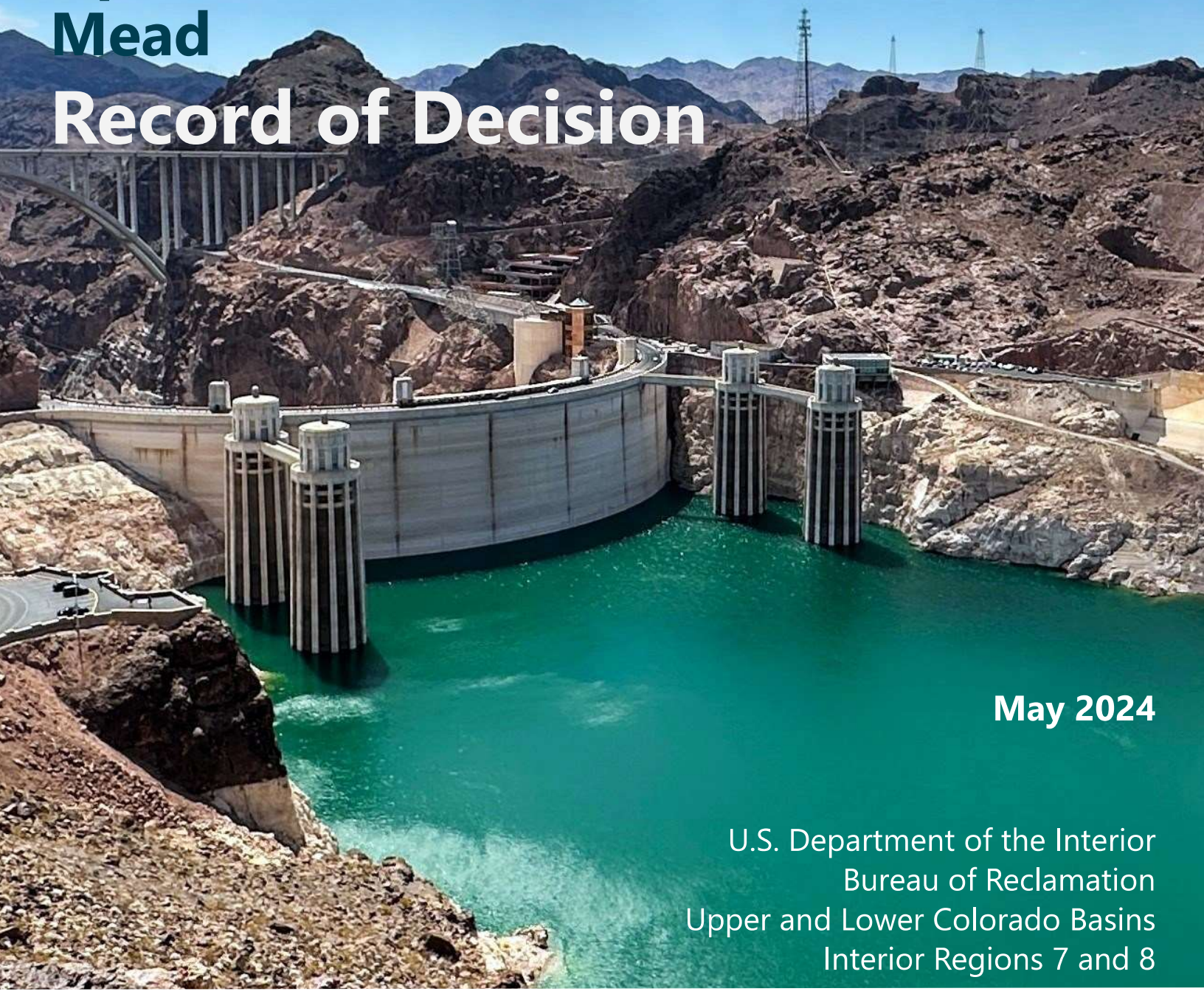
BUREAU OF RECLAMATION

Supplement to the 2007 Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead

Record of Decision



May 2024

U.S. Department of the Interior
Bureau of Reclamation
Upper and Lower Colorado Basins
Interior Regions 7 and 8

BUREAU OF
RECLAMATION

Mission Statements

The **Department of the Interior** protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

The mission of the **Bureau of Reclamation** is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Photo by Connie Castle, Bureau of Reclamation, 2023, Flickr.com

The water level behind the Hoover Dam on July 28, 2023.

Record of Decision

Near-term Colorado River Operations

Recommending Official:

Digitally signed by MARIACAMILLE TOUTON
Date: 2024.04.30 16:14:20 -04'00'

Date 4/30/24

Camille Calimlim Touton
Commissioner, Bureau of Reclamation

Approved:

Date **MAY 06 2024**

Deb Haaland
Secretary of the Interior

This page intentionally left blank.

Contents

I. Introduction

The Colorado River Basin (Basin) provides essential water supplies to approximately 40 million people, nearly 5.5 million acres of agricultural lands, hydroelectric renewable power, recreational opportunities, habitat for ecological resources, and other benefits across the western United States and northwestern United Mexican States (Mexico). The Basin occupies an area of approximately 250,000 square miles in the western United States and 3,500 square miles in northwestern Mexico. The Colorado River Compact of 1922 (Compact) divided the Colorado River system into two sub-basins, the Upper Basin and the Lower Basin, and divided the seven states within the Basin into the Upper Division and the Lower Division. Upper Division states include Colorado, New Mexico, Utah, and Wyoming, and the Lower Division includes Arizona, California, and Nevada. There are 30 federally recognized Tribes in the Basin.

