October 24-Month Study
Date: October 14, 2022

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

Current Reservoir Status

	September Inflow (unregulated) (acre-feet)	Percent of Average (percent)	October 13, Midnight Elevation (feet)	October 13, Midnight Reservoir Storage (acre-feet)
Fontenelle	29,400	73	6496.66	264,000
Flaming Gorge	31,700	69	6012.35	2,659,000
Blue Mesa	30,500	87	7444.40	279,500
Navajo	21,800	63	6020.71	872,600
Powell	244,600	71	3530.35	5,858,000

Expected Operations

The operation of Lake Powell and Lake Mead in this October 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.

[2] For more information: https://www.usbr.gov/uc/DocLibrary/Plans/20220429-2022DroughtResponseOperationsPlan-ApprovalMemo-508-DOI.pdf.

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 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 September was 0.245 maf or 71 percent of the 30-year average from 1991 to 2020. The October 2022 unregulated inflow forecast for Lake Powell is 0.325 maf or 72 percent of the 30-year average. The observed 2022 April through July unregulated inflow is 3.751 maf or 59 percent of average. The preliminary 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_10_ucb.pdf.

Fontenelle Reservoir

As of October 11, 2022, the Fontenelle Reservoir pool elevation is 6497.03 feet, which amounts to 80 percent of live storage capacity. Inflows for the month of August totaled approximately 29,000 acre-feet (af) or 73 percent of average. Fontenelle's release is currently maintained at 1,000 cfs.

The October final forecast for unregulated inflows into Fontenelle for the next three months projects below average conditions. October, November, and December inflow volumes amount to 40,000 af (89 percent of average), 35,000 af (84 percent of average), and 28,000 af (88 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 October 11, 2022, Flaming Gorge Reservoir pool elevation is 6012.53 feet, which amounts to 73 percent of live storage capacity. Unregulated inflow volume for the month of September is approximately 32,000 acre-feet (af), which is 69 percent of the average September unregulated inflow volume. The current average daily release is 1,820 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, increasing base flow average daily releases to about 1,800 cfs.

The observed April through July unregulated inflow volume into Flaming Gorge Reservoir is 552,000 af (57 percent 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 September forecast for unregulated inflows into Flaming Gorge for the next three months projects below average conditions. October, November, and December forecasted unregulated inflow volumes amount to 47,000 af (88 percent of average), 43,000 af (87 percent of average), and 29,000 af (88 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 October 6, 2022, releases from Crystal Dam are approximately 1,050 cfs. Gunnison Tunnel diversions are occurring and currently about 710 cfs. Flows of the Gunnison River in the Black Canyon are being maintained at about 335 cfs while flows in the Whitewater Reach of the Gunnison River are about 1520 cfs.

The unregulated inflow volume in August to Blue Mesa was 30,500 af (87 percent of average). Unregulated Inflow volumes forecasted for Blue Mesa for the next three months (October, November and December) are projected to be: 30,000 af (81 percent of average), 26,000 af (86 percent of average) and 21,000 af (84 percent of average), respectively. The October 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 820,000 af (91 percent of average). The water supply period (April-July) for 2023 is forecasted to be 593,000 af of unregulated inflow (93 percent of average).

Blue Mesa elevation is currently declining and as of October 6, 2022, was 7,445.66 feet above sea level corresponding to a live storage of 286,078 af which is 34 percent of capacity. By the end of water year 2023 (September 30, 2023) Blue Mesa elevation is projected to be 7,482.82 feet with about 523,000 af 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 in 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 October 10th, the daily average release rate from Navajo Dam was 450 cfs while reservoir inflow was averaging 540 cfs. The water surface elevation was 6020.82 feet above sea level. At this elevation the live storage is 0.873 maf (53 percent of live storage capacity) and the active storage is 0.247 maf (24 percent of active storage capacity). The Navajo Indian Irrigation Project (NIIP) is diverting 177 cfs (totaling 203.6 kaf so far in CY2022). The San Juan-Chama project is diverting 52 cfs (totaling 67.6 kaf 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 44.4 kaf, which was 90 percent of average for the month. The release averaged 680 cfs and totaled 40.3 kaf, which was 74 percent 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 October, November, and December is 32 kaf (83 percent of average), 26 kaf (97 percent of average), and 21 kaf (101 percent of average), respectively.

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 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 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 September was 245 kaf (71 percent of average). The release volume from Glen Canyon Dam in August was 547 kaf. The end of September elevation and storage of Lake Powell were 3,529.33 feet (171 feet from full pool) and 5.80 maf (25 percent of live capacity), respectively.

Current Operations
Hourly releases during October 2022 will fluctuate from a low of approximately 6,000 cfs during the early morning hours to a high of 9,000 cfs during the afternoon and evening hours. Thee November 2022 releases are currently scheduled to fluctuate between a low of 6,300 cfs to a high of 9,986 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 1,100 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 40 MW (approximately 800 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 October 1, 2022, by the Colorado Basin River Forecast Center, projects that the most probable (median) unregulated inflow volume in water year 2023 will be 8.10 maf (84 percent of average).

In addition to the October 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 October to determine a possible range of reservoir elevations under probable most and minimum inflow scenarios. 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 October forecast for water year 2023 ranges from a minimum probable of 4.80 maf (50 percent of average) to a maximum probable of 15.50 maf (161 percent of average) with the most probable forecast

for water year 2023 of 8.10 maf (84 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 8.10 maf unregulated, the October 24-Month Study projects Lake Powell elevation will end water year 2023 near 3535.54 feet with approximately 6.17 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 October 2022 model run for the minimum and the maximum inflow forecast are 3,495.87 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 2000-2021 is the lowest 22-year period since the closure of Glen Canyon Dam in 1963, with an average unregulated inflow of 8.46 maf, or 88 percent of the 30-year average (1991-2020) with only five above-average water years. (For comparison, the 1991-2020 total water year average is 9.60 maf.) The unregulated inflow during the 2000-2021 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 8.3 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 18.68 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.

To: All Annual Operating Plan Recipients

From: Noe Santos, P.E.
River Operations Manager
Boulder Canyon Operations Office
Interior Region 8: Lower Colorado Basin
P.O. Box 61470
Boulder City, NV 89006-1470
Phone: (702) 293-8190

From: Heather Patno
Acting Supervisor, Water Management Group
Water and Power Division, Power Office
Interior Region 7: Upper Colorado Basin
125 South State Street, Room 8100
Salt Lake City, UT 84138-5571
Phone: (801) 524-3883

The operation of Lake Powell and Lake Mead in this October 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 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 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:

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

[2] For more information: https://www.usbr.gov/uc/DocLibrary/Plans/20220429-2022DroughtResponseOperationsPlan-ApprovalMemo-508-DOI.pdf.

