May 6, 2020

VIA ELECTRONIC DELIVERY

7.D. Review Coordinator
Boulder Canyon Operations Office
United States Bureau of Reclamation
PO Box 61470
Boulder City, NV 89006

Re: Comments on U.S. Bureau of Reclamation's "7D" Report Scope and Approach

Dear Sirs and Madams:

On behalf of our respective organizations, thank you for the opportunity to comment on the proposed scope and approach of the Bureau of Reclamation's review ("7.D. Review") of the Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead ("2007 Guidelines").

We understand and recognize the relative merits of the scope and approach for the 7.D. Review as proposed by the Bureau in its March 24 & 31, 2020 webinar presentations. However, we would like to ensure that this proposed scope of review will incorporate several key factors that were not clearly identified by the Bureau in those presentations. As discussed further below, an evaluation of certain additional questions/elements as part of the 7.D. Review would appear to be critical to the stated objective of evaluating the effectiveness of the 2007 Interim Guidelines, including the effectiveness of the Bureau's past operations and actions under the Guidelines with regard to the common themes and stated purposes of the Guidelines.

We respectfully suggest that the following five (5) elements and questions should be addressed within the Bureau's proposed scope of review, as they appear to be inextricably linked to an assessment of the Guidelines' relative level of effectiveness with respect to the three stated purposes of the Guidelines, the adherence to common themes in the Guidelines, the evaluation of the four operational elements identified by the Bureau, and the Bureau's objective documentation of annual operations since 2008.

1. How effectively did the process used to develop and implement the Guidelines (and other subsequent actions) encourage the submission and evaluation of relevant information from a diverse range of stakeholders?

This question will be critical to evaluating the Guidelines' adherence to several of the common themes identified by the Bureau – i.e. (a) preserving "flexibility to deal with further challenges such as climate change and deepening drought"; (b) facilitating "informed decision-making in the Basin"; and (c) addressing "future controversies… through consultation and negotiation… before resorting to litigation". Similarly, this question will be important to evaluating the Guidelines' effectiveness with respect to certain identified purposes – i.e. improving management "by considering trade-offs between the frequency and magnitude of reductions in water deliveries" and "considering the effects on water storage… and on water supply, power production, recreation, and other environmental resources."

For example, Reclamation should assess the following within the scope of the 7.D. Review:

- **Role of Mexico regarding shortage management.** For example:
    - Did Mexico's concerns with certain modeled terms of shortage sharing affect operational experience and the effectiveness of the Guidelines;
    - How did the subsequent Joint Colorado River Cooperative process with Mexico and the later negotiations, including binational technical collaboration and modeling work, result in any operational value gains/effectiveness; and
    - How did the agreements reached with Mexico in Minutes 316, 319, and 323 result in operational value gains/effectiveness?

- **Tribal participation in 2007 Guidelines and subsequent processes.** For example:
    - How was tribal water demand information included in the Guidelines modeling and, if it was not included how did that affect operational experience and effectiveness;
    - How did the subsequent effort to develop the Tribal Basin Study result in operational value gains/effectiveness;
    - Did tribal engagement in Drought Contingency Plan process influence the effectiveness of the Guidelines; and
    - How have tribal entities contributed to system conservation/storage (e.g. Colorado River Indian Tribe and Gila River Indian Community) during the period, and how did that influence the operational experience/effectiveness of the Guidelines?

- **NGO participation in 2007 Guidelines and subsequent processes**. For example:
    - How did the development and consideration of the Conservation Before Shortage alternative (in terms of the operational provisions ultimately implemented) result in operational value gains/effectiveness;
    - What was the value of the NGO roles in the binational negotiations around Minutes 319 and 323; and
    - How did the NGOs' provision of technical expertise and resources for implementing operational actions, such as in the Minutes, Pilot System Conservation Program/System Conservation Pilot Program, and the DCP impact operational experience and effectiveness?

2. Did the Guidelines development process (and other subsequent actions) consider and model a sufficient range of climate, water demand, water risk, and other scenarios?

This question and element will be critical to evaluating the Guidelines' adherence to several of the common themes identified by the Bureau – i.e. (a) planning for shortages; (b) preserving "flexibility to deal with further challenges such as climate change and deepening drought"; and (c) facilitating "informed decision-making in the Basin." Similarly, this question and element will be important to evaluating the Guidelines' effectiveness with respect to at least two of the identified purposes – i.e. (a) improving management "by considering trade-offs between the frequency and magnitude of reductions in water deliveries" and "considering the effects on water storage… and on water supply, power production, recreation, and other environmental resources"; and (b) providing U.S. users "a greater degree of predictability" in annual water deliveries, particularly under "drought and low reservoir conditions."