The Secretary of the Interior (Secretary) is vested with the responsibility to manage the mainstream waters of the lower Colorado River and operate federal facilities pursuant to applicable federal law. The Department of the Interior's (Department) Bureau of Reclamation (Reclamation) is tasked with operating facilities in both the Upper and Lower Basins.

Reclamation, the Department, Colorado River Basin States (Basin States), Mexico, Tribes, and other Basin water users have undertaken a series of intensive efforts to respond to the extended drought and historically low reservoir levels in the Basin. In December 2007, the Department signed the Record of Decision (ROD) for the Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead (2007 Interim Guidelines ROD; DOI 2007). The 2007 Interim Guidelines, which were anticipated to be in place through 2026, provide operating criteria for Lake Powell and Lake Mead, including provisions designed to provide a greater degree of certainty to water users about timing and volumes of potential water delivery reductions, and additional operating flexibility to conserve and store water in the system.

The 2007 Interim Guidelines adopted ranges of releases from Glen Canyon and Hoover Dams that were linked to reservoir elevations in Lake Powell and Lake Mead, respectively. The 2007 Interim Guidelines were adopted for a limited period ("interim") to provide an opportunity for Reclamation and interested entities to gain valuable experience for the management of Lake Powell and Lake Mead under modified operations, with the goal of improving the analytical bases for making future operational decisions, whether during the interim period or after.

Despite the 2007 Interim Guidelines and other initiatives, such as the 2019 Drought Contingency Plan (DCP; Public Law 116-14) Colorado River water supplies continue to decline, resulting in historically low reservoir levels at Lake Powell and Lake Mead. Absent a meaningful and unexpected change in hydrologic conditions and trends, water use patterns, or both, Colorado River reservoirs will continue to decline to critically low elevations, threatening essential water supplies across seven states in the United States and two states in Mexico. Although hydrology improved in 2023, it is foreseeable that without appropriate responsive actions and under a continuation of poor hydrologic

trends, major Colorado River reservoirs could continue to decline to "dead pool" in the coming years.

Given the declining reservoir elevations, the anticipated continuing trend of low-runoff conditions, and the need to protect infrastructure and Colorado River operations, the Department published a Notice of Intent (NOI) in the Federal Register on November 17, 2022. The NOI provided the public with the Department's intent to "promptly identify and analyze modified operating guidelines to address current and foreseeable hydrologic conditions" (87 Federal Register 69042, 69043 (November 17, 2022)). Under the 2007 Interim Guidelines, 2019 DCPs, and related agreements, Reclamation lacks the operational tools necessary to address projected extreme drought conditions and is prioritizing implementation of near-term actions to stabilize the decline in reservoir storage and prevent system collapse. The modification of operating guidelines noted in the Federal Register notice is focused on the 2023–2026 period (i.e., the remainder of the interim period). Any actions adopted pursuant to this Supplemental Environmental Impact Statement (SEIS) process would be separately developed from operational planning for the period beyond 2026; however, these tools may inform such later planning.

This ROD for the Supplement to the 2007 Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead (2024 Near-term Colorado River Operations ROD) is limited to adjustments made to the 2007 Interim Guidelines ROD, which is incorporated by reference. Any effects of other authorities after 2007, such as the 2019 DCPs, are described in **Section IX.B** of this 2024 Near-term Colorado River Operations ROD.

II. Decision

The decision is to adjust the 2007 Interim Guidelines for Lower Basin shortages and coordinated operations of Lake Powell and Lake Mead as described under **Section IX** of this 2024 Near-term Colorado River Operations ROD.

This ROD revises the 2007 Interim Guidelines for the near-term operation of Glen Canyon and Hoover Dams to address the potential for continued low-runoff conditions in the Basin. Reclamation has concluded that the potential impacts of low-runoff conditions pose unacceptable risks to routine operations of Glen Canyon and Hoover Dams during the remainder of the interim period (through the end of the 2026 operating year) and that modified operating guidelines need to be expeditiously developed.

The Preferred Alternative proposed to modify the following sections of the 2007 Interim Guidelines ROD:

- Section 2. Determination of Lake Mead Operation During the Interim Period. Reclamation analyzed Section 2.D, Shortage Conditions, to determine possible decreases in the quantity of water that would be apportioned for consumptive use in the Lower Division States.

- Section 6. Coordinated Operation of Lake Powell and Lake Mead During the Interim Period. Reclamation analyzed a revision of Sections 6.C, Mid-Elevation Release Tier, and 6.D, Lower Elevation Balancing Tier, to reduce the quantity of water released from Glen Canyon Dam.
- Section 7. Implementation of Guidelines. Reclamation analyzed a revision of Section 6.C, Mid-Year Review.

III. Background

The period from 2000 through 2022 is the driest 23-year period in more than a century and one of the driest periods in the last 1,200 years. This drought in the Basin has reduced Colorado River system storage, despite increasing conservation efforts in the Colorado River Basin.

Currently, the Department does not have adequate operational guidelines in place to address the operations of Lake Powell and Lake Mead during these extreme drought and low reservoir conditions. Accordingly, the Secretary, acting through Reclamation, proposed supplemental Colorado River Lower Basin shortage guidelines and coordinated reservoir management strategies to address operations of Lake Powell and Lake Mead, particularly under extreme drought and low reservoir conditions that could occur during the remainder of the interim period (through the end of the 2026 operating year). This action is proposed in order to provide a greater degree of certainty to United States Colorado River water users and managers of the Basin by providing detailed and objective guidelines for the operations of Lake Powell and Lake Mead.

IV. Alternatives Considered

The purpose of the SEIS is to supplement the 2007 Interim Guidelines to modify guidelines for operation of the Glen Canyon and Hoover Dams to address historic drought, historically low reservoirs, and low-runoff conditions in the Basin. The need for the modified operating guidelines is based on the potential that continued low-runoff conditions in the Basin could lead Lake Powell and Lake Mead to decline to critically low elevations, impacting operations through the remainder of the interim period (through the end of the 2026 operating year).

