Peer Review Report

RiverWare Analysis of Tieton River Fisheries Enhancement and Water Reliability Projects

Date

June 24, 2022 (peer review received April 2022)

Originating office

Bureau of Reclamation, Columbia-Pacific Northwest Region, Regional Office, Boise, Idaho

Reclamation Roles

Director or delegated manager: Jennifer Carrington, Regional Director, Columbia-Pacific Northwest Region, Bureau of Reclamation

Peer Review lead and contact: Michael Poulos, Civil Engineer (Hydrologic), Columbia-Pacific Northwest Region, Bureau of Reclamation

Peer Review Scope

A river and reservoir operations model for the Yakima River basin has been developed in RiverWare as part of the Yakima Basin Integrated Plan, which brings together stakeholders to discuss potential new storage projects and operations within the Yakima River basin. The model was adapted to simulate different new infrastructure and operations scenarios for the Tieton River, which is a tributary of the Naches and Yakima Rivers. The different scenarios are being considered as part of the Tieton River Fisheries Enhancement Project with the goal of replacing the Yakima-Tieton Irrigation District's aging infrastructure while improving system reliability and fish habitat. The purpose of this modeling study was to evaluate the relative effects of the different scenarios on instream flows, irrigation deliveries, and reservoir dynamics under both historical and projected future hydrologic conditions.

The methods and results of this study have been summarized in a technical memorandum. The scientific information presented in the report is considered 'Influential Scientific Information', as defined by the Office of Management and Budget (Bulletin M-05-03) and the Bureau of Reclamation (Policy CMP P14). The information is influential in that it is expected to be used in decision making processes. Since the report does not provide recommendations or interpretations spanning a range of disciplines, it does not fit the criteria of a 'scientific assessment', nor is it considered "highly influential," according to the referenced documents.

Peer reviewers were asked to review the model documentation, methods, and assumptions related to simulating each alternative and methods used to summarize the results (i.e., how the scientific information was produced).

Peer Reviewers

The peer review was conducted by Reclamation civil engineers (hydrologic) that were not involved in the project. The reviewers were selected based on experience in RiverWare modeling, system operations, climatic and hydrologic change studies, and data analyses.

The following individuals were selected as peer reviewers:

Jonathan Rocha

Title: Civil Engineer (Hydrologic), Water Management – Real-Time Operations, Columbia-Pacific Northwest Region, Bureau of Reclamation
Expertise: River and reservoir real-time operations and modeling; data analyses

Sophie Wilderotter

Title: Civil Engineer (Hydrologic), Water Management – Long-Term Operations and Planning, Columbia-Pacific Northwest Region, Bureau of Reclamation
Expertise: Modeling of river and reservoir operations and future climate projections; data analyses

Summary of Reviewer Comments, Responses, and Corresponding Changes

Peer reviewers were specifically asked to provide responses relative to four questions:

1. Are the assumptions clearly explained in the documentation of the modeling analysis?
    - Both reviewers stated the model assumptions were sufficient but suggested clarifying and reorganizing some of the model assumptions. Explanations addressing these suggestions were added and the relevant sections were reorganized.
2. Does the documentation clearly show the effects of the assumptions on the river-reservoir system?
    - The reviewers both responded that the documentation clearly showed the effects of the assumptions on the results.
3. Does the document adequately characterize the uncertainty associated with the analysis?
    - One reviewer suggested clarifying the uncertainties associated with how irrigation users are regulated in real-time operations and adding an uncertainties section. Both suggestions were accepted and addressed by changes to the text.
4. Does the model output reflect reasonable outcomes of the assumptions?
    - Both reviewers agreed the model output accurately reflected the assumptions.

Both reviewers also provided numerous general suggestions and questions. Assuming other readers would raise similar questions, these questions and suggestions were addressed by clarifying and adding details to the text of the main document.