April 4, 2012 RA INTERIM FLOW PROGRAM RECOMMENDATIONS

BACKGROUND

On April 1, 2012, the approved RA Interim Flow Schedule (dated January 31, 2012) called for Interim Flow releases from Friant Dam to increase from 350 cfs to 500 cfs. However, low water supply demand on the part of the Exchange Contractors, in combination with degrading water quality conditions in the Mendota Pool and Delta-Mendota Canal (DMC) raised the question of whether the scheduled increase in releases to 500 cfs from Friant Dam would further degrade water quality in Mendota Pool and the DMC and thus be inconsistent with the terms of the Settlement and 2012 State Water Resources Control Board (SWRCB) Permit.

Currently, water quality conditions as measured by electrical conductivity is about 940 micro-Siemens (umhos/cm) at Check 21 adjacent to Mendota Pool and about 760 micro-Siemens at the DMC headworks at the Delta. These EC numbers indicate that the water quality problem in the DMC starts with high EC values at the Delta and progressively worsens as the DMC waters move toward Mendota Pool. According to the Mendota Pool Water Quality Response Plan (Response Plan, dated February 1, 2011, page 6), the Delta-Mendota Water Authority and Exchange Contractors identified EC levels above 700 micro-Siemens as a level of concern. At Check 21, the 940 micro-Siemens readings are well above the level of concern.

During consultations with Reclamation, the Exchange Contractors, other agencies and the TAC, I was informed that other measures to address water quality issues required by the Response Plan and set forth in the SWRCB Permit either already have been taken by Reclamation and the Exchange Contractors, (*i.e.,* termination of in-pumping to the DMC) or would be infeasible (*i.e.,* diverting DMC deliveries through the Firebaugh Wasteway). Thus, based on the information available, it appears that the only additional short-term tool for avoiding further degradation of water quality in the Mendota Pool and DMC is to control the rate of Interim Flow releases.

The following updated Interim Flow Schedule recommendation that I am transmitting for review and action by Reclamation reflects my concurrence with Reclamation and other parties that there is a need to delay the scheduled Interim Flow release increase from Friant Dam that was scheduled for April 1, 2012.

UPDATED RA RECOMMENDATION: APRIL 4, 2012 - FEBRUARY 28, 2013

Note that all flow releases identified in this recommendation, although called Interim Flow releases, actually include both Interim Flow releases and Riparian releases. The portions of the total Friant Dam releases recommended that are actually Interim Flows are identified in Table 1 (Updated RA Interim Flow Schedule for 2012) and it is important to note that the RA is not authorized to make any recommendation with respect to implementation of the Riparian flow releases. Riparian releases are set forth in Exhibit B of the Settlement and reflected in Table 1.

After consulting with the TAC, Reclamation and other agency staff, and other interested parties, and based on the best available information at the time of this submittal, I recommend that the January 31, 2012, Interim Flow Schedule be modified as provided for in the following recommendations.

RA Flow Schedule Recommendations

- The current Interim Flow releases from Friant Dam (350 cfs) should continue through April 16, 2012.
- On April 17, the Interim Flow releases from Friant Dam should be increased to 500 cfs and be maintained at 500 cfs for seven (7) days.
- On April 24, Interim Flow releases from Friant Dam should be increased to 700 cfs and maintained at 700 cfs for seven (7) days.
- On May 1, Interim Flow releases from Friant Dam should be increased to its maximum sustained release level of 1040 cfs and maintained at 1040 cfs for ten (10) days.
- On May 11, implementation of the descending limb of the Interim Flows should commence in accordance with the following rates of decreasing Interim Flow releases from Friant Dam:
    - May 11 – Friant Dam releases should be reduced to 950 cfs
    - May 12 – Friant Dam releases should be reduced to 850 cfs
    - May 13 – Friant Dam releases should be reduced to 750 cfs
    - May 14 – Friant Dam releases should be reduced to 600 cfs
    - May 15 – Friant Dam releases should be reduced to 500 cfs
    - May 16 – Friant Dam releases should be reduced to 400 cfs
- On May 17, Interim Flow releases should be reduced to 350 cfs and maintained at 350 cfs through May 28.
- On May 29, Interim Flow releases should be reduced to 215 cfs and maintained at 215 cfs through June 30.
- Beginning July 1 and continuing through February 28, 2013, I recommend that the Interim flow Schedule be implemented consistent with Table 1.