A. No Action Alternative

The No Action Alternative describes the continued implementation of existing agreements that control operations of Glen Canyon and Hoover Dams. These include the 2007 Interim Guidelines for the remainder of the interim period (through the end of the 2026 operating year) and agreements adopted pursuant to the DCPs. Continuing current operations of Lake Powell and Lake Mead in extreme low-runoff scenarios would create the potential for water levels in one or both reservoirs to

decline below minimum power pool, thereby limiting operation of Glen Canyon Dam or Hoover Dam, or both, to provide water supplies in the Basin. The No Action Alternative would perform worse than the Preferred Alternative in meeting the federal action's purpose of and need for ensuring "that Glen Canyon Dam continues to operate under its intended design" and protecting "Hoover Dam operations, system integrity, and public health and safety."

B. Preferred Alternative

The Preferred Alternative would modify and/or add to the following sections of the 2007 Interim Guidelines ROD published at 73 *Federal Register* 19881 (April 11, 2008):

- Section 2. Determination of Lake Mead Operation During the Interim Period
- Section 6. Coordinated Operation of Lake Powell and Lake Mead During the Interim Period
- Section 7. Implementation of Guidelines

This alternative describes a set of actions adopted pursuant to Secretarial authority under applicable federal law. The Preferred Alternative models changes to operations for both Glen Canyon Dam and Hoover Dam. The Preferred Alternative includes assumptions for a total of 3.0 maf of SEIS conservation through 2026, with a minimum of 1.5 maf physically conserved by the end of calendar year 2024. This additional conservation would be added onto 2007 Interim Guidelines shortages and DCP contributions and would be implemented across a range of elevations in Lake Mead.

Under the Preferred Alternative, tier-based reductions and contributions would be limited to the existing 2007 Interim Guidelines, Lower Basin DCP, and "Extension of Cooperative Measures and Adoption of a Binational Water Scarcity Contingency Plan in the Colorado River Basin" (Minute 323) to the 1944 Treaty with Mexico for "Utilization of waters of the Colorado and Tijuana Rivers and of the Rio Grande" (1944 Treaty). Glen Canyon Dam operations would remain consistent with the existing 2007 Interim Guidelines except if Lake Powell is in the Middle Elevation Release Tier or Lower Elevation Balancing Tier, when a mid-year adjustment could be made to reduce the annual volume to no less than 6.0 maf. This mid-year adjustment would be permissible only if the minimum probable scenario in the 24-Month Study shows Lake Powell dropping below 3,500 feet at any point in the following 12 months.

Whenever Lake Mead's content is projected to be below an elevation of 1,025 feet, based on the April 24-Month Study minimum probable projection, the Lower Division States, after consultation with the Upper Division States, would have 45 calendar days to provide Reclamation with an implementation plan to protect Lake Mead from reaching an elevation of 1,000 feet. If an implementation plan is not acceptable to Reclamation, then Reclamation may take additional action to protect a surface elevation of 1,000 feet.

SEIS conservation up to 2.3 maf is anticipated to be federally compensated. Any remaining required SEIS conservation may be compensated by state or local entities or uncompensated.

All or a portion of the remaining required SEIS conservation may be offset with intentionally created surplus (ICS) created in 2023–2026. Any such ICS created in 2023–2026, less the system assessment in the year of creation, cannot be ordered for delivery, transfer, or assignment of the ICS at any time before December 31, 2026. Because of the limitation on ICS accumulation space, some conserved water intended to become ICS may instead become system water, which is an uncompensated addition of system water.

For all operations within the scope of the 2007 Interim Guidelines, the Secretary reserves the right to operate Reclamation facilities to address extraordinary circumstances, as described in Sections 6 and 7(D) of the 2007 Interim Guidelines ROD, including "operations that are prudent or necessary for safety of dams, public health and safety, other emergency situations, or other unanticipated or unforeseen activities arising from actual operating experience." The Preferred Alternative does not identify additional involuntary shortages beyond those already described in the 2007 Interim Guidelines and DCPs. Reclamation would consult and coordinate with Tribes, states, and other water users before applying any additional involuntary shortages to protect Lake Mead from reaching an elevation of 1,000 feet or to otherwise address extraordinary circumstances.

Environmentally Preferred Alternative

The Preferred Alternative is designated as the Environmentally Preferred Alternative. As described in the Final SEIS, the Preferred Alternative addresses critical elevations at Lake Powell and Lake Mead, thus best allowing the water stored in these reservoirs to be released for appropriate environmental purposes. The purpose of the Preferred Alternative is to mitigate impacts from ongoing trends in the Colorado River System. Continuing with current operations through 2026 would likely result in adverse effects on environmental justice communities, socioeconomics, and Indian Trust Assets. Biological mitigation measures have been identified in the Biological Opinions issued by the US Fish and Wildlife Service related to this SEIS. For these same reasons, the Preferred Alternative is also the most effective alternative to avoid and minimize any environmental harm from implementation.

