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OFFICE OF THE GENERAL COUNSEL

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MEMORANDUM FOR: William T. Hogarth
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SUBJECT: Guidance on Programmatic Environmental Impacts Statements

I. Introduction: NEPA Overview

The intent of the National Environmental Policy Act, 42 U.S.C. § 4321 (NEPA) is to incorporate environmental considerations in to Federal agency decision making. As the "basic national charter for protection of the environment," NEPA establishes policy, sets goals, and provides the procedural requirements for federal agencies to comply with the law. (See 40 C.F. R. § 1500.1(a)). The implementing regulations for NEPA were developed by the Council on Environmental Quality (CEQ) and are codified at 40 C.F.R. § 1500 et seq.

Specifically, NEPA demands that federal agencies understand and acknowledge environmental interconnections related to their decisions and activities by assessing how the impacts of one action add to, change, or exacerbate the impacts of other actions. To accomplish this, the Act prescribes the necessary process by which agencies must take a "hard look at the environmental consequences of proposed actions utilizing public comment and the best available scientific information." Colorado Envt'l. Coalition v. Dombeck, 185 F.3d 1162, 1171-72 (10th Cir, 1999). Being procedural, it does not dictate specific decisional outcomes or results. Vermont Yankee Nuclear Power Corp. V. NRDC, 435 U.S. 519 (1978).

Two major objectives of NEPA's procedural requirements are (1) to disclose the foreseeable environmental consequences of the proposed action and alternatives to that action, and (2) to permit the public to participate in the evaluation and selection among the alternative courses of action. (See 40 C.F.R. §§ 1502.1 and 1506.6). The primary vehicle for meeting the procedural requirements of NEPA is the environmental impact statement (EIS). An EIS must be included with every recommendation or report on proposals for legislation and for every major federal action significantly affecting the quality of the human environment.

The purpose of an EIS is to serve as an "action-forcing device to insure that the policies and

goals defined in [NEPA] are infused into the ongoing programs and actions of the Federal government." Andrus v. Sierra Club, 442 U.S. 347 (1979), (See also 40 C.F.R. § 1502.1). Intended as more than a descriptive document, the EIS is a detailed, probing and analytical document to be used by federal officials in planning actions and making decisions. (See 40 C.F.R. 1502.1). It requires an up-front analysis at the proposal stage of a project and is not to be used as a justification for decisions already made. Baltimore Gas & Electric Co. v. NRDC, 462 U.S. 87 (1983). To be sufficiently complete, the EIS must address any adverse unavoidable environmental effects resulting from the implementation of the proposed action, alternatives to the proposed action, the relationship between short-term uses and the long-term maintenance of the environment, and any irretrievable commitment of resources involved in the proposed action. (See 42 U.S.C.§ 4332(2)(C)).

The EIS provides the scientific and analytic basis for comparing and assessing alternatives to the proposed action. It must disclose both the direct and indirect environmental effects, as well as any cumulative impacts that alternatives to the proposed action will have on the environment (See 40 C.F.R. §§ 1508.7and 1508.8). In this way, the EIS insures the integrity of the agency process by forcing it to face difficult issues and objections raised in the preliminary public scoping process. As such, it serves as an environmental full disclosure law allowing the public to weigh a project's benefits against its environmental costs. As an analytical document, the EIS also serves to identify gaps in the knowledge base of the action.

A programmatic EIS (hereinafter also referred to as a PEIS) is the comprehensive document in which the Agency considers a number of related actions or projects being decided within one program. As such, a PEIS looks to the environmental consequences of a program as a whole. One of its purposes is to assess the impact of connected and cumulative actions under one programmatic umbrella in order to determine significant impacts to the environment. In it, the analysis of environmental impacts is tied to a specific program and the individual and cumulative effects of each project individually, and all projects together, are analyzed in a way which allows senior level decision makers to examine the implications of their programs. As stated in Northcoast Environmental Center v. Glickman, 136 F.3d 660 (1998), "...a programmatic EIS is superior to a limited, contract-specific EIS because it examines an entire policy initiative rather than performing a piecemeal analysis within the structure of a single agency action."

(NOTE: Several types of EISs are designed to view activities with a much broader framework, including environmental assessments of programs, policies or governmental management plans. These EISs are often called overview, comprehensive, policy or programmatic assessments. For purposes of this guidance on programmatic EISs, the term programmatic should be read to include all of these categories of broad assessment.)

Although the CEQ regulations provide a framework for the overall NEPA EIS process, much discretion for actually formulating the structure and scope of the PEIS is left to the agency. Being so broadly defined and structurally limitless, scoping the PEIS can prove cumbersome and confusing. This guidance is intended to provide general information on the scope and structure of the PEIS. The first section addresses the basic structure of the PEIS document and presents

the nuts and bolts scoping requirements of the NEPA process as provided in the regulations and relevant case law. The second portion looks at how the agency can use NEPA and the PEIS process to structure a document which will meet the goals of NEPA and also provide for long-term program management and planning. The final section provides specific recommendations for structuring PEIS documents to address NMFS activities as embodied in Fishery Management Plans (FMPs).

