF CONTACT

- (1) *Lau* Regulation Requirements,*
- (2) Education of the Handicapped Programs, [and]
- (3) Expansion of athletic programs for female students.

2. The Director of the PTFP denied the District's Petition for Forgiveness and the District subsequently filed a Petition for Reconsideration in which it realleged the facts stated in the Petition for Forgiveness and alleged two additional circumstances to establish "good cause." In the alternative, the District requested that the Board allow the District to grant the amount of the Federal interest to the Oklahoma Educational Television Authority (OETA). On February 20, 1980, the Board met to consider the District's Petition for Reconsideration. At that time we were aware that the District desired to make an additional proposal, but we had not received any formal documentation. Consequently, we took no final action at that meeting and set March 14, 1980, as the final date by which the District would be allowed to file any additional materials. On March 14, 1980, the District filed an Amended Petition for Reconsideration in which it suggested that forgiveness be granted so that it could use the funds to purchase the equipment necessary to originate programming for a public channel on a local cable television system.

3. We note that neither the additional circumstances alleged in its Petition for Reconsideration, the proposed transfer to OETA, nor the District's proposed operation of a public channel on a cable television system have ever been presented to the PTFP staff for an initial decision. Thus, the staff has never made a determination as to whether any of these additional grounds constitute "good cause" for the granting of forgiveness. Therefore, we are remanding the matter to the staff for a decision.

Dated: August 20, 1980.

*Although the District's petition did not give the citation for the *Lau* decision or explain its holding, we believe that the decision referred to is *Lau v. Nichols*, 414 U.S. 563 (1974). There the Supreme Court held that the failure of a school district to establish a program to rectify the language problem of non-English speaking students violated the equal protection clause of the Fourteenth Amendment. The District estimated that the "costs for the implementation of the *Lau* decision alone for the 1979-80 school year is \$410,000."

*Those additional circumstances are:

- (1) The District's "urgent need to expand its video tape capabilities of its television media system for disseminating information," and
- (2) The District's "additional programming needs."

Grant Appeals Board of the Public Telecommunications Facilities Program.
William Fishman,
Chairman.
Forrest Chisman,
Member.
Edward Zimmerman,
Member.

[FR Doc. 80-38311 Filed 8-27-80; 8:45 am]
 BILLING CODE 3610-00-M

COUNCIL ON ENVIRONMENTAL QUALITY

National Environmental Policy Act (NEPA); Implementation Procedures, Appendix I and Appendix II

AGENCY: Council on Environmental Quality, Executive Office of the President.

ACTION: Appendix I and Appendix II to the Council on Environmental Quality's regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA).

SUMMARY: Appendix I contains federal agency NEPA contacts. Appendix II lists federal agencies with jurisdiction by law or special expertise on environmental quality issues. These appendices are intended to improve public participation and facilitate agency compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality's NEPA Regulations.

SUPPLEMENTARY INFORMATION: Appendix I revises and replaces Appendix III to the Council's Guidelines on the preparation of Environmental Impact Statements (38 FR 20550, August 1, 1973) which were replaced by the Council's NEPA regulations on July 30, 1979. Appendix II revises and replaces Appendix II to the Guidelines. For further information on the content and organization of Appendix II refer to its introductory paragraphs. Appendix II was published in the *Federal Register* (44 FR 60353, October 19, 1979) for public review and comment. As a result of public and agency review and comment, a number of changes were made and incorporated into the current list.

FOR INFORMATION CONTACT:
 C. Foster Knight, Acting General Counsel, Council on Environmental Quality, 722 Jackson Place NW., Washington, D.C. 20006, (202) 395-5750.

Appendix I—Federal Agency—National Environmental Policy Act (NEPA) Contacts

ACTION

Office of Policy and Planning, ACTION,
 Room M-606, 806 Connecticut Avenue

NW., Washington, D.C. 20525, (202) 254-6880.

Advisory Council on Historic Preservation
 Office of Cultural Resource Preservation,
 Advisory Council on Historic Preservation,
 Suite 536, 1522 K Street NW., Washington,
 D.C. 20005; (202) 254-3974.

Department of Agriculture

Director, Office of Environmental Quality,
 Department of Agriculture, 14th and
 Independence Avenue SW., Washington,
 D.C. 20250, (202) 447-3885.

Department of Agriculture Component Agencies

Animal and Plant Health Inspection
 Service: Office of the Administrator,
 Animal and Plant Health Inspection
 Service, Room 2135 South Agriculture
 Bldg., Washington, D.C. 20250, (202) 447-2290.

Agriculture Stabilization and Conservation
 Service: Director, Impact Analysis and
 Public Participation Staff, Agriculture
 Stabilization and Conservation Service,
 Room 3757 South Agriculture Bldg.,
 Washington, D.C. 20250, (202) 447-7865.

Farmers Home Administration: Director,
 Environmental and Technology Staff,
 Farmers Home Administration, Room
 5309 South Agriculture Bldg.,
 Washington, D.C. 20250, (202) 447-3394.

Food Safety and Quality Service: Food
 Safety and Quality Service, Room 611
 Annex Bldg., Washington, D.C. 20250,
 (202) 447-7745.

Forest Service: Environmental Coordinator,
 Forest Service Room 3210 South
 Agriculture Bldg., P.O. Box 2417,
 Department of Agriculture, Washington,
 D.C. 20250, (202) 447-4708.

Rural Electrification Administration:
 Environmental and Energy Requirements
 Division; Rural Electrification
 Administration, Room 3860 South
 Agriculture Bldg., Department of
 Agriculture, Washington, D.C. 20250,
 (202) 447-5755.

Science and Education Administration:
 Science and Education Administration,
 Room 20, Bldg. 005-BARC-W, Beltsville,
 MD 20705, (301) 344-2198.

Soil Conservation Service: Environmental
 Services Division, Soil Conservation
 Service, Room 6105 South Agriculture
 Bldg., P.O. Box 2890, Washington, D.C.
 20013, (202) 447-3839.

Appalachian Regional Council

Division of Energy, Environment and Natural
 Resources, Appalachian Regional
 Council, 1686 Connecticut Avenue NW.,
 Washington, D.C. 20235, (202) 673-7861.

Arms Control Disarmament Agency

Office of the General Counsel, Arms Control
 Disarmament Agency, Room 5534, 320 21st
 Street NW., Washington, D.C. 20451, (202)
 632-0760.

Central Intelligence Agency

Director of Logistics, Central Intelligence
 Agency, Room 2C02 Page Bldg., 803 Follin
 Lane, Vienna, VA 22180, (703) 281-8200.

Civil Aeronautics Board

Office of the General Counsel, Civil Aeronautics Board, Room 909 Universal Bldg., 1825 Connecticut Avenue NW., Washington, D.C. 20428, (202) 673-5858.

Department of Commerce

Office of Environmental Affairs, Department of Commerce, Room 3425 Commerce Bldg., Washington, D.C. 20230, (202) 377-4335.

Department of Commerce Component Agencies

Economic Development Administration: Special Assistant for the Environment, Economic Development Administration, Room 7217 Main Commerce Bldg., Washington, D.C. 20230, (202) 377-4208.

Maritime Administration: Division of Environmental Activities, Maritime Administration, Department of Commerce, Washington, D.C. 20230, (202) 377-5136.

National Oceanic and Atmospheric Administration: Office of Ecology and Conservation, National Oceanic and Atmospheric Administration, Department of Commerce, Room 5811 Commerce Bldg., Washington, D.C. 20230, (202) 377-5181.

Community Service Administration

Office of Public Affairs, Community Services Administration, Room 540, 1200 19th Street NW., Washington, D.C. 20506, (202) 254-5150.

Consumer Product Safety Commission

Office of the Executive Director, Consumer Product Safety Commission, Room 528, 1111 18th Street NW., Washington, D.C. 20207, (202) 634-7770.

Department of Defense

Office of Assistant Secretary of Defense (Energy, Environment, and Safety), Department of the Defense, Room 3D825 The Pentagon, Washington, D.C. 20301, (202) 695-7620.

Department of Defense Component Agencies

Department of the Air Force: Deputy for Environment and Safety, Office of the Secretary, Department of the Air Force, Room 4C885 The Pentagon, Washington, D.C. 20301, (202) 697-9297.

Department of the Army: Army Environmental Office, H2DA(DAEN-2CE), Department of the Army, Room 1E876 The Pentagon, Washington, D.C. 20301, (202) 694-3434.

Corps of Engineers: Executive Director of Civil Works, Office of the Chief of Engineers, Corps of Engineers, Washington, D.C. 20314, (202) 272-0101.

Defense Logistics Agency: Defense Logistics Agency, Headquarters, Cameron Station, Alexandria, VA 22314, (703) 274-6967.

Department of the Navy: Environmental Protection Office, Office of the Chief of Naval Operations, Department of the Navy, Room BC 786, The Pentagon, Washington, D.C. 20350, (202) 695-3639/69.

Department of Energy

NEPA Affairs Division, Department of Energy, Room 4C084, 1000 Independence Avenue SW., Washington, D.C. 20585, (202) 252-4800.

Department of Energy Component Agencies

Federal Energy Regulatory Commission: Advisor on Environmental Affairs, Federal Energy Regulatory Commission, Room 3347, 825 North Capitol Street NE., Washington, D.C. 20460, (202) 357-8228.

Environmental Protection Agency

Director, Office of Environmental Review, Environmental Protection Agency, Room 2119 Mall, 401 M Street SW., Washington, D.C. 20460, (202) 755-0777.

Export-Import Bank of the United States

Office of General Counsel, Export-Import Bank of the United States, Room 947 Lafayette Bldg., 811 Vermont Avenue NW., Washington, D.C. 20571, (202) 586-8334.

Farm Credit Administration

Governor's Office, Farm Credit Administration, 490 L'Enfant Plaza East SW., Washington, D.C. 20587 (202) 755-2130.

Federal Communications Commission

Office of General Counsel, Federal Communications Commission, Room 616, 1919 M Street NW., Washington, D.C. 20554, (202) 632-6990.

Federal Deposit Insurance Corporation

Office of the Comptroller, Federal Deposit Insurance Corporation, Room 4006A, 550 Seventeenth Street NW., Washington, D.C. 20429, (202) 389-4481.

Federal Home Loan Bank Board

Office of General Counsel, Federal Home Loan Bank Board, Third Floor, East Wing, 1700 G Street NW., Washington, D.C. 20552 (202) 377-8404.

Federal Emergency Management Agency

Office of General Counsel, Federal Emergency Management Agency, 1725 I Street NW., Washington, D.C. 20472 (202) 634-4100.

Federal Reserve System

Secretary of the Board of Governors of the Federal Reserve, Federal Reserve System, 20th and Constitution Avenue NW., Washington, D.C. 20561, (202) 452-3252.

Federal Savings and Loan Insurance Corporation

Federal Savings and Loan Insurance Corp., 1700 G Street NW., Washington, D.C. 20552, (202) 377-8000.

Federal Trade Commission

Office of General Counsel, Federal Trade Commission, Room 588, Pennsylvania Avenue at 6th St. NW., Washington, D.C. 20580, (202) 523-1928.

General Services Administration

Office of Space Management, General Services Administration, Room 2521, 18th and F Streets NW., Washington, D.C. 20406, (202) 566-1416.

Department of Health and Human Services

Office of Environmental Affairs, Office of the Assistant Secretary for Administration, Management and Budget, Department of Health, and Human Services, Room 527F Humphrey Bldg., 200 Independence Avenue SW., Washington, D.C. 20201, (202) 472-9740.

Department of Health and Human Services Component Agencies

Food and Drug Administration: Environmental Impact Staff HFV-2/ HFV-9, Food and Drug Administration, 5800 Fishers Lane, Rockville, MD 20857, (301) 443-4501.

Department of Housing and Urban Development

Office of Environmental Quality, Department of Housing and Urban Development, Room 7256 HUD Building, 451 Seventh Street SW., Washington, D.C. 20410, (202) 755-6308.

Department of the Interior

Office of Environmental Project Review, Department of the Interior, Room 4526 Interior Bldg., C Street, between 18th and 19th NW., Washington, D.C. 20240, (202) 343-3891.

Department of the Interior Component Agencies

Bureau of Land Management: Office of Planning, Inventory and Environmental Coordination, Bureau of Land Management, Department of the Interior, 18th and C Sts. NW., Washington, D.C. 20240, (202) 343-7417.

Bureau of Indian Affairs: Bureau of Indian Affairs, Room 4525 Main Interior Bldg., C Street, between 18th and 19th NW., Washington, D.C. 20240, (202) 343-9468.

Bureau of Mines: Special Assistant for Environmental Assessment, Bureau of Mines, Department of the Interior, Room 1005 Columbia Plaza Bldg., 2401 E Street NW., Washington, D.C. 20506, (202) 634-1313.

Water and Power Resources Service: Office of Environmental Affairs, Water and Power Resource Service, Department of the Interior, Room 7622 Interior Bldg., C Street, between 18th and 19th NW., Washington, D.C. 20240, (202) 343-5287.

Geological Survey: Environmental Impact Analysis Program, Geological Survey, Department of the Interior, 760 National Center, Reston, VA 22092, (703) 860-7455, 7456, or 7457.

Fish and Wildlife Service: Office of Environmental Coordination, Fish and Wildlife Service, Department of the Interior, 18th and C Streets, NW., Washington, D.C. 20240, (202) 343-8888.

Heritage Conservation and Recreation Service: Division of Environmental Compliance and Review, Heritage Conservation and Recreation Service, Room 303 Pension Bldg., 440 G Street NW., Washington, D.C. 20243, (202) 343-5711.

National Park Service: Environmental Compliance Office, National Park Service, Department of the Interior,

Room 1210 Main Interior Bldg., C Street, between 18th and 19th NW., Washington, D.C. 20240, (202) 343-2163.

Office of Surface Mining Control and Reclamation: Branch of Environmental Analysis, Office of Surface Mining Control and Reclamation, Department of the Interior, Room 130 South Bldg., 1951 Constitution Ave. NW., Washington, D.C. 20240, (202) 343-5287.

International Boundary and Water Commission, U.S. Section

International Boundary and Water Commission, (U.S. Section), IBW Bldg., 4110 Rio Bravo, El Paso, Texas 79902, (FTS) 572-7393.

International Communication Agency

Office of General Counsel, International Communication Agency, Room 917, 1750 Pennsylvania Avenue NW., Washington, D.C. 20547, (202) 724-9054.

Interstate Commerce Commission

Section of Energy and Environment, Interstate Commerce Commission, Room 3371, 12th and Constitution Avenue NW., Washington, D.C. 20423, (202) 275-7658.

Department of Justice

General Litigation Section, Land and Natural Resources Division, Department of Justice, Room 2127 Justice Bldg., 9th and Pennsylvania Ave. NW., Washington, D.C. 20530, (202) 633-2704.

Department of Justice Component Agencies

Office of Justice, Assistance, Research and Statistics (formerly LEAA): Environmental Coordinator, Room 1154, 693 Indiana Avenue NW., Washington, D.C. 20531, (202) 724-7658.

Bureau of Prisons: Office of Facilities Development and Operations, Bureau of Prisons, Department of Justice, 320 1st St. NW., Washington, D.C. 20534, (202) 724-3234.

Drug Enforcement Administration: Office of Science and Technology, Drug Enforcement Administration, Department of Justice, 1405 I St. NW., Washington, D.C. 20537, (202) 633-1211.

Immigration and Naturalization Service: Facilities and Engineering Branch, Immigration and Naturalization Service, Department of Justice, 425 I St. NW., Washington, D.C. 20536.

National Institute of Justice: Environmental Coordinator, National Institute of Justice, Department of Justice, Washington, D.C. 20530.

Department of Labor

Office of Health and Disability, Department of Labor, Room S-2121, 200 Constitution Avenue NW., Washington, D.C. 20210, (202) 523-6094.

Department of Labor Component Agencies

Occupational Safety and Health Administration: Occupational Safety and Health Administration, Room N-3651 Labor Bldg., 200 Constitution Avenue NW., Washington, D.C. 20210, (202) 523-7058.

Mine Safety and Health Administration: Office of Standards, Mine Safety and

Health Administration, 4015 Wilson Blvd., Arlington, VA 22032, (703) 235-1910.

Marine Mammal Commission

General Counsel, Marine Mammal Commission, Room 307, 1625 Eye Street NW., Washington, D.C. 20006, (202) 653-6237.

National Academy of Sciences

National Academy of Sciences, Room JH 804, 2101 Constitution Avenue NW., Washington, D.C. 20418, (202) 389-8884.

National Academy of Engineering

National Academy of Engineering, Room JH 804, 2101 Constitution Avenue NW., Washington, D.C. 20418, (202) 389-8884.

National Aeronautics and Space Administration

Management Support Office (External Relations), National Aeronautics and Space Administration, Code LB-4, Room 6133, 400 Maryland Avenue, SW., Washington, D.C. 20548, (202) 755-8383.

National Capital Planning Commission

Environment/Energy Branch, National Capital Planning Commission, Room 1040, 1325 G Street NW., Washington, D.C. 20570, (202) 724-0180.

National Credit Union Administration

Office of General Counsel, National Credit Union Administration, Room 4202, 2025 M Street NW., Washington, D.C. 20456, (202) 357-1030.

National Science Foundation

Assistant Director, Astronomical, Atmospheric, Earth and Ocean Sciences, National Science Foundation, 1800 G Street NW., Washington, D.C. 20550, (202) 632-7300.

Nuclear Regulatory Commission

Division of Site Safety and Environmental Analysis, Nuclear Regulatory Commission, Room P518A, Phillips Bldg., 7920 Norfolk Avenue, Bethesda, MD 20014, (301) 492-8448.

Overseas Private Investment Corporation

General Counsel's Office, Overseas Private Investment Corporation, Room 725, 1129 Twentieth Street NW., Washington, D.C. 20527, (202) 632-1798.

Pennsylvania Avenue Development Corporation

Office of Long Range Planning, Pennsylvania Avenue Development Corporation, Suite 1148, 425 13th Street NW., Washington, D.C. 20004, (202) 566-1218.

United States Postal Service

Director, Office of Program Planning, United States Postal Service, Room 8915, 475 L'Enfant Plaza SW., Washington, D.C. 20260, (202) 245-4304.

Securities and Exchange Commission

Office of General Counsel, Securities and Exchange Commission, Room 2327 L, 500 North Capitol Street, Washington, D.C. 20549, (202) 523-2350.

Small Business Administration

Office of Financing, Small Business Administration, Room 800, 1441 L Street NW., Washington, D.C. 20418, (202) 653-6896.

Smithsonian Institution

General Counsel, Smithsonian Institution, 1000 Jefferson Drive SW., Washington, D.C. 20560, (202) 628-4422.

Department of State

Office of Environmental Affairs, Department of State, Room 7820 State Department Bldg., 21st and C Streets NW., Washington, D.C. 20520, (202) 632-9288.

Department of State Component Agencies

Agency for International Development: Agency for International Development, Room 3245, State Department Bldg., 2201 C Street NW., Washington, D.C. 20523, (202) 632-1038.

Tennessee Valley Authority

Environmental Quality Staff, Tennessee Valley Authority, Forestry Building, Norris, Tennessee 37828, (615) 494-9800/ (FTS) 856-6450.

Department of Transportation

Office of Environment and Safety, Department of Transportation, Room 9422 Nassif Bldg., 400 Seventh Street SW., Washington, D.C. 20590, (202) 428-4357.

Department of Transportation Component Agencies

United States Coast Guard: Office of Marine Environment and Systems, G-W5/73, U.S. Coast Guard Headquarters, 2100 2d St. SW., Washington, D.C. 20593, (202) 426-2010.

Federal Aviation Administration: Office of Environment and Energy, Federal Aviation Administration, Room 939 FOB-10A, 800 Independence Avenue SW., Washington, D.C. 20591, (202) 428-8406.

