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PEP – ENVIRONMENTAL STATEMENT MEMORANDUM NO. ESM 10-20

To: Heads of Bureaus and Offices

From: Willie R. Taylor, Director
Office of Environmental Policy and Compliance

Subject: Coordinating Adaptive Management and National Environmental Policy Act Processes

This Environmental Statement Memorandum (ESM) is being issued under the authority provided to the Office of Environmental Policy and Compliance (OEPC) by 381 Departmental Manual (DM) 4.5B, to convey instructions and guidance through its Environmental Memoranda Series, and by 516 DM 3.2, which authorizes OEPC to provide advice and assistance to the Department of the Interior on matters pertaining to environmental quality and for overseeing and coordinating the Department's compliance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality and departmental regulations, which authorize OEPC to provide further guidance concerning NEPA.[1]

Guidance regarding Adaptive Management (AM) is provided in departmental NEPA regulation 43 CFR Part 46 and 522 DM 1 (Adaptive Management Implementation Policy). More detailed information about the use and implementation of AM is given in *Adaptive Management: The U.S. Department of the Interior Technical Guide (2007)*.

1. Purpose and Scope

The purpose of this memorandum is to provide guidance to bureaus and offices on the use of AM and the relationship between AM practices and NEPA processes. As an approach to management of resources, any use of AM is subject to compliance with NEPA's statutory and regulatory requirements for Federal activities affecting the environment.

[1] This ESM is internal Department of the Interior guidance directed toward its bureaus and offices, and is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

2. What is Adaptive Management?

Adaptive Management is a system of management practices based on clearly identified outcomes and monitoring to determine whether management actions are meeting desired outcomes; and, if not, facilitating management changes that will best ensure that outcomes are met or re-evaluated. Adaptive management recognizes that knowledge about natural resource systems is sometimes uncertain. (43 CFR 46.30).

The Department technical guide emphasizes structured decision making and employs an iterative learning process that acknowledges uncertainty and that values reducing that uncertainty thus producing improved understanding and improved management over time as follows:

> "Adaptive management [is a decision process that] promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps adjust policies or operations as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a 'trial and error' process, but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather a means to more effective decisions and enhanced benefits. Its true measure is in how well it helps meet environmental, social, and economic goals, increases scientific knowledge, and reduces tensions among stakeholders." (*Adaptive Management: The U.S. Department of the Interior Technical Guide (2007)*).

Adaptive Management emphasizes transparency, shared decision making, and the importance of cooperative engagement of stakeholders. The objective of using an AM strategy is to reach a particular desired outcome or to achieve a specific goal while formulating decisions in an operational setting characterized by uncertainty. Thus, AM should not be the strategy of choice whenever it is unclear as to desired outcomes and specific goals. Use of an AM strategy also may be inappropriate in situations where there is little to no chance for changing the decision or where the decision space is very limited. Adaptive Management is a technique to be employed for charting a decision making course along an uncertain path whose goal is to obtain an expected and desirable situation. An effective and necessary monitoring program can provide the needed navigational framework for successfully meeting the challenges of adaptively managing the path.

3. What is the Relationship between Adaptive Management and the NEPA Process?

Compliance with NEPA is a statutory and regulatory requirement for Federal activities affecting the environment. Adaptive Management is a discretionary management

approach to structured decision making that may be used in conjunction with the NEPA process. Adaptive Management is not a substitute for NEPA compliance for agency decisions. Because AM provides a mechanism for addressing uncertainties and data gaps that may be identified through the NEPA process, it is a management tool that is consistent with NEPA's goal of informed decision making.

It must be clearly understood that NEPA compliance is a statutory requirement, the implementation of which is governed by regulations that set forth the obligations and the procedural provisions embodied in the statute. National Environmental Policy Act compliance is required for all Federal actions affecting the environment. AM is a discretionary learning-based management process having no statutory or regulatory requirements.

Adaptive Management and NEPA are similar in that each emphasizes collaboration principles and working with stakeholders. The responsible official should consider and make an effort to meet the separate but related needs for stakeholder involvement in the AM and NEPA processes. These distinctive needs, the NEPA requirement for public involvement on the one hand, and the emphasis of AM on the ongoing relationship between the agency and other persons interested in the decisions to be made, on the other, must be clearly articulated. There may be some overlap, but NEPA requirements and the role of AM, in the context of stakeholder involvement, need to be explicitly understood.