I. The PEIS Scope

There are two ways in which the CEQ regulations refer to the scope of an EIS document. 40 C.F.R. § 1501.7 establishes parameters for scoping the document which includes soliciting public participation in the identification of issues to be addressed by the proposed agency action. This scoping process helps the agency define the purpose and need for the EIS. A separate section on "scope" at 40 C.F.R §§ 1508.25 addresses the specific structural components required to be addressed in the EIS. This section specifies the three types of actions, three types of alternatives, and three types of impacts that the agency must consider in the EIS. It establishes the threshold criteria for making a preliminary decision whether the EIS will be programmatic or site-specific. The emphasis of this guidance is on the section 1508.25 structural and procedural requirements.

In terms of basic structure, an EIS generally includes: 1) a detailed statement of purpose and need for the action, 2) a description of a range of alternatives for the proposed action, 3) a description of the affected environment, and 4) an analysis of potential impacts on the environment from the alternatives and the proposed action. The following discussion addresses the statement of purpose and need and the three categories of factors to be considered when scoping the PEIS as reflected in 40 C.F.R §§ 1508.25. It concludes with some general remarks regarding cumulative impacts assessment, past effects and the scope of the affected environment.

A. The Basic Structure of the PEIS under 40 C.F.R. § 1508.25

Regardless of the regulations outlining this basic framework, scoping a tight, concise and sufficiently detailed PEIS can be daunting. In their effort to afford a wide range of Federal agency activity with sufficient leeway for tailored assessments, the regulations remain fairly broad and often raise more questions than they address. A look at the case law alone lends further confusion. Beginning in 1976, a handful of landmark cases attempted to describe the scope and necessity for a comprehensive or programmatic EIS. (See Kleppe v. Sierra Club, 427 U.S. 390 (1976)("When several proposals are pending before an agency at the same time, and when those proposals have cumulative or synergistic environmental impacts, their environmental consequences must be considered together.") and Fritiofson v. Alexander, 772 F.2d 1225 (5th Cir. 1985)(the agency must review the cumulative impact of incremental actions)). Unfortunately, these early cases led to significant confusion regarding timing, scope and the early enunciation of the principles of cumulative actions versus cumulative effects.

In an attempt to dispel uncertainty and provide specific guidance, the CEQ regulations promulgated in 1979 generally codified, expanded and summarize the court's earlier findings. Since then, the courts have attempted to reconcile previous decisions with CEQ's directives. Today, making the threshold determination for a PEIS and scoping an appropriate PEIS document requires untangling and understanding the interplay of early case law, the ensuing CEQ regulations that tried to make sense of early case law, and the interpretive decisions which have ensued. The following discussion is intended to highlight the guiding principles and applicable requirements regarding the appropriate scope of the PEIS which have emerged through the course of NEPA's evolution.

1. The Statement of Purpose and Need

The Purpose and Need section of the EIS defines the need for and the goals of Agency decision-making as reflected in the public scoping process. 40 C.F.R. § 1502.13 specifies that "The statement [of Purpose and Need] shall briefly specify the underlying purpose and need to which the Agency is responding in proposing the alternatives.." As such, the statement effectively scopes and structures the alternatives under consideration and helps determine the breadth and scope of the ensuing analysis. In a PEIS, the Purpose and Need section of a PEIS should be structured to clearly articulate the purpose as it relates to the establishment of a program management framework. In addition, and as appropriate, the PEIS statement of Purpose and Need should describe the role of a cumulative effects analysis in establishing a baseline environmental picture which will allow the Agency to assess whether the current management regime is working and how it might be changed, if necessary.

2. The types of actions mandating a Programmatic EIS

Three types of actions require agency consideration in determining the need to prepare a PEIS. They are:

(1) Connected actions, which means that they are closely related and therefore *should be discussed in the same impact statement.* (See Custer County Action Association v. Garvey, 256 F.3d 1024 (2001) (Actions are connected if one automatically triggers another, or they are sufficiently interdependent to not proceed on their own),

(2) Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and *should therefore be discussed in the same impact statement,* (See Kleppe), and

(3) Similar actions, which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography. An agency

> *may wish* to analyze these actions in the same impact statement. It should do so when the best way to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions is to treat them in a single impact statement. (Emphasis added).

Under 40 C.F.R. § 1508.25(a), two types of actions require a PEIS (cumulative and connected actions), and one is discretionary (similar actions). The two categories of mandatory PEIS, however, have been sufficiently broadened by case law to the extent that there are actually two additional instances where an agency must consider producing a comprehensive, single programmatic EIS. The other two instances are: 1) when an agency undertakes a broad program or regional planning, and 2) where there are cumulative or synergistic environmental impacts upon the environment from past, present or reasonably foreseeable future actions.

