The following is an updated recommendation by the Restoration Administrator (RA) for Restoration Flows for the balance of 2016, pursuant to the December 2013 Restoration Flow Guidelines (RFG) and Exhibit B of the Settlement. As always, I reserve the right to change, update and/or modify Flow Recommendations as circumstances change and conditions warrant.

**Background**

I am in receipt of the July 5, 2016 Restoration Allocation which provides an allocation of 270,297 ac-ft of Restoration Flows as measured at Gravelly Ford. This is increased from the 266,932 ac-ft from the May 31, 2016 Allocation.

**Considerations for Restoration Flow Releases**

From the January 29 Restoration Flow Recommendation, the focus of this year’s Restoration Flow releases were identified as:

1. Taking a fundamental step towards implementation of the Settlement by commencing year-round connectivity of the river from Friant Dam to the Merced River confluence.
2. Facilitate outmigration of juveniles and to further refine techniques and methods for juvenile trapping in Reach 1.

The juvenile outmigration studies are completed for 2016, however the objective of full river connectivity is still valid. The July 5, 2016 Allocation identifies specific and continuing challenges for this objective.

The need for environmental sampling for the presence of kangaroo rats downstream of Sack Dam will prevent release of Restoration Flows downstream of Sack Dam until the sampling protocol has been completed and results analyzed. Additionally, the Eastside Bypass sand removal project will further constrain release below Sack Dam from June 1 through at least July, and possibly until August 30.

Maintenance at the canal power plant will occur from approximately June 10 through approximately the end of July. As a result, releases from the dam can be up to 285 cfs, or above 470 cfs, but not between 285 and 470 cfs.
Both holding contract losses and Reach 2B losses are higher than anticipated. While holding contract losses do not impact Restoration Flows, Reach 2B losses will require additional Restoration Flows to achieve flow targets for Sack Dam releases.

Maintenance activities at the Chowchilla Bifurcation Structure and Mendota Pool may impact river flows; details on those maintenance activities are still forthcoming. If any impacts to Recommended Restoration Flow releases are suggested by Reclamation, it will be incumbent on Reclamation to demonstrate the need for any flow modifications, and to demonstrate that Reclamation has used reasonable efforts to avoid any reduction or discontinuance of release as required by the Settlement.

Finally, Central Valley Project operations continue to be scrutinized by resource agencies in consideration of delta smelt and winter run Chinook salmon stocks. Additional flow releases from CVP facilities could have impacts on delta operations, and potentially on Millerton operations and therefore on Restoration flows. Details on CVP operations in support of fisheries stocks are still forthcoming.

**Recommendation**

The RA is recommending the following for the balance of 2016. This Recommendation presumes certain timing for channel constraints and losses, which may prove to be inaccurate. As a result, this Recommendation may be further updated to achieve the objectives of river connectivity.

1. Continue Restoration Flows from Friant Dam above Holding Contract releases as necessary with the target of providing the following Restoration Flows at Gravelly Ford for the balance of the Restoration Year. These recommended Restoration Flow targets at Gravelly Ford may be updated if circumstances change:
   a. 200 cfs of Restoration Flows from July 11 through August 9
   b. 180 cfs of Restoration Flows from August 10 through August 31
   c. 170 cfs of Restoration Flows in September
   d. 190 cfs of Restoration Flows in October
   e. 340 cfs of Restoration Flows in November (the fall pulse is distributed throughout the month of November)
   f. 230 cfs of Restoration Flows in December
   g. 250 cfs of Restoration Flows in January and February, 2017
2. Upon release of constraints for flows past Sack Dam, commence releases of flows past Sack Dam in the amount of 50 cfs; at that time and based on channel conditions and the results of flow bench evaluations I will provide a recommendation for balance of year releases past Sack Dam.
3. Any Restoration Flows that reach Mendota Pool and are not released past Sack Dam may be recaptured at Mendota Pool.
4. In general, flow changes should occur between 0800 and 1200 on days when they are scheduled to occur. I will work with Program staff to adjust specific time and dates of flow changes as warranted (for example, if a flow change is nominally scheduled to occur on Sunday or a holiday).

This flow recommendation is shown in Table 1, and the volumetric outcome of this flow recommendation is shown in Table 2.
Table 1.

<table>
<thead>
<tr>
<th>Start Date</th>
<th>End Date</th>
<th>Restoration Flow at GRF</th>
<th>Total Flow at GRF</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 11, 2016</td>
<td>August 9, 2016</td>
<td>200 cfs</td>
<td>205 cfs</td>
</tr>
<tr>
<td>August 10, 2016</td>
<td>August 31, 2016</td>
<td>180 cfs</td>
<td>185 cfs</td>
</tr>
<tr>
<td>September 1, 2016</td>
<td>September 30, 2016</td>
<td>170 cfs</td>
<td>175 cfs</td>
</tr>
<tr>
<td>October 1, 2016</td>
<td>October 31, 2016</td>
<td>190 cfs</td>
<td>195 cfs</td>
</tr>
<tr>
<td>November 1, 2016</td>
<td>November 30, 2016</td>
<td>340 cfs</td>
<td>345 cfs</td>
</tr>
<tr>
<td>December 1, 2016</td>
<td>December 31, 2016</td>
<td>230 cfs</td>
<td>235 cfs</td>
</tr>
<tr>
<td>January 1, 2017</td>
<td>February 28, 2017</td>
<td>250 cfs</td>
<td>255 cfs</td>
</tr>
</tbody>
</table>

Recommendation for Disposition of URF’s, and Other Discussion

This flow schedule will produce a significant volume of Unreleased Restoration Flows (URF’s). My recommendation for disposition of URF’s is as follows:

1. 85 TAF of URF’s were released for sale in “Block 1”, with canal losses the total committed to sale is 89,473 ac-ft.
2. 4,461 ac-ft of URF’s were released for sale in “Block 2”, with canal losses the total committed to sale is 4,696 ac-ft.
3. The allocation uncertainty from earlier this year clearly demonstrate the need for the Restoration Program to have access to water that it can call upon despite uncertainty elsewhere in the CVP, and despite any delays in a Restoration Allocation. Accordingly, I am recommending that 18 TAF of URF’s be set aside for banking opportunities, and I will work with Reclamation to identify appropriate banking or exchange opportunities to ensure early season water availability for the Program in future years.
4. Withhold an additional 6000 URF’s from sale pending an updated Recommendation from me later in the year. This withholding will avoid “overselling” URF’s in the event hydrologic conditions turn dry, and will provide additional water to address channel losses.
5. Any URF’s not withheld for exchange or banking per (3) above, or withheld to address future conditions per (4) above, may be released for sale.
6. I anticipate that seepage losses in the system may exceed Exhibit B estimates; however it is not clear if this is a unique phenomenon related to the preceding four dry years and lack of connectivity and continuity in river flows, or a condition to be managed in a more sustained fashion.
7. Based on withholding URFs for flows and banking to address uncertainties, I am not planning on utilizing Buffer Flows this Restoration year.

Additional Consultation

I will continue to coordinate with the TAC, Program Office, and technical study leads to monitor release conditions, data collection conditions, juvenile trapping progress and other factors. As necessary, I will
be prepared to provide additional Restoration Flow recommendations as necessary. I look forward to the next Allocation, and will make any necessary changes or adjustments at that time.
Table 1 Notes:

1. Volumes highlighted have been released at the time of this Recommendation
2. All volumes shown are scheduled for release – actual releases may differ as a result of operational considerations or adjustments to the daily flow schedule by the RA, Program and Operations.