GUIDE TO ENVIRONMENTAL IMPACT ANALYSIS

A Supplement to the US Army NEPA Manual Series

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The purpose of the guide is to provide guidance, recommendations, and suggestions for producing succinct, tightly focused, issue-driven NEPA analyses and documents that can be used to support better decisions. It contains guidance, recommendations, and suggestions for efficiently, and effectively, preparing the affected environment description and environmental consequences portions of an Army EA and EIS. The guide can be applied to all Army NEPA analyses associated with on- and off-post training activities, materiel acquisition programs, facility construction and renovation projects, and other actions supporting installation operations.

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PREFACE

The content of this guide incorporates direction and information contained in Environmental Analysis of Army Actions—Final Rule (Title 32 of the Code of Federal Regulations Part 651), published in the Federal Register (FR) on 29 March 2002 (see 67 FR 15290).

This guide is a living document that is modified, as necessary, to incorporate changes in Federal Legislation, Executive Orders, and DoD and Army policy and guidance. Users are advised to periodically visit the ASA(ALT) Digital library website at http://library.saalt.army.mil

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ACRONYMS AND ABBREVIATIONS

ACSIM	Assistant Chief of Staff for Installation Management
ASA(ALT)	Assistant Secretary of the Army for Acquisition, Logistics, and Technology
CEQ	Council on Environmental Quality
CERL	Construction Engineering Research Laboratory
CFR	Code of Federal Regulations
CX	Categorical Exclusion
DOD	Department of Defense
DOPAA	Description of Proposed Action and Alternatives
EA	Environmental Assessment
EBS	Environmental Baseline Study
ESO	Environmental Support Office
EIS	Environmental Impact Statement
ESQD	Explosive Safety Quantity Distance
FAA	Federal Aviation Administration
FNSI	Finding of No Significant Impact
FR	Federal Register
HAP	Hazardous Air Pollutant
H&S	Health and Safety
IMA	Installation Management Agency
IPR	In-Process Review
MACOM	Major Army Command
NEPA	National Environmental Policy Act
NOI	Notice of Intent
ODEP	Office of the Director of Environmental Programs
REC	Record of Environmental Consideration
ROD	Record of Decision
ROI	Region of Influence
USACE	US Army Corps of Engineers
USACHPPM	US Army Center for Health Promotion and Preventative Medicine
USAEC	US Army Environmental Center
USC	United States Code

CHAPTER 1.0: INTRODUCTION

National Environmental Policy Act (NEPA) analyses and subsequent documents, principally environmental assessments (EAs) and environmental impact statements (EISs), are commonly too cumbersome, too lengthy, and too costly (CEQ, 1997). In particular, the results of the environmental impact analyses described in NEPA documents are too often long and drawn out, encyclopedic, and inadequately focused on those issues and attributes that encompass the real environmental impacts. Typically, there is little consistency in the level of analysis and documentation across resource areas. Adequate documentation of the process used to analyze resulting impacts, draw conclusions, identify alternatives, and apply mitigation measures is commonly lacking. These problems are often the result of "cookie-cutter" approaches to NEPA documentation, in lieu of developing unique strategies for individual projects that provide focus on issues for the project at hand; and efficient and effective communication, and interaction, among NEPA analysis team members. Such "cookie-cutter" approaches have proven to be costly and ineffective, resulting in project delays, and are becoming more and more difficult to defend when challenged.

1.1 PURPOSE OF THE GUIDE

The purpose of this guide is to not only show the possibility, but the necessity to produce succinct, tightly focused, issue-driven NEPA analyses and documents that can be used to support better decisions. This will require a more structured, focused approach to: (1) identifying environmental issues which merit attention, (2) delineating and identifying appropriate regions of influence (ROIs), and (3) completing the subsequent environmental impact analysis process. This guide contains guidance, recommendations, and suggestions for conducting environmental impact analyses, and efficiently and effectively preparing the affected environment description and environmental consequences portions of an Army EA and EIS. This information is presented in a simple, understandable, and manageable format, suitable for use throughout the Army. By following this approach and procedures presented in the guide, NEPA analysts can reduce or eliminate many of the typical problems associated with NEPA analyses, such as repeated revisions, project delays, and cost overruns.

This guide has been prepared as a supplement to the Army NEPA manuals listed below, as part of a concentrated effort to improve the Army's environmental impact analysis process. This information is targeted for use by NEPA analysts familiar with the Army NEPA process and the Army's regulation for implementing NEPA—32 CFR Part 651, *Environmental Analysis of Army Actions*.

- *NEPA Manual for Materiel Acquisition* (July 2004)
- *Environmental Impact Analysis Manual for Off-Post Training and Deployments* (August 1998)
- *NEPA Manual for Installation Operations and Training* (June 1998)

As part of the US Army's series of guides for improving environmental compliance, this document describes the next step in the Army's NEPA process, following, in sequence, the guidance contained

in the *Guide to Development of the Description of Proposed Action and Alternatives (DOPAA)—A Supplement to the US Army NEPA Manual Series*.[1]

1.2 USE AND ORGANIZATION OF THE GUIDE

The intent of this guide is to make Army NEPA practitioners, as well as proponents, more effective and knowledgeable in conducting the environmental impact analysis process and in documenting the results in EAs and EISs, in support of better Army decisions.

This guide can be applied to all Army NEPA analyses associated with on- and off-post training activities, materiel acquisition programs, facility construction and renovation projects, and other actions supporting installation operations. It should be used in conjunction with 32 CFR Part 651 and any applicable command- or installation-specific policies and procedures for conducting NEPA analyses. In addition, it should be regarded as a supplement to, not a replacement for, the Army NEPA manuals previously mentioned.

Following the introduction of this guide in Chapter 1.0, Chapters 2.0 and 3.0 provide comprehensive guidance and information on the environmental impact analysis process. Chapter 2.0 identifies key players and describes their level of involvement in the analysis process. Chapter 3.0 describes the precursors to environmental impact analysis, and a multi-step process for conducting impact analyses, including environmental issue identification and ROI delineation. Chapter 4.0 identifies sources for assistance, guidance, and information to support Army NEPA analyses. Lastly, Chapter 5.0 lists the source documents that were used in preparation of the guide.

[1] Several of the Army's manuals and guides identified can be accessed at the ASA(ALT) Digital Library: http://library.saalt.army.mil

CHAPTER 2.0: ROLES AND RESPONSIBILITIES

This chapter outlines the roles and responsibilities of participants involved in the Army NEPA process, specifically as it relates to the environmental impact analysis process. In order for the process to be successful, all participants must clearly understand their responsibilities and work as a team through constant communication and coordination.

2.1 PROPONENTS

As defined in 32 CFR Part 651, any Army structure may be a proponent. In general, the proponent is the unit, element, or organization that is responsible for initiating and/or carrying out the proposed action. The proponent is fully responsible for funding and preparation of the environmental documentation. This includes responsibility for the content, accuracy, quality, and conclusions of the NEPA analysis, even if another organization or a contractor prepares the resulting documentation. Although the proponent can also serve as a decision maker,[2] he or she is not necessarily the only, or even primary, decision maker for the proposed action.

The proponent, in coordination with the appropriate NEPA task manager, must determine the appropriate level of NEPA analysis and documentation needed. The proponent must also identify the appropriate milestones, timelines, and inputs required for the successful integration of the NEPA process, including the use of scoping to further define the breadth and depth of required analyses. To ensure a thorough and accurate analysis, the proponent must assemble an appropriate team of experts to support the effort. Depending on the specific action or project, and its location and associated issues, this team may include personnel from affected installations, Army legal staff and public affairs representatives, specialized consultants, facilities and systems engineering contractors, regulatory agencies, and special interest groups.[3]

2.2 NEPA SUPPORT STAFF

In addition to in-house environmental staff, proponents can often obtain NEPA analysis support through the Major Army Command (MACOM) or other installation environmental offices, and/or through the use of contractors. This team of analysts and other environmental resource specialists are usually responsible for conducting the NEPA analyses, collecting the necessary data, analyzing potential environmental impacts, and producing draft and final reports. A NEPA task manager within the Government (and/or contractor organization) is normally identified to oversee the day-to-day requirements of the analysis process.

[2] The decision maker is the person or persons who make the final decision on how to implement the proposed action.

[3] The ongoing transformation of installation management will likely modify some of the roles and responsibilities under NEPA. Two chains of command are expected: one for the operation and management of the installation, and another focused on the performance of mission (e.g., training or war-fighting). While the identification of the proponent and the decision maker may present a greater challenge, it is critical that the proponent responsibilities be maintained. The proponent of the action must be responsible for the cost and quality of the NEPA analysis, the content of the NEPA analysis, and subsequent mitigation implementation and monitoring requirements.

2.3 INSTALLATIONS

When Army actions are proposed to occur near or at an existing installation (military facilities, ranges, and training lands), the appropriate offices must contribute to the analyses or at least review the EA/EIS. Installation organizations must be involved when the action or resultant issues are related to their responsibilities. Required support can include participation in scoping efforts, providing technical information on environmental conditions at the installation, and participation in impact analysis workshops or in-process reviews (IPRs). A list of typical key installation offices or organizations that could provide such support is provided below (note that the structure of Army installations may vary, and titles may change):

- Directorate of Plans, Training, Testing, and Mobilization
- Directorate of Public Works
- Environmental Office
- Public Affairs Office
- Real Estate Office
- Safety Office
- Staff Judge Advocate

The Installation Commander's designated NEPA point of contact should always be involved, given their responsibility for installation NEPA compliance and any related coordination requirements.

2.4 MAJOR ARMY COMMANDS

MACOMs provide NEPA oversight and assistance to proponents at various levels. As part of NEPA analyses, MACOMs can often participate in EA/EIS development, providing preparation support to subordinate installations and Program Offices, or acting as a contributing office and reviewer. Any NEPA-related support will usually be coordinated through the MACOM's designated NEPA Program Manager.

Whenever the garrison is the proponent, the Installation Management Agency (IMA) Region should be directly involved to do a "check" on the requirements and potential funding for all aspects of the proposal. Otherwise, the IMA Region should be coordinated with if the proposal is likely to have a measurable impact on installation owned resources.

2.5 OTHER FEDERAL, STATE, AND LOCAL AGENCIES

The Council on Environmental Quality (CEQ) implementing regulations for NEPA emphasize early consultation with other Federal, state, and local agencies and organizations that have jurisdiction by law over some aspect of a proposed action, or that can provide special expertise during the analysis. The involvement of other agencies in the development of EAs and EISs enhances early issue identification and problem solving. Although Army proponents don't always take the opportunity to consult with other agencies during the early identification of potential environmental issues, such

early coordination can quickly identify significant issues that might involve costly mitigation requirements, or prevent a successful action from occurring altogether.[4]

An Army proponent should coordinate with other agencies, organizations, and individuals through formal or informal scoping (or other means), and should coordinate such efforts through the affected installation's Environmental Office. Typically, this office will have an established rapport with the responsible regulatory agencies and other interest or stakeholder groups, and can advise and assist the proponent in addressing project issues and concerns. Agency or other external scoping *should not* be conducted until internal [Army and Department of Defense (DOD)] scoping has established sufficient information about the proposed action to present a coherent proposal, along with a list of possible alternatives. Once internal agreement has been reached and documented, external scoping can be used to further refine the proposed actions and alternatives, as well as focus the subsequent analyses and documentation.

In addition, any Federal, state, or local agency or Indian Tribe which has jurisdiction by law, or special expertise with respect to any environmental impact involved with the proposal (or a reasonable alternative), should be requested to participate in the NEPA process as a Cooperating Agency (40 CFR 1501.6 and 1508.5).

2.6 ORGANIZATIONS AND INDIVIDUALS

Proponents should look for opportunities to partner or coordinate with private organizations and individuals whose specialized expertise will improve the NEPA process (32 CFR 651.5(d)(7)), leading to better decisions. Such organizations and individuals can be a valuable source of information on particular sites or subject matters.[5]

Any Army proponent that involves the public, through scoping (or other means), must coordinate with the affected installation's (or command level) Public Affairs Office. Proponents must also coordinate with the installation Environmental Office when establishing partnerships, or dialog, with private organizations and individuals, in order to maintain the desired continuity with the regulatory and environmental communities.

[4] At this early stage in the NEPA analysis process, the involvement of outside agencies, local government officials, or private organizations and individuals represents a form of pre-scoping, but does not replace formal scoping requirements, such as for an EIS.

[5] See footnote 4.

CHAPTER 3.0:
ENVIRONMENTAL IMPACT ANALYSIS

Since the inception of NEPA in 1969, the practice of environmental impact analysis has seemingly lost sight of its original intent. This intent or purpose is succinctly stated in the 1992 CEQ *Regulations for Implementing the Procedural Provisions of the NEPA* (40 CFR Parts 1500-1508):

> "NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA. **NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail.**" (40 CFR 1500.1(b))
>
> "NEPA's purpose is not to generate paperwork—even excellent paperwork—but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment." (40 CFR 1500.1(c))

Although with the best intentions, the Army's implementation of the NEPA process has become expensive and cumbersome, contrary to the approach envisioned by the framers of NEPA. Using the customary approach to NEPA analyses (as seen by the besieged Army decision maker), the technical and economic aspects of a project are evaluated, using a lengthy process that covers all potential impacts at the same level of detail. Unfortunately, initiation of the NEPA process is too often started late in the project planning, making the process seem even longer.

All to often, the NEPA document preparers merely "turn the crank" in analyzing potential issues in great detail, independent of significance or interest. The result is lengthy, encyclopedic documents, where EAs and EISs are virtually indistinguishable. Such circumstances are the major reason that NEPA analyses have become a "box to be checked", as opposed to a valuable component of decisionmaking. Both timely initiation of the NEPA analysis, and the pre-determination of significant issues to be addressed, would support a more positive and productive NEPA process.