Federal Highway Administration: Office of Environmental Policy, Federal Highway Administration, Room 322 Nassif Bldg., 400 Seventh Street SW., Washington, D.C. 20590, (202) 428-0106.

Federal Railroad Administration: Office of Policy and Program Development, Federal Railroad Administration, Room 5100 Nassif Bldg., 400 Seventh Street SW., Washington, D.C. 20590, (202) 428-9684.

National Highway Traffic Safety Administration: Office of Chief Counsel, National Highway Traffic Safety Administration, 400 Seventh Street, SW., Washington, D.C. 20590, (202) 428-2992.

St. Lawrence Seaway Development Corp.: Office of Comprehensive Planning, 800 Independence Ave. SW., Washington, D.C. 20591, (202) 428-8755.

Urban Mass Transit Administration: Office of Program Analysis, Urban Mass Transit Administration, Room 9305 Nassif Bldg., 400 Seventh Street, SW., Washington, D.C. 20590, (202) 472-2435.

Department of the Treasury

Department of the Treasury, Room 706
Treasury Bldg., 1331 G Street NW.,
Washington, D.C. 20220, (202) 376-0289.

Veterans Administration

Environmental Affairs Coordinator, Veterans
Administration, Code 004A, 810 Vermont
Avenue NW., Washington, D.C. 20420, (202)
389-2526/2529.

Water Resources Council

Policy Analysis Division, Water Resources
Council, Suite 800, 2120 L Street NW.,
Washington, D.C. 20037, (202) 254-6453.

*Water Resources Council Component
Commissions*

Great Lakes Basin Commission: Office of
the Chairman, Great Lakes Basin
Commission, Post Office Box 999, 2475
Plymouth Road, Ann Arbor, Michigan
48106, (313) 668-2333.

Missouri River Basin Commission: Office
of the Chairman, Missouri River Basin
Commission, 10050 Regency Circle, Suite
403, Omaha, Nebraska 68114, (406) 449-
2876.

New England River Basin Commission:
Office of the Chairman, New England
River Basins Commission, 53 State St.,
First Floor, Boston, Mass. 02109, (617)
223-6244.

Ohio River Basin Commission: Office of
the Chairman, Ohio River Basin
Commission, 36 East 4th St., Suite 208-
220, Cincinnati, Ohio 45202, (513) 684-
3831.

*Pacific Northwest River Basins
Commission:* Office of the Chairman,
Pacific Northwest River Basins
Commission, P.O. Box 908, One
Columbia River, Vancouver, Washington
98660, (206) 694-2581.

Susquehanna River Basin Commission:
Office of the Commissioner,
Susquehanna River Basin Commission,
1100 L St. NW., Room 5113, Washington,
D.C. 20240, (202) 343-4061.

*Upper Mississippi River Basin
Commission:* Office of the Chairman,
Upper Mississippi River Basin
Commission, Federal Office Bldg., Room
510, Fort Snelling, Twin Cities,
Minnesota 55111, (612) 725-4690.

**Appendix II—Federal Agencies and
Federal-State Agencies With Jurisdiction
by Law or Special Expertise on
Environmental Quality Issues¹**

The following list is a compilation of
all federal agencies with jurisdiction by
law or special expertise on
environmental quality issues. Agencies

¹ River Basin Commissions (Delaware, Great
Lakes, Missouri, New England, Ohio, Pacific
Northwest, Susquehanna, Upper Mississippi) and
similar federal-state agencies should be consulted
on actions affecting the environment of their
specific geographic jurisdictions. In all cases where
a proposed action will have significant international
environmental effects, the Department of State
should be consulted and should be sent a copy of
any draft and final impact statement that covers
such action.

with "jurisdiction by law" are defined in
Section 1508.15 of the Council's NEPA
regulations as federal agencies with
authority to approve, deny or finance all
or part of a proposal. Federal regulatory
approval requirements (including
permits and licenses) administered by
agencies with jurisdiction by law are
listed under the appropriate agency and
marked by an asterisk (*).²

"Special expertise" is defined in
Section 1508.26 of the NEPA regulations
as statutory responsibility, agency
mission or related program experience.
The subject of "Special expertise" is
listed in parentheses opposite the
appropriate agency. These designations
are intended to provide examples rather
than to define the limits of an agency's
expertise.

The Council on Environmental Quality
has prepared this list to supplement its
National Environmental Policy Act
(NEPA) regulation which became
effective on July 30, 1979. Both the public
and private sectors and governmental
agencies may use this list as a reference
guide to facilitate their participation in
and compliance with the NEPA process.³
The list will be helpful in the following
ways.

First, the Council on Environmental
Quality's NEPA regulations require the
federal agency having primary
responsibility for preparing an
environmental impact statement (EIS)
under NEPA (the lead agency to
determine whether any other federal
agencies have jurisdiction by law or
special expertise with respect to any
environmental effects involved in a
proposal for legislation or other major
federal action significantly affecting the
human environment. 40 CFR 1501.5(a),
1501.6(a), 1501.7(a). The federal lead
agency must, at the earliest possible
time in the NEPA process, request the
participation of federal cooperating
agencies with jurisdiction by law or
special expertise concerning the
proposal. 40-CFR 1501.6(a), 1501.7(a).
The lead agency and those involved in
the "scoping process" (See 40 CFR
1501.7) may use this list to help
determine which other federal agencies
should be requested to participate as
cooperating agencies in the NEPA
process. The list will also be helpful to
the lead agency in determining which

² Because laws are amended or new laws
enacted, these responsibilities may change and new
ones may be added. The definitive designation of an
agency with jurisdiction by law depends on the law
and not on this index.

³ Section 1507.2 of the regulations requires
agencies to have a person responsible for overall
agency NEPA compliance and most agencies have
an office that exercises NEPA oversight. A list of
federal agency NEPA offices with addresses and
telephone numbers is attached.

agencies should receive copies of the
draft environmental impact statement
for review and comment.

Second, this compilation will prove
useful to those whose activities or
proposed actions require federal
regulatory approvals by facilitating the
identification of those federal agencies
with the authority to issue applicable
permits, licenses or other federal
regulatory approvals.

Third, a major goal of NEPA and the
CEQ regulations is to encourage public
participation in agency decisionmaking.
40 CFR 1500.2(d). Individuals, citizen
groups and state and local governments
who are interested in an environmental
issue may use the list to help identify
those agencies that have jurisdiction by
law over or special expertise in the
subject matter of a proposal. Those
interested may then contact the
potentially involved agencies to obtain
information on the issues and to
participate in the NEPA process.

The list is organized into four broad
categories: pollution control, energy, land
use, and natural resource management.
Because some activities may fall into
more than one of these categories, users
of the list should consult all pertinent
entries.

Finally, since federal legal authorities,
programs and agency responsibilities
change periodically, the Council will
periodically update this list. The public
and agencies are strongly encouraged to
send comments noting changes or
corrections that should be made to the
list. Comments should be addressed to
General Counsel (ATTN: List of
Agencies With Jurisdiction By Law or
Special Expertise) Council on
Environmental Quality, 722 Jackson
Place N.W., Washington, D.C. 20006.

Dated: August 23, 1980.

C. Foster Knight,
Acting General Counsel.

**Appendix II—Federal Agencies and Federal-
State Agencies With Jurisdiction by Law or
Special Expertise on Environmental Quality
Issues***Index**I. Pollution Control*

- A. Air Pollution
- B. Water Pollution
 - (1) Water Quality
 - (2) Pollution of Marine Resources
- C. Solid and Liquid Waste
- D. Noise
- E. Radiation
- F. Hazardous Substances
 - (1) Toxic Materials
 - (2) Food Additives and Contamination of Food
 - (3) Pesticides
- II. Energy
 - A. Electric Power
 - B. Petroleum

C. Natural Gas
 D. Coal and Minerals
 III. Land Use
 A. Land Use Changes, Planning, and Regulation of Land Development
 B. Public Land Management
 C. Coastal Areas
 D. Environmentally Critical Areas
 E. Community Development
 F. Historic, Architectural, and Archeological Preservation
 G. Outdoor Recreation
 IV. Natural Resource Management
 A. Weather Modification
 B. Waterway Regulation and Stream Modification
 C. Soil and Plant Conservation and Hydrology
 D. Fish and Wildlife
 E. Renewable Resources
 F. Energy and Natural Resources Conservation

I. POLLUTION CONTROL

A. Air Pollution

Department of Agriculture

- Forest Service (effects of air pollution on vegetation and visibility and fire smoke management on National Forest Systems lands).
- Clean Air Act, 42 U.S.C. 7470, *et seq.* as amended.
- Rural Electrification Administration (electric power plant emissions).
- Soil Conservation Service (effects of air pollution on vegetation; wind erosion).

Department of Commerce

- National Bureau of Standards (measurements, standards, data and methods).
- National Oceanic and Atmospheric Administration (meteorological and climatological research and monitoring; urban pollution; incorporation of national standards in Coastal Zone Management Plans for management and protection of coastal and marine resources).

Department of Defense

- Department of the Air Force (pollution from military aircraft).
- Department of the Army (exhaust from rotary wing military aircraft).

Department of Energy

- Office of Environment (energy policy, programs, and projects; emissions from energy sources);
- Economic Regulatory Administration.
- Exemptions from prohibitions against burning of natural gas and oil in power plants and major fuel-burning installations. Powerplant and Industrial Fuel Use Act of 1978, 42 U.S.C. 8301; Department of Energy Organization Act, 42 U.S.C. 7101.

Department of Health and Human Services

- Public Health Service: Center for Disease Control (effects of air pollutions on health).
- National Institutes of Health (effects of air pollution on health).

Department of Housing and Urban Development

(Housing, community planning and developing.)

Department of the Interior

- Bureau of Indian Affairs (Indian lands).
- Bureau of Land Management (public lands, effect of air pollution and smoke on vegetation and visibility).
- Bureau of Mines (air pollution for mining and minerals processing).
- Fish and Wildlife Service (effects of air pollution on fish and wildlife resources).
- Geological Survey (emissions from outer-continental shelf lease operations).
- Heritage Conservation and Recreation Service (effects on historic or recreational areas and facilities).
- National Park Service (visibility and other effects on National Park System areas and facilities).
- Office of Surface Mining Reclamation and Enforcement (surface mining and reclamation operations).

Department of Labor

- Mining Safety and Health Administration (airborne hazards in workplace (mines)).
- Occupational Safety and Health Administration (airborne hazards in workplace).

Department of Transportation

- Coast Guard (cargo tank venting and vapor recovery systems).
- Federal Aviation Administration (aircraft emissions).
- Federal Highway Administration (highway related air quality impacts; vehicle emissions).
- Federal Railroad Administration (locomotive emissions).
- Urban Mass Transportation Administration (urban transportation systems).

Environmental Protection Agency

(Effect of air pollution on public health and welfare; air quality criteria and standards; air pollution control and abatement technologies; transportation emissions and air quality impacts; stationary source emissions; monitoring technology.)

- Prevention of significant air quality deterioration. 42 U.S.C. 7470, *et seq.*

*Review of emission sources for conformance with new source performance standards. 42 U.S.C. 7411.

*Application of primary non-ferrous smelter order. 42 U.S.C. 7419.

*Assuring that federal projects conform with State Implementation Plans. 42 U.S.C. 7618.

*Certification of new emission sources for conformance with National Emission Standards for Hazardous Air Pollutants including radioactive materials. 42 U.S.C. 7412(c).

Interstate Commerce Commission

(Air pollution from trucks and railroads.)

National Aeronautics and Space Administration

(Advanced technology for remote sensing of air quality parameters and for reduction of aircraft engine emissions.)

Nuclear Regulatory Commission

(Radioactive substances.)

Tennessee Valley Authority

(Air quality in the Tennessee Valley region, measurement and control of air pollution from fossil-fueled steamplants and effects on vegetation.)

B. Water Pollution

(1) Water Quality

Department of Agriculture

- Agricultural Stabilization and Conservation Service (agricultural lands).
- Forest Service.
- Soil Conservation Service (watershed protection).

Department of Commerce

- Maritime Administration (marine pollution from ships).
- National Bureau of Standards (Measurements, standards, data, and methods).
- National Oceanic and Atmospheric Administration (management and protection of coastal and marine resources, marine pollution research and monitoring).

Department of Defense

- Army Corps of Engineers:
 - *Rules governing work or structures in or affecting navigable waters of the United States. 33 U.S.C. 401, 403 and 419 (33 CFR Part 322).
 - *Permits for river and harbor improvement projects. 33 U.S.C. 541.
 - *Authority to enjoin dumping of, or force removal of, refuse placed in or on the banks of a navigable water or tributary of a navigable water. 33 U.S.C. 407.

*Permits for private projects to improve navigable waters. 33 U.S.C. 565.

*Permits for discharges of dredged or fill materials into waters of the United States. 33 U.S.C. 1344 (33 CFR Part 323).

*Permits for transportation of dredged materials for dumping into ocean waters. 33 U.S.C. 1413 (33 CFR Part 324).

• Department of Navy (ship pollution control).

Department of Energy

• Office of Environment (energy policy, programs and projects).

Department of Health and Human Services

• Public Health Service (effects of pollution on health).

Department of the Interior

• Bureau of Indian Affairs (Indian lands).

• Bureau of Land Management (public lands, coastal zone management, outer continental shelf).

*Permits (easements/leases) for water projects. 43 U.S.C. 1732(b), 1761(a)(1). (43 CFR Part 2800).

• Bureau of Mines (mining activities).

• Fish and Wildlife Service (effects on fish and wildlife resources).

• Geological Survey (hydrology).

• Heritage Conservation and Recreation Service (effects on historic or recreational areas and facilities).

• National Park Service (affecting National Park System areas and facilities).

• Office of Surface Mining, Reclamation and Enforcement (hydrologic balance in surface mining and reclamation operations).

• Office of Water Research and Technology (research in water quality and quantity, other hydrologic problems, desalinization).

• Water and Power Resources Service (public works, salinity control, sedimentation, irrigation).

Department of Transportation

• Coast Guard (oil spills, ship sanitation).

*Tanker construction, equipment, manning, operation. 46 U.S.C. 391a.

*Oil and hazardous substances discharge prevention. 33 U.S.C. 1321.

*Pollution prevention (33 CFR Parts 151, 154-8).

*Vessel navigation, waterfront facility regulations. 33 U.S.C. 1221 (50 U.S.C. 191).

*Certification of marine sanitation devices. 33 U.S.C. 1322 (33 CFR Part 159).

Environmental Protection Agency

(Wastewater treatment works; effluent limitations; oil and hazardous

substance discharges; protection of drinking water supplies; thermal discharges; monitoring technology.)

*Permits for discharge of specific pollutants from aquaculture projects. 33 U.S.C. 1328.

*Permits for disposal of sewage sludge. 33 U.S.C. 1345.

*Oil spill prevention, containment and countermeasure plans (prepared by facility owner/operator). 33 U.S.C. 1321, 1361 (40 CFR 112.7).

*Permits for treatment, storage or disposal of hazardous wastes. 42 U.S.C. 6925. (40 CFR 122, 123, 124).

*Review of permits for discharges of dredged or fill materials into navigable waters. 33 U.S.C. 1344(c).

*Assistance for construction of publicly owned wastewater treatment works. 33 U.S.C. 1281.

*Underground injection control permits. 42 U.S.C. 300f, *et seq.*

*National Pollutant Discharge Elimination System (NPDES) wastewater permits. 33 U.S.C. 1342.

Federal Emergency Management Agency

(Floodplain management.)

Federal Maritime Commission

*Certificates of financial responsibility for water pollution. 33 U.S.C. 1321 (46 CFR Part 542); 42 U.S.C. 1643 (46 CFR Part 543); 43 U.S.C. 1815 (46 CFR Part 544).

International Boundary and Water Commission, U.S. Section

(U.S.-Mexico border sanitation problems.)

National Aeronautics and Space Administration

(Advanced technology for remote sensing of water quality.)

Nuclear Regulatory Commission

(Radioactive substances.)

Tennessee Valley Authority

(Water quality in the Tennessee Valley, effects of chemical and thermal effluents.)

Water Resources Council

(Principles and standards for water plans.)

• River Basin Commissions (as geographically appropriate).

(2) Pollution of Marine Resources.

Department of Commerce

• Maritime Administration (port, coastal and ocean pollution);

*Merchant vessels, polluting discharges and dumping. 46 U.S.C. 1101 *et seq.*

*Port operations, polluting discharges, and dumping. 46 U.S.C. 887.

• National Bureau of Standards (measurements, data, standards, and methods).

• National Oceanic and Atmospheric Administration (coastal zone management; ocean pollution; ocean mining).

Department of Defense

• Army Corps of Engineers:

*Rules governing work or structures in or affecting waters of the United States. 33 U.S.C. 401, 403 and 419.

*Permits for private projects to improve navigable waters. 33 U.S.C. 565.

*Permits for discharges of dredged or fill materials into waters of the United States. 33 U.S.C. 1344.

*Permits for transportation of dredged materials for dumping into ocean waters. 33 U.S.C. 1413.

*Authority to enjoin or force removal of refuse placed in or on the banks of a navigable water or tributary of a navigable water. 33 U.S.C. 407.

*Regulation of artificial islands, installations and devices on the outer continental shelf. 43 U.S.C. 133(f).

• Department of the Navy (oceanography; pollution from ships.)

Department of Energy

(Energy programs.)

Department of Health and Human Services

• Public Health Service (effects on health).

• Food and Drug Administration (shellfish sanitation; contamination of fish and shellfish with toxics).

Department of the Interior

• Bureau of Indian Affairs (Indian lands).

• Bureau of Land Management (coastal zone management, outer continental shelf).

*Coral harvesting (outer continental shelf). 43 U.S.C. 1334 (43 CFR Part 6224).

*Mineral mining on the outer continental shelf. 43 U.S.C. 1331-1343.

• Bureau of Mines (ocean mining).

• Fish and Wildlife Service (effects on sport fisheries, estuarine areas, endangered species, outer continental shelf).

• Geological Survey:

*Permits for geological and geophysical exploration on outer continental shelf. 43 U.S.C. 1340 (30 CFR Part 251).

*Permits for exploration and development activities on federal oil and gas leases on the outer continental shelf. 43 U.S.C. 1331 *et seq.* (30 CFR Part 250).

- Heritage Conservation and Recreation Service (effects on historic and recreational values of marine resources).
- National Park Service (affecting National Parks System areas, especially National Seashores).
- Office of Water Research and Technology (research into saline and otherwise contaminated water).
- Water and Power Resources Service (water development projects in coastal areas, estuarine effects on water developments).

Department of State

(International marine resource issues.)

Department of Transportation

- Coast Guard (ocean dumping enforcement, and marine resource protection).

Environmental Protection Agency

(Marine discharges, oil spills, ocean dumping, and environmental effects.)

- Permits for ocean discharges. 33 U.S.C. 1343.
- Permits for discharge of specific pollutants from aquaculture projects. 33 U.S.C. 1328.
- Permit for disposal of sewage sludge. 33 U.S.C. 1345.
- Review of permits for transportation of dredged material for ocean dumping. 33 U.S.C. 1413.
- Permits for transportation of materials (other than dredged material) for ocean dumping. 33 U.S.C. 1412, 1414.
- Review of permits for discharges of dredged or fill materials into waters of the United States. 33 U.S.C. 1344(c).

National Aeronautics and Space Administration

(Advance technology for remote sensing of water quality.)

Nuclear Regulatory Commission

- (Radioactive substances.)
- Water Resources Council*
(Principles and standards for water plans.)
- River Basin Commissions (as geographically appropriate).

C. Solid Waste

Department of Agriculture

- Agricultural Stabilization and Conservation Service (solid waste, especially sludge disposal on cropland).
- Forest Service (national forests and grasslands site permits).
- Rural Electrification Administration (solid waste disposal from electric power plants).
- Soil Conservation Service (watershed protection).

Department of Commerce

- Maritime Administration (marine pollution from ships).
- National Bureau of Standards (measurements, standards, data, and methods).
- National Oceanic and Atmospheric Administration (ocean pollution research and monitoring; ocean dumping; management and protection of coastal and marine resources).