- 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 September was 0.245 maf or 71 percent of the 30-year average from 1991 to 2020. The October 2022 unregulated inflow forecast for Lake Powell is 0.325 maf or 72 percent of the 30-year average. The observed 2022 April through July unregulated inflow is 3.751 maf or 59 percent of average. The preliminary 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 0.965 maf. Consumptive use for Nevada above Hoover (SNWP Use) is projected to be 0.244 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 Maintenancereports 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 Colorado River Forecasting Service through the National Weather Service's Colorado Basin River Forecast Center and are as follows in thousand acre-feet (kaf):

Reservoir	Observed Inflow (kaf)				Sep	Inflow Forecast (kaf)			Observed 2022	
	Jun	Jul	Aug	Sep	%Avg	Oct	Nov	Dec	Apr-Jul	%Avg
Lake Powell	1284	491	368	245	71%	325	365	300	3751	59%
Fontenelle	241	102	56	29	72%	40	35	28	456	62%
Flaming Gorge	274	125	58	30	65%	47	43	29	553	57%
Blue Mesa	133	59	57	31	88%	30	26	21	431	68%
Morrow Point	134	60	58	31	84%	32	27	23	445	64%
Crystal	145	64	62	33	79%	35	31	27	485	63%
Taylor Park	26	11.3	7.9	5.3	76%	6	4.5	4	72	77%
Vallecito	26	18.8	18	11.5	74%	11	6.5	5	125	71%
Navajo	47	44	53	22	64%	32	26	21	381	60%
Lemon	5.2	4.9	4.4	2.6	73%	2.3	1.2	0.9	32	67%
McPhee	22	8.5	9.6	5.8	53%	8.5	4.5	3.5	144	56%
Ridgway	17.6	12.6	11.8	6.4	72%	6	5	4	57	62%
Deerlodge	311	48	7.8	4.2	27%	25	26	22	903	76%
Durango	54	29	29	18.1	67%	18	14	11	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_10_ucb.pdf.

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 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)
*	Oct 2021	37	1	33	4	37	6491.62	229
H	Nov 2021	39	1	43	0	43	6491.01	225
I	Dec 2021	29	1	50	0	50	6487.63	203
S	Jan 2022	29	1	51	0	51	6483.90	180
T	Feb 2022	23	1	46	0	46	6479.63	157
O	Mar 2022	46	1	50	0	50	6478.63	151
R	Apr 2022	50	1	5	44	49	6478.74	152
I	May 2022	63	1	47	8	55	6479.96	158
C	Jun 2022	241	2	82	0	82	6503.59	315
A	Jul 2022	102	3	83	11	93	6504.34	321
L	Aug 2022	56	2	67	1	68	6502.43	306
*	Sep 2022	29	2	61	0	61	6498.08	274
	WY 2022	**744**	**15**	**617**	**67**	**685**		
	Oct 2022	40	1	61	0	61	6494.91	252
	Nov 2022	35	1	60	0	60	6491.22	226
	Dec 2022	28	1	61	0	61	6485.91	192
	Jan 2023	26	1	61	0	61	6479.56	156
	Feb 2023	24	0	56	0	56	6472.80	124
	Mar 2023	42	0	61	0	61	6467.91	104
	Apr 2023	65	1	34	28	62	6468.48	106
	May 2023	130	1	76	0	76	6480.24	160
	Jun 2023	275	2	102	45	147	6499.64	286
	Jul 2023	165	3	101	21	122	6504.93	326
	Aug 2023	60	2	78	0	78	6502.30	305
	Sep 2023	40	2	65	0	65	6498.63	278
	WY 2023	**930**	**14**	**817**	**94**	**912**		
	Oct 2023	46	1	68	0	68	6495.46	255
	Nov 2023	42	1	66	0	66	6491.84	231
	Dec 2023	32	1	69	0	69	6485.99	193
	Jan 2024	31	1	69	0	69	6479.14	154
	Feb 2024	29	0	65	0	65	6471.30	118
	Mar 2024	51	0	68	0	68	6466.99	101
	Apr 2024	77	1	34	37	71	6468.33	106
	May 2024	166	1	83	0	83	6485.11	187
	Jun 2024	301	2	103	95	198	6499.99	288
	Jul 2024	146	3	101	7	108	6504.67	324
	Aug 2024	59	2	70	0	70	6502.97	311
	Sep 2024	39	2	65	0	65	6499.18	282
	WY 2024	**1019**	**15**	**862**	**139**	**1000**		

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 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)
*	Oct 2021	49	50	7	77	0	77	117	6018.23	2918	107
H	Nov 2021	47	49	3	51	0	51	117	6018.09	2913	87
I	Dec 2021	21	41	2	52	0	52	117	6017.72	2900	82
S	Jan 2022	33	55	2	52	0	52	117	6017.75	2901	80
T	Feb 2022	30	54	2	47	0	47	117	6017.87	2905	70
O	Mar 2022	74	83	3	52	0	52	118	6018.65	2932	111
R	Apr 2022	66	62	5	51	0	51	118	6018.81	2938	179
I	May 2022	88	88	7	139	48	187	114	6015.77	2769	570
C	Jun 2022	274	113	9	110	12	121	113	6015.25	2752	465
A	Jul 2022	125	110	11	79	0	79	106	6016.09	2780	137
L	Aug 2022	58	70	11	105	0	105	104	6014.73	2735	124
*	Sep 2022	32	63	9	112	0	112	102	6013.01	2680	125
	WY 2022	**897**	**837**	**70**	**927**	**60**	**987**				**2138**
	Oct 2022	47	68	6	112	0	112	100	6011.52	2632	137
	Nov 2022	43	68	3	101	0	101	99	6010.40	2597	127
	Dec 2022	29	62	1	105	0	105	97	6009.05	2554	127
	Jan 2023	32	67	1	108	0	108	95	6007.76	2515	130
	Feb 2023	35	67	2	95	0	95	94	6006.82	2486	117
	Mar 2023	85	104	2	73	0	73	95	6007.74	2514	131
	Apr 2023	105	102	4	70	0	70	96	6008.61	2541	265
	May 2023	180	126	6	215	0	215	93	6005.59	2448	740
	Jun 2023	350	222	8	68	0	68	98	6010.12	2588	458
	Jul 2023	195	152	11	61	0	61	101	6012.56	2665	126
	Aug 2023	68	86	11	80	0	80	101	6012.42	2661	95
	Sep 2023	46	71	9	76	0	76	101	6012.01	2648	91
	WY 2023	**1215**	**1197**	**66**	**1164**	**0**	**1164**				**2544**
	Oct 2023	54	76	6	68	0	68	101	6012.06	2649	97
	Nov 2023	51	75	3	69	0	69	101	6012.17	2653	101
	Dec 2023	34	71	1	77	0	77	101	6011.94	2645	102
	Jan 2024	42	80	1	75	0	75	101	6012.04	2649	100
	Feb 2024	43	79	2	69	0	69	101	6012.28	2656	94
	Mar 2024	85	102	3	52	0	52	103	6013.68	2701	126
	Apr 2024	111	105	4	51	0	51	105	6015.18	2750	254
	May 2024	239	156	7	221	0	221	102	6013.06	2681	734
	Jun 2024	389	286	9	63	0	63	110	6019.31	2887	430
	Jul 2024	161	123	12	59	0	59	112	6020.79	2937	119
	Aug 2024	66	77	11	80	0	80	112	6020.38	2923	99
	Sep 2024	43	69	10	77	0	77	111	6019.89	2907	90
	WY 2024	**1318**	**1299**	**69**	**960**	**0**	**960**				**2345**