As a means to fixing these problems, Army proponents and NEPA practitioners must implement early in the process a stepwise, hierarchical and efficient approach for analysis (and documentation) that is better focused on issues of interest to the public, regulators, and the decision maker. The laborious effort that has been customary for Army NEPA analyses must be discouraged. Proponents should encourage analytical rather than encyclopedic documents that emphasize real issues, while de-emphasizing insignificant ones. The Army's new regulation for implementing NEPA (32 CFR Part 651) helps in this regard with the setting of page limits for Army NEPA documents. The regulation now specifies that an EA should be 1 to 25 pages in length (32 CFR 651.34), while an EIS should not exceed 150 pages; 300 pages for very complex proposals (32 CFR 651.43).

To conduct more efficient and focused analyses, and create more effective documents, the remaining portions of this chapter provide guidance for a more structured, interactive approach to environmental impact analysis for Army EAs and EISs. This approach requires close and early

coordination between the program technical personnel and the environmental staff, and/or contractors, performing the NEPA analysis.

3.1 PRECURSORS TO ENVIRONMENTAL IMPACT ANALYSIS

Before a successful environmental impact analysis can be conducted, it is necessary to: (1) identify the purpose and need for the proposal and develop an adequate DOPAA; (2) determine the appropriate level of NEPA documentation (EA or EIS) to implement; and (3) conduct some level of scoping, either formal or informal, to help identify and narrow the issues for analysis. Each of these processes is briefly discussed in the following sections. In addition, the importance of the Administrative Record to the overall NEPA process is described.

3.1.1 Description of Proposed Action and Alternatives

Once it has been determined that an Army action is needed, the means to accomplishing the action can be identified and defined in the DOPAA. The DOPAA is the most critical element in guiding an environmental impact analysis. The scope of an environmental document, the region of influence (ROI), and a description of the affected environment cannot be meaningfully determined, let alone an impact analysis completed, until an adequate DOPAA is prepared. Unfortunately, the DOPAA tends to be one of the weakest, and frequently, most confusing elements of an EA or EIS.

All too often, the *purpose and need statement* for the proposed action is defined too narrowly, placing inappropriate limitations on the range of reasonable alternatives for meeting mission goals and objectives. Likewise, care must also be taken to ensure that the purpose and need does not create an excessively wide range and unwieldy number of possible alternatives. Finding the right balance for the *purpose and need statement*, with proper focus on the mission goals and objectives, can be a difficult process, often requiring numerous revisions and rewrites.

Once a proposal has been identified, and the proponent is actively preparing to make a decision on one or more alternative means of accomplishing the proposal, it is imperative that appropriate effort be spent identifying and describing the various actions or activities that will be necessary to implement the proposal. Special emphasis should be placed on describing, in sufficient detail, those features of the DOPAA that have the potential for significant environmental impact, and those features and alternatives that will discriminate the levels of impact among project alternatives. Less emphasis should be placed on those features that have little or no potential for environmental impact, and do not aid in discriminating impacts among alternatives.

The clarity and detail of the DOPAA is probably the most critical factor in the smooth and efficient preparation of an environmental analysis. The timely preparation of a DOPAA is essential. Conducting environmental analysis prior to the development of a well-defined DOPAA is almost always a wasted effort. The preparation of a DOPAA concurrent with such analysis is also a prescription for inefficiency. To ensure an efficient and effective NEPA process, the DOPAA should be developed before any extensive efforts are spent collecting baseline data or conducting detailed impact analyses. Deviation from this sequence is a major source of project cost overruns and schedule slips. Early agreement on the DOPAA is, therefore, crucial to the project's success. The DOPAA should not be considered finished until the proponent is willing to state, preferably in writing, that the information in the DOPAA is accurate and complete.

There are times, however, when DOPAA information is imprecise, yet analysis must proceed in order to meet hard deadlines. In these cases, uncertainties can be handled by "bracketing" impact discussions and perhaps stressing the identification of environmental resource vulnerabilities or susceptibilities (i.e., capacities to withstand levels of impacts rather than the precise identification of impacts). However, having to take this approach is not an ideal scenario.

It should also be noted that the DOPAA is only the first part of what becomes the section on alternatives, including the Proposed Action. As stated in 40 CFR 1502.14, this section is the heart of an EIS and should present the environmental impacts of the proposed action and alternatives in comparative form. Thus, it provides the decision maker and the public with a clear basis for choice among the potential courses of action.

In describing the process and guidance for environmental impact analysis, this guide assumes that an adequate DOPAA has already been prepared. Specific guidance for preparing DOPAAs can be found in the *Guide to Development of the Description of Proposed Action and Alternatives (DOPAA)—A Supplement to the US Army NEPA Manual Series*.[6]

3.1.2 Environmental Assessments versus Environmental Impact Statements

Requirements for determining the appropriate level of NEPA analysis are described in 32 CFR 651.11 and 651.12. Once the decision has been made that a proposal does not qualify for a Categorical Exclusion (CX), and no prior NEPA documentation adequately covers the proposal for reference in a Record of Environmental Consideration (REC), then an EA or an EIS must be prepared to assess potential effects. Further guidance for determining which level of analysis and documentation to implement is provided in the following paragraphs.

Environmental Assessments

An EA is intended to be a concise public document whose sole purpose is to provide sufficient analysis and evidence for determining whether the proposed action has: (1) the potential for significant impacts, in which case a Notice of Intent (NOI) to prepare an EIS is published in the *Federal Register*; or (2) no significant environmental effects, in which case a Finding of No Significant Impact (FNSI) is prepared.

Rather than resembling a "mini EIS" with much less public involvement than an EIS, the EA should be used for determining the significance of any potential impacts and the need for a subsequent EIS. In this regard, the straightforward consideration of the significance criteria outlined in 40 CFR 1508.27, in terms of "context" and "intensity", should be the primary focus of EAs (see also Section 3.2.4.2 of this guide for discussions on significance). If used appropriately, the EA represents an intermediate, evaluative step in the NEPA compliance process; one which can eliminate many issues from further, subsequent analyses, and focus any required EIS on those issues which are truly relevant to the decision at hand.

Based on this understanding, and in accordance with 32 CFR Part 651, it is recommended that an EA be prepared when all *three* of the following conditions are satisfied. Otherwise, an EIS will most likely be required.

[6] The Army's Guide to Development of the DOPAA can be accessed at the ASA(ALT) Digital Library: http://library.saalt.army.mil

(1) There is little or uncertain potential for significant adverse (or beneficial) impacts to occur; or the potential for significant environmental impacts can be reduced to less-than-significant levels through the addition of appropriate mitigation measures.

(2) The proposed action normally requires preparation of an EA, or the proposed action does *not* normally require preparation of an EIS (for a list of Army actions normally requiring an EA or an EIS, refer to Appendix A of this guide).

(3) The proposed action is *not* expected to be highly controversial from an environmental standpoint.

The EA must end with either a FNSI or an NOI. Both are made available to the public, and they must summarize the conclusions and the major components of the EA. If, for example, the conditions of item number 1 (above) are invoked using mitigation measures to reduce impacts below the significance level, they should be enumerated in the FNSI and incorporated into the final action plans.[7] The FNSI should also identify where a full copy of the EA can be obtained and identify appropriate points of contact for further information.

If the EA identifies potential impacts that cannot be readily mitigated, the NOI is the first step toward the more formal EIS. As an intermediate step, however, the EA can still form the basis for eliminating issues that require no further analyses in the EIS, "incorporating by reference" the contents of the EA.[8]

Environmental Impact Statements

An EIS is a detailed, written, and more formal statement, or document, providing a full, open, and fair discussion of significant environmental impacts. It is used to inform decision makers and the public of the reasonable alternatives, which would avoid or minimize adverse impacts or enhance the quality of the human environment, and the related decisions made regarding the proposed action. Though an EIS can stem from an earlier EA, and need not discuss minor issues documented in that EA, it is typically more detailed and more complex than an EA. While the EIS process requires formal public interaction and scoping, it is more than a public disclosure document, and should be used by responsible officials in conjunction with other relevant planning and decision support materials.

In accordance with the 32 CFR 651.41, an EIS is required when a proponent, preparer, or approving authority determines that the proposed action has the potential to:

- Significantly affect environmental quality, or public health or safety

[7] Based upon the analysis and selection of mitigation measures that reduce environmental impacts until they are no longer significant, an EA may result in a FNSI in accordance with 32 CFR Part 651. If the proponent uses mitigation measures in such a manner, the FNSI must identify these mitigating measures (making them legally binding), and they must be accomplished as part of the project. If any of these mitigation measures are not implemented, allowing the likelihood for significant adverse environmental effects to occur, the EA is invalidated. The proponent must then publish an NOI and prepare an EIS. (32 CFR 651.15(c))

[8] Note that the CEQ regulations allow the proponent to initiate the EIS process at any time without preparing or completing an EA (40 CFR 1501.3).

- Significantly affect historic (listed or eligible for listing in the National Register of Historic Places, maintained by the National Park Service, Department of Interior), or cultural, archaeological, or scientific resources, public parks and recreation areas, wildlife refuge or wilderness areas, wild and scenic rivers, or aquifers

- Significantly impact prime and unique farmlands located off-post, wetlands, floodplains, coastal zones, or ecologically important areas, or other areas of unique or critical environmental sensitivity

- Result in significant or uncertain environmental effects, or unique or unknown environmental risks

- Significantly affect a federally listed threatened or endangered plant or animal species, a federal candidate species, a species proposed for federal listing, or critical habitat

- Either establish a precedent for future action or represent a decision in principle about a future consideration with significant environmental effects

- Adversely interact with other actions with individually insignificant effects so that cumulatively significant environmental effects result

- Involve the production, storage, transportation, use, treatment, and disposal of hazardous or toxic materials that may have significant environmental impact

- Be highly controversial from an environmental standpoint

- Cause loss or destruction of significant scientific, cultural, or historical resources

Consistent with CEQ regulations, 32 CFR Part 651 reiterates that significant impacts of socioeconomic consequence alone *do not* merit preparation of an EIS (32 CFR 651.39(a)). A list of Army actions normally requiring an EIS is presented in Appendix A of this guide.

3.1.3 Scoping

Scoping is an early and open process for determining the scope of issues to be addressed in an EA or EIS. It helps to identify the significant issues related to a proposed action and its alternatives that are deserving of study, and to eliminate those issues, that are not significant, from further detailed consideration. Scoping can be external or internal, formal or informal, depending on the needs and desires of the proponents and analysts. If an EIS is required, scoping becomes a formal requirement; but some form of scoping can always prove useful, even at the EA stage of analysis.

As part of the scoping process for an EIS, all potentially interested or affected parties (including affected Federal, state, and local agencies; recognized Indian tribes, interest groups, and other interested persons) must be sought out and given an opportunity to participate in determining the scope, and to help in the identification of significant issues to be analyzed in the document, as well as insignificant issues that can be deleted from further analysis.

While formal public scoping is required for an EIS, it can also prove valuable in the preparation of an EA prior to the publication of a FNSI, or the NOI for an EIS. Rather than holding scoping meetings for an EIS, an approach utilizing information meetings can be used for EAs to gather information on local issues in a very informal setting without fear by an individual of negative comments from others in the community. Other informal/internal forms of scoping, however, can proceed at any time for both EAs and EISs, as long as there is enough information available on the proposed project. Internal scoping commonly involves other Army and DOD organizations outside the proponent's office and MACOM (e.g., offices at other military installations that could be affected or that have experience with similar issues). Agency scoping efforts should also occur for both EAs and EISs. This form of scoping may involve other Federal, state, and local agencies with jurisdiction and/or expertise in the subject matter or location(s) involved. Contacts with local civic leaders and citizen groups may also prove useful. Such scoping efforts will not only aid in the early identification of issues, but also help with agency and public reviews later in the overall NEPA process.[9] All of these efforts simply conform to CEQ's implementing regulations that "there shall be an early and open process for determining the scope of issues to be addressed…" (40 CFR 1501.7). Public scoping is, of course, necessary to meet the intent of NEPA and the requirements of CEQ's and the Army's implementing regulations.

A word of caution—the scoping input obtained from the general public, agencies, and other sources is all too often ignored, forgotten, or otherwise ineffectively used; and less supportive of good decisions. Too many EISs seem to almost ignore scoping input. No real attempt is made to distinguish between significant and non-significant issues, and there is little evidence that the organization and content of the document in any way reflects the scoping results. Instead, the same environmental resource headings are used over and over again for each NEPA document, with the level of analysis and amount of attention devoted to each resource topic left relatively uniform. Properly used, the scoping process can be a valuable tool to focus, and thereby shorten, the analysis in NEPA documents.

More detailed guidance for conducting scoping can be found in CEQ's *Memorandum for General Counsels, NEPA Liaisons and Participants in Scoping* (CEQ, 1981), and in 32 CFR 651.48.

3.1.4 Project Files and the Administrative Record

A filing system for the Administrative Record should be established at project inception to ensure that all necessary records are incorporated into the system. The NEPA task manager, resource analysts, and all others involved in the project should regularly submit project records to the filing system throughout the NEPA process. The task manager should ensure that the filing system is properly organized and maintained and eventually submitted to the proponent or other responsible Army office at project completion. Files that are electronic, searchable, and presented on CDs have proven to be the most effective. Organization, thoroughness, and ease of access to the administrative record is important for the following reasons:

- It provides the only record of the NEPA analysis activities, which should be available upon request.

[9] Any scoping activities conducted before the preparation of an EIS cannot substitute for the normal public scoping process that occurs after publication of the NOI.

- It provides information that might be required in response to a formal request under the Freedom of Information Act.

- It would be needed during any litigation challenging the legal sufficiency of the NEPA analysis and documentation.

- It contains data that might be needed to support a supplemental NEPA analysis of similar or follow-on actions.