C. Original Action Alternatives 1 and 2

Reclamation initially considered Action Alternatives 1 and 2 from the Original Draft SEIS. Action Alternative 1 included assumptions for reduced releases from Glen Canyon Dam and additional Lower Basin shortages based on priority. Action Alternative 2 included assumptions for reduced releases from Glen Canyon Dam and additional Lower Basin shortages that were not based exclusively on priority. During the initial public comment period, Reclamation received comments on perceived flaws of Action Alternatives 1 and 2. Among the input Reclamation received was a Lower Division State proposal, and all seven States requested that Reclamation analyze the Lower Division State proposal in the SEIS. As a result, the Department withdrew the Original Draft SEIS on May 22, 2023, to develop and analyze the Lower Division State proposal. After analysis, Reclamation designated the Lower Division State proposal as the Preferred Alternative. Reclamation described that the Preferred Alternative provides additional risk reduction, compared with Action Alternatives 1 and 2, while implementing similar flow reductions; therefore, Action Alternatives 1 and 2 were eliminated from detailed analysis in the Revised Draft SEIS and Final SEIS.

V. Basis for Decision

The Department selected the Preferred Alternative based on the Department's determination that it best meets all aspects of the purpose and need for the federal action, including: the need for the modified operating guidelines based on the potential that continued low-runoff conditions in the Basin could lead Lake Powell and Lake Mead to decline to critically low elevations, impacting operations through the remainder of the interim period. The Preferred Alternative will allow Reclamation to operate Glen Canyon Dam and Hoover Dam until further policies can be implemented after 2026.

VI. Public Response to the Final Supplemental Environmental Impact Statement and Draft Record of Decision

Reclamation published the Notice of Availability of the Final SEIS in the *Federal Register* on March 8, 2024, for a 30-day public review period. In addition, Reclamation released the Draft ROD to Tribes and states for comments between April 9 and 24, 2024. As of April 25, 2024, Reclamation had received nine letters on the Final SEIS and/or Draft ROD. Two of the letters stated that the stakeholder had no comments. Some comments recommended actions that should be considered as part of the Post-2026 EIS planning effort. Others provided suggested changes to the ROD that have been incorporated. For example, Reclamation added information describing the process for notification and coordination, including Tribal consultation, and on steps to be taken if the 24-Month Study describes any minimum probably projections of Lake Powell reaching 3,500 feet in the next 12 months.

One comment stated that the majority of the 3.0 maf of SEIS conservation contemplated in the proposed action had not yet been contracted and is therefore still speculative. However, as of April 25, 2024, Reclamation had executed contracts for approximately 1.59 maf of system conservation water and is actively working on additional conservation agreements to be signed in 2024, which would add approximately 0.7 to 0.8 maf through 2026. In addition, non-compensated, by Federal funds, conservation totaled approximately 0.62 maf in calendar year 2023 with additional non-compensated conservation projected in 2024 through 2026. Three comments requested further clarification on tools and authorities that Reclamation may use to implement this ROD or to specifically list actions that would occur before implementing this ROD. Reclamation declined to add specific examples to the text to ensure that all tools and authorities are viewed as available instead of only those that may be listed in this text.

VII. Refinement of Operational Guidelines for the Preferred Alternative in Response to Public Comments

A. Public Comment Considerations

In response to public, Tribal, and agency comments on the revised Draft SEIS, several additions were made to the chapters and appendixes in the Final SEIS. No changes to the Preferred Alternative or alternatives were required because of comments. The responses to comments in the Response to Public Comments report (Appendix H of the Final SEIS) note when and where text has been changed in the SEIS based on a specific comment. A summary of changes is as follows:

- Updated water quality figures to represent current modeling results and analysis
- Added acreage of marsh and cottonwood-willow vegetation in the Hoover Dam to Southerly International Boundary with Mexico (SIB) reach that could be affected under the Preferred Alternative
- Added a table to summarize land cover types from Lake Mead to the SIB
- Added two tables to demonstrate the predicted changes in native and nonnative species under the no action alternative
- Updated water quality affected environment to more explicitly acknowledge that salinity control efforts also occur on federal lands
- Updated water quality figures (Exceedance Probability for Temperature and Salinity Concentrations in Glen Canyon Dam Releases, Predicted Release Salinity Concentration [mg/L] from Glen Canyon Dam over the 5-Year Simulation Period, Projected Release Temperatures from Glen Canyon Dam over the 5-Year Simulation Period for Each Selected Trace and Management Scenario, Box Plots Showing the Number of Days with an Average Glen Canyon Dam Release Temperature over 16°C [60.8°F] for All CRMMS Traces and Each Alternative for Operating Years 2023-2026, and Box Plots Showing the Number of Days with an Average Glen Canyon Dam Release Temperature over 20°C [68°F] for All CRMMS Traces and Each Alternative for Operating Years 2023-2026) to accurately represent modeling results and analysis
- Updated water quality sediment cumulative effects section to include the proposed flow options for the LTEMP SEIS
- Updated discussion of safe whitewater boating threshold
- Updated the documentation of public involvement and Tribal coordination efforts

Between the revised Draft and Final documents, Reclamation reviewed the current hydrology to determine if it warranted changes to the analysis. Based on this review, Reclamation determined that

the hydrology used in the revised Draft SEIS analyzed a range of hydrology for June 2023 – September 2024 even drier than recent forecasts. Additionally, since the analyses are not intended to suggest actual probabilities but rather compare performance across alternatives, and because it is intended to analyze operational strategies across a wide range of low-flow hydrologic scenarios, the hydrology used in the revised Draft SEIS is sufficient and did not warrant any revisions.

