

# Upper Sacramento Scheduling Team

## Spring Pulse Flow Planning

Wednesday, April 7, 2021, 9:00-10:30 a.m.

### Meeting Summary

#### Participants

Agency	Attendees
Reclamation	Elissa Buttermore, Suzanne Manugian, Tom Patton, Josh Israel, Jo Anna Beck, Jacob Berens
USFWS	Jim Early, Charlie Chamberlain
NMFS	Cyril Michel, Garwin Yip
CDFW	Mike Harris
DWR	Mike Ford, Kevin Reece
SWRCB	Matt Holland, Michael Macon, Diane Riddle, Erik Ekdahl
SRSC	Anne Williams, Thad Bettner, Roger Cornwell
Kearns & West	Terra Alpaugh, Alyson Scurlock

#### Action Items

- All to send Kearns & West any suggested guidance document revisions regarding fall flows or spring flows coordination.
  - Kearns & West to compile the suggested revisions and send to Josh Israel and Rafael Lopez.
- Kearns & West to compile the list of