While the CEQ regulations make separate reference to regional and geographic planning in 40 C.F.R. § 1502.4(b) and 40 C.F.R. § 1508.18(b)(4), these sections do not make the PEIS process mandatory. It is in post-regulation case law that the courts have held that when regional plans and multiple federal programs will have a cumulative or synergistic environmental effect upon a region, the relevant agency must prepare a programmatic environmental impact statement. Churchill County v. Babbitt, 150 F.3d 1072 (1998); City of Tenakee Springs v. Block, 778 F.2d 1402 (9th Cir. 1985).

The cumulative impacts requirement (2 above) ostensibly relates more to synergy and the interplay of cumulative *effects* as opposed to specific actions. The CEQ regulations define cumulative impacts in 40 C.F.R. § 1508.7. That section provides that:

> "Cumulative impact" is 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.

This section has its roots in earlier case law (Fritiofson) which attempted to capture past, present and future actions in the analysis of cumulative impacts (as opposed to cumulative actions). Like the regional planning requirement, this standard was swept in to the regulations in a section unrelated to the section 1508.25 scoping provision and therefore without a mandatory statement for a programmatic EIS. Nevertheless, it is now widely recognized and generally held that any project that will have cumulative effects as a result of its interplay with other projects, whether government action or not, must assess those other impacts as well. In other words, it is not sufficient to discuss a single action that has significant synergistic effects based another projects without addressing the impacts from those other projects in a broader, more comprehensive EIS.

Thus, in determining whether or not a PEIS is required, the agency should consider:

a) Whether there are cumulative actions pending which require a look at cumulative effects within one document;
b) Whether there are connected actions (e.g., actions proceeding because of their inter-relatedness to one another) which require a single PEIS;
c) Whether a regional plan is about to be undertaken, and
d) Whether the project will cause cumulative or incremental synergistic effects on the environment which give rise to a singular PEIS.

3. The Alternatives to be Considered

The CEQ regulations specify that the development and consideration of alternatives is "..the heart of the environmental impact statement." See 40 C.F.R. § 1502.14. The D.C. Circuit court has held that the detailed statement of alternatives is the "lynchpin of the entire impact statement." Alaska v. Andrus, 580 F.2d 465 (D.C. Cir. 1978). Significant emphasis is placed on this analysis as it is through assessing and reviewing the alternatives that the agency discloses its thinking on implementation of the project and demonstrates to the public that sufficient consideration has been given to the protection of the environment.

In the discussion of alternatives section, the environmental impacts of the proposal and the alternatives must be presented in comparative form. The comparison must be made in a way that "sharply defines the issues and provides a clear basis for choice for the decision maker and the public." (See 40 C.F.R. § 1502.14). The comparison of alternatives is to be made by scientifically assessing the environmental consequences of each of the alternatives on the affected environment and presenting that information in a point-by-point, side-by-side analysis of the alternatives in the "Environmental Consequences" section (See 40 C.F.R. § 1502.16). Where possible, the agency should identify the preferred alternative.

The CEQ regulations at 40 C.F.R. sections 1502.16 and 1508.25 require that agencies develop and assess three kinds of alternatives. The kinds of alternatives the agency must, at a minimum, consider are the no action alternative, alternatives describing other reasonable courses of action, and an alternative that advances mitigation efforts to the proposed action, but which are not specified in the proposed action.

The No Action alternative simply means maintaining the status quo as opposed to reverting to a pristine environmental state. Kleppe. This alternative assesses the expected consequences to the affected environment should the agency undertake no action. Presentation of this alternative provides the baseline by which comparison is made to the other alternatives developed.

The alternatives describing other reasonable courses of action presents the range of alternatives developed by the agency and assessed for possible use in meeting the agency's needs. These are the alternatives typically identified with the EIS document. The individual alternatives to the proposed action are described in the "Alternatives" section of the EIS.

In developing alternatives, the agency is bound by a "rule of reason." That rule of reason governs both which alternatives the agency must discuss, and the extent to which it must discuss them. Andrus; Citizen's Against Burlington, Inc. v. Busey, 938 F.2d 190 (D.C.Cir. 1991). Under the rule of reason, there is no specified number for how many alternatives the agency must consider. This is a matter left to agency discretion as guided by the nature of the action. As stated in Vermont Yankee Nuclear Power Corp. V. NRDC, 435 U.S. 519 (1978), the concept of alternatives is an evolving one, requiring the agency to explore more or fewer alternatives as they become better known and understood. In fact, an EIS with only two alternatives considered, the no action and preferred, has been upheld by the courts. In Communities, Inc. V. Busey, 956 F.2d 619 (6th Cir. 1992), the court held that it was acceptable that an EIS considered only these two alternatives where the agency "fully explained" its reasons for rejecting other alternatives for airport improvement, and where the agency provided a "thorough discussion" of the infeasibility of the other alternatives not considered.