Department of Defense

- Army Corps of Engineers:
• Rules governing work or structures in or affecting waters of the United States. 33 U.S.C. 401, 403 and 419.
- Permits for discharges of dredged or fill materials into waters of the United States. 33 U.S.C. 1344.
- Transportation of dredged materials for dumping into ocean waters. 33 U.S.C. 1413.

Department of Health and Human Services

- Public Health Service:
Center for Disease Control (effects on health). Food and Drug Administration (contamination of food resulting from disposal of municipal and industrial waste treatment sludge).

Department of the Interior

- Bureau of Indian Affairs (Indian lands).
- Bureau of Land Management (public lands).
- Sale or lease of land for solid waste disposal sites. 43 U.S.C. 809 *et seq.* (for sale: 43 CFR Part 2740, for lease: 43 CFR Part 2912).
- Bureau of Mines (mineral waste, mine acid waste, municipal solid waste, recycling).
- Fish and Wildlife Service (National Wildlife Refuges).
- Geological Survey (geologic and hydrologic effects).
- National Park Service (National Parks System areas).
- Office of Surface Mining Reclamation and Enforcement (surface mining and reclamation operation wastes).

Department of Labor

- Mine Safety and Health Administration (mine waste control).

Department of Transportation

- Coast Guard (ship sanitation).
- Research and Special Programs Administration Materials Transportation Bureau (transport of hazardous cargo).

Environmental Protection Agency

(Solid wastes; hazardous waste; resource conservation and recovery; environmental effects.)

- Permits for disposal of sewage sludge. 33 U.S.C. 1345.
- The Solid Waste Disposal Act. 42 U.S.C. 3251, *et seq.*, as amended by the Resource Conservation and Recovery Act. 42 U.S.C. 6901 *et seq.* (40 CFR Parts 122, 123, 124, 350, 257).
- Criteria for classification of solid waste disposal facilities and practices. 40 U.S.C. 6907(a)(3), 6944(a). 42 U.S.C. 345 (40 CFR Part 257).
- Identification and listing of hazardous waste. 42 U.S.C. 6921 (40 CFR Part 250).
- Standards applicable to generators and transporters of hazardous waste, and for owners and operators of hazardous waste treatment, storage, and disposal facilities. 42 U.S.C. 6922, 6923, 6924 (40 CFR Part 250).
- Permits for hazardous waste treatment, storage, and disposal facilities. 42 U.S.C. 6925 (40 CFR Parts 122, 123, 124).
- Preliminary notification of hazardous waste activities. 42 U.S.C. 6930 (40 CFR Part 250).
- Use of restricted toxic substances—exemptions from rules and regulations. 15 U.S.C. 2601-2629.
- Review of permits for discharges of dredged or fill material into waters of the United States. 33 U.S.C. 1344.
- Assistance for construction of solid disposal facilities. 42 U.S.C. 6961 *et seq.*

Federal Emergency Management Agency

(Disaster relief assistance, hazardous materials emergency management.)

General Services Administration

(Public building.)

Nuclear Regulatory Commission

- (Radioactive waste.)
- Licensing of radioactive wastes. 42 U.S.C. 2071-2114, 5842 (10 CFR Parts 20, 40).

Tennessee Valley Authority

(Coal combustion products.)

Water Resources Council

- River Basin Commissions (as geographically appropriate).

D. Noise

Department of Agriculture

- Forest Service (noise effects on National Forests and Grasslands).

Department of Defense

- Department of the Air Force (military aircraft noise).

- Department of the Army (rotary wing and rotary wing engine noise generation of military aircraft).

Department of Health, and Human Services

(Effects on health.)

Department of Housing and Urban Development

- Office of Community Planning and Development (environmental criteria and standards for housing and land use.)

Department of the Interior

- Bureau of Indian Affairs (Indian lands).
- Bureau of Land Management (public lands, effects of noise, noise abatement and control).

*Lease of public lands for airports. 42 U.S.C. 211-214 (43 CFR Part 2640).

*Off-road vehicle noise. (E.O. 11644).

*Standards for operation of off-road vehicles on BLM lands. (43 CFR Part 8340).

*Authority for closure of BLM lands to off-road vehicular uses. (43 CFR Part 8364).

*Permits for off-road vehicular use special events, i.e., tours and competitions. 43 CFR Part 8372.

• Bureau of Mines (mine noise, blasting and vibration).

• Fish and Wildlife Service (effects on fish and wildlife resources).

*Permits for off-road vehicle use on National Wildlife Refuge System areas.

• Heritage Conservation and Recreation Service (effects on historic and recreational resources—include off-road vehicular noise).

• National Park Service (National Parks System areas) (50 CFR Part 2634).

*Permits for offroad vehicle use (36 CFR Part 7).

• Office of Surface Mining Reclamation and Enforcement (surface mining and reclamation use of explosives).

• Water and Power Resources Service.

*Permits for organized off-road vehicle events. (43 CFR 420.24).

Department of Labor

- Mining Safety and Health Administration (noise in the workplace (mines)).
- Occupational Safety and Health Administration (noise in the workplace).

Department of Transportation

- Federal Aviation Administration (aircraft noise and land use compatibility).

*Airport construction, alteration, etc. 49 U.S.C. 1350, 1354, 1355 (14 CFR Part 157).

- Federal Highway Administration (traffic and motor carrier noise).

- Federal Railroad Administration (railroad noise).

- Urban Mass Transportation Administration (transit noise).

Environmental Protection Agency

(Noise exposure standards, noise abatement and control techniques, noise impact assessment techniques, environmental effects).

*Noise Control Act of 1972. 42 U.S.C. 4901-4918.

Interstate Commerce Commission

(Noise effects from trucks and railroads.)

National Aeronautics and Space Administration

(Advanced technology for reduction of aircraft noise.)

E. Radiation

Department of Commerce

- National Bureau of Standards (measurements, standards, methods and data).

Department of Energy

- Office of Environment (nuclear energy; waste disposal; radiation effects).

Department of Health, and Human Services

- Public Health Service:

Food and Drug Administration (health and safety; contamination of food with radioactive materials).

National Institutes of Health (health).

Department of Housing and Urban Development

(Housing, community planning and development.)

Department of the Interior

- Bureau of Indian Affairs (Indian lands).

- Bureau of Land Management (public lands):

*Leases for uranium exploration and mining on acquired lands. 30 U.S.C. 351-359.

*Leases for phosphate exploration and mining. 30 U.S.C. 211.

*Withdrawal of public lands for deep-burial depositories for radioactive waste. 43 U.S.C. 1714.

- Bureau of Mines (uranium mines).

- Fish and Wildlife Service (National Wildlife Refuges).

- Geological Survey (waste disposal).

- National Park Service (National Park System areas).

Department of Labor

- Mining Safety and Health Administration (worker protection from radiation exposure in mining).

- Occupational Safety and Health Administration (worker exposure to sources of radiation not covered by other federal agencies).

Department of Transportation

- Federal Highway Administration: Bureau of Motor Carrier Safety (enforcement of hazardous materials regulation for highway transportation in interstate commerce).

Environmental Protection Agency

(Radiation protection standards and guidance, radioactive air emissions, ocean disposal of radioactive waste, radiation limits for drinking water, radiation monitoring.)

Federal Emergency Management Agency

(Review and approval of state and local nuclear incident emergency response plans, federal contingency plans, radiation hazards emergency management.)

Nuclear Regulatory Commission

(Radiation effects—generally.)

*Licenses for special nuclear material. 42 U.S.C. 2073-2078 (10 CFR Part 70).

*Licenses for source material. 42 U.S.C. 2091-2099 (10 CFR Part 40).

*Licenses for by-product material. 42 U.S.C. 2111-2114 (10 CFR Parts 30-35).

*Licensing for utilization or production facilities for industrial or commercial purposes. 42 U.S.C. 2131-2133 (10 CFR Part 50).

*Licensing utilization or production facilities for medical therapy and research and development. 42 U.S.C. 2134 (10 CFR Part 50).

*Nuclear power reactor operator's license. 42 U.S.C. 2137 (10 CFR Part 55).

*Licensing and regulating Department of Energy demonstration reactors. 42 U.S.C. 5842 (1) and (2).

*Licensing Department of Energy facilities for receipt and long term storage of high-level radioactive wastes. 42 U.S.C. 5842(3) and (4).

Tennessee Valley Authority

(Nuclear power plant planning and monitoring, uranium mining and milling.)

F. Hazardous Substances

(1) Toxic Materials.

Consumer Product Safety Commission

(Consumer product safety.)

Department of Agriculture

- Agricultural Marketing Services (consumer protection).
- Animal and Plant Health Inspection Service (control of plant pests, noxious weeds, animal diseases, and vectors).
- Forest Service (effects on forests and grassland).
- *Permits for disposal on national forest lands.

Department of Commerce

- Maritime Administration (port, coastal and ocean pollution):
 - *Merchant vessels, polluting discharges and dumping. 46 U.S.C. 1101 *et seq.*
 - *Port operations, polluting discharges and dumping. 46 U.S.C. 887.
- National Bureau of Standards (measurements, standards, methods and data).
- National Oceanic and Atmospheric Administration (coastal and marine resources management and protection, ocean pollution research, and monitoring).

Department of Defense

(Military operations.)

Department of Health and Human Services

- Public Health Service:
 - Center for Disease Control (health issues).
 - Food and Drug Administration (contamination of food).
 - National Institutes of Health (health issues).

Department of Housing and Urban Development

- Office of Neighborhoods, Voluntary Associations and Consumer Protection (lead-based paint poisoning prevention, housing, community planning and development).

Department of the Interior

- Bureau of Indian Affairs (Indian lands).
- Bureau of Land Management (public lands).
- Bureau of Mines (disposal methods for selected milling and mine wastes).
- Fish and Wildlife Service (National Wildlife Refuge System areas, effects on fish and wildlife resources).
- Geological Survey.
- *Discharges from outer continental shelf mineral leases. (30 CFR Part 250).
- National Park Service (affecting National Park System areas).
- Office of Surface Mining Reclamation and Enforcement (effects of surface mining and reclamation operations).

- Water and Power Resources Service (water storage and delivery projects).

Department of Labor

- Mining Safety and Health Administration (mining hazards).
- Occupational Safety and Health Administration (workplace hazards).

Department of Transportation

- Coast Guard:
 - *Transportation of hazardous materials by vessel. 46 U.S.C. 170, 375, 391a, 416; 49 U.S.C. 1655, 1803, 1804, 1808; 50 U.S.C. 198.
 - *Navigation and waterfront facility regulation. 33 U.S.C. 1221, 1224, 1321; 50 U.S.C. 191.
 - *Hazardous substance discharge to navigable waters. 33 U.S.C. 1321.
- Federal Highway Administration.
- Bureau of Motor Carrier Safety (hazardous material transportation in interstate commerce).
- Federal Railroad Administration (railroad transport).
- Research and Special Programs Administration (hazardous cargo, pipelines).
- Materials Transportation Bureau:
 - *Transportation of hazardous materials. 42 U.S.C. 1805-1806.
 - *Permits for facilities to handle hazardous materials. 42 U.S.C. 1805-1806.

Environmental Protection Agency

(Pollution control and environmental effects.)

- *Treatment, storage and disposal of hazardous wastes—permits. Resource Conservation and Recovery Act of 1976. 42 U.S.C. 6901, *et seq.* (40 CFR Parts 122, 123, 124, 250, 257).
- *Criteria for classification of solid waste disposal facilities and practices. 40 USC 6907(a)(3), 6944(a), 42 USC 345 (40 CFR Part 257).
- *Identification and listing of hazardous waste. 42 USC 6921 (40 CFR Part 250).
- *Standards applicable to generators and transporters of hazardous wastes and for owners and operators of hazardous waste treatment, storage and disposal facilities. 42 USC 6922, 6923, 6924 (40 CFR Part 250).
- *Permits for hazardous waste treatment, storage and disposal facilities. 42 USC 6925 (40 CFR Parts 122, 123, 124).
- *Preliminary notification of hazardous waste activities. 42 USC 6930 (40 CFR Part 250).
- *Authorization to Construct or Modify a Project which will Erect a Hazardous Pollutant (NESHAP). (40 CFR 61.06, 61.07, 61.08).

- (2) Food Additives and Contamination of Foodstuffs.

Department of Agriculture

- Food Safety and Quality Service (meat and poultry products).

Department of Commerce

- National Oceanic and Atmospheric Administration (seafood quality).

Department of Health and Human Services

- Public Health Service:
 - Food and Drug Administration (effects on health).

Environmental Protection Agency

(Establishment of food additives from pesticides use.)

Federal Emergency Management Agency

- (Disaster assistance, hazardous materials emergency management.)
- (3) Pesticides.

Department of Agriculture

- Animal Plant Health and Inspection Service (control of animal and plant pests and exotic noxious weeds).
- Food Safety and Quality Service (consumer protection).
- Forest Service (control of animal and plant pests).
- Science and Education Administration (biological controls, food and fiber production).
- Soil Conservation Service (watershed protection).

Department of Commerce

- Maritime Administration (merchant ship operations).
- National Oceanic and Atmospheric Administration (effects on marine life and the coastal zone, seafood quality, ocean pollution research and monitoring).

Department of Defense

- Armed Forces Pest Management Board (pesticide use on DOD lands, facilities and equipment; control of disease vectors).
- Armed-Services Explosive Safety Board (control of pests for munitions and explosive devices).

Department of Health and Human Services

- Public Health Service:
 - Center for Disease Control (effects on health).
 - Food and Drug Administration (contamination of food).

Department of the Interior

- Bureau of Indian Affairs (Indian lands).

- Bureau of Land Management (public lands).

- Fish and Wildlife Service (National Wildlife Refuge and National Fish Hatchery System, effects of use on fish and wildlife resources).

- National Park Service (National Park System areas).

- Water and Power Resources Service (irrigated lands and other project lands, facilities and rights of way).

Department of Labor

- Occupational Safety and Health Administration (worker exposures during manufacture of pesticides).

- Permits for transportation of hazardous materials. 49 U.S.C. 1805-1808.

- Approval for shipments of Class A explosives. 46 U.S.C. 170(7).

- Permit for facilities to handle hazardous materials. 49 U.S.C. 1805-1808.

- Coast Guard

- Permits for transportation of hazardous substances. 46 U.S.C. 170, 391a.

- Navigation and waterfront facility, regulation. 33 U.S.C. 1221, 1321; 50 U.S.C. 191.

- Federal Aviation Administration (transport by air).

- Federal Highway Administration, Bureau of Motor Carrier Safety (pesticide transport in interstate commerce).

- Federal Railroad Administration (transport by rail).

- Research and Special Programs Administration Materials Transportation Bureau (transport).

Environmental Protection Agency

(Pollution control and environmental effects.)

- Permits for hazardous waste treatment, storage and disposal facilities. 42 U.S.C. 6925 (40 CFR Parts 122, 123, 124).

- Certification of pesticide users. 7 U.S.C. 136 b, i, u. (40 CFR Part 171).

- Registration of pesticides. 7 U.S.C. 136c (40 CFR Part 162).

- Experimental pesticide use permits. 7 U.S.C. 136a (40 CFR Part 172).

- Establishment of pesticide tolerances. 21 U.S.C. 346a (40 CFR Part 180).

- Pesticide disposal and transportation. 7 U.S.C. 136q (40 CFR 165).

- Worker protection standards for agricultural pesticides. 7 U.S.C. 136w (40 CFR Part 70).

- Emergency exemptions for pesticides use. 7 U.S.C. 136p (40 CFR Part 166).

Tennessee Valley Authority

(Public lands and waters in Tennessee Valley region.)

II. ENERGY

A. Electric Power Development, Generation and Transmission, and Use

Department of Agriculture

- Forest Service (National Forests and Grasslands).

- Permits and Grants for electrical, communication, water facilities and roadways. 16 U.S.C. 522 *et seq.* (CFR 251.50), 43 U.S.C. 1761.

- Rural Electrification Administration (rural areas).

- Electrical generation and transmission projects. 7 U.S.C. 901 *et seq.*

- Farmers Home Administration (small hydro, solar, wind).

- Approval of Plans and Specifications for FMHA funded projects. 7 U.S.C. 1942.

Department of Commerce

- National Oceanic and Atmospheric Administration (coastal energy facility-planning and siting).

Department of Defense

- Army Corps of Engineers (hydro).

- Rules governing work or structures in or affecting waters of the United States. 33 U.S.C. 401, 403.

- Permits for discharges of dredged or fill material into waters of the United States. 33 U.S.C. 1344.

- Regulation of artificial islands, installations, and devices on the outer continental shelf. 43 U.S.C. 1333(f).

Department of Energy

- Federal Energy Regulatory Commission (hydroelectric power, electric transmission, electric supply, facility siting):

- Regulation of interconnection of electric transmission facilities and regulation of enlargement of electric transmission facilities for wheeling. 16 U.S.C. 824-825K (18 CFR 32).

- Regulation of the development of water power including the licensing of non-Federal hydroelectric power projects. Federal Power Act. 16 U.S.C. 791-825r (18 CFR 4-25, 36, 131, 141).

- Application for order directing the establishment of physical connection facilities. 16 U.S.C. 834(b).

- Withdrawal of Federal lands for power and powersite development purposes. 16 U.S.C. 818. (43 CFR 2344 *et seq.*).

- Office of Environment (energy policy, programs and projects).

- Economic Regulatory Administration.

- Exemptions from prohibitions against the burning of natural gas and petroleum in power plants and major fuel burning installations. Powerplant and Industrial Fuel Use Act of 1978, 42 U.S.C. 8301 *et seq.*

- Transmission of electric energy to a foreign country. Federal Power Act, 16 U.S.C. 824a(e) (18 CFR 32.30-32.38; 10 CFR 205.300-309).

Department of Health and Human Services

- Public Health Service: National Institutes of Health (radiation effects).

Department of Housing and Urban Development

(Urban areas.)

Department of the Interior

- Bureau of Indian Affairs:

- Approval of leases for Indian lands. 25 U.S.C. 392-403b, 415 (25 CFR Part 131).

- Rights-of-way over Indian lands. 25 U.S.C. 311, 323-328 (25 CFR Part 161); 25 U.S.C. 15 (25 CFR 231-233).

- Bureau of Land Management (public lands):

- Leases and permits for use of public lands. 43 U.S.C. 931 c and d. (43 CFR Part 9).

- Easements (permits for rights-of-way. 43 U.S.C. 9, 43 U.S.C. 1701 *et seq.*, (43 CFR Parts 2800-2890).

- Exchange of Federal lands to facilitate energy development. 43 U.S.C. 1716, (43 CFR Parts 2200-2270).

- Bureau of Mines (mining research).

- Geological Survey (classification of federal lands as to their water power and water storage values):

- Fish and Wildlife Service (effects on fish and wildlife resources):

- Easements/permits for transmission line rights-of-way across National Wildlife Refuge and National Fish Hatchery System land. 16 U.S.C. 668dd for refuge, 43 U.S.C. 931c and d for hatcheries. (50 CFR 29.21).

- Public works—leases, permits, easements. 43 U.S.C. 931c, 931d (43 CFR Part 9).

- Permits for powerline rights-of-way on National Wildlife Monuments (Alaska only). 16 U.S.C. 432, 460k-3, and 742(f); (50 CFR Part 100).

- Heritage Conservation and Recreation Service (effects on historic or recreational values).

- National Park Service:

- Easements for rights-of-way across National Park System land. 16 U.S.C. 5.

- Water and Power Resources Service (hydroelectric power development and transmission in the 17 contiguous western states).

*Public works—leases, permits easements. 43 U.S.C. 931c, 931d (43 CFR Part 9).

*Easements/permits for powerline rights-of-way. 43 U.S.C. 3871.

Department of Transportation

- Federal Highway Administration:
- *Relocation and accommodation of utility facilities on highway rights-of-way 23 U.S.C. 109(1), 116, 123 (23 CFR Part 645).

