November 24-Month Study
Date: November 16, 2022

From: Water Resources Group, Salt Lake City
To: All Colorado River Annual Operating Plan (AOP) Recipients

Current Reservoir Status

	October Inflow (unregulated) (acre-feet)	Percent of Average (percent)	November 15, Midnight Elevation (feet)	November 15, Midnight Reservoir Storage (acre-feet)
Fontenelle	39,600	88	6,493.04	238,686
Flaming Gorge	41,400	78	6,010.87	2,611,492
Blue Mesa	32,400	89	7,443.39	274,369
Navajo	44,200	115	6,019.93	865,565
Powell	437,000	97	3,529.19	5,789,152

Expected Operations

The operation of Lake Powell and Lake Mead in this November 2022 24-Month Study is pursuant to the December 2007 Record of Decision on Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations of Lake Powell and Lake Mead (Interim Guidelines), and reflects the 2022 Annual Operating Plan (AOP) and draft 2023 AOP. Pursuant to the Interim Guidelines, the August 2022 24-Month Study projections of the January 1, 2023, system storage and reservoir water surface elevations set the operational tier for the coordinated operation of Lake Powell and Lake Mead during 2023.

The August 2021 24-Month Study projected the January 1, 2022, Lake Mead elevation to be at or below 1,075 feet and at or above 1,050 feet. Consistent with Section 2.D.1 of the Interim Guidelines, a Shortage Condition consistent with Section 2.D.1.a will govern the operation of Lake Mead for calendar year (CY) 2022. In addition, Section III.B of Exhibit 1 to the Lower Basin Drought Contingency Plan (DCP) Agreement will also govern the operation of Lake Mead for CY 2022. Efforts to conserve additional water in Lake Mead under a 2021 Lower Basin Memorandum of Understanding (MOU) to facilitate near-term actions to maintain the water surface elevation of Lake Mead will also take place in CY 2022.

In light of the prolonged drought, low runoff conditions, and depleted storage at Lake Powell, the Department of the Interior implemented an action under Sections 6 and 7.D of the 2007 Interim Guidelines specifically reducing the Glen Canyon Dam annual releases to 7.00 maf in water year (WY) 2022.[1] This action was undertaken in conjunction with the 2022 Drought Response Operations Plan[2] actions which together are anticipated to add approximately one million additional acre-feet of storage to

[1] For more information: https://www.usbr.gov/uc/DocLibrary/Plans/20220503-2022DROA-GlenCanyonDamOperationsDecisionLetter-508-DOI.pdf.

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Lake Powell by April 2023. The Department of Interior and Reclamation will work to determine the manner in which to operate Glen Canyon Dam to ensure the benefits of these actions are preserved.

The reduction of releases from Lake Powell from 7.48 million acre-feet (maf) to 7.00 maf in WY 2022 resulted in a reduced release volume of 0.480 maf that normally would have been released from Glen Canyon Dam to Lake Mead as part of the 7.48 maf annual release volume, consistent with routine operations under the 2007 Interim Guidelines. The reduction of releases from Glen Canyon Dam in WY 2022 (resulting in increased storage in Lake Powell) did not affect the operating determinations for 2023 and was accounted for "as if" this volume of water had been delivered to Lake Mead. The 24-Month Study will continue to model 2023 and 2024 operations at lakes Powell and Mead as if the 0.480 maf had been delivered to Lake Mead for operating condition purposes both for the U.S. Lower Basin and for Mexico unless otherwise determined through additional consultation and communication as described below. The elevations listed in this report reflect the projected physical elevations at each reservoir after implementing operations as described.

Using the approach described in the immediately preceding paragraph, the August 2022 24-Month Study projected the January 1, 2023, Lake Powell elevation to be less than 3,525 feet. Consistent with Section 6.D.1 of the Interim Guidelines, Lake Powell's operations in WY 2023 will be governed by the Lower Elevation Balancing Tier with an initial projected WY release volume of 7.00 maf. Because the 2022 operations were designed to protect critical elevations at Lake Powell, Reclamation will implement Lower Elevation Balancing Tier operations in a way that continues to protect these critical elevations, or preserves the benefits of the 2022 operations to protect Lake Powell, in WY 2023. Specifically, Reclamation modeled operations in WY 2023 as follows:

- The Glen Canyon Dam annual release has initially been set to 7.00 maf, and in April 2023 Reclamation will evaluate hydrologic conditions to determine if balancing releases may be appropriate under the conditions established in the 2007 Interim Guidelines;
- Balancing releases will be limited (with a minimum of 7.00 maf) to protect Lake Powell from declining below elevation 3,525 feet at the end of December 2023;
- Balancing releases will take into account operational neutrality of the 0.480 maf that was retained in Lake Powell under the May 2022 action.[1] Any Lake Powell balancing release volume will be calculated as if the 0.480 maf had been delivered to Lake Mead in WY 2022; and
- The modeling approach for WY 2023 will apply to 2024.

Consistent with the provisions of the 2007 Interim Guidelines, and to preserve the benefits to Glen Canyon Dam facilities from 2022 Operations into 2023 and 2024, Reclamation will consult with the Basin States on monthly and annual operations. Reclamation will also ensure all appropriate consultations with Basin Tribes, the Republic of Mexico, other federal agencies, water users and non-governmental organizations with respect to implementation of these monthly and annual operations.

Reclamation will continue to carefully monitor hydrologic and operational conditions and assess the need for additional responsive actions and/or changes to operations. Reclamation will continue to consult with the Basin States, Basin Tribes, the Republic of Mexico, and other partners on Colorado River operations to consider and determine whether additional measures should be taken to further enhance the preservation of these benefits, as well as recovery protocols, including those of future protective measures for both Lakes Powell and Mead.

The August 2022 24-Month Study projected the January 1, 2023 Lake Mead elevation, determined as if the 0.480 maf had been delivered to Lake Mead in WY 2022, to be below 1,050 feet and above 1,045 feet. Consistent with Section 2.D.1 of the Interim Guidelines, a Shortage Condition consistent with Section 2.D.1.b will govern the operation of Lake Mead for CY 2023. In addition, Section III.B of Exhibit 1 to the Lower Basin DCP Agreement will govern the operation of Lake Mead for CY 2023. Efforts to conserve additional water in Lake Mead under the 2021 MOU will also continue in CY 2023.

The 2023 operational tier determinations for Lake Powell and Lake Mead will be documented in the 2023 AOP, which is currently in development.

Current runoff projections into Lake Powell are provided by the National Weather Service's Colorado Basin River Forecast Center and are as follows. The observed unregulated inflow into Lake Powell for the month of October was 0.437 maf or 97 percent of the 30-year average from 1991 to 2020. The November 2022 unregulated inflow forecast for Lake Powell is 0.355 maf or 85 percent of the 30-year average. The observed 2022 April through July unregulated inflow is 3.751 maf or 59 percent of average. The observed WY 2022 unregulated inflow is 6.084 maf or 63 percent of average.

The 2022 AOP is available online at:
https://www.usbr.gov/lc/region/g4000/aop/AOP22.pdf.
The draft 2023 AOP is available online at:
https://www.usbr.gov/uc/water/rsvrs/ops/aop/AOP23_draft.pdf.
The Interim Guidelines are available online at:
https://www.usbr.gov/lc/region/programs/strategies/RecordofDecision.pdf.
The Colorado River DCPs are available online at:
https://www.usbr.gov/dcp/finaldocs.html.
The 2021 Lower Basin MOU is available online at:
https://www.usbr.gov/lc/region/g4000/2021_MOU.pdf.
The Upper Basin Drought Response Operations Agreement is online at:
https://www.usbr.gov/dcp/droa.html.
The Upper Basin Hydrology Summary is available online at:
https://www.usbr.gov/uc/water/crsp/studies/24Month_11_ucb.pdf.

Fontenelle Reservoir

As of November 2, 2022, the Fontenelle Reservoir pool elevation is 6494.39 feet, which amounts to 74 percent of live storage capacity. Inflows for the month of October totaled approximately 40,000 acre-feet (af) or 89 percent of average. Fontenelle's release is currently maintained at 1,000 cfs.

Fontenelle's releases will remain at 1,000 cfs until the winter release is set in mid- November. Winter release will be set at 950 cfs to meet spring elevation targets and are forecasted to remain at this level through winter, subject to hydrology. The winter release is planned to be maintained until March or April when the ice along the Green River begins to melt.

The November final forecast for unregulated inflows into Fontenelle for the next three months projects below average conditions. November, December, and January Most Probable inflow volumes amount to 33,000 af (79 percent of average), 27,000 af (84 percent of average), and 25,000 af (83 percent of average), respectively.

The next Fontenelle Working Group meeting is scheduled for April 27, 2023 at 10:00 a.m. at Green River, WY, tentatively. Details on the meeting will be provided as we get closer to the meeting date. Prior Fontenelle Working Group meeting minutes are available online on USBR's website at https://www.usbr.gov/uc/water/crsp/wg/ft/ftcurrnt.html. The Fontenelle Working Group is an open public forum for information exchange between Reclamation and other parties associated with the operation of Fontenelle Reservoir.

Flaming Gorge

As of November 7, 2022, Flaming Gorge Reservoir pool elevation is 6011.17 feet, which amounts to 72 percent of live storage capacity. Unregulated inflow volume for the month of October is approximately 41,000 af, which is 78 percent of the average September unregulated inflow volume. The current average daily release is 1,700 cfs.

Pursuant to the 2022 Plan, which was just approved by the Upper Division States, the Upper Colorado River Commission, and the Department of the Interior, an additional 500 thousand acre-feet (kaf) will be delivered from Flaming Gorge Reservoir from May 2022 through April 2023 to Lake Powell. This volume will be added to the spring periods by increasing the Larval Trigger Study Plan (LTSP) releases to 8600 cfs for 7 days, a 3-day smallmouth bass flow spike (mid-late July, possibly earlier), as well as the summer-winter base flow period. Under a Drought Contingency Plan adopted in 2022, the total release volume on November 7, 2022 is ~259 kaf. The total release volume under this same plan in WY2022 is 194 kaf.

The observed April through July unregulated inflow volume into Flaming Gorge Reservoir is 552,000 acre-feet (57% of average), a moderately dry hydrologic classification. Due to spring flows being greater than 14,000 cfs for more than 4 days in Reach 2, per the 2022 Plan, an average hydrologic operation was conducted for summer, autumn, and winter base flow.

The November forecast for unregulated inflows into Flaming Gorge for the next three months projects below average conditions. November, December, and January forecasted unregulated inflow volumes amount to 40,000 af (81 percent of average), 28,000 af (85 percent of average), and 32,000 af (79 percent of average), respectively.

Reclamation is planning to hold the next Flaming Gorge Working Group meetings on March 16, 2023 and April 20, 2023 at 10:00 am location TBD. The Flaming Gorge Working Group is an open public forum for information exchange between Reclamation and the stakeholders of Flaming Gorge Dam. The public is encouraged to attend and comment on the operations and plans presented by Reclamation at these meetings. Meeting notes from past Working Group meetings are posted on the Working Group webpage. For more information on this group and these meetings please contact Dale Hamilton at 801-379-1186.

Aspinall Unit Reservoirs

As of November 8, 2022, releases from Crystal Dam are approximately 370 cfs. Gunnison Tunnel diversions have been suspended as the irrigation season has come to an end. Flows of the Gunnison River in the Black Canyon are being maintained at about 360 cfs while flows in the Whitewater Reach of the Gunnison River are about 1,070 cfs.

The unregulated inflow volume in August to Blue Mesa was 32,400 af (88 percent of average). Unregulated Inflow volumes forecasted for Blue Mesa for the next three months (November, December and January) are projected to be: 25,000 af (84 percent of average), 21,000 af (86 percent of average) and 20,000 af (91 percent of average), respectively. The November 24-Month Study will be reflective of these new forecasted inflows.