The Administrative Record must demonstrate that decisions were made in a consistent, traceable, and replicable manner. This aspect of NEPA is often overlooked to the detriment of the federal agency, if and when litigation occurs. The Administrative Record establishes the "facts" in litigation, and a failure to properly document actions and decisions can weaken even a good case. Specific guidance for developing the Administrative Record is provided in 32 CFR 651.4(q)(8).

3.2 STEPS IN THE ENVIRONMENTAL IMPACT ANALYSIS PROCESS

The flow chart shown in Figure 3-1 provides a visualization of the five key steps to a more efficient and effective approach to the environmental impact analysis process described in this section. Each *square* on the chart represents a distinct step that must be taken in order for the NEPA analysis to proceed. *Diamonds* appear as decision points for determining advancement. In many cases, certain steps and decision points in the process will need to be repeated.

As previously mentioned, this process represents a more structured and interactive approach for conducting environmental impact analyses. It relies heavily on the close and early coordination between Army program technical personnel and the environmental staff, and/or contractors, responsible for the NEPA analysis. It also relies on the close coordination and involvement of other Army representatives and, in some cases, non-Army representatives having environmental and/or regulatory expertise on a particular issue and/or location.

Also shown in Figure 3-1, the scoping process, from informal/internal scoping through to formal, public scoping (as required for an EIS), parallels much of the environmental impact analysis process, providing information to help identify and reduce the number of potential issues for analysis.

3.2.1 Step 1—Preliminary Identification of Issues

Once the DOPAA has been completed and approved and the scoping process initiated, the identification of the important environmental issues associated with the proposed action and alternatives can begin. There are a number of ways to accomplish this. Working as a *team*, the proponent and supportive technical staff, the NEPA task manager, and principal environmental analysts, can quickly identify important issues, based on their professional expertise, experience with similar projects, and familiarity with the affected environment. To support early issue identification, research and data collection often relies on existing, readily available information (e.g., prior NEPA documents, environmental resource management plans, communications with installation personnel, news media, and Internet searches). This process must consider all of the usual environmental resources, but more importantly, to consider their individual components or attributes, and to identify exactly which DOPAA activities or sub-activities affect the issue.

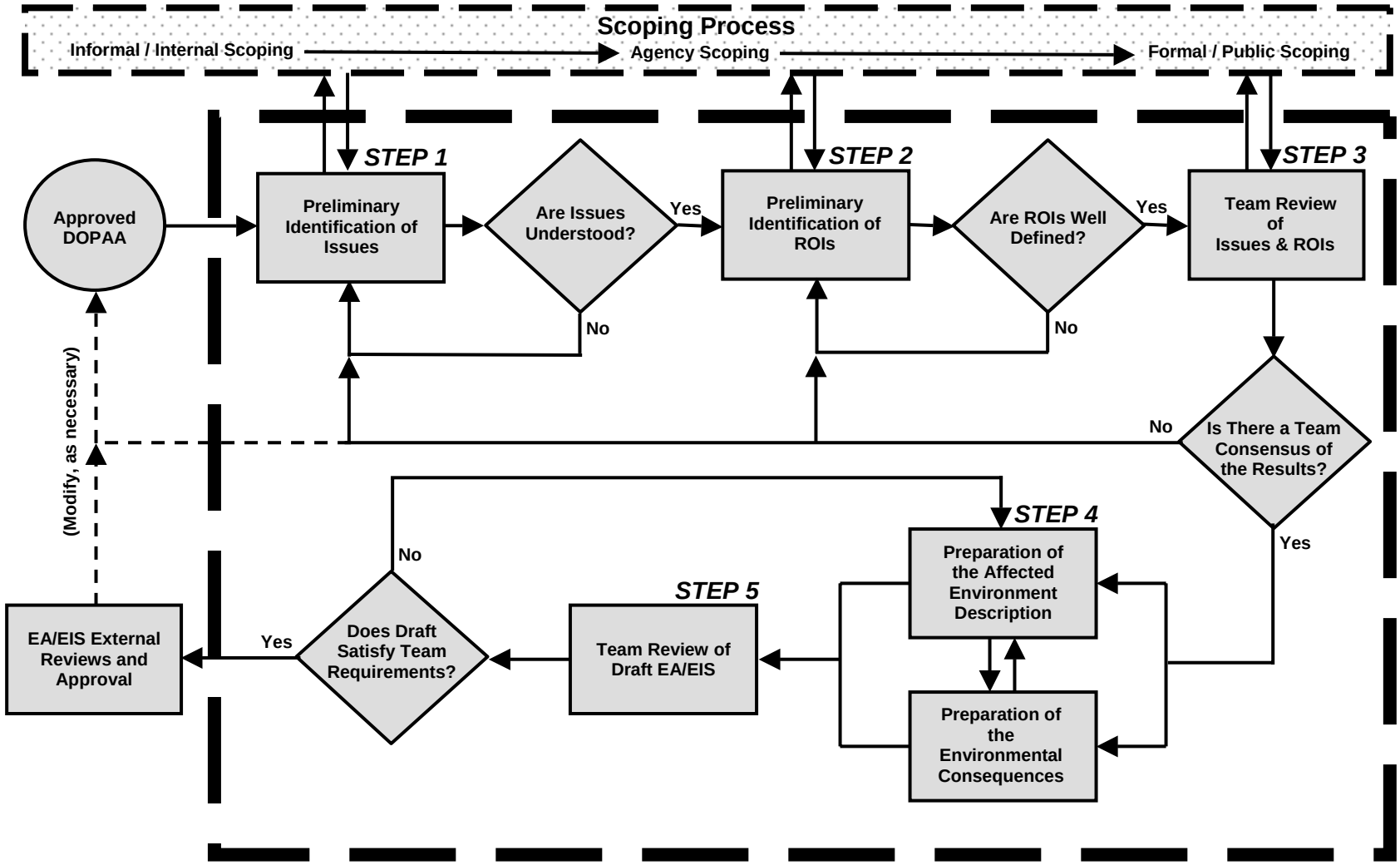

Figure 3-1. Environmental Impact Analysis Process

Each discrete project component, and the activities and sub-activities associated with implementation of the proposed action and its alternatives, will have its own set of consumables and emissions. For example, an Army project will often consume (or utilize) one or more of the following items:

- Land, waterways, and/or airspace
- Utilities (electricity, gas, water, etc.)
- Materials and goods
- Manpower
- Housing space
- Community Services (medical, fire department, recreation, etc.)
- Capital

Similarly, emissions and other outputs typically generated by Army projects include:

- Air emissions
- Wastewater
- Electromagnetic radiation
- Light
- Noise
- Solid and hazardous wastes
- Traffic
- Employment
- Facilities and equipment
- Changes in the use of land, waterways, and/or airspace

A checklist, such as the one organized by typical environmental resources and their principal attributes, shown in Appendix B, is a useful tool at this stage in the process. It forces the Team to consider a wide variety of potential issues and make a preliminary determination of whether or not they are relevant to the project under consideration. This is best accomplished by explicitly identifying the project-related activities and sub-activities that give rise to the impacts or issues; or, what cause-effect relationships come into play. Effective mitigation measures cannot be successfully identified or implemented until the exact cause of the impact is known. This checklist can also help the Team determine whether the issues are likely to be short-term or long-term, and whether the issues are directly or indirectly related to the proposed project (see Section 3.2.4.2 of the guide for further discussions on types of environmental effects).

The checklist should be used by the *interdisciplinary* Team, along with the completed DOPAA in hand. Particular focus should be placed on the identification of DOPAA-related activities and sub-activities, noting them in the body of the table. For any potential issues that the Team deems irrelevant, the checklist also provides a systematic process for identifying, and noting, the reason(s) for such determinations. This checklist can become part of the Administrative Record, addressing the issue identification and review process.

It is worth remembering, however, that no checklist can be universally comprehensive or complete. Some environmental resources, their individual attributes, and potential issues may be overlooked for any given Army project or program. The sample checklist presented in Appendix B can be

amended, and items deleted or added, as warranted, by the unique circumstances of a particular action.

The impacts and issues may be different during different phases in the life cycle of a project, such as for construction and operational phases. This consideration becomes much more complicated when dealing with a long life-cycle project, such as for the acquisition of a new weapon system, which can cover multiple phases involving system development, manufacturing, operation, and eventual disposal, spanning decades. As the list of consumables, emissions, and other outputs expected during each phase are identified, the checklist can be used to determine relevant issues by phase. Some issues, of course, will be related to more than one phase. The principal goal is to insure that DOPAA-related activities or sub-activities are linked to specific environmental issues.

During this early stage in the analysis process, output from any scoping activities should be used to help identify potential issues or eliminate potential issues in conjunction, or in parallel, with use of the checklist. The results of initial impact analysis can then be provided back to the various levels of scoping; better informing stakeholders on the status of the analyses, and providing opportunities to discuss their relative importance. Through ongoing scoping, issues can be screened and better evaluated for potential impact and significance. If an issue raised during scoping is not deemed relevant or germane by the Team, then this determination should be explained, if not in the NEPA document, then at least in the Administrative Record. Normally, however, every attempt should be made to address and analyze concerns and/or issues raised during the scoping process.

Once the preliminary identification of issues has been completed, the nature (significance) of such issues can often be productively evaluated and better understood through an analysis of cause-effect relationships. Figure 3-2 schematically captures the cause-effect relationship for a hypothetical road/trail construction project, in which a variety of both direct and indirect effects flow from a single action or cause. It should be noted that the effects chain presented in this figure does not address the full range of natural and social science categories for this or any other project. This type of assessment is particularly useful for capturing the secondary, tertiary, and indirect effects of a proposed action, and will assist in the determination and evaluation of cumulative impacts. An understanding of these cause-effect relationships will also assist in the identification of synergistic, cross-discipline assessments during later steps of the environmental impact analysis process.

3.2.2 Step 2—Preliminary Identification of Regions of Influence

The ROI represents the geographic area where most of the direct and indirect effects of the project are likely to occur. The trend of defining the ROI in NEPA documents has emerged only in the last several years. Typically, older documents defined the ROI as the county or installation boundary; while a select few examples exploit this concept, carefully adjusting the ROI for each resource area. For instance, determining potential impacts on air quality requires examining a larger ROI than for archaeological or historical resources. The recognition of differences and the subsequent benefits for focusing impact analysis is still a rare, but desirable occurrence.

Defining the ROI correctly is important since its delineation has implications for: (1) the collection of background data and information to support the analysis; (2) bounding the affected environment description that provides the context for understanding potential project impacts; (3) defining the range of affected populations and interested parties to be included/sought after in the scoping process; and (4) capturing the direct, indirect, and potential cumulative impacts. Under-defining the

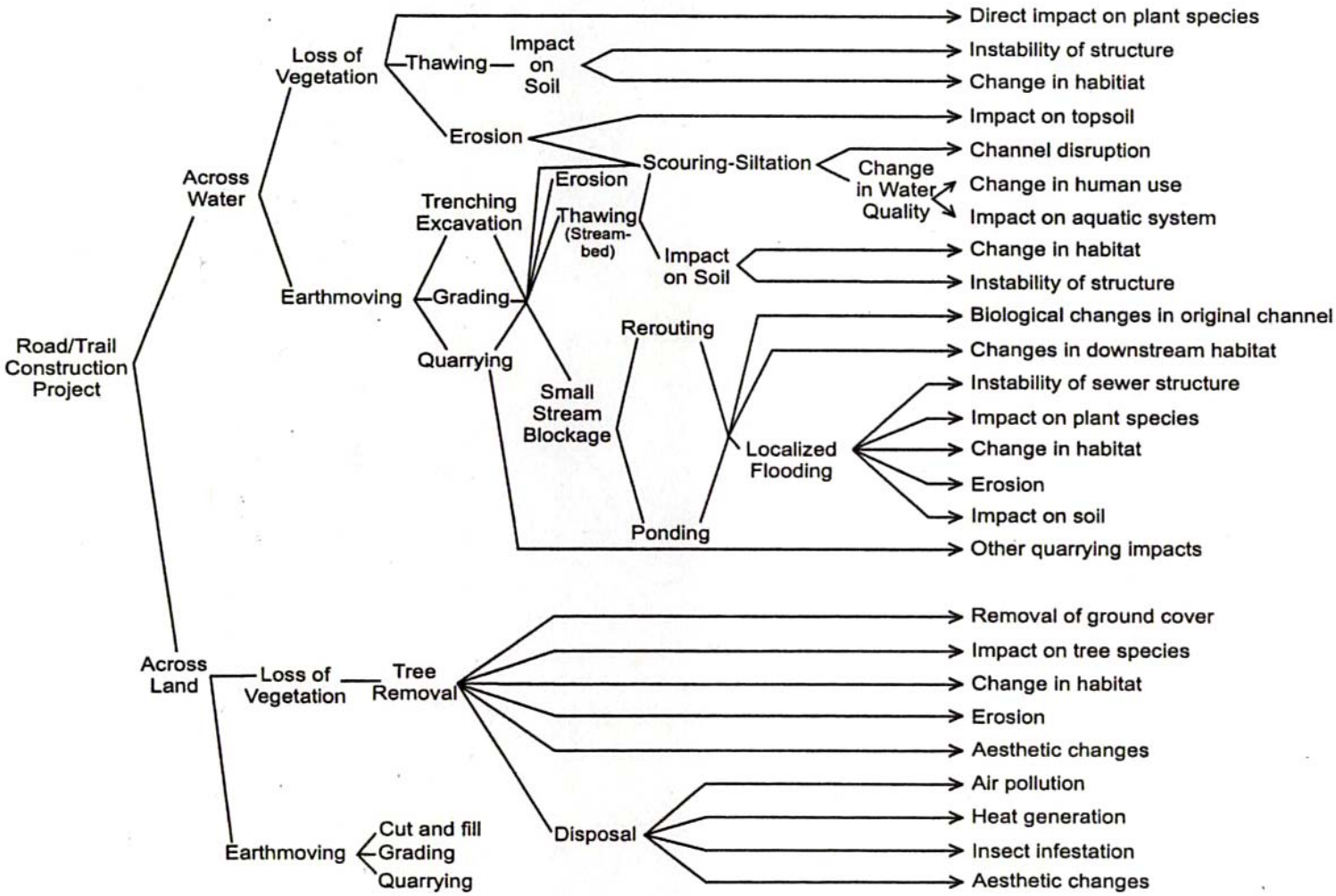

Figure 3-2. Example of a Cause-Effect Relationship for a Road/Trail Construction Project

ROI can result in the omission of potential impacts, and insufficient data and information to understand the full extent and context of impacts and their significance. Over-defining the ROI can lead to the collection and presentation of excessive, irrelevant information in the affected environment section, and the analysis of far removed, tenuous effects.

