

Peer Review and Information Quality Plan for the New Mexico Unit of the Central Arizona Project Environmental Impact Statement

1 Introduction

This peer review and information quality plan (Plan) has been developed by the U.S. Department of the Interior's Bureau of Reclamation, Lower Colorado Region (Reclamation). Because the peer review guidance is inherently federal, this Plan applies specifically to Reclamation and any federal cooperating agencies. Reclamation is the lead federal agency for preparation of an environmental impact statement entitled New Mexico Unit (NM Unit) of the Central Arizona Project EIS (NM Unit EIS; sometimes referred to as "the EIS"). The NM Unit may be located on a matrix of federal, state, and private lands near Cliff, Grant County, New Mexico. The New Mexico Interstate Stream Commission (ISC) is a joint lead agency for preparation of the EIS. Reclamation shall implement this Plan with input and advice from the ISC as joint lead agency for the EIS. This shall include the ISC's input on the categorization of scientific information used in development of the EIS and input on the level and intensity of peer review that is appropriate to assure the quality of that information.

This Plan was prepared in compliance with the "Final Information Quality Bulletin for Peer Review" issued by the Office of Management and Budget on December 16, 2004 (OMB Bulletin). The OMB Bulletin has subsequently been incorporated into the U.S. Department of the Interior (Department) information quality guidelines. Reclamation, and any federal cooperating agencies identified in the future, are subject to these guidelines, and each also has its own policies and procedures that will apply to certain components of the National Environmental Policy Act (NEPA) and information quality guidelines (Reclamation 2015). Because the EIS is a non-delegated Departmental EIS, this Plan supersedes individual agency policies, adheres to the OMB Bulletin, and follows the terminology from the U.S. Environmental Protection Agency (EPA) 2015 guidelines for Peer Review (EPA 2015) rather than bureau-specific terminology.

2 Definitions

"Scientific information," per the OMB Bulletin, means factual inputs, data, models, analyses, technical information, or scientific assessments related to such disciplines as the behavioral and social sciences, public health and medical sciences, life and earth sciences, engineering, or physical sciences.

"Scientific assessment" means an evaluation of a body of scientific or technical knowledge, which typically synthesizes multiple factual inputs, data, models, assumptions, and/or applies best professional judgment to bridge uncertainties in the available information. These assessments include, but are not limited to, state-of-science reports; technology assessments; weight-of-evidence analyses; meta-analyses; health, safety, or ecological risk assessments; toxicological characterizations of substances; integrated assessment models; hazard determinations; or exposure assessments.

"Scientific and technical work products" are further defined by the EPA (2015) as including risk assessments, technical studies and guidance, analytical methods, scientific database designs, technical models, technical protocols, statistical survey/studies, technical background materials, technical guidance (except for guidance providing policy decisions), research plans, and research strategies. The term "scientific and/or technical work product" is generally consistent with the term "scientific information" in the OMB Bulletin (EPA 2015, p. 40).

“Influential scientific information” is a subset of scientific information defined by OMB as information agencies can reasonably determine to have a clear and substantial impact on important public policies or private sector decisions.

“Highly influential scientific assessment” is a subset of influential scientific information that could have a potential impact of more than \$500 million in any year, or which is novel, controversial, or precedent-setting, or has significant interagency interest. A scientific assessment of this type requires external peer review.

“Exempt Information,” in accordance with the OMB Bulletin, includes, among other things, information whose dissemination arises in adjudications and permit proceedings, unless the agency, in its discretion, determines that peer review is practical and appropriate and that the influential dissemination is scientifically or technically novel (i.e., a major change in accepted practice) or likely to have precedent-setting influence on future adjudications or permit proceedings.

3 Purpose

The purpose of this Plan is to ensure the following, consistent with the OMB Bulletin and Departmental and agency guidelines:

- That the quality of scientific information used in the development of the NM Unit EIS conforms to the standards of the scientific and technical community.
- That the methods for producing quality information will be made transparent, to the maximum extent practicable, through accurate documentation, use of appropriate internal and external review procedures, consultation with experts and users, and verification of information quality.

The purpose of this Plan also is to meet the Council on Environmental Quality’s (CEQ) regulatory requirements at 40 CFR §1502.22, regarding the use of credible scientific evidence in evaluating the reasonably foreseeable significant adverse impacts on the human environment. The CEQ’s regulations require that, when the specific information relevant to reasonably foreseeable significant adverse impacts cannot be obtained for certain reasons, the agency’s evaluation of such impacts is to be based on theoretical approaches or research methods generally accepted in the scientific community (40 CFR §1502.22).

For purposes of this plan and in compliance with the CEQ regulations and OMB, Departmental, and agency requirements, four categories of information are identified:

- 1) Scientific information,
- 2) Influential scientific information,
- 3) Highly influential scientific assessments, and
- 4) Exempt information.