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 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)
*	Oct 2021	5	5	9302.69	59
H	Nov 2021	4	4	9302.58	59
I	Dec 2021	5	5	9302.55	59
S	Jan 2022	4	4	9302.29	58
T	Feb 2022	3	4	9301.88	58
O	Mar 2022	4	4	9301.56	57
R	Apr 2022	8	6	9302.92	59
I	May 2022	27	12	9312.55	74
C	Jun 2022	26	19	9316.61	81
A	Jul 2022	11	15	9314.18	77
L	Aug 2022	8	14	9310.35	70
*	Sep 2022	5	8	9308.87	68
	WY 2022	**110**	**100**		
	Oct 2022	6	6	9309.07	68
	Nov 2022	5	5	9309.04	68
	Dec 2022	4	5	9308.24	67
	Jan 2023	4	5	9307.46	66
	Feb 2023	4	5	9306.94	65
	Mar 2023	4	5	9306.14	64
	Apr 2023	8	6	9307.46	66
	May 2023	27	12	9316.63	81
	Jun 2023	40	18	9328.37	103
	Jul 2023	15	21	9325.32	97
	Aug 2023	9	18	9320.54	88
	Sep 2023	6	15	9315.47	79
	WY 2023	**132**	**121**		
	Oct 2023	6	9	9313.70	76
	Nov 2023	5	5	9313.67	76
	Dec 2023	4	5	9312.92	75
	Jan 2024	5	5	9312.80	74
	Feb 2024	4	5	9312.31	74
	Mar 2024	5	5	9312.19	73
	Apr 2024	9	9	9312.19	73
	May 2024	26	15	9318.61	84
	Jun 2024	40	18	9330.11	106
	Jul 2024	15	21	9327.11	100
	Aug 2024	8	18	9321.90	90
	Sep 2024	7	18	9315.76	79
	WY 2024	**134**	**134**		

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 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)
*	Oct 2021	27	26	0	58	0	58	7429.52	209
H	Nov 2021	27	27	0	16	0	16	7431.94	220
I	Dec 2021	22	22	0	11	0	11	7434.40	231
S	Jan 2022	20	20	0	14	0	14	7435.60	236
T	Feb 2022	18	19	0	14	0	14	7436.57	241
O	Mar 2022	30	30	0	32	0	32	7436.17	239
R	Apr 2022	62	60	0	44	0	46	7438.94	252
I	May 2022	177	162	1	79	0	79	7454.56	335
C	Jun 2022	133	126	1	69	0	69	7463.76	391
A	Jul 2022	59	63	1	84	0	84	7460.15	368
L	Aug 2022	57	64	1	89	0	89	7455.69	341
*	Sep 2022	31	33	1	55	28	82	7446.72	292
	WY 2022	**661**	**652**	**6**	**566**	**28**	**595**		
	Oct 2022	30	30	0	0	75	75	7437.60	246
	Nov 2022	26	26	0	0	14	14	7440.06	258
	Dec 2022	21	22	0	14	0	14	7441.76	266
	Jan 2023	20	21	0	15	0	15	7443.03	273
	Feb 2023	18	19	0	13	0	13	7444.17	278
	Mar 2023	28	29	0	16	0	16	7446.75	292
	Apr 2023	56	54	1	47	0	47	7447.98	298
	May 2023	195	180	1	110	0	110	7460.06	367
	Jun 2023	250	228	1	31	0	31	7488.10	563
	Jul 2023	92	98	1	76	0	76	7490.70	583
	Aug 2023	51	60	1	82	0	82	7487.70	560
	Sep 2023	33	42	1	78	0	78	7482.84	523
	WY 2023	**820**	**809**	**7**	**482**	**89**	**571**		
	Oct 2023	35	38	0	72	0	72	7478.20	489
	Nov 2023	30	30	0	13	0	13	7480.50	506
	Dec 2023	26	27	0	14	0	14	7482.31	519
	Jan 2024	25	25	0	14	0	14	7483.83	530
	Feb 2024	23	24	0	12	0	12	7485.30	542
	Mar 2024	38	38	0	17	0	17	7488.08	563
	Apr 2024	78	78	1	28	0	28	7494.37	612
	May 2024	204	193	1	69	0	69	7509.04	735
	Jun 2024	251	229	1	145	0	145	7518.25	817
	Jul 2024	86	92	2	108	0	108	7516.31	800
	Aug 2024	55	65	1	112	0	112	7510.91	751
	Sep 2024	35	46	1	109	0	109	7503.47	687
	WY 2024	**886**	**886**	**9**	**712**	**0**	**712**		

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 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)
*	Oct 2021	27	58	1	59	61	0	61	7149.67	109
H	Nov 2021	30	16	3	19	17	0	17	7151.77	110
I	Dec 2021	23	11	1	12	16	0	16	7145.62	106
S	Jan 2022	21	14	1	15	16	0	16	7144.25	105
T	Feb 2022	19	14	1	15	14	0	14	7145.30	105
O	Mar 2022	31	32	2	33	30	0	30	7149.87	109
R	Apr 2022	65	46	3	50	47	0	47	7153.31	112
I	May 2022	186	79	9	88	89	0	89	7152.08	111
C	Jun 2022	134	69	1	70	71	0	71	7150.86	110
A	Jul 2022	60	84	1	85	84	0	84	7152.31	111
L	Aug 2022	58	89	1	90	90	0	90	7152.25	111
*	Sep 2022	31	82	1	83	78	0	78	7157.81	115
	WY 2022	**685**	**595**	**24**	**619**	**614**	**0**	**614**		
	Oct 2022	32	75	2	77	80	0	80	7153.73	112
	Nov 2022	27	14	1	15	15	0	15	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	31	16	3	19	18	0	18	7153.73	112
	Apr 2023	61	47	5	52	52	0	52	7153.73	112
	May 2023	220	110	25	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	**890**	**571**	**70**	**641**	**643**	**0**	**643**		
	Oct 2023	36	72	1	73	73	0	73	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	145	14	159	159	0	159	7153.72	112
	Jul 2024	90	108	4	112	112	0	112	7153.73	112
	Aug 2024	56	112	1	113	113	0	113	7153.73	112
	Sep 2024	36	109	1	110	110	0	110	7153.73	112
	WY 2024	**947**	**712**	**61**	**773**	**773**	**0**	**773**		

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 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)
*	Oct 2021	32	61	5	66	34	32	66	6752.35	17	41	24
H	Nov 2021	34	17	4	21	22	0	22	6749.65	16	1	19
I	Dec 2021	27	16	4	21	20	0	21	6750.09	16	1	19
S	Jan 2022	25	16	4	21	20	0	21	6750.38	16	1	18
T	Feb 2022	22	14	3	17	18	0	18	6746.37	15	0	17
O	Mar 2022	36	30	4	34	32	1	32	6752.56	17	6	25
R	Apr 2022	73	47	8	54	54	1	54	6752.33	17	31	24
I	May 2022	203	89	17	105	92	13	106	6751.40	16	59	48
C	Jun 2022	145	71	10	82	80	2	81	6752.67	17	62	21
A	Jul 2022	64	84	4	88	89	0	90	6747.68	15	65	28
L	Aug 2022	62	90	3	94	92	0	92	6751.52	17	66	31
*	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	35	80	3	83	82	0	82	6753.04	17	55	27
	Nov 2022	31	15	4	19	19	0	19	6753.04	17	0	19
	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	18	6	24	24	0	24	6753.04	17	5	19
	Apr 2023	77	52	16	68	68	0	68	6753.04	17	42	26
	May 2023	250	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	**1010**	**643**	**120**	**763**	**732**	**31**	**762**			**410**	**352**
	Oct 2023	40	73	4	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	159	28	187	130	57	187	6753.03	17	61	126
	Jul 2024	98	112	8	120	120	0	120	6753.04	17	65	55
	Aug 2024	63	113	7	120	120	0	120	6753.04	17	65	55
	Sep 2024	42	110	6	116	116	0	116	6753.04	17	55	61
	WY 2024	**1061**	**773**	**114**	**887**	**805**	**81**	**886**			**410**	**476**