B. Operational Considerations (New)

Dry hydrology in recent years has resulted in low elevations at Lake Powell/Glen Canyon Dam, providing operating experience and an opportunity to assess facility performance at these low elevations (for example, 3,490 feet, Glen Canyon Dam's minimum power pool). Reclamation is learning from these low-elevation operations and will continue to refine the operating parameters for Glen Canyon Dam and other facilities to incorporate new information and operating experience as they become available. Since the publication of the revised Draft SEIS, Reclamation has obtained additional information about enhanced risks of relying on the river outlet works at Glen Canyon Dam, particularly as the exclusive means of releasing water at low elevations for sustained periods of time. Reclamation has recently developed Interim Operating Guidance for Glen Canyon Dam during Low Reservoir Levels at Lake Powell to address the potential for negative consequences associated with the long-term operation of the river outlet works at Glen Canyon Dam at low reservoir levels. This Interim Operating Guidance indicates that Reclamation will exercise the full extent of operational capabilities within the Upper Colorado Basin to attempt to maintain reservoir level at or above elevation 3,490 feet, minimum power pool, to allow redundant downstream delivery of water through the penstocks and river outlet works if needed. The Final SEIS modeled the possible occurrences of Lake Powell dropping below elevation 3,490 feet through 2026. Under the Preferred Alternative, the percentage of traces falling below 3,490 feet is 0 percent in 2024 and 2025 and 2 percent in 2026. Reclamation will continue to evaluate these risks and any appropriate mitigation and remedial measures and will manage Glen Canyon Dam accordingly.

VIII. Environmental Impacts and Implementation of Environmental Commitments

Hydrologic modeling of the Colorado River system was conducted to determine the potential hydrologic effects of the alternatives. Modeling provided projections of potential near future Colorado River system conditions (i.e., reservoir elevations, reservoir releases, river flows) for comparison of those conditions under the No Action Alternative to conditions under the Preferred Alternative. Due to the uncertainty with regard to future inflows into the system, multiple ensembles were modeled in order to estimate a reasonable range of uncertainties of future conditions.

Hydrologic modeling also provided the basis for the analysis of the potential effects of each alternative on other environmental resources. The Final SEIS evaluated the following resource areas: hydrologic resources, water deliveries, water quality, air quality, visual resources, cultural resources, paleontological resources, biological resources, recreation, electrical power resources, socioeconomics, environmental justice, and Indian trust assets. The potential effects on specific resources were identified and analyzed for the No Action Alternative and Preferred Alternative.

It is important to note that Reclamation has been undertaking environmental mitigation measures on the Colorado River during the past 20 years through both the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) and the Glen Canyon Dam Adaptive Management Program (GCDAMP). Based on the analyses in the SEIS, the ongoing mitigation being conducted under these programs and the new conservation measures described below (to be implemented by the LCR MSCP and GCDAMP), Reclamation determined that additional specific measures to avoid or mitigate environmental harm were not required.

A. Lower Colorado River Multi-Species Conservation Program

The LCR MSCP is a 50-year cooperative effort between federal and non-federal entities, approved by the Secretary in April 2005. This program was developed to address potential effects to listed and other selected special status species (covered species) from identified ongoing and future anticipated federal discretionary actions and non-federal activities on the lower Colorado River (covered actions). When established in 2005, the Biological Opinion (BO) issued by the US Fish and Wildlife Service (USFWS) for the LCR MSCP provided Endangered Species Act (ESA) compliance for the effects of covered actions. When the ROD was signed for the 2007 Interim Guidelines, the ESA compliance provided by the LCR MSCP was sufficient to allow for full implementation of the 2007 Interim Guidelines. In 2022, a new BO was issued for the LCR MSCP to allow for annual flow reductions to accommodate implementation of the Lower Basin DCP and the 500 Plus Plan.[1] In 2024, in response to the purpose and need identified in the SEIS, a new BO was issued for the LCR MSCP to allow for annual flow reductions in a range of 2.083 maf up to 3.0 maf through January 2028. The annual reduction in flow coverage provided by the BO will allow for implementation of the Preferred Alternative as described in **Section X**.

The LCR MSCP identified, and is mitigating for, impacts on the covered species and their habitats from the flow reductions described above. The analyses completed in 2005 and 2022 estimated these impacts to include the potential loss of up to 2,008 acres of cottonwood-willow habitats, 140 acres of marsh habitat, and 414 acres of backwater habitat. The analysis completed under the 2024 BO estimated additional impacts resulting in the potential loss of 41 acres of marsh habitat and 109 acres of backwater habitat.

[1] Recognizing the history of low-runoff conditions and the variability of flows in the Basin, workgroups concluded an additional 500,000 af or more per year of additional reductions in water use were required. The plan was to conserve additional water above what is required under a Lower Basin shortage condition and contributions under the Lower Basin DCP. The 500 Plus Plan's parties identified and are funding projects in each of the three Lower Division States. The projects include Tribal, agricultural, and municipal water users.

To offset these impacts, the LCR MSCP will continue implementation of all conservation measures established in 2005 and 2022 including:

- creation and long-term management of 5,940 acres of cottonwood-willow habitat
- creation and long-term management of 527 acres of marsh habitat
- creation and long-term management of 375 acres of backwater habitat
- stocking of 660,000 razorback sucker over the term of the LCR MSCP
- stocking of 620,000 bonytail over the term of the LCR MSCP
- a suite of additional avoidance and minimization measures, monitoring and research measures, and species-specific conservation measures.

To offset the impacts associated with the Preferred Alternative, the LCR MSCP will create and manage through the term of the LCR MSCP an additional 41 acres of marsh habitat and an additional 109 acres of backwater habitat. In addition to the habitat creation conservation measures described above, the LCR MSCP will also implement additional avoidance and minimization measures and monitoring and research measures that target the impacts of the Preferred Alternative.

These habitats will be actively managed to provide habitat values greater than those of the impacted habitats. While the LCR MSCP is geared toward special status species, it is important to understand that all species that use the habitats impacted by the LCR MSCP covered activities benefit by the conservation actions currently being carried out under the LCR MSCP.