The forecasted 2023 water year unregulated inflow volume to Blue Mesa is projected to be 805,400 af (89 percent of average). The water supply period (April-July) for 2023 is forecasted to be 577,000 af of unregulated inflow (91 percent of average).

Blue Mesa elevation is currently increasing and as of November 8, 2022, was 7,442.42 feet above sea level corresponding to a live storage of 269,461 acre-feet which is 33 percent of capacity. By the end of water year 2023 (September 30, 2023) Blue Mesa elevation is projected to be 7,482.12 feet with about 517,000 acre-feet of storage which will be 63 percent of capacity.

The Aspinall Unit Operations Group is an open public forum for information exchange between Reclamation and the stakeholders of the Aspinall Unit. The public is encouraged to attend and comments on the operations and plans presented by Reclamation at these meetings. Meeting notes from past working Group meetings are posted on the Operations Group webpage. For more information on this group and these meetings please contact Erik Knight in the Grand Junction Area Office at (970) 248-0629.

The next Operations Group meeting will be held January 19 2023, tentative in person in, Montrose CO, location TDB. Contact Erik Knight in the Grand Junction Area Office at (970) 248-0629 to get more information regarding this Operation Group meeting.

Navajo Reservoir

On November 2nd, the daily average release rate from Navajo Dam was 300 cfs while reservoir inflow was averaging 280 cfs. The water surface elevation was 6019.82 feet above sea level. At this elevation the live storage is 0.864 maf (52% of live storage capacity) and the active storage is 0.238 maf (23% of active storage capacity). The Navajo Indian Irrigation Project (NIIP) has shut down diversions for the year. The NIIP CY 2022 diversion has totaled 204,492 af. The San Juan-Chama project is not currently diverting (totaling 67,960 af so far in CY2022) from the basin above Navajo Reservoir.

Releases from Navajo Dam are made for authorized purposes of the Navajo Unit and are pursuant to the Record of Decision for the Navajo Reservoir Operations. Releases target the San Juan River Recovery Implementation Program's (SJRIP) recommended downstream baseflow range of 500 cfs to 1,000 cfs through the critical habitat reach of the San Juan River (Farmington, NM to Lake Powell).

Preliminary modified unregulated inflow (MUI) into Navajo was 44.2 kaf, which was 115% of average for the month. The release averaged 530 cfs and totaled 32.6 kaf, which was 94% of average for the month. Preliminary Water Year 2022 modified unregulated inflow to Navajo Reservoir was 574 kaf (63 percent of average).

The most probable MUI forecast for November, December, and January is 26 kaf (97% of average), 21 kaf (101% of average), and 19 kaf (95% of average), respectively. Current storage levels and forecasts suggest Navajo has a 20% chance of conducting a spring peak release, and conversely, a 7% chance of experiencing a shortage in 2023, based on 1991 - 2020 hydrology.

Releases over the winter may be decreased as low as 250 cfs to save water, as described in the Navajo Record of Decision (2006) if conditions allow.

Reclamation conducts Public Operations Meetings three times per year to gather input for determining upcoming operations for Navajo Reservoir. Input from individuals, organizations, and agencies along with other factors such as weather, water rights, endangered species requirements, flood control, hydro power, recreation, fish and wildlife management, and reservoir levels, will be considered in the development of these reservoir operation plans. In addition, the meetings are used to coordinate activities and exchange information among agencies, water users, and other interested parties concerning the San Juan River and Navajo Reservoir. The next meeting will be held on Tuesday, January 17th, 2023 at 1:00 PM. This meeting is open to the public, and will be held at the Farmington Civic Center, 200 West Arrington, in Farmington, New Mexico (subject to change based on guidance at the time). The meeting will also have a virtual option.

Glen Canyon Dam / Lake Powell

Current Status

The reduction of releases from Lake Powell from 7.48 maf to 7.00 maf in water year 2022 will result in a reduced release volume of 0.480 maf that normally would have been released from Glen Canyon Dam to Lake Mead as part of the 7.48 maf annual release volume, consistent with operations under the 2007 Interim Guidelines. The reduction of releases from Glen Canyon Dam in water year 2022 (resulting in increased storage in Lake Powell) will not affect future operating determinations and will be accounted for "as if" this volume of water had been delivered to Lake Mead. The August 2022 24-Month Study modeled 2023 and 2024 operations at Lakes Powell and Mead as if the 0.480 maf had been delivered to Lake Mead for operating tier/condition purposes both for the U.S. Lower Basin and for Mexico. The elevations listed in the August 2022 24-Month Study report reflected the projected physical elevations at each reservoir after implementing operations as described for water year 2023 tier determination purposes.

Using the approach described in the immediately preceding paragraph, the August 2022 24-Month Study projected the January 1, 2023, Lake Powell elevation to be less than 3,525 feet. Consistent with Section 6.D.1 of the Interim Guidelines, Lake Powell's operations in water year 2023 are governed by the Lower Elevation Balancing Tier (LEBT) with an initial projected water year release volume of 7.00 maf. Because the 2022 operations were designed to protect critical elevations at Lake Powell, Reclamation will implement

Lower Elevation Balancing Tier operations in a way that continues to protect these critical elevations or preserves the benefits of the 2022 operations to protect Lake Powell, in water year 2023. Specifically, Reclamation modeled operations in WY 2023 as follows in the August and September 24-Month Studies:

- The Glen Canyon Dam annual release has initially been set to 7.00 maf, and in April 2023 Reclamation will evaluate hydrologic conditions to determine if balancing releases may be appropriate under the conditions established in the 2007 Interim Guidelines;
- Balancing releases will be limited (with a minimum of 7.00 maf) to protect Lake Powell from declining below elevation 3,525 feet at the end of December 2023;
- Balancing releases will take into account operational neutrality of the 0.480 maf that was retained in Lake Powell under the May 2022 action (May 3rd Letter). Any Lake Powell balancing release volume will be calculated as if the 0.480 maf had been delivered to Lake Mead in WY 2022; and
- The modeling approach for WY 2023 will apply to 2024.

In accordance with the May 3rd Letter, consistent with the provisions of the 2007 Interim Guidelines, and to preserve the benefits to Glen Canyon Dam facilities from 2022 Operations into 2023 and 2024, Reclamation will consult with the Basin States on monthly and annual operations. Reclamation will also ensure all appropriate consultation with Basin Tribes, the Republic of Mexico, other federal agencies, water users and non-governmental organizations with respect to implementation of these monthly and annual operations.

Reclamation will continue to carefully monitor hydrologic and operational conditions and assess the need for additional responsive actions and/or changes to operations. Reclamation will continue to consult with the Basin States, Basin Tribes, the Republic of Mexico and other partners on Colorado River operations to consider and determine whether additional measures should be taken to further enhance the preservation of these benefits, as well as recovery protocols, including those of future protective measures for both Lakes Powell and Mead. For additional information, the news release can be found here: https://www.usbr.gov/newsroom/news-release/4294.

The Bureau of Reclamation announced on May 3, 2022, two separate urgent drought response actions that will help prop up Lake Powell by nearly 1 million acre-feet (maf) of water over the next 12 months (May 2022 through April 2023). To protect Lake Powell, more water will flow into the lake from upstream reservoirs and less water will be released downstream:

- Under a Drought Contingency Plan adopted in 2019, approximately 500 thousand acre-feet (kaf) of water will come from Flaming Gorge Reservoir, located approximately 455 river miles upstream of Lake Powell.
- Another 480 kaf will be left in Lake Powell by reducing Glen Canyon Dam's annual release volume from 7.48 maf to 7.00 maf, as outlined in the 2007 Interim Guidelines that control operations of Glen Canyon Dam and Hoover Dam.

The plan can be found at the following website: https://www.usbr.gov/dcp/droa.html
For additional information, see the following news release: https://www.usbr.gov/newsroom/#/news-release/4196

The unregulated inflow volume to Lake Powell during October was 437 thousand acre-feet (kaf) (97 percent of average). The release volume from Glen Canyon Dam in October was 480 kaf. The end of

October elevation and storage of Lake Powell were 3,529.92 feet (170 feet from full pool) and 5.83 million acre-feet (maf) (25 percent of live capacity), respectively.

Current Operations

Hourly releases during November 2022 will fluctuate from a low of approximately 6,300 cfs during the early morning hours to a high of 10,487 cfs during the afternoon and evening hours. The December 2022 releases are currently scheduled to fluctuate between a low of 6,029 cfs to a high of 10,979 cfs.

In addition to daily scheduled fluctuations for power generation, the instantaneous releases from Glen Canyon Dam may also fluctuate to provide 40 megawatts (MW) of system regulation. These instantaneous release adjustments stabilize the electrical generation and transmission system and translate to a range of about 1,300 cfs above or below the hourly scheduled release rate. Under normal system conditions, fluctuations for regulation are typically short lived and generally balance out over the hour with minimal or no noticeable impacts on downstream river flow conditions.

Releases from Glen Canyon Dam can also fluctuate beyond scheduled releases when called upon to respond to unscheduled power outages or power system emergencies. Depending on the severity of the system emergency, the response from Glen Canyon Dam can be significant, within the full range of the operating capacity of the power plant for as long as is necessary to maintain balance in the transmission system. Glen Canyon Dam currently maintains 30 MW (approximately 1,100 cfs) of generation capacity in reserve in order to respond to a system emergency even when generation rates are already high. System emergencies occur infrequently and typically require small responses from Glen Canyon Dam. However, these responses can have a noticeable impact on the river downstream of Glen Canyon Dam.

Inflow Forecasts and Model Projections

The forecast for water year 2023 unregulated inflow to Lake Powell, issued on November 2, 2022, by the Colorado Basin River Forecast Center, projects that the most probable (median) unregulated inflow volume in water year 2023 will be 8.0 maf (83 percent of average).

In addition to the November 2022 24-Month Study based on the Most Probable inflow scenario, and in accordance with the Upper Basin Drought Response Operations Agreement (DROA), Reclamation has conducted model runs in November to determine a possible range of reservoir elevations under probable most and minimum inflow scenarios. The probable maximum information was run in the October 2022 24-Month Study. The probable minimum and probable maximum model runs are conducted simultaneously in January, April, August, and October, or when necessary to incorporate changing conditions. The probable minimum inflow scenario reflects a dry hydrologic condition which statistically would be exceeded 90 percent of the time. The most probable inflow scenario reflects a median hydrologic condition which statistically would be exceeded 50 percent of the time. The probable maximum inflow scenario reflects a wet hydrologic condition which statistically would be exceeded 10 percent of the time. There is approximately an 80 percent probability that a future elevation will fall inside the range of the minimum and maximum inflow scenarios. Additionally, there are possible inflow scenarios that would result in reservoir elevations falling outside the ranges indicated in these reports.

The DROA coordination will continue until either (i) the minimum probable projected elevation remains above 3,525 feet for 24 months or (ii) the process moves to the next step when the most probable projected elevation indicates Powell elevations below 3,525 feet and a Drought Response Operations Plan is developed. This 2022 Plan is described above and available for review here: https://www.usbr.gov/dcp/droa.html.

The November forecast for water year 2023 ranges from a minimum probable of 4.94 maf (51 percent of average) to a maximum probable of 14.74 maf (153 percent of average) with the most probable forecast for water year 2023 of 8.0 maf (83 percent of average). There is a 10 percent chance that inflows could be higher than the current maximum probable forecast and a 10 percent chance that inflows could be lower than the minimum probable forecast.

Based on the current forecast for water year 2023 of 8.0 maf unregulated, the November 24-Month Study projects Lake Powell elevation will end water year 2023 near 3535.00 feet with approximately 6.14 maf in storage (26 percent of capacity). Note that projections of elevation and storage for water year 2023 have significant uncertainty at this point in the season. Projections of end of water year 2023 elevation using the minimum inflow forecast results from the November 2022 model run for the minimum and the October maximum inflow forecast are 3,499.92 feet and 3,583.27 feet, respectively. The annual release volume from Lake Powell during water year 2023 will be 7.00 maf under the Lower Elevation Balancing Tier and will balance the contents between Powell and Mead with annual release volumes from Glen Canyon Dam between 7.00 maf and 9.50 maf as determined under Section 6.D.1 and 7.D of the Interim Guidelines as determined by the Department of the Interior as described above.