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 2022 24-Month Study

Most Probable Inflow*

Vallecito Reservoir

	Date	Regulated Inflow (1000 Ac-Ft)	Total Release (1000 Ac-Ft)	Reservoir Elev End of Month (Ft)	Live Storage (1000 Ac-Ft)
*	Oct 2021	8	3	7619.62	29
H	Nov 2021	5	2	7621.90	32
I	Dec 2021	4	0	7624.23	35
S	Jan 2022	4	0	7626.39	39
T	Feb 2022	3	0	7628.13	42
O	Mar 2022	7	0	7631.90	48
R	Apr 2022	27	2	7644.01	73
I	May 2022	53	33	7652.10	92
C	Jun 2022	26	34	7648.50	83
A	Jul 2022	19	32	7642.57	70
L	Aug 2022	18	28	7637.64	59
*	Sep 2022	12	26	7630.15	45
	WY 2022	**185**	**160**		
	Oct 2022	11	3	7634.54	53
	Nov 2022	7	2	7637.21	59
	Dec 2022	5	0	7639.42	63
	Jan 2023	5	0	7641.60	68
	Feb 2023	4	0	7643.29	72
	Mar 2023	6	0	7645.74	77
	Apr 2023	16	2	7651.63	91
	May 2023	62	33	7662.60	119
	Jun 2023	67	34	7673.93	151
	Jul 2023	19	32	7669.36	138
	Aug 2023	12	28	7663.33	121
	Sep 2023	11	26	7657.64	106
	WY 2023	**225**	**160**		
	Oct 2023	10	17	7654.95	99
	Nov 2023	8	2	7657.35	105
	Dec 2023	7	2	7659.31	111
	Jan 2024	6	2	7660.87	115
	Feb 2024	5	2	7662.09	118
	Mar 2024	10	2	7665.10	126
	Apr 2024	23	2	7672.38	147
	May 2024	68	45	7679.60	169
	Jun 2024	62	61	7679.78	170
	Jul 2024	21	42	7672.95	148
	Aug 2024	15	38	7664.74	125
	Sep 2024	16	30	7659.48	111
	WY 2024	**251**	**242**		

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 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)
*	Oct 2021	20	0	16	1	2	28	6022.31	887	45
H	Nov 2021	14	0	10	1	0	18	6021.39	879	36
I	Dec 2021	15	0	11	0	0	18	6020.63	872	35
S	Jan 2022	14	0	10	0	0	22	6019.21	859	38
T	Feb 2022	14	0	11	1	1	20	6018.00	848	33
O	Mar 2022	41	2	32	1	4	22	6018.57	853	38
R	Apr 2022	123	17	84	2	17	20	6023.53	898	44
I	May 2022	167	30	114	3	38	18	6029.39	954	104
C	Jun 2022	47	7	50	3	37	24	6027.89	939	61
A	Jul 2022	44	5	54	3	39	35	6025.41	916	55
L	Aug 2022	53	5	56	3	38	30	6023.95	902	49
*	Sep 2022	22	1	35	2	23	40	6020.65	872	56
	WY 2022	**574**	**66**	**484**	**20**	**200**	**296**			**594**
	Oct 2022	32	1	22	1	2	29	6019.56	862	47
	Nov 2022	26	0	20	1	0	18	6019.73	864	32
	Dec 2022	21	0	16	0	0	18	6019.50	862	29
	Jan 2023	19	0	14	0	0	22	6018.55	853	32
	Feb 2023	23	0	19	1	1	20	6018.22	850	29
	Mar 2023	55	4	45	1	4	22	6020.18	868	36
	Apr 2023	115	14	87	2	17	20	6025.45	916	54
	May 2023	230	31	171	3	38	18	6036.83	1028	138
	Jun 2023	190	25	132	3	37	24	6043.28	1096	164
	Jul 2023	30	2	41	4	39	35	6039.86	1059	85
	Aug 2023	24	1	39	3	38	30	6036.80	1027	58
	Sep 2023	25	1	39	2	23	40	6034.15	1001	62
	WY 2023	**790**	**80**	**645**	**21**	**200**	**296**			**766**
	Oct 2023	30	2	35	1	9	22	6034.42	1003	43
	Nov 2023	28	1	21	1	0	16	6034.81	1007	33
	Dec 2023	24	0	19	1	0	17	6034.96	1009	32
	Jan 2024	22	0	18	1	0	19	6034.78	1007	32
	Feb 2024	29	1	25	1	0	14	6035.75	1017	26
	Mar 2024	92	10	74	1	5	16	6040.68	1068	39
	Apr 2024	147	18	107	2	21	16	6046.96	1136	67
	May 2024	251	34	194	3	35	15	6058.72	1276	150
	Jun 2024	187	25	161	4	51	15	6065.73	1367	159
	Jul 2024	33	2	51	5	56	20	6063.59	1339	71
	Aug 2024	24	1	45	4	39	28	6061.62	1313	57
	Sep 2024	31	2	43	3	18	25	6061.37	1310	51
	WY 2024	**898**	**96**	**793**	**26**	**235**	**223**			**760**

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 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)
*	Oct 2021	317	419	21	481	0	481	3544.25	4628	7181	489
H	Nov 2021	346	342	20	500	0	500	3541.84	4615	7016	496
I	Dec 2021	266	290	16	600	0	600	3537.33	4591	6713	599
S	Jan 2022	249	269	4	673	0	673	3531.52	4561	6335	681
T	Feb 2022	215	235	4	540	0	540	3526.97	4538	6048	556
O	Mar 2022	329	327	7	574	0	574	3523.13	4519	5812	584
R	Apr 2022	594	490	12	502	0	502	3522.77	4517	5791	510
I	May 2022	1382	1212	14	598	0	598	3531.69	4561	6346	599
C	Jun 2022	1284	1198	25	598	0	598	3539.81	4604	6878	595
A	Jul 2022	491	463	28	672	0	672	3536.20	4551	6212	672
L	Aug 2022	368	444	27	713	0	713	3531.69	4529	5938	719
*	Sep 2022	245	420	24	547	0	547	3529.33	4517	5797	556
	WY 2022	**6084**	**6107**	**203**	**6999**	**0**	**6999**				**7057**
	Oct 2022	325	438	17	480	0	480	3528.40	4513	5743	493
	Nov 2022	365	404	16	500	0	500	3526.62	4505	5639	501
	Dec 2022	300	366	13	600	0	600	3522.63	4486	5410	602
	Jan 2023	260	334	3	664	0	664	3517.09	4462	5101	671
	Feb 2023	285	338	3	587	0	587	3512.77	4443	4867	596
	Mar 2023	445	396	6	620	0	620	3508.72	4426	4654	633
	Apr 2023	670	562	9	552	0	552	3508.73	4426	4655	569
	May 2023	1750	1558	11	550	0	550	3525.57	4500	5578	572
	Jun 2023	2300	1696	22	577	0	577	3542.27	4581	6593	598
	Jul 2023	765	661	28	652	0	652	3541.98	4580	6575	672
	Aug 2023	315	403	28	696	0	696	3537.25	4556	6277	714
	Sep 2023	320	434	26	522	0	522	3535.54	4547	6172	537
	WY 2023	**8100**	**7587**	**183**	**7000**	**0**	**7000**				**7157**
	Oct 2023	421	474	17	643	0	643	3532.71	4534	5999	656
	Nov 2023	452	442	17	642	0	642	3529.34	4518	5798	643
	Dec 2023	361	385	13	715	0	715	3523.87	4492	5480	717
	Jan 2024	350	369	3	763	0	763	3517.31	4463	5112	770
	Feb 2024	397	399	3	675	0	675	3512.51	4442	4854	684
	Mar 2024	614	499	6	713	0	713	3508.64	4426	4650	726
	Apr 2024	920	717	9	635	0	635	3509.94	4431	4718	652
	May 2024	2060	1741	12	632	0	632	3528.25	4512	5734	654
	Jun 2024	2423	1895	23	663	0	663	3546.30	4602	6853	684
	Jul 2024	711	675	29	749	0	749	3544.83	4594	6758	769
	Aug 2024	371	487	29	800	0	800	3539.87	4569	6441	818
	Sep 2024	316	438	26	563	0	563	3537.64	4558	6301	577
	WY 2024	**9396**	**8520**	**187**	**8193**	**0**	**8193**				**8350**