Environmental Protection Agency

(Pollution control and environmental effects.)

*The Solid Waste Disposal Act, 42 U.S.C. 3251, *et seq.*, as amended by the Resource Conservation and Recovery Act. 42 U.S.C. 6901, *et seq.**

*Prevention of significant air quality deterioration. 42 U.S.C. 7470, *et seq.**

*Review of emission sources for conformance with new source performance standards. 42 U.S.C. 7411.

*Certification of new emission sources for conformance with National Emission Standards for Hazardous Air Pollutants. 42 U.S.C. 7412(c).

National Pollutant Discharge Elimination System (NPDES) wastewater permits. 33 U.S.C. 1342.

*Oil spill prevention, containment, and countermeasure plans (prepared by facility owner/operator.) 33 U.S.C. 1321, 1361 (40 CFR 112.7).

*Review of permits for discharges of dredged or fill materials into the waters of the United States. 33 U.S.C. 1344.

*Underground injection control permits. 42 U.S.C. 300f *et seq.**

*Permits for ocean discharge. 33 U.S.C. 1343.

*Review of permits for transportation of dredged material for ocean dumping. 33 U.S.C. 1413.

*Permits for transportation of materials (other than dredged material) for ocean dumping. 33 U.S.C. 1412, 1414.

*Permits for hazardous waste treatment storage, and disposal facilities. 42 U.S.C. 6925 (40 CFR Parts 122, 123, 124).

Federal Emergency Management Agency

(Review and approval of state and local nuclear incident emergency response plans.)

International Boundary and Water Commission, U.S. Section

(Hydroelectric power installations on Rio Grande.)

*Consolidated procedures for issuance of NPDES, PSD, RCRA, and UIC permits. (40 CFR Parts 122, 123, 124).

Nuclear Regulatory Commission

Licensing for utilization or production facilities for industrial or commercial purposes. 42 U.S.C. 2123 (10 CFR Part 50).

*Nuclear power reactor operator's licenses. 42 U.S.C. 2137 (10 CFR Part 55).

*Licensing uranium milling operations. 42 U.S.C. 2091 *et seq.* (10 CFR Part 40).

*Licensing and regulating demonstration reactors. 42 U.S.C. 2134, 5842 (10 CFR Part 50).

Department of Transportation

(Transport of sources.)

- Federal Aviation Administration.

Tennessee Valley Authority

(Tennessee Valley Region.)

Water Resources Council

(Water resources planning and data.)

- River Basin Commissions (as geographically appropriate).

B. Petroleum Development, Extraction, Refining, Transport and Use

Department of Agriculture

- Forest Service (Permits and Rights-of-Way).

Department of Commerce

- National Oceanic and Atmospheric Administration (coastal and marine resources—management and protection).

- Maritime Administration (port, coastal and ocean pollution):

*Merchant vessels. 42 U.S.C. 1101 *et seq.*

*Port operations. 42 U.S.C. 867.

Department of Defense

- Army Corps of Engineers:
- *Rules governing work or structures in or affecting the waters of the United States. 33 U.S.C. 403.

*Permits for discharges of dredged or fill materials into waters of the United States. 33 U.S.C. 1344.

*Regulation of artificial islands, installations, and devices on the outer continental shelf. 43 U.S.C. 1333 (f).

Department of Energy

- Office of Environment (energy policy, programs, and projects); Economic Regulatory Administration.

*Exemptions from prohibitions against the burning of petroleum in power plants and major fuel-burning installations. Powerplant and Industrial Fuel Use Act of 1978. 42 U.S.C. 8301 *et seq.*; Department of Energy Organization Act. 42 U.S.C. 7101 *et seq.*

Department of the Interior

- Bureau of Indian Affairs:

*Leases for oil and gas on Federal lands. 25 U.S.C. 392 *et seq.* (25 CFR Part 131).

*Rights-of-way over Indian lands. 25 U.S.C. 311 *et seq.* (25 CFR Parts 161, 171, 172, 183, 184).

*Approval of leases for oil and gas.

For allotted lands: 25 U.S.C. 398; for tribal lands: 25 U.S.C. 396a (25 CFR Parts 131, 171, 172, 183, 184).

- Bureau of Land Management (public lands and outer continental shelf):

*Leases for oil and gas deposit:

(a) Public domain lands. 30 U.S.C. 181 *et seq.* (30 CFR Part 221, 43 CFR Part 3100).

(b) Acquired lands. 30 U.S.C. 351-359, (30 CFR Part 221, 43 CFR Part 3100).

(c) Outer continental shelf lands. 43 U.S.C. 1331-1343, (30 CFR Parts 250 and 251, 43 CFR Part 3300).

(d) In and under railroad and other rights-of-way acquired under laws of the United States. 30 U.S.C. 301-306, 43 CFR Part 3100).

*Leases and land exchanges for oil shale, native asphalt, solid and semisolid bitumen and bituminous rock. For leases: 30 U.S.C. 241 (43 CFR Part 3500); for exchanges: 43 U.S.C. 1716 (43 CFR Parts 2200-2270).

*Easements/permits for oil and gas pipeline rights-of-way. 30 U.S.C. 185, 43 U.S.C. 1701, 43 CFR Parts 2800-2860.

*Grants for rights-of-way for "common carrier" oil and gas pipelines on outer continental shelf. 43 U.S.C. 1331, 43 CFR Part 3340.

*Easements/Leases/Permits for use, occupancy and development of public lands. 43 U.S.C. 1732, 43 CFR Subchapter 2000 and 3000.

*Exchange of Federal lands with oil and gas deposits (excludes outer continental shelf lands). 43 U.S.C. 1716, 43 CFR Parts 2200-2207.

- Bureau of Mines (environmental effects of oil mining).

- Fish and Wildlife Service (effects on fish and wildlife resources).

*Permits for oil and gas pipeline rights-of-way across National Wildlife Refuge and National Fish Hatchery Systems lands. 16 U.S.C. 668dd for refuges, 43 U.S.C. 931c and d for hatcheries; 50 CFR 29.21.

*Permits for oil and gas pipeline rights-of-way across National Wildlife Monuments (Alaska only). 16 U.S.C. 432, 460k-3, and 742(f), 50 CFR Part 100.

- Geological Survey:

*Supervision of oil and gas, oil shale, and bitumen lease operations: Public domain. 30 U.S.C. 181 *et seq.* (30 CFR Part 221); Acquired land. 30 U.S.C. 351 *et seq.* (30 CFR Part 221); Outer continental shelf lands. 43 U.S.C. 1331 *et seq.* (30 CFR Parts 250, 251); Indian lands. 25

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PROCEDURES FOR ENVIRONMENTAL IMPACT ANALYSIS AND
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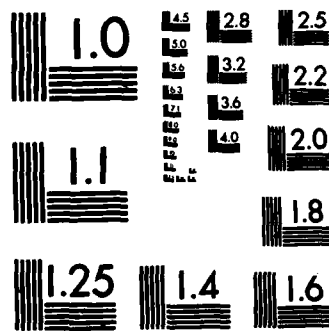
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U.S.C. 396a *et seq.* (25 CFR Parts 171, 172, 174, 183, 184)

*Applications for purchase of government royalty oil. For outer continental shelf (OCS) oil: 43 U.S.C. 1334, 30 CFR Part 225a; for non-OCS oil: 30 U.S.C. 189, 192 and 134, 30 CFR Part 225.

*Easements/rights of use for "gathering" pipelines, artificial islands, platforms and other fixed structures on any Federal or State outer continental shelf oil or gas lease. 43 U.S.C. 1334 and 1335, 30 CFR 250.18 and .19.

• Heritage Conservation and Recreation Service (effects on historical or recreational values).

• National Park Service (affecting National Park System areas).

*Permits for oil and gas operations on National Park System areas. 16 U.S.C. (36 CFR Part 9).

• Water and Power Resources Service (water storage and delivery)

*Easements/permits for oil pipeline rights-of-way. 43 U.S.C. 3871.

Department of State

*Facilities for export/import of petroleum products, coal, minerals, water, sewage permits. Executive Order 10485.

Department of Transportation

(Transport and pipeline safety.)

• Coast Guard:

*Tank vessel regulation. 46 U.S.C. 391a.

*Ports and waterways safety. 33 U.S.C. 1221.

*Construction and alteration of bridges over navigable waters (for pipelines). 33 U.S.C. 525; 33 U.S.C. 494, 495; 33 U.S.C. 513-14.

*Outer continental shelf structures. 43 U.S.C. 1331.

• Federal Highway Administration:

*Relocation and accommodation of pipelines on highway rights-of-way. 23 U.S.C. 109(1), 116, 123 (23 CFR Part 645).

• Research and Special Programs Administration Materials Transportation Bureau (pipeline safety).

Environmental Protection Agency

(Pollution control and environmental effects.)

*The Solid Waste Disposal Act, 42 U.S.C. 3251 *et seq.*, as amended by the Resource Conservation and Recovery Act. 42 U.S.C. 6901 *et seq.*

*Prevention of significant air quality deterioration. 42 U.S.C. 7470 *et seq.*

*Review of emission sources for conformance with new source performance standards. 42 U.S.C. 7411.

*Consolidated procedures for issuance of NPDES, PSD, RCRA, and UIC permits. (40 CFR Parts 122, 123, 124).

National Pollutant Discharge Elimination System (NPDES) wastewater permits. 33 U.S.C. 1342.

*Oil spill prevention, containment, and countermeasure plans (prepared by facility owner/operator.) 33 U.S.C. 1321, 1361 (40 CFR 112.7)

*Review of permits for discharges of dredged or fill materials into the waters of the United States. 33 U.S.C. 1344.

*Underground injection control permits. 42 U.S.C. 300f *et seq.*

*Permits for ocean discharge. 33 U.S.C. 1343.

*Review of permits for transportation of dredged material for ocean dumping. 33 U.S.C. 1413.

*Permits for transportation of materials (other than dredged material) for ocean dumping. 33 U.S.C. 1412, 1414

*Permits for hazardous waste treatment storage and disposal facilities. 42 U.S.C. (40 CFR Parts 122, 123, 124).

Interstate Commerce Commission

(Regulation of carriers; assessing differences in energy efficiencies between transport modes.)

C. Natural Gas Development, Production, Transmission, and Use

Department of Agriculture

• Forest Service.

Department of Commerce

• National Oceanic and Atmospheric Administration (coastal and marine resources—management and protection).

• Maritime Administration:

*Liquified natural gas vessels. 42 U.S.C. 1101 *et seq.*

*Liquified natural gas terminals. 46 U.S.C. 867.

Department of Defense

• Army Corps of Engineers:

*Rules governing work or structures in or affecting the waters of the United States. 33 U.S.C. 403.

*Permits for discharges of dredged or fill materials into waters of the United States. 33 U.S.C. 1344.

*Regulation of artificial islands, installations, and devices on the outer continental shelf. 43 U.S.C. 1333(f).

Department of Energy

• Federal Energy Regulatory Commission:

*Certificates for natural gas facilities (underground storage fields, LNG facilities, and transmission pipeline facilities); sale, exchange and transportation of gas; abandonment of facilities; and curtailment of natural gas service; authorization to import and export natural gas. Natural Gas Act. 15 U.S.C. 717-717w.

*Authorization compelling the expansion, improvement or connection of natural gas facilities. 15 U.S.C. 717f(a).

• Office of Environment (energy policy, programs and projects).

• Economic Regulatory Administration.

*Exemptions from prohibitions against the burning of natural gas in powerplants and major fuel-burning installations. Powerplant and Industrial Fuel Use Act of 1978, 42 U.S.C. 8301 *et seq.*; Department of Energy Organization Act, 42 U.S.C. 7101 *et seq.*

Department of Housing and Urban Development

• Office of Community Planning and Development (residential and other lands).

Department of the Interior

• Bureau of Indian Affairs:

*Leases for mining, oil and gas, farming and other uses on federal lands. 25 U.S.C. 393 *et seq.* (25 CFR Parts 171, 172).

• Bureau of Land Management (public lands and outer continental shelf):

*Application for lease on phosphate, nitrate, oil, gas, and asphaltic mineral deposits. 30 U.S.C. 121, 122, 123.

*Oil and Gas Leases. 30 U.S.C. 221.

*Lease of oil and gas deposits located in rights-of-way. 30 U.S.C. 301.

*Leasing of oil and gas deposits on the outer continental shelf. 43 U.S.C. 1331-1343.

*Gas pipeline rights-of-way. 30 U.S.C. 185.

*Permits, leases, and easements of public lands for use, occupancy, and development. 43 U.S.C. 1702.

• Bureau of Mines (methane; Federal Helium Program).

• Fish and Wildlife Service (effects on fish and wildlife resources).

• Geological Survey:

*Communitization of federal oil and gas leases. 30 U.S.C. 181 *et seq.*, 315 *et seq.*

*Supervision of oil and gas lease operations: Public domain. 30 U.S.C. 181, *et seq.* (30 CFR Part 221); Acquired lands. 30 U.S.C. 351 *et seq.* (30

*Easements/rights of use for "gathering" pipelines, artificial islands, platform, and other fixed structures on any Federal or state outer continental shelf oil or gas lease. 43 U.S.C. 1334 and 1335 (30 CFR 250.18 and .19). CFR Part 221); Outer continental shelf land. 43 U.S.C. 1331 *et seq.* (30 CFR Parts 250, 251); Indian lands. 25 U.S.C. 3969, *et seq.* (25 CFR Parts 171, 172, 173, 174, 183, 184).

- Heritage Conservation and Recreation Service (effects on historical and recreational values).

- National Park Service (affecting National Park System areas).

- Permits for oil and gas operations on National Park System lands. 16 U.S.C. 1 (36 CFR Part 9).

- Water and Power Resources Service:

- Easements/permits for gas pipeline, rights-of-way. 43 U.S.C. 3871.

Department of Transportation

(Transport and safety.)

- Coast Guard:

- Tank vessel regulation. 46 U.S.C. 391a.

- Navigation and waterfront facility regulation. 33 U.S.C. 1221, 1321; 50 U.S.C. 191.

- Construction and alteration of bridges over navigable waters (for pipelines). 33 U.S.C. 525; 33 U.S.C. 494-95; 33 U.S.C. 513-14.

- Outer continental shelf structures. 43 U.S.C. 1331.

- Federal Highway Administration:
 - Relocation and accommodation of pipelines on highway rights-of-way. 23 U.S.C. 109(1), 116, 123 (23 CFR Part 645).

- Federal Railroad Administration (railroad transport).

- Research and Special Programs Administration Materials Transportation Bureau (pipeline safety).

Environmental Protection Agency

(Pollution control and environmental effects.)

- The Solid Waste Disposal Act, 42 U.S.C. 3251, *et seq.*, as amended by the Resource Conservation and Recovery Act. 42 U.S.C. 6901, *et seq.*

- Prevention of significant air quality deterioration. 42 U.S.C. 7470, *et seq.*

- Review of emission sources for conformance with new source performance standards. 42 U.S.C. 7411.

- Certification of new emission sources for conformance with National Emission Standards for Hazardous Air Pollutants. 42 U.S.C. 7412(c).

- National Pollutant Discharge Elimination System (NPDES) wastewater permits. 33 U.S.C. 1342⁴

- Oil spill prevention, containment, and countermeasure plans (prepared by facility owner/operator.) 33 U.S.C. 1321, 1361 (40 CFR 112.7)

- Review of permits for discharges of dredged or fill materials into the waters of the United States. 33 U.S.C. 1344.

- Underground injection control permits. 42 U.S.C. 300f, *et seq.*

- Permits for ocean discharge. 33 U.S.C. 1343.

- Review of permits for transportation of dredged material for ocean dumping. 33 U.S.C. 1413.

- Permits for transportation of materials (other than dredged material) for ocean dumping. 33 U.S.C. 1412, 1414.

- Permits for hazardous waste treatment storage and disposal facilities. 42 U.S.C. 6925 (40 CFR 122, 123, 124).

Interstate Commerce Commission

(Regulation of carriers.)

D. Coal and Minerals Development, Mining Conversion, Processing, Transport and Use

Appalachian Regional Commission

(Appalachian region.)

Department of Agriculture

- Forest Service (National Forests and Grasslands—Mineral Materials Permits):

- Surface use of public domain lands under U.S. mining laws. 16 U.S.C. 478-555 (36 CFR Part 252).

- Mineral development on acquired lands for solid (hardrock) minerals, 16 U.S.C. 520 (36 CFR Part 252), and for phosphate, oil, gas, oil shale, sodium, potassium and sulphur, 30 U.S.C. 352.

- Coal leasing. 30 U.S.C. 201-352.

- Surface coal mining operations. 30 U.S.C. 1272.

- Geothermal resource developments. 30 U.S.C. 1014.

- Rural Electrification

Administration:

- Financial assistance for purchase of coal mines and mining facilities. 7 U.S.C. 901 *et seq.*

- Soil Conservation Service (abandoned mined land; transportation)

Department of Commerce

(Technical and economic information.)

- Maritime Administration (dry bulk shipping of coal and other minerals in the inland waterways, domestic ocean, Great Lakes and U.S. foreign trades.)

- National Oceanic and Atmospheric Administration (atmospheric dispersion of effluents; acid rain; management and protection of coastal and marine resources—air and water pollution from mining, offshore and coastal mining, port planning).

Department of Defense

- Army Corps of Engineers:

- Rules governing work or structures on or affecting waters of the United States. 33 U.S.C. 403.

- Permits for discharges of dredged or fill materials into waters of the United States. 33 U.S.C. 1344.

- Authority to enjoin or force removal of refuse placed in or on the banks of a

navigable water or tributary of a navigable water. 33 U.S.C. 407.

Department of Energy

- Federal Energy Regulatory Commission.

- Economic Regulatory Administration.

- Exemptions from, prohibitions against burning of natural gas and oil in powerplants and major fuel-burning installations. Powerplant and Industrial Fuel Use Act of 1978, 42 U.S.C. 8301; Department of Energy Organization Act, 42 U.S.C. 7101.

- Office of Environment (energy policy, programs and projects).

Department of Housing and Urban Development

- Office of Policy Development and Research (subsidence).

Department of the Interior

- Bureau of Indian Affairs:

- Rights-of-way over Indian lands. 25 U.S.C. 311 *et seq.* (25 CFR Parts 161, 171, 172, 177).

- Leases for coal and uranium on federal lands. 25 U.S.C. 392 *et seq.* (25 CFR Part 131).

- Approval of coal and uranium leases on Indian lands. For tribal lands: 25 U.S.C. 396a; for allotted lands: 25 U.S.C. 396. (25 CFR Parts 131, 171-175, 177).

- Bureau of Land Management (public lands):

- Exploration licenses to explore for coal deposits on unleased lands. 30 U.S.C. 181 and 201(b). (43 CFR Part 3400).

- Leases/permits for recovery of coal deposits. 30 U.S.C. 181 *et seq.*, 30 U.S.C. 120 *et seq.*, 43 U.S.C. 1701 *et seq.* (43 CFR Part 3400).

- Permit to mine coal for domestic needs. 30 U.S.C. 208, (43 CFR Part 3440).

- Easements/permits for rights-of-way. 43 U.S.C. 9, 43 U.S.C. 1701 *et seq.* (43 CFR Parts 2800-2890).

- Exchange of Federal lands with coal or uranium deposits. 43 U.S.C. 1716, (43 CFR Parts 2200-2270).

- Leases for uranium exploration and mining (public domain and acquired lands) 30 U.S.C. 181 and 351-359, 30 U.S.C. 1201 *et seq.* (43 CFR Parts 3500-3800).

- Approval of plan of operations in connection with uranium leases. 30 U.S.C. 22 *et seq.*, 43 U.S.C. 1701 *et seq.* (43 CFR Part 3802, 45 FR 13968).

- Bureau of Mines (mining activities and research).

- Fish and Wildlife Service (effects on fish and wildlife resources).