Upper Colorado River Basin Hydrology

Upper Colorado River Basin regularly experiences significant year to year hydrologic variability. The 30-year average was updated in October 2022 from 1981 through 2010 to 1991 through 2020. Shifting the period of record decreased the average unregulated inflow 1.20 maf. The period 2000-2022 is the lowest 23-year period since the closure of Glen Canyon Dam in 1963, with an average unregulated inflow of 8.29 maf, or 93 percent of the 30-year average (1991-2020). (For comparison, the 1991-2020 total water year average is 9.60 maf.) The unregulated inflow during the 2000-2022 period has ranged from a low of 2.64 maf (28 percent of average) in water year 2002 to a high of 15.97 maf (166 percent of average) in water year 2011. In water year 2021 unregulated inflow volume to Lake Powell was 3.50 maf (36 percent of average), the second driest year on record above 2002. Under the current most probable forecast, the total water year 2023 unregulated inflow to Lake Powell is projected to be 8.0 maf (86 percent of average).

At the beginning of water year 2023, total system storage in the Colorado River Basin was 19.54 maf (33 percent of 58.48 maf total system capacity). This is a decrease of 3.33 maf over the total storage at the beginning of water year 2022 when total system storage was 22.87 maf (39 percent of capacity). Since the beginning of water year 2000, total Colorado Basin storage has experienced year to year increases and decreases in response to wet and dry hydrology, ranging from a high of 94 percent of capacity at the beginning of 2000 to the now current level of 33 percent of capacity at the beginning of water year 2023. Based on current inflow forecasts, the current projected end of water year 2023 total Colorado Basin reservoir storage is approximately 18.70 maf (32 percent of total system capacity). The actual end of water year 2023 system storage may vary from this projection, primarily due to uncertainty regarding this season's runoff and reservoir inflow.

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The August 2021 24-Month Study projected the January 1, 2022, Lake Mead elevation to be at or below 1,075 feet and at or above 1,050 feet. Consistent with Section 2.D.1 of the Interim Guidelines, a Shortage Condition consistent with Section 2.D.1.a will govern the operation of Lake Mead for calendar year (CY) 2022. In addition, Section III.B of Exhibit 1 to the Lower Basin Drought Contingency Plan (DCP) Agreement will also govern the operation of Lake Mead for CY 2022. Efforts to conserve additional water in Lake Mead under a 2021 Lower Basin Memorandum of Understanding (MOU) to facilitate near-term actions to maintain the water surface elevation of Lake Mead will also take place in CY 2022.

In light of the prolonged drought, low runoff conditions, and depleted storage at Lake Powell, the Department of the Interior implemented an action under Sections 6 and 7.D of the 2007 Interim Guidelines specifically reducing the Glen Canyon Dam annual releases to 7.00 maf in water year (WY) 2022.[1] This action was undertaken in conjunction with the 2022 Drought Response Operations Plan[2] actions which together are anticipated to add approximately one million additional acre-feet of storage to Lake Powell by April 2023. The Department of Interior and Reclamation will work to determine the manner in which to operate Glen Canyon Dam to ensure the benefits of these actions are preserved.

The reduction of releases from Lake Powell from 7.48 million acre-feet (maf) to 7.00 maf in WY 2022 resulted in a reduced release volume of 0.480 maf that normally would have been released from Glen Canyon Dam to Lake Mead as part of the 7.48 maf annual release volume, consistent with routine operations under the 2007 Interim Guidelines. The reduction of releases from Glen Canyon Dam in WY 2022 (resulting in increased storage in Lake Powell) did not affect the operating determinations for 2023 and was accounted for "as if" this volume of water had been delivered to Lake Mead. The 24-Month Study will continue to model 2023 and 2024 operations at lakes Powell and Mead as if the 0.480 maf had been delivered to Lake Mead for operating condition purposes both for the U.S. Lower Basin and for Mexico unless otherwise determined through additional consultation and communication as described below. The elevations listed in this report reflect the projected physical elevations at each reservoir after implementing operations as described.

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- Balancing releases will take into account operational neutrality of the 0.480 maf that was retained in Lake Powell under the May 2022 action.[1] Any Lake Powell balancing release volume will be calculated as if the 0.480 maf had been delivered to Lake Mead in WY 2022; and
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Consistent with the provisions of the 2007 Interim Guidelines, and to preserve the benefits to Glen Canyon Dam facilities from 2022 Operations into 2023 and 2024, Reclamation will consult with the Basin States on monthly and annual operations. Reclamation will also ensure all appropriate consultations with Basin Tribes, the Republic of Mexico, other federal agencies, water users and non-governmental organizations with respect to implementation of these monthly and annual operations.

Reclamation will continue to carefully monitor hydrologic and operational conditions and assess the need for additional responsive actions and/or changes to operations. Reclamation will continue to consult with the Basin States, Basin Tribes, the Republic of Mexico, and other partners on Colorado River operations to consider and determine whether additional measures should be taken to further enhance the preservation of these benefits, as well as recovery protocols, including those of future protective measures for both Lakes Powell and Mead.

The August 2022 24-Month Study projected the January 1, 2023 Lake Mead elevation, determined as if the 0.480 maf had been delivered to Lake Mead in WY 2022, to be below 1,050 feet and above 1,045 feet. Consistent with Section 2.D.1 of the Interim Guidelines, a Shortage Condition consistent with Section 2.D.1.b will govern the operation of Lake Mead for CY 2023. In addition, Section III.B of Exhibit 1 to the Lower Basin DCP Agreement will govern the operation of Lake Mead for CY 2023. Efforts to conserve additional water in Lake Mead under the 2021 MOU will also continue in CY 2023.

The 2023 operational tier determinations for Lake Powell and Lake Mead will be documented in the 2023 AOP, which is currently in development.

Current runoff projections into Lake Powell are provided by the National Weather Service's Colorado Basin River Forecast Center and are as follows. The observed unregulated inflow into Lake Powell for the month of October was 0.437 maf or 97 percent of the 30-year average from 1991 to 2020. The November 2022 unregulated inflow forecast for Lake Powell is 0.355 maf or 85 percent of the 30-year average. The observed 2022 April through July unregulated inflow is 3.751 maf or 59 percent of average. The observed WY 2022 unregulated inflow is 6.084 maf or 63 percent of average.

In this study, the CY 2022 diversion for Metropolitan Water District of Southern California (MWD) is projected to be 1.136 maf. The CY 2022 diversion for the Central Arizona Project (CAP) is projected to be 0.971 maf. Consumptive use for Nevada above Hoover (SNWP Use) is projected to be 0.241 maf for CY 2022.

Due to changing Lake Mead elevations, Hoover's generator capacity is adjusted based on estimated effective capacity and plant availability. The estimated effective capacity is based on projected Lake Mead elevations. Unit capacity tests will be performed as the lake elevation changes. This study reflects these changes in the projections.

Hoover, Davis, and Parker Dam historical gross energy figures come from Power, Operations, and Maintenance reports provided by the Lower Colorado Region's Power Office, Bureau of Reclamation, Boulder City, Nevada. Questions regarding these historical energy numbers can be directed to Colleen Dwyer at (702) 293-8420.

Runoff and inflow projections into upper basin reservoirs are provided by the National Weather Service's Colorado Basin River Forecast Center and are as follows in thousand acre-feet (kaf):

Reservoir	Observed Inflow (kaf)				Oct	Inflow Forecast (kaf)			Observed 2022	
	Jul	Aug	Sep	Oct	%Avg	Nov	Dec	Jan	Apr-Jul	%Avg
Lake Powell	491	368	245	437	97%	355	300	270	3751	59%
Fontenelle	102	56	29	40	89%	33	27	25	456	62%
Flaming Gorge	125	58	32	41	77%	40	28	32	553	57%
Blue Mesa	59	57	31	32	88%	25	21	20	431	68%
Morrow Point	60	58	31	33	86%	27	23	22	445	64%
Crystal	64	62	33	36	84%	31	27	25	485	63%
Taylor Park	11.3	7.9	5.2	5.5	84%	4.5	4	4	72	77%
Vallecito	18.8	18	11.5	14.2	102%	7	5	4.5	125	71%
Navajo	44	53	22	44	114%	26	21	19	381	60%
Lemon	4.9	4.4	2.6	3.5	124%	1.4	1	0.8	32	67%
McPhee	8.5	9.6	5.8	8.7	104%	4.5	3.7	3.5	144	56%
Ridgway	12.6	11.8	6.4	7.6	103%	4.5	3.6	3.2	57	62%
Deerlodge	48	7.8	4.2	23	78%	23	22	22	903	76%
Durango	29	29	18.1	22	86%	13	11	10	230	60%

The 2022 AOP is available online at:
https://www.usbr.gov/lc/region/g4000/aop/AOP22.pdf.
The draft 2023 AOP is available online at:
https://www.usbr.gov/uc/water/rsvrs/ops/aop/AOP23_draft.pdf.
The Interim Guidelines are available online at:
https://www.usbr.gov/lc/region/programs/strategies/RecordofDecision.pdf.
The Colorado River DCPs are available online at:
https://www.usbr.gov/dcp/finaldocs.html.
The 2021 Lower Basin MOU is available online at:
https://www.usbr.gov/lc/region/g4000/2021_MOU.pdf.
The Upper Basin Drought Response Operations Agreement is online at:
https://www.usbr.gov/dcp/droa.html.
The Upper Basin Hydrology Summary is available online at:
https://www.usbr.gov/uc/water/crsp/studies/24Month_11_ucb.pdf.

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Fontenelle Reservoir

	Date	Regulated Inflow (1000 Ac-Ft)	Evap Losses (1000 Ac-Ft)	Power Release (1000 Ac-Ft)	Bypass Release (1000 Ac-Ft)	Total Release (1000 Ac-Ft)	Reservoir Elev End of Month (Ft)	Live Storage (1000 Ac-Ft)
*	Nov 2021	39	1	43	0	43	6491.01	225
H	Dec 2021	29	1	50	0	50	6487.63	203
I	Jan 2022	29	1	51	0	51	6483.90	180
S	Feb 2022	23	1	46	0	46	6479.63	157
T	Mar 2022	46	1	50	0	50	6478.63	151
O	Apr 2022	50	1	5	44	49	6478.74	152
R	May 2022	63	1	47	8	55	6479.96	158
I	Jun 2022	241	2	82	0	82	6503.59	315
C	Jul 2022	102	3	83	11	93	6504.34	321
A	Aug 2022	56	2	67	1	68	6502.43	306
L	Sep 2022	29	2	61	0	61	6498.08	274
	WY 2022	**744**	**15**	**617**	**67**	**685**		
*	Oct 2022	40	1	22	39	61	6494.58	249
	Nov 2022	33	1	57	0	57	6491.03	225
	Dec 2022	27	1	58	0	58	6486.04	193
	Jan 2023	25	1	58	0	58	6480.10	159
	Feb 2023	24	0	53	0	53	6474.08	130
	Mar 2023	42	0	58	0	58	6470.12	113
	Apr 2023	65	1	35	24	59	6471.46	119
	May 2023	125	1	76	0	76	6481.52	167
	Jun 2023	265	2	102	42	144	6499.60	285
	Jul 2023	155	3	102	20	122	6503.69	316
	Aug 2023	58	2	77	0	77	6500.84	294
	Sep 2023	40	2	65	0	65	6497.12	267
	WY 2023	**899**	**14**	**764**	**125**	**889**		
	Oct 2023	45	1	68	0	68	6493.74	244
	Nov 2023	42	1	64	0	64	6490.39	221
	Dec 2023	32	1	65	0	65	6485.16	188
	Jan 2024	31	1	65	0	65	6479.05	154
	Feb 2024	29	0	60	0	60	6472.22	122
	Mar 2024	51	0	64	0	64	6468.88	108
	Apr 2024	77	1	35	21	55	6473.92	129
	May 2024	166	1	92	0	92	6487.50	202
	Jun 2024	301	2	104	111	215	6499.73	286
	Jul 2024	146	3	102	13	115	6503.55	315
	Aug 2024	59	2	66	0	66	6502.39	306
	Sep 2024	39	2	60	0	60	6499.39	284
	WY 2024	**1018**	**15**	**843**	**144**	**987**		
	Oct 2024	45	1	61	0	61	6496.96	266