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 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)
*	Oct 2021	481	80	51	581	9.4	16	586	581	1066.77	8945
H	Nov 2021	500	42	44	642	10.8	10	650	572	1064.97	8804
I	Dec 2021	600	64	36	503	8.2	10	511	579	1066.39	8915
S	Jan 2022	673	60	25	640	10.4	11	639	583	1067.09	8970
T	Feb 2022	540	58	23	590	10.6	10	590	581	1066.78	8946
O	Mar 2022	574	41	25	1010	16.4	17	1009	555	1061.49	8536
R	Apr 2022	502	30	33	1027	17.3	17	1026	522	1054.69	8026
I	May 2022	598	8	40	1083	17.6	25	1075	489	1047.69	7517
C	Jun 2022	598	16	47	889	14.9	29	877	467	1043.02	7187
A	Jul 2022	672	70	45	822	13.4	31	814	458	1040.92	7041
L	Aug 2022	713	186	48	573	9.3	28	567	473	1044.28	7275
*	Sep 2022	547	120	48	539	9.1	24	545	476	1045.03	7328
	WY 2022	**6999**	**776**	**463**	**8899**		**228**	**8887**			
	Oct 2022	480	69	45	488	7.9	26	488	476	1044.89	7319
	Nov 2022	500	68	40	676	11.4	15	676	466	1042.71	7166
	Dec 2022	600	69	32	427	6.9	11	427	478	1045.38	7353
	Jan 2023	664	87	22	604	9.8	10	604	485	1046.90	7460
	Feb 2023	587	88	21	549	9.9	8	549	491	1048.19	7553
	Mar 2023	620	107	23	883	14.4	14	883	479	1045.64	7371
	Apr 2023	552	72	30	994	16.7	16	994	454	1040.03	6980
	May 2023	550	43	37	976	15.9	20	976	427	1033.95	6567
	Jun 2023	577	22	44	915	15.4	28	915	403	1028.44	6203
	Jul 2023	652	56	42	828	13.5	32	828	391	1025.63	6021
	Aug 2023	696	66	45	798	13.0	34	798	384	1023.94	5913
	Sep 2023	522	62	43	692	11.6	30	692	373	1021.25	5743
	WY 2023	**7000**	**810**	**423**	**8829**		**245**	**8829**			
	Oct 2023	643	69	41	527	8.6	24	527	381	1023.04	5856
	Nov 2023	642	68	36	649	10.9	14	649	381	1023.21	5867
	Dec 2023	715	69	29	543	8.8	9	543	394	1026.18	6057
	Jan 2024	763	87	20	582	9.5	10	582	408	1029.61	6280
	Feb 2024	675	88	19	526	9.1	8	526	421	1032.60	6477
	Mar 2024	713	107	21	861	14.0	15	861	416	1031.51	6405
	Apr 2024	635	72	28	973	16.3	17	973	397	1027.04	6113
	May 2024	632	43	35	956	15.5	21	956	377	1022.10	5797
	Jun 2024	663	22	42	898	15.1	29	898	360	1017.85	5531
	Jul 2024	749	56	40	810	13.2	33	810	355	1016.67	5458
	Aug 2024	800	66	43	788	12.8	35	788	355	1016.68	5458
	Sep 2024	563	62	42	677	11.4	31	677	347	1014.76	5341
	WY 2024	**8193**	**810**	**396**	**8791**		**244**	**8791**			

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 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)
*	Oct 2021	581	-3	14	658	0	658	10.7	634.42	1471
H	Nov 2021	642	-9	13	543	0	543	9.1	637.48	1551
I	Dec 2021	503	-6	13	465	0	465	7.6	638.32	1573
S	Jan 2022	640	-20	9	523	0	523	8.5	641.60	1661
T	Feb 2022	590	-26	8	555	0	555	10.0	641.69	1663
O	Mar 2022	1010	-38	10	931	0	931	15.1	642.79	1693
R	Apr 2022	1027	-31	13	975	0	975	16.4	643.08	1701
I	May 2022	1083	-20	14	1041	0	1041	16.9	643.35	1708
C	Jun 2022	889	-30	14	842	0	842	14.1	643.47	1712
A	Jul 2022	822	-26	12	770	0	770	12.5	643.97	1725
L	Aug 2022	573	-13	16	575	0	575	9.3	642.87	1695
*	Sep 2022	539	-6	16	617	0	617	10.4	639.17	1595
	WY 2022	**8899**	**-228**	**151**	**8495**	**0**	**8495**			
	Oct 2022	488	-11	14	598	0	598	9.7	634.00	1460
	Nov 2022	676	-16	13	516	0	516	8.7	639.01	1591
	Dec 2022	427	-5	13	396	0	396	6.4	639.51	1604
	Jan 2023	604	-12	9	522	0	522	8.5	641.80	1666
	Feb 2023	549	-11	8	530	0	530	9.5	641.80	1666
	Mar 2023	883	-9	10	830	0	830	13.5	643.05	1700
	Apr 2023	994	-13	13	970	0	970	16.3	643.00	1699
	May 2023	976	-13	14	948	0	948	15.4	643.00	1699
	Jun 2023	915	-18	14	882	0	882	14.8	643.00	1699
	Jul 2023	828	-19	12	823	0	823	13.4	642.00	1671
	Aug 2023	798	-17	15	766	0	766	12.5	642.00	1671
	Sep 2023	692	-8	16	722	0	722	12.1	640.01	1617
	WY 2023	**8829**	**-151**	**151**	**8504**	**0**	**8504**			
	Oct 2023	527	-11	14	685	0	685	11.1	633.00	1434
	Nov 2023	649	-16	13	569	0	569	9.6	635.00	1486
	Dec 2023	543	-5	13	407	0	407	6.6	639.51	1604
	Jan 2024	582	-12	9	499	0	499	8.1	641.80	1666
	Feb 2024	526	-11	8	508	0	508	8.8	641.80	1666
	Mar 2024	861	-9	10	808	0	808	13.1	643.05	1700
	Apr 2024	973	-13	13	949	0	949	15.9	643.00	1699
	May 2024	956	-13	14	929	0	929	15.1	643.00	1699
	Jun 2024	898	-18	14	865	0	865	14.5	643.00	1699
	Jul 2024	810	-19	12	806	0	806	13.1	642.00	1671
	Aug 2024	788	-17	15	755	0	755	12.3	642.00	1671
	Sep 2024	677	-8	16	707	0	707	11.9	640.01	1617
	WY 2024	**8791**	**-151**	**151**	**8488**	**0**	**8488**			

