

Peer Review Plan

Water Supply Benefits of Forecast Informed Reservoir Operations at Reclamation Section 7 Reservoirs

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Originating office:

Bureau of Reclamation, Research and Development Office
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Reclamation roles:

Director or delegated manager: Kenneth Nowak, Research and Development Office, Bureau of Reclamation

Peer Review Lead: Chris Frans, Research and Development Office, Bureau of Reclamation

Subject and Purpose:

Reservoir managers at the Bureau of Reclamation use forecast information to guide water management decisions across multiple timescales. Advances in forecasting have spurred increasing interest in Forecast-Informed Reservoir Operations (FIRO), a strategy that integrates improved monitoring and forecasting with flexible operational policies to optimize water retention and release.

Most Reclamation reservoirs follow water control manuals or guidance curves that prescribe seasonal storage for flood control and conservation, which may be fixed or dynamic. FIRO's potential benefits depend on operational flexibility and the degree of forecast integration, with the greatest opportunities in reservoirs using fixed storage requirements. Under Section 7 of the Flood Control Act of 1944, the U.S. Army Corps of Engineers (USACE) prescribes flood control storage at federally funded reservoirs, including 77 operated by Reclamation.

The Energy and Water Development Joint Explanatory Statement accompanying the FY2026 appropriations act directs Reclamation to assess the economic benefits of FIRO implementation at its Section 7 reservoirs. This subject report provides a preliminary analysis in support of that directive.

Report Language:

Forecast-Informed Reservoir Operations (FIRO) Engagement

The agreement directs Reclamation to complete the ongoing regional economic assessment of benefits for implementing FIRO at Reclamation reservoirs, including Section 7 reservoirs. Reclamation is directed to provide, no later than 180 days after the

enactment of this Act, a report that quantifies the economic value of the water supply benefits of this research and to provide a briefing no later than 30 days following the completion of the assessment. Further, upon completion of the regional assessment, Reclamation is directed to begin preliminary site-specific economic assessments of water supply and conservation benefits of FIRO at Section 7 reservoirs.

Impact of Dissemination:

Under Reclamation policy CMP TRMR-30 Peer Review of Scientific Information and Assessments in fulfillment of the Final Information Quality Bulletin for Peer Review (70 FR 2664-2677) and implementation of the Information Quality Act (Pub. L. 106-554) the analysis and outcomes of the FIRO benefits assessment are determined to be an influential scientific assessment. The outcomes of this assessment will inform strategic directions for investing in future FIRO assessments and implementation priorities.

Peer Review Scope:

The subject of this review will consider the information and science used to develop a relative value proposition to inform prioritization of studies of implementation of FIRO at individual reservoirs. Due to the broader spatial scope and the required timeline, the analysis includes simplifying assumptions. The core focus of this review is to provide commentary on whether the assumptions and outcomes are adequately characterized. Peer reviewers are not to provide advice or comment on a policy or decision.

Peer reviewers will be asked to provide responses to the following questions:

Reservoir Operations

- 1) Is the method for analyzing historical reservoir storage patterns for characterizing FIRO opportunities adequately described?
- 2) Does the method of estimating potential FIRO volumes adequately capture the key parameters influencing the capacity of a reservoir for evacuating storage without increasing flood risk?
- 3) Is the overall method for determining potential additional water supply through FIRO concepts adequate for prioritizing future reservoir specific analyses?

Water Value Estimation

- 1) Is the scope focus on the benefits for irrigation and M&I water use sufficient for prioritizing future site specific analyses?
- 2) Is the land value based assessment adequately described and are supporting datasets clearly identified?
- 3) Do the relative spatial patterns of water value across the western U.S. match the expectations informed by expert experience?

Timing of Review:

The review period is expected to be April 24 – May 15, 2015. The final Peer Review Report is expected to be available on the U.S. Bureau of Reclamation Peer Review public website

(<http://www.usbr.gov/main/qoi/peeragenda.html>) by September 30, 2026. No time deferrals are involved.

Methodology of Review:

Review will be conducted by individuals. The identities of the reviewers will be disclosed in the final Peer Review Report. Review findings/comments will be attributed to the individual reviewer.

Number of Peer Reviewers: 2 peer reviewers will be utilized.

Reviewer Selection Process:

One peer reviewers will have at least 10 years' experience with expertise in reservoir operations, water management, and flood hydrology. The second peer reviewer will have at least 10 years' experience in economics and water resources. Peer reviewers will have education, professional experience, and peer recognition in their field, and will have contributed to their field.

Delivery of findings:

The peer review team members will each submit a report of their findings to the Peer Review Lead by the end of the review period. At a minimum, their report will include a brief description of their findings and recommendations in a comment matrix and a peer review checklist. The report will be provided digitally to the Peer Review Lead.

Response to Peer Review:

The Peer Review Report and Reclamation's response to the Report will be published on Reclamation's peer review website (<http://www.usbr.gov/main/qoi/peeragenda.html>).

Federal Register Notice: Federal Register notices will not be provided announcing the formation of a peer review team and completion of the final report.

Applicability of the Federal Advisory Committee Act (FACA):

This peer review is not subject to the Federal Advisory Committee Act (FACA) because the review does not involve open meetings or committee chartering and reviewers are being asked to provide individual reviews on the subject matter. Reclamation is not seeking consensus advice from the reviewers as a group.

Agency contact:

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