

April 27, 2012 RA INTERIM FLOW PROGRAM RECOMMENDATIONS

INTRODUCTION

The latest RA Interim Flow Schedule (dated April 4, 2012) called for Interim Flow releases from Friant Dam to increase from 700 cfs to 1040 cfs on May 1, 2012, based on the April 12 Reclamation Allocation and Default Flow Schedule that forecast a probable Critical High Water Year with 670,000 ac-ft impaired runoff (90% probability). Reclamation submitted an April 20, 2012, Allocation and Default Flow Schedule update for RA review on April 23 that increased the Allocation to at least 770,000 ac-ft unimpaired runoff (90% probability) and a change to a probable Dry Water Year. Reclamation's updated 50% runoff forecast was increased to 950,000 ac-ft.

My updated Interim Flow Schedule recommendation reflects my review of the latest Reclamation forecast, assumes that the April 4 flow schedule will remain unchanged through April 30, and provides for revised Interim Flow recommendations for the period from May 1, 2012, through February 28, 2013.

BACKGROUND

I recently reviewed the April 24 DWR Bulletin 120 update, which slightly reduces the 90% forecast to 770,000 ac-ft to 750,000 ac-ft, and also reduces the 50% forecast from 950,000 ac-ft to 920,000 ac-ft; however, the April 24 forecasts do not include precipitation that occurred yesterday and today (approximately 0.5" to 1.5" throughout the watershed). So I expect the next 90% and 50% runoff forecasts to stay the same or slightly increase unimpaired runoff.

My April 4 Interim Flow recommendations included a 1,040 cfs bench commencing May 1. Exhibit B of the Settlement indicates that riparian demand is assumed to increase from 150 cfs to 190 cfs starting May 1 and computed Reach 2A losses are expected to be approximately 109 cfs based on the Mussetter flow loss curves. Therefore, the magnitude of the highest bench could be increased to 1,100 cfs and still enable flows to remain below the 810 cfs constraint at Site 1 in Reach 2B (*i.e.*, 1,100 cfs release -190 cfs riparian demand -109 cfs flow loss in Reach 2A + 5 cfs = 806 cfs). To initiate a 1,100 cfs bench by May 1 and allow Reclamation time to review my updated Interim Flow recommendations, I am submitting my updated recommendations today.

Also, based on the updated 50% and 90% exceedence runoff forecasts, and based on input received from the TAC, I am recommending a flow schedule that is based on 800,000 ac-ft of unimpaired runoff. The 800,000 ac-ft runoff estimate translates roughly to a 78% exceedence value based on the April 24 Bulletin 120 update, still a conservative estimate. I recommend using the 78% exceedence factor because it represents the minimum runoff volume that fully restores the volume of summer baseflows for a Dry year in Exhibit B of the Settlement (350 cfs with 700 cfs fall pulse flows). As Reclamation transitions from using a 90% forecast to a 50% forecast, I expect the runoff volume to:

- increase substantially above the current 750,000 ac-ft volume runoff forecast,
- increase above the 800,000 ac-ft runoff volume conservatively assumed for my present recommendation, and
- increase to a value nearer a 50% runoff forecast of 920,000 to 950,000 ac-ft.

Therefore, I believe my updated Interim Flow recommendations are conservative by assuming at least 800,000 ac-ft of unimpaired runoff; however, if the runoff estimate increases or decreases over the next several weeks, I provide for adjustments to the flow recommendations that would accommodate runoff estimate changes. In any any event, if the May runoff forecasts exceed approximately 835,000 ac-ft, then the combined effect of downstream conveyance capacity limits and the end of the flexible flow period on May 28 will preclude additional Interim Flow releases.

RA RECOMMENDATION: May 1, 2012 - February 28, 2013

For this probable Dry Water Year with 800,000 ac-ft of unimpaired runoff, my current recommendation is based on a calculation that 184,345 ac-ft of Interim Flow volume is available for 2012 as measured at Gravelly Ford. Approximately 6,942 ac-ft of the available Spring Flexible Flow volume (measured at Gravelly Ford) will be released through April 30 with the remaining 34,016 acre feet released from May 1 through May 28. Approximately 109,071 ac-ft of Interim Flow volume will be available for use starting May 29 and continuing through February 28, 2013. As indicated in Table 1 (Updated RA Interim Flow Schedule Recommendation) and Figure 1 (Updated RA Interim Flow Spring Hydrograph for the Dry Water Year through June 30, 2012), my updated recommendation would use 184,344 ac-ft through February 28, 2013, and account for all but about 1 ac-ft of the available 184,345 ac-ft of Interim Flow volume.

Specific Interim Flow release recommendations for the period May 1, 2012 through February 28, 2013 are as follows (all refer to Table 1 and Figure 1):

- Current Interim Flow releases from Friant Dam (700 cfs) should continue through April 30, 2012.
- On May 1, the Interim Flow releases from Friant Dam should be increased to 1100 cfs and be maintained at 1100 cfs for twenty-two (22) days.
- On May 23, Interim Flow releases from Friant Dam should be decreased to 800 cfs and maintained at 800 cfs for one (1) day.
- On May 24, Interim Flow releases from Friant Dam should be decreased to 550 cfs and maintained at 550 cfs for one (1) day.
- On May 26, the Interim Flow releases from Friant Dam should be decreased to 350 cfs and maintained at 350 cfs until October 31, 2012.
- On November 1, Interim Flow releases should be increased to 700 cfs and maintained at 700 cfs through November 10, 2012.
- On November 11, Interim Flow releases should be reduced to 350 cfs and maintained at 350 cfs through February 28, 2013.

As noted in Figure 1, if the 800,000 ac-ft forecast for unimpaired runoff is reduced later in May, the 1,100 cfs flow bench duration would be shortened. If the forecast is increased the 1,100 cfs bench duration would be lengthened to May 27. In both of these alternative scenarios, 800 cfs and 550 cfs descending limb benches would be retained to achieve 350 cfs baseline flows by May 29, 2012.

Table 1.**Updated RA Flow Schedule Recommendation for 2012 (based on a Probable Dry Water Year)**

Begin Date	End Date	Recommended Friant Dam Releases (cfs)	Exhibit B Riparian Release (cfs)	Gravelly Ford Flow Target (cfs)	Gravelly Ford Flow Allocation (cfs)	Estimated Flows Entering Mendota Pool (cfs)
3/1/12	3/31/12	350	130	225	220	145
4/1/12	4/16/12	350	150	205	200	125
4/17/12	4/23/12	500	150	355	350	265
4/24/12	4/30/12	700	150	555	550	455
5/1/12	5/22/12	1,100	190	915	910	806
5/23/12	5/24/12	800	190	165	610	515
5/24/12	5/25/12	550	190	365	360	275
5/26/12	6/30/12	350	190	165	160	85
7/1/12	8/31/12	350	230	125	120	45
9/1/12	9/30/12	350	210	145	140	65
10/1/12	10/31/12	350	160	195	190	115
11/1/12	11/10/12	700	130	575	570	475
11/11/12	12/31/12	350	120	235	230	155
1/1/13	2/28/13	350	100	255	250	175
	TOTALS	301,289	116,945	187,965	184,344	127,918

Figure 1.