* Based on the Colorado River Basin Forecast Center's Most Probable Water Supply Forecast

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OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Flaming Gorge Reservoir

	Date	Unreg Inflow (1000 Ac-Ft)	Reg Inflow (1000 Ac-Ft)	Evap Losses (1000 Ac-Ft)	Power Release (1000 Ac-Ft)	Bypass Release (1000 Ac-Ft)	Total Release (1000 Ac-Ft)	Bank Storage (1000 Ac-Ft)	Reservoir Elev End of Month (Ft)	Live Storage (1000 Ac-Ft)	Jensen Flow (1000 Ac-Ft)
*	Nov 2021	47	49	3	51	0	51	117	6018.09	2913	87
H	Dec 2021	21	41	2	52	0	52	117	6017.72	2900	82
I	Jan 2022	33	55	2	52	0	52	117	6017.75	2901	80
S	Feb 2022	30	54	2	47	0	47	117	6017.87	2905	70
T	Mar 2022	74	83	3	52	0	52	118	6018.65	2932	111
O	Apr 2022	66	62	5	51	0	51	118	6018.81	2938	179
R	May 2022	88	88	7	139	48	187	114	6015.77	2769	570
I	Jun 2022	274	113	9	110	12	121	113	6015.25	2752	465
C	Jul 2022	125	110	11	79	0	79	106	6016.09	2780	137
A	Aug 2022	58	70	11	105	0	105	104	6014.73	2735	124
L	Sep 2022	32	63	9	112	0	112	102	6013.01	2680	125
	WY 2022	**897**	**837**	**70**	**927**	**60**	**987**				**2138**
*	Oct 2022	41	65	6	111	0	111	100	6011.45	2630	142
	Nov 2022	40	64	3	105	0	105	98	6010.11	2587	128
	Dec 2022	28	59	1	112	0	112	96	6008.45	2536	134
	Jan 2023	32	65	1	112	0	112	94	6006.95	2490	134
	Feb 2023	34	63	2	98	0	98	93	6005.77	2454	120
	Mar 2023	80	96	2	66	0	66	94	6006.66	2481	124
	Apr 2023	100	94	4	64	0	64	95	6007.48	2506	249
	May 2023	175	126	6	215	0	215	91	6004.44	2414	715
	Jun 2023	335	214	8	68	0	68	97	6008.77	2546	458
	Jul 2023	180	147	11	57	0	57	100	6011.16	2621	122
	Aug 2023	65	84	10	80	0	80	99	6010.97	2615	95
	Sep 2023	46	71	9	79	0	79	99	6010.46	2599	94
	WY 2023	**1156**	**1149**	**65**	**1168**	**0**	**1168**				**2516**
	Oct 2023	52	75	6	68	0	68	99	6010.47	2599	94
	Nov 2023	51	73	3	65	0	65	99	6010.62	2604	97
	Dec 2023	34	67	1	68	0	68	99	6010.54	2601	93
	Jan 2024	42	76	1	69	0	69	99	6010.69	2606	94
	Feb 2024	43	74	2	63	0	63	99	6010.97	2615	88
	Mar 2024	85	98	3	52	0	52	101	6012.29	2656	126
	Apr 2024	111	89	4	51	0	51	102	6013.33	2690	254
	May 2024	239	165	7	221	0	221	100	6011.44	2629	734
	Jun 2024	389	303	9	63	0	63	109	6018.24	2851	430
	Jul 2024	161	130	12	59	0	59	111	6019.94	2908	119
	Aug 2024	66	73	11	78	0	78	110	6019.46	2892	97
	Sep 2024	43	64	10	77	0	77	109	6018.81	2870	90
	WY 2024	**1316**	**1285**	**69**	**934**	**0**	**934**				**2316**
	Oct 2024	52	68	6	71	0	71	109	6018.56	2862	97

* Based on the Colorado River Basin Forecast Center's Most Probable Water Supply Forecast

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OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Taylor Park Reservoir

	Date	Regulated Inflow (1000 Ac-Ft)	Total Release (1000 Ac-Ft)	Reservoir Elev End of Month (Ft)	Live Storage (1000 Ac-Ft)
*	Nov 2021	4	4	9302.58	59
H	Dec 2021	5	5	9302.55	59
I	Jan 2022	4	4	9302.29	58
S	Feb 2022	3	4	9301.88	58
T	Mar 2022	4	4	9301.56	57
O	Apr 2022	8	6	9302.92	59
R	May 2022	27	12	9312.55	74
I	Jun 2022	26	19	9316.61	81
C	Jul 2022	11	15	9314.18	77
A	Aug 2022	8	14	9310.35	70
L	Sep 2022	5	8	9308.87	68
	WY 2022	**110**	**100**		
*	Oct 2022	6	6	9308.80	68
	Nov 2022	5	5	9308.77	68
	Dec 2022	4	5	9307.96	67
	Jan 2023	4	5	9307.18	66
	Feb 2023	4	5	9306.65	65
	Mar 2023	4	5	9305.85	64
	Apr 2023	8	6	9307.18	66
	May 2023	27	12	9316.38	81
	Jun 2023	40	18	9328.16	103
	Jul 2023	15	21	9325.10	97
	Aug 2023	9	18	9320.31	88
	Sep 2023	6	18	9313.44	76
	WY 2023	**132**	**124**		
	Oct 2023	7	9	9312.23	74
	Nov 2023	5	5	9312.20	73
	Dec 2023	4	5	9311.44	72
	Jan 2024	5	5	9311.31	72
	Feb 2024	4	5	9310.82	71
	Mar 2024	5	5	9310.69	71
	Apr 2024	9	9	9310.69	71
	May 2024	26	15	9317.24	82
	Jun 2024	40	18	9328.91	104
	Jul 2024	15	24	9324.32	95
	Aug 2024	8	18	9318.93	85
	Sep 2024	7	18	9312.54	74
	WY 2024	**135**	**137**		
	Oct 2024	7	9	9311.31	72

* Based on the Colorado River Basin Forecast Center's Most Probable Water Supply Forecast

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OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Blue Mesa Reservoir

	Date	UnReg Inflow (1000 Ac-Ft)	Regulated Inflow (1000 Ac-Ft)	Evap Losses (1000 Ac-Ft)	Power Release (1000 Ac-Ft)	Bypass Release (1000 Ac-Ft)	Total Release (1000 Ac-Ft)	Reservoir Elev End of Month (Ft)	Live Storage (1000 Ac-Ft)
*	Nov 2021	27	27	0	16	0	16	7431.94	220
H	Dec 2021	22	22	0	11	0	11	7434.40	231
I	Jan 2022	20	20	0	14	0	14	7435.60	236
S	Feb 2022	18	19	0	14	0	14	7436.57	241
T	Mar 2022	30	30	0	32	0	32	7436.17	239
O	Apr 2022	62	60	0	44	0	46	7438.94	252
R	May 2022	177	162	1	79	0	79	7454.56	335
I	Jun 2022	133	126	1	69	0	69	7463.76	391
C	Jul 2022	59	63	1	84	0	84	7460.15	368
A	Aug 2022	57	64	1	89	0	89	7455.69	341
L	Sep 2022	31	33	1	55	28	82	7446.72	292
	WY 2022	**661**	**652**	**6**	**566**	**28**	**595**		
*	Oct 2022	32	32	0	0	58	58	7441.74	266
	Nov 2022	25	25	0	0	16	16	7443.60	275
	Dec 2022	21	22	0	14	0	14	7445.22	284
	Jan 2023	20	21	0	15	0	15	7446.44	290
	Feb 2023	18	19	0	13	0	13	7447.54	296
	Mar 2023	28	29	0	16	0	16	7450.02	309
	Apr 2023	55	53	1	52	0	52	7450.12	310
	May 2023	180	165	1	115	0	115	7458.67	359
	Jun 2023	250	228	1	31	0	31	7487.01	554
	Jul 2023	92	98	1	76	0	76	7489.63	575
	Aug 2023	51	60	1	82	0	82	7486.61	551
	Sep 2023	33	45	1	78	0	78	7482.12	518
	WY 2023	**805**	**798**	**7**	**492**	**74**	**565**		
	Oct 2023	36	38	0	70	0	70	7477.73	486
	Nov 2023	30	30	0	13	0	13	7480.04	502
	Dec 2023	26	27	0	14	0	14	7481.86	516
	Jan 2024	25	25	0	14	0	14	7483.38	527
	Feb 2024	23	24	0	12	0	12	7484.86	538
	Mar 2024	38	38	0	17	0	17	7487.65	559
	Apr 2024	78	78	1	28	0	28	7493.95	609
	May 2024	204	193	1	69	0	69	7508.65	732
	Jun 2024	251	229	1	150	0	150	7517.38	809
	Jul 2024	86	95	2	84	0	84	7518.46	819
	Aug 2024	55	65	1	87	0	87	7515.86	796
	Sep 2024	35	46	1	82	0	82	7511.68	758
	WY 2024	**887**	**889**	**9**	**639**	**0**	**639**		
	Oct 2024	36	38	1	82	0	82	7506.54	713

* Based on the Colorado River Basin Forecast Center's Most Probable Water Supply Forecast

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OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Morrow Point Reservoir

	Date	Unreg Inflow (1000 Ac-Ft)	Blue Mesa Release (1000 Ac-Ft)	Side Inflow (1000 Ac-Ft)	Total Inflow (1000 Ac-Ft)	Power Release (1000 Ac-Ft)	Bypass Release (1000 Ac-Ft)	Total Release (1000 Ac-Ft)	Reservoir Elev End of Month (Ft)	Live Storage (1000 Ac-Ft)
*	Nov 2021	30	16	3	19	17	0	17	7151.77	110
H	Dec 2021	23	11	1	12	16	0	16	7145.62	106
I	Jan 2022	21	14	1	15	16	0	16	7144.25	105
S	Feb 2022	19	14	1	15	14	0	14	7145.30	105
T	Mar 2022	31	32	2	33	30	0	30	7149.87	109
O	Apr 2022	65	46	3	50	47	0	47	7153.31	112
R	May 2022	186	79	9	88	89	0	89	7152.08	111
I	Jun 2022	134	69	1	70	71	0	71	7150.86	110
C	Jul 2022	60	84	1	85	84	0	84	7152.31	111
A	Aug 2022	58	89	1	90	90	0	90	7152.25	111
L	Sep 2022	31	82	1	83	78	0	78	7157.81	115
	WY 2022	**685**	**595**	**24**	**619**	**614**	**0**	**614**		
*	Oct 2022	33	58	1	59	60	0	60	7156.10	114
	Nov 2022	27	16	2	18	19	0	19	7153.73	112
	Dec 2022	23	14	2	16	16	0	16	7153.73	112
	Jan 2023	22	15	2	17	17	0	17	7153.73	112
	Feb 2023	20	13	2	15	15	0	15	7153.73	112
	Mar 2023	30	16	2	18	17	0	17	7153.73	112
	Apr 2023	61	52	6	58	58	0	58	7153.73	112
	May 2023	200	115	20	135	135	0	135	7153.73	112
	Jun 2023	270	31	20	51	51	0	51	7153.72	112
	Jul 2023	96	76	4	80	80	0	80	7153.73	112
	Aug 2023	54	82	3	85	85	0	85	7153.73	112
	Sep 2023	34	78	1	79	79	0	79	7153.73	112
	WY 2023	**870**	**565**	**65**	**630**	**632**	**0**	**632**		
	Oct 2023	37	70	1	71	71	0	71	7153.73	112
	Nov 2023	31	13	1	14	14	0	14	7153.73	112
	Dec 2023	27	14	1	15	15	0	15	7153.73	112
	Jan 2024	26	14	1	15	15	0	15	7153.73	112
	Feb 2024	25	12	2	14	14	0	14	7153.73	112
	Mar 2024	40	17	2	19	18	0	18	7153.73	112
	Apr 2024	89	28	11	39	39	0	39	7153.73	112
	May 2024	226	69	22	91	91	0	91	7153.73	112
	Jun 2024	265	150	14	164	164	0	164	7153.72	112
	Jul 2024	90	84	4	88	87	0	87	7153.73	112
	Aug 2024	56	87	1	88	88	0	88	7153.73	112
	Sep 2024	36	82	1	83	83	0	83	7153.73	112
	WY 2024	**948**	**639**	**61**	**700**	**699**	**0**	**699**		
	Oct 2024	37	82	1	83	83	0	83	7153.73	112