4 Information Quality Guidelines

The main point of this section is to explain the process that will be used for determining which work products will require peer review, and how that peer review will be approached. The four levels of involvement discussed in this plan are public review, peer input, internal peer review, and external peer review. Reclamation anticipates that a large majority of the scientific information that will be used during preparation of the EIS is Exempt Information excluded from the OMB Bulletin requirements or which does not otherwise meet the criteria for external peer review set forth in Section 5.

4.1 Public Review and Comment on EIS

In compliance with CEQ regulations, the Draft and the Final EIS will be circulated to persons, organizations, and agencies. However, as the EPA noted (EPA 2015), public comment is not a substitute for peer review. Substantive and relevant public comments may be provided as part of a review package to peer reviewers if such information would assist with a peer review. Decision documents, including but not limited to the EIS (draft or final) and the Record of Decision, are not scientific or technical work products and will not be subject to peer review; however, underlying scientific and technical work products used in the EIS may be candidates for peer review (EPA 2015, p. 41).

4.2 Peer Input for Scientific Information

A variety of scientific and technical work products will be used and cited, or their conclusions will be summarized in the EIS. Many are existing studies or assessments that have already undergone scientific peer review and do not need to go through the peer review process again (EPA 2015, p. 45); where that is the case, it will be documented (EPA 2015, p. 48). Information that does not rise to the level of influential scientific information or highly influential scientific assessments does not require peer review, but it might require what EPA calls peer input or peer consultation (EPA 2015, p. 24). This connotes an interaction during the development of the EIS, providing for an open exchange of data, insights, and ideas. Peer input may be characterized by a continued and iterative interaction with scientific experts during scientific work product development.

Peer input is generally internal. Examples of work products that will be subject to peer input include cultural resource survey reports, biological field survey reports, or collection and summation of U.S. Census data used to characterize the socioeconomic conditions of affected communities. Reclamation will decide, with advice from Reclamation's Director of the Office of Research and Development (R&D Director) when necessary, which work products are neither influential nor highly influential and will require only peer input at most. The OMB Bulletin does not require scientific information that is not influential or highly influential to be peer reviewed. For the NM Unit EIS, there is an extensive interdisciplinary team of experts within Reclamation and ISC who may be involved in internal peer input based on internal agency review policy, or by the agencies' agreements for specific work products, if applicable.

4.3 Internal Peer Review Process

The goal of peer review is to obtain an independent, third-party review of the product from experts in the relevant scientific disciplines having applicable technical expertise. In order to be independent, peer review requires that the reviewers have not participated in development of the work product being reviewed (OMB Bulletin, pp. 17-20). Scientific or technical work products that are less complex, novel, or controversial, or have a lower impact but nevertheless constitute non-exempt influential scientific information may be peer reviewed using internal federal government experts as long as the reviewers did not participate in the development of the work product. Examples of internal peer review include, but are not limited to, the following:

- 1) Individual scientists or appropriately accredited experts employed by Reclamation who did not participate in the development of the work product or the use of the work product in the EIS;
- 2) Individual scientists or appropriately accredited experts from other federal bureaus or offices;
- 3) An ad hoc panel of independent experts from within Reclamation and other federal bureaus or offices.

Internal peer reviewers will prepare a report that describes the nature of their review and their findings and conclusions which discloses the names of the reviewer(s) and organizational affiliation(s). The internal peer review process will be discussed in the EIS and the report will be posted on the EIS website.

4.4. External Peer Review Process

Depending upon whether a scientific or technical work product is influential or highly influential, and other important factors (see Section 5 below), the product may need to be peer reviewed by external experts outside the federal government. External peer review mechanisms range from individual letter reviews by outside scientists or accredited technical experts, to a panel review by independent experts outside the federal government. The level and intensity of peer review should match the impact and complexity of the work product being reviewed. Peer reviewers shall be selected based on expertise, experience and skills, including specialists from multiple disciplines as necessary.

External peer reviewers will prepare a report that describes the nature of their review and their findings and conclusions which discloses the names of the reviewer(s) and organizational affiliation(s). The external peer review process will be discussed in the EIS and the report will be posted on the EIS website.

5 Peer Review Decisions

Work products that are needed in order to prepare the NM Unit EIS that may rise to the level of influential scientific information or highly influential scientific assessments have not yet been identified. Scientific information that may be developed and/or used in the preparation of the NM Unit EIS which, along with other factors, will be used to inform a decision also have not been identified. The first step in determining which scientific work products would require peer review is to identify those products which are non-exempt scientific information per the OMB Bulletin or scientific and/or technical work products per EPA 2015. The next step is to identify the subset of scientific work products that, when considered individually, rise to the level of influential or highly influential. Many of these products will have already undergone appropriate external peer review. In the development of products for the EIS, experts within Reclamation who have participated in development of the work product being reviewed or in the use of the work product in preparing the EIS would not qualify as independent peer reviewers.