Adaptive Management and NEPA are also similar in that each emphasizes learning. To provide an adequate framework for an AM approach to decision making, it is important to openly acknowledge uncertainty and the need to learn during the AM process. Learning and adjusting are part of the ongoing AM process. In AM, the need to learn is best expressed as one or more key questions with regard to uncertainty about the consequences of management actions. If such uncertainty motivates the use of an AM approach to a given management situation, it is important to acknowledge the existence of this uncertainty in the NEPA process. This acknowledgement informs the public involvement and shapes the analysis of environmental effects that is required for compliance with NEPA. When using an AM approach for a proposed agency action, the need to supplement or prepare additional NEPA documents in the future may be reduced or eliminated if management adaptations, which could occur in light of new information that is predicted to emerge, are fully documented and analyzed through the NEPA process.

4. Criteria for Considering Whether to Use AM

The Department supports the use of AM under appropriate circumstances, recognizing that not all decisions can or should use an AM approach. The conditions for using AM are discussed in detail in the DOI technical guide. These conditions include clear objectives, uncertainty about management impacts, and monitoring to guide decision making and evaluating management effectiveness. These conditions are listed here:

- A real management choice is to be made;
- There is an opportunity to apply learning;
- Clear and measurable management objectives can be identified;
- The value of information for decision making is high;
- Uncertainty exists and decision-making is ongoing;
- Uncertainty can be expressed as a set of testable models;
- A monitoring system can be established to reduce uncertainty; and
- There is an ability to analyze the effects of the AM actions in the NEPA document.

Conditions where AM may not be appropriate include the following:

- Resource management decisions cannot be revisited and modified over time;
- Monitoring cannot provide useful information for decision making;
- Irresolvable conflicts in defining explicit and measurable management objectives or alternatives exist;
- The agency has limited discretion over resource systems and outcomes; and
- Risks associated with learning-based decision making are too high.

5. Coordinating Adaptive Management and the NEPA Process

In general, when an AM approach to decision making is considered to be appropriate, the NEPA compliance associated with that decision may be structured to potentially allow changes to management decisions without the need to initiate further NEPA analysis. The conditions in which NEPA compliance can be structured to allow for the iterative, learning-based decision making characteristic of AM include:

a. the management actions under consideration in the AM approach are identified in the NEPA analysis;

b. the criteria for management adjustments are clearly articulated in the NEPA analysis; and

c. the AM process produces outcomes within the range analyzed in the NEPA analysis.

However, it is important that monitoring be designed in the context of AM to promote learning, track progress in achieving objectives, and facilitate decision making through time. There needs to be assurance that monitoring will occur and that appropriate adjustments in project activities will be made in response to the information provided by that monitoring. Monitoring protocols need to be integrated into the project and considered in the NEPA analysis. Monitoring should be used to evaluate the adequacy of the original action and to determine whether management adjustments need to be undertaken to meet the identified goals/outcomes. If monitoring indicates that the management options analyzed during the NEPA process are inadequate to achieve the

expected outcomes or that outcomes can be achieved more effectively or efficiently via other management actions, agencies may need to re-initiate the NEPA process in order to ensure that any restructured management decision framework complies with NEPA. Above all, commitments and mechanisms need to be in place to ensure bureaus and offices adjust their decisions based on the results of such monitoring and evaluation.

6. How to Conduct NEPA Analyses for Proposed Actions That Include an AM Approach

Adaptive Management prescribes the integration of decision making, monitoring, and assessment into an iterative process of learning - and performance-based management. If and when an agency chooses to use an AM approach to a decision or project, that AM process needs to be spelled out in the NEPA document analyzing the proposed action. Since AM is an approach to management over time, not itself a statutorily required analysis of the environmental consequences of certain actions, the AM effort is likely to continue after the NEPA process has been completed. Therefore, the parameters of the AM process need to be included in the NEPA analysis and the subsequent decision and its implementation should follow the parameters outlined in the NEPA analysis.