* Based on the Colorado River Basin Forecast Center's Most Probable Water Supply Forecast

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OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Crystal Reservoir

	Date	Unreg Inflow (1000 Ac-Ft)	Morrow Release (1000 Ac-Ft)	Side Inflow (1000 Ac-Ft)	Total Inflow (1000 Ac-Ft)	Power Release (1000 Ac-Ft)	Bypass Release (1000 Ac-Ft)	Total Release (1000 Ac-Ft)	Reservoir Elev End of Month (Ft)	Live Storage (1000 Ac-Ft)	Tunnel Flow (1000 Ac-Ft)	Below Tunnel Flow (1000 Ac-Ft)
*	Nov 2021	34	17	4	21	22	0	22	6749.65	16	1	19
H	Dec 2021	27	16	4	21	20	0	21	6750.09	16	1	19
I	Jan 2022	25	16	4	21	20	0	21	6750.38	16	1	18
S	Feb 2022	22	14	3	17	18	0	18	6746.37	15	0	17
T	Mar 2022	36	30	4	34	32	1	32	6752.56	17	6	25
O	Apr 2022	73	47	8	54	54	1	54	6752.33	17	31	24
R	May 2022	203	89	17	105	92	13	106	6751.40	16	59	48
I	Jun 2022	145	71	10	82	80	2	81	6752.67	17	62	21
C	Jul 2022	64	84	4	88	89	0	90	6747.68	15	65	28
A	Aug 2022	62	90	3	94	92	0	92	6751.52	17	66	31
L	Sep 2022	33	78	2	80	69	12	80	6750.17	16	62	22
	WY 2022	**754**	**614**	**69**	**683**	**622**	**62**	**684**			**393**	**295**
*	Oct 2022	36	60	3	63	53	10	63	6751.29	16	41	21
	Nov 2022	31	19	4	23	23	0	23	6753.04	17	0	23
	Dec 2022	27	16	4	20	20	0	20	6753.04	17	0	20
	Jan 2023	25	17	3	20	20	0	20	6753.04	17	0	20
	Feb 2023	23	15	3	18	18	0	18	6753.04	17	0	18
	Mar 2023	37	17	7	24	24	0	24	6753.04	17	5	19
	Apr 2023	71	58	10	68	68	0	68	6753.04	17	42	26
	May 2023	230	135	30	165	134	31	165	6753.04	17	62	103
	Jun 2023	305	51	35	86	86	0	86	6753.03	17	61	25
	Jul 2023	105	80	9	89	89	0	89	6753.04	17	65	24
	Aug 2023	58	85	4	89	89	0	89	6753.04	17	65	24
	Sep 2023	37	79	3	82	82	0	82	6753.04	17	55	27
	WY 2023	**985**	**632**	**115**	**748**	**706**	**40**	**746**			**396**	**350**
	Oct 2023	43	71	6	77	52	24	77	6753.04	17	55	22
	Nov 2023	36	14	5	19	19	0	19	6753.04	17	0	19
	Dec 2023	32	15	5	20	20	0	20	6753.04	17	0	20
	Jan 2024	31	15	5	20	20	0	20	6753.04	17	0	20
	Feb 2024	29	14	4	18	18	0	18	6753.04	17	0	18
	Mar 2024	46	18	6	24	24	0	24	6753.04	17	5	19
	Apr 2024	100	39	11	50	50	0	50	6753.04	17	42	8
	May 2024	251	91	25	116	116	0	116	6753.04	17	62	54
	Jun 2024	293	164	28	192	130	62	192	6753.03	17	61	131
	Jul 2024	98	87	8	95	95	0	95	6753.04	17	65	30
	Aug 2024	63	88	7	95	95	0	95	6753.04	17	65	30
	Sep 2024	42	83	6	89	89	0	89	6753.04	17	55	34
	WY 2024	**1064**	**699**	**116**	**815**	**729**	**86**	**815**			**410**	**405**
	Oct 2024	43	83	6	89	52	37	89	6753.04	17	55	34

* Based on the Colorado River Basin Forecast Center's Most Probable Water Supply Forecast

Model Run ID: 3207

Processed On: 11/15/2022 4:02:28PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Vallecito Reservoir

— BUREAU OF —
RECLAMATION

	Date	Regulated Inflow (1000 Ac-Ft)	Total Release (1000 Ac-Ft)	Reservoir Elev End of Month (Ft)	Live Storage (1000 Ac-Ft)
*	Nov 2021	5	2	7621.90	32
H	Dec 2021	4	0	7624.23	35
I	Jan 2022	4	0	7626.39	39
S	Feb 2022	3	0	7628.13	42
T	Mar 2022	7	0	7631.90	48
O	Apr 2022	27	2	7644.01	73
R	May 2022	53	33	7652.10	92
I	Jun 2022	26	34	7648.50	83
C	Jul 2022	19	32	7642.57	70
A	Aug 2022	18	28	7637.64	59
L	Sep 2022	12	26	7630.15	45
	WY 2022	**185**	**160**		
*	Oct 2022	14	3	7635.84	56
	Nov 2022	7	2	7638.41	61
	Dec 2022	5	2	7639.88	64
	Jan 2023	5	2	7641.32	67
	Feb 2023	4	2	7642.35	70
	Mar 2023	6	2	7644.14	74
	Apr 2023	16	2	7650.11	87
	May 2023	62	31	7662.14	118
	Jun 2023	62	54	7664.75	125
	Jul 2023	17	42	7655.13	100
	Aug 2023	12	38	7644.15	74
	Sep 2023	11	30	7635.18	55
	WY 2023	**221**	**208**		
	Oct 2023	13	17	7632.90	50
	Nov 2023	8	2	7636.06	56
	Dec 2023	7	2	7638.57	61
	Jan 2024	6	2	7640.50	66
	Feb 2024	5	2	7641.97	69
	Mar 2024	10	2	7645.54	77
	Apr 2024	23	2	7654.26	98
	May 2024	68	40	7665.03	126
	Jun 2024	62	63	7664.52	124
	Jul 2024	21	41	7656.51	103
	Aug 2024	15	38	7647.03	80
	Sep 2024	16	29	7640.98	67
	WY 2024	**254**	**239**		
	Oct 2024	13	16	7639.27	63

* Based on the Colorado River Basin Forecast Center's Most Probable Water Supply Forecast

Model Run ID: 3207

Processed On: 11/15/2022 4:02:28PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Navajo Reservoir

BUREAU OF RECLAMATION

	Date	Mod Unreg Inflow (1000 Ac-Ft)	Azotea Tunnel Div (1000 Ac-Ft)	Reg Inflow (1000 Ac-Ft)	Evap Losses (1000 Ac-Ft)	NIIP Diversion (1000 Ac-Ft)	Total Release (1000 Ac-Ft)	Reservoir Elev End of Month (Ft)	Live Storage (1000 Ac-Ft)	Farmington Flow (1000 Ac-Ft)
*	Nov 2021	14	0	10	1	0	18	6021.39	879	36
H	Dec 2021	15	0	11	0	0	18	6020.63	872	35
I	Jan 2022	14	0	10	0	0	22	6019.21	859	38
S	Feb 2022	14	0	11	1	1	20	6018.00	848	33
T	Mar 2022	41	2	32	1	4	22	6018.57	853	38
O	Apr 2022	123	17	84	2	17	20	6023.53	898	44
R	May 2022	167	30	114	3	38	18	6029.39	954	104
I	Jun 2022	47	7	50	3	37	24	6027.89	939	61
C	Jul 2022	44	5	54	3	39	35	6025.41	916	55
A	Aug 2022	53	5	56	3	38	30	6023.95	902	49
L	Sep 2022	22	1	35	2	23	40	6020.65	872	56
	WY 2022	**574**	**66**	**484**	**20**	**200**	**296**			**595**
*	Oct 2022	44	2	32	1	5	33	6019.84	865	51
	Nov 2022	26	0	20	1	0	18	6020.07	867	31
	Dec 2022	21	0	18	0	0	17	6020.14	867	28
	Jan 2023	19	0	16	0	0	19	6019.73	864	29
	Feb 2023	23	0	20	1	0	14	6020.33	869	23
	Mar 2023	53	4	45	1	5	16	6022.79	891	30
	Apr 2023	110	13	83	2	21	16	6027.55	936	50
	May 2023	220	29	160	3	35	15	6038.24	1042	132
	Jun 2023	170	22	140	4	51	15	6044.86	1113	145
	Jul 2023	30	2	53	4	56	20	6042.46	1087	70
	Aug 2023	24	1	48	3	39	28	6040.39	1065	56
	Sep 2023	25	1	43	2	18	25	6040.11	1062	47
	WY 2023	**765**	**75**	**677**	**22**	**231**	**235**			**691**
	Oct 2023	35	2	38	1	9	18	6040.97	1071	41
	Nov 2023	28	1	21	1	0	15	6041.46	1076	32
	Dec 2023	24	0	19	1	0	15	6041.72	1079	30
	Jan 2024	22	0	18	1	0	18	6041.60	1078	31
	Feb 2024	29	1	25	1	0	17	6042.23	1084	29
	Mar 2024	92	10	74	1	6	18	6046.62	1133	41
	Apr 2024	147	18	107	2	21	18	6052.33	1198	69
	May 2024	251	34	188	3	36	19	6062.80	1329	154
	Jun 2024	187	25	163	4	52	21	6069.23	1415	165
	Jul 2024	33	2	51	5	55	22	6066.95	1384	73
	Aug 2024	24	1	45	4	46	27	6064.54	1351	56
	Sep 2024	31	2	43	3	25	38	6062.80	1329	64
	WY 2024	**903**	**96**	**792**	**27**	**251**	**247**			**786**
	Oct 2024	35	2	37	2	9	22	6063.17	1333	45

* Based on the Colorado River Basin Forecast Center's Most Probable Water Supply Forecast

Model Run ID: 3207

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OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Lake Powell