B. Glen Canyon Dam Adaptive Management Program

The GCDAMP provides an organization and process for cooperative integration of dam operations, downstream resource protection and management, and monitoring and research information, as well as to improve the values for which the Glen Canyon National Recreation Area and Grand Canyon National Park were established. The GCDAMP works within the operating guidelines of the LTEMP for sub annual operations of Glen Canyon Dam. Under ESA section 7(a)(2) Reclamation consulted with the USFWS on the Preferred Alternative specifically to address impacts on ESA listed species if annual water release volumes from Lake Powell are reduced to 6.0 maf/year.

Reclamation will implement the following conservation measures as part of this action:

- Reclamation will design and implement a study to evaluate fish entrainment through Glen Canyon Dam.

  An evaluation of fish entrainment could provide details to improve predictive models that indicate propagule pressure of Smallmouth Bass or other non-native species at different Lake Powell elevations (Eppehimer et al. 2024). Further, analysis of fish passthrough can provide a better understanding of fish assemblages, water temperature, and other aspects of water quality that passthrough the dam into the Colorado River below Glen Canyon Dam. The result of this study will help Reclamation and the National Park Service (NPS) identify,

manage, and minimize threats from non-native fish from Lake Powell in the Colorado River below Glen Canyon Dam.

- Reclamation will support an annual monitoring of backwaters and other low velocity habitats for non-native fishes.

  Backwaters and low-velocity habitats may be the first habitats to be invaded by warm-water non-native species of fish. Further, these locations are high value habitats to young Humpback Chub and Razorback Sucker. Thus, additional evaluation of these habitats during stress events associated with lower water will provide critical data on current distribution and overlap between species such as Smallmouth Bass and Humpback Chub (Smallmouth Bass Ad Hoc Group 2023).

- Reclamation will pursue the potential to manipulate flows to reduce the temperature to benefit Humpback Chub and disadvantage warmwater species.

  Reducing the temperature in the mainstem of the Colorado River below Glen Canyon Dam is expected to have a beneficial effect to Humpback Chub by limiting the numbers of warm-water non-native species such as Smallmouth Bass. Flow manipulations that require the use of bypass tubes or outlet works from the dam could pull cooler water into the outflow and reduce the water temperature below the dam thereby limiting Smallmouth Bass spawning and growth (Yackulic et al. 2024). Flow manipulations that dewater habitat for Smallmouth Bass by drawing down the outflow from the hydropower generating tubes could disrupt nesting.

- Reclamation's Upper Colorado Regional Office and the LCR MSCP will coordinate on and fund efforts to better understand movements of non-native species from below Pearce Ferry Rapid into the Grand Canyon.

  Pearce Ferry Rapid is considered a partial barrier to the movement of fishes between Lake Mead and the western Grand Canyon. Historically, predatory fish from Lake Mead (for example, striped bass) would move into the western Grand Canyon but may have been recently limited by the rapid that occurs above the inflow/delta at Lake Mead. Evaluating this region and the fish passage through it will allow management agencies to identify future actions that may protect native fish populations from non-native species in Lake Mead.

- Reclamation's Upper Colorado Regional Office will convene an expert science panel (that includes representation from the Humpback Chub Recovery Team and management agencies) that's purpose would be to determine which Humpback Chub population dynamics in the western Grand Canyon population should trigger conservation interventions to prevent population decline.

  The panel's responsibility would be to evaluate population dynamics in this reach and recommend conservation intervention measures that might be undertaken. This process could be similar to and follow the management triggers plan developed for the Little Colorado River population of Humpback Chub for the LTEMP BO (USFWS 2016). This plan would be developed prior to the post-2026 plan for GCD operations so as to consider these intervention measures for inclusion in that plan.

C. Endangered Species Act Compliance

In compliance with the ESA, Reclamation submitted two Biological Assessments (BAs) to USFWS and requested formal consultation on the Preferred Alternative. Reclamation divided the analysis of potential effects on listed species into two geographic areas: Lake Powell to the upper end of Lake Mead and Lake Mead to the SIB. The Lower Basin LCR MSCP BA was submitted on October 11, 2023, and the Upper Basin GCDAMP BA was submitted on October 6, 2023.

Reclamation has reviewed the effects of the Preferred Alternative in the Final SEIS and has determined that all potential effects to listed species and their habitats along the Colorado River from the full pool elevation of Lake Mead to the SIB are covered by the Lower Basin LCR MSCP.

Reclamation has reviewed the effects of the Preferred Alternative in this Final SEIS and has determined that all potential effects to listed species and their habitats from full pool Lake Powell to the inflow of the Colorado River into Lake Mead are covered by the GCDAMP.

USFWS issued two BOs for the Preferred Alternative dated April 8, 2024, for the LCR MSCP BO and dated April 8, 2024, for the GCDAMP BO. The LCR MSCP BO concurred with Reclamation's "likely to adversely affect" findings for the seven species (northern Mexican gartersnake, Yuma Ridgway's rail, southwestern willow flycatcher, western yellow-billed cuckoo, humpback chub, bonytail, and razorback sucker) addressed in the BA and found that the adverse effects would not jeopardize the continued existence of those species. The GCDAMP BO concurred with Reclamation's "likely to adversely affect" findings for the razorback sucker and humpback chub and Reclamation's "not likely to adversely affect" findings for the Colorado pikeminnow, southwestern willow flycatcher, and the western yellow-billed cuckoo. The USFWS also found that the adverse effects for the two fish species would not jeopardize the continued existence of those species. Conservation measures for listed species in the action area are listed in the previous **Sections VIII.A** and **VIII.B**.

