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Updated 2025 Restoration Allocation and Default Flow Schedule April 14, 2025

Summary

The updated Restoration Allocation is based on an Unimpaired Runoff Forecast at the 75% probability of exceedance of 1,367 Thousands of Acre-Feet (TAF). This results in a Normal-Dry Water Year Type. This value for the runoff forecast was arrived at by blending the Department of Water Resources (DWR) and National Weather Service (NWS) forecasts with a 10/90 ratio, respectively, adjusting for observed runoff to date, and using professional judgment to apply an offset to bring the forecast values lower. Accordingly, 272.182 TAF is allocated to the Restoration Program as measured at Gravelly Ford. The Restoration Administrator is asked to return a recommendation on or before April 28, 2025.

Overview

The following transmits the updated 2025 Restoration Allocation and Default Flow Schedule to the Restoration Administrator for the San Joaquin River Restoration Program (SJRRP), consistent with the January 2020 (Version 2.1) Restoration Flow Guidelines (Guidelines or RFG). This Restoration Allocation and Default Flow Schedule provides the following:

- Forecasted water year Unimpaired Runoff: the estimated annual flows that would occur absent regulation on the river. This value is also known as the "Natural River," "Unimpaired Runoff," "Unimpaired Inflow," or "Full Natural Flow," and is utilized to identify the water year type.
- Hydrograph Volumes: the annual allocation hydrograph based on water year Unimpaired Runoff, utilizing Method 3.1 with the Gamma Pathway (RFG-Appendix C, Figure C3) agreed to by the Parties in December 2008.
- Default Flow Schedule: the schedule of Restoration Flows in the absence of a recommendation from the Restoration Administrator.
- Additional Allocations: the hypothetical Restoration Allocations that would result from 10%, 50%, 75%, and 90% probability of exceedance (often shortened as "% exceedance") of the Unimpaired Runoff Forecast.
- Unreleased Restoration Flows: the amount of Restoration Flows not released due to channel capacity constraints, or without delaying completion of Phase 1 improvements.

- Flow targets at Gravelly Ford: the flows at the head of Reach 2, and estimated scheduled releases from Friant Dam adjusted for the assumed Holding Contract demands and losses in Exhibit B.
- Restoration Budget: the volumes for the annual allocation, spring flexible flow, base flow, riparian recruitment, and fall flexible flow.
- Remaining Flow Volume: the volume of Restoration Flows released, the remaining volume available, and associated limitations and flexibility.
- Operational Constraints: the flow release limitations based on downstream channel capacity, regulatory, or legal constraints.

Consistent with Paragraph 18 of the Settlement, the Restoration Administrator shall make recommendations to the Secretary of the Interior concerning the manner in which the hydrographs shall be implemented. As described in the Guidelines, the Restoration Administrator is requested to recommend a flow schedule showing the use of the entire annual allocation during the upcoming Restoration Year or otherwise identify Unreleased Restoration Flows and categorize recommended flows by account. If a recommendation is not provided by the Restoration Administrator, the Capacity Constrained Default Flow Schedule (Table 6b) or the most recently approved schedule will be implemented. The Restoration Administrator is asked to return a recommendation on or before April 28.

Forecasted Unimpaired Runoff

Unimpaired Runoff represents the natural water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds (a.k.a. "Unimpaired Inflow" or "Natural River" or "Full Natural Flow"). It is calculated for the period of a water year. The forecast of the Unimpaired Runoff determines the volume of Restoration Flows available for the Restoration Year (i.e., the Restoration Allocation) (see Table 1). Information for forecasting the Unimpaired Runoff includes:

- Observation of Unimpaired Runoff into Millerton Lake to support the water supply allocation
- The California DWR Bulletin 120 latest update for San Joaquin River inflow to Millerton Lake Unimpaired Flow, and/or the most current DWR Bulletin Water Supply Index (WSI)
- The NWS Ensemble Streamflow Prediction (ESP) Water Supply Forecast for the San Joaquin River at Millerton Lake
- Other forecast models, ground-based observations, remotely-sensed observations, hydrologic models, analysis of historic patterns, and short-term weather forecasts as appropriate.

Table 1 shows the 2025 water year (October 1, 2024 to September 30, 2025) observed accumulated and forecasted water year Unimpaired Runoff into Millerton Lake. This table also

includes the published DWR forecast, the DWR forecast adjusted for an expected runoff for the current month, the NWS forecast with and without a 7-day smoothing function applied to remove the day-to-day variance, and the NWS forecast with 7-day smoothing and adjustment for the expected runoff for the current month (Reclamation adjusts the DWR and NWS values by replacing the forecasted runoff for the current month with Reclamation's own estimate of runoff for the current month, which increases accuracy by incorporating the latest data and local knowledge). Figure 1a plots DWR and NWS forecast values over the entire water year, while Figure 1b shows the most recent period in detail.

The DWR Bulletin 120 (B120) forecast for April 1 (issued April 8) was adjusted by Reclamation to better align with observed runoff conditions to date and projections for the remainder of the month (becoming the "Runoff Adjusted DWR values"). Daily NWS forecast values were also adjusted by Reclamation for expected runoff for the remainder of the month. The NWS forecast considers the modeled future weather over the next 15 days whereas the DWR B120 forecast does not account for current trends to the same degree.

Table 1. San Joaquin River Water Year Actuals and Forecasts at Millerton Lake, in TAF

Forecast Probability of Exceedance					
Runoff Statistic	**90%**	**75%**	**50%**	**25%**	**10%**
Accumulated Unimpaired Runoff ("Natural River") April 9, 2025 [1]	453.2				
Accumulated Unimpaired Runoff as percent of normal [2]	84%				
DWR, April 1, 2025 [3], [7] (Published Value)	1,230	1,325	1,475	1,600	1,740
DWR, April 10, 2025 [4] (Runoff Adjusted)	1,294	1,392	1,548	1,696	1,866
NWS, April 10, 2025 [5] (Published Daily Value)	1,330	1,360	1,420	1,510	1,590
Smoothed NWS, April 10, 2025 [6] (7-day Smoothing)	1,330	1,365	1,422	1,518	1,597
NWS, April 10, 2025 [4] (Smoothed and Runoff Adjusted)	1,304	1,347	1,414	1,500	1,606

1. FullNaturalFlowMonthly_MILFN
2. Based on average accumulation of Unimpaired Runoff totaling 1,830 TAF.
3. B120: Bulletin 120 - WSI. April-July runoffs are converted to Water Year equivalents in this table.
4. The adjusted data has been updated with the actual Unimpaired Runoff through the current date and projected out for the remainder of the month.
5. CNRFC - Ensemble Products - FRAC1
6. The NWS smoothed data uses a 7-day triangular weighted moving average, where the most recent day (n) is given greater weight than each previous forecast day (n-1, 2, 3, etc.); this reduces noise stemming from ESP model input. The following formula is used: $((Forecast_n * 1) + (Forecast_{n-1} * 0.857) + (Forecast_{n-2} * 0.714) + (Forecast_{n-3} * 0.571) + (Forecast_{n-4} * 0.429) + (Forecast_{n-5} * 0.286) + (Forecast_{n-6} * 0.143)) / 4$
7. Values at the 75% exceedance and 25% exceedance are interpolated.