The following essential factors must be considered in defining the ROI:

- Magnitude and direction of expected direct and indirect environmental effects
- Dispersion or migration relationships for affected environmental media, such as groundwater flow and wind direction
- Ecosystem boundaries and wildlife migration patterns
- Political or regulatory jurisdictions (air basin boundaries, counties, city limits, flood control districts, etc.) which present particular resource management or impact mitigation requirements

It is important to remember that the ROI is unlikely to be the same geographical area for each environmental component and its various attributes. Each component and attribute is likely to have its own ROI, which may or may not overlap spatially with other components or attributes. When analyzing the specific contribution of a proposed action to cumulative effects, the ROI boundaries of the analysis almost always should be expanded to account for *other* past, present, and reasonably foreseeable future actions in the area having similar effects. The possibility of remote, non-contiguous ROIs also needs to be considered.

CEQ's publication, *Considering Cumulative Effects Under the National Environmental Policy Act* (CEQ, 1997), provides some possible geographic boundaries for different environmental resources, which are presented in Table 3-1. As noted by CEQ, the list is not inclusive and the applicable geographical boundaries need to be defined on a case-by-case basis.

Using the results of scoping and other readily available existing information, Team resource analysts, with the appropriate expertise, should delineate the individual ROIs for each of the issues identified in Step 1. Some issues may require further research and communications with local experts and government regulators to clarify ROI boundaries.

To facilitate analysis, ROIs should be drawn onto one or more maps of the project area, and compared. The Team should then collectively review the ROIs to ensure proper definition. Any doubts, uncertainties, or disagreements should be resolved before proceeding to the next step; and the discussions and results should be included in the Administrative Record.

3.2.3 Step 3—Team Review of Issues and Regions of Influence

During this step, the review and concurrence of previously defined issues and ROIs is subjected to review by the entire interdisciplinary Team. Equal attention should be paid to concurrence with both the issues identified for inclusion in the environmental impact analysis process, and those issues identified as irrelevant. As mentioned earlier, this effort will be easier if all project activities and sub-activities are adequately described in the DOPAA, and the relevant environmental issues

Table 3-1. Geographic Areas That Could Be Used In A Cumulative Effects Analysis

Resource	Possible Geographic Areas for Analysis
Air Quality	Metropolitan area, airshed, or global atmosphere
Water Quality	Stream, watershed, river basin, estuary, aquifer, or parts thereof
Vegetative Resources	Watershed, forest, range, or ecosystem
Resident Wildlife	Species habitat or ecosystem
Migratory Wildlife	Breeding grounds, migration route, wintering areas, or total range of affected population units
Fishery Resources	Stream, river basin, estuary, or parts thereof; spawning area and migration route
Historic Resources	Neighborhood, rural community, city, state, tribal territory, known or possible historic district
Sociocultural Resources	Neighborhood, community, distribution of low-income or minority population, or culturally valued landscape
Land Use	Community, metropolitan area, county, state, or region
Coastal Zone	Coastal region or watershed
Recreation	River, lake, geographic area, or land management unit
Socioeconomics	Community, metropolitan area, county, state, or country

Source: CEQ, 1997

associated with the activities and sub-activities are identified at the individual attribute level. An appropriate ROI can be more easily defined through the analysis of precise cause-effect relationships and more tightly drawn issues.

The Team review of issues and ROIs should be conducted in a formal in-process review (IPR) setting involving the proponent and supportive technical staff, the NEPA task manager, the principal environmental investigators or analysts, and Environmental Office staff from the affected installation(s), whenever possible. Depending on the complexity of the proposal, the types of issues identified, and the potential for controversy, others may need to participate in the IPR, including Army legal counsel and public affairs representatives, and outside technical experts. Participation of the entire interdisciplinary Team is important because it helps ensure that the Team, as a whole, considers issues which otherwise might be overlooked if individual resource analysts independently considered issues only within their own disciplines. Interdisciplinary assessment and agreement on issues, and associated ROI delineation, forces analysts to look beyond their individual resource areas and establish a broader perspective and understanding of other environmental resource areas. This will increase the likelihood that a more comprehensive identification of the important issues will result.

At the IPR, proponent personnel can help answer DOPAA-related questions that other members of the Team may have, and generally help resolve unanswered questions and uncertainties about the Proposed Action. Their presence will also provide the Team with an overall understanding of the proponent's flexibility in accommodating changes in the DOPAA, should significant issues arise that can best be avoided by changing the location of a particular action, the integration of one or more mitigation measures, or other major changes in the perceived action.

Environmental staff members from the affected installations can provide the Team with critical insights into particular local issues, and an understanding and appreciation of local sensitivities. Such local sensitivities can raise new concerns or elevate the importance of issues for assessment that might otherwise be overlooked or under-estimated.

The IPR is critical because it will define the course of action for the detailed analysis and documentation in the EA or EIS. This is accomplished through Team review and concurrence of the following items:

- Issues to address and their relative importance
- ROI delineations
- Acknowledgement of all substantive scoping issues
- Methodological approaches to be used for modeling and other impact analyses
- Collection of outstanding data (to ensure time and resources are not expended collecting wrong or unnecessary information)

These are further discussed in the paragraphs that follow.

Review of Issues and ROIs

During the IPR, each resource analyst starts off with a concise summary of the issues and non-issues identified within their area of expertise, including a rationale for each. A delineation of the associated ROI(s) is also shown and/or discussed, in relationship to the proposed action and alternatives. This includes the ROI for direct and indirect impacts, secondary and tertiary impacts, and cumulative impacts.

The collective Team review of the individual issues and ROIs also provides an excellent opportunity to identify and capture cross-discipline, cross-impact, or synergistic issues. All too often, NEPA documents fail to properly capture and address these cross-discipline impacts. Examples include the potential effects of air pollutant deposition on vegetation health and growth, the effect of habitat loss on species diversity, and disturbance of cultural resource sites by vehicular traffic or increased human presence. As each environmental analyst presents their issues to the Team, additional potential secondary or tertiary issues can be identified in all resource areas. Discussion among Team members should help to ensure that no such issues are overlooked.[10]

If a large number of issues is anticipated in the IPR, it may be prudent to determine beforehand the relative importance and priority of each issue. This helps to ensure that appropriate time and resources are devoted to addressing them. The following criteria can be used as guidelines for determining the relative importance of environmental issues:

[10] Developing formal matrices to help track and sequence issues and impacts can help refine cause-effect relationships which, when understood well, will aid in the identification of mitigation measures if they are deemed necessary. Excellent discussions on the use of matrices, networks, and checklists for impact or issue identification can be found elsewhere in Canter, 1996.

- **Legislative/Regulatory/Legal Barrier.** The degree to which there is an actual or suspected violation of one or more statutes or regulations for protection of the environment.

- **Public Sensitivity.** The degree of public sensitivity, emotionalism, and written or vocal expression.

- **Scientific Documentation.** The degree to which the scientific literature identifies an issue as important.

- **Operational Encroachment.** The degree to which an issue could have implications for the sustainability of installation operations.

Ensuring That Scoping Issues Have Been Acknowledged

A comprehensive checklist of issues raised during all phases of the scoping process should be made, whether it was a formal or informal process. In reviewing the checklist, the Team should ensure that each issue raised is included in the analysts' review of issues and ROIs. Formal acknowledgement of the substantive scoping issues identified will help to avoid the problems raised earlier in Section 3.1.3.

Methodological Approaches for Analysis

NEPA documentation is not an end in itself. It is not intended to be an exhaustive academic exercise, but rather a process through which the analysis conforms to the issues identified, time constraints specified, and resources at hand. The IPR also presents an opportunity for the Team to obtain consensus on the methodological approach, or approaches, to be later used in Step 4 of the analysis process. Methods used to assess environmental impacts will vary by environmental resource and its individual attributes. They will also vary according to the importance of the issues and their anticipated impacts. The degree of sophistication in the methodological approach should reflect the complexity of the issue(s). Some attributes can be handled qualitatively, while others will require detailed quantitative analysis. They should also use, to the maximum extent possible, approved methods and/or models approved by the regulatory agency or commonly accepted in NEPA practice. Above all, the methodological approach, or approaches, should produce consistent, verifiable, and reproducible results.[11]

The methodological approach, model, statistical technique, or qualitative analysis must be appropriate for the particular issue being addressed. The choice of models, for example, will depend on the issue being addressed, information needs of the decision maker and the public, the required level of detail, and the variables that can be controlled. The methodological approach should be judged by performance and accuracy. Individual resource analysts should tailor their methodological approaches to ensure an understanding of impact significance and facilitation of decision support through the comparison of alternatives.

[11] Useful discussions on selecting computer models and input parameters for impact analyses are available elsewhere in Meier, 1998.

Identification of Data Requirements

With any methodological approach, additional data and information will be required beyond that used for preliminary analyses conducted in Steps 1 and 2. Often, the cost and time associated with data collection and processing information may influence the choice of methodological approach. In order to ensure focused, timely, issue-driven NEPA documents, considerable focus should be placed on obtaining the right data to address the issues, and no more. The IPR represents a good forum to establish guidelines and consensus on the data collection effort.

Agreement on the ROIs can profoundly influence the amount of data required, whether from secondary sources, or from primary sources involving field studies or direct acquisition. The quality of data, in terms of its accuracy and precision, requires technical attention, as well as the suitability of the data to address identified issues.

Most NEPA analyses involve both primary and secondary data sources. As secondary data is commonly used in NEPA documents, especially in EAs, care should be taken to ensure that secondary data is accurate and relevant to issues being addressed. Data collection efforts should focus more on the analysis of those issues deemed important to the Team, not the collection of data that is easy to obtain.

There will be situations where necessary data, particularly primary data, for an EIS cannot be obtained. While every effort should be made to obtain and include this information in an EIS, it sometimes cannot be obtained within reasonable cost and time constraints. If this is the case, the EIS should state so, and identify the relevance of the missing information, and summarize the existing credible scientific evidence that is relevant. (40 CFR 1502.22)

Because data collection can be time consuming and costly (particularly when field studies are involved), focus must be maintained on data collection requirements for relevant identified issues within designated ROIs. Agreeing on the data collection goals and methods, established in Step 3, should avoid the timely, costly pursuit of unnecessary and inappropriate data in Step 4.

Consensus

Once the proponent and supporting staff, the NEPA task manager, the resource analysts, and other Team members concur with the results of the IPR, the environmental impact analysis can proceed to the next step; that is, preparation of both the affected environment and environmental consequences sections of the EA or EIS. If consensus is not achieved, further review of the identified issues and the associated ROIs may be necessary in order to ensure that they are, in fact, well understood. In some cases, this review process may take two or more iterations, especially for complex projects with numerous environmental issues. This process, nevertheless, is critical to assuring focused, well-defined environmental impact analyses, and should be completed before detailed data collection, analysis, and documentation efforts, in Step 4, begin.[12]

[12] There may be occasions when it becomes apparent that more information is needed before a particular issue can be determined relevant or not germane, or a ROI can be delineated. In such a case, information given in the DOPAA may need to be augmented or clarified. There is also the possibility that a particularly environmental issue is identified that may warrant alteration of the DOPAA, especially if the issue is deemed critical enough to be a "show stopper" that could seriously delay implementation of the proposed action.

As always, the results and decisions made in the IPR should be well documented for the Administrative Record, perhaps as meeting minutes. Written concurrence of IPR agreements and decisions, including signatures of key participants, is also recommended.

3.2.4 Step 4—Preparation of the Affected Environment Description and Environmental Consequences

The NEPA task manager and analysts on the Team must prepare the Affected Environment Description and the Environmental Consequences chapters of the EA or EIS. Once consensus has been reached and documented on the issues for analysis, the ROI delineations, the methodological approaches, and the data requirements (from Step 3); the NEPA Team can assemble outstanding data, conduct field studies (as necessary), and perform detailed impact analyses. Guidance for implementing these tasks and documenting the results is provided in the following sections. Further guidance for preparing the Affected Environment Description and Environmental Consequences chapters for EAs and EISs is provided in 32 CFR 651.34 and Appendix E to Part 651, respectively.

3.2.4.1 Affected Environment Description

CEQ's regulations state that: "The environmental impact statement shall succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration. The descriptions shall be no longer than necessary to understand the effects of the alternatives. Data and analyses in a statement shall be commensurate with the importance of the impact, with less important materials summarized, consolidated, or simply referenced. Agencies shall avoid useless bulk in statements and shall concentrate effort and attention on important issues. Verbose descriptions of the affected environment are themselves no measure of the adequacy of an environmental impact statement." (40 CFR 1502.15)

Whether it is for an EA or an EIS, the description of the affected environment should provide the following information:

- **Environmental Setting.** The affected environment description should provide relevant information to decision makers, regulatory agency representatives, and others unfamiliar with the general location and environmental setting. Depending on the nature of the proposed action, it may include information on the regional, local, and community setting, and on the individual site(s) involved. The description should include relevant maps or figures for delineating environmental conditions within the ROI.

- **Context for Understanding Environmental Impacts.** One of the primary purposes of the affected environment description is to highlight those environmental components and attributes which are most likely to be impacted. The "context" of a potential impact, in addition to its "intensity", must be well understood in order to determine its significance (see Section 3.2.4.2 for further discussions on significance of impacts). For those components and attributes that have little or no potential to be impacted, they should be ignored, with just a brief discussion of how such a determination was made.