BUREAU OF RECLAMATION

	Date	Unreg Inflow (1000 Ac-Ft)	Regulated Inflow (1000 Ac-Ft)	Evap Losses (1000 Ac-Ft)	PowerPlant Release (1000 Ac-Ft)	Bypass Release (1000 Ac-Ft)	Total Release (1000 Ac-Ft)	Reservoir Elev End of Month (Ft)	Bank Storage (1000 Ac-Ft)	EOM Storage (1000 Ac-Ft)	Lees Ferry Gage (1000 Ac-Ft)
*	Nov 2021	346	342	20	500	0	500	3541.84	4615	7016	496
H	Dec 2021	266	290	16	600	0	600	3537.33	4591	6713	599
I	Jan 2022	249	269	4	673	0	673	3531.52	4561	6335	681
S	Feb 2022	215	235	4	540	0	540	3526.97	4538	6048	556
T	Mar 2022	329	327	7	574	0	574	3523.13	4519	5812	584
O	Apr 2022	594	490	12	502	0	502	3522.77	4517	5791	510
R	May 2022	1382	1212	14	598	0	598	3531.69	4561	6346	599
I	Jun 2022	1284	1198	25	598	0	598	3539.81	4604	6878	595
C	Jul 2022	491	463	28	672	0	672	3536.20	4551	6212	672
A	Aug 2022	368	444	27	713	0	713	3531.69	4529	5938	722
L	Sep 2022	245	420	24	547	0	547	3529.33	4517	5797	562
	WY 2022	**6084**	**6107**	**203**	**6999**	**0**	**6999**				**7066**
*	Oct 2022	437	535	17	480	0	480	3529.92	4520	5832	494
	Nov 2022	355	404	17	500	0	500	3528.15	4512	5728	501
	Dec 2022	300	372	13	600	0	600	3524.31	4494	5505	602
	Jan 2023	270	345	3	664	0	664	3519.00	4470	5206	671
	Feb 2023	285	336	3	587	0	587	3514.70	4451	4970	596
	Mar 2023	435	381	6	620	0	620	3510.43	4433	4743	633
	Apr 2023	670	570	9	552	0	552	3510.58	4434	4752	569
	May 2023	1650	1485	12	550	0	550	3526.08	4502	5607	572
	Jun 2023	2200	1633	22	577	0	577	3541.82	4579	6564	598
	Jul 2023	765	674	28	652	0	652	3541.72	4578	6558	672
	Aug 2023	315	406	28	696	0	696	3537.04	4555	6264	714
	Sep 2023	318	415	26	525	0	525	3535.00	4545	6138	540
	WY 2023	**8000**	**7555**	**184**	**7003**	**0**	**7003**				**7161**
	Oct 2023	417	460	17	480	0	480	3534.43	4542	6104	493
	Nov 2023	451	436	17	500	0	500	3533.20	4536	6029	501
	Dec 2023	361	374	14	600	0	600	3529.49	4518	5807	602
	Jan 2024	350	362	4	710	0	710	3523.90	4492	5482	717
	Feb 2024	397	396	4	750	0	750	3518.00	4466	5151	759
	Mar 2024	614	502	6	670	0	670	3515.05	4453	4990	683
	Apr 2024	920	720	10	670	0	670	3515.74	4456	5027	687
	May 2024	2060	1745	12	700	0	700	3532.44	4532	5983	722
	Jun 2024	2423	1906	23	790	0	790	3548.44	4613	6994	811
	Jul 2024	711	653	30	840	0	840	3545.38	4597	6793	860
	Aug 2024	371	467	29	840	0	840	3539.56	4567	6421	858
	Sep 2024	316	430	26	559	0	559	3537.25	4556	6277	574
	WY 2024	**9391**	**8451**	**191**	**8109**	**0**	**8109**				**8266**
	Oct 2024	417	479	18	643	0	643	3534.51	4542	6109	656

* Based on the Colorado River Basin Forecast Center's Most Probable Water Supply Forecast

Model Run ID: 3207

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OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Hoover Dam - Lake Mead

BUREAU OF RECLAMATION

	Date	Glen Release (1000 Ac-Ft)	Side Inflow Glen to Hoover (1000 Ac-Ft)	Evap Losses (1000 Ac-Ft)	Total Release (1000 Ac-Ft)	Total Release (1000 CFS)	SNWP Use (1000 Ac-Ft)	Downstream Requirements (1000 Ac-Ft)	Bank Storage (1000 Ac-Ft)	Reservoir Elev End of Month (Ft)	EOM Storage (1000 Ac-Ft)
*	Nov 2021	500	42	44	642	10.8	10	650	572	1064.97	8804
H	Dec 2021	600	64	36	503	8.2	10	511	579	1066.39	8915
I	Jan 2022	673	60	25	640	10.4	11	639	583	1067.09	8970
S	Feb 2022	540	58	23	590	10.6	10	590	581	1066.78	8946
T	Mar 2022	574	41	25	1010	16.4	17	1009	555	1061.49	8536
O	Apr 2022	502	30	33	1027	17.3	17	1026	522	1054.69	8026
R	May 2022	598	8	40	1083	17.6	25	1075	489	1047.69	7517
I	Jun 2022	598	16	47	889	14.9	29	877	467	1043.02	7187
C	Jul 2022	672	70	45	822	13.4	31	814	458	1040.92	7041
A	Aug 2022	713	183	48	573	9.3	25	567	473	1044.28	7275
L	Sep 2022	547	118	48	539	9.1	22	545	476	1045.03	7328
	WY 2022	**6999**	**771**	**463**	**8899**		**223**	**8888**			
*	Oct 2022	480	94	46	418	6.8	17	434	482	1046.28	7417
	Nov 2022	500	68	40	676	11.4	21	676	472	1044.05	7259
	Dec 2022	600	69	32	436	7.1	16	436	483	1046.49	7432
	Jan 2023	664	87	22	585	9.5	10	585	491	1048.26	7558
	Feb 2023	587	88	21	543	9.8	7	543	498	1049.62	7656
	Mar 2023	620	107	23	902	14.7	16	902	485	1046.82	7455
	Apr 2023	552	72	30	1010	17.0	22	1010	458	1040.94	7042
	May 2023	550	43	37	989	16.1	27	989	430	1034.60	6611
	Jun 2023	577	22	44	919	15.4	32	919	406	1028.99	6239
	Jul 2023	652	56	42	830	13.5	32	830	394	1026.17	6056
	Aug 2023	696	66	45	790	12.8	31	790	387	1024.65	5958
	Sep 2023	525	62	43	690	11.6	24	690	377	1022.13	5798
	WY 2023	**7003**	**835**	**425**	**8786**		**256**	**8802**			
	Oct 2023	480	69	41	508	8.3	17	508	376	1021.88	5782
	Nov 2023	500	68	35	613	10.3	10	613	370	1020.53	5698
	Dec 2023	600	69	29	547	8.9	10	547	375	1021.77	5776
	Jan 2024	710	87	20	569	9.3	11	569	387	1024.69	5961
	Feb 2024	750	88	19	543	9.4	8	543	404	1028.59	6213
	Mar 2024	670	107	21	894	14.5	15	894	395	1026.38	6070
	Apr 2024	670	72	28	1014	17.0	16	1014	375	1021.73	5773
	May 2024	700	43	34	993	16.2	21	993	357	1017.14	5487
	Jun 2024	790	22	41	900	15.1	29	900	347	1014.73	5339
	Jul 2024	840	56	39	786	12.8	33	786	349	1015.30	5374
	Aug 2024	840	66	43	765	12.4	35	765	353	1016.28	5434
	Sep 2024	559	62	41	673	11.3	31	673	346	1014.37	5317
	WY 2024	**8109**	**810**	**390**	**8806**		**235**	**8806**			
	Oct 2024	643	69	39	487	7.9	25	487	355	1016.85	5469

* Based on the Colorado River Basin Forecast Center's Most Probable Water Supply Forecast

Model Run ID: 3207

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OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Davis Dam - Lake Mohave

BUREAU OF RECLAMATION

	Date	Hoover Release (1000 Ac-Ft)	Side Inflow (1000 Ac-Ft)	Evap Losses (1000 Ac-Ft)	Power Release (1000 Ac-Ft)	Spill Release (1000 Ac-Ft)	Total Release (1000 Ac-Ft)	Total Release (1000 CFS)	Reservoir Elev End of Month (Ft)	EOM Storage (1000 Ac-Ft)
*	Nov 2021	642	-9	13	543	0	543	9.1	637.48	1551
H	Dec 2021	503	-6	13	465	0	465	7.6	638.32	1573
I	Jan 2022	640	-20	9	523	0	523	8.5	641.60	1661
S	Feb 2022	590	-26	8	555	0	555	10.0	641.69	1663
T	Mar 2022	1010	-38	10	931	0	931	15.1	642.79	1693
O	Apr 2022	1027	-31	13	975	0	975	16.4	643.08	1701
R	May 2022	1083	-20	14	1041	0	1041	16.9	643.35	1708
I	Jun 2022	889	-30	14	842	0	842	14.1	643.47	1712
C	Jul 2022	822	-26	12	770	0	770	12.5	643.97	1725
A	Aug 2022	573	-13	16	575	0	575	9.3	642.87	1695
L	Sep 2022	539	-6	16	617	0	617	10.4	639.17	1595
	WY 2022	**8899**	**-228**	**151**	**8495**	**0**	**8495**			
*	Oct 2022	418	-2	14	540	0	542	8.8	633.78	1454
	Nov 2022	676	-16	13	510	0	510	8.6	639.01	1591
	Dec 2022	436	-5	13	392	0	392	6.4	640.01	1618
	Jan 2023	585	-12	9	515	0	515	8.4	641.80	1666
	Feb 2023	543	-11	8	525	0	525	9.4	641.80	1666
	Mar 2023	902	-9	10	849	0	849	13.8	643.05	1700
	Apr 2023	1010	-13	13	987	0	987	16.6	643.00	1699
	May 2023	989	-13	14	961	0	961	15.6	643.00	1699
	Jun 2023	919	-18	14	886	0	886	14.9	643.00	1699
	Jul 2023	830	-19	12	825	0	825	13.4	642.00	1671
	Aug 2023	790	-17	15	757	0	757	12.3	642.00	1671
	Sep 2023	690	-8	16	720	0	720	12.1	640.01	1617
	WY 2023	**8786**	**-143**	**151**	**8467**	**0**	**8469**			
	Oct 2023	508	-11	14	666	0	666	10.8	633.00	1434
	Nov 2023	613	-16	13	532	0	532	8.9	635.00	1486
	Dec 2023	547	-5	13	411	0	411	6.7	639.51	1604
	Jan 2024	569	-12	9	486	0	486	7.9	641.80	1666
	Feb 2024	543	-11	8	525	0	525	9.1	641.80	1666
	Mar 2024	894	-9	10	842	0	842	13.7	643.05	1700
	Apr 2024	1014	-13	13	990	0	990	16.6	643.00	1699
	May 2024	993	-13	14	966	0	966	15.7	643.00	1699
	Jun 2024	900	-18	14	868	0	868	14.6	643.00	1699
	Jul 2024	786	-19	12	782	0	782	12.7	642.00	1671
	Aug 2024	765	-17	15	732	0	732	11.9	642.00	1671
	Sep 2024	673	-8	16	703	0	703	11.8	640.01	1617
	WY 2024	**8806**	**-151**	**151**	**8503**	**0**	**8503**			
	Oct 2024	487	-11	14	645	0	645	10.5	633.00	1434

* Based on the Colorado River Basin Forecast Center's Most Probable Water Supply Forecast

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OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Parker Dam - Lake Havasu