Additional Comments

As required by the Draft Restoration Flow Guidelines (RFG), my updated Interim Flow Program recommendation accounts for the total remaining allocation of water volume for the 2012 Water Year (in this case, April 4, 2012 through February 28, 2013). The remaining volume is calculated in concert with Reclamation. For this Critical-High Water Year, my January 31, 2012 recommendation determined that 70,919 acre-feet of Interim Flow volume was available for 2012. Approximately 14,717 acre-feet of the available Interim Flow volume (measured at Gravelly Ford) has been released through April 3. Thus, we have approximately 56,202 acre feet of Interim Flow volume available for use starting tomorrow, April 4, and continuing through February 28, 2013. As indicated in Table 1 (Updated RA Interim Flow Schedule Recommendation for 2012) and Figure 1 (Updated RA Interim Flow Spring Hydrograph for the Critical-High Water Year – Through June 30, 2012), my updated recommendation would use 70,879 acre feet through February 28, 2013, accounting for all but about 40 acre feet of the available 70,919 acre feet of Interim Flow volume.

Several factors/considerations shaped my updated Interim Flow Schedule recommendations and need to be identified in order to understand the basis for my specific flow recommendations. These factors include:

- The Critical-High Water Year designation (90% exceedance runoff forecast) currently being used by Reclamation and is the assumed Restoration Allocation this recommendation.

- The Water Year designation is subject to change based on future meteorological conditions, runoff conditions, and exceedance value used.
- Reclamation has indicated that all available measures provided for in the Mendota Pool Response Plan has either already been implemented or would be ineffective in terms of enabling increased Interim Flow releases from Friant Dam.
- Poor water quality conditions persist in the DMC and Check 21.
- Historical trends indicate that the Exchange Contractors and other Mendota Pool users during a typical year will begin to increase water use in mid-April and continue to increase use through August.
- Seepage constraints in the Eastside Bypass adjacent to Reach 4B1 continue to prevent Interim Flows from passing Mendota Dam.
- Fisheries agency staff comments on the desired timing and duration of flow benches for purposes of supporting fisheries experiments being implemented during this year's Spring Pulse Flow period.

If one or more of the above factors change significantly, I will review the current recommendation to determine whether I should prepare another updated Interim Flow Schedule for your for review and action. This Critical-High Water Year is not, by definition, a typical year. Accordingly, I will continue to work with Reclamation and other parties to monitor actual conditions in and adjacent to the mainstem of the San Joaquin River to evaluate whether a future update of this Flow Schedule Recommendation will be necessary. Table 1 addresses the specific flow release recommendations for the rest of the 2012 Water Year (through February 28, 2013) while Figure 1 (Updated RA Interim Flow Spring Hydrograph for the Critical-High Water Year – Through June 30, 2012) illustrates the shape of the hydrograph through June 30, 2012.

In addition, based on my consultation with the TAC, I intend to follow up on concerns expressed by NRDC regarding reliance on Interim Flow release reductions to address water quality conditions, particularly when the water quality issues encountered in the Mendota Pool and DMC are not related to implementation of the Interim Flow Program.

Therefore, I request that Reclamation consult with the SWRCB staff as soon as possible to obtain guidance concerning the appropriate process to be followed to comply with Board Permit Conditions relating to water quality. It is counter-intuitive to restrict flows of high quality Interim Flows to areas experiencing degraded water quality conditions and I am not comfortable with using Interim Flow releases as a default mechanism to address water quality conditions such as those we now are confronting. I also would like to be included in discussions with SWRCB staff when they are scheduled.

TABLE 1. Updated RA Flow Schedule Recommendation for 2012 (based on a Critical-High 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	5/10/12	1040	190	855	850	751
5/11/12	5/11/12	950	190	765	760	665
5/12/12	5/12/12	850	190	665	660	565
5/13/12	5/13/12	750	190	565	560	465
5/14/12	5/14/12	600	190	415	410	315
5/15/12	5/15/12	500	190	315	310	225
5/16/12	5/16/12	400	190	215	210	135
5/17/12	5/28/12	350	190	165	160	85
5/29/12	5/31/12	215	190	30	25	0
6/1/12	6/30/12	215	190	30	25	0
7/1/12	8/31/12	255	230	30	25	0
9/1/12	9/30/12	260	210	55	50	0
10/1/12	10/31/12	160	160	5	0	0
11/1/12	11/6/12	400	130	275	270	195
11/7/12	12/31/12	120	120	5	0	0
1/1/13	2/28/13	110	100	15	10	0
	TOTALS	187,745	116,866	74,499	70,879	46,829

Figure 1: Updated RA Interim Flow Spring Hydrograph for the Critical-High Water Year – Through June 30, 2012 (inflow less than 670 TAF)