- **Environmental Baseline.** In this regard, the affected environment description should present sufficient, relevant detailed information to describe the "status quo" or no-action environment, which is the baseline against which the impacts of the proposed action and other alternatives can be compared. It should also present a summary of trends in the condition of the relevant

environmental resource attributes, so that the potential compounding effects of proposed actions can be better understood.

For discussion and analysis purposes, it is useful to think of the various environmental resource topics that are usually addressed in an EA or EIS (such as air quality and biological resources) as *environmental components*. The characteristics of each environmental component are then described as *attributes*, such as criteria pollutants, hazardous air pollutants, visibility, and stratospheric ozone for air quality; and flora, fauna, habitat, and protected species for biological resources.

Criteria for Including Environmental Components and Their Attributes

In deciding whether to include a particular environmental component and its relevant attributes in an environmental analysis, the following criteria should be used:

- The potential exists for the proposed action and alternatives to directly or indirectly impact the component and its attributes.

- The scoping process identifies the component and its attributes as a real or perceived issue of concern.

If neither of these criteria are met, the environmental analysis should document such conclusions that the particular environmental component, or particular attribute, warrants no further consideration. Too many EAs and EISs present detailed descriptions of environmental components and attributes that are not impacted by a proposed action or its alternatives, and/or over which no concern was expressed during the scoping process. This can create a gross imbalance between the description of various components and attributes and the impact analysis presented later. If there is no discussion in the Environmental Consequences section of the document, there is little reason to include supportive data in the Affected Environment section.

The application of these criteria will facilitate focused and issue driven environmental analysis, while satisfying CEQ's guidance for describing the affected environment (40 CFR 1502.15), presented at the beginning of this section. Although CEQ's regulations specify an "inter-disciplinary approach" for the analysis, this requirement does not dictate detailed discussions of every discipline or environmental component in the document. The regulations also state that, "the disciplines of the preparers shall be appropriate to the scope and issues identified in the scoping process" (40 CFR 1502.6).

The Extent of Information and Data to Include

The information and data included in a description of the affected environment should be just sufficient to provide: (1) relevant information for those unfamiliar with the environmental setting, (2) the context for understanding the environmental impacts or consequences, and (3) the environmental baseline against which impacts of the proposed action and other alternatives can be compared.

This guidance does not mandate the listing of every threatened and endangered species that has, might have, or could have been, sighted within proximity of a particular site, within an entire installation, or in an entire forest, particularly if impacts are limited to the immediate vicinity of the

proposed project. The socioeconomic conditions for an entire county are not required in an analysis simply because the data is readily available for that particular census area, unless they are relevant to identified impacts. All too often, published, or other readily available, information is presented, rather than asking the fundamental question of whether the information gathered is pertinent and germane. To avoid making this mistake, the issues and ROIs agreed upon earlier should be used in determining the extent of data acquisition, analysis, and documentation.

Field Studies

While some EAs can rely entirely on secondary data, or incorporate background data "by reference", EISs will often require some level of field studies to address potentially significant impacts. Every effort should be made to use already published or unpublished data from recognized, authoritative sources, such as Federal, state, and local government agencies, or local universities and colleges. However, much of the information necessary for a focused, issue driven analysis may not be available from these sources at the scale, date, and reliability required. In these cases, field studies will most likely be required.

One or more trips to the affected environment locale(s) is usually necessary to either collect new field data, or to verify conditions described in existing source documents used and cited in the affected environment description. At this stage, the responsible resource analysts should be collecting the data necessary for their individual analyses. Some analysts, such as wildlife biologists, may require several return trips to collect and/or confirm seasonal data.

Again, these field studies must be focused and issue driven. It is usually unnecessary and wasteful to collect detailed information on "anything and everything" in sight just in case it *might* be needed. Careful thought must precede unnecessary data acquisition, devising a structured plan for obtaining necessary data, systematically collecting it in the field, and carefully recording and using the data once it is obtained.

Hallmarks of good field studies include: (1) careful planning, including problem definition, base map selection, technique selection, and data classification systems; (2) a reconnaissance or pilot study with the field testing of techniques and classification systems anticipated; (3) the systematic collection of field data, including mapping, sampling, interviewing, etc.; and (4) the processing and analysis of data collected and the preparation of the findings in a report. Once the field data has been collected and organized, it must be carefully processed and analyzed. While each discipline has its own philosophical and methodological approach to field studies, it should be done carefully and systematically, and be replicable. As a key element of the Administrative Record, field studies must be well documented.

For an agency to adequately evaluate the potential for significant impacts, field studies are often necessary when existing data is incomplete or unavailable. CEQ's regulations require agencies to obtain incomplete information when it is essential to a reasoned choice among alternatives. However, the regulations also state that the collection of such information should only occur as long as the overall costs of obtaining it are not exorbitant. (For further discussions on this requirement, see 40 CFR 1502.22.)

In cases, where field studies will not be required to support the analysis, site visits to the project area (by a small team) may still prove useful. At a minimum, the NEPA task manager for the EA or EIS should visit all of the sites and locations involved. Other than gaining familiarity and insight into the

environmental setting and affected environment, site visits also add the critical element of credibility to the environmental analysis. Without visiting a site, it is difficult to maintain the credibility of the analysis and the trust and confidence of the public, regulators, and other stakeholders. This point can be particularly important during litigation.

3.2.4.2 Environmental Consequences

In describing the environmental consequences, CEQ's regulations state that: "This section forms the scientific and analytic basis for the comparisons (of alternatives)… The discussion will include the environmental impacts of the alternatives including the proposed action, any adverse environmental effects which cannot be avoided should the proposal be implemented, the relationship between short-term uses of man's environment and the maintenance of long-term productivity, and any irreversible and irretrievable commitments of resources which would be involved in the proposal should it be implemented… It shall include discussions of:

- Direct effects and their significance
- Indirect effects and their significance
- Possible conflicts between the proposed action and the objectives of Federal, regional, state, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned
- The environmental effects of alternatives including the proposed action
- Energy requirements and conservation potential of various alternatives and mitigation measures
- Natural or depletable resource requirements and conservation potential of various alternatives and mitigation measures
- Urban quality, historic and cultural resources, and the design of the built environment, including the reuse and conservation potential of various alternatives and mitigation measures
- Means to mitigate adverse environmental impacts…" (40 CFR1502.16)

The following paragraphs provide further guidance on direct and indirect impacts, short-term and long-term impacts, cumulative impacts, significance of impacts, and methodology and scientific accuracy.

Direct and Indirect Impacts

It is worth remembering that the CEQ regulations are quite precise in their definition of environmental "effects",[13] which include:

- **Direct Effects.** These effects are caused by the action and occur at the same time and place.

[13] The CEQ regulations use the terms *effects* and *impacts* synonymously and interchangeably.

- **Indirect Effects.** These are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate; and related effects on air and water and other natural systems, including ecosystems. (40 CFR 1508.8)

Despite these guidelines, most EAs and EISs poorly identify and discuss indirect impacts. Direct and indirect impacts are often indistinguishable in a document and, most often, no real attempt is made to identify indirect, secondary, or tertiary impacts. This often stems from a lack of issue-driven analyses, where energy and time is dissipated covering insignificant issues, instead of focusing on the important issues. This also indicates a lack of scientific rigor and thoroughness in the analysis. The use of checklists and interaction matrices to determine cause-effect relationships, as mentioned earlier, can produce a better understanding of direct, indirect, secondary, and tertiary relationships; and produce better results.

Many analyses are weakened by inadequate consideration of secondary and tertiary impacts within a particular environmental component, as well as inter-environmental component impacts. As an example, air quality analyses typically estimate air emissions and resultant ground concentrations, and compare them to government standards; but rarely address the effects of these concentrations or deposition rates on particularly sensitive flora and/or fauna.

Short-Term and Long-Term Impacts

In order to fully understand the "context" aspect of significant impacts, a determination of both short- and long-term effects must be made (40 CFR 1508.27(a)). These are defined in the following:

- **Short-Term Impacts.** These types of impacts are transitory effects on a proposed action that are of limited duration, and are generally caused by construction activities or operation start-up.

- **Long-Term Impacts.** These are impacts that occur or continue to occur over an extended period of time, whether they start during the construction phase or operation start-up, or start during the operations phase.

Most impacts from the operations phase of a project are long-term since project or program operations represent a steady-state condition (occurring continuously or repeatedly over a long period of time). However, long-duration impacts could also be caused by construction activities if a resource is destroyed or irreparably damaged, or if the recovery rate of the affected resource is very slow.

Cumulative Impacts

The concept of cumulative impacts has led CEQ to provide additional guidance in their publication *Considering Cumulative Effects Under the National Environmental Policy Act* (CEQ, 1997). The original guidance defines cumulative impact as…"the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR 1508.7)

Though obvious in its intent, this requirement has proven to be a problematic area of environmental impact analyses. CEQ indicates that, "analyzing cumulative effects is more challenging, primarily because of the difficulty of defining the geographic (spatial) and time (temporal) boundaries".

To really address cumulative impacts, the "incremental impact of the action when added to other past, present, and reasonably foreseeable future actions", significantly broadens the scope of an environmental impact assessment, with all of the attendant schedule and cost implications. Since actions …"regardless of what agency (Federal or non-Federal) or person undertakes such actions" must be added, the burden can be considerable. Simple identification of these other actions (past, present, and reasonably foreseeable) can be difficult and time consuming. Even if all other actions can be identified satisfactorily, the analytical challenge of incorporating cumulative impacts is not trivial and, indeed, can be quite complex.

Although no universally accepted framework for cumulative effects analysis exists, CEQ identifies eight general principles that have gained acceptance:

- Cumulative effects are caused by the aggregate of past, present, and reasonable foreseeable future actions.
- Cumulative effects are the total effect, including both direct and indirect effects, on a given resource, ecosystem, and human community of all actions taken, no matter who (federal, nonfederal, or private) has taken the actions.
- Cumulative effects need to be analyzed in terms of the specific resource, ecosystem, and human community being affected.
- It is not practical to analyze the cumulative effects of an action on the universe; the list of environmental effects must focus on those that are truly meaningful.
- Cumulative effects on a given resource, ecosystem, and human community are rarely aligned with political or administrative boundaries.
- Cumulative effects may result from the accumulation of similar effects or the synergistic interaction of different effects.
- Cumulative effects may last for many years beyond the life of the action that caused the effects.
- Each affected resources, ecosystem, and human community must be analyzed in terms of its capacity to accommodate additional effects, based on its own time and space parameters.

By applying these principles to environmental analysis of all kinds, CEQ asserts that cumulative effects will be better considered, and the analysis will be complete. Cumulative effects analysis should also be conducted within the context of resource, ecosystem, and human community thresholds—levels of stress, beyond which the desired conditions degrade (CEQ, 1997).

At the very least, an attempt should be made to identify those other actions that could have an additive, incremental impact on those environmental components and their attributes identified as

being significant issues under the proposed action. Further guidance in addressing cumulative impacts is provided in 32 CFR 651.16.

Significance of Impacts

Again, the CEQ implementing regulations are quite precise, and should always be kept in mind. In 40 CFR 1508.27, it states: " 'Significantly' as used in NEPA requires considerations of both context and intensity:

- **Context.** This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

- **Intensity.** This refers to the severity of the impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

  - Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

  - The degree to which the proposed action affects public health or safety.

  - Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

  - The degree to which the effects on the quality of the human environment are likely to be highly controversial.

  - The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

  - The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

  - Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

  - The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

  - The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

- Whether the action threatens a violation of Federal, state, or local law or requirements imposed for the protection of the environment."

In evaluating the significance of impacts on individual environmental components or their attributes, the applicability of the items identified by CEQ above should be considered first. In addition, other considerations, judged appropriate for specific environmental components and their attributes, should also be considered. 32 CFR 651.39 provides further guidance for determining significance.

Methodology and Scientific Accuracy

Many EAs and EISs lack scientific rigor. While this criticism is too frequently true and unfortunate, it can be readily addressed. Too much time and effort is often devoted to the meaningless collection of reams of data, and the quasi-scientific analysis of marginal or even irrelevant issues. If these analyses and documents were truly issue-driven, more time and effort could be devoted to the rigorous exploration of the truly relevant and significant issues. The composition of the interdisciplinary Team and their skill levels must be matched to the environmental issues at hand.

All analyses must use accepted scientific approaches, using an exact, objective, factual, and systematic or methodological basis. Again, the analysis should be objective, systematic, accurate, precise, and consistent. Meticulous records of calculations and assumptions made should be kept, at the very least, for the Administrative Record, if not in the appropriate appendices of the document. Above all, the analysis should be reproducible, and be presented in such a way that the reader (whether the decision maker or the public) can easily reach informed conclusions.

3.2.5 Step 5—Team Review of Draft EA/EIS

Once the initial, first draft of both the Affected Environment Description and the Environmental Consequences chapters of the EA or EIS are completed, a thorough Team review of the entire draft document should be conducted. A collaborative, collective review helps ensure that all earlier identified issues have been satisfactorily addressed. It will also ensure that all possible cross-discipline, synergistic effects have been adequately addressed.

Impacts should be addressed in proportion to their significance. For each issue addressed in the environmental consequences section, appropriate contextual information must be provided in the affected environment description. As mentioned earlier, a mismatch often occurs between the amount or information, or even its relevance, provided in the affected environment description, and the impact analysis conducted in the environmental consequences. The analysis should also avoid the implication that compliance with regulatory requirements demonstrates the absence of adverse or significant impacts.

The EA or EIS must also be written in plain language, and use appropriate graphics to facilitate understanding by the decision maker and the public (40 CFR 1502.8). Whenever possible, technical editors should review the document to ensure accuracy, consistency, and readability.