D. Section 106 Compliance

In compliance with 36 CFR 800, Section 106 of the National Historic Preservation Act of 1966, and all other laws, regulations, and directives that are pertinent to this Federal undertaking, (Reclamation initialized consultation on the SEIS with the State Historic Preservation Officers of Arizona, California, Colorado, Nevada, Utah and Wyoming in the fall of 2023. Reclamation also consulted with Tribal Historic Preservation Officers (THPOs), affected Tribes without THPOs, and consulting parties regarding the effects of the undertaking on historic properties on multiple occasions. In light of this extended consultation and in accordance with 36 CFR 800.4(d)(2), Reclamation has determined that this SEIS will have No Adverse Effect on Historic Properties.

The SHPO representatives of Colorado, Utah, and Wyoming agreed that should any adverse effects be identified in the future, they would be resolved on a case-by-case basis. Reclamation initialized consultation toward a programmatic agreement for this project with the other states, multiple Tribes, NPS, and the Advisory Council on Historic Preservation. During these meetings, it was

decided that potential adverse effects on historic properties due to the low water would be handled on a case-by-case basis.

Should Reclamation's projected annual release fall below 6.0 maf, Reclamation and the NPS would initiate a monitoring program for Lake Powell and Lake Mead to assist in identifying potential adverse effects on previously unexposed historic properties.

IX. Implementing the Decision

A. Setting

The Colorado River Basin continues to experience a prolonged period of aridification caused by climate change, with extended periods of drought and record low-runoff conditions. The period from 2000 through 2022 is the driest 23-year period in more than a century and one of the driest periods in the last 1,200 years. This has resulted in historically low reservoir levels at Lake Powell and Lake Mead.

Given the declining reservoir elevations, the anticipated continuing trend of low-runoff conditions, and the need to protect infrastructure and Colorado River operations, the Department charged Reclamation with modifying operating guidelines to address current and foreseeable hydrologic conditions. Under the 2007 Interim Guidelines, 2019 DCPs, and related agreements, Reclamation lacked the operational tools necessary to address projected extreme drought conditions and stabilize the system.

In May 2023, the Department received a Lower Division State proposal, which was supported by the Upper Basin States for analysis and inclusion as an alternative in the SEIS. This alternative outlines tools to address the potential impacts of low runoff conditions in the remainder of the interim period (through the end of the 2026 operating year). Reclamation has conducted an extensive public process, seeking input from state, Tribal and local governments, along with input from members of environmental organizations and members of the general public. These supplemental guidelines represent the Department's determination as to the most appropriate set of guidelines to adopt at this stage of the ongoing drought.

B. Scope of Guidelines

This ROD is organized in the same way as the 2007 Interim Guidelines ROD. It makes limited adjustments to the 2007 Interim Guidelines ROD. If there is no change to the 2007 Interim Guidelines ROD, that is indicated in each specific section.

There have been additions to the Law of the River such as operational rules, guidelines, and decisions that have been put into place since the 2007 Interim Guidelines ROD, such as Minute 323

between the United States and Mexican Sections of the International Boundary and Water Commission (IBWC), and the agreements related to the 2019 DCPs. This ROD does not reflect changes that have been made due to those authorities; it only reflects changes in the guidelines that are a result of this SEIS.

The operational effects of existing and future system conservation water are described in a new **Section XI.G.2.E**, Reservoir Protection Conservation. New **Section XI.G.6.E** describes operations for the Mid-Elevation Release Tier and the Lower Elevation Balancing Tier.

X. Operational Setting

A. Criteria for the Coordinated Long-Range Operation of Colorado River Reservoirs

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

B. Interim Surplus Guidelines

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

C. Annual Operating Plan for Colorado River Reservoirs

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

XI. Conditions of Implementation

A. Forbearance

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

B. Delivery Agreement

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

C. Mexico

The 2007 Interim Guidelines, as adopted, only applied to domestic water management actions within the United States. The 2007 Interim Guidelines were adopted by the Secretary of the Interior after consultation with the IBWC. Since 2007, the IBWC has adopted a number of Minutes pursuant to the 1944 Treaty that are in effect as of the time of the issuance of this ROD. Like the 2007 ROD, this ROD only applies to water management actions within the US and does not modify, change or effect in any way, Minutes adopted by the IBWC.

D. Intentionally Created Surplus

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

E. Relationship with Existing Law

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**. The operational effect of system conservation compensated under the Inflation Reduction Act (Public Law 117-169) is described in **Sections XI.G.2.E** and **XI.G.6.E**.

F. Definitions

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

G. Interim Guidelines for the Operation of Lake Powell and Lake Mead

The 2007 Interim Guidelines, as revised by this ROD, shall include **Sections XI.A., B., E., and F.**, above and this **Section XI.G**. The 2007 Interim Guidelines, as revised by this ROD, which shall implement and be used for determinations made pursuant to the Long-Range Operating Criteria during the effective period identified in Section 8, are hereby adopted:

Section 1. Allocation of Unused Basic Apportionment Water Under Article II(B)(6)

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

Section 2. Determination of Lake Mead Operation During the Interim Period

A. Normal Conditions

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

B. Surplus Conditions

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

C. Allocation of Colorado River Water and Forbearance and Reparation Arrangements

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

D. Shortage Conditions

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

E. [New] Reservoir Protection Conservation

1. In all Lake Mead operating conditions, Reservoir Protection Conservation shall target a cumulative volume of 3.0 maf or more of additional conserved water in total for calendar years 2023 through 2026, with a minimum of 1.5 maf physically conserved by the end of calendar year 2024.
2. These additional conserved waters shall be in addition to required shortage reductions as specified in **Section 2.D** above and water savings contributions as specified in Section III.B of Exhibit 1 to the Lower Basin Drought Contingency Plan Agreement, and consist of the following:
    a. Compensated System Conservation Water agreements executed for implementation in years 2023-2026;
    b. ICS created in years 2023-2026;[2] and
    c. Other compensated and non-compensated conserved water left in Lake Mead in years 2023-2026.
3. These additional conserved waters shall be included in operational planning as reported in the Colorado River Annual Operating Plan (AOP) and accounted for in the Colorado River Accounting and Water Use Report: Arizona, California, and Nevada.