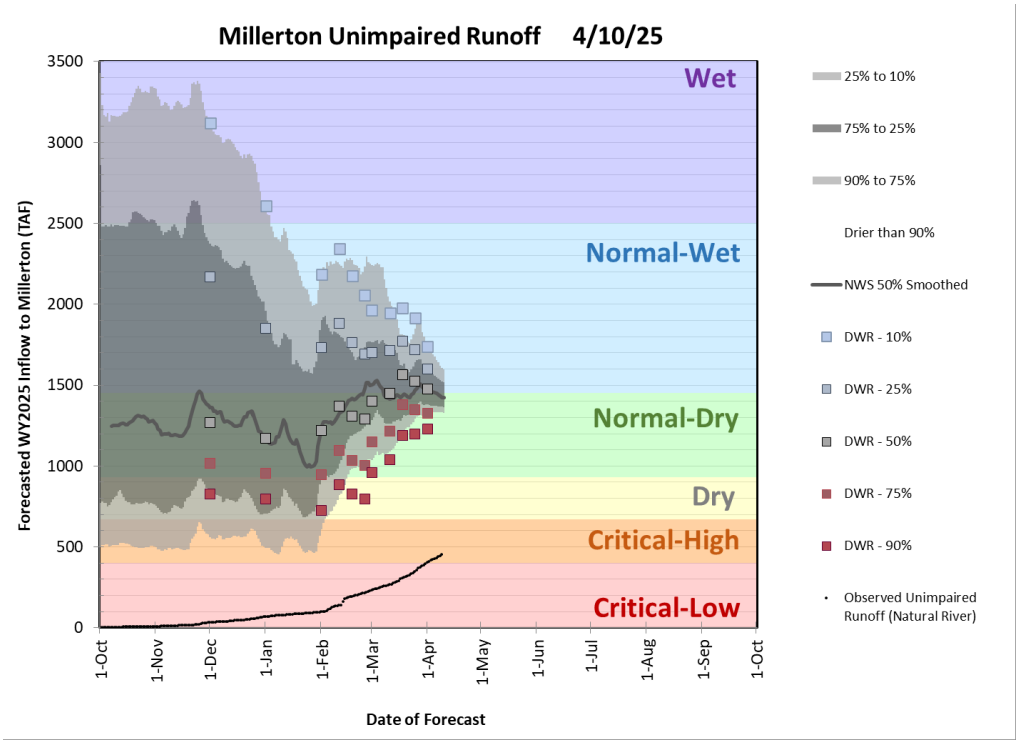

Figure 1a. Plot of 2025 Water Year forecasts. This includes both NWS Ensemble Streamflow Prediction Forecasts and DWR Forecasts at the 90%, 75%, 50%, 25%, and 10% exceedances (shown as shaded bands for NWS and squares for DWR).

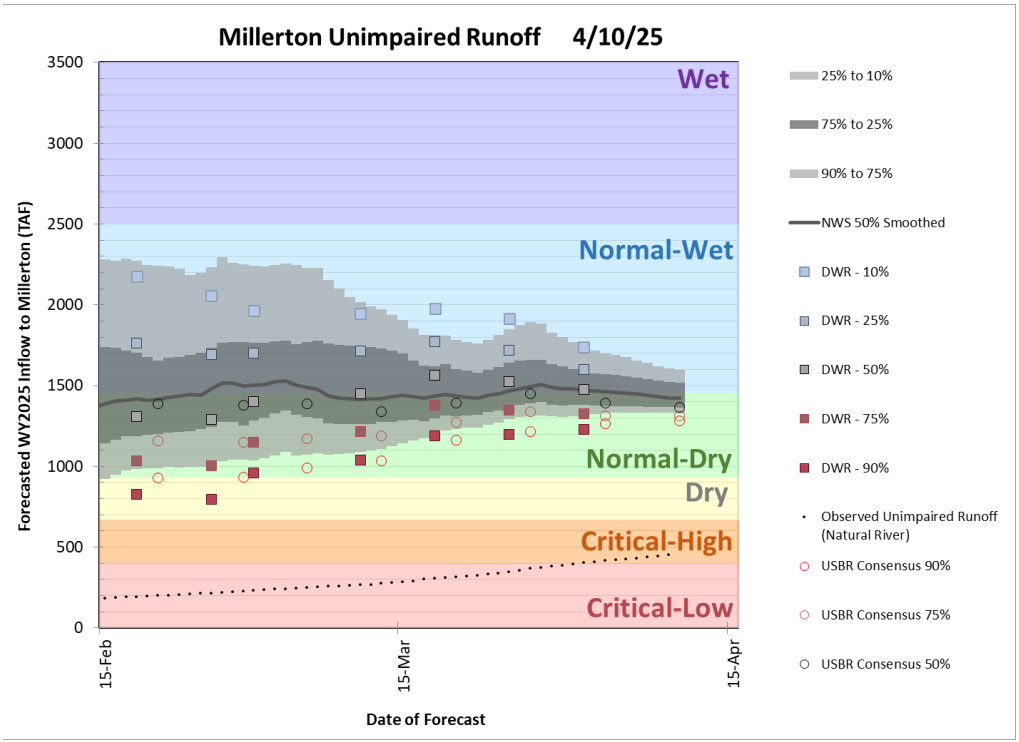

Figure 1b. Detail plot of most recent forecasts. Also shown are Reclamation's "hybrid" forecast with open circles.

The 2025 water year began with strong gradient in precipitation from north to south. However, the last few storms have brought more precipitation to the Southern Sierra. Currently, all western Sierra Nevada watersheds have between 85% and 104% of average snowpack according to the CU Boulder "Real-time" model as of March 31(Figure 2). The San Joaquin watershed is predicted by this model to have 87% of normal, which is slightly higher than the snow course estimate of 75% of April 1 average.

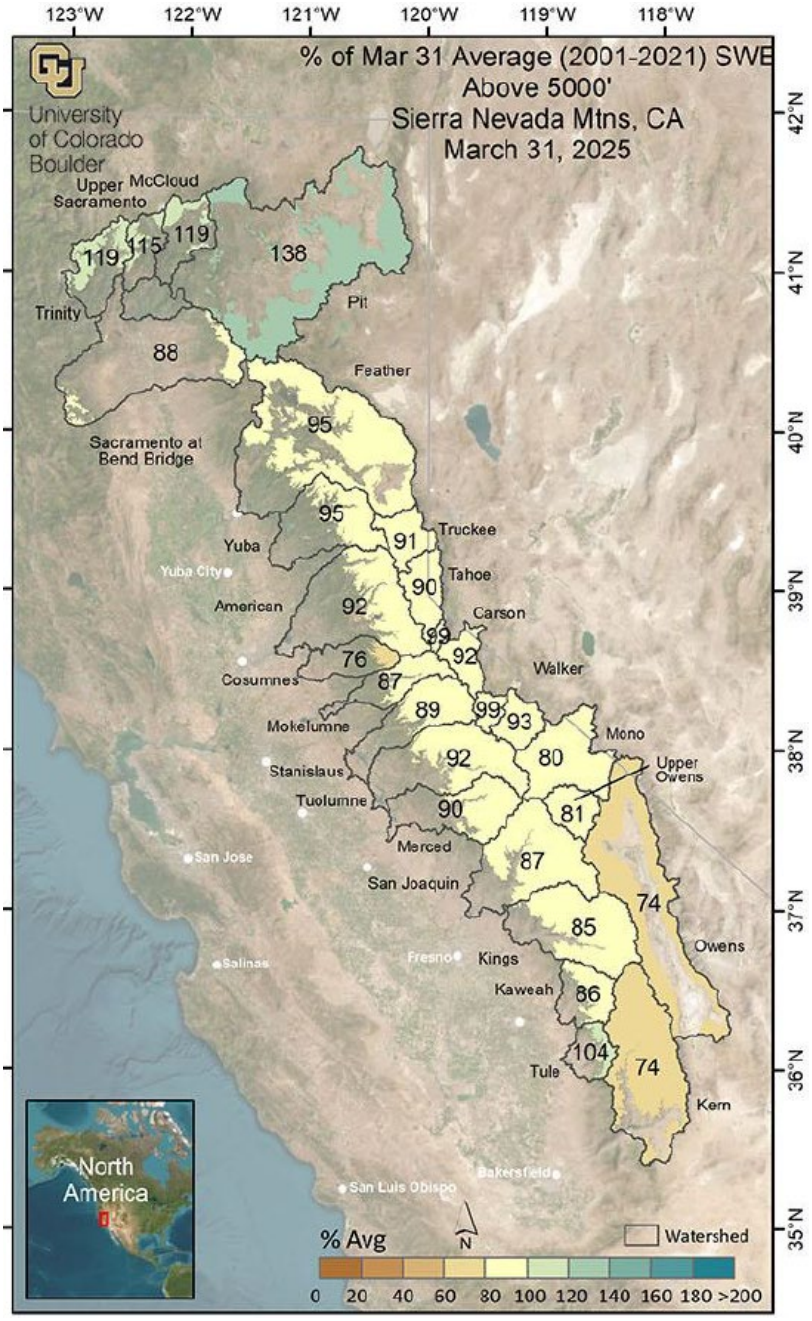

Figure 2. Modeled basinwide SWE as percent of average for March 31. The most recent storms have erased much of the north-south bias in snowpack. Model data from University of Colorado at Boulder "Real-time Spatial Estimates of Snow-Water Equivalent".

Storms this water year have been somewhat warmer than previous years. This trend has manifested in the 2025 water year as relatively more snow at high elevations (above 8,000') than mid-elevations (5,000' to 8,000'). This trend is exemplified by two snow pillow stations in the San Joaquin Watershed. Mammoth Pass snow pillow, at 9,300', has trended above the long-term median, whereas the Poison Ridge snow pillow at 6.900', has trended below median.