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 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)
*	Oct 2021	658	18	12	421	6.8	99	139	448.37	587	67	1.1
H	Nov 2021	543	13	9	348	5.8	96	124	447.05	562	92	1.5
I	Dec 2021	465	16	7	281	4.6	99	87	447.33	567	89	1.5
S	Jan 2022	523	-3	6	342	5.6	96	89	446.38	550	114	1.9
T	Feb 2022	555	12	8	445	8.0	4	103	446.44	551	127	2.3
O	Mar 2022	931	2	9	658	10.7	97	133	448.02	580	170	2.8
R	Apr 2022	975	6	11	737	12.4	100	141	447.11	563	161	2.7
I	May 2022	1041	8	13	741	12.0	106	150	448.68	593	145	2.4
C	Jun 2022	842	18	15	679	11.4	103	60	448.30	586	154	2.6
A	Jul 2022	770	31	17	639	10.4	106	19	448.84	596	150	2.4
L	Aug 2022	575	42	17	482	7.8	106	16	448.16	583	120	2.0
*	Sep 2022	617	16	15	458	7.7	103	52	447.96	579	105	1.8
	WY 2022	**8495**	**180**	**140**	**6231**		**1117**	**1112**			**1497**	
	Oct 2022	598	18	12	439	7.1	106	61	447.50	570	63	1.0
	Nov 2022	516	17	9	352	5.9	103	64	447.50	570	90	1.5
	Dec 2022	396	18	7	238	3.9	106	77	446.50	552	88	1.4
	Jan 2023	522	14	6	310	5.0	99	115	446.50	552	136	2.2
	Feb 2023	530	5	8	401	7.2	18	102	446.50	552	122	2.2
	Mar 2023	830	4	9	609	9.9	99	105	446.70	555	145	2.4
	Apr 2023	970	8	11	715	12.0	96	108	448.70	593	144	2.4
	May 2023	948	6	13	722	11.7	99	108	448.70	593	108	1.8
	Jun 2023	882	7	16	719	12.1	96	45	448.70	593	114	1.9
	Jul 2023	823	14	17	684	11.1	99	38	448.00	580	120	2.0
	Aug 2023	766	13	17	624	10.2	99	36	447.50	571	100	1.6
	Sep 2023	722	12	15	524	8.8	96	88	447.50	570	97	1.6
	WY 2023	**8504**	**135**	**139**	**6337**		**1117**	**948**			**1328**	
	Oct 2023	685	18	12	482	7.8	99	103	447.50	571	87	1.4
	Nov 2023	569	17	9	372	6.2	96	104	447.50	570	113	1.9
	Dec 2023	407	18	7	260	4.2	99	74	446.50	552	108	1.8
	Jan 2024	499	14	6	303	4.9	87	112	446.50	552	130	2.1
	Feb 2024	508	5	8	395	6.9	4	99	446.50	552	117	2.0
	Mar 2024	808	4	9	602	9.8	87	102	446.70	555	139	2.3
	Apr 2024	949	8	11	708	11.9	84	105	448.70	593	138	2.3
	May 2024	929	6	13	718	11.7	87	105	448.70	593	104	1.7
	Jun 2024	865	7	16	714	12.0	84	44	448.70	593	109	1.8
	Jul 2024	806	14	17	679	11.0	87	37	448.00	580	115	1.9
	Aug 2024	755	13	17	626	10.2	87	36	447.50	571	95	1.6
	Sep 2024	707	12	15	524	8.8	84	85	447.50	570	93	1.6
	WY 2024	**8488**	**135**	**139**	**6384**		**987**	**1005**			**1350**	

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 2022 24-Month Study

Most Probable Inflow*

Hoover Dam - Lake Mead

	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
*	Oct 2021	581	9.4	1066.77	8945	-71	422.27	1228.0	216.2	87	372.4
H	Nov 2021	642	10.8	1064.97	8804	-140	421.30	938.0	241.3	67	375.8
I	Dec 2021	503	8.2	1066.39	8915	111	424.48	957.0	185.9	68	369.9
S	Jan 2022	640	10.4	1067.09	8970	55	420.00	993.0	236.8	67	370.2
T	Feb 2022	590	10.6	1066.78	8946	-24	420.26	994.0	220.4	67	373.2
O	Mar 2022	1010	16.4	1061.49	8536	-409	413.69	898.0	375.9	62	372.3
R	Apr 2022	1027	17.3	1054.69	8026	-511	405.75	863.0	380.5	61	370.4
I	May 2022	1083	17.6	1047.69	7517	-509	397.38	1082.0	391.7	80	361.7
C	Jun 2022	889	14.9	1043.02	7187	-330	396.77	1076.9	315.1	81	354.6
A	Jul 2022	822	13.4	1040.92	7041	-146	392.29	1236.6	287.9	94	350.1
L	Aug 2022	573	9.3	1044.28	7275	234	399.70	1224.8	200.6	94	349.9
*	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	488	7.9	1044.89	7319	-10	398.80	924.5	175.6	70	359.8
	Nov 2022	676	11.4	1042.71	7166	-153	397.84	948.8	241.3	72	356.9
	Dec 2022	427	6.9	1045.38	7353	187	396.21	957.8	150.5	72	352.8
	Jan 2023	604	9.8	1046.90	7460	108	397.37	969.0	214.9	73	355.7
	Feb 2023	549	9.9	1048.19	7553	92	398.65	887.1	196.5	66	358.1
	Mar 2023	883	14.4	1045.64	7371	-181	396.97	961.1	321.7	73	364.3
	Apr 2023	994	16.7	1040.03	6980	-391	392.55	931.2	353.2	73	355.3
	May 2023	976	15.9	1033.95	6567	-413	387.40	826.8	345.2	66	353.9
	Jun 2023	915	15.4	1028.44	6203	-364	380.27	964.0	312.1	80	341.2
	Jul 2023	828	13.5	1025.63	6021	-182	374.43	1194.6	276.6	100	334.2
	Aug 2023	798	13.0	1023.94	5913	-108	372.53	1181.8	264.3	100	331.1
	Sep 2023	692	11.6	1021.25	5743	-170	371.01	1169.0	225.9	100	326.4
	WY 2023	**8829**							**3077.8**		
	Oct 2023	527	8.6	1023.04	5856	113	375.88	826.9	173.8	70	330.0
	Nov 2023	649	10.9	1023.21	5867	10	379.16	824.2	218.6	70	336.5
	Dec 2023	543	8.8	1026.18	6057	190	378.59	833.4	181.3	70	333.8
	Jan 2024	582	9.5	1029.61	6280	223	378.89	931.3	195.3	76	335.6
	Feb 2024	526	9.1	1032.60	6477	197	381.32	951.0	177.3	76	336.9
	Mar 2024	861	14.0	1031.51	6405	-73	381.99	843.3	298.7	75	346.7
	Apr 2024	973	16.3	1027.04	6113	-292	378.24	878.5	326.8	81	335.9
	May 2024	956	15.5	1022.10	5797	-316	374.27	774.8	321.1	74	335.8
	Jun 2024	898	15.1	1017.85	5531	-266	369.03	817.3	293.8	81	327.2
	Jul 2024	810	13.2	1016.67	5458	-73	364.77	997.7	261.4	100	322.6
	Aug 2024	788	12.8	1016.68	5458	0	364.51	997.7	253.4	100	321.6
	Sep 2024	677	11.4	1014.76	5341	-117	364.21	981.5	215.6	100	318.2
	WY 2024	**8791**							**2916.9**		