Section 3. Implementation of Intentionally Created Surplus

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

Section 4. Implementation of Developed Shortage Supply

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

Section 5. California's Colorado River Water Use Plan Implementation Progress

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

[2] Any ICS created in 2023–2026, less the system assessment in the year of creation, cannot be ordered for delivery, transfer, or assignment of the ICS at any time before December 31, 2026.

Section 6. Coordinated Operation of Lake Powell and Lake Mead During the Interim Period

There are no changes to this section, except as noted in the Lake Powell Operational Tiers chart and new **Section XI.G.6.E**, which describes operations for the Mid-Elevation Release Tier and the Lower Elevation Balancing Tier.

A. Equalization Tier

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

B. Upper Elevation Balancing Tier

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

C. Mid-Elevation Release Tier

Changes reflected in revised Lake Powell Operational Tiers chart and in **Section 6.E** below.

D. Lower Elevation Balancing Tier

Changes reflected in revised Lake Powell Operational Tiers chart and in **Section 6.E** below.

E. [New] Mid-Elevation and Lower Elevation Balancing Tiers

When operating in the Mid-Elevation Release Tier or the Lower Elevation Balancing Tier, Reclamation will consider all tools that are available during the interim period to avoid Lake Powell elevation declining below 3,500 feet.[3] If the minimum probable 24-Month Study projects in any month an elevation below 3,500 feet in the next 12 months, the Secretary shall begin planning to reduce releases, as needed, to not less than 6.0 maf from Lake Powell in the Water Year to maintain an elevation of 3,500 feet.[4]

[3] Low elevation operation at Lake Powell is further described in Section VII.B. "Operational Considerations" of this ROD.

[4] The Secretary reserves the right to operate Reclamation facilities to protect the Colorado River system if hydrologic conditions require such action as described in Sections 6 and 7(D) in the 2007 Interim Guidelines ROD.

Lake Powell Operational Tiers (subject to April adjustments or mid-year review modifications)		
Lake Powell Elevation (feet)	**Lake Powell Operational Tier**	**Lake Powell Active Storage** (maf)
3,700	**Equalization Tier** Equalize, avoid spills, or release 8.23 maf	**23.31**
3,636–3,666 (see Table 2.3-1 in the 2007 FEIS)	**Upper Elevation Balancing Tier** Release 8.23 maf; if Lake Mead <1,075 feet, balance contents with a minimum/maximum release of 7.0/9.0 maf	**14.65–18.36** (2008–2026)
3,575	**Mid-Elevation Release Tier** Release 7.48 maf; if Lake Mead <1,025 feet, release 8.23 maf If any minimum probable Lake Powell elevation projection shows Lake Powell <3,500 feet, begin planning to reduce releases to no less than 6.0 maf	**8.90**
3,525	**Lower Elevation Balancing Tier** Balance contents with a minimum/maximum release of 7.0/9.5 maf If any minimum probable Lake Powell elevation projection shows Lake Powell <3,500 feet, begin planning to reduce releases to no less than 6.0 maf	**5.55**
3,500	The Secretary reserves the right to operate Reclamation facilities to protect the Colorado River system if hydrologic conditions require such action as described in Sections 6 and 7(D) in the 2007 Interim Guidelines ROD	**4.22**
3,370		**0**

Section 7. Implementation of Guidelines

A. AOP Process

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

B. Consultation

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**, except for the following.

The AOP will describe the projected range of releases that may be possible for the current year, including releases from Lake Powell down to 6.0 maf. Additionally, the 24-Month Study, which is updated every month for the upcoming 24-month period, will describe any minimum probable projections of Lake Powell reaching elevation 3,500 feet in the next 12 months. The 24-Month Study will also include possible actions by the Secretary of Interior, consistent with the coordination further described in this **Section B**, to reduce Lake Powell releases, as needed, to not less than 6.0 maf in the Water Year.

Whenever Lake Mead's content is projected to be below an elevation of 1,025 feet, based on the April 24-Month Study minimum probable projection, the Lower Division States, after consultation with the Upper Division States, will provide Reclamation with an implementation plan to protect Lake Mead from reaching an elevation of 1,000 feet within 45 days. If an implementation plan is not acceptable to Reclamation, then Reclamation may take additional action to protect a surface elevation of 1,000 feet.

Any additional operating decisions made through this ROD will be coordinated through the Colorado River Management Workgroup, which includes representatives from Basin States, Basin Tribes, Mexico, and other partners. Reclamation will notify representatives, using the Colorado River Management Workgroup, if the elevations described above are being projected in any 24-Month Study for Lake Powell or the April 24-Month Study for Lake Mead to initiate the coordination on potential responsive actions.

Reclamation will continue to consult with the Basin Tribes on the implementation of this ROD and Colorado River Operations. Reclamation will make opportunities available to exchange information with Tribes, meet with Tribes in a variety of forums, and respond to requests for individual government-to-government consultations on particular proposals or operations, including any plans intended to protect Lake Mead from reaching an elevation of 1,000 feet. Basin Tribes may request government-to-government consultation at any time.

C. Mid-Year Review

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.

D. Operations During Interim Period

Formal review to evaluate the effectiveness of the 2007 Interim Guidelines has been completed.

Section 8. Interim Period and Termination

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**. These operational considerations are in place until such time as new operational guidelines are in effect.

Section 9. Authority

There are no changes from the 2007 Interim Guidelines ROD as described in **Section IX.B**.