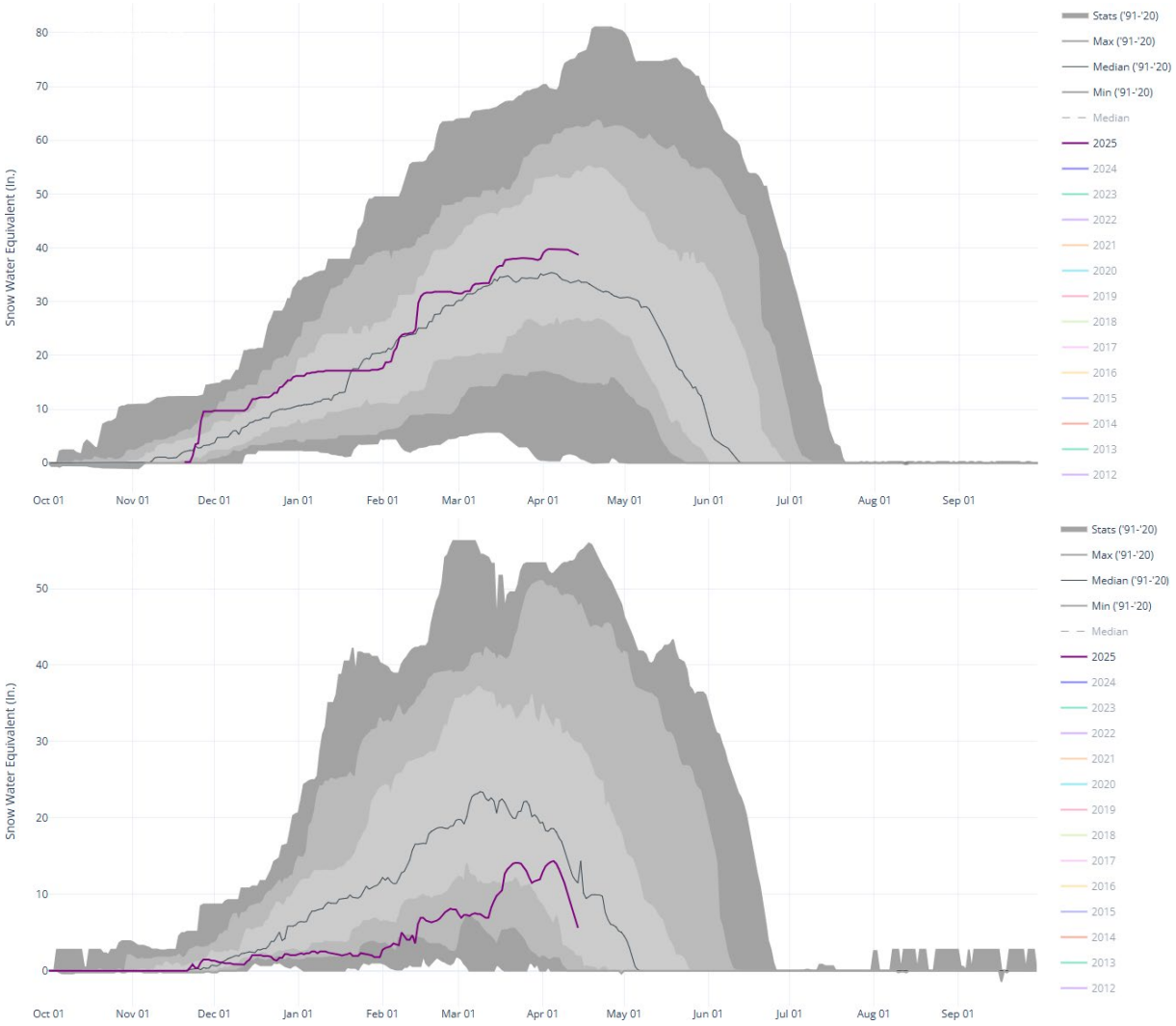

Figure 3. Mammoth Pass Snow Pillow trace (top) compared to Poison Ridge Snow Pillow trace (bottom). Snow Water Equivalent (SWE) is plotted here as purple line against historic probabilities at two of the many snow pillows. Mammoth Pass SWE is tracking near-median conditions and lies at 9,300 feet elevation, whereas Poison Ridge SWE is well below median conditions and lies at 6,900 feet elevation.

Runoff forecasting now has the benefit of two Airborne Snow Observatory (ASO) surveys this year, the most recent conducted on March 26. That second survey found 882 TAF of snow water equivalent. Snowpack densities were well-informed by contemporaneous manual snow course surveys and Reclamation has confidence in ASO's estimated snowpack volume. ASO's snow

water equivalent (SWE) volume distribution by elevation (Figure 4, righthand side) fully characterizes the pattern that is evident in snow pillows and snow courses.

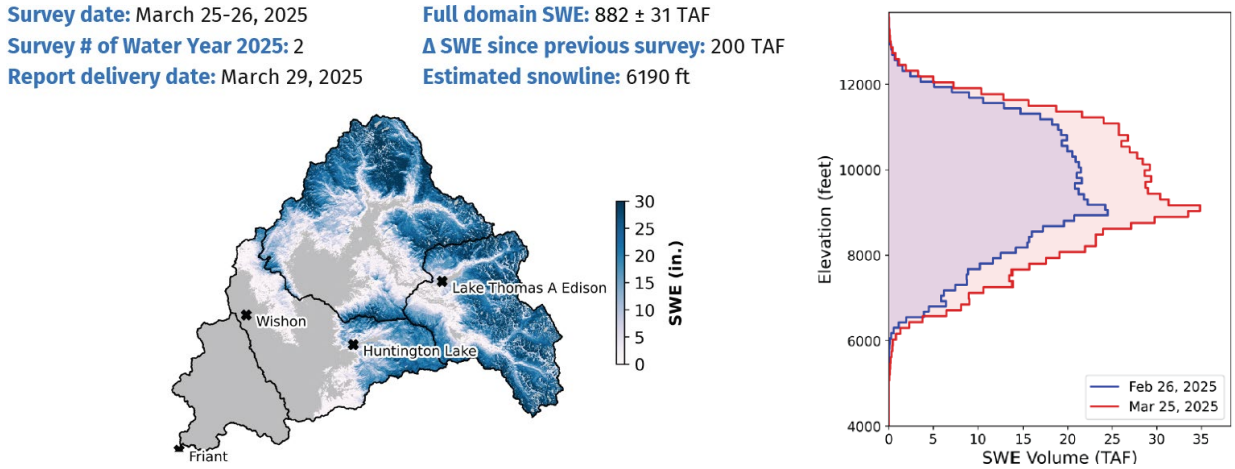

Figure 4. ASO spatial SWE distribution (left) and SWE elevation distribution (right).

ASO also measures snowpack albedo (or reflectivity). The February 26 survey found high albedos throughout most of the snowpack with the exception of lower elevations where albedo was lower likely due to soot from the 2020 Creek Fire. iSnobal modeling by M3Works through March 25 has found snowpack cold content to be declining rapidly at most elevations. Cold content is driven by the temperature of the storms which deposited the snow, the intervening weather between storms, and the snowpack albedo. These data from ASO and iSnobal indicate that snowpack runoff could progress quickly in spring.

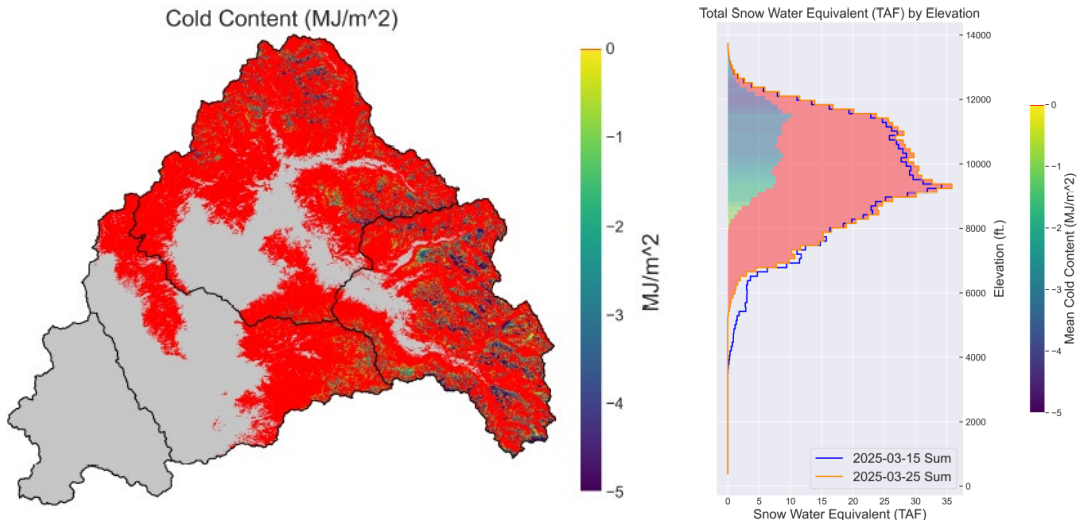

Figure 5. Modeled snowpack cold content spatial distribution (left) and cold content elevation distribution (right). snowpack shown in red are ripe for melt.