For example, in the operational period since 2008, Colorado River users have experienced longer and drier hydrologic conditions. In some instances, that has required complex supply and demand management decisions and the development of shortage sharing arrangements, each of which can be time-consuming and sometimes present difficult negotiations. From the standpoint of adherence to those common themes and the evaluation of effectiveness, Reclamation should assess whether the range of climate change impacts and other hydrologic scenarios that were considered as part of the Guidelines and subsequent processes were sufficiently robust; whether demand side analyses were sufficiently accurate or realistic; and whether modeling sufficiently addressed other risk factors relevant to hydrologic risk and creating operational mechanisms to monitor, manage, and mitigate that risk. For example, Reclamation should assess the following within the scope of the 7.D. Review:

- **Adherence/effectiveness of range of modeled climate scenarios.** For example:
    - How did the range of the hydrologic scenarios modeled for the 2007 Guidelines compare to the climate scenarios evaluated in later studies, such as the 2012 Colorado River Basin Water Supply and Demand Study, and those developed in other Colorado River scientific research;
    - To what degree did the range of scenarios assessed in the 2007 Guidelines reflect the hydrologic risk experienced by Colorado River Basin users; and
    - Given actual operating experience, did the policies/actions that were developed based on modeled scenarios of hydrologic risk sufficiently anticipate and consider trade-offs between water deliveries and effects on water storage, power production, recreation and environmental resources?

- **Adherence/effectiveness of evaluated demand schedules/scenarios.** For example:
    - Did the development of multiple demand scenarios for the 2012 Colorado River Basin Water Supply and Demand Study create any operational value gains/effectiveness in comparison to the single demand scenario used to model impacts and future predictions in the 2007 Guidelines;
    - How did the difference in actual demands from the modeled demands in the 2007 Guidelines impact Reclamation's planning and operations; and
    - How did the difference between actual demands and modeled demands impact operations with regard to equalization tier releases in comparison to what had been expected during the development of the Guidelines?

- **Adherence/effectiveness of evaluated and modeled risk factors.** For example:
    - How accurate were the CRSS-based probabilistic analyses utilized in the 2007 Guidelines in assessing water supply risk, and how did this affect operations/effectiveness; and
    - Did the CRSS-based probabilistic analysis in the Guidelines provide a mechanism to assess the trade-offs between water deliveries and risks/effects on water storage, power production, recreation, and environmental resources?

- **Adherence/effectiveness of ongoing model refinements.** For example:
    - How did the resources available for improving the CRSS model, MTOM model, and other operational models allow Reclamation to address risk assessment needs; and
    - To what extent have model refinements improved Reclamation's ability to conduct environmental flow vulnerability assessments as developed in the 2012 Colorado River Basin Supply and Demand Study?

3. <u>How well did the Guidelines development process (and other subsequent actions) consider and model scenarios for use of the operating Guidelines?</u>

This question and element will be critical to evaluating the Guidelines' adherence to at least two of the common themes identified by the Bureau – i.e. (a) planning for shortages; and (b) facilitating "informed decision-making in the Basin." Similarly, this question and element will be important to evaluating the Guidelines' effectiveness with respect to at least two of the identified purposes – i.e.(a) improving management "by considering trade-offs between the frequency and magnitude of reductions in water deliveries" and "considering the effects on water storage… and on water supply, power production, recreation, and other environmental resources"; and (b) providing U.S. users "a greater degree of predictability" in annual water deliveries, particularly under "drought and low reservoir conditions."

For example, since 2008, Basin users have encountered several unforeseen implications of the operational provisions such as conflict over Lake Powell releases under the equalization tier system and potentially severe consequences for Lake Mead storage from potential maximum ICS withdrawal by the Lower Basin states. Reclamation should assess the following within the scope of the 7.D. Review:

- **Impacts from actual creation, storage, and delivery of ICS.** For example:
    - How did the scenarios modeled for creation, storage, and delivery of ICS in the 2007 Guidelines compare to the actual use of ICS / operational experience over the period;
    - How did the shortage risk estimates in the 2007 Guidelines compare to the shortage risk estimates done during the DCP negotiations with a range of ICS withdrawal scenarios; and
    - Did the 2007 Guidelines ICS delivery rules create an incentive to withdraw ICS prior to imposition of stricter delivery rules during potential shortages, and did this have any impact on operations/effectiveness?

- **Impacts of changes in delivery volumes year-to-year.** For example:
    - Did the actual operation of the 2007 Guidelines create opportunities for users to alter delivery schedules in a manner that would affect releases between Lake Mead and Lake Powell?