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 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
*	Oct 2021	658	10.7	634.42	1471	-95	134.72	215.5	80.2	85	121.9
H	Nov 2021	543	9.1	637.48	1551	80	136.32	164.9	65.8	65	121.0
I	Dec 2021	465	7.6	638.32	1573	22	137.10	192.5	56.1	75	120.6
S	Jan 2022	523	8.5	641.60	1661	88	139.02	159.6	64.6	63	123.6
T	Feb 2022	555	10.0	641.69	1663	2	140.45	174.9	72.1	69	130.0
O	Mar 2022	931	15.1	642.79	1693	30	140.26	253.3	118.7	99	127.4
R	Apr 2022	975	16.4	643.08	1701	8	137.93	255.0	124.0	100	127.1
I	May 2022	1041	16.9	643.35	1708	7	140.42	241.8	132.1	95	126.9
C	Jun 2022	842	14.1	643.47	1712	3	139.18	251.6	108.5	99	128.9
A	Jul 2022	770	12.5	643.97	1725	14	144.37	255.0	99.3	100	129.1
L	Aug 2022	575	9.3	642.87	1695	-30	141.93	253.3	74.7	99	129.9
*	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	598	9.7	634.00	1460	-135	134.84	185.9	72.6	73	121.5
	Nov 2022	516	8.7	639.01	1591	131	135.21	153.0	62.9	60	121.8
	Dec 2022	396	6.4	639.51	1604	13	138.97	157.9	49.5	62	125.2
	Jan 2023	522	8.5	641.80	1666	62	139.44	157.9	65.5	62	125.6
	Feb 2023	530	9.5	641.80	1666	0	140.13	193.1	67.0	76	126.3
	Mar 2023	830	13.5	643.05	1700	34	139.22	255.0	104.1	100	125.4
	Apr 2023	970	16.3	643.00	1699	-2	138.83	255.0	121.4	100	125.1
	May 2023	948	15.4	643.00	1699	0	139.10	255.0	118.8	100	125.3
	Jun 2023	882	14.8	643.00	1699	0	139.31	255.0	110.8	100	125.5
	Jul 2023	823	13.4	642.00	1671	-27	139.32	255.0	103.3	100	125.5
	Aug 2023	766	12.5	642.00	1671	0	139.18	255.0	96.0	100	125.4
	Sep 2023	722	12.1	640.01	1617	-54	138.30	255.0	90.0	100	124.6
	WY 2023	**8504**							**1061.9**		
	Oct 2023	685	11.1	633.00	1434	-183	134.19	227.0	82.8	89	120.9
	Nov 2023	569	9.6	635.00	1486	51	132.32	159.8	67.9	63	119.2
	Dec 2023	407	6.6	639.51	1604	118	136.88	154.7	50.2	61	123.3
	Jan 2024	499	8.1	641.80	1666	62	139.60	156.3	62.8	61	125.8
	Feb 2024	508	8.8	641.80	1666	0	140.44	160.0	64.3	63	126.5
	Mar 2024	808	13.1	643.05	1700	34	139.34	194.1	101.5	76	125.5
	Apr 2024	949	15.9	643.00	1699	-2	138.95	249.9	118.8	98	125.2
	May 2024	929	15.1	643.00	1699	0	139.22	255.0	116.5	100	125.4
	Jun 2024	865	14.5	643.00	1699	0	139.41	255.0	108.7	100	125.6
	Jul 2024	806	13.1	642.00	1671	-27	139.43	255.0	101.2	100	125.6
	Aug 2024	755	12.3	642.00	1671	0	139.23	255.0	94.7	100	125.4
	Sep 2024	707	11.9	640.01	1617	-54	138.40	255.0	88.2	100	124.7
	WY 2024	**8488**							**1057.5**		

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 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
*	Oct 2021	421	6.8	448.37	587	-2	82.15	96.8	29.7	81	70.6
H	Nov 2021	348	5.8	447.05	562	-25	81.18	90.0	24.0	75	69.1
I	Dec 2021	281	4.6	447.33	567	5	81.34	102.6	18.6	85	66.1
S	Jan 2022	342	5.6	446.38	550	-18	80.46	93.9	23.0	78	67.4
T	Feb 2022	445	8.0	446.44	551	1	80.54	86.8	30.9	72	69.4
O	Mar 2022	658	10.7	448.02	580	30	77.95	112.3	45.8	94	69.6
R	Apr 2022	737	12.4	447.11	563	-17	79.08	120.0	50.8	100	68.9
I	May 2022	741	12.0	448.68	593	30	84.09	120.0	51.5	100	69.5
C	Jun 2022	679	11.4	448.30	586	-7	78.23	120.0	47.2	100	69.4
A	Jul 2022	639	10.4	448.84	596	10	82.19	120.0	44.7	100	69.9
L	Aug 2022	482	7.8	448.16	583	-13	83.58	120.0	33.4	100	69.3
*	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	439	7.1	447.50	570	-9	79.89	93.9	31.0	78	70.6
	Nov 2022	352	5.9	447.50	570	0	80.28	90.0	24.2	75	68.8
	Dec 2022	238	3.9	446.50	552	-19	80.87	111.3	15.2	93	63.8
	Jan 2023	310	5.0	446.50	552	0	79.73	93.9	20.7	78	66.9
	Feb 2023	401	7.2	446.50	552	0	78.63	95.2	27.7	79	69.1
	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	77.79	120.0	49.7	100	69.5
	May 2023	722	11.7	448.70	593	0	78.89	120.0	50.8	100	70.3
	Jun 2023	719	12.1	448.70	593	0	78.76	120.0	50.4	100	70.2
	Jul 2023	684	11.1	448.00	580	-13	78.78	120.0	47.8	100	69.8
	Aug 2023	624	10.2	447.50	571	-10	78.57	120.0	43.3	100	69.4
	Sep 2023	524	8.8	447.50	570	0	78.89	120.0	36.4	100	69.4
	WY 2023	**6337**							**439.0**		
	Oct 2023	482	7.8	447.50	571	0	79.34	91.0	33.8	76	70.1
	Nov 2023	372	6.2	447.50	570	0	80.11	92.0	25.5	77	68.6
	Dec 2023	260	4.2	446.50	552	-19	80.67	112.3	16.6	94	63.7
	Jan 2024	303	4.9	446.50	552	0	79.79	92.9	20.3	77	66.9
	Feb 2024	395	6.9	446.50	552	0	78.79	95.4	27.4	79	69.2
	Mar 2024	602	9.8	446.70	555	4	77.57	120.0	41.3	100	68.7
	Apr 2024	708	11.9	448.70	593	38	77.83	120.0	49.3	100	69.6
	May 2024	718	11.7	448.70	593	0	78.92	120.0	50.5	100	70.3
	Jun 2024	714	12.0	448.70	593	0	78.79	120.0	50.2	100	70.2
	Jul 2024	679	11.0	448.00	580	-13	78.81	120.0	47.4	100	69.9
	Aug 2024	626	10.2	447.50	571	-10	78.55	120.0	43.5	100	69.4
	Sep 2024	524	8.8	447.50	570	0	78.89	120.0	36.4	100	69.4
	WY 2024	**6384**							**442.1**		