Interpreting snowpack model data has been challenging this water year. Some models have been running much higher snowpack volumes than others (Table 2). Fortunately, Reclamation has been able to resolve these discrepancies through ASO surveys and verifying model performance from, week to week. More difficult to discern has been the runoff forecasts that rely upon snowpack models that have been shown to have a high bias. This situation has prompted Reclamation to rely more upon experimental snowpack-runoff relationships such as WRF-Hydro (produced under a contract with ASO Inc.) and Reclamation's experimental water budget model.

Table 2. Total snowpack volume (TAF of Snow Water Equivalent) depicted by models and remote sensing, and a consensus estimate for April 10, 2025.

Date	Snowpack Model SWE Volumes (TAF)						
	NWS CNRFC (Snow-17)	NOHRSC (SNODAS)	CU Boulder (Real-time SWE)	DWR iSnobal	M3W iSnobal	ASO Inc. (Aerial Snow Survey)	Reclamation Consensus
Jan 21, 2025	352	382	Not Available	383	Not Available	Not Available	**374**
Feb 13, 2025	629	521	395 [8] (Feb 1)	598 (Feb 11)	Not Available [9]	Not Available	**535**
Mar 13, 2025	929	894	817 (Mar 1)	715	729 (Mar 11)	682 [10] (Feb 26)	**727**
Apr 10, 2025	1059	1040	923 (Mar 31)	888 (Apr 9)	895 (Apr 9)	882 [10] (Mar 26)	**895**

8. CU Boulder "Real-time SWE" model was issued March 1 and will be reissued at roughly 2-week intervals.
9. The "iSnobal" model for the San Joaquin is produced by M3Works under a contract with ASO. The first model run with ASO assimilation was issued March 12.
10. First ASO survey was conducted February 26. Second ASO survey was conducted March 25-26.

Combining Forecasts

Staff from the South-Central California Area Office of Reclamation and the SJRRP jointly track and evaluate the accuracy of runoff forecasts on a regular basis. Based on the age of these forecasts, the short-term and long-term weather forecasts, the climatological outlook, observed Unimpaired Runoff, and other available information, a hybrid forecast is generated. The weighting of the different components is regularly evaluated and selected using the best available information and professional judgment. **For the current allocation, the DWR "runoff adjusted" and NWS "smoothed and runoff adjusted" forecasts are combined with a 10/90 blending, respectively (i.e., 10% DWR, 90% NWS) (Table 3). Reclamation Applied an offset to this forecast based on analysis of the current snowpack and runoff model performance. Using professional judgment the 10/90 blended forecast was reduced by 20 TAF at the 90% exceedance increasing the reduction to 120 TAF at the 10% exceedance.** The selection of this blending ratio and offsets are based on the long-term performance of the forecasts, the age of the forecasts, and other data. Offsets are only applied when there is sufficient evidence to depart from the DWR and NWS forecast ranges. Because of the potential

overestimate of snowpack and lower observed runoff efficiency, Reclamation offset the blended values lower (more so at the 10% exceedance, less so at the 90% exceedance).

Table 3. Current Blending and Hybrid Unimpaired Runoff Forecasts (TAF)

Category	Forecast Probability of Exceedance				
	90%	75%	50%	25%	10%
Blending Ratio (DWR/NWS)	10/90 Offset: -20 TAF @ 90% / -40 TAF @ 75% / -60 TAF @ 50% / -80 @ 25 % / -120 TAF @ 10%				
Hybrid Unimpaired Runoff Forecast (TAF)	1,283	1,312	1,367	1,439	1,512

Restoration Allocation

As per the Guidelines, the **50% probability of exceedance** forecast is used for the allocation under current hydrologic conditions to set the Restoration Flow Allocation. Table 4 below, from the Guidelines Version 2.1, depicts the progression of forecast exceedances used to set the Restoration Allocation.

Table 4. Guidance on Percent Probability of Exceedance Forecast to Use for Allocation. The final allocation issuance is made in May or June as per the Guidelines.

Value (TAF)		Date of Forecast Used for the Allocation					
		January	February	March	April	May	June
If the 50% forecast is:	Above 2,200	50	50	50	50	50	—
	1,600 to 2,200	75	75	50	50	50	—
	900 to 1,599	75	75	75	**50**	50	—
	500 to 899	90	90	75	50	50	50
	Below 500	90	90	90	90	75	50

Applying the forecast blending (and sometimes offsets) determined by Reclamation and using the 50% probability of exceedance forecast dictated by the Guidelines, Reclamation calculates an **Unimpaired Runoff hybrid forecast of 1,367 TAF and a Normal-Dry Water Year Type. This provides a Restoration Allocation of 272.182 TAF as measured at Gravelly Ford (GRF).** Combined with Holding Contracts on the San Joaquin River, **this results in a Friant Dam release of approximately 389.127 TAF (Table 5)**. Other hypothetical allocations are presented in Table 5 as grayed values and indicate the range of probable forecasts and the resulting Restoration Allocations.

Table 5. SJRRP Water Year Type and Allocation for 2025 Restoration Year (highlighted in blue) shown with other hypothetical values unhighlighted.

Category	Forecast Probability of Exceedance Using Proposed Blending				
	90%	75%	50%	25%	10%
Hybrid Unimpaired Runoff Forecast (TAF)	1,283	1,312	**1,367**	1,439	1,512
Water Year Type	Normal-Dry	Normal-Dry	**Normal-Dry**	Normal-Dry	Normal-Wet
Restoration Allocation at GRF (TAF)	260.874	264.778	**272.182**	281.874	292.041
Friant Dam Flow Releases (TAF)	377.819	381.723	**389.127**	389.819	408.986

TAF = thousands of acre-feet

Unreleased Restoration Flow Pricing

The first allocation issued after March 21 (i.e., this allocation) sets the price for 2025 Tier 2 Unreleased Restoration Flows (URFs) which may be made available to Friant Contractors. The Tier 2 price is $169.54 per acre-foot. Tier 1 URF pricing is independent of hydrology and fixed at $25.00 per acre-foot in 2025.

Contractual Obligation Considerations

Consistent with Section 10004(j) of the San Joaquin River Restoration Settlement Act, the Settlement and the Settlement Act do not modify the rights and obligations of the United States under the Purchase Contract between Miller and Lux and the United States (Purchase Contract) and the Second Amended Exchange Contact between the United States, Department of the Interior, Bureau of Reclamation and Central California Irrigation District (CCID), San Luis Canal Company (SLCC), Firebaugh Canal Water District (FCWD), and Columbia Canal Company (CCC). These four districts are collectively known as the San Joaquin River Exchange Contractors (SJREC). Reclamation's obligations in the Purchase Contract and Exchange Contract remain unchanged by this allocation, which is consistent with Condition 17 of Reclamation's 2013 Water Rights Order addressing Restoration Flows.

Hydrologic conditions in Northern California, where the SJREC water supply is typically generated, are trending well above average. 2025 will be a "Non-Shasta Critical" allocation for SJREC. Federal storage in San Luis Reservoir is at 88% of full storage, or about 117% of normal to date, which is adequate to fully meet the 2025 Exchange Contract supply.

Default Flow Schedule

The Default Flow Schedule, derived from Exhibit B in the Settlement, identifies how Reclamation will schedule the Restoration Allocation for the current Water Year Type and Unimpaired Runoff volume absent a recommendation from the Restoration Administrator. The

Guidelines provide detail on how a Default Flow Schedule is parsed from the allocation volume. This approved method of distributing water throughout the year is referred to as "Method 3.1" with the "gamma pathway."

Exhibit B Method 3.1 Default Flow Schedules

Table 6a shows the Basic Default Flow Schedule flows and corresponding Restoration Allocation volumes for the entire year absent channel capacity and seepage constraints, including total releases from Friant Dam and Restoration Flow releases in excess of Holding Contracts. Volume is distributed as various flow rates across the year as per the methods explained in the Guidelines.