In a programmatic EIS, the proposed action for which alternatives must be developed is the agency's formulation of a comprehensive management framework to address a wide array of subsequent and perhaps disparate and as yet unknown field activities. This can be a difficult undertaking. At the PEIS stage, many actions which have been identified may lack specificity and detail in terms of their application, and yet their ultimate implementation will lead to the very effects which ideally should be analyzed up-front. In addition, management framework options may be severely limited by the directives and objectives established in the authorizing law and the realities of the political process. These factors can hamper decision makers and may limit the availability of specific management alternatives in a PEIS. To counter this effect, the PEIS should clearly articulate and acknowledge these limitations and proceed within the bounds of reason to provide as complete an array of alternatives as possible.

The final alternative to be considered, the mitigation alternative, is a spin on the proposed action alternative. It requires the agency to assess its ability to avoid impacts altogether. The specific parameters for mitigation are set forth at 40 C.F.R. § 1508.20. In assessing mitigation, the agency should look at the possibility of not taking certain actions or parts of an action, minimizing the magnitude of the action or its implementation, restoring or rehabilitating the environment through maintenance or preservation measures or by replacing the loss in one area with substitute resources in another.

The requirement that an EIS contain a detailed discussion of possible mitigation measures flows both from the language of the Act and, more expressly, from CEQ's implementing regulations. It is only by discussing and understanding the extent to which adverse effects can be avoided that NEPA's requirement that an agency prepare a detailed statement on "any adverse environmental effects which

cannot be avoided should the proposal be implemented," can be met (See 42 U. S. C. §§ 4332(C)(ii)). The omission of a reasonably complete discussion of possible mitigation measures would undermine the "action forcing" function of NEPA. Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the

adverse effects. Robertson v. Methow Valley Citizen's Council, 490 U.S. 332 (1989).

4. The Types of effects to be Considered in the "Environmental Consequences" section

The "Environmental Consequences" portion of the EIS is that portion of the document where the agency takes a "hard look" at the environmental effects of the proposed alternatives. (See 40 C.F.R. § 1502.16). The analysis of effects consists of the assessment and consideration of the impact of the alternatives on the affected environment. The effects to be considered must include the reasonably foreseeable direct, indirect, and cumulative impacts of a proposed action on the components, structures and functioning of affected ecosystems, including the biological communities within that ecosystem. (See 40 C.F.R. §§ 1508.7 and 1508.8). The analysis should demonstrate that the agency is thinking through and considering the project in an environmentally conscientious way.

The effects to be considered are defined at 40 C.F.R. §§ 1508.7 and 1508.8. Section 1508.8 provides that:.

> (a) Direct effects, ... are caused by the action and occur at the same time and place.
>
> (b) Indirect effects... 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.

That section further provides that:

> Effects and impacts as used in these regulations are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.

Section 1508.7 provides that:

> "Cumulative impact" is 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.

A five part process for conducting the threshold cumulative effects analysis was set forth in Fritiofson. There, the court held that a meaningful cumulative- effects analysis must identify:

1) the area in which effects of the proposed project will be felt;
2) the impacts that are expected in that area from the proposed project;
3) other actions- past, proposed and reasonably foreseeable- that have had or are expected to have impacts in the same area;
4) the impacts or expected impacts from these other actions, and
5) the overall impact that can be expected if the individual impacts are allowed to accumulate.

Only significant effects need to be assessed in the PEIS. The CEQ regulations define "significant effects" in terms of context and intensity. The context requirement generally means that the significance of the effect "must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality ...." The regulations also specify that "[B]oth short-term and long-term effects are relevant." (See 40 C.F.R. 1508.27(a)).

Intensity refers to the severity of impact and requires that the agency consider both beneficial and adverse effects, the unique characteristics of the affected environment, public health and safety, highly controversial effects, uncertain and unknown effects, the extent precedence will be established, the impact on unique cultural and historical resources, the impact on endangered or threatened species, the effect of cumulative impacts on the project, and potential violations of existing law designed for protection of the environment. 40 C.F.R. § 1508.27(b).

Case law also provides that the PEIS should consider whether the program causes an unacceptable degradation of a resource for which there is often no regulation or mechanism for regulating incremental impacts. Challenges to the adequacy of a PEIS can be successfully challenged by a plaintiff focusing on the potential effects of several actions on unregulated target resources. In Natural Resources Defense Council v. Hodel, 865 F.2d 288 (1988), the Federal Energy Regulatory Commission's EIS supporting several offshore oil drilling proposals was found legally insufficient because it failed to consider the cumulative impacts of oil exploration and oil drilling ranging from Alaska to southern California on two target resources (salmon and whales) that migrated past all the widely separated locations of activity. While acknowledging that such an assessment was potentially an extreme undertaking, the court nevertheless left no doubt that the NEPA analysis was incomplete without it.