An AM approach may be included in, or even shape in large part, the proposed action and/or in one or more alternatives to the proposed action. An AM proposal or alternative must clearly identify the adjustment(s) that may be made when monitoring during project implementation indicates that the action is not achieving its intended result, or is causing unintended and undesirable effects. The environmental document prepared pursuant to NEPA must disclose not only the effects of the proposed action or alternative but also the anticipated effect of the adjustments that may be made. Such a proposal or alternative must also describe the monitoring that would take place to inform the responsible official whether the action is achieving its desired outcome. Specifically, the proposed action or alternative employing an AM approach must describe, and the supporting NEPA document must analyze:

- The proposed AM approach;
- Identification of uncertainties to be addressed through management and monitoring;
- One or more specific questions that can be answered in the course of managing and identifying monitoring protocols which follow from the question(s);
- How the AM approach is reflected in the alternatives being considered;
- The environmental effects of the proposed AM approach and each of the alternatives;
- The monitoring protocol including a reasonable mechanism to assure that monitoring will occur;
- The desired outcome;
- The performance measures that will determine whether the desired outcome is being achieved or whether a mid-course corrective action is needed;
- The factors for determining whether additional NEPA review will be needed in the future;

- The thresholds or triggers requiring adaptive or remedial action and the specific management options that may be used;
- Clear timeframes for long-term goals and short-term evaluations;
- A description of the AM oversight team composition and processes, with provisions for conflict resolution; and
- Provisions for data management, documentation, and reporting.

The following table identifies the AM steps documented in the technical guide and corresponding NEPA components. The AM steps may be coordinated with one or more of the procedural requirements for complying with NEPA and are part of an iterative process advancing the understanding of the environment and improving management decisions. Stakeholder involvement is a continuous part of both of the AM approach and the NEPA process from scoping, preparation and review of environmental documents and effectiveness monitoring with respect to implementation of the decision.

NEPA Components	AM Step	Comments
Proposed Action	Identify a set of potential AM management actions for decision making. Adaptive Management may be an integral and major feature of the proposed action and/or the alternatives.	Evaluate the role of AM in the development of this proposal; fully describe the proposed AM actions to be implemented. In carrying out initial public participation in the NEPA evaluation process, bureaus and offices should strive to ensure that stakeholders and public understand the principles and implications of AM and have reasonable opportunity to provide input.
Purpose and Need	Identify clear, measurable, and agreed-upon management objectives to guide decision making and evaluate management effectiveness over time. Develop a monitoring protocol including a reasonable mechanism to assure that monitoring will occur.	NEPA documents for projects that invoke AM should explain how **monitoring and interpretation** will be used to answer one or more key questions that could be answered in the course of managing and to demonstrate that learning has occurred.
Scoping	Ensure stakeholder commitment to an adaptive management approach for the enterprise for its duration. Incorporate the views from scoping into a reasonable range of approaches that could be tried and compared within the project.	In carrying out initial public participation in the NEPA evaluation process, bureaus and offices should strive to ensure that stakeholders and the public understand AM principles and its implications and have reasonable opportunity to provide input.
Alternatives	Identify a set of potential AM management actions for decision making. In some cases, Adaptive Management may be more narrowly focused, only involving and requiring discussion with respect to one or	Develop performance metrics relating to the management objectives Design and implement a monitoring plan to track resource status and

	more of the alternatives or focused on a specific issue or a single resource or narrow range of resources. Its use, in some cases, may not be a major factor in the proposed action, but rather a minor component.	other key resource attributes. Describe how the monitoring plan supports learning through the testing of alternative models and measuring progress towards objectives.
Describe Affected Environment	Identify models that characterize different ideas (hypotheses) about how the system may work.	Identify whether the ecological/resource processes that drive resource dynamics are understood and the uncertainties in that understanding.
Effects Analysis (direct, indirect, & cumulative)	Assess management alternatives as to their resource consequences and contributions toward achieving objectives.	The EIS (or EA) must disclose not only the effects of the proposed action or alternative but also the effect of the adjustment.
Decision	Select management actions based on management objectives, resource conditions, and understanding. Identify how future decisions will be made.	
Implementation	Use monitoring to track system responses to management actions. Improve understanding of resource dynamics by, among other things, comparing predicted and observed changes in resource status. Review and refine management actions throughout the life of the project.	If the revised management action is analyzed in the NEPA document, then no new NEPA analysis is necessary if and when the revised action is eventually taken. If evaluation or monitoring indicates that the management options analyzed during the NEPA process are not achieving the performance goals, agencies may need to re-initiate the NEPA process. Bureaus and Offices should maintain open channels of information to the public and affected regulatory and permitting agencies during the application of AM, including transparency of the monitoring process that precedes AM and the decision-making process that implements it. This involves: (a) identifying indicators of change, (b) assessing monitoring activities for accuracy and usefulness, and (c) making changes in management activities and/or strategies.

This memorandum replaces ESM 03-6.