Table 6a. Basic Default Flow Schedule

Flow Period	Friant Dam Release Flow (cfs)	Holding Contracts [10] Flow (cfs)	Flow Target at GRF Flow (cfs)	Restoration Flow at GRF Flow (cfs)	Friant Dam Release Volume (TAF)	Restoration Flow at GRF Volume (TAF)
Mar 1–Mar 15	500	130	375	370	14.876	11.008
Mar 16–Mar 31	1500	130	1375	1370	47.603	43.478
Apr 1–Apr 15	2500	150	2355	2350	74.380	69.917
Apr 16–Apr 30	1152	150	1007	1002	34.285	29.822
May 1–May 28	350	190	165	160	19.438	8.886
May 29–Jun 30	350	190	165	160	22.909	10.473
July 1–July 29	350	230	125	120	20.132	6.902
Jul 30–Aug 31	350	230	125	120	22.909	7.855
Sep 1–Sep 30	350	210	145	140	20.826	8.331
Oct 1–Oct 31	350	160	195	190	21.521	11.683
Nov 1–Nov 6	700	130	575	570	8.331	6.783
Nov 7–Nov 10	700	130	575	570	5.554	4.522
Nov 11–Nov 30	350	120	235	230	13.884	9.124
Dec 1–Dec 31	350	120	235	230	21.521	14.142
Jan 1–Jan 31	350	100	255	250	21.521	15.372
Feb 1–Feb 28	350	100	255	250	19.438	13.884
				Totals	**389.127**	**272.182**

10. In recent years, Holding Contract demands have been higher than assumed under Exhibit B of the Settlement, in which case, flows at Friant are increased to achieve the Gravelly Ford Flow Target.

Table 6b shows the Capacity Constrained Default Flow Schedule volumes with all expected operational constraints, primarily controlled by seepage limitations in Reach 4A. Any volume within the Spring Flexible Flow Account and Fall Flexible Flow Account that cannot be released on the default schedule is shifted to other times during the flexible flow period with available

capacity as per the Guidelines. This Capacity Constrained Default Flow Schedule depicted in Table 6b will be implemented in the absence of a specific recommendation by the Restoration Administrator. Table 6b uses Exhibit B losses; actual losses are greater in most cases. **With these known constraints, a Restoration Flow volume of 2.052 TAF is generated that cannot be scheduled for release without shifting outside of the flexible flow periods (which would require a Water Supply Test). This volume would become URFs under the Capacity Constrained Default Flow Schedule using Exhibit B losses.** Note that this estimate is based on the newly set Reach 3 seepage capacity of approximately 895 cfs and a raised Reach 4A seepage capacity of approximately 950 cfs,[1] the latter which is a higher limitation than previous Restoration Allocations. This is an estimated volume of water, actual URF volumes will depend on several factors including the Restoration Administrator Recommendation, flow schedule to date, recapture of Restoration Flows at Mendota Pool, any Friant Dam releases made for the Exchange Contract, real-time assessments of groundwater constraints, actual river losses, and in-river construction projects.

[1] This estimate of 950 cfs is an approximate seepage capacity flow rate. Higher flows conducted in March 2025 will help refine this estimate. As always, seepage constraints are driven by real-time groundwater conditions and may be above or below the estimated flow rates shown here.

Table 6b. Capacity Constrained Default Flow Schedule

Flow Period	Flow (cfs)				Volume (TAF)		
	Friant Dam Release	Holding Contracts [11]	Flow Target at GRF	Restoration Flow at GRF	Friant Dam Release	Restoration Flow at GRF	Unreleased Restoration Flow [12]
Mar 1–Mar 15	1167	130	1,042	1,037	34.717	30.849	-19.841
Mar 16–Mar 31	1167	130	1,042	1,037	37.031	32.906	10.572
Apr 1–Apr 15	1187	150	1,042	1,037	35.312	30.849	39.068
Apr 16–Apr 30	1187	150	1,042	1,037	35.312	30.849	-1.028
May 1–May 28	864	190	679	674	47.973	37.421	-28.535
May 29–Jun 30	346	190	161	156	22.630	10.194	0.279
Jul 1–Jul 29	346	230	121	116	19.887	6.658	0.245
Jul 30–Aug 31	346	230	121	116	22.630	7.576	0.279
Sep 1–Sep 30	346	210	141	136	20.573	8.077	0.253
Oct 1–Oct 31	346	160	191	186	21.259	11.421	0.262
Nov 1–Nov 6	739	130	614	609	8.795	7.248	-0.464
Nov 7 –Nov 10	696	130	571	566	5.520	4.489	0.034
Nov 11–Nov 30	346	120	231	226	13.715	8.955	0.169
Dec 1–Dec 31	346	120	231	226	21.259	13.880	0.262
Jan 1–Jan 31	346	100	251	246	21.259	15.110	0.262
Feb 1–Feb 28	346	100	251	246	19.202	13.648	0.236
				Totals	**387.075**	**270.130**	**2.052**

11. In recent years, Holding Contract demands have been higher than assumed under Exhibit B of the Settlement, in which case, flows at Friant are increased to achieve the Gravelly Ford Flow Target.

12. This estimate of URF volume is based on the most constraining reach, with Spring Flexible Flows redistributed March 1 through May 28 as necessary and Fall Flexible Flows redistributed September 3 through December 28 as necessary up to channel capacity constraints. Constrained values are based on actual losses, not Exhibit B losses. Actual URF volume will depend on the Restoration Administrator's recommendations.

Exhibit B Restoration Flow Budget

Table 7 shows the components of the annual water budget for February 1, 2025, through February 28, 2026 (i.e., the Restoration Year including the spring flexible flow period). The Continuity Flow Account, Spring Flexible Flow Account, Riparian Recruitment Flow Account, and Fall Flexible Flow Account reflect the Exhibit B hydrograph for the current Restoration Allocation. The expected 116.945 TAF for Holding Contracts is shown. The volume for each flow account may change with subsequent Restoration Allocations.

Table 7. Restoration Budget with Flow Accounts

Period	Holding Contract Demand (TAF)	Restoration Flow Accounts (TAF)			
		Continuity Flow Account	Spring Flexible Flow Account	Riparian Recruitment Flow Account	Fall Flexible Flow Account
Feb 1–Feb 28	–	0	128.797	–	–
Mar 1–Apr 30	16.919	25.428		–	–
May 1–May 28	10.552	8.886		0	–
May 29–Jul 29	25.666	17.375	–	0	–
Jul 30–Aug 31	15.055	7.855	–	–	–
Sep 1–Sep 30	12.496	8.331	–	–	6.942
Oct 1–Nov 30	17.177	25.170	–	–	
Dec 1–Dec 31	7.379	14.142	–	–	
Jan 1–Feb 28	11.702	29.256	–	–	–
	116.945 [13]	**136.443**	**128.797**	**0**	**6.942**
		272.182 (Base Flow volume)			
	389.127 (Approximate Friant Release Volume) [13]				

13. Since the early 2000s, Holding Contract demands have been higher than assumed under Exhibit B of the Settlement, in which case, flows at Friant are increased to achieve the Gravelly Ford Flow Target.

Remaining Flow Volumes

The amount of water remaining for scheduling is the volume of flows released from Friant Dam in excess of releases required to meet Holding Contract demands, less past releases. Table 8 tracks these balances among the four flow accounts. Tracking these four flow accounts is necessary for application of the Water Supply Test. The released-to-date volumes are derived from quality assurance/quality control (QA/QC) daily average data when available, and partly from provisional data posted to CDEC, and thus may have future adjustments. Such adjustments may also affect the remaining flow volume.

Table 8. Estimated Restoration Flow Volume Remaining and Released to Date

Flow Account		Yearly Allocation (TAF)	Released to River to Date [14] (TAF)	Released as URFs to Date [14] (TAF)	Remaining Flow Volume (TAF)
Base Flows	Continuity Flow Account (Mar 1– Feb 28)	136.443	19.081	0	117.362
	Spring Flexible Flows (Feb 1–May 28)	128.797	45.515	0	83.282
	Riparian Recruitment Flows (May 1–Jul 29)	0	0	0	0
	Fall Flexible Flows (Sep 3–Dec 28)	6.942	0	0	6.942
Buffer Flows [15]		—	—	0	0
Unreleased Restoration Flows (Returned Exchanges)		—	—	0	—
Purchased Water		—	—	0	—
		Totals:	**64.596**	**0**	**207.586**

14. These are “Base Flow” releases through April 14, 2025
15. Buffer Flow volumes are based on actual releases, and are not an allocated volume per se.

Available URF Exchange Returns

There are currently no active URF Exchange agreements that would allow returns in the upcoming Restoration Year. SJRRP is working on the extension of two agreements shown in Table 9 below.

Table 9. Volume available from URF Exchange Returns

Exchange Partner	Period of Return [16]	Minimum Required Return (TAF)	Maximum Annual Return (TAF)	Notes
FID	Mar–Sep	— [16], [17]	Up to 2.624 TAF	Currently being renegotiated
OCID	Mar–Sep	— [16], [17]	Up to 3.000 depending on hydrology	Currently being renegotiated

16. If minimum volume of water is not taken, unused water is purchased by District
17. Unless otherwise by mutual agreement or modification of agreement

URF Exchange Commitments

Reclamation has previously developed URF agreements which may require commitments of water when URFs are made available.