BUREAU OF RECLAMATION

	Date	Davis Release (1000 Ac-Ft)	Side Inflow (1000 Ac-Ft)	Evap Losses (1000 Ac-Ft)	Total Release (1000 Ac-Ft)	Total Release (1000 CFS)	MWD Diversion (1000 Ac-Ft)	CAP Diversion (1000 Ac-Ft)	Reservoir Elev End of Month (Ft)	EOM Storage (1000 Ac-Ft)	Flow To Mexico (1000 Ac-Ft)	Flow To Mexico (1000 CFS)
*	Nov 2021	543	13	9	348	5.8	96	124	447.05	562	92	1.5
H	Dec 2021	465	16	7	281	4.6	99	87	447.33	567	89	1.5
I	Jan 2022	523	-3	6	342	5.6	96	89	446.38	550	114	1.9
S	Feb 2022	555	12	8	445	8.0	4	103	446.44	551	127	2.3
T	Mar 2022	931	2	9	658	10.7	97	133	448.02	580	170	2.8
O	Apr 2022	975	6	11	737	12.4	100	141	447.11	563	161	2.7
R	May 2022	1041	8	13	741	12.0	106	150	448.68	593	145	2.4
I	Jun 2022	842	18	15	679	11.4	103	60	448.30	586	154	2.6
C	Jul 2022	770	31	17	639	10.4	106	19	448.84	596	150	2.4
A	Aug 2022	575	40	17	482	7.8	106	16	448.16	583	120	2.0
L	Sep 2022	617	14	15	458	7.7	103	52	447.96	579	108	1.8
	WY 2022	**8495**	**176**	**140**	**6231**		**1117**	**1112**			**1499**	
*	Oct 2022	542	27	12	393	6.4	106	66	447.14	564	67	1.1
	Nov 2022	510	17	9	338	5.7	103	74	447.00	561	88	1.5
	Dec 2022	392	18	6	235	3.8	106	68	446.50	552	86	1.4
	Jan 2023	515	14	6	312	5.1	106	101	446.50	552	136	2.2
	Feb 2023	525	5	8	407	7.3	1	106	446.50	552	122	2.2
	Mar 2023	849	4	9	609	9.9	106	115	446.70	555	145	2.4
	Apr 2023	987	8	11	715	12.0	96	124	448.70	593	144	2.4
	May 2023	961	6	13	714	11.6	99	129	448.70	593	109	1.8
	Jun 2023	886	7	16	704	11.8	96	64	448.70	593	114	1.9
	Jul 2023	825	14	17	684	11.1	99	40	448.00	580	121	2.0
	Aug 2023	757	13	17	612	10.0	99	40	447.50	571	100	1.6
	Sep 2023	720	12	15	529	8.9	96	82	447.50	570	97	1.6
	WY 2023	**8469**	**144**	**139**	**6253**		**1112**	**1010**			**1329**	
	Oct 2023	666	18	12	484	7.9	99	83	447.50	571	87	1.4
	Nov 2023	532	17	9	372	6.3	96	67	447.50	570	113	1.9
	Dec 2023	411	18	7	266	4.3	99	71	446.50	552	108	1.8
	Jan 2024	486	14	6	300	4.9	86	103	446.50	552	129	2.1
	Feb 2024	525	5	8	398	6.9	6	111	446.50	552	116	2.0
	Mar 2024	842	4	9	601	9.8	99	124	446.70	555	138	2.2
	Apr 2024	990	8	11	712	12.0	89	137	448.70	593	137	2.3
	May 2024	966	6	13	718	11.7	85	144	448.70	593	103	1.7
	Jun 2024	868	7	16	713	12.0	82	51	448.70	593	109	1.8
	Jul 2024	782	14	17	678	11.0	85	17	448.00	580	115	1.9
	Aug 2024	732	13	17	625	10.2	85	17	447.50	571	95	1.5
	Sep 2024	703	12	15	532	8.9	82	76	447.50	570	93	1.6
	WY 2024	**8503**	**135**	**139**	**6398**		**992**	**1001**			**1344**	
	Oct 2024	645	18	12	481	7.8	85	78	447.50	571	83	1.4

* Based on the Colorado River Basin Forecast Center's Most Probable Water Supply Forecast

Model Run ID: 3207

Processed On: 11/15/2022 4:02:28PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Hoover Dam - Lake Mead

BUREAU OF RECLAMATION

	Date	Power Release (1000 Ac-Ft)	Power Release (1000 CFS)	Reservoir Elev End of Month (Ft)	EOM Storage (1000 Ac-Ft)	Change In Storage (1000 Ac-Ft)	Hoover Static Head (Ft)	Hoover Gen Capacity MW	Hoover Gross Energy MKWH	Percent of Units Available	KWH/AF
*	Nov 2021	642	10.8	1064.97	8804	-140	421.30	938.0	241.3	67	375.8
H	Dec 2021	503	8.2	1066.39	8915	111	424.48	957.0	185.9	68	369.9
I	Jan 2022	640	10.4	1067.09	8970	55	420.00	993.0	236.8	67	370.2
S	Feb 2022	590	10.6	1066.78	8946	-24	420.26	994.0	220.4	67	373.2
T	Mar 2022	1010	16.4	1061.49	8536	-409	413.69	898.0	375.9	62	372.3
O	Apr 2022	1027	17.3	1054.69	8026	-511	405.75	863.0	380.5	61	370.4
R	May 2022	1083	17.6	1047.69	7517	-509	397.38	1082.0	391.7	80	361.7
I	Jun 2022	889	14.9	1043.02	7187	-330	396.77	1076.9	315.1	81	354.6
C	Jul 2022	822	13.4	1040.92	7041	-146	392.29	1236.6	287.9	94	350.1
A	Aug 2022	573	9.3	1044.28	7275	234	399.70	1224.8	200.6	94	349.9
L	Sep 2022	539	9.1	1045.03	7328	53	400.65	1157.3	188.5	88	349.7
	WY 2022	**8899**							**3240.9**		
*	Oct 2022	418	6.8	1046.28	7417	88	402.36	924.5	145.8	70	348.8
	Nov 2022	676	11.4	1044.05	7259	-158	399.26	948.8	242.0	72	358.2
	Dec 2022	436	7.1	1046.49	7432	173	397.34	966.8	154.7	72	354.6
	Jan 2023	585	9.5	1048.26	7558	126	399.29	874.7	209.1	64	357.6
	Feb 2023	543	9.8	1049.62	7656	98	400.04	912.1	194.9	66	359.1
	Mar 2023	902	14.7	1046.82	7455	-201	398.27	979.7	325.0	73	360.5
	Apr 2023	1010	17.0	1040.94	7042	-413	393.65	949.8	361.2	72	357.5
	May 2023	989	16.1	1034.60	6611	-432	388.23	836.5	347.3	66	351.3
	Jun 2023	919	15.4	1028.99	6239	-371	381.04	973.7	314.7	78	342.5
	Jul 2023	830	13.5	1026.17	6056	-183	374.97	1220.2	277.9	100	334.9
	Aug 2023	790	12.8	1024.65	5958	-98	373.15	1207.4	261.8	100	331.5
	Sep 2023	690	11.6	1022.13	5798	-160	371.80	1194.6	225.7	100	327.1
	WY 2023	**8786**							**3060.2**		
	Oct 2023	508	8.3	1021.88	5782	-16	375.81	835.9	172.3	69	338.8
	Nov 2023	613	10.3	1020.53	5698	-85	377.32	833.3	206.7	69	337.4
	Dec 2023	547	8.9	1021.77	5776	78	375.15	851.8	180.7	69	330.6
	Jan 2024	569	9.3	1024.69	5961	186	374.34	941.1	187.9	76	330.3
	Feb 2024	543	9.4	1028.59	6213	252	376.97	960.9	181.3	76	333.7
	Mar 2024	894	14.5	1026.38	6070	-143	375.61	1173.4	296.7	93	331.7
	Apr 2024	1014	17.0	1021.73	5773	-296	373.07	841.9	336.2	81	331.6
	May 2024	993	16.2	1017.14	5487	-286	369.18	743.5	324.3	74	326.6
	Jun 2024	900	15.1	1014.73	5339	-148	365.02	795.7	290.3	81	322.5
	Jul 2024	786	12.8	1015.30	5374	35	362.55	986.0	251.1	100	319.3
	Aug 2024	765	12.4	1016.28	5434	60	363.64	994.3	244.6	100	319.9
	Sep 2024	673	11.3	1014.37	5317	-117	363.82	978.1	213.9	100	317.6
	WY 2024	**8806**							**2886.1**		
	Oct 2024	487	7.9	1016.85	5469	152	368.60	778.3	160.6	78	330.0

* Based on the Colorado River Basin Forecast Center's Most Probable Water Supply Forecast

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Processed On: 11/15/2022 4:02:28PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Davis Dam - Lake Mohave

BUREAU OF RECLAMATION

	Date	Power Release (1000 Ac-Ft)	Power Release (1000 CFS)	Reservoir Elev End of Month (Ft)	EOM Storage (1000 Ac-Ft)	Change In Storage (1000 Ac-Ft)	Davis Static Head (Ft)	Davis Gen Capacity MW	Davis Gross Energy MKWH	Percent of Units Available	KWH/AF
*	Nov 2021	543	9.1	637.48	1551	80	136.32	164.9	65.8	65	121.0
H	Dec 2021	465	7.6	638.32	1573	22	137.10	192.5	56.1	75	120.6
I	Jan 2022	523	8.5	641.60	1661	88	139.02	159.6	64.6	63	123.6
S	Feb 2022	555	10.0	641.69	1663	2	140.45	174.9	72.1	69	130.0
T	Mar 2022	931	15.1	642.79	1693	30	140.26	253.3	118.7	99	127.4
O	Apr 2022	975	16.4	643.08	1701	8	137.93	255.0	124.0	100	127.1
R	May 2022	1041	16.9	643.35	1708	7	140.42	241.8	132.1	95	126.9
I	Jun 2022	842	14.1	643.47	1712	3	139.18	251.6	108.5	99	128.9
C	Jul 2022	770	12.5	643.97	1725	14	144.37	255.0	99.3	100	129.1
A	Aug 2022	575	9.3	642.87	1695	-30	141.93	253.3	74.7	99	129.9
L	Sep 2022	617	10.4	639.17	1595	-100	137.50	248.2	78.5	97	127.3
	WY 2022	**8495**							**1074.5**		
*	Oct 2022	540	8.8	633.78	1454	-141	134.35	185.9	66.9	73	123.8
	Nov 2022	510	8.6	639.01	1591	136	135.14	153.0	62.1	60	121.8
	Dec 2022	392	6.4	640.01	1618	27	139.25	157.9	49.2	62	125.5
	Jan 2023	515	8.4	641.80	1666	49	139.74	157.9	64.9	62	125.9
	Feb 2023	525	9.4	641.80	1666	0	140.18	193.1	66.3	76	126.3
	Mar 2023	849	13.8	643.05	1700	34	139.11	255.0	106.4	100	125.3
	Apr 2023	987	16.6	643.00	1699	-2	138.74	255.0	123.3	100	125.0
	May 2023	961	15.6	643.00	1699	0	139.03	255.0	120.4	100	125.3
	Jun 2023	886	14.9	643.00	1699	0	139.29	255.0	111.2	100	125.5
	Jul 2023	825	13.4	642.00	1671	-27	139.31	255.0	103.6	100	125.5
	Aug 2023	757	12.3	642.00	1671	0	139.22	255.0	95.0	100	125.4
	Sep 2023	720	12.1	640.01	1617	-54	138.31	255.0	89.7	100	124.6
	WY 2023	**8467**							**1058.8**		
	Oct 2023	666	10.8	633.00	1434	-183	134.31	227.0	80.6	89	121.0
	Nov 2023	532	8.9	635.00	1486	51	132.59	159.8	63.6	63	119.5
	Dec 2023	411	6.7	639.51	1604	118	136.85	154.7	50.6	61	123.3
	Jan 2024	486	7.9	641.80	1666	62	139.70	156.3	61.2	61	125.9
	Feb 2024	525	9.1	641.80	1666	0	140.31	160.0	66.4	63	126.4
	Mar 2024	842	13.7	643.05	1700	34	139.14	194.1	105.5	76	125.4
	Apr 2024	990	16.6	643.00	1699	-2	138.73	249.9	123.7	98	125.0
	May 2024	966	15.7	643.00	1699	0	139.01	255.0	120.9	100	125.2
	Jun 2024	868	14.6	643.00	1699	0	139.40	255.0	109.0	100	125.6
	Jul 2024	782	12.7	642.00	1671	-27	139.57	255.0	98.3	100	125.7
	Aug 2024	732	11.9	642.00	1671	0	139.38	255.0	91.9	100	125.6
	Sep 2024	703	11.8	640.01	1617	-54	138.42	255.0	87.7	100	124.7
	WY 2024	**8503**							**1059.6**		
	Oct 2024	645	10.5	633.00	1434	-183	134.45	227.0	78.1	89	121.1