- Permits for use of National Wildlife Refuge and National Fish Hatchery Systems lands. 16 U.S.C. 668dd-ee for

refuges. 43 U.S.C. 931c-d for hatcheries. (50 CFR 25.41 and 29.21).

- Geological Survey:

- Consolidation of coal leases. 30 U.S.C. 202a.

- Approves and supervises coal exploration operations, on leased Federal lands, prior to issuance of a Mining Permit by Office of Surface Mining Reclamation and Enforcement. 30 U.S.C. 201(b), 30 U.S.C. 181 *et seq.*, (43 CFR Part 4300, 30 CFR Part 211).

- Approval and supervision of plan of operations for a uranium prospecting permit or mining lease. 30 U.S.C. 181 *et seq.*, (30 CFR Part 231).

- Heritage Conservation and Recreation Service (effects on historical or recreational values).

- National Park Service (affecting National Park System areas).

- Leases, permits and licenses for mining on National Park System lands involved in Wild and Scenic River Systems. 16 U.S.C. 1280.

- Access permits for mining activity within the National Park System. 16 U.S.C. 1902, 1908 (36 CFR Part 9).

- Office of Minerals Policy and Research Analysis (research).

- Office of Surface Mining Reclamation and Enforcement.

- Issues and enforces permits for coal exploration operations on Federal lands within an approved mining permit area; and, if there is no approved State Coal Mining Regulatory Program, on non-Federal and non-Indian lands. 30 U.S.C. 1262, 30 CFR Ch. VII, 43 CFR Part 4300.

- Issues and enforces permits for surface coal mining operations on Federal lands except the States do this when there is both an approved State Coal Mining Regulatory Program and a Cooperative Agreement between the State and the Secretary of the Interior. 30 U.S.C. 1267, 1268, 1271, and 1273, 30 CFR Ch. VII.

- Issues and enforces permits for surface coal mining operations on non-Federal lands in those States where there is no approved State Coal Mining Regulatory Program. 30 U.S.C. 1258-1262, 30 CFR Ch. VII.

- Issues and enforces permits for surface mining and surface effects of underground coal mining operations on Indian lands—effective September 3, 1980. 30 U.S.C. 1300, 30 CFR Ch. VII and 25 CFR Part 177.

- Water and Power Resources Service (water storage and delivery projects).

- Easements/permits for access rights-of-way. 43 U.S.C. 3871.

Department of Labor

- Mine Safety and Health Administration (worker safety)

- Occupational Safety and Health Administration (worker safety in very limited situations)

Department of Transportation

- Coast Guard.

- Construction and alterations on bridges and causeways over navigable waters. 33 U.S.C. 401, 491, 494-495, 513-514, 525.

- Federal Highway Administration (coal haul roads, effects of railroad coal transport on roads and streets).

- Federal Railroad Administration (railroad transport).

Environmental Protection Agency

(Pollution control and environmental effects.)

- The Solid Waste Disposal Act, 42 U.S.C. 3251 *et seq.*, as amended by the Resource Conservation and Recovery Act (RCRA). 42 U.S.C. 8901 *et seq.*

- Prevention of significant air quality deterioration (PSD). 42 U.S.C. 7470 *et seq.*

- Review of emission sources for conformance with new source performance standards. 42 U.S.C. 7411.

- Certification of new emission sources for conformance with National Emission Standards for Hazardous Air Pollutants. 42 U.S.C. 7412(c).

- National Pollutant Discharge Elimination System (NPDES)

- Wastewater permits. 33 U.S.C. 1342.

- Oil spill prevention, containment, and countermeasure plans (prepared by facility owner/operator.) 33 U.S.C. 1321, 1361 (40 CFR 112.7)

- Review of permits for discharges of dredged or fill materials into the waters of the United States. 33 U.S.C. 1344.

- Underground injection control (UIC) permits. 42 U.S.C. 300f *et seq.*

- Permits for transportation of materials (other than ~~hazardous~~ material) for ocean dumping. 33 U.S.C. 112, 1414.

- Permits for hazardous waste treatment storage and disposal facilities. 42 U.S.C. 6925 (40 CFR Parts 124, 123, 124).

Interstate Commerce Commission

(Regulation of carriers; environmental impacts from railroad construction for moving coal, including downline impacts; rates for coal movement by rail.)

Tennessee Valley Authority

(Tennessee Valley region.)

III. LAND USE

A. Land Use Changes, Planning, and Regulation of Land Development

Department of Agriculture

- Agricultural Stabilization and Conservation Service (Federally

subsidized agricultural conservation and land use programs).

- Soil Conservation Service (data on land use patterns, soil resources and all other areas, natural resources and resource management).

- Forest Service (National Forest and Grasslands):

- Special use permits, archeological permits, leases and easements. 16 U.S.C. 497; 16 U.S.C. 580d; 48 U.S.C. 341 (36 CFR Part 251), 261; 43 U.S.C. 1761.

- Permits for use of wilderness areas. 16 U.S.C. 472; 16 U.S.C. 551 (36 CFR Part 293).

- Mineral exploitation of acquired lands. 16 U.S.C. 520 (36 CFR Part 252).

- Easement and road rights-of-way in National Forests and other lands. 16 U.S.C. 533 (36 CFR 212.10).

- Grazing permits. 16 U.S.C. 580(K) and (L) (36 CFR Part 222).

- Geothermal resource developments. 30 U.S.C. 1014.

- Multiple-use sustained-yield units. 16 U.S.C. 528 (36 CFR Part 223); 30 U.S.C. 521 *et seq.*

- Surface use on public domain lands under U.S. mining laws. 16 U.S.C. 478-551 (36 CFR Part 252).

- Minerals development on acquired lands: Solid (hardrock) minerals. 16 U.S.C. 520; Phosphate oil, gas, oil shale, sodium, potassium and sulphur. 30 U.S.C. 352.

- Coal leasing. 30 U.S.C. 201-352.

- Surface coal mining operations. 30 U.S.C. 1272.

- Bankhead-Jones Farm Tenant Act, Title III—Administration of national grasslands. 7 U.S.C. 1010-1012 (36 CFR 213.3).

- Claim of privately owned horses and burros. 16 U.S.C. 1333 (36 CFR Part 222).

- Economics, Statistics and Cooperatives Service (data on natural resources; analysis of the economic impacts of agriculturally related pollution and resource degradation; and interactions of environmental programs with other federal farm policy objectives).

- Science and Education Administration (rural and community development; and the technical effects of agricultural practices on resource quality and off-farm pollution).

- Soil Conservation Service (technical planning and assistance in watershed protection for both private and public programs).

Department of Commerce

- National Oceanic and Atmospheric Administration (management and protection of coastal and marine resources).

Department of Defense

- Army Corps of Engineers (flood plains and wetlands).
- Rules governing work on or structures in or affecting the waters of the United States. 33 U.S.C. 403.
- Permits for discharges of dredged or fill materials into the waters of the United States. 33 U.S.C. 1344.
- Department of the Air Force (land use around airfields).

Department of Housing and Urban Development

- Office of Interstate Land Sales (land sales).
- Subdivided land sales, registration. Interstate Land Sales Full Disclosure Act. 15 U.S.C. 1701.
- Office of Community Planning and Development (community development; planning activities).

Department of the Interior

- Bureau of Indian Affairs.
 - Sale, exchange and conveyance of tribal trust or restricted lands. 25 U.S.C. 294, 372, 379 *et seq.*; 25 CFR 121.17-121.31.
 - Rights-of-way over Indian lands. 25 U.S.C. 323-328 (25 CFR Part 161).
 - Permits concessions and leases on lands withdrawn or acquired in connection with Indian irrigation projects. 25 U.S.C. 390; 25 CFR Part 203.
 - Sale of timber from tribal and allotted lands. 25 U.S.C. 406, 407 *et seq.*; 25 CFR Part 141.
 - Permits for grazing on Indian lands. 5 U.S.C. 301 *et seq.*; 25 CFR Part 151.
- Note.**—For Federal lands administered by Bureau of Indian Affairs see III B: Public Land Management.

Bureau of Land Management (effects on public lands and the outer continental shelf).

- For regulatory authorities see III B: Public Land Management.
- Bureau of Mines (minerals).
- Fish and Wildlife Service (effects on fish and wildlife resources and on components of the National Wildlife Refuge and National Fish Hatchery Systems).
- Approval of conversion of use for State lands acquired, developed or improved with grants under the (1) Pittman-Robertson Act, (2) Dingell-Johnson Act, (3) Endangered Species Act and/or (4) Anadromous Fish Act of 1965. For (1): 16 U.S.C. 669, 50 CFR 80.5; for (2): 16 U.S.C. 777, 50 CFR 80.5; for (3): 16 U.S.C. 1535; and for (4) 16 U.S.C. 757a and b.
- For regulatory authorities on Federal lands see III B: Public Land Management.

- Geological Survey (land use planning, geologic hazards, topographic and photographic mapping).
- Heritage Conservation and Recreation Service (National Trails System, Wild and Scenic Rivers System, outdoor recreation, urban parks, historic preservation).

• Approval of a conversion to a non-designated use for State and local lands acquired or developed, in whole or in part, with a Land and Water Conservation Fund Act grant. 16 U.S.C. 4601-8(f).

• Approval of a conversion to other than public recreation uses for State and local areas developed or improved with an Urban Park and Recreation Recovery Act grant. 16 U.S.C. 2509, 36 CFR Part 1228.

• Approval of a conversion to a non-designated use for lands deeded by the Federal government to State and local entities as park demonstration areas, recreation areas, wildlife conservation preserves and refuges and as historic monuments and properties under the (1) Recreation Demonstration Act of 1942 and (2) Federal Property and Administrative Services Act of 1949. For (1): 16 U.S.C. 459 *et seq.*; for (2): 40 U.S.C. 484(k)(2), 41 CFR Part 101 47.308-7.

• Approval of a conversion to a non-designated use of abandoned railroad rights-of-way acquired by State and local governments under Section 809(b) of the Railroad Revitalization and Regulatory Reform Act of 1976. 49 U.S.C. 1a, 43 CFR Part 31.18.

• National Park Service (effects on National Park System areas).

• For regulatory authorities see III B: Public Land Management.

• Office of Surface Mining Reclamation and Enforcement (surface mining and reclamation operations).

• Issues and enforces permits for coal exploration operations on non-Federal and non-Indian lands if there is no approved State Coal Mining Regulatory Program. 30 U.S.C. 1262, 30 CFR Ch. VII.

• Issues and enforces permits for surface coal mining operations on non-Federal lands in those States where there is no approved State Coal Mining Regulatory Program. 30 U.S.C. 1256-1262, 30 CFR Ch. VII.

• Issues and enforces permits for surface effects of underground coal mining operations on non-Federal land in those States where there is no approved State Coal Mining Regulatory Program. 30 U.S.C. 1228, 30 CFR Ch. VII.

• Issues and enforces permits for surface coal mining and surface effects of underground coal mining operations on Indian lands—Effective September 3, 1980. 30 U.S.C. 1300, 30 CFR Ch. VII and 25 CFR Part 177.

• Water and Power Resources Service (effects on land irrigated by federal projects, planning for water development projects and basin-wide water studies).

• Sale of farm units on Federal irrigation projects. (Statutory jurisdiction appears in individual project authorizations.)

• Administration of excess lands and residency requirements. 43 U.S.C. 371.

Department of Transportation

- Coast Guard:
- Permits for causeways. 33 U.S.C. 401.
- Bridges over navigable waters—33 U.S.C. 401, 491, 525.

• Approval of plans to alter a bridge. 33 U.S.C. 514.

• Federal Aviation Administration (airport land use compatibility):

• Approval of airport development, including airport master plans and airport layout plans. 49 U.S.C. 1711-1727 (14 CFR Part 152).

• Acquisition of land for public airports. 49 U.S.C. 1723 (14 CFR Part 154).

• Construction of alteration of objects affecting navigable airspace. 49 U.S.C. 1655 (14 CFR Part 77).

• Release of airport property from surplus property disposal restrictions. 49 U.S.C. 1101-1119 (14 CFR Part 155).

• Federal Highway Administration:

• Approval of highway projects and programs. 23 U.S.C. 101-156, generally, and 23 U.S.C. 204, 208-210, 212-219.

• Certification by FHWA and UMTA of urban transportation planning process. 23 U.S.C. 105(d), 134(a) and 49 U.S.C. 1604(g) (24 CFR 450.122).

• Regulation of highway-related land use: Highway beautification. 23 U.S.C. 131 (23 CFR Part 750); Junkyard control and acquisition. 23 U.S.C. 136, 315 (23 CFR Part 751); Landscapes and roadsides development. 23 U.S.C. 131, 315, 319 (23 CFR Part 752).

• Urban Mass Transportation Administration:

• Approval of Annual Element (AE) of Transportation Improvement Program (TIP). 23 U.S.C. 105 (23 CFR 450.320).

• Approval for substituting mass transit or other transit projects in lieu of interstate highway. 23 U.S.C. 103(e)(4).

• Certification by FHWA and UMTA of urban transportation planning process. 23 U.S.C. 105(d), 134(a) and 49 U.S.C. 1604(g) (24 CFR 450.122).

Environmental Protection Agency

(Pollution control and environmental effects.)

• Assistance for construction of publicly owned wastewater treatment works. 33 U.S.C. 1281.

Federal Emergency Management Agency

(National Flood Insurance Program, Disaster Relief Assistance, dam and levee safety, mitigation of natural hazards.)

International Boundary and Water Commission, U.S. Section

(Project lands, lands along international portions of Rio Grande and Colorado River and lands along international boundary in New Mexico, Arizona, and California.)

Interstate Commerce Commission

*Certificate of Public Convenience and Necessity for new railroad lines. 49 U.S.C. 1(18).

National Aeronautics and Space Administration

(Advanced technology for remote sensing of land use and land cover.)

National Capital Planning Commission

*Approval of land-use plans and construction in National Capital D.C. Code 5-428; 40 U.S.C. 74a(DC Code 9-304; D.C. Code 8-104; P.L. 90-553, §4; 40 U.S.C. 122 (D.C. Code 8-115.))

Tennessee Valley Authority

(Planning on public lands in Tennessee Valley region; assistance to local organizations.)

Water Resources Council

*River Basin Commissions (as geographically appropriate).

B. Public Land Management**Department of Agriculture**

*Forest Service (National Forests and Grasslands management):

*Special use permits, archeological permits, leases and easements. 16 U.S.C. 497, 16 U.S.C. 580d, 48 U.S.C. 341 (36 CFR Part 251); see also § 261; 43 U.S.C. 1761.

*Geothermal resource development. 30 U.S.C. 1014.

*Surface coal mining operations. 30 U.S.C. 1272.

*Coal leasing. 30 U.S.C. 201-352.

*Mineral development on acquired lands: solid (hardrock) minerals. 16 U.S.C. 520 (36 CFR Part 252; phosphate, oil, gas, oil shale, sodium, potassium and sulphur). 30 U.S.C. 352.

*Easement and road rights-of-way in National Forests and other lands. 16 U.S.C. 533 (36 CFR 212.10).

*Grazing permits. 16 U.S.C. 580 (K) and (L) (36 CFR 227.1).

*Multiple use sustained-yield units. 16 U.S.C. 528 (36 CFR Part 223).

*Bankhead-Jones Farm Tenant Act, Title III—Administration of National

Grasslands. 7 U.S.C. 1010-12 (36 CFR 213.3).

*Claim of privately owned horses and burros. 36 CFR Part 222.

Department of Commerce

*National Oceanic and Atmospheric Administration (consistency of spillover impacts from public land uses with coastal management programs).

Department of Defense

(Lands under Department control.)

*Army Corps of Engineers (project recreation lands).

*Department of the Air Force (land use around airfields).

Department of the Interior

*Bureau of Indian Affairs (effects on Indian lands):

*Sale of Federal land purchased for Indian administrative uses. 25 U.S.C. 293.

*Leases, permits and easements for public works on public lands under the jurisdiction of BIA. 43 U.S.C. 931c, 931d (43 CFR Part 9).

*Rights-of-way over Federal lands under BIA jurisdiction. 25 U.S.C. 323-328, 25 CFR Part 181.

*Permits for grazing on Federal lands under BIA jurisdiction. 5 U.S.C. 301, *et seq.*; 25 CFR Part 151.

*Leases for mining, oil and gas, coal, farming and other uses on Federal lands under BIA jurisdiction. 5 U.S.C. 301, 25 U.S.C. 392, *et seq.*; 25 CFR Part 131.

*Note.—Indian lands are private and not public lands. For Indian lands see III A: Land Use Changes, etc.

*Bureau of Land Management (effects on public lands and outer continental shelf):

*Easements/permits for rights-of-way. 43 U.S.C. 9, 43 U.S.C. 1701 *et seq.*, 43 CFR Parts 2800-2900.

*Grants for rights-of-way for "common carrier" oil and gas pipelines on outer continental shelf. 43 U.S.C. 1331, 43 CFR Part 3340.

*Easements, permits and leases for public works. 43 U.S.C. 931 c and d, 43 CFR Part 9.

*Special land-use permits for habitation, occupation and other purposes. 43 U.S.C. 1732(b), 43 CFR Part 2920.

*Permits for off-road vehicular use special events, i.e., tours and competitions. 43 CFR Part 8372.

*Sale or lease of land for solid waste disposal sites. 43 U.S.C. 869 *et seq.* For sale: 43 CFR Part 2740; for lease: 43 CFR Part 2912.

*Permits for coral harvesting on the outer continental shelf. 43 U.S.C. 1334, 43 CFR Part 6224.

*Exchange of Federal lands for other property. 43 U.S.C. 1716, 43 CFR Parts 2200-2270.

*Withdrawal of public lands for deep-burial depositories for radioactive waste. 43 U.S.C. 1714.

*Leases for oil and gas deposits: (a) Public domain lands. 30 U.S.C. 181 *et seq.*, 30 CFR Part 221, 43 CFR Part 3100.

(b) Acquired lands. 30 U.S.C. 351-359, 30 CFR 221, 43 CFR Part 3100.

(c) Outer continental shelf lands. 43 U.S.C. 1331-1343, 30 CFR 250 and 251, 43 CFR Part 3300.

(d) In and under railroad and other rights-of-way acquired under laws of the United States. 30 U.S.C. 301-306, 43 CFR Part 3100.

*Leases for oil shale, native asphalt, solid and semisolid bitumen and bituminous rock. For leases: 30 U.S.C. 241, 43 CFR Part 3500; for exchanges: 43 U.S.C. 1716, 43 CFR 2200-2270.

*Leases for uranium exploration and mining (public domain and acquired lands). 30 U.S.C. 181 and 351-359, 30 U.S.C. 1201 *et seq.*, 43 CFR Parts 3500-3800.

*Leases for geothermal resources recovery. 30 U.S.C. 1001-1025, 43 CFR Parts 3200-3250.

*Exploration Licenses to explore for coal, uranium and other leasable minerals on unleased lands. 30 U.S.C. 181 and 201(b), 43 CFR Part 3400.

*Leases/permits for recovery of coal and uranium deposits. 30 U.S.C. 181 *et seq.*, 30 U.S.C. 120 *et seq.*, 43 U.S.C. 1701 *et seq.*, 43 CFR Parts 3400-3800.

*Permits to mine coal for domestic needs. 30 U.S.C. 208, 43 CFR Part 3440.

*Leases for phosphate, sodium, potash, etc., exploration and mining. 30 U.S.C. 181 *et seq.*, 43 CFR Group 3500.

*Licenses for geothermal powerplant. 30 U.S.C. 1001-1025, 43 CFR Part 3250.

*Licenses for synthetic liquid fuel facilities. 30 U.S.C. 323.

*Solar energy facility siting. 43 U.S.C. 1761.

*Permits for sand, stone and gravel. 30 U.S.C. 601, 602.

*Permits for grazing. 43 U.S.C. 315, 43 CFR Group 4100.