To help determine the adequacy and completeness of EAs and EISs, Appendices C and D of this guide provide respective checklists that can be used at this step in the process. Items missing, or deemed inadequate, should be corrected. While not required by 32 CFR Part 651 or the CEQ regulations, a checklist can be very useful as a reminder of the various requirements and recommendations contained in these regulations.

Once the Team is satisfied that the EA or EIS has addressed and satisfied all necessary requirements, the document can proceed for external review and approval in accordance with 32 CFR Part 651.

CHAPTER 4.0:
SOURCES FOR ASSISTANCE, GUIDANCE, AND INFORMATION

The NEPA process is designed for collaborative problem solving. As such, the properly administered NEPA process will engage numerous sets of stakeholders in the process. While the degree and extent of such collaboration will depend upon the nature/severity of received impacts, open communication will prove fruitful. Many individuals and interests groups have knowledge and expertise that can prove valuable and, if approached early and collaboratively, these stakeholders can be very helpful. As an example, any project having implications for any Indian Tribes should immediately approach tribal representatives to accurately reflect the concerns and values that only the tribe can articulate. Similarly, community, environmental, and other interest groups can prove to be a valuable source of information and analysis support.

Within the Army organization and at Army installations, there are numerous sources of specialized expertise. These potential sources of information include the Environmental Support Office (ESO) of Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA (ALT)), the USAEC, the MACOM Environmental Office, the Office of the Director of Environmental Programs (ODEP), US Army Corps of Engineers (USACE) research laboratories, USACE districts and divisions, and DOD Regional Support Centers. State and local agencies are another potential source of information, and the appropriate points of contact within these agencies may be obtained from the installation Environmental Office. Local interest groups can also yield useful information.

Suggested Army sources of assistance and information, by category of issue, are listed below. Note that many of the titles and organizations identified will vary from installation to installation.

(1) Aesthetics:
- Installation Landscape Architect
- USACE District Landscape Architects

(2) Air Quality:
- Installation Environmental Specialist
- Installation Preventive Medicine Officer

(3) Airspace:
- Installation Air Traffic and Airspace Officers
- Army Regional Representative to the Federal Aviation Administration (FAA)
- Army Aeronautical Services
- Military Airspace Management System Office
- Installation Range Control Officer

(4) Earth Science:
- Installation Environmental Specialist
- USACE District Geotechnical Staff

(5) Wildlife and Ecology:
- Installation Environmental Specialist
- Installation Wildlife Officer
- Installation Forester
- Installation Natural Resource Committee
- USACE District Environmental Staff

(6) Energy/Resource Conservation:

- Installation Environmental Specialist
- Directorate of Public Works

(7) Health and Safety:
- Installation Preventive Medicine Officer
- Installation Safety Officer
- Installation Hospital

(8) Historic/Archaeological Resources:
- Installation Environmental Specialist
- Installation Historian or Architect
- USACE District Archaeologist.

(9) Land Use and Recreation Impacts:
- Installation Master Planner
- Real Estate Office
- USACE District Community Planners

(10) Socioeconomics:
- Personnel Office
- Public Affairs Office
- USACE District Economic Planning Staff

(11) Water Supply and Water Quality:
- Installation Environmental Specialist
- Installation Preventive Medicine Officer
- Directorate of Public Works
- USACE District Environmental Staff

(12) Noise:
- Preventive Medicine Officer
- Directorate of Public Works
- Installation Master Planner

(13) Hazardous Waste Management
- Directorate of Public Works
- Defense Reutilization & Marketing Office

(14) Training Operations:
- Installation Director of Plans, Training, and Mobilization

Army acquisition or system environmental analyses can prove more challenging, as they may affect numerous installations, and may be more programmatic in nature, leaving site-specific analyses for later, tiered local level analysis. However, in order to efficiently use the programmatic approach, these program levels must have considerable knowledge of life-cycle impacts, including those that occur at the installation level. This is best accomplished through the exchange of information between system designers/developers and those commands and installations facing the issues of fielding and use. In addition, previous NEPA analyses can be used to develop guidelines and tools to insure adequate consideration at the program level.

For national or program level analyses, some nation-wide Army sources can provide valuable assistance. Such national sources for additional assistance, guidance, and information are provided below:

- **Environmental Support Office (ESO) of Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA (ALT)), formerly known as the US Army Acquisition Pollution Prevention Support Office.** The mission of the Army Acquisition Pollution

Prevention is to promote stewardship within Army weapon system and industrial base. The ESO (AMCOPS-IEI/SAAL-PE) oversees the A2P3 by reducing constraints on Army operational readiness through integrating environmental considerations into the materiel life cycle. Through policy development, direct acquisition and logistics support, and encouraging technology exploitation, the ESO helps to resolve environmental issues through pollution prevention solutions that protect the soldier and civilian workforce, enables training, and sustains mission readiness.

Telephone: (703) 806-9242, DSN 656-9242
Web Information: http://www.environmentalsupportoffice.com/

- **US Army Environmental Center (USAEC).** USAEC provides a broad range of environmental services and products to Headquarters Department of the Army, MACOMs, and commanders worldwide. As part of support for the Director of Environmental Programs, under the Assistant Chief of Staff for Installation Management (ACSIM), the USAEC can advise Army agencies and proponents in the preparation of NEPA analyses and, upon request, review NEPA documents.

  Telephone: (410) 436-6854, DSN 584-6854 (for system acquisition programs)
  (410) 436-1590, DSN 584-1590 (for installation operations)
  Web Information: http://aec.army.mil/usaec/index.html

- **US Army Center for Health Promotion and Preventive Medicine (USACHPPM).** The USACHPPM's mission is to provide worldwide technical support for implementing preventive medicine, public health, and health promotion/wellness services into all aspects of the Army community. The USACHPPM can provide a variety of information and support including: (1) health risk assessments for soldiers and the general public exposed to ionizing radiation, (2) source emission (stack) testing and air pollution health impact assessments, (3) noise monitoring and modeling, and (4) evaluation of hazardous waste management procedures.

  Telephone: (800) 222-9698
  Web Information: http://chppm-www.apgea.army.mil/

- **US Army Engineer Research & Development Center, Construction Engineering Research Laboratory (CERL).** CERL conducts research and development in infrastructure and environmental sustainment. Resulting technologies help military installations provide and maintain quality training lands and facilities for soldiers and their families. Many of the tools and technologies can facilitate and streamline environmental analysis and NEPA document development. CERL works closely with its Army customers and can provide assistance with the NEPA process.

  Telephone: (217) 352-6511 or 1-800-USA-CERL
  Web information: http://www.cecer.army.mil

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APPENDIX A

ARMY ACTIONS NORMALLY REQUIRING AN EA OR AN EIS

Army Actions Normally Requiring an EA or an EIS

In accordance with 32 CFR 651.33, the following Army actions normally require an EA, unless they qualify for the use of a CX:

(a) Special field training exercises or test activities in excess of five acres on Army land of a nature or magnitude not within the annual installation training cycle or installation master plan.

(b) Military construction that exceeds five contiguous acres, including contracts for off-post construction.

(c) Changes to established installation land use that generate impacts on the environment.

(d) Alteration projects affecting historically significant structures, archaeological sites, or places listed or eligible for listing on the National Register of Historic Places.

(e) Actions that could cause significant increase in soil erosion, or affect prime or unique farmland (off Army property), wetlands, floodplains, coastal zones, wilderness areas, aquifers or other water supplies, prime or unique wildlife habitat, or wild and scenic rivers.

(f) Actions proposed during the life cycle of a weapon system if the action produces a new hazardous or toxic material or results in a new hazardous or toxic waste, and the action is not adequately addressed by existing NEPA documentation. Examples of actions normally requiring an EA during the life cycle include, but are not limited to, testing, production, fielding, and training involving natural resources, and disposal/demilitarization. System design, development, and production actions may require an EA, if such decisions establish precedent (or make decisions, in principle) for future actions with potential environmental effects. Such actions should be carefully considered in cooperation with the development or production contractor or government agency, and NEPA analysis may be required.

(g) Development and approval of installation master plans.

(h) Development and implementation of Integrated Natural Resources Management Plans (land, forest, fish, and wildlife) and Integrated Cultural Resources Management Plans.

(i) Actions that take place in, or adversely affect, important wildlife habitats, including wildlife refuges.

(j) Field activities on land not controlled by the military except those that do not alter land use to substantially change the environment (for example, patrolling activities in a forest). This includes firing of weapons, missiles, or lasers over navigable waters of the United States, or extending 45 meters or more above ground level into the national airspace. It also includes joint air attack training that may require participating aircraft to exceed 250 knots at altitudes below 3000 feet above ground level, and helicopters, at any speed, below 500 feet above ground level.

(k) An action with substantial adverse local or regional effects on energy or water availability. Such impacts can only be adequately identified with input from local agencies and/or citizens.

(l) Production of hazardous or toxic materials.

(m) Changes to established airspace use that generate impacts on the environment or socioeconomic systems, or create a hazard to non-participants.

(n) An installation pesticide, fungicide, herbicide, insecticide, and rodenticide-use program/plan.

(o) Acquisition, construction, or alteration of (or space for) a laboratory that will use hazardous chemicals, drugs, or biological or radioactive materials.

(p) An activity that affects a federally listed threatened or endangered plant or animal species, a federal candidate species, a species proposed for federal listing, or critical habitat.

(q) Substantial proposed changes in Army-wide doctrine or policy that potentially have an adverse effect on the environment (40 CFR 1508.18 (b)(1)).

(r) An action that may threaten a violation of Federal, state, or local law or requirements imposed for the protection of the environment.

(s) The construction and operation of major new fixed facilities or the substantial commitment of installation natural resources supporting new materiel at the installation.

In accordance with 32 CFR 651.42, the following Army actions normally require an EIS:

(a) Significant expansion of a military facility or installation.

(b) Construction of facilities that have a significant effect on wetlands, coastal zones, or other areas of critical environmental concern.

(c) The disposal of nuclear materials, munitions, explosives, industrial and military chemicals, and other hazardous or toxic substances that have the potential to cause significant environmental impact.

(d) Land acquisition, leasing, or other actions that may lead to significant changes in land use.

(e) Realignment or stationing of a brigade or larger table of organization equipment unit during peacetime (except where the only significant impacts are socioeconomic, with no significant biophysical environmental impact).

(f) Training exercises conducted outside the boundaries of an existing military reservation where significant environmental damage might occur.

(g) Major changes in the mission or facilities either affecting environmentally sensitive resources (see §651.29(c)) or causing significant environmental impact (see §651.39).

APPENDIX B

SAMPLE CHECKLIST FOR ISSUES DETERMINATION

Sample Checklist for Issues Determination

ENVIRONMENTAL RESOURCE/ ATTRIBUTE	POTENTIAL ISSUE	YES	NO	DOPAA RELATED ACTIVITY	SHORT TERM		LONG TERM	
					DIRECT	INDIRECT	DIRECT	INDIRECT
AIRSPACE USE								
Controlled & Uncontrolled Airspace	Reduction in Navigable Airspace							
	Obstruction to Navigation							
Special Use Airspace	Change in Time, Duration, or in Nature of Use							
Enroute Jet Routes & Airways	Change in Altitude or Course							
Military Training Routes	Change in Altitude or Course							
Airports/Airfields	Change in Approach or Departure Patterns							
AIR QUALITY								
Criteria Pollutants	Pollution Emission Change							
	Photochemical Smog Formation							
Hazardous Air Pollutants (HAP)	HAP Emissions Change							
Acid Deposition	Precursor Pollutant Emissions Change							
Stratospheric Ozone	Precursor Pollutant Emissions Change							
	Penetration of Ozone Layer							
Odor	Malodorous Emissions							
BIOLOGICAL RESOURCES (TERRESTRIAL)								
Flora	Flora Destruction							
Protected Species: Flora	Species Loss							
Fauna	Species Disturbance							
	Population Dynamics Interference							
	Reduction in Biodiversity							

ENVIRONMENTAL RESOURCE/ ATTRIBUTE	POTENTIAL ISSUE	YES	NO	DOPAA RELATED ACTIVITY	SHORT TERM		LONG TERM	
					DIRECT	INDIRECT	DIRECT	INDIRECT
	Exotic Species Introduction							
	Biotic Interaction Interference							
Habitat	Habitat Destruction							
	Habitat Degradation							
	Habitat Fragmentation							
	Nutrient Cycling Alteration							
	Disturbance Regime Change							
Sensitive Habitats	Riparian Zone Alteration							
	Special or Unique Community Loss							
Protected Species: Fauna	Species Disturbance							
	Critical Habitat Loss							
BIOLOGICAL RESOURCES (AQUATIC)								
Flora	Flora Destruction							
Fauna	Species Disturbance							
	Population Dynamics Interference							
	Reduction in Biodiversity							
	Exotic Species Introduction							
	Biotic Interaction Interference							
Protected Species	Species Disturbance							
	Critical Habitat Loss							
Wetlands	Wetlands Loss							
	Sedimentation							
	Pollution/Contamination							
	Hydrologic Regime Alteration							
BIOLOGICAL RESOURCES (MARINE)								
Fish	Loss of Aquatic Plant Beds							
	Reduction in Populations							

ENVIRONMENTAL RESOURCE/ ATTRIBUTE	POTENTIAL ISSUE	YES	NO	DOPAA RELATED ACTIVITY	SHORT TERM		LONG TERM	
					DIRECT	INDIRECT	DIRECT	INDIRECT
	Loss of Essential Fish Habitat							
	Water Quality Changes (e.g., Salinity)							
	Drainage Impacts on Fisheries							
Marine Mammals	Species Disturbance							
	Habitat Destruction							
	Habitat Degradation							
Special Habitats: Marine Sanctuaries/ Coral Reefs/Estuaries	Habitat Destruction							
	Habitat Degradation							
CULTURAL RESOURCES								
Archaeological (Prehistoric & Historic)	Destruction, Removal, or Alteration							
	Alteration of Setting							
Historic Buildings & Structures	Destruction, Removal, or Alteration							
	Alteration of Setting							
Traditional Resources	Destruction, Removal, or Alteration							
	Alteration of Setting							
Scientific Resources	Destruction, Removal, or Alteration							
	Alteration of Setting							
Native American Resources	Grave Disturbance							
	Spiritual Place Desecration							
Areas of Ethnic Importance	Disturbance or Alteration							
HAZARDOUS MATERIALS & WASTE								
Hazardous Materials	Introduction and Use of New, or Additional Hazardous Materials							
	Exceeding Hazardous Materials Handling Capacity							
Hazardous Wastes	Generation of New or Additional Wastes							