* Based on the Colorado River Basin Forecast Center's Most Probable Water Supply Forecast

Model Run ID: 3207

Processed On: 11/15/2022 4:02:28PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Parker Dam - Lake Havasu

BUREAU OF RECLAMATION

	Date	Power Release (1000 Ac-Ft)	Power Release (1000 CFS)	Reservoir Elev End of Month (Ft)	EOM Storage (1000 Ac-Ft)	Change In Storage (1000 Ac-Ft)	Parker Static Head (Ft)	Parker Gen Capacity MW	Parker Gross Energy MKWH	Percent of Units Available	KWH/AF
*	Nov 2021	348	5.8	447.05	562	-25	81.18	90.0	24.0	75	69.1
H	Dec 2021	281	4.6	447.33	567	5	81.34	102.6	18.6	85	66.1
I	Jan 2022	342	5.6	446.38	550	-18	80.46	93.9	23.0	78	67.4
S	Feb 2022	445	8.0	446.44	551	1	80.54	86.8	30.9	72	69.4
T	Mar 2022	658	10.7	448.02	580	30	77.95	112.3	45.8	94	69.6
O	Apr 2022	737	12.4	447.11	563	-17	79.08	120.0	50.8	100	68.9
R	May 2022	741	12.0	448.68	593	30	84.09	120.0	51.5	100	69.5
I	Jun 2022	679	11.4	448.30	586	-7	78.23	120.0	47.2	100	69.4
C	Jul 2022	639	10.4	448.84	596	10	82.19	120.0	44.7	100	69.9
A	Aug 2022	482	7.8	448.16	583	-13	83.58	120.0	33.4	100	69.3
L	Sep 2022	458	7.7	447.96	579	-4	81.26	120.0	31.4	100	68.7
	WY 2022	**6231**							**431.0**		
*	Oct 2022	393	6.4	447.14	564	-15	81.28	91.9	27.2	77	69.1
	Nov 2022	338	5.7	447.00	561	-3	79.97	90.0	23.2	75	68.5
	Dec 2022	235	3.8	446.50	552	-9	80.65	111.3	15.0	93	63.7
	Jan 2023	312	5.1	446.50	552	0	79.71	93.9	20.8	78	66.9
	Feb 2023	407	7.3	446.50	552	0	78.58	95.2	28.1	79	69.0
	Mar 2023	609	9.9	446.70	555	4	77.52	120.0	41.8	100	68.6
	Apr 2023	715	12.0	448.70	593	38	77.78	120.0	49.7	100	69.5
	May 2023	714	11.6	448.70	593	0	78.94	120.0	50.2	100	70.4
	Jun 2023	704	11.8	448.70	593	0	78.85	120.0	49.5	100	70.3
	Jul 2023	684	11.1	448.00	580	-13	78.78	120.0	47.8	100	69.8
	Aug 2023	612	10.0	447.50	571	-10	78.65	120.0	42.5	100	69.5
	Sep 2023	529	8.9	447.50	570	0	78.86	120.0	36.7	100	69.3
	WY 2023	**6253**							**432.5**		
	Oct 2023	484	7.9	447.50	571	0	79.32	91.0	33.9	76	70.1
	Nov 2023	372	6.3	447.50	570	0	80.10	92.0	25.5	77	68.6
	Dec 2023	266	4.3	446.50	552	-19	80.62	112.3	16.9	94	63.6
	Jan 2024	300	4.9	446.50	552	0	79.82	92.9	20.1	77	66.9
	Feb 2024	398	6.9	446.50	552	0	78.77	95.4	27.6	79	69.2
	Mar 2024	601	9.8	446.70	555	4	77.58	120.0	41.2	100	68.7
	Apr 2024	712	12.0	448.70	593	38	77.80	120.0	49.5	100	69.6
	May 2024	718	11.7	448.70	593	0	78.92	120.0	50.5	100	70.3
	Jun 2024	713	12.0	448.70	593	0	78.80	120.0	50.0	100	70.2
	Jul 2024	678	11.0	448.00	580	-13	78.82	120.0	47.4	100	69.9
	Aug 2024	625	10.2	447.50	571	-10	78.57	120.0	43.4	100	69.4
	Sep 2024	532	8.9	447.50	570	0	78.84	120.0	36.9	100	69.3
	WY 2024	**6398**							**442.9**		
	Oct 2024	481	7.8	447.50	571	0	79.34	91.0	33.7	76	70.2

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Model Run ID: 3207

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OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Upper Basin Power

	Date	Glen Canyon 1000 MWHR	Flaming Gorge 1000 MWHR	Blue Mesa 1000 MWHR	Morrow Point 1000 MWHR	Crystal Reservoir 1000 MWHR	Fontenelle Reservoir 1000 MWHR
*	Nov 2021	189	19	3	6	2	3
H	Dec 2021	226	19	2	5	2	4
I	Jan 2022	252	19	3	5	1	4
S	Feb 2022	201	17	3	4	1	3
T	Mar 2022	208	19	8	9	4	3
	Winter 2022	**1259**	**123**	**34**	**50**	**17**	**19**
O	Apr 2022	179	19	11	15	10	0
R	May 2022	214	52	20	31	18	3
I	Jun 2022	222	41	18	25	16	6
C	Jul 2022	251	29	23	29	17	7
A	Aug 2022	265	39	23	31	18	6
L	Sep 2022	201	42	14	27	13	5
	Summer 2022	**1332**	**222**	**108**	**160**	**92**	**28**
*	Oct 2022	175	42	0	21	10	2
	Nov 2022	177	34	0	7	4	4
	Dec 2022	211	37	4	6	3	4
	Jan 2023	231	36	4	6	3	4
	Feb 2023	202	32	3	5	3	3
	Mar 2023	212	21	4	6	4	3
	Winter 2023	**1209**	**202**	**15**	**51**	**28**	**20**
	Apr 2023	187	21	14	21	12	2
	May 2023	190	70	31	49	23	4
	Jun 2023	207	22	9	18	15	7
	Jul 2023	239	19	22	29	15	8
	Aug 2023	253	26	24	31	15	6
	Sep 2023	190	26	23	28	14	5
	Summer 2023	**1266**	**184**	**122**	**176**	**95**	**32**
	Oct 2023	174	22	20	25	9	5
	Nov 2023	180	21	4	5	3	4
	Dec 2023	215	22	4	5	3	4
	Jan 2024	251	23	4	5	3	4
	Feb 2024	260	21	4	5	3	4
	Mar 2024	230	17	5	7	4	3
	Winter 2024	**1310**	**127**	**40**	**53**	**27**	**25**
	Apr 2024	229	17	8	14	9	2
	May 2024	245	73	21	33	20	6
	Jun 2024	288	21	47	59	22	7
	Jul 2024	311	19	26	31	16	8
	Aug 2024	308	26	28	32	16	5
	Sep 2024	203	25	26	30	15	5
	Summer 2024	**1382**	**155**	**130**	**169**	**84**	**28**
	Oct 2024	232	24	25	30	9	5

* Based on the Colorado River Basin Forecast Center's Most Probable Water Supply Forecast

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OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

November 2022 24-Month Study

Most Probable Inflow*

Flood Control Criteria - Beginning of Month Conditions

— BUREAU OF —
RECLAMATION

Date	Flaming Gorge KAF	Blue Mesa KAF	Navajo KAF	Lake Powell KAF	Upper Basin Total KAF	Lake Mead KAF	Total KAF	Flaming Gorge KAF	Blue Mesa KAF	Navajo KAF	Tot or Max Allow KAF	Lake Powell KAF	Lake Mead KAF	Total KAF	BOM Space Required KAF	Mead Sched Rel KAF	Mead FC Rel KAF	Sys Cont MAF
	****PREDICTED SPACE****							****CREDITABLE SPACE****										
Nov 2022	1,132	559	783	17481	19955	20203	40158	1132	559	783	2473	17481	20203	40158	3810	676	0	19.3
Dec 2022	1,198	549	781	17586	20115	20361	40476	1198	549	781	2528	17586	20361	40476	4580	436	0	19.2
Jan 2023	1,282	541	780	17809	20412	20188	40600	1282	541	780	2603	17809	20188	40600	5350	585	0	19.0
								****EFFECTIVE SPACE****										
Jan 2023	1,282	541	780	17809	20412	20188	40600	255	325	402	982	17809	20188	38979	5350	585	0	19.0
Feb 2023	1,362	535	784	18108	20788	20062	40851	335	320	405	1060	18108	20062	39230	1500	543	0	18.8
Mar 2023	1,427	529	779	18343	21078	19964	41042	399	315	399	1113	18343	19964	39420	1500	902	0	18.4
Apr 2023	1,417	515	756	18570	21259	20165	41424	385	302	370	1057	18570	20165	39792	1500	1010	0	18.2
May 2023	1,386	515	712	18562	21175	20578	41753	349	299	303	951	18562	20578	40090	1500	989	0	18.7
Jun 2023	1,430	466	606	17707	20209	21009	41218	389	234	159	782	17707	21009	39498	1500	919	0	19.8
Jul 2023	1,180	270	535	16749	18734	21381	40115	123	16	33	171	16749	21381	38301	1500	830	0	19.7
								****CREDITABLE SPACE****										
Aug 2023	1,074	250	561	16756	18641	21564	40205	1074	250	561	1885	16756	21564	40205	1500	790	0	19.2
Sep 2023	1,102	273	583	17050	19008	21662	40670	1102	273	583	1958	17050	21662	40670	2270	690	0	18.8
Oct 2023	1,145	307	586	17176	19214	21822	41035	1145	307	586	2038	17176	21822	41035	3040	508	0	18.5
Nov 2023	1,168	339	577	17210	19294	21838	41132	1168	339	577	2084	17210	21838	41132	3810	613	0	18.4
Dec 2023	1,186	322	572	17285	19365	21922	41288	1186	322	572	2081	17285	21922	41288	4580	547	0	18.3
Jan 2024	1,222	309	569	17507	19607	21844	41451	1222	309	569	2100	17507	21844	41451	5350	569	0	18.2
								****EFFECTIVE SPACE****										
Jan 2024	1,222	309	569	17507	19607	21844	41451	492	309	492	1293	17507	21844	40644	5350	569	0	18.2
Feb 2024	1,251	298	570	17832	19951	21659	41610	520	298	493	1310	17832	21659	40801	1500	543	0	18.1
Mar 2024	1,274	287	564	18163	20287	21407	41694	540	287	485	1312	18163	21407	40881	1500	894	0	18.0
Apr 2024	1,246	265	515	18324	20351	21550	41901	507	265	430	1202	18324	21550	41077	1500	1014	0	17.9
May 2024	1,192	216	449	18287	20144	21847	41991	447	216	340	1003	18287	21847	41137	1500	993	0	18.9
Jun 2024	1,179	93	319	17331	18923	22133	41055	429	93	171	693	17331	22133	40157	1500	900	0	20.2
Jul 2024	873	15	233	16319	17441	22281	39722	102	3	29	134	16319	22281	38734	1500	786	0	20.1
								****CREDITABLE SPACE****										
Aug 2024	788	5	264	16520	17578	22246	39824	788	5	264	1057	16520	22246	39824	1500	765	0	19.7
Sep 2024	813	29	297	16893	18031	22186	40217	813	29	297	1138	16893	22186	40217	2270	673	0	19.2
Oct 2024	857	67	319	17036	18279	22303	40582	857	67	319	1243	17036	22303	40582	3040	487	0	19.0

* Based on the Colorado River Basin Forecast Center's Most Probable Water Supply Forecast

Model Run ID: 3207

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