Table 10. Volume Committed to URF Exchanges in 2025

Exchange Partner	Exchange Terms	Notes
DEID	1.800 TAF net URF (1.895 gross URF)	This is a "reverse" exchange — SJRRP was provided water in 2023 with exchanged URF to be provided in first subsequent Dry or Normal-Dry year. URF must be Tier 2 and schedulable across summer.

Operational Constraints

Operating criteria, such as channel conveyance capacity, ramping rate constraints, scheduled maintenance or construction, reservoir storage, contractual obligations, and downstream seepage concerns, may restrict the release of Restoration Flows. Table 11 summarizes known 2025 Restoration Year operational constraints.

Table 11. Summary of Operational Constraints

Type of Constraint	Period	Flow Limitation
Levee Stability	Currently in effect	1,210 cfs in Reach 2B
	Currently in effect	2,600 cfs in Middle Eastside Bypass
	Currently in effect	2,350 cfs in Reach 5
Seepage Limitation	Currently in effect	Reach 3: Approximately 895 cfs at MEN [18]
USFWS Biological Opinion	Until consultation for "Phase 2"	1,660 cfs of Restoration Flows released at Friant Dam
Construction — Arroyo Canal Fish Screen and Sack Dam Fish Passage [19]	September–October 2025	Approximately 150 cfs — Pending the contract award and dewatering plan
	November–December 2025	Approximately 200 cfs — Pending the contract award and dewatering plan
	January–February 2026	Approximately 220 cfs — Pending the contract award and dewatering plan

18. A seepage easement was signed in March 2025 increasing the seepage limitation to the current estimate of 895 cfs at MEN. Seepage constraints are driven by real-time groundwater conditions and may be above or below the estimated flow rates shown here.
19. The approximate values indicated here were developed in consultation with the Restoration Administrator who further engaged with implementing agencies with expertise in fisheries (i.e., NMFS, USFWS, and CDFW). Flow limitations will be finalized when the construction contract is awarded and the contractor's dewatering plan approved. Flow limitations will be consistent with Paragraph 11(a) and Paragraph 13(i) of the Settlement.

The 2025 Channel Capacity Report identifies a maximum flow in Reach 2B of 1,210 cfs due to levee stability constraints. This results in a maximum release from Friant Dam between 1,460 cfs and 1,590 cfs depending on the time of year. The 2025 Channel Capacity Report also identifies a maximum flow in the Middle Eastside Bypass of 2,600 cfs, which was increased from the 2022 Channel Capacity Report value of 1,070 cfs due to the completion of the DWR Reach O levee improvements project and the removal of two weirs within the Eastside Bypass.

2025 Allocation History

The Restoration Allocation is adjusted multiple times between the date of the initial allocation and the final allocation; issuances will generally take place on a monthly schedule but may also be issued based on rapidly changing hydrologic conditions. The Restoration Administrator is responsible for contingency planning and managing releases to stay within the current allocation to the extent possible, in accordance with the Guidelines. Table 12 summarizes the full allocation history for this Restoration Year.

Table 12. Allocation History

Allocation Type	Issue Date	Forecast Blending Applied	Unimpaired Runoff Forecast (at forecast exceedance)	Year Type	Restoration Allocation at Gravelly Ford	Restoration Flows and URFs Released
Initial	January 22, 2025	10/90	727 TAF (@ 75%)	Dry	168.055 TAF	0 TAF (through 1/21/2025)
Updated	February 14, 2025	40/60	1,049 TAF (@ 75%)	Normal-Dry	229.374 TAF	0 TAF (through 2/14/2025)
Updated	March 17, 2025	50/50 (-50 / -75 / -100 / -125 / -150)	1,191 TAF (@ 75%)	Normal-Dry	248.489 TAF	21.610 TAF (through 3/16/2025)
Updated	April 14, 2025	10/90 (-20 / -40 / -60 / -80 / -120)	1,367 TAF (@ 50%)	Normal-Dry	272.182 TAF	64.596 TAF (through 4/14/2025)

Appendix A: Abbreviations, Acronyms, and Glossary

AEWSD	Arvin–Edison Water Storage District
af	acre-feet
ASO	Airborne Snow Observatory
B120	DWR Bulletin No. 120 which forecasts water supply
CCC	Columbia Canal Company
CCID	Central California Irrigation District
CDEC	California Data Exchange Center
cfs	cubic feet per second
CVP	Central Valley Project
DEID	Delano–Earlimart Irrigation District
Delta	Sacramento–San Joaquin Delta
DWR	California Department of Water Resources
ESP	Ensemble Streamflow Prediction
Exhibit B	Exhibit B of the Settlement depicting Default Hydrograph
FCWD	Firebaugh Canal Water District
GRF	Gravelly Ford Flow Gauge
FID	Fresno Irrigation District
Guidelines	Restoration Flow Guidelines
NWS	National Weather Service
QA/QC	Quality Assurance/Quality Control (i.e., finalized)
OCID	Orange Cove Irrigation District
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
Restoration Year	the cycle of Restoration Flows, March 1 through February 28/29
RFG	Restoration Flow Guidelines
RWA	SJRRP Reclaimed Water Account
Secretary	U.S. Secretary of the Interior
Settlement	Stipulation of Settlement in NRDC, et al., v. Kirk Rodgers, et al.
SJREC	San Joaquin River Exchange Contractors
SJRRP	San Joaquin River Restoration Program

SLCC	San Luis Canal Company
SMP	Seepage Management Plan
SWE	Snow Water Equivalent
TAF	thousand acre-feet
URF	Unreleased Restoration Flows
WSI	DWR Water Supply Index
WY	Water year, October 1 through September 30

Appendix B: Previous Year (2023) Flow Accounting

Table B. Restoration Flow Accounting and Unreleased Restoration Flows, and Holding Contracts, for the period February 2023 through February 2024. Flood management releases to San Joaquin River occurred January 5–February 5, 2023, and March 8–July 26, 2023. No releases for the Exchange Contract occurred during this Restoration Year. The final Restoration Allocation was 557.038 TAF. URF Sales and Exchanges removed from the Allocation totaled 373.849 TAF. Additionally, Unreleased Restoration Flow exchange returns of 10.167 TAF were released to the San Joaquin River, and 0 TAF of Buffer Flows. A total of 4.245 TAF was advanced into February 2023. The Restoration Allocation had a year-end balance of -0.002 TAF.

Flow Period	Gravelly Ford 5 cfs Requirement (TAF)	Other Flows Passing GRF (TAF)	URF Sold or Exch	Released Restoration Flow Volumes (TAF)						
				Continuity Flow	Spring Flexible Flow	Fall Flexible Flow	Riparian Recruitment Flow	Buffer Flow	Flexible Buffer Flow	URF Returned
Feb 1–Feb 28	–	–	–	–	4.245	–	–	–	–	–
Mar 1–Mar 31	9.219 [A1]	297.134	165.263	13.527	9.531	–	–	0	–	0
Apr 1–Apr 30	45.663 [A1]	458.132	0	11.901	11.008	–	–	0	–	0
May 1–May 31	47.324 [A1]	439.371	81.054	9.838	11.941	–	4.600	0	0	0
Jun 1–Jun 30	51.285 [A1]	320.110	96.000	9.521	–	–		0		0
Jul 1–Jul 31	48.532 [A1]	154.540	29.732	7.379	–	–		0		0
Aug 1–Aug 31	8.541	1.327	0	9.481	–	–	–	0		2.826
Sep 1–Sep 30	11.153	0	0	8.331	–	0.754	–	0		3.868

Flow Period	Gravelly Ford 5 cfs Requirement (TAF)	Other Flows Passing GRF (TAF)	URF Sold or Exch	Released Restoration Flow Volumes (TAF)						
				Continuity Flow	Spring Flexible Flow	Fall Flexible Flow	Riparian Recruitment Flow	Buffer Flow	Flexible Buffer Flow	URF Returned
Oct 1–Oct 31	10.986	0	0	10.342	–	0	–	0	0	2.499
Nov 1–Nov 30	11.173	0	1.895	8.933	–	4.079	–	0		0
Dec 1–Dec 31	9.773	0	0	10.072	–	0	–	0		0.974
Jan 1–Jan 31	10.130	0.101	0	15.681	–	–	–	0	–	0
Feb 1–Feb 29	8.838	0	0	21.933	–	–	–	0	–	0
	272.616 [A1]	**1,670.715**	**373.944**	**136.939**	**36.725**	**4.833**	**4.600**	**0**	**0**	**10.167**
				183.096 (allocated Restoration Flows)				**0** (all Buffer Flows)		
				183.096 (Restoration Flows affecting Friant water supply)						
				193.263 (Restoration Flows released to river)						
			557.040 (Restoration Allocation used)							
				2,072.656 (Friant Dam releases — excludes removed URFs, Restoration Flows advanced into February, and excludes contributions from tributary inflows)						

A1. Calculations of the 5 cfs requirement are sensitive to gauge error at GRF or imprecision in Friant Dam release. The values for March through July are likely erroneously high and should instead be considered “Other Flows Passing GRF.”