*Leases/transfers of public lands for a public airport. 49 U.S.C. 1115, 43 CFR Part 2840.

*Leases and sale of Federal land to State and local agencies and non-profit groups for recreational and public purposes. 43 U.S.C. 869 *et seq.*, 43 CFR Part 2740 (sales), 43 CFR Part 2912 (leasing).

*Permits for commercial recreational use of public lands. 43 U.S.C. 1701 *et seq.*, 43 CFR Part 8370.

*Concurrence for placer mining use of the surface of public lands withdrawn or reserved for power development or for a

power site. 30 U.S.C. 621, 43 CFR Part 3730.

*Leases, permits and licenses for mining in Wild and Scenic River System areas. 16 U.S.C. 1280; each area has special Federal Regulations.

*Management and control of wild free-roaming horses and burros and cooperative agreements for adoption. 16 U.S.C. 1331-1340, 43 CFR Group 4700.

*Sale by contract of forest products. 30 U.S.C. 601 *et seq.*, 43 U.S.C. 315, 423, and 1181a; 43 CFR Group 5400.

*Permits for free use of timber. 16 U.S.C. 604 *et seq.*, 30 U.S.C. 189, 48 U.S.C. 423, 43 CFR Part 5500.

*Bureau of Mines (mineral land assessment):

*Agreements to dispose of helium of the United States. 43 U.S.C. 1201, 30 U.S.C. 180 *et seq.*, 43 CFR Part 16.

*Fish and Wildlife Service (effects on fish and wildlife resources):

*Easements/permits for transmission line, oil and gas pipeline and other rights-of-way across National Wildlife Refuge and National Fish Hatchery System land. 16 U.S.C. 668dd *et seq.*, for refuges. 43 U.S.C. 931 c and d for hatcheries; 50 CFR 25.41 and 29.21.

*Permits for rights-of-way across National Wildlife Monuments (Alaska only). 16 U.S.C. 432, 460k-3, and 742(f); 50 CFR Part 100.

*Permits for off-road vehicular use on National Wildlife Refuge System areas. 50 CFR Part 2634.

*Geological Survey:

*Supervision of oil and gas, oil shale and bitumen lease operations. Public domain: 30 U.S.C. 181, *et seq.*; 30 CFR Part 221. Acquired lands: 30 U.S.C. 351, *et seq.*; 30 CFR Part 221. Outer continental shelf: 43 U.S.C. 1331, *et seq.*; 30 CFR Parts 250 and 251. Indian lands: 25 U.S.C. 396, *et seq.*; 25 CFR Parts 171-174, 183, 184.

*Easements/rights of use for "gathering" pipelines, artificial islands, platforms and other fixed structures on any Federal or State outer continental shelf oil or gas lease. 43 U.S.C. 1334 and 1335, 30 CFR 250.18 and .19.

*Approves and supervises coal exploration operations, on leased Federal lands, prior to issuance of a Mining Permit by Office of Surface Mining Reclamation and Enforcement. 30 U.S.C. 201(b), 30 U.S.C. 181 *et seq.*, 43 CFR 4300, 30 CFR Part 211.

*Approval and supervision of plan of operations for a prospecting permit or a mining lease issued on public domain lands, acquired lands, and tribal and allotted Indian lands for potash, sodium, phosphate and other minerals (exclusive of oil, gas and coal). 30 U.S.C. 189 *et seq.*, 30 CFR Part 231.

*Permits for geothermal resources exploration. 30 U.S.C. 1023, 30 CFR 270.78.

*Supervision of geothermal resources lease operation. 30 U.S.C. 1023, 30 CFR Parts 270 and 271.

*Heritage Conservation and Recreation Service (funding of State and local programs for acquisition, development and preservation of public park, recreation and cultural/historical resources, Wild and Scenic Rivers System, National Trails System).

*National Park Service (effects on National Park System areas):

*Leases, permits and licenses for mining on National Park System lands involved in Wild and Scenic River System. 16 U.S.C. 1280.

*Access permits for mining activity within the National Park System. 16 U.S.C. 1902, 1906 (36 CFR Part 9); 30 U.S.C. 21 *et seq.*

*Permits, leases and easements for rights-of-way, grazing, oil and gas operations, and other uses on National Park System areas. 16 U.S.C. 1 *et seq.*; 36 CFR Parts 9 *et seq.*

*Permits for commercial operations on National Park System areas. 16 U.S.C. 1 *et seq.*, 36 CFR Part 7.

*Permits for off-road vehicular use. 36 CFR Part 7.

*Office of Surface Mining Reclamation and Enforcement:

*Issues and enforces permits for coal exploration operations on Federal lands within an approved mining permit area; and, if there is no approved State Coal Mining Regulatory Program, on non-Federal and non-Indian lands. 30 U.S.C. 1262, 30 CFR Ch. VII, 43 CFR Part 4300.

*Issues and enforces permits for surface coal mining operations on Federal lands except the State does this when there is both an approved State Coal Mining Regulatory Program and a Cooperative Agreement between the State and the Secretary of Interior. 30 U.S.C. 1267, 1268, 1271 and 1273, 30 CFR Ch. VII.

*Water and Power Resources Service (water storage and delivery projects, recreational developments, salinity control, sedimentation, irrigation):

*Sale or lease of project lands to a governmental entity or a non-profit group for recreational or other public purposes. 43 U.S.C. 809.

*Lease of project lands for commercial recreational developments. 43 U.S.C. 391 *et seq.*

Department of Transportation

*Transportation programs with measures to protect land traversed (particularly parks, recreation areas and historic sites). Department of

Transportation Act as amended. 49 U.S.C. 1651-1659.

*Federal Highway Administration (construction and management of National Park Service roads and forest highways):

*Approval of projects for Indian reservation roads and bridges. 23 U.S.C. 206.

*Construction of public lands highways. 23 U.S.C. 209.

*Approval of projects for public lands development roads and trails. 23 U.S.C. 214.

Environmental Protection Agency

(Pollution control and environmental effects; pesticide use and integrated pest management.)

*Underground Injection Control permits on Indian lands. 42 U.S.C. 300 f. *et seq.*

*Air emissions from federal facilities. 42 U.S.C. 7418.

*Wastewater discharges from federal facilities. 33 U.S.C. 1323.

*Solid wastes and hazardous wastes from federal facilities. 42 U.S.C. 6961.

*Pesticide use on public lands.

Federal Emergency Management Agency

(National Flood Insurance Program, disaster relief assistance.)

General Services Administration

(Public buildings management.)

*Federal Property Resources Service (land disposal).

National Aeronautics and Space Administration

(Advanced technology of remote sensing of land use and land cover.)

Tennessee Valley Authority

(Project lands.)

C. Land Use in Coastal Areas

Department of Agriculture

*Forest Service.

*Soil Conservation Service (soil stability, hydrology).

Department of Commerce

*Maritime Administration (ports).

*National Oceanic and Atmospheric Administration (coastal and marine resources and protection):

*Permits for activities in designated marine sanctuaries. 16 U.S.C. 143 *et seq.* (15 CFR Part 922).

*Approval and funding of state coastal management programs. 16 U.S.C. 1451 *et seq.* (15 CFR Parts 923, 930).

*Protection of threatened and endangered marine species and critical habitats. 16 U.S.C. 1531 *et seq.* (50 CFR Part 222).

*Establishment of estuarine sanctuaries. 16 U.S.C. 1461 (15 CFR Part 921).

*Consistency determinations to insure Federal development projects and Federally permitted or funded projects with an approved state coastal zone management plan. 16 U.S.C. 1451 (15 CFR Part 930).

*Review of Federal permits affecting water resources. 16 U.S.C. 661 *et seq.*

*Grants and loans under Coastal Energy Impact Program. 16 U.S.C. 1456a (15 CFR Part 931).

Department of Defense

*Army Corps of Engineers (beaches, dredge and fill permits, Refuse Act permits):

*Rules governing work or structures in or affecting waters of the United States. 33 U.S.C. 401, 403, and 419.

*Authority to enjoin or force removal of refuse placed in or on the banks of a navigable water or tributary of a navigable water. 33 U.S.C. 407.

*Permits for private projects to improve navigable waters. 33 U.S.C. 565.

*Permits for discharges of dredged or fill materials into waters of the United States. 33 U.S.C. 1344.

*Permits for transportation of dredge materials for dumping into ocean waters. 33 U.S.C. 1413.

Department of Energy

*Federal Energy Regulatory Commission:

*Certificates for natural gas facilities (underground storage fields, LNG facilities, and transmission pipeline facilities); sale, exchange and transportation of gas; abandonment of facilities; and curtailment of natural gas service; authorization to import and export natural gas. Natural Gas Act. 15 U.S.C. 717-717w.

*Authorization compelling the expansion, improvement or connection of natural gas facilities. 15 U.S.C. 717f(a).

*Office of Environment (energy policy, programs and projects).

*Economic Regulatory Administration.

*Exemptions from prohibitions against the burning of natural gas in powerplants and major fuel-burning installations. Powerplant and Industrial Fuel Use Act of 1976, 42 U.S.C. 8301 *et seq.*; Department of Energy Organization Act, 42 U.S.C. 7101 *et seq.*

Department of Housing and Urban Development

(Development in coastal areas.)

Department of the Interior

*Bureau of Indian Affairs (Indian lands).

*Bureau of Land Management (coastal zone planning and management, outer continental shelf):

*Leases for oil and gas deposits on the outer continental shelf. 43 U.S.C. 1331-1343, 30 CFR Parts 250 and 251, 43 CFR Part 3300.

*Grants for rights-of-way for "common carrier" oil and gas pipelines on outer continental shelf. 43 U.S.C. 1331, 43 CFR Part 3340.

*Permits for harvesting coral on the outer continental shelf. 43 U.S.C. 1334, 43 CFR Part 6224.

*Fish and Wildlife Service (effects on fish and wildlife resources):

*Easements/permits for transmission line, oil and gas pipeline and other rights-of-way across National Wildlife Refuge System land. 16 U.S.C. 668dd *et seq.*, 50 CFR 25.41 and 29.21.

*Geological Survey (estuarine and geophysical exploration on outer continental shelf, coastal zone planning):

*Permits for geological and geophysical exploration on outer continental shelf. 43 U.S.C. 1340 (30 CFR Part 251).

*Approval of geologic and geophysical exploration plans. 43 U.S.C. 1340.

*Drilling permits. 43 U.S.C. 1351.

*Supervision of oil and gas lease operations in the outer continental shelf. 43 U.S.C. 1331 *et seq.*, 30 CFR Parts 250 and 251.

*Easements/rights of use for "gathering" pipelines, artificial islands, platforms and other fixed structures on any Federal or State outer continental shelf oil or gas lease. 43 U.S.C. 1334 and 1335, 30 CFR 250.18 and .19.

*Heritage Conservation & Recreation Service (effects on historical and recreational values, coastal zone planning):

*National Park Service (effects on National Park System areas, barrier island ecology and coastal processes).

*Permits, leases and easements for rights-of-way, oil and gas operations and other uses on National Park System areas. 16 U.S.C. 1 *et seq.* 36 CFR Part 9 *et seq.*

*Water and Power Resources Service (water development projects in coastal areas, estuarine effects on water developments):

*Easements/permits for rights-of-way. 43 U.S.C. 3871.

Department of Transportation

*Coast Guard (bridges, pipelines/ transmission lines crossing navigable

waters, navigation and deepwater ports):

*Bridges over navigable waters—permits. 33 U.S.C. 525.

*Approval of plans to alter a bridge. 33 U.S.C. 514.

*Permits for causeways. 33 U.S.C. 401.

*Waterfront facilities. 33 U.S.C. 1221, 1321.

*Deepwater port regulation. 33 U.S.C. 1503-1524.

*Licensing of persons to engage in the ownership, construction or operation of a deepwater port. 33 U.S.C. 1503-1520.

Environmental Protection Agency

(Pollution control and environmental effects.)

*Permits for ocean discharges. 33 U.S.C. 1343.

*Permits for disposal of sewage sludge. 33 U.S.C. 1345.

*Review of permits for transportation of dredged material for ocean dumping. 33 U.S.C. 1413.

*Permits for transportation of materials (other than dredged materials) for ocean dumping. 33 U.S.C. 1412, 1414.

*Oil spill prevention, containment, and countermeasure plans (prepared by facility owner/operator). 1321, 1361 (40 CFR 112.7).

*Criteria for classification of solid waste disposal facilities and practices. 40 U.S.C. 6907(a)(3), 6944(a), 42 U.S.C. 345 (40 CFR 257).

*Permits for hazardous waste treatment, storage, and disposal facilities. 42 U.S.C. 6925 (40 CFR 122, 123, 124).

*Assistance for construction of publicly owned wastewater treatment works. 33 U.S.C. 1261.

*Review of permits for discharges of dredged or fill materials in waters of the United States. 33 U.S.C. 1344.

Federal Emergency Management Agency

(National Flood Insurance Program; floodplain management; sand dunes, mangrove forests, barrier islands; disaster relief assistance.)

National Aeronautics and Space Administration

(Advanced technology for remote sensing of land use and land cover.)

D. Protection of Environmentally Critical Areas

Floodplains, Wetlands, Barrier Islands, Beaches and Dunes, Unstable Soils, Steep Slopes, Aquifer Recharge Areas, Tundra, Etc.

Department of Agriculture

- Watershed Protection and Flood Prevention Act. 16 U.S.C. 1001-1009 (7 CFR Parts 15, 23, 600).
- Agricultural Stabilization and Conservation Service (commodity and land use programs; Water Bank).
- Permits for importing or exporting terrestrial plants in compliance with the Endangered Species Act. 16 U.S.C. 1531-1543.
- Forest Service (National Forest System lands).
- Science and Education Administration (soil and water conservation program).
- Soil Conservation Service (watershed protection and flood control; soil and water conservation).

Department of Commerce

- National Oceanic and Atmospheric Administration (coastal and marine resources, management and protection):
- Protection of threatened and endangered marine species and critical habitats. 16 U.S.C. 1531 *et seq.* (50 CFR Part 222).
- Permits for activities in designated marine sanctuaries. 16 U.S.C. 1431 *et seq.* (15 CFR Part 922).
- Establishment of estuarine sanctuaries. 16 U.S.C. 1401 (15 CFR Part 921).
- Approval and funding of state coastal management programs. 16 U.S.C. 1451 *et seq.* (15 CFR Parts 923, 930).
- Review of Federal permits affecting water resources. 16 U.S.C. 661 *et seq.*

Department of Defense

- Army Corps of Engineers:
- Rules governing work or structures in or affecting waters of the United States. 33 U.S.C. 401, 403, 419.
- Permits for discharge of dredged or fill materials into waters of the United States. 33 U.S.C. 1344.

Department of Health and Human Services

- Public Health Service: Center for Disease Control (health issues).

Department of Housing and Urban Development

- Office of Community Planning and Development (urban and floodplain areas).

Department of the Interior

- Bureau of Indian Affairs (Indian lands).
- Bureau of Land Management (public lands, outer continental shelf; management of "special areas"):
- Leases, permits and licenses for mining in Wild and Scenic River System

areas. 16 U.S.C. 1280; each area has special Federal Regulations.

- Approval of plan of operations for a mining lease in a wilderness study area. 43 U.S.C. 1701 *et seq.*, 12 U.S.C. 1201 *et seq.*, 43 CFR 802.

• Permits for use of a designated "special area" as defined in 43 CFR 8372.0-5(g). 43 U.S.C. 1701 *et seq.*, 16 U.S.C. 460 (1-6a), 16 U.S.C. 670 (g-n), 43 CFR Part 8370.

• Federal lands exempted from coal leasing. 30 U.S.C. 181 *et seq.*, 30 U.S.C. 351-359, 43 CFR 3400.2.

• Restrictions on use of "outstanding natural areas" and "primitive areas." 43 U.S.C. 1701 *et seq.*, 43 CFR Subpart 8352.

• Fish and Wildlife Service (protection of fish and wildlife resource values, National Wildlife Refuge and National Fish Hatchery Systems):

• Protection of endangered species and critical habitats. 16 U.S.C. 1531-1543, 50 CFR Part 402.

• Determination of critical habitats for endangered and threatened species of fish and wildlife and plants. 16 U.S.C. 1533; 50 CFR Parts 17, 402 and 424.

• Geological Survey (geologic and hydrologic sensitive areas; earthquake, volcanic and other natural hazards):

• Discharges from outer continental shelf mineral leases. 30 CFR Part 250.

• Heritage Conservation & Recreation Service (historical and recreational values, Wild and Scenic River System, National Trails System):

• Identification and listing on the National Registry of Natural Landmarks of nationally significant natural areas in the United States. 16 U.S.C. 461, 36 CFR Part 1212.

• National Park Service (National Park System areas):

• See IIB for regulatory authorities.

• Office of Surface Mining Reclamation and Enforcement (surface coal mining and reclamation operations):

• Designation of areas unsuitable for surface coal mining and reclamation operations. 30 U.S.C. 1272 and 1276, 30 CFR Parts 765 *et seq.*

• Office of Water Research and Technology (water resource planning).

• Water and Power Resources Service (water storage and delivery projects).

Department of Transportation

• Coast Guard:

• Establishment of port access routes. 33 U.S.C. 1221.

• Construction and alterations on bridges and causeways over navigable waters. 33 U.S.C. 401, 491, 494-495, 513-514, 525.

• Federal Highway Administration:

• Approval of federal-aid highway projects. 23 U.S.C. 101-156, generally.

• Approval of highway bridge replacement and rehabilitation. 23 U.S.C. 144 (23 CFR part 650).

Environmental Protection Agency

(Pollution control and environmental effects on wetlands, floodplains, and prime agricultural lands.)

• Underground injection control permits. 42 U.S.C. 300 *f et seq.*

• Criteria for classification of solid waste disposal facilities and practices. 40 U.S.C. 6907(a)(3), 6944(a), 42 U.S.C. 345 (40 CFR Part 257).

• Permits for owners and operators of hazardous waste treatment, storage and disposal facilities. 42 U.S.C. 6924 (40 CFR Part 250 Subpart D).

• Review of permits for discharges of dredged or fill materials into waters of the United States. 33 U.S.C. 1344.

Federal Emergency Management Agency

(National Flood Insurance Program; floodplain management; sand dunes, mangrove forests, barrier islands; disaster relief assistance.)

Tennessee Valley Authority (Tennessee Valley Region)**Water Resources Council**

(Coordination of floodplain and wetland initiatives.)

• River Basin Commissions (as geographically appropriate)

E. Community Development

• Action (effects on low income populations).

Advisory Council on Historic Preservation

(Historic preservation.)

Department of Agriculture

• Science and Education Administration (rural and community development program).

• Soil Conservation Service (soil surveys).

• Farmers Home Administration (rural and community development program).

• Agricultural Stabilization and Conservation Service (USDA rural development and farm programs).

Department of Commerce

• Economic Development Administration (designated areas).

• National Oceanic and Atmospheric Administration (energy development impact on communities; financial assistance under the Coastal Energy Impact Program):

• Approval and funding of State coastal zone management programs. 16

U.S.C. 1451 *et seq.* (15 CFR Parts 923, 130).

Department of Health and Human Services

- Public Health Service: Center for Disease Control (health).
- Office of Human Development Services (problems of handicapped, aged, children and Native Americans).

Department of Housing and Urban Development

- Office of Community Planning and Development (community development; effects on low income populations; economic revitalization in distressed areas; density and congestion mitigation; rehabilitation and urban homesteading).