4. How did the Guidelines (and other subsequent actions) enable flexible supporting governance and decision-making frameworks to allow for operations to adapt to changing conditions, including through the "mid-year review"?

This question and element will be critical to evaluating the Guidelines' adherence to at least one of the common themes identified by the Bureau – i.e. preserving "flexibility to deal with further challenges such as climate change and deepening drought." Similarly, this question and element will be important to evaluating the Guidelines' effectiveness with respect to at least one of the identified purposes – i.e. providing U.S. users "a greater degree of predictability" in annual water deliveries, particularly under "drought and low reservoir conditions."

Since 2008, Basin users have had to work together on a series of challenges and efforts related to the ongoing implementation of the Guidelines, and Reclamation should assess the following within the scope of the 7.D. Review:

- **Adherence/effectiveness of consultation measures.** For example:
    - Did the 2007 Guidelines' critical low-elevation consultation provisions requiring the Secretary to consult with the Basin States create measures that prevented Lake Mead from falling further; and
    - Was the 2007 Guidelines' consultation process effective in engaging other stakeholders (NGOs/tribes/cities) for discussions on measures to prevent Lake Mead's elevation from falling below critical levels?

- **Adherence/effectiveness of decision-making process**. For example:
    - How did the Guidelines and subsequent actions like the Minutes, SCPP, and DCP include or exclude the interested/affected parties and the public in the decision-making process;
    - What was similar or different in the decision-making process between the Guidelines and the needed subsequent actions (e.g. DCP), why were they different, and were there operational/effectiveness results; and
    - Did the Guidelines and subsequent actions allow flexibility to base decisions on improved data that was obtained from subsequent advances in technology tools, such as Lidar (light detection and ranging) measurements of snow pack water content?

5. How well did the development process for the Guidelines (and other subsequent actions) and the models used to guide implementation of the same provide information to decisionmakers?

This question and element will be critical to evaluating the Guidelines' adherence to at least two of the common themes identified by the Bureau – i.e. (a) planning for shortages; and (b) facilitating "informed decision-making in the Basin." Similarly, this question and element will be important to evaluating the Guidelines' effectiveness with respect to at least one of the identified purposes – i.e. improving management "by considering trade-offs between the frequency and magnitude of reductions in water deliveries" and "considering the effects on water storage… and on water supply, power production, recreation, and other environmental resources."

Since 2008 the implementation of the Guidelines and subsequent actions, such as DCP, have been strongly influenced by outside resources and issues that were not necessarily evaluated during the

Guidelines development or in subsequent processes. Reclamation should assess the following within the scope of the 7.D. Review:

- **Impact of limited resolution above CRSS nodes.** For example:
    - Did the resolution of the CRSS nodes and model results used to develop and administer the 2007 Guidelines and subsequent actions provide an adequate range of outcomes to assess risks and consider trade-offs, particularly under low-flow scenarios; and
    - Did the CRSS model provide adequate information to analyze the benefits and costs of conservation efforts undertaken in Upper Basin under the PSCP/SCPP?

- **Impact of not modeling interconnected resources management.** For example:
    - Given actual operating experience, did the 2007 Guidelines adequately consider the effects of its operational provisions on interconnected resources;
    - How did the various operational provisions and incentives in the Guidelines impact water delivery and storage decisions made in connection to resources such as the Salton Sea or the Cienega de Santa Clara; and
    - How have the 2007 Guidelines interconnected with other U.S. Department of the Interior processes such as the Glen Canyon Dam Adaptive Management Work Group, Glen Canyon Dam Long-Term Experimental Management Plan, Upper Colorado River Endangered Fish Recovery Program, San Juan River Basins Recovery Implementation Program, Lower Colorado River Multi-Species Conservation Program?

Conclusion

In summary, we propose that these specific questions and elements be addressed within the Bureau's proposed scope for the 7.D. review, as they appear to be critical to the Bureau's evaluation of the effectiveness and the operational experience of the 2007 Guidelines. Lessons learned in connection with these elements could also have significant value to stakeholders as we begin to collectively consider potential approaches to updating or continuing the Interim Guidelines in 2026.

Again, thank you for the opportunity to comment on the proposed scope and approach for the 7.D. Review. We look forward to continuing to work with the Bureau on these important issues for sustainably managing our critical Colorado River resources.

Sincerely,

American Rivers | Environmental Defense Fund | National Audubon Society

The Nature Conservancy | Theodore Roosevelt Conservation Partnership

Trout Unlimited | Western Resource Advocates