Appendix C: History of Millerton Unimpaired Runoff

Table C. Water Year Totals in Thousand Acre-Feet

Water Year [A2]	Unimpaired Runoff [A3]	SJRRP Water Year Type [A4]
1901	3,227.9	Wet
1902	1,704.0	Normal-Wet
1903	1,727.0	Normal-Wet
1904	2,062.0	Normal-Wet
1905	1,795.4	Normal-Wet
1906	4,367.8	Wet
1907	3,113.9	Wet
1908	1,163.4	Normal-Dry
1909	2,900.7	Wet
1910	2,041.5	Normal-Wet
1911	3,586.0	Wet
1912	1,043.9	Normal-Dry
1913	879.4	Dry
1914	2,883.4	Wet
1915	1,966.3	Normal-Wet
1916	2,760.5	Wet
1917	1,936.2	Normal-Wet
1918	1,466.8	Normal-Wet
1919	1,297.5	Normal-Dry
1920	1,322.5	Normal-Dry
1921	1,604.4	Normal-Wet
1922	2,355.1	Normal-Wet
1923	1,654.3	Normal-Wet
1924	444.1	Critical-High
1925	1,438.7	Normal-Dry
1926	1,161.4	Normal-Dry
1927	2,001.3	Normal-Wet
1928	1,153.7	Normal-Dry
1929	862.4	Dry
1930	859.1	Dry
1931	480.2	Critical-High
1932	2,047.4	Normal-Wet
1933	1,111.4	Normal-Dry
1934	691.5	Dry
1935	1,923.2	Normal-Wet
1936	1,853.3	Normal-Wet
1937	2,208.0	Normal-Wet
1938	3,688.4	Wet
1939	920.8	Dry
1940	1,880.6	Normal-Wet
1941	2,652.5	Wet
1942	2,254.0	Normal-Wet
1943	2,053.7	Normal-Wet
1944	1,265.4	Normal-Dry
1945	2,134.633	Normal-Wet
1946	1,727.115	Normal-Wet
1947	1,121.564	Normal-Dry
1948	1,201.390	Normal-Dry
1949	1,167.008	Normal-Dry
1950	1,317.457	Normal-Dry
1951	1,827.254	Normal-Wet
1952	2,840.854	Wet
1953	1,226.830	Normal-Dry
1954	1,313.993	Normal-Dry
1955	1,161.161	Normal-Dry
1956	2,959.812	Wet
1957	1,326.573	Normal-Dry
1958	2,631.392	Wet
1959	949.456	Normal-Dry
1960	826.021	Dry
1961	647.428	Critical-High
1962	1,924.066	Normal-Wet
1963	1,945.266	Normal-Wet
1964	922.351	Dry
1965	2,271.191	Normal-Wet
1966	1,298.792	Normal-Dry
1967	3,233.097	Wet
1968	861.894	Dry
1969	4,040.864	Wet
1970	1,445.837	Normal-Dry
1971	1,416.812	Normal-Dry
1972	1,039.249	Normal-Dry
1973	2,047.585	Normal-Wet
1974	2,190.308	Normal-Wet
1975	1,795.922	Normal-Wet
1976	629.234	Critical-High
1977	361.253	Critical-Low
1978	3,402.805	Wet
1979	1,829.988	Normal-Wet
1980	2,973.169	Wet
1981	1,067.757	Normal-Dry
1982	3,317.171	Wet
1983	4,643.090	Wet
1984	2,042.750	Normal-Wet
1985	1,135.975	Normal-Dry
1986	3,031.600	Wet
1987	756.853	Dry
1988	862.124	Dry
1989	939.168	Normal-Dry
1990	742.824	Dry
1991	1,027.209	Normal-Dry
1992	807.759	Dry
1993	2,672.322	Wet
1994	824.097	Dry
1995	3,876.370	Wet
1996	2,200.707	Normal-Wet
1997	2,817.670	Wet
1998	3,160.759	Wet
1999	1,527.040	Normal-Wet
2000	1,735.653	Normal-Wet
2001	1,065.318	Normal-Dry
2002	1,171.457	Normal-Dry
2003	1,449.954	Normal-Dry
2004	1,130.823	Normal-Dry
2005	2,826.872	Wet
2006	3,180.816	Wet
2007	684.333	Dry
2008	1,116.790	Normal-Dry
2009	1,455.379	Normal-Wet
2010	2,028.706	Normal-Wet
2011	3,304.824	Wet
2012	831.582	Dry
2013	856.626	Dry
2014	509.579	Critical-High
2015	327.410	Critical-Low
2016	1,300.612	Normal-Dry
2017	4,395.400	Wet
2018	1,348.980	Normal-Dry
2019	2,734.772	Wet
2020	886.025	Dry
2021	521.853	Critical-High
2022	1,059.492	Normal-Dry
2023	4,506.923	Wet
2024	1,757.111	Normal-Wet

A2. Water year is from Oct 1 through Sept 30, for example the 2010 water year began Oct 1, 2009. Unimpaired Runoff is based on Reclamation calculations, and hypothetical water year types are shown here; actual Restoration water year types are based on the final allocation, which may sometimes differ slightly from the calculated water year total.

A3. Also known as “Natural River” or “Unimpaired Runoff into Millerton”–This is the total runoff that would flow into Millerton Lake if there were no dams or diversions upstream. There was a lower level of precision prior to 1945. Friant Dam uses 1.9835 conversion from cfs to AF.

A4. The six SJRRP Water Year Types are based on Unimpaired Runoff and are not updated as climatology changes as per the Settlement. Critical-Low= <400 TAF, Critical-High=400-669.999 TAF, Dry= 670-929.999 TAF, Normal-Dry 930-1,449.999, Normal-Wet 1,450-2,500, Wet>2,500.

Appendix D: Final Restoration Allocations and Errors

Table D1. History of Restoration Allocations

Year	Type	Date of Final Allocation Issuance [A6]	Unimpaired Runoff Forecast in Final Allocation (TAF)	Final Restoration Allocation (TAF)	Observed Unimpaired Runoff on September 30 (TAF)	Unimpaired Runoff Forecast Error	Allocation Error
2009	Interim Flows			261.5	1,455.379	—	—
2010	Interim Flows			98.2	2,028.706	—	—
2011	Interim Flows			152.4	3,304.824	—	—
2012	Interim Flows			183	831.582	—	—
2013	Interim Flows			65.5	856.626	—	—
2014	Restoration Flows	Mar 3	518	0 [A5]	509.579	+8.421 (+1.6%)	0 [A5]
2015	Restoration Flows	Sep 28	327	0	327.410	-0.410 (-0.1%)	0
2016	Restoration Flows	Sep 30	1,300.986	263.295	1,300.986	0 (0%)	0
2017	Restoration Flows	Jul 10	4,444	556.542	4,395.400	+48.600 (+1.1%)	0
2018	Restoration Flows	May 22	1,427	280.258	1,348.979	+78.021 (+5.8%)	+10.503
2019	Restoration Flows	May 20	2,690	556.542	2,734.772	-44.772 (-1.6%)	0
2020	Restoration Flows	June 19	880	202.197	886.025	-6.025 (-0.7%)	-1.345
2021	Restoration Flows	June 25	529	70.919	521.853	+7.147 (+1.4%)	0
2022	Restoration Flows	May 13	1,072	232.470	1,059.492	+12.508 (+1.2%)	+1.684
2023	Restoration Flows	May 18	4,664	557.038	4,506.923	+157.077 (+3.5%)	0
2024	Restoration Flows	May 17	1,776	329.026	1,757.111	+18.889 (+1.1%)	+2.646

A5. No water was provided under this Critical-High designation due to necessity for Friant Dam to release flows for the Exchange Contract.

A6. In 2018 with the completion of Version 2.0 of the Restoration Flows Guidelines, the date of final Restoration Allocation issuance was advanced from September 30 to May (or June under dry hydrologic conditions). This results in greater Unimpaired Runoff Forecast error, and sometimes in greater Allocation Error.