ENVIRONMENTAL RESOURCE/ ATTRIBUTE	POTENTIAL ISSUE	YES	NO	DOPAA RELATED ACTIVITY	SHORT TERM		LONG TERM	
					DIRECT	INDIRECT	DIRECT	INDIRECT
	Exceeding Hazardous Wastes Handling Capacity							
HEALTH & SAFETY (H & S)								
Occupational H & S	Exposure to New or Additional H & S Hazards							
Public H & S	Exposure to New or Additional H & S Hazards							
	Radiation (Non-Ionizing) Exposure							
	New or Expanded Hazard Area(s) for Launches or Weapons Testing							
	New or Expanded Explosive Safety Quantity Distances (ESQDs) for Weapons Storage							
	Effects on Children							
HYDROLOGY & HYDROGEOLOGY								
Surface Water: Streams and Rivers	Channel Alteration							
	Drainage Network Alteration							
	Stream Flow Change							
Surface Water: Lakes	Eutrophication (Nutrient Loading)							
Groundwater	Groundwater Withdrawal (Aquifer Decline)							
	Subsidence Due to Drawdown							
	Changes in Groundwater Flow							
	Saltwater Intrusion							
LAND USE & LAND COVER								
Land Use	Change in Land Use							
	Conflicts with Land Use Plans, Policies, and Controls							
	Land Use Incompatibility							
	Urban Sprawl							

ENVIRONMENTAL RESOURCE/ ATTRIBUTE	POTENTIAL ISSUE	YES	NO	DOPAA RELATED ACTIVITY	SHORT TERM		LONG TERM	
					DIRECT	INDIRECT	DIRECT	INDIRECT
	Agricultural Land Encroachment							
Land Cover	Change in Land Cover							
	Imperviousness Increase							
NOISE								
Continuous Noise: Humans	Annoyance, Hearing Loss, Speech and Sleep Interference (>55 dB)							
	Health Impacts (>75 dB)							
	Compatibility with Surrounding Land Uses							
Continuous Noise: Animals	Loss of Productivity for Domestic Animals							
	Disturbance, Agitation, or Removal of Wildlife							
Impulse Noise: Humans	Annoyance							
	Disturbance							
	Vibration of Structures							
Impulse Noise: Animals	Disturbance							
	Startle Effects							
SOCIOECONOMICS								
Employment	Direct, Indirect, and Induced Employment Generation							
Income	Direct, Indirect, and Induced Income Generation							
Population	Population Influx (In-migration)							
	Demographic Changes							
Housing	Increased Demand for Housing							
	Additional Housing Construction							
Community Services & Infrastructure	Increased Demand for Community Services and Infrastructure							
	Additional Services/Infrastructure – Related Construction							

ENVIRONMENTAL RESOURCE/ ATTRIBUTE	POTENTIAL ISSUE	YES	NO	DOPAA RELATED ACTIVITY	SHORT TERM		LONG TERM	
					DIRECT	INDIRECT	DIRECT	INDIRECT
Environmental Justice	Disproportionate Impacts to Minority and Low Income Populations							
SOILS & TOPOGRAPHY								
Soils	Soil Erosion							
	Soil Compaction							
	Development (Construction) in Hydric Soils							
	Loss of Prime or Unique Farmland							
Topography - Inland	Change in Slope (Conditional Stability)							
	Deforestation/Vegetation Removal							
	Drainage Alteration							
Topography - Coastal	Shore Erosion							
	Longshore (Sediment) Transport Alteration							
	Sand Dune Alteration							
TRANSPORTATION								
Roads & Highways (other modes as appropriate)	Increase in Traffic, Congestion							
	Decrease in Level of Service							
	Disruption of Traffic							
	Infrastructure Improvements Needed							
	Increase in Traffic Accidents							
UTILITIES AND INFRASTRUCTURE								
Electricity	Change in Demand							
	Additional Infrastructure Construction							
Natural Gas	Change in Demand							
	Additional Infrastructure Construction							

ENVIRONMENTAL RESOURCE/ ATTRIBUTE	POTENTIAL ISSUE	YES	NO	DOPAA RELATED ACTIVITY	SHORT TERM		LONG TERM	
					DIRECT	INDIRECT	DIRECT	INDIRECT
Potable Water	Change in Demand							
	Additional Infrastructure Construction							
Wastewater	Change in Demand							
	Additional Infrastructure Construction							
Solid Waste	Change in Demand							
	Additional Infrastructure Construction							
VISUAL AND AESTHETIC RESOURCES								
Scenic Attractiveness	Alteration and Degradation							
Scenic Integrity	Alteration and Degradation							
Views	Blockage							
Visibility	Decrease in Visibility							
	Light Pollution							
WATER RESOURCES								
Water Quality: Surface	Pollutant Contamination							
	Sedimentation							
	Thermal Discharges							
Water Quality: Groundwater	Pollutant Contamination							
Water Supply	Reduction in Water Supply							

APPENDIX C

CHECKLIST FOR ARMY EAs

Checklist for Army EAs

SECTION OR TOPIC	YES	NO	N/A	PAGE NO.	COMMENTS
DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA)					
Does the EA include a signature (Review and Approval) page? (32 CFR 651.34(a)).					
Does the EA include a purpose and need for the action? (32 CFR 651.34(b)).					
Does the EA include a description of the proposed action? (32 CFR 651.34(c)).					
Does the EA include appropriate consideration of the No Action alternative? (32 CFR 651.34(d)).					
Does the EA include all other appropriate and reasonable alternatives that can realistically be accomplished? (32 CFR 651.34(d)).					
Does the EA include and present, in the discussion of alternatives, any criteria for screening alternatives, and the final disposition of any alternatives that were initially identified? (32 CFR 651.34(d)).					
AFFECTED ENVIRONMENT DESCRIPTION					
Does the affected environment section address the general conditions and nature of the affected environment and establish the environmental setting against which environmental effects are evaluated? (32 CFR 651.34(e)).					
Does the EA include any relevant general baseline conditions focusing on specific aspects of the environment that may be impacted by the alternatives? (32 CFR 651.34(e)).					
Does the EA incorporate and/or reference environmental baseline studies (EBSs) and similar real estate or construction environmental baseline documents, or their equivalent, where appropriate? (32 CFR 651.34(e)).					
Does the EA identify either the presence or absence of unique characteristics of the geographic area such as proximity to historic or cultural resources? (40 CFR 1508.27(b)(3)).					

SECTION OR TOPIC	YES	NO	N/A	PAGE NO.	COMMENTS
Does the EA identify either the presence or absence, within the area potentially affected by the proposed action and alternatives, of districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places? (40 CFR 1508.27(b)(8)).					
Does the EA identify either the presence or absence of unique characteristics of the geographic area such as parklands? (40 CFR 1508.27(b)(3)).					
Does the EA identify either the presence or absence of unique characteristics of the geographic area such as prime farmlands? (40 CFR 1508.27(b)(3)).					
Does the EA identify either the presence or absence of unique characteristics of the geographic area such as wetlands? (40 CFR 1508.27(b)(3)).					
Does the EA identify either the presence or absence of unique characteristics of the geographic area such as wild and scenic rivers? (40 CFR 1508.27(b)(3)).					
Does the EA identify either the presence or absence of unique characteristics of the geographic area such as ecologically critical areas? (40 CFR 1508.27(b)(3)).					
Does the EA identify either the presence or absence, within the area potentially affected by the proposed action and alternatives, of an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973 ? (40 CFR 1508.27(b)(9)).					
ENVIRONMENTAL CONSEQUENCES					
Does the EA state and assess the effects (direct, indirect, and cumulative) of the proposed action and its alternatives on the environment? (32 CFR 651.34(f)).					
Does the EA state and assess what practical mitigation is available to minimize the impacts on the environment? (32 CFR 651.34(f)).					
Does the discussion and comparison of impacts provide sufficient analysis to reach a conclusion regarding the significance of the impacts, and not merely a quantification of facts? (32 CFR 651.34(f)).					
Does the EA provide a clear statement regarding whether or not the described impacts are significant? (32 CFR 651.34(g)).					
If the EA identifies potential significant impacts associated with the proposed action, does the conclusion clearly state that an EIS will be prepared before the proposed action is implemented? (32 CFR 651.34(g)).					

SECTION OR TOPIC	YES	NO	N/A	PAGE NO.	COMMENTS
If no significant impacts are associated with the proposed action, does the conclusion state that a FNSI will be prepared? (32 CFR 651.34(g)).					
Does the EA clearly present any mitigations that reduce adverse impacts? (32 CFR 651.34(g)).					
If the EA depends upon mitigations to support a resultant FNSI, does the EA clearly identify these mitigations as a subsection of the Conclusions? (32 CFR 651.34(g)).					
SIGNIFICANCE					
Does the EA analyze the significance of the proposed action in several contexts, such as society as a whole (human, national), the affected region, the affected interests, and the locality? (40 CFR 1508.27(a).					
In evaluating intensity or the severity of impacts, does the EA consider impacts that may be both beneficial and adverse? (40 CFR 1508.27(b)(1).					
In evaluating intensity or the severity of impacts, does the EA consider the degree to which the proposed action affects public health or safety? (40 CFR 1508.27(b)(2).					
In evaluating intensity or the severity of impacts, does the EA consider unique characteristics of the geographic area such as proximity to historic or cultural resources, parklands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas? (40 CFR 1508.27(b)(3).					
In evaluating intensity or the severity of impacts, does the EA consider the degree to which the effects on the quality of the human environment are likely to be highly controversial? (40 CFR 1508.27(b)(4).					
In evaluating intensity or the severity of impacts, does the EA consider the degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks? (40 CFR 1508.27(b)(5).					
In evaluating intensity or the severity of impacts, does the EA consider the degree to which the action may establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration? (40 CFR 1508.27(b)(6).					

SECTION OR TOPIC	YES	NO	N/A	PAGE NO.	COMMENTS
In evaluating intensity or the severity of impacts, does the EA consider whether the action is related to other actions with individually insignificant but cumulatively significant impacts? (40 CFR 1508.27(b)(7).					
In evaluating intensity or the severity of impacts, does the EA consider the degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources? (40 CFR 1508.27(b)(8).					
In evaluating intensity or the severity of impacts, does the EA consider the degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973? (40 CFR 1508.27(b)(9).					
In evaluating intensity or the severity of impacts, does the EA consider whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment? (40 CFR 1508.27(b)(10).					
Does the EA establish, by resource category, the threshold at which significance is reached? (32 CFR 651.39(b)).					
Does the EA use appropriate methods to identify and ascertain the "significance" of impacts, such as simple analytical tools that are subject to independent peer review, fully documented, and available to the public? (32 CFR 651.39(c)).					
PUBLIC INVOLVEMENT					
Were environmental agencies and the public involved in the preparation of the EA to the extent practicable? (32 CFR 651.36(b)).					
Did public involvement begin early in the proposal development stage? (32 CFR 651.36(c)).					
Were agencies with jurisdiction or special expertise directly involved in the impact analysis, and did they provide information and conclusions for incorporation into the EA? (32 CFR 651.36(c)).					
LIST OF PREPARERS					
Does the EA present a list of analysts/preparers? (32 CFR 651.34(h)).					

SECTION OR TOPIC	YES	NO	N/A	PAGE NO.	COMMENTS
AGENCIES AND PERSONS CONSULTED					
Does the EA include, as an appendix, copies of correspondence to and from agencies and persons contacted during the preparation of the EA? (32 CFR 651.34(h)).					
Does the Administrative Record include copies of correspondence to and from agencies and persons contacted during the preparation of the EA? (32 CFR 651.34(h)).					
REFERENCES					
Does the EA provide bibliographic information for cited sources? (32 CFR 651.34(i)).					
Was expressed permission of the proponent of any draft documents cited as a reference obtained? (32 CFR 651.34(i)).					

APPENDIX D

CHECKLIST FOR ARMY EISs

Checklist for Army EISs

SECTION OR TOPIC	YES	NO	N/A	PAGE NO.	COMMENTS
ISSUE IDENTIFICATION					
Does the document use the scoping process, not only to identify significant environmental issues deserving of study, but also to de-emphasize insignificant issues, narrowing the scope of the EIS process accordingly? (40 CFR 1500.4(g) and 1501.17d)).					
Has any other Federal agency that has special expertise, with respect to any environmental issue which should be addressed in the statement, been invited to be a cooperating agency? (40 CFR 1501.6).					
Has the scope and the significant issues to be analyzed in depth in the EIS been determined? (40 CFR 1501.7(a)(3)).					
Have the issues which are not significant or which have been covered by prior environmental review been identified and eliminated? (40 CFR 1501.7(a)(3)).					
SCOPING					
Has there been an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action? (40 CFR 1501.7)					
INTERDISCIPLINARY PREPARATION					
Has the EIS been prepared using an interdisciplinary approach, which insures the integrated use of the natural, and social sciences and the environmental design arts? (40 CFR 1502.6).					
Are the disciplines of the preparers appropriate to the scope and issues identified in the scoping process? (40 CFR 1502.6).					
Have the cooperating agencies, upon request, made available staff support to enhance the interdisciplinary capability? (40 CFR 1501.6 (b)(4)).					
SUMMARY					
Does the EIS contain a summary that adequately and accurately summarizes the EIS? (40 CFR 1502.12).					