Finally, the allocation of resources by a Federal agency necessarily calls in to play discussions of public policy. Because decisions on allocating resources involves political choices and trade-offs, the political goals of resource management plans are often at odds with scientific or technical expertise. As a result, management plans cannot always be limited to technical questions and technical solutions. The PEIS should therefore acknowledge the political realm in which it exists, describe the effects and interplay between science and policy, and seek mechanisms to deal with the potential friction.

B. A Final Word on Cumulative Impacts, Environmental Consequences and the Affected Environment

There are two potential pitfalls associated with the delineation of impacts on the affected environment which are worth noting. First, the cumulative impacts assessment must always be considered as separate and distinct from the cumulative action assessment. The cumulative action assessment consists of determining whether there are multiple projects represented by actual proposals which must collectively be reviewed in one EIS. To do this, the agency must determine whether multiple projects are presented by actual proposals and whether they may have cumulative impacts. Thus, the cumulative actions are considered for the purpose of cumulative environmental impact assessment *and* for the purpose of decision making on each proposed action.

The cumulative impacts assessment provides that for every action, whether a single-action EIS or a cumulative action EIS, an analysis must be made of the synergistic effects of all of the actions, both individually and collectively. In other words, both the cumulative action programmatic EIS and the single-project EIS call for the assessment of the cumulative effects of each action. In a programmatic EIS, this analysis can become quite wieldy. Nevertheless, failure to note this distinction and address its tenets can lead to significant legal shortcomings in the PEIS and leaves the agency vulnerable to time-consuming and costly litigation.

The cumulative impact analysis is of tremendous significance in the PEIS. Because the PEIS is a broad, overview document, it is critical that it look at the cumulative impacts the program is expected to have (and has had) over time. Without a full-blown look at cumulative and synergistic effects, the PEIS will be held legally insufficient. In Greenpeace v. NMFS, 55 F. Supp. 2d 1248 (W.D. Wash. 1999), Judge Zilly held the National Marine Fisheries Service could not continue "to make individually minor but collectively significant changes to the Fishery Management Plans (FMPs) without preparing an SEIS analyzing these changes" and that "NEPA's cumulative effects provisions requires a programmatic analysis of the FMPs in their current form." (See also, Sierra Club v. Penfold, 857 F.2d 1307 (1988) (an EIS must include a cumulative impacts assessment).

Second, the agency must remain mindful that both the CEQ regulations and the courts require the agency to consider past and present actions as well as future actions when assessing the affected environment and environmental consequences. In essence, the word "consequences" connotes future effects. When assessing environmental impacts, it is easy to be blind to the requirement to consider past and present impacts caused by other activities that have affected the environment.

40 C.F.R. § 1502.15 defines the "Affected Environment" as "...the areas to be affected or created by the alternatives under consideration..." For purposes of the environmental consequences comparison, the area is defined as it exists prior to the effect of any proposed or alternative action. Thus, it establishes a baseline environmental picture by which to gauge the effects of each of the alternatives. In order to adequately present the baseline, it has been held that "... impact statements...will take into account the effect of their approval upon the existing

environment; and the condition of that environment presumably will reflect earlier proposed actions and their effects." Kleppe (emphasis added). Allowing the cumulative impacts of contemplated actions to be evaluated later simply acknowledges that the effects of past and present actions have created the existing environment.

This "backward look" requirement appears to make the PEIS process appear piecemeal. Many have tried to argue that it is contrary to NEPA's overall prohibition against using the EIS process to justify past actions. But the purpose of the look back is not to document or discuss the merits of the past action, but to insure that the environmental baseline is presented as it actually exists. Congress passed NEPA out of concern that our limited natural resources are being lost in "small but steady increments." By requiring that the affected environment be described in terms that reflect the degree of existing environmental degradation caused by previous activity and by requiring that the cumulative impacts assessment account for previous effects on the environment, the goal of NEPA to help agencies avoid undue environmental harm through creeping and incremental loss is, in fact, advanced and assured.

In a programmatic EIS, the failure to adequately describe the affected environment and to account for the effects of past actions is fatal. In Greenpeace v. NMFS, Judge Zilly held that "...the programmatic EIS was necessary because of the significant cumulative effects of the amendments to the FMPs over the years, rather than because there were particular new amendments pending" and that, "[T]he programmatic EIS should therefore present a more general picture of the environmental effects of the plans..." Because the court was asking NMFS to look back, the document was also referred to as a supplemental EIS (SEIS). (The concept and parameters of an SEIS are considered later in this document).

If these aspects have been overlooked and the sufficiency of the PEIS analysis is legally challenged, the decision making process will be delayed as the court remands the document to the agency for their inclusion. Accurately capturing the baseline environmental scope of the affected area, including the consequences of past actions, is time consuming and complex. During the pendency of the redrafting, the court can, and generally does, forestall proceeding with the proposed action. Sierra Club v. Penfold, 857 F.2d 1307 (9th Cir. 1988). It is therefore imperative that the agency provide a complete environmental baseline of the affected environment up front and include the consideration of past actions in their cumulative effects analysis.