Table D2. History of Restoration Flow Releases

Year	Year Type	Final Restoration Allocation (TAF)	URFs Removed from Allocation (TAF)	URF Exchange Returns (TAF)	Buffer Flows Utilized (TAF)	Restoration Flows Passing Gravelly Ford (TAF) [A7]	Restoration Allocation Utilization (TAF)	Release Error (TAF)
2014	Critical-High	0	0	0	0	0	0	0
2015	Critical-Low	0	0	0	0	0	0	0
2016	Normal-Dry	263.295	pending	pending	pending	pending	pending	pending
2017	Wet	556.542	367.458	0	0	pending	pending	pending
2018	Normal-Dry	280.258	124.791	2.129	0	157.596	280.258	0
2019	Wet	556.542	365.760	0	0	190.666	556.426	-0.116
2020	Dry	202.197	63.502	0.487	0.605	139.517	201.927	-0.270
2021	Critical-High	70.919	0	10.425	0.902	82.247	70.919	0
2022	Normal-Dry	232.470	101.076	3.500	0	135.094	232.670	+0.200
2023	Wet	557.038	373.944	10.167	0	193.263	557.040	+0.002
2024	Normal-Wet	329.026	150.473	8.700	4.447	191.542	328.868	-0.158

A7. Restoration Flows passing Gravelly Ford includes flood management releases which were accounted for as meeting the Restoration Flow Schedule at Gravelly Ford.

Appendix E: Unreleased Restoration Flow History

Table E1. URF Distributions (TAF)

Restoration Year	Gross Volume of URF Sales to Class 1	Gross Volume of URF Sales to Class 2	Net Volume of URF Sales to Class 1	Net Volume of URF Sales to Class 2	Gross Volume of URF put into Exchanges	Net Volume of URF put into Exchanges	Gross Volume of URFs Spilled	Gross Total URF
2013	—	—	—	—	12.694	12.694	—	12.694
2014	11.219	—	11.219	—	—	—	0.206	11.425
2015	—	—	—	—	—	—	—	0
2016	70.860	56.959	67.317	54.111	18.947	18.000	—	146.766
2017	5.474	364.967	5.200	346.716	2.491	2.366	—	372.932
2018	65.249	40.000	61.986	38.000	19.543	18.565	—	124.792
2019	—	326.954	—	310.607	16.298	15.482	22.509	365.761
2020	43.500	—	41.325	—	20.002	19.697	—	63.502
2021	—	—	—	—	—	—	—	0
2022	75.178	—	71.419	—	26.951	25.603	—	102.128
2023	—	372.048	—	353.446	—	—	—	372.049
2024	—	150.474	—	142.950	—	—	—	150.474
Total	**271.480**	**1,311.402**	**258.48**	**1,245.83**	**116.926**	**112.407**	**22.715**	**1,722.523**

Table E2. Expected URF Revenue for the Restoration Fund

Restoration Year	Revenue Expected from URF Sales	Revenue Expected from URF Exchanges	Total Expected URF Revenue
2013	—	—	—
2014	$3,470,650	—	$3,470,650
2015	—	—	—
2016	$9,686,790	—	$9,686,790
2017	$6,990,680	—	$6,990,680
2018	$6,123,858	$494,504	$6,618,362
2019	$6,393,286	$306,680	$6,699,966
2020	$8,922,481	$1,251,630	$10,174,111
2021	—	$525,000	$525,000
2022	$13,488,907	$1,909,267	$15,398,173
2023	$8,129,258	—	$8,129,258
2024	$3,287,850	$188,870	$3,476,720
Total	**$66,493,760**	**$4,675,951**	**$71,169,710**

Table E3. URF Exchanges Returned to the Program (TAF)

Restoration Year	Volume Returned	Notes
2013	—	—
2014	11.425	From 2013 URF Exchange with FID, used for 2014 sales
2015	—	—
2016	—	—
2017	5.474	Returned from San Luis Reservoir, 5.200 net URF sold
2018	2.129	Returned from 2018 DEID exchange
2019	9.000	Returned to SLR from 2019 AEWSD and LTRID exchange, transferred to CVO for San Luis Unit supply
2020	0.487	Returned from FID from 2019 exchange
2021	10.425	Returned from multi-party 2020 exchange
2022	3.500	From 2016 URF Exchange with AEWSD
2023	10.167	3.500 AEWSD, 2.000 FID, 4.667 OCID
2024	8.700	3.500 AEWSD, 0.822 DEID, 0.378 SWID, 3.000 OCID
Total	**61.307**	

Appendix F: Water Management Goal

Table F1. Final Friant Water Contract Supply

Contract Year	Class 1 Total Supply 800 TAF		Class 2 Total Supply 1,401.475 TAF	
	Class 1 Declaration	Volume of Class 1 as Uncontrolled Season	Class 2 Residual Declaration	Volume of Class 2 as Uncontrolled Season
2009	100%	—	10%	21%. Including residual allocation is equivalent to 31%
2010	100%	—	10%	32%. With residual allocation is equivalent to 42%
2011	100%	—	5%	38%. With residual allocation is equivalent to 43%
2012	57%	—	0%	0%
2013	62%	—	0%	0%
2014	0%	—	0%	0%
2015	0%	—	0%	0%
2016	75% Residual	12.5% (100 TAF used, mostly in April)	0%	7%
2017	100%	—	3%	30%. UcS through mid-July. With residual allocation equivalent to 33%
2018	88% Residual	11% (88 TAF used April-May)	0%	9%.
2019	100%	—	0%	49%
2020	65%	—	0%	0%
2021	40%	—	0%	0%
2022	35%	—	0%	0%
2023	100%	—	15%	18%. UcS through late-July. With residual allocation equivalent to 33%
2024	90%	pending	0%	pending

Notes

2009: C1/C2 declaration on 6/12/209 was 77/18, increased to 100/10 once SJRRP Interim Flows were scheduled for 10/1/2009 release.

2010: Class 2 declaration changed from 15% to 10%, but this did not impact RWA calculation which uses growing season allocation of 15%.

2011: Class 2 declaration changed from 20% to 5%, but this did not impact RWA calculation which uses growing season allocation of 20%.

2012: Class 1 declaration changed from 50% to 57% on 4/27/2012, but this did not impact RWA calculation which uses growing season allocation of 50%.

2013: Final declaration made 7/15/2013.

2014, 2015: Friant Dam releases to satisfy Exchange Contract at Mendota Pool. 2014 final declaration made 5/13/2014. 2015 final declaration made 2/27/2015.

2016: 12.5% of Class 1 was released as Uncontrolled Season water. Class 1 allocation was reduced from 100% to 87.5% (including UcS) at final allocation on 7/18/2016.

2017: Uncontrolled Season through mid-July. Flood flows 1/42017–7/20/2017.

2018: 11% of Class 1 was released as Uncontrolled Season water. Class 1 allocation was reduced from 100% to 99% (including UcS) before final allocation on 9/26/2018.

2019: Uncontrolled season through 7/15/2019. Flood flows 3/15/2019–4/5/2019 and 5/21/2023–7/10/2019.

2020: Final declaration 6/24/2020.

2021: Class 1 declaration increased from 20% to 25% in November, increased to 40% in December. Late change did not affect apportionment of RWA impact.

2022: Class 1 declaration increased from 30% to 35% in January associated with 2023 flood flows.

2023: Flood flows 1/5/2023–2/5/2023 and 3/8/2023–7/26/2023.

2024: Final Class 1 declaration is pending as of this issuance.

Table F2. Additional Water Supply

Restoration Year	Gross Volume of URF Sales to Class 1	Gross Volume of URF Sales to Class 2	Net Volume of URF Sales to Class 1	Net Volume of URF Sales to Class 2	Gross Volume of URF put into Exchanges	Net Volume of URF put into Exchanges	Gross Volume of URFs Spilled	Gross Total URF
2013	Table Under Development							
2014								
2015								
2016								
2017								
2018								
2019								
2020								
2021								
2022								
2023								
2024								
Total								

Table F3. URF Reconciliation (URF Distribution to incorrect Class) [A8]

Restoration Year	URFs Sales Distributed to Class 1 Which Should Have Been Distributed to Class 2	Error Extinguished	URFs Sales Distributed to Class 2 Which Should Have Been Distributed to Class 1	Error Extinguished
2020	0	Not Applicable	0	Not Applicable
2021	0	Not Applicable	0	Not Applicable
2022	0	Not Applicable	0	Not Applicable
2023	0	Not Applicable	0	Not Applicable
2024	0	Not Applicable	Tier 1 (50.474)	Pending

A8. Reconciliation of URFs was instituted in 2020 and will be codified in Restoration Flow Guidelines Version 2.2.