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 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
*	Oct 2021	183	29	14	22	7	2
H	Nov 2021	189	19	3	6	2	3
I	Dec 2021	226	19	2	5	2	4
S	Jan 2022	252	19	3	5	1	4
T	Feb 2022	201	17	3	4	1	3
O	Mar 2022	208	19	8	9	4	3
	Winter 2022	**1259**	**123**	**34**	**50**	**17**	**19**
R	Apr 2022	179	19	11	15	10	0
I	May 2022	214	52	20	31	18	3
C	Jun 2022	222	41	18	25	16	6
A	Jul 2022	251	29	23	29	17	7
L	Aug 2022	265	39	23	31	18	6
*	Sep 2022	201	42	14	27	13	5
	Summer 2022	**1332**	**222**	**108**	**160**	**92**	**28**
	Oct 2022	170	37	0	29	14	4
	Nov 2022	176	33	0	5	3	4
	Dec 2022	211	34	4	6	3	4
	Jan 2023	230	35	4	6	3	4
	Feb 2023	201	31	3	5	3	3
	Mar 2023	211	24	4	7	4	3
	Winter 2023	**1199**	**194**	**15**	**58**	**32**	**23**
	Apr 2023	185	23	12	19	12	2
	May 2023	189	70	29	49	23	4
	Jun 2023	207	22	9	18	15	7
	Jul 2023	238	20	22	29	15	8
	Aug 2023	252	26	24	31	15	6
	Sep 2023	189	25	23	28	14	5
	Summer 2023	**1259**	**186**	**120**	**174**	**95**	**32**
	Oct 2023	231	22	21	26	9	5
	Nov 2023	229	23	4	5	3	5
	Dec 2023	252	25	4	5	3	5
	Jan 2024	265	25	4	5	3	4
	Feb 2024	231	23	4	5	3	4
	Mar 2024	241	17	5	7	4	4
	Winter 2024	**1449**	**135**	**41**	**54**	**27**	**26**
	Apr 2024	214	17	8	14	9	2
	May 2024	218	73	21	33	20	5
	Jun 2024	240	21	45	57	22	7
	Jul 2024	277	20	34	40	21	8
	Aug 2024	293	27	35	41	21	5
	Sep 2024	204	26	34	40	20	5
	Summer 2024	**1242**	**157**	**144**	**185**	**93**	**27**

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM

OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

October 2022 24-Month Study

Most Probable Inflow*

Flood Control Criteria - Beginning of Month Conditions

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****										
Oct 2022	1,057	533	776	17516	19882	20292	40174	1057	533	776	2366	17516	20292	40174	3040	488	0	19.3
Nov 2022	1,127	579	786	17571	20063	20301	40364	1127	579	786	2492	17571	20301	40364	3810	676	0	19.1
Dec 2022	1,188	567	784	17675	20214	20454	40668	1188	567	784	2539	17675	20454	40668	4580	427	0	19.0
Jan 2023	1,264	559	786	17904	20513	20267	40780	1264	559	786	2609	17904	20267	40780	5350	604	0	18.8
								****EFFECTIVE SPACE****										
Jan 2023	1,264	559	786	17904	20513	20267	40780	292	351	347	990	17904	20267	39162	5350	604	0	18.8
Feb 2023	1,340	552	795	18213	20900	20160	41059	368	346	355	1069	18213	20160	39441	1500	549	0	18.6
Mar 2023	1,401	546	797	18447	21191	20067	41259	427	341	356	1124	18447	20067	39638	1500	883	0	18.3
Apr 2023	1,393	533	780	18659	21365	20249	41614	415	328	333	1077	18659	20249	39985	1500	994	0	18.0
May 2023	1,364	526	732	18659	21280	20640	41920	380	319	267	966	18659	20640	40265	1500	976	0	18.7
Jun 2023	1,403	457	620	17736	20216	21053	41269	416	234	114	764	17736	21053	39553	1500	915	0	19.9
Jul 2023	1,137	262	552	16721	18672	21417	40089	134	16	6	156	16721	21417	38294	1500	828	0	19.7
								****CREDITABLE SPACE****										
Aug 2023	1,020	242	589	16739	18590	21599	40188	1020	242	589	1850	16739	21599	40188	1500	798	0	19.2
Sep 2023	1,045	265	620	17037	18967	21707	40673	1045	265	620	1930	17037	21707	40673	2270	692	0	18.8
Oct 2023	1,085	302	647	17142	19176	21877	41053	1085	302	647	2034	17142	21877	41053	3040	527	0	18.5
Nov 2023	1,106	336	645	17315	19401	21764	41165	1106	336	645	2087	17315	21764	41165	3810	649	0	18.3
Dec 2023	1,127	319	641	17516	19603	21753	41356	1127	319	641	2087	17516	21753	41356	4580	543	0	18.3
Jan 2024	1,173	306	639	17833	19951	21563	41514	1173	306	639	2117	17833	21563	41514	5350	582	0	18.2
								****EFFECTIVE SPACE****										
Jan 2024	1,173	306	639	17833	19951	21563	41514	480	306	515	1301	17833	21563	40698	5350	582	0	18.2
Feb 2024	1,208	294	641	18201	20345	21340	41685	513	294	516	1324	18201	21340	40865	1500	526	0	18.1
Mar 2024	1,237	283	631	18460	20611	21143	41754	539	283	506	1328	18460	21143	40931	1500	861	0	18.0
Apr 2024	1,209	262	580	18664	20714	21215	41930	507	262	448	1217	18664	21215	41095	1500	973	0	17.9
May 2024	1,155	212	512	18596	20475	21507	41982	446	212	357	1015	18596	21507	41118	1500	956	0	18.9
Jun 2024	1,142	90	372	17580	19183	21823	41006	428	84	178	690	17580	21823	40093	1500	898	0	20.3
Jul 2024	835	7	281	16460	17584	22089	39673	102	-22	32	112	16460	22089	38661	1500	810	0	20.1
								****CREDITABLE SPACE****										
Aug 2024	750	25	309	16556	17640	22162	39802	750	25	309	1084	16556	22162	39802	1500	788	0	19.7
Sep 2024	777	73	335	16873	18058	22162	40219	777	73	335	1185	16873	22162	40219	2270	677	0	19.2

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

Model Run ID: 3204

Processed On: 10/11/2022 2:30:21PM