SECTION OR TOPIC	YES	NO	N/A	PAGE NO.	COMMENTS
Does the summary stress the major conclusions, areas of controversy (including issues raised by agencies and the public), and the issues to be resolved (including the choice among alternatives)? (40 CFR 1502.12 and 32 CFR 651 Appendix E (b)(2)).					
Does the summary list all new federal permits, licenses, and other entitlements that must be obtained prior to proposal implementation? (32 CFR 651 Appendix E (b)(2)).					
ALTERNATIVES, INCLUDING THE PROPOSED ACTION					
Have the environmental impacts of the proposal and the alternatives been presented in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public? (40 CFR 1502.14 and 32 CFR 651 Appendix E (b)(5)).					
Has the EIS rigorously explored and objectively evaluated all reasonable alternatives? (40 CFR 1502.14(a)).					
For alternatives that were eliminated from detailed study, has the EIS briefly discussed the reasons for their having been eliminated? (40 CFR 1502.14(a)).					
Has the EIS devoted substantial treatment to each alternative considered in detail, including the proposed action, so that reviewers may evaluate their comparative merits? (40 CFR 1502.14(b)).					
Have reasonable alternatives not within the jurisdiction of the lead agency been included? (40 CFR 1502.14(c) and 32 CFR 651 Appendix E (b)(5)(i)).					
Has the alternative of No Action been included? (40 CFR 1502.14(d) and 32 CFR 651 Appendix E (b)(5)).					
Has the preferred alternative or alternatives, if one or more exists, been identified in the Draft EIS and Final EIS? (40 CFR 1502.14(e) and 32 CFR 651 Appendix E (b)(5)).					
Does the EIS include appropriate mitigation measures not already included in the proposed action or alternatives? (40 CFR 1502.14(f)).					

SECTION OR TOPIC	YES	NO	N/A	PAGE NO.	COMMENTS
AFFECTED ENVIRONMENT DESCRIPTION					
Does the EIS succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration? (40 CFR 1502.15 and 32 CFR 651 Appendix E (b) (6)).					
Does the document characterize the resources, ecosystems, and human communities identified during scoping in terms of their response to change and capacity to withstand stress? (CEQ, 1997).					
Is the description of the affected environment no longer than necessary to understand the effects of the alternatives? (40 CFR 1502.15).					
Does the document characterize the stresses affecting the resources, ecosystems, and human communities and their relation to regulatory thresholds? (CEQ, 1997).					
Does the document define a baseline condition for the resources, ecosystems, and human communities? (CEQ, 1997).					
Is the data and analysis in the statement commensurate with the importance of the impact, with less important material summarized, consolidated, or simply referenced? (40 CFR 1502.15).					
Has the EIS avoided useless bulk and concentrated effort and attention on important issues? (40 CFR 1502.15).					
Does the EIS identify either the presence or absence of unique characteristics of the geographic area such as proximity to historic or cultural resources? (40 CFR 1508.27(b)(3)).					
Does the EIS identify either the presence or absence of unique characteristics of the geographic area such as proximity to parklands? (40 CFR 1508.27(b)(3)).					
Does the EIS identify either the presence or absence, within the area potentially affected by the proposed action and alternatives, of districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places? (40 CFR 1508.27(b)(8)).					
Does the EIS identify either the presence or absence of unique characteristics of the geographic area such as proximity to prime farmlands? (40 CFR 1508.27(b)(3)).					
Does the EIS identify either the presence or absence of unique characteristics of the geographic area such as proximity to wetlands? (40 CFR 1508.27(b)(3)).					

SECTION OR TOPIC	YES	NO	N/A	PAGE NO.	COMMENTS
Does the EIS identify either the presence or absence of unique characteristics of the geographic area such as proximity to wild and scenic rivers? (40 CFR 1508.27(b)(3)).					
Does the EIS identify either the presence or absence of unique characteristics of the geographic area such as proximity to ecologically critical areas? (40 CFR 1508.27(b)(3)).					
Does the EIS identify either the presence or absence, within the area potentially affected by the proposed action and alternatives, of an endangered species or its habitat that has been determined to be critical under the Endangered Species Act of 1973? (40 CFR 1508.27(b)(9)).					
ENVIRONMENTAL CONSEQUENCES					
Does the document focus on significant environmental issues and alternatives, and have paperwork and the accumulation of extraneous background data been reduced? (40 CFR 1502.1).					
Have the issues which are not significant or which have been covered by prior environmental review been identified and eliminated? In addition, has the discussion of these issues in the statement been narrowed to a brief presentation of why they will not have a significant effect on the human environment, or has a reference to their coverage elsewhere been provided? (40 CFR 1501.7(a)(3) and 32 CFR 651.48 (b)(1)).					
Has the document provided a full and fair discussion of significant environmental impacts and informed decision makers and the public of the reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment? (40 CFR 1502.1).					
Does the document focus on significant environmental issues and alternatives, and have paperwork and the accumulation of extraneous background data been reduced? (40 CFR 1502.1).					
Have impacts been discussed in proportion to their significance? (40 CFR 1502.2(b)).					
Does the document include discussions of the environmental effects of alternatives including the proposed action? (40 CFR 1502.16(d) and 32 CFR 651 Appendix E (b)(7)(iv)).					
Is there only brief discussion of other than significant issues? (40 CFR 1502.2(b) and 1500.4(c)).					

SECTION OR TOPIC	YES	NO	N/A	PAGE NO.	COMMENTS
For other than significant issues, is there only enough discussion to show why more study is not warranted? (40 CFR 1502.2(b)).					
Is the EIS concise and no longer than absolutely necessary? (40 CFR 1502.2(c)).					
Does the document include discussions of the direct effects (which are caused by the action and occur at the same time and place) and their significance? (40 CFR 1502.16(a) and 1508.8(a) and 32 CFR 651 Appendix E (b)(7)(i)).					
Does the document include discussions on the indirect effects (which are caused by the action and are later in time or farther removed in distance, but are still reasonable foreseeable) and their significance? (40 CFR 1502.16(b) and 1508.8(b) and 32 CFR 651 Appendix E (b)(7)(ii)).					
Does the document identify both beneficial and adverse impacts? (40 CFR 1508.27(b)(1)).					
Does the document discuss the degree to which the proposed action affects public health or safety? (40 CFR 1508.27(b)(2)).					
Does the document discuss impacts to unique characteristics of the geographic area such as historic or cultural resources? (40 CFR 1508.27(b)(3)).					
Does the document discuss impacts to unique characteristics of the geographic area such as parklands? (40 CFR 1508.27(b)(3)).					
Does the document discuss impacts to unique characteristics of the geographic area such as prime farmlands? (40 CFR 1508.27(b)(3)).					
Does the document discuss impacts to unique characteristics of the geographic area such as wetlands? (40 CFR 1508.27(b)(3)).					
Does the document discuss impacts to unique characteristics of the geographic area such as wild and scenic rivers? (40 CFR 1508.27(b)(3)).					
Does the document discuss impacts to unique characteristics of the geographic area such as ecologically critical areas? (40 CFR 1508.27(b)(3)).					
Does the document discuss the degree to which the effects on the quality of the human environment are likely to be highly controversial? (40 CFR 1508.27(b)(4)).					

SECTION OR TOPIC	YES	NO	N/A	PAGE NO.	COMMENTS
Does the document discuss the degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks? (40 CFR 1508.27(b)(5)).					
Does the document discuss the degree to which the action may establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration? (40 CFR 1508.27(b)(6)).					
Does the document discuss the degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources? (40 CFR 1508.27(b)(8)).					
Does the document discuss the degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973? (40 CFR 1508.27(b)(9)).					
Does the document identify whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment? (40 CFR 1508.27(b)(10)).					
Does the document include discussions of possible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies, and controls for the area concerned? (40 CFR 1502.16(c)).					
Does the document include discussions of energy requirements and conservation potential of various alternatives and mitigation measures? (40 CFR 1502.16(e) and 32 CFR 651 Appendix E (b)(7)(v)).					
Does the document include discussions of natural or depletable resource requirements and conservation potential of various alternatives and mitigation measures? (40 CFR 1502.16(f)).					
Does the document include discussions of urban quality, historic and cultural resources, and the design of the built or urbanized environment, including the reuse and conservation potential of various alternatives and mitigation measures? (40 CFR 1502.16(g) and 32 CFR 651 Appendix E (b)(7)(viii)).					
Does the document identify means to mitigate adverse environmental impacts (if not fully covered in the Comparison of Alternatives section? (40 CFR 1502.16(h) and 32 CFR 651 Appendix E (b)(7)(x)).					

SECTION OR TOPIC	YES	NO	N/A	PAGE NO.	COMMENTS
Does the document identify any adverse impacts that cannot be avoided should the proposal be implemented? (40 CFR 1502.16 and 32 CFR 651 Appendix E (b)(7)(xi)).					
Does the document discuss the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity? (40 CFR 1502.16 and 32 CFR 651 Appendix E (b)(7)(vii)).					
Does the document discuss any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented? (40 CFR 1502.16 and 32 CFR 651 Appendix E (b)(7)(vi)).					
CUMULATIVE EFFECTS					
Does the document discuss whether the action is related to other actions with individually insignificant but cumulatively significant impacts? (40 CFR 1508.27(b)(7)).					
Does the document discuss cumulative effects that may be due to repeated additive effects from a single proposed project? (CEQ, 1997).					
Does the document discuss cumulative effects that may arise from multiple sources (projects, point sources, or general effects associated with development) that affect environmental resources additively? (CEQ, 1997).					
Does the document discuss cumulative effects that may be due to stressors from a single source that interact with receiving biota to have an interactive (nonlinear) net effect? (CEQ, 1997).					
Does the document discuss cumulative effects that may arise from multiple sources that affect environmental resources in an interactive (i.e., countervailing or synergistic) fashion? (CEQ, 1997).					
WRITING/FORMAT					
Has the EIS been written in plain language and does the EIS use appropriate graphics so that decision makers and the public can readily understand them? (40 CFR 1502.8).					
Has a format that will encourage good analysis and clear presentation of the alternatives, including the proposed action, been used? (40 CFR 1502.10).					

SECTION OR TOPIC	YES	NO	N/A	PAGE NO.	COMMENTS
LIST OF PREPARERS					
Does the EIS list the names of the persons, together with their qualifications (expertise, experience, and professional disciplines), who were primarily responsible for preparing the document or significant background papers? (40 CFR 1502.17 and 32 CFR 651 Appendix E (b)(8)).					
METHODOLOGY AND SCIENTIFIC ACCURACY					
Has the professional integrity, including scientific integrity, of the discussions and analyses in the EIS been ensured? (40 CFR 1502.24).					
Have any methodologies used in the EIS been identified? (40 CFR 1502.24).					
Have references to scientific and other sources, relied upon for conclusions in the EIS, been explicitly provided in footnotes? (40 CFR 1502.24).					
INCORPORATION BY REFERENCE					
Has material been incorporated into an EIS by reference when the effect will be to cut down on bulk without impeding agency and public review of the action? (40 CFR 1502.21).					
If incorporated material is cited in the EIS, is its content briefly described? (40 CFR 1502.21).					
If incorporated material is cited in the EIS, is it reasonably available for inspection within the time allowed for comment? (40 CFR 1502.21).					
Does the EIS avoid citing material based on proprietary data, which is itself not available for review and comment? (40 CFR 1502.21).					
INCOMPLETE OR UNAVAILABLE INFORMATION					
Does the document make it clear, if it is the case, that incomplete or unavailable information is lacking when reasonably foreseeable significant adverse effects on the environment are being evaluated? (40 CFR 1502.22).					
If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives, and the overall costs of obtaining it are not exorbitant, is the information included in the EIS? (40 CFR 1502.22(a) and 32 CFR 651.44(a)).					

SECTION OR TOPIC	YES	NO	N/A	PAGE NO.	COMMENTS
If the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant, or the means to obtain it are not known, does the EIS include a statement that such information is incomplete or unavailable? (40 CFR 1502.22(b)(1) and 32 CFR 651.44(b)(2)).					
If the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant, or the means to obtain it are not known, does the EIS include a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment? (40 CFR 1502.22(b)(2) and 32 CFR 651.44(b)(2)).					
If the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant, or the means to obtain it are not known, does the EIS include a summary of existing credible scientific evidence that is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment? (40 CFR 1502.22(b)(3) and 32 CFR 651.44 (b)(3)).					
If the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant, or the means to obtain it are not known, does the EIS include the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community? (40 CFR 1502.22(b)(4) and 32 CFR 651.44 (b)(4)).					
APPENDICES					
If appendices are prepared, do they consist of material prepared in connection with the EIS (as distinct from material which is not so prepared and which is incorporated by reference)? (40 CFR 1502.18 and 32 CFR 651 Appendix E (b)(11)).					
If appendices are prepared, do they consist of material that substantiates any analysis fundamental to the EIS? (40 CFR 1502.18).					
If appendices are prepared, are they analytic and relevant to the decision to be made? (40 CFR 1502.18).					

SECTION OR TOPIC	YES	NO	N/A	PAGE NO.	COMMENTS
ENVIRONMENTAL REVIEW AND CONSULTATION REQUIREMENTS					
Has the Draft EIS been prepared concurrently with and integrated with environmental impact analyses and related surveys and studies required by the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq), the National Historic Preservation Act of 1966 (16 U.S.C. 470 et seq), the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), and other environmental review laws and executive orders such as Executive Order 12898 Environmental Justice? (40 CFR 1502.25(a)).					
Does the draft EIS list all Federal permits, licenses, and other entitlements that must be obtained in implementing the proposal? (40 CFR 1502.25(b)).					
If it is uncertain whether a Federal permit, license, or other entitlement is necessary, does the draft EIS so indicate? (40 CFR 1502.25(b)).					