Consistent with OMB, Departmental, and EPA guidance, all non-exempt influential and highly influential scientific and technical work products used in agency decision-making will be subject to peer review, taking into consideration the criteria described in this section. For work products that would typically fall within the Exempt Information category, Reclamation, at its discretion, will determine whether peer review is practical and appropriate and whether the influential dissemination is scientifically or technically novel or likely to have precedent-setting influence on future adjudications and/or permit proceedings.

The EIS Manager for Reclamation will identify, based on input from the appropriate staff within the agency and the ISC's EIS Manager, the work products they believe meet the criteria for influential scientific information or highly influential scientific assessments that have not yet had appropriate peer review. The EIS Manager will forward the identified work products to Reclamation's NM Unit EIS Peer Review Manager (PR Manager). The PR Manager will make recommendations regarding which products will require peer review, based upon the criteria in this section.

Generally, scientific or technical work products that meet one or more of the following criteria are considered to be influential scientific information: ¹

- 1) Establishes a significant precedent, model, or methodology;
- 2) Supports an economically significant regulatory action that is likely to have an annual effect on the economy of \$100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, tribal, or local governments or communities (additional details on economic and social science work products requiring peer review is incorporated by reference from EPA (2015, pp. 49-52));
- 3) Addresses significant controversial issues;
- 4) Focuses on significant emerging issues;
- 5) Has significant cross-agency/interagency implications;
- 6) Involves a significant investment of agency resources;
- 7) Considers an innovative approach for a previously defined problem/process/method; or
- 8) Satisfies a statutory or other legal mandate for peer review (EPA 2015, p. 42-44).

Influential scientific information may be peer reviewed through an internal or external mechanism depending on the nature of the product being reviewed. The choice of peer review mechanism (e.g., internal or external, letter review or *ad hoc* panel) for influential scientific information will be made by Reclamation, with input from ISC and with advice from the R&D Director. The choice of peer review mechanism will be based on the novelty and complexity of the information to be reviewed, the importance of the information to the decision making, the extent of prior peer review, and the expected benefits and cost of review (OMB Bulletin, Sec. II.4).

As with the categorization of a work product as influential scientific information, the decision whether or not to elevate a work product to the highly influential category occurs on a case-by-case basis and is largely based on the same factors identified above as criteria for influential scientific information; however, highly influential scientific assessments differ based on the number of factors involved, the degree of the product's impact and the degree of novelty, precedent and controversy associated with the particular assessment (EPA 2015, pp. 43-44). The greater the significant departure from existing, adequately peer-reviewed methodology, the more appropriate it is to include the product as a highly influential scientific assessment.

Non-exempt highly influential scientific assessments are expected to undergo external peer review; however, the level of external peer review should match the impact and complexity of the work product (EPA 2015, p. 54). Reclamation, with input from ISC, will make final decisions regarding work products requiring external review and the specific peer review protocol that will be used in those reviews. Decisions regarding external peer review will be made consistent with the OMB, Departmental, and EPA guidelines; and, if appropriate, consider advice from the R&D Director. Reclamation, with input from ISC, will identify the areas of expertise required for each external peer review, and will determine the number and types of reviews and reviewers that will be appropriate for each particular work product. To facilitate the peer-review process, Reclamation may utilize one or both of its indefinite delivery/indefinite quantity contracts, which are available for use through Reclamation's Office of R&D, to carry out any external peer reviews deemed appropriate.

¹ See EPA 2015, p. 44, for scientific or technical work products that are generally not considered to be influential scientific information or highly influential scientific assessments.

Reclamation's PR Manager will be responsible for documenting all decisions made with regard to implementation of this Plan.

6 Publication of Peer Review Documentation

In compliance with OMB's transparency requirements and the EPA guidance, documentation for influential or highly influential peer reviews will be posted to the NM Unit EIS website and/or Reclamation's peer review website, and will allow for public comment. In anticipation that some scientific work products associated with this project could rise to the level of influential, this overall Plan will also be posted to the peer review website.

7 References

U.S. Environmental Protection Agency, 2015. Peer Review Handbook. 4th edition. https://www.epa.gov/sites/production/files/2016-03/documents/epa_peer_review_handbook_4th_edition.pdf

Interim Guidance Document Governing Code of Conduct, Peer Review, and Information Quality Correction for National Park Service Cultural and Natural Resource Disciplines. January 31, 2008. NPS.

Reclamation, 2015. Bureau of Reclamation Information Quality Guidelines. <https://www.usbr.gov/main/qoi/guidelines.html>