II. What is the appropriate structure of a PEIS?

NEPA demands analytical thought and the presentation of environmental and scientific evidence and findings in an organized, well written, and concise document. As such, NEPA serves as a comprehensive scientific planning device designed to promote and further our understanding of

ecosystem dynamics and bio-diversity. An agency, and particularly an environmental agency, has much to benefit from applying NEPA's concepts and requirements to its overall management structure. By meeting all of NEPA's procedural requirements in the PEIS, the agency will have produced a document flexible enough to help the agency meet any number of other goals and objectives. A look at NEPA's requirements for scientific accuracy and organization makes these possibilities clear.

A. NEPA as a scientific research promoter

From its inception, NEPA recognized that scientific and agency knowledge about the environment is incomplete. In fact, NEPA was designed to promote and assist the search for greater environmental knowledge. As stated by Senator Allott, the Republican floor manager of NEPA, it "authorizes all federal agencies to conduct investigations and research relating to ecological systems and environmental quality." 115 Cong. Rec. at 40, 422. This concept is clearly articulated in NEPA's statement of purpose at 42 U.S.C. § 4321 which provides that the goal of the Act is:

> To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; *to enrich the understanding of the ecological systems and natural resources important to the Nation*; and to establish a Council on Environmental Quality. (Emphasis added)

In order to accurately reflect the agency's thinking, NEPA EISs must be analytically sound. They must organize and rely on existing scientific data, and, where reasonable and not cost-prohibitive, the agency must gather new supporting information. Andrus at 473. (See also 40 C.F.R. § 1502.22). The CEQ regulations are replete with directives to this effect. 40 C.F.R. § 1502.2 directs that "[e]nvironmental impact statements shall be analytic rather than encyclopedic." 40 C.F.R. § 1502.1 directs that environmental impact statements "...shall be supported by evidence that the agency has made the necessary environmental analyses." 40 C.F.R. § 1500.1(b) states that the information in the EIS must be of "high quality"and that "accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA." And 40 C.F.R. § 1502.8 states that statements shall "... be based upon the analysis and supporting data from the natural and social sciences and the environmental design arts." As such, NEPA serves as an information gathering and educational vehicle designed to promote our scientific understanding of ecology and the environment.

1. Incomplete or Unavailable Information

Because it plays an information gathering role, and recognizing that the complexities of ecosystem inter-relatedness are far-reaching and predominantly unknown, the NEPA process accepts and accommodates the fact that there will be gaps in an agency's knowledge surrounding a decision. Thus, while reasonable efforts to acquire knowledge must be made, all

decisions need not be delayed pending perfect knowledge. Andrus: Jicarilla Apache Tribe of Indians v. Morton, 471 F.2d 1275 (9th Cir. 1973). The specific requirements for dealing with incomplete and unavailable information are set out at 40 C.F.R.§ 1502.22. That section requires that the agency clearly identify the information that is incomplete or unavailable, together with a statement of the relative importance of the missing information. It also requires the agency to provide a summary of the existing scientific evidence relative to the missing information and to prepare an evaluation of the expected environmental impacts in light of that evidence.

2. Monitoring and Supplemental EISs

In its promotion of environmental research and understanding, NEPA requires continuing environmental monitoring and analysis for changes to ongoing federal actions. CEQ regulation 40 C.F.R §.1505.3 specifies that implementation of the action should be accompanied by monitoring in important cases. Regulation 40 C.F.R. § 1502.9 provides the procedural framework for keeping environmental analyses current as significant new information is identified through the process of supplementing draft and final EISs.

Provided the changes are not substantial, the environmental assessment (EA) process is sufficient for monitoring purposes. If, however, significant new information of relevance to the proposed action or its impacts is discovered, an agency must prepare a supplement to the EIS. Thus, "a supplemental EIS is required where new information is generated as a result of maintaining inventories and adjusting management direction and those changes cumulatively have an impact on the environment. See Greenpeace v. NMFS, 55 F.Supp 2d 1248 (W.D. Wash. 1999); Seattle Audubon Society V. Mosely, 798 F.Supp 1473 (W.D. Wash. 1992). The decision whether to prepare an SEIS is as critical as the initial determination to do an EIS. As one court noted, when new information comes to light the agency must consider it, evaluate it, and make a reasoned determination whether it is of such significance as to require [an SEIS]." Warm Springs Dam Task Force v. Gribble, 621 F.2d 1017, 1024 (9th Cir. 1980). How routinely an agency programmatically supplements a PEIS is a matter to be determined by the specific project. Typically, routine assessments should be considered every five years. The key is that there be no gaps in planning. Seattle Audubon.