Department of the Interior

- Bureau of Indian Affairs (Indian peoples and lands).
- Bureau of Land Management (public lands):
 - *Leases and sale of Federal land to State and local agencies and non-profit groups for recreational and public purposes. 43 U.S.C. 809 *et seq.*, 43 CFR 2740 for sales, 43 CFR 2912 for leases.
 - *Leases/transfers of public lands for a public airport. 49 U.S.C. 1115, 43 CFR Part 2840.
 - *Permits for free use of timber. 16 U.S.C. *et seq.*, 30 U.S.C. 208, 43 CFR 3440.
 - *Exchange of Federal lands for other property. 43 U.S.C. 1716, 43 CFR 2200-2700.
 - *Easements, leases and permits for public works. 43 U.S.C. 931 c and d, 43 CFR Part 9.
 - *Special land-use permits for habitation, occupation and other purposes. 43 U.S.C. 931 c and d, 43 CFR Part 9.
 - *Sale or lease of land for solid waste disposal sites. 43 U.S.C. 809 *et seq.* For sale: 43 CFR Part 2740; for lease: 43 CFR Part 2912.
 - Fish and Wildlife Service (effects on fish and wildlife resources and National Wildlife Refuge and National Fish Hatchery System areas).
 - Heritage Conservation & Recreation Service (landmarks, archeological remains, outdoor recreation, urban parks, historic preservation):
 - *Assistance to State and local agencies, through Land and Water Conservation Fund Act grants, for the acquisition and/or development of park and recreation areas and/or facilities. 16 U.S.C. 4601.
 - *Assistance to State and local agencies, through Urban Park and Recreation Recovery Act grants, for the development and/or improvement of

park and recreation areas. 16 U.S.C. 2504, 36 CFR Part 1228.

- *Assistance for the acquisition, rehabilitation, restoration and reconstruction of historic properties. 16 U.S.C. 470 *et seq.*, 36 CFR Part 1207, 36 CFR 60.3.
- National Park Service (effects on National Park System Areas).
- Water and Power Resources (water storage and delivery, irrigation):
 - *Sale of farm units on Federal irrigation projects (Statutory jurisdiction appears in individual project authorizations).
 - *Sale or lease of project lands to a governmental entity or nonprofit group for recreational or other public purposes. 43 U.S.C. 809.

Department of Transportation

- Federal Aviation Administration (effects of airport development on communities).
- Federal Highway Administration (effects of highways on communities):
 - *Relocation assistance in connection with highway projects. 42 U.S.C. 4801 *et seq.* (23 CFR Part 740, 49 CFR Part 25).
 - *Approval of economic growth center development highways. 23 U.S.C. 143.
- Urban Mass Transportation Administration.
- *Urban Mass Transportation Act. 49 U.S.C. 1610.

Environmental Protection Agency

(Pollution control and environmental effects.)

Federal Emergency Management Agency

(National Flood Insurance program, disaster relief assistance, dam and levee safety, mitigation of natural hazards.)

General Services Administration

(Building design and construction.)

Interstate Commerce Commission

(Effects of freight and passenger railline abandonment on community development.)

National Capital Planning Commission

(Washington, D.C. area.)

*Approval of land use plans and construction in the National Capital. D.C. Code 5-428, 40 U.S.C. 74a (D.C. Code 5-304); D.C. Code 5-104; Pub. L. 90-553, section 4; 40 U.S.C. 122 (D.C. Code 5-115).

National Endowment for the Arts

(Effects of development on artistic values.)

F. Historic, Architectural, and Archeological Preservation

Advisory Council on Historic Preservation

(Effects of development or other actions on archeological and historic resources.)

*Procedures for the protection of historic and cultural properties, 36 CFR Part 800.

Department of Agriculture

- Forest Service (historic and archeological resources in National Forests and Grasslands).
- Agricultural Stabilization and Conservation Service (effects on historic and archeological resources from agriculture).

Department of Commerce

- National Oceanic and Atmospheric Administration (areas for preservation and restoration under State coastal zone management programs):
 - *Marine Sanctuaries. 16 U.S.C. 1431.

Department of Housing and Urban Development

(Protection of historic and architectural resources in urban areas.)

Department of the Interior

- *Permits to examine ruins, excavations and gathering of objects on land under jurisdiction of Interior, Agriculture and Army. 16 U.S.C. 432.
- Bureau of Indian Affairs (protection of historic and archeological resources on Indian and Native American lands):
 - *Concurrence for issuance and supervision of antiquity permits (see HCRS) on Indian lands. 16 U.S.C. 432, 25 CFR Part 132.
 - *Protection of access to sacred sites, use and possession of sacred objects and other rights of the American Indian, Eskimo, Aleut, and Native Hawaiian. 42 U.S.C. 1906.
- Bureau of Land Management (cultural resource management on public lands and outer continental shelf):
 - *Concurrence for issuance and supervision of antiquity permits (see HCRS). 16 U.S.C. 432, 43 CFR Part 3.
 - Fish and Wildlife Service (National Wildlife Refuge and National Fish Hatchery System lands):
 - *Special use permit for antiquities search and collection activities—in addition to an antiquity permit (see HCRS). 16 U.S.C. 606dd *et seq.*, 50 CFR 25.41.
 - Heritage Conservation & Recreation Service (HCRS) (protection of historic, archeological, architectural properties):
 - *Permits to examine ruins, excavate archeological sites and gather objects of

antiquity on Federal and Indian lands (Antiquity permits issued by the Departmental Consulting Archeologist). 16 U.S.C. 432, 43 CFR Part 3.

*Permits to excavate or remove archeological resources located on public lands or Indian lands. 16 U.S.C. 470aa *et seq.* [Regulations for the Archeological Resources Protection Act of 1979 under Development.]

*Determinations of eligibility for and listing on the National Register of Historic Places of sites, buildings, districts, structures and objects of historical, architectural, archeological, and/or cultural significance. 16 U.S.C. 470, 36 CFR Parts 60, 63 and 67, 36 CFR 808.4(a)(3).

• National Park Service (protection of archeological and historic resources on National Park System lands):

*Concurrence for issuance and supervision of antiquity permits (see HCRS). 16 U.S.C. 432, 43 CFR Part 3, 36 CFR 2.20 and 2.25.

• Water and Power Resources Service (protection of cultural resources on water storage and delivery project lands):

*Concurrence for issuance and supervision of antiquity permits (see HCRS). 16 U.S.C. 432, 43 CFR Part 3.

Department of Transportation

*Approval of transportation programs or projects that require the use of or have significant impacts on an historic site. 42 U.S.C. 1853(f).

• Coast Guard:

*Construction and alterations on bridges and causeways over navigable waters that are or require the use of or have significant impacts on an historic site. 33 U.S.C. 401, 491, 525; 33 U.S.C. 494-496; 33 U.S.C. 513-514.

• Federal Highway Administration (effects of highway projects on cultural resources):

*Approval of transportation programs or projects that require the use of or have significant impacts on an historic site. 42 U.S.C. 138.

*Archeological and paleontological salvage on federal and federal-aid highway projects. 23 U.S.C. 305 (23 CFR Part 785).

• Urban Mass Transportation Administration (effects of rapid transit projects on architectural and historic resources).

Environmental Protection Agency

(Effects of pollution on historic, architectural and archeological resources.)

General Services Administration

• Public Buildings Service (effects of development and pollution

architectural and historic resources in urban areas).

National Capital Planning Commission

(Effects of development and pollution on architectural, historic and archeological resources in the Washington, D.C. area.)

*Approval of land use plans and construction in the National Capital. D.C. Code 5-428; 40 U.S.C. 74a (D.C. Code 8-304); D.C. Code 8-104; Pub. L. 90-553, section 3; 40 U.S.C. 122 (D.C. Code 8-115).

Tennessee Valley Authority

(Effects of development and other actions on historic and archeological resources in the Tennessee Valley region.)

G. Outdoor Recreation

Department of Agriculture

• Forest Service (National Forest land and Grasslands).

*Permits for use of wilderness areas. 16 U.S.C. 472, 16 U.S.C. 551 (36 CFR Part 293).

*Permits for hunting and fishing in refuge lands. 16 U.S.C. 551; 16 U.S.C. 683.

• Soil Conservation Service (watershed protection).

Department of Commerce

• National Oceanic and Atmospheric Administration (marine recreational fishing, coastal access planning in state coastal zone management programs)

Department of Defense

• Army Corps of Engineers (recreation areas on Department of Defense lands):

*Activities on water resources development projects. 16 U.S.C. 460d (36 CFR Parts 313, 327).

Department of Health and Human Services

• Public Health Service: Center for Disease Control (outdoor recreation and health).

Department of Housing and Urban Development

(Outdoor recreation in urban areas.)

Department of the Interior

• Bureau of Indian Affairs (outdoor recreation on Indian lands).

• Bureau of Land Management (outdoor recreation on public lands generally, including ORV use and river management):

*Leases and sale of Federal land to State and local agencies and non-profit groups for recreational and public purposes. 43 U.S.C. 889 *et seq.* 43 CFR

Part 2740 for sales, 43 CFR Part 2912 for leases.

*Exchange of Federal land for other property. 43 U.S.C. 1717, 43 CFR Parts 2200-2700.

*Permits for off-road vehicular use special events, i.e., tours and competitions. 43 U.S.C. 1701 *et seq.*, 16 U.S.C. 460(1-6a), 43 CFR Part 8372).

*Permits for use of a national trail, developed facility and a designated "special area" as defined in 43 CFR 8372.0-5(g). 43 U.S.C. 1701 *et seq.*, 16 U.S.C. 460 (1-6a), 16 U.S.C. 670 (g-n), 43 CFR Part 8370.

*Permits for commercial recreation use of public lands. 43 U.S.C. 1701 *et seq.* 43 CFR Part 8370.

• Fish and Wildlife Service (effects on fish and wildlife resources):

*Permits for special uses including concessions and other recreational facilities on National Wildlife Refuge System lands. 16 U.S.C. 668dd *et seq.*, 50 CFR 25.51-25.41.

*Permits for off-road vehicular use on National Wildlife Refuge System lands. 50 CFR Part 2634.

• Heritage Conservation & Recreation Service (outdoor recreation, urban parks, Wild and Scenic Rivers System, National Trails System):

*Assistance to State and local agencies, through Land and Water Conservation Fund Act grants, for the acquisition and/or development of park and recreation areas and/or facilities. 16 U.S.C. 4601.

*Assistance to State and local agencies, through Urban Park and Recreation Recovery Act grants, for the development and/or improvement of park and recreation areas. 16 U.S.C. 2504, 36 CFR Part 1228.

• National Park Service (effects on National Park System areas):

*Permits for off-road vehicle use. 16 U.S.C. 1 *et seq.*, 36 CFR 7.

• Water and Power Resources (effects on water storage and delivery projects):

*Sale or lease of project lands to a governmental entity or a non-profit group for recreational purposes. 43 U.S.C. 889.

*Lease of project lands for commercial recreational developments. 43 U.S.C. 391 *et seq.*

*Permits for organized off-road vehicular events. 43 CFR 420.24.

Department of Transportation

• Coast Guard:

*Recreational boating regulation. 46 U.S.C. 1451.

• Federal Highway Administration: *Preservation of parklands. 23 U.S.C. 138.

*Access highways to public recreation areas on lakes. 23 U.S.C. 155.

Environmental Protection Agency

(Pollution control and environmental effects.)

National Capital Planning Commission

*Approval of land use plans and construction in the National Capital. D.C. Code 5-428; 40 U.S.C. 74a (D.C. Code 9-304); D.C. Code 8-104; Pub. L. 90-553; 40 U.S.C. 122 (D.C. Code 8-115).

Tennessee Valley Authority

(Recreation on public lands and waters in Tennessee Valley Region.)

Water Resources Council

(Recreation on water and related land resources.)

- *River Basin Commissions (as geographically appropriate).

IV. NATURAL RESOURCE MANAGEMENT**A. Weather Modification****Department of Agriculture**

- *Forest Service (national forests and grasslands).
- *Soil Conservation Service (snow survey).
- *World Food and Agricultural Outlook and Situation Board (data relating to commodities).

Department of Commerce

- *National Oceanic and Atmospheric Administration (research and development; reports on private activities).

Department of Defense

- *Department of the Air Force (fog dissipation).

Department of the Interior

- *Bureau of Indian Affairs (effects on Indian lands).
- *Bureau of Land Management (effects on public lands).
- *Fish and Wildlife Service (effects on fish and wildlife resources and National Wildlife Refuge and National Fish Hatchery System areas).
- *Geological Survey (effects on hydrologic resources).
- *National Park Service (effects on National Park System areas).
- *Water and Power Resources Service (effects on water storage and delivery projects, water resources research).
- *Areawide precipitation augmentation research through cloud seeding, etc. 43 U.S.C. 377.

Environmental Protection Agency (pollution control and environmental effects).

B. Waterway Regulation and Stream Modification**Department of Agriculture**

- *Agricultural Stabilization and Conservation Service (resource conservation; Water Bank programs).
- *Animal and Plant Health Inspection Service (control of exotic noxious weeds).
- *Forest Service (National Forests and Grasslands).
- *Science and Education Administration (soil and water conservation).
- *Soil Conservation Service (watershed protection).

Department of Commerce

- *Maritime Administration (merchant vessels, barges and inland vessels).
- *National Oceanic and Atmospheric Administration (conservation of marine, estuarine and anadromous fish habitat; review of federal permits affecting water resources, management and protection of coastal and marine resources).

Department of Defense

- *Army Corps of Engineers:
 - *Rules governing work or structures in or affecting waters of the United States. 33 U.S.C. 401, 403, and 419 (33 CFR Part 322).
 - *Permits for discharges of dredged or fill materials into waters of the United States. 33 U.S.C. 1344 (33 CFR Part 323).
 - *Permits for activities at lakes managed by a lakeshore management plan. 33 U.S.C. 1251.
 - *Permits for use of river or harbor improvement built by U.S. 33 U.S.C. 408 (33 CFR 320.2(e)).

Department of the Interior

- *Bureau of Indian Affairs (effects on Indian lands).
- *Bureau of Land Management (effects on public lands).
- *Bureau of Mines (effects on mineral resources, production and transportation).
- *Fish and Wildlife Service (effects on fish and wildlife resources and National Wildlife Refuge and National Fish Hatchery System areas):
 - *Consultation regarding Federal or Federally permitted projects which affect streams and water bodies under the Fish and Wildlife Coordination Act. 16 U.S.C. 661 *et seq.*, 43 CFR Part 17.
 - *Geological Survey (hydrologic research, data collection and reporting for surface and groundwaters).
 - *Heritage Conservation & Recreation Service (effects on Wild and Scenic River System and other outdoor

recreation areas, opportunities and users).

- *National Park Service (effects on National Park System areas).
- *Office of Surface Mining Reclamation and Enforcement (effects on surface mining and reclamation activities).
- *Water and Power Resources Service (water storage and delivery projects and their effects):
 - *Construction and operation of works and structures for storage, diversion and development of waters, including flood control, navigation and river regulation and control in the 17 contiguous western States. 43 U.S.C. 391 *et seq.*

Department of Transportation

- *Coast Guard (vessels, bridge, port, and waterway safety; navigation aids):
 - *Deepwater port regulation. 33 U.S.C. 1503-1524.
 - *Tank vessel regulation. 46 U.S.C. 391a.
 - *Ports and waterways safety. 33 U.S.C. 1224.
 - *Construction and alterations on bridges and causeways over navigable waters. (33 U.S.C. 401, 491, 525; 33 U.S.C. 494-95; 33 U.S.C. 513-14).
- *Federal Highway Administration:
 - *Approval of federal-aid highway and bridge projects involving navigable waters and channel changes. 23 U.S.C. 144 (23 CFR Part 650).
 - *Approval of toll bridge and ferry projects. 23 U.S.C. 129.

Environmental Protection Agency (pollution control and environmental effects):

- *Review of permits for discharge of dredged or fill materials into waters of the United States. 33 U.S.C. 1344.

Federal Emergency Management Agency

(Floodplain mapping, floodplain management, dam and levee safety, mitigation of natural hazards.)

International Boundary and Water Commission, U.S. Section

(Maintenance, restoration and protection of banks of Rio Grande and Colorado River where they form an international boundary.)

Tennessee Valley Authority

- *Construction of dams, appurtenant work, or other obstruction affecting navigation, flood control, public lands or reservations on the Tennessee River System. 16 U.S.C. 831y-1.

Water Resources Council

- *Water Resources Planning Act. 42 U.S.C. 1962 (18 CFR Parts 701-706; 33 CFR Part 252).

- River Basin Commissions (as geographically appropriate).

C. Soil and Plant Conservation and Hydrology

Department of Agriculture

- Agricultural Stabilization and Conservation Service (soil conservation; cost-share programs).

- Farmers Home Administration (soil erosion).

- Forest Service (soil and plant conservation and hydrology generally).

- Science and Education Administration (technical aspects of water and soil conservation).

- Soil Conservation Service (providing technical assistance and monitoring of soil and watershed conservation programs):

- Grazing Permits. 16 U.S.C. 560 (K) and (L) (36 CFR 227.1).

- Multiple-use sustained-yield units. 16 U.S.C. 528 (36 CFR 223).

- Bankhead-Jones Farm Tenant Act, Title III—Administration of National Grasslands. 7 U.S.C. 1010-1012 (36 CFR 213.3).

Department of Commerce

- National Oceanic and Atmospheric Administration (coastal and marine resources-management and protection).

Department of Defense

- Army Corps of Engineers (dredging, aquatic plants).

- Rules governing work or structures in or affecting the waters of the United States. 33 U.S.C. 403.

- Permits for discharge of dredged or fill materials into waters of the United States. 33 U.S.C. 1344.

Department of the Interior

- Bureau of Indian Affairs (effects on Indian lands).

- Bureau of Land Management (watersheds, soil erosion and vegetation management on public lands).

- Permits for livestock. 43 U.S.C. 315, 43 CFR Group 4100.

- Bureau of Mines (hydraulic effects of mining).

- Fish and Wildlife Service (effects on fish and wildlife resources)

- Endangered, threatened plants—permits. 16 U.S.C. 1541 (50 CFR 17.62).

- Geological Survey (geology and hydrology).

- National Park Service (effects on National Park System lands).

- Special use permits, grazing permits, permits to collect soil, rock, water, and plant specimens. 16 U.S.C. 1 *et seq.*; 36 CFR Parts 1, 2 and 7.

- Office of Surface Mining Reclamation and Enforcement (effects of

mining on erosion, aquifers and alluvial valley floors).

- Office of Water Research and Technology (water resources research).

- Water and Power Resources Service (soil and moisture conservation, hydrology, erosion control on public lands, water storage and delivery projects).

Department of Transportation

- Federal Highway Administration (erosion control in highway projects).

Environmental Protection Agency (pollution control and environmental effects).

Federal Emergency Management Agency

(Floodplain mapping, floodplain management, dam and levee safety, mitigation of natural hazards.)

National Aeronautics and Space Administration (advanced technology for remote sensing of land covers).

Tennessee Valley Authority (National Fertilizer Development Center, endangered plants in the Tennessee Valley region).

Water Resources Council (floodplain and wetland initiatives).

- River Basin Commissions (as geographically appropriate).

D. Fish and Wildlife

Department of Agriculture

- Agricultural Stabilization and Conservation Service (agricultural conservation program, water bank program).

- Animal and Plant Health Inspection Service:

- Prevention of importation or exportation of diseased livestock or poultry. 21 U.S.C. 102-105, 111, 132a-134f.

- Forest Service (habitat management).

- Claim of privately owned horses and burros. 16 U.S.C. 1333 (36 CFR Part 222).

- Permits for hunting and fishing in refuge lands. 16 U.S.C. 551; 16 U.S.C. 683.

- Soil Conservation Service (habitat, fish ponds, aquaculture).

Department of Commerce

- National Oceanic and Atmospheric Administration (coastal and marine resources management and protection):

- Scientific research and public display of marine mammals. 16 U.S.C. 1374 (50 CFR Part 618; 50 CFR 216.31, 220).

- Consultation regarding Federal or Federally permitted projects affecting fish and wildlife habitat in coastal and offshore areas under the Fish and Wildlife Coordination Act. 16 U.S.C. 661, *et seq.*

- Permits for activities in designated marine sanctuaries. 16 U.S.C. 1431, *et seq.* (15 CFR Part 922).