B. NEPA as an Organizational and Planning Tool

In addition to serving as a means for furthering our understanding of ecosystem dynamics and bio-diversity, NEPA is well-designed to serve as a comprehensive scientific planning and organizational tool.. Toward this end, section 102(2)(H) of NEPA specifically requires all federal agencies to "initiate and utilize ecological information in the planning and development of resource-oriented projects." The CEQ regulations at 40 C.F.R. § 1501.2 states that each agency shall comply with the mandate of section 102(2)(A) to "utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man's environment."

NEPA is replete with directives that EIS documents be well-organized and well-written. It directs that "Agencies shall avoid useless bulk in statements and shall concentrate effort and attention on important issues" and that "[V]erbose descriptions of the affected environment are themselves no measure of the adequacy of an environmental impact statement" (See 40 C.F.R. § 1502.15). The regulations also direct that "agencies should employ writers of clear prose or editors to write, review, or edit statements" (See 40 C.F.R.§ 1502.8).

Of critical value and importance, and in further emphasizing the need for organization, NEPA encourages the use of tiering impact statements to eliminate repetitive discussions of the same issues. In fact, the concept of programmatic EISs is closely linked to tiering. Pursuant to 40 C.F.R. § 1508.28, "tiering" refers to:

> the coverage of general matters in broader environmental impact statements (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basin wide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared.

The CEQ guidelines provide that when an area-wide or overview EIS is prepared for projects that share common timing or geography, the area-wide EIS should be followed by a site-specific or project-specific EIS. The specific regulation is found at 40 C.F.R. §1502.20. That section provides that:

> Agencies are encouraged to tier their environmental impact statements to eliminate repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review. Whenever a broad environmental impact statement has been prepared (such as a program or policy statement) and a subsequent statement or environmental assessment is then prepared on an action included within the entire program or policy (such as a site specific action) the subsequent statement or environmental assessment need only summarize the issues discussed in the broader statement and incorporate discussions from the broader statement by reference and shall concentrate on the issues specific to the subsequent action. The subsequent document shall state where the earlier document is available. Tiering may also be appropriate for different stages of actions.

It is through the subsequent tiering of a project that the onerous initial undertaking of the PEIS analysis pays off. Two words of caution, however. While the agency has discretion on whether to prepare a PEIS, it cannot tier site-specific EISs to the broader program where the program itself has not been subject to NEPA procedures. Northcoast Environmental Center v. Glickman, 136 F.3d 60 (1998). This is particularly problematic in those instances where an agency has never prepared a programmatic EIS but has proceeded with a number of project actions under unrelated EAs and EISs and those individual projects are later determined to have had cumulatively significant impacts on the environment. AOC v.Daley, Greenpeace. In addition, where a programmatic EIS has been prepared, a second level of NEPA analysis is required to describe the detailed, site-specific actions which follow. City of Tenakee Springs v. Block, 778 F.2d 1402 (9th Cir. 1985).

The NEPA PEIS, monitoring, SEIS and tiering systems all support a well-organized management and scientific referral system. The PEIS is the backbone of this system. Once a programmatic EIS has been completed and the agency is preparing to take an action under the program, an environmental assessment (EA) is conducted to evaluate the expected impacts of a particular project on the environment. If the impacts are not expected to be great, the agency will issue a finding of no significant impact (FONSI) and no further analysis will be done. If the impacts are expected to be significant, the agency will proceed with developing an SEIS that identifies not only the impacts on the action, but also all new reasonable alternatives to the proposed action . In this way, the agency can rely on its preceding organizational and analytical efforts to stay on top of decision making and to forecast expected changes required in managing a resource. As a result of initially complete work, a well crafted PEIS should therefore serve as an important component for planning national programs and for providing guidance and context when initiating a specific project in the field.

III. PEIS Principles applied to NMFS' Fishery Management Plans (FMPs)

The interplay of law, CEQ regulations and guidance and the complexity of the PEIS cumulative effects analysis with regard to fishery management and the affected environment requires an intense and focused organizational approach. Given the many parameters to be considered on a multitude of fronts, the process begs for the formulation of a series of inter-related matrices on which to base textual discussion. This matrix approach can be used to organize data as well as to highlight and overview key aspects of the PEIS. It should never, however, be construed as replacing the necessary and required in-depth analysis demanded of the NEPA process outlined in this guidance.

The following section describes an approach for organizing a set of three matrices which can form the basis of managing the volume of data and information in a PEIS and which should assist decision makers in developing and assessing an appropriate range of management alternatives. The three matrices contemplated are a baseline matrix, a past effects matrix and an alternatives matrix. Each is described briefly below, and then synthesized in a discussion of the effective interplay of the matrix approach.

A. The Baseline Matrix

The baseline matrix is intended to promote a concise and organized description of the "Affected Environment" in the PEIS. It's goal is to provide the foundation of information describing what is known about the impacted environment. The baseline matrix should identify the specific resources in the affected environment (such as marine mammals, see birds, habitat) (in rows) as well as a series of parameters which quantify the resource (for example, population density, habitat/range, known predators, known prey, life span, etc) (in columns). In each cell,

information is tabulated based on what is known. Where information is unavailable, the cell is left empty. Where information is incomplete, existing data is provided, but the deficiency is acknowledged and/or explained.