- Approval and funding of state coastal management programs. 16 U.S.C. 1451, *et seq.* (15 CFR Part 923; 930).

- Protection of threatened and endangered marine species and critical habitats. 16 U.S.C. 1531, *et seq.* (50 CFR Part 222).

- Protection of marine mammals. 16 U.S.C. 1361, *et seq.* (50 CFR Part 216).

- Establishment of estuarine sanctuaries. 16 U.S.C. 1461 (15 CFR Part 921).

- Trustee of natural resources. 43 U.S.C. 1813 (E.O. 12123).

- Scientific, propagation or survival of marine reptile—permits. 16 U.S.C. 1538 (50 CFR 223.23).

- Endangered or threatened marine fish, sea turtles—permits. 16 U.S.C. 1531 (50 CFR 222.21).

- Control of fishing by foreign and domestic vessels in the 3-200 mile Fishery Conservation Zone. 16 U.S.C. 1801, *et seq.* (50 CFR Ch. VI).

- Permit for importing marine mammals or products thereof. 16 U.S.C. 1371-74 (50 CFR Part 216).

- Whaling for scientific and subsistence purposes. 16 U.S.C. 916 (50 CFR Part 216).

Department of Defense

- Army Corps of Engineers (public works project mitigation measures).

- Rules governing work or structures in or affecting the waters of the United States. 33 U.S.C. 403.

- Permits for discharge of dredged or fill material into waters of United States. 33 U.S.C. 1344.

- Department of the Air Force (bird-aircraft strike hazard reduction).

Department of the Interior

- Bureau of Indian Affairs (effects on Indian lands and off-reservation treaty fishing).

- Bureau of Land Management (wild horses and burros; endangered species and raptors; effects of power lines and other major projects crossing public lands):

- Management and control of wild free-roaming horses and burros and cooperative agreements for adoption. 16 U.S.C. 1331-1340, 43 CFR Group 4700.

- Fish and Wildlife Service (endangered species; effects on fish and wildlife):

- Permits to take bald and golden eagles for scientific, religious and other purposes. 16 U.S.C. 668a, 50 CFR Part 22.

- Permits for the taking and importation of marine mammals. 16 U.S.C. 1361 *et seq.*, 50 CFR Part 18.

*Permits for export/import and to take for scientific and other purposes endangered or threatened wildlife and plants. 16 U.S.C. 1531 *et seq.*, 50 CFR Part 17.

*Permits for the importation of injurious mammals, birds, fish and other wildlife. 16 U.S.C. 42-44, 50 CFR 16.22.

*Permits for export/import and interstate transportation of wildlife. 16 U.S.C. 42 *et seq.*, 50 CFR Part 14.

*Permits for the banding and marking of migratory birds. 16 U.S.C. 703-711, 50 CFR 21.22.

*Permits to perform taxidermy services on migratory birds, nests and eggs for commercial uses. 16 U.S.C. 704, 50 CFR 21.24.

*Permits for special purpose uses of migratory birds, 16 U.S.C. 701, *et seq.*, 50 CFR 21.27.

*Certificates or permits of exception to Convention on International Trade in Endangered Species. 16 U.S.C. 1531-1543, 50 CFR Part 23.

*Protection of endangered species and critical habitats. 16 U.S.C. 1531-1543, 50 CFR Part 402.

*Determination of critical habitats for endangered and threatened species fish and wildlife and plants. 16 U.S.C. 1533; 50 CFR Parts 17, 402 and 424.

*Consultation regarding Federal or Federally permitted projects which affect streams and water bodies under the Fish and Wildlife Coordination Act. 16 U.S.C. 661, *et seq.*, 43 CFR Part 17.

*Restoration and enhancement of anadromous fishery resources through grants for fish ladders, new anadromous fish hatcheries, new fishways, etc. 16 U.S.C. 742a-742j, 50 CFR Part 401.

*Improvement of sport fishery resources through grants to States under the Dingell-Johnson (D-J) Program. 16 U.S.C. 777-777k, 50 CFR Part 80.

*Restoration and enhancement of wildlife populations and resources through grants to States under the Pittman-Robertson (P-R) Program. 16 U.S.C. 669 *et seq.*, 50 CFR Part 80.

*Habitat acquisition and improvement and other activities for designated marine mammals through grants to States under the Marine Mammal Grant Program. 16 U.S.C. 1361 *et seq.*

*Land acquisition, management, and other activities for endangered and threatened species through grants to States. 16 U.S.C. 1531-1543, 50 CFR Part 81.

*Geological Survey (water quality and quantity).

*Heritage Conservation & Recreation Service (fishing, hunting and other outdoor recreational pursuits).

*National Park Service:

*Permits for collecting animal specimens from National Park System areas. 16 U.S.C. 1 *et seq.*, 36 CFR Part 2.

*Licenses and permits for sport or commercial fishing in certain National Park System areas. 36 CFR Part 2.

*Disposition of surplus animals from National Park System areas. 36 CFR Part 10.

*Office of Surface Mining Reclamation and Enforcement (effects of surface mining and reclamation activities).

*Water and Power Resources Service (water storage and delivery projects, hunting and fishing on project lands, mitigation measures, limnology).

Department of Health and Human Services

*Public Health Service (health).
*Food and Drug Administration (contamination of fish and shellfish with toxics).

Department of State

(International issues concerning fish and wildlife, including migratory birds and marine mammals.)

Department of Transportation

(Effects of highway projects on fish and wildlife habitat.)

*Federal Highway Administration (highway construction).

Environmental Protection Agency

(Pollution control and environmental effects.)

Marine Mammal Commission

(Marine mammal protection and conservation.)

Tennessee Valley Authority

(Fish and wildlife management and conservation in the Tennessee Valley.)

E. Renewable Resource Development, Production, Management, Harvest, Transport and Use

*ACTION (small-scale voluntary activities involving energy conservation, e.g., woodlot coops).

Department of Agriculture

*Economic Statistical Cooperation Service (data).

*Agricultural Stabilization and Conservation Service (conservation program, forestry incentives program.)

*Forest Service (timber sale, free use, timber management activities and grazing habitat management in National Forests and Grasslands).

*Timber use permits. 16 U.S.C. 472; 16 U.S.C. 528-531; 16 U.S.C. 1600-1614.

*Science and Education Administration (forest and range management).

*Soil Conservation Service (watershed protection; soil conservation).

Department of Commerce

*Maritime Administration (transportation of renewable resource commodities).

*National Oceanic and Atmospheric Administration (coastal and marine resources management and development, control of fishing by foreign and domestic vessels in the 3-200 mile Fishery Conservation Zone).

Department of Defense

*Army Corps of Engineers (hydro).
*Rules governing work or structures in or affecting waters of the United States. 33 U.S.C. 403.

*Permits for discharge of dredged or fill material into waters of United States. 33 U.S.C. 1344.

Department of Energy

*Federal Energy Regulatory Commission.

*Regulation of development of water resources. Federal Power Act. 16 U.S.C. 791-825r (18 CFR Parts 4-25, 36, 131, 141).

*Office of Environment (energy policy, programs and projects).

Department of Housing and Urban Development

(Building materials.)

Department of the Interior

*Bureau of Indian Affairs (Indian lands):

*Permits for grazing on Indian lands and on Federal lands under BIA jurisdiction. 5 U.S.C. 301 *et seq.*, 25 CFR 151.

*Sale of timber from tribal and allotted lands. 25 U.S.C. 406, 407 *et seq.*; 25 CFR Part 141.

Permits, concessions and leases on lands withdrawn or acquired in connection with Indian irrigation projects. 25 U.S.C. 390, 25 CFR Part 203.

*Leases for farming and other uses on Federal lands under BIA jurisdiction. 5 U.S.C. 301, 25 U.S.C. 392 *et seq.*, 25 CFR Part 131.

*Bureau of Land Management (public lands, outer continental shelf):

*Permits for coral harvesting on the outer continental shelf. 43 U.S.C. 1334, 43 CFR Part 6224.

*Permits for grazing. 43 U.S.C. 315, 43 CFR Group 4100.

*Sale by contract of forest products. 30 U.S.C. 601 *et seq.*, 43 U.S.C. 315, 423, and 1161a; 43 CFR Group 5400.

*Permits for free use of timber. 16 U.S.C. 604 *et seq.*, 30 U.S.C. 189, 48 U.S.C. 423, 43 CFR Part 5500.

*Management and control of wild free-roaming horses and burros and cooperative agreements for adoption. 16 U.S.C. 1331-1340, 43 CFR Group 4700.

• Fish and Wildlife Service (effects on fish and wildlife resources).

• Heritage Conservation and Recreation Service (funding for State and local programs for acquisition, development and preservation of public park, recreation and cultural/historical resources; effects on historical and recreational values).

• National Park Service (effects on National Park System areas):

*Permits for sport fishing, hunting and grazing. 16 U.S.C. Ch. 1 *et seq.*, 36 CFR Parts 1, 2 and 7.

• Water and Power Resources Service (water storage and delivery projects, irrigation):

*Sale of farm units on Federal irrigation projects. (Statutory authority appears in individual project authorizations.)

Department of Transportation

• Federal Highway Administration (logging haul roads, access roads).

Environmental Protection Agency

(Pollution control and environmental effects.)

Interstate Commerce Commission

(Freight rates.)

Tennessee Valley Authority

(Hydro-electric power, biomass production and use.)

F. Non-energy Mineral Resource Conservation, Development, Production, Management, Transport and Use

Department of the Interior

• Bureau of Indian Affairs (effects on Indian lands):

*Approval of leases for Indian lands. 25 U.S.C. 392-403b, 415; 25 CFR Part 131.

*Leases for mining and other uses on Federal lands under BIA jurisdiction. 5 U.S.C. 301, 25 U.S.C. 392, *et seq.*, 25 CFR Part 131.

*Rights-of-way over Federal lands under BIA jurisdiction. 25 U.S.C. 323-328, 25 CFR Part 161.

• Bureau of Land Management (effects on public lands and the outer continental shelf):

*Exploration Licenses to explore for leasable minerals on unleased lands. 30 U.S.C. 181 and 201(b), 43 CFR Part 3400.

*Leases for phosphate, sodium, potassium, etc., exploration and mining. 30 U.S.C. 181 *et seq.*, 43 CFR Group 3500.

*Permits for sand, stone and gravel. 30 U.S.C. 601, 602.

*Leases, permits and licenses for mining in Wild and Scenic River System

areas. 16 U.S.C. 1280; each area has special Federal Regulations.

*Concurrence for placer mining use of the surface of public lands withdrawn or reserved for power development or for a power site. 30 U.S.C. 621, 43 CFR Part 3730.

*Leases and permits for sulfur in Louisiana and New Mexico. 30 U.S.C. 271 *et seq.*, 43 CFR Group 3500.

*Easements/permits for rights-of-way. 43 U.S.C. 9, 43 U.S.C. 1701 *et seq.*, 43 CFR Parts 2800-2900.

*Exchange of Federal lands for other property. 43 U.S.C. 1716, 43 CFR 2200-2270.

• Bureau of Mines (mineral land assessment):

*Agreements to dispose of helium of the United States. 43 U.S.C. 1201, 30 U.S.C. 180 *et seq.*, 43 CFR Part 16.

• Fish and Wildlife Service (effects on fish and wildlife resources):

*Easements/permits for transmission line, pipelines and other rights-of-way across National Wildlife Refuge and National Fish Hatchery System land. 16 U.S.C. 668dd *et seq.* for refuges, 43 U.S.C. 931c and d for hatcheries; 50 CFR 25.41 and 29.21.

*Permits for rights-of-way across National Wildlife Monuments (Alaska only). 16 U.S.C. 432, 460k-3, and 742(f); 50 CFR Part 100.

*Geological survey: Approval and supervision of plan of operations for a prospecting permit or a mining lease issued on public domain lands, acquired lands, and tribal and allotted Indian lands for potash, sodium phosphate and other minerals (exclusive of oil, gas and coal). 30 U.S.C. 189 *et seq.*, 30 CFR Part 231.

• Heritage Conservation & Recreation Service (effects on public park, recreation and cultural/historical resources and values).

• National Park Service (effects on National Park System areas):

*Permits, leases and easements for rights-of-way, grazing and other uses on National Park System areas. 16 U.S.C. 1 *et seq.*, 36 CFR Part 9 *et seq.*

*Leases, permits and licenses for mining on National Park System lands involved in Wild and Scenic River Systems. 16 U.S.C. 1280.

*Access permits for mining activity within the National Park System. 16 U.S.C. 1902, 1906; 30 U.S.C. 21 *et seq.*, 36 CFR Part 9.

• Office of Minerals Policy and Research Analysis (research).

• Office of Surface Mining Reclamation and Enforcement (effects of surface mining and reclamation activities).

• Water and Power Resources Service (effects on water storage and delivery projects):

*Easements/permits for access, pipeline and other rights-of-way. 43 U.S.C. 3871.

G. Natural Resources Conservation

Department of Agriculture

• Agricultural Stabilization and Conservation Service (resource conservation programs).

• Forest Service (conservation of forest and rangeland resources).

• Science and Education Administration (research in technical aspects of soil and water conservation; forest and range management).

• Soil Conservation Service (soil and water conservation).

Department of Energy

• Federal Energy Regulatory Commission (hydroelectric power and natural gas facilities).

• Office of Environment (energy policies, programs and projects):

*Energy Conservation Standards for New Buildings Act. 42 U.S.C. 6634.

Department of Commerce

• National Bureau of Standards (energy efficiency).

• National Oceanic and Atmospheric Administration (coastal and marine resources—management and protection, heating fuel usage forecasting, coastal energy facility planning and siting in state coastal zone management programs).

Environmental Protection Agency

(Resource recovery from wastes, pollution control and environmental effects.)

*The Solid Waste Disposal Act, 42 U.S.C. 3251, *et seq.*, as amended by the Resource Conservation and Recovery Act. 42 U.S.C. 6901, *et seq.*

*Guidelines on solid waste collection and storage for federal assistance. 42 U.S.C. 6907 (40 CFR Part 243).

*Resource recovery facilities. 42 U.S.C. 6907 (40 CFR Part 245).

*Materials recovery, solid waste management guidelines for source separation. 42 U.S.C. 6907 (40 CFR Part 246).

*Solid waste management guidelines for beverage containers. 42 U.S.C. 6907 (40 CFR Part 244).

Federal Emergency Management Agency

(Dam and levee safety.)

Department of the Interior

• Bureau of Indian Affairs (Indian lands).

- Bureau of Land Management (public lands and outer continental shelf areas).
- Bureau of Mines (land reclamation, recycling, processing and use of recycled materials).
- Fish and Wildlife Service (fish and wildlife resources, National Wildlife Refuge and National Fish Hatchery Systems).
- Geological Survey (water resources; oil, gas, geothermal, coal and other mineral operations).
- Heritage Conservation & Recreation Service (urban parks, outdoor recreation, historical and cultural resources, National Trails System, Wild and Scenic Rivers System).
- National Park Service (National Park System).
- Office of Surface Mining Reclamation and Enforcement (surface mining and reclamation).
- Office of Water Research and Technology (water resources, desalinization).
- Water and Power Resources Service (water storage and delivery projects, Soil and Moisture Conservation Program).

Department of Housing and Urban Development

- Office of Housing (previously FHA) (housing standards).
- Office of Policy Development and Research (energy, building technology and standards research).

Interstate Commerce Commission

(Energy efficiencies of rail and alternative transport modes.)

Tennessee Valley Authority

(Energy conservation, soil conservation).

(PR Dec. 80-28800 Filed 8-27-80; 8:45 am)
BILLING CODE 5125-01-01

COUNCIL ON WAGE AND PRICE STABILITY

Pay Advisory Committee; Meeting

Authority of Committee: The Pay Advisory Committee was established by the Council on Wage and Price Stability pursuant to Executive Order 12161 (44 FR 56663).

Time and Place of Meeting: The Pay Advisory Committee will meet on September 16, 1980, at 2:00 p.m. in Room 2006 of the New Executive Office Building, 726 Jackson Place, NW., Washington, D.C. 20503.

Purpose of Meeting: The purpose of the meeting will be to continue unfinished business from the Committee's earlier meetings.

Public Participation: The meeting of the Pay Advisory Committee will be open to the public. Public attendance will, however, be limited by available space; persons will be seated on a first-come, first-served basis. Persons attending the meeting will not be permitted to speak or participate in the Committee's deliberations. Interested persons will be permitted to file written statements with the Committee by mail or personal delivery to the Office of General Counsel, Council on Wage and Price Stability, 600 17th Street, NW., Washington, D.C. 20506.

Additional Information: For additional information, please telephone the Office of Public Affairs at (202) 456-6756.

Dated: August 25, 1980.

David A. Henderson,
Acting Advisory Committee Management Officer.

(PR Dec. 80-28432 Filed 8-27-80; 8:45 am)
BILLING CODE 5175-01-01

Price Advisory Committee; Meeting

Authority of Committee: The Price Advisory Committee was established by the Council on Wage and Price Stability pursuant to Executive Order 12161 (44 FR 56663).

Time and Place of Meeting: The Price Advisory Committee will meet on September 10, 1980, at 10:00 a.m. in Room 2006 of the New Executive Office Building, 726 Jackson Place, NW., Washington, D.C. 20503.

Purpose of Meeting: The purpose of the meeting will be to continue unfinished business from the Committee's earlier meetings.

Public Participation: The meeting of the Price Advisory Committee will be open to the public. Public attendance will, however, be limited by available space; persons will be seated on a first-come, first-served basis. Persons attending the meeting will not be permitted to speak or participate in the Committee's deliberations. Interested persons will be permitted to file written statements with the Committee by mail or personal delivery to the Office of General Counsel, Council on Wage and Price Stability, 600 17th Street, NW., Washington, D.C. 20506.

Additional Information: For additional information, please telephone the Office of Public Affairs at (202) 456-6756.

Dated: August 25, 1980.

David Henderson,
Acting Advisory Committee Management Officer.

(PR Dec. 80-28432 Filed 8-27-80; 8:45 am)
BILLING CODE 5175-01-01

DEPARTMENT OF DEFENSE

Corps of Engineers; Department of the Army

Notice of Intent To Prepare a Draft Environmental Impact Statement (DEIS) for a Proposed Permit Action Concerning Commercial Sand and Gravel Dredging on the Frunch Broad, Tennessee, and Cumberland Rivers

AGENCY: U.S. Army Corps of Engineers, Nashville District.

ACTION: Notice of intent to prepare a draft environmental impact statement (DEIS).

1. Proposed Action.

SUMMARY: Because several commercial firms have applied for Department of the Army Permits covering sand and gravel dredging, a DEIS evaluating the cumulative impacts of sand and gravel dredging in the Nashville District will be prepared. Ten companies are involved in the action. Diesel-powered hydraulic dredges are predominant although two bucket-ladder dredges are also in use. Processing methods range from processing at a land plant to total processing on-board.

2. Alternatives.

Alternatives which have been identified are (1) "no action" (denial of permits), (2) requiring alternative dredging equipment or procedures, (3) land-based extraction, and (4) alternative materials.

3. Scoping Process.

a. **Public Input.** The public is invited to submit written comments within 30 days of this notice to aid in determining the issues to be covered in the DEIS. Input from concerned Federal, State, and local agencies will be solicited by letter.

b. **Issues.** The applicants have contracted comprehensive environmental studies and a detailed Environmental Assessment which will serve as basic information for the DEIS. The following is a list of significant issues which were analyzed and which are identified for coverage in the DEIS:

- (1) Effects on water quality (including turbidity, water supply impacts, toxic materials, and recreation impacts).
 - (2) Effects on navigation.
 - (3) Socioeconomic impacts.
 - (4) Effects on archeological sites.
 - (5) Effects on aquatic habitat (including changes in substrate composition and bottom geometry).
 - (6) Effects on benthic populations.
 - (7) Effects on fish.
 - (8) Effects on periphyton.
 - (9) Effects on endangered species.
- The Environmental Assessment is available for inspection between the

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