B. The Alternatives Matrix

The alternatives matrix is intended to delineate the parameters of the different management objectives addressed within a range of identified management components. It is based on the premise that the overall management of a resource is subject to variation as a result of shifting policy decisions within statutory constraints, as well as by variations in the resource itself as a result of both predictable and unpredictable environmental affects. In developing alternatives for an FMP PEIS, the root of the question is whether the way in which the Council and the agency have decided to meet statutory policies continues to be the best way to meet those policies or whether there is a better, alternative way to meet those same policy objectives. True "policy" decisions are made by the Council and NMFS in trying to determine how best to craft a management regime in order to meet a particular statutory policy objective and balance management measures among sometimes competing statutory policy objectives. The goal of the alternatives matrix, therefore, is to present alternatives as a series of management regimes in which different management approaches for each component are chosen as a result of the desire or need to meet a particular statutory policy objective.

The management components should identify the broad category of policy objectives being considered by the agency in the proposed management plan (for example marine mammal protection, sea bird protection, target species protection, habitat protection, etc.). Where possible and applicable, these components should include reference to the authorizing statute or regulation they arise under, and the specific resource managed or otherwise served by the law.

Within each management component, the matrix should identify a sub-layer of management tools directly associated with each management component. The management tools would include actions previously used to implement policy objectives within each component, such as TAC setting, spatial and temporal closures and harvest limits and gear restrictions/modifications for marine mammal protection. It may also include new initiatives under consideration.

The remainder of the matrix would present in columns different management regimes combining different levels of a variety of the management tools in each component. The different regimes would be designed to reflect shifting policy objectives. All components would be considered in each alternative and the array of management tools in each alternative would be chosen to reflect a different set of management objectives for each management component. The no action alternative would include statements of "no change/status quo" in each cell.

In order to craft "FMP-like" alternatives that are legally sufficient, each alternative must have an approach specified for each major component of the FMP identified. Approaches to a particular component do not have to be unique among all of the alternatives, but there should be at least one reasonable alternative management approach to the component presented in the status quo alternative. Less emphasis should be placed on the number of alternatives and more on the quality. It is quite possible under this scenario that many of the management tools employed are

the same with only minor modifications in any one component. This is perfectly acceptable provided each alternative has a management approach for each management tool identified in each management component.

C. The Past Effects Matrix

The past effects matrix is intended to delineate what is known about the effects of past actions on the affected environment for purposes of accurately assessing cumulative impacts and to allow the assessment of our capabilities for managing a resource under a specific management approach in the future. It's goal is to present the range of actions the agency has implemented in managing all aspects of the resources, together with their consequent effects. It should include information gathered through research, testing and any other activities which arise as a result of the direct management of a resource, but which nevertheless have bearing on the state of the affected environment. It should provide information in a manner useful to the "environmental consequences" discussion as well as for aiding in the development of alternative courses of action. As such, it serves to provide information allowing NMFS to assess its capability for managing a resource based on past experience.

The resources enumerated in the baseline matrix should all be accounted for in the past effects matrix, regardless of whether there is any known effect from activity on that resource. Again, in each cell, information is tabulated based on what is known. Where information is unavailable, the cell is left empty. Where information is incomplete, existing data is provided, but the deficiency is acknowledged and/or explained. The past effects matrix should include the tabulation of all previous EAs and EISs prepared for a fishery management area, together with their known effects.

The past effects matrix combines parameters from the baseline matrix and the alternatives matrix. It should identify the affected resource parameter (by row) and the management tool employed (columns). Each cell, then, would contain a description of the level of measure employed and it's effect on the corresponding resource parameter. The cell should also contain information referencing specific information regarding when and where the tool/method was employed and citing all relevant pre-existing NEPA documentation discussing the predicted impacts.

D. The Interplay of the Matrices

The three matrices described above can serve the agency in a number of ways. First, they can provide the basis for the discussion of affected environment and environmental consequences in the PEIS and in all subsequent NEPA documents related to the management unit under consideration. This will minimize repetitive and redundant work in ensuing documents and will provide uniformity and consistency across the program. Second, by adhering to the requirements for monitoring and supplementing EIS information, they serve as a central repository for a significant amount of incoming and accumulating data. Third, they provide a useful vehicle for arraying and manipulating data in a way which can aid environmental modeling and study on

related projects. Fourth, they provide the agency with valuable information regarding the agency's capability for managing an individual or collective group of resources. Fifth, they will highlight gaps in our knowledge base requiring further study and they can be used to present requests for additional funding for research to fill those gaps. Sixth, they can provide accurate information regarding the effects of past actions on our ability to manage and/or protect specific resources. Finally, they can aid the agency in assessing and planning for the need to take different management approaches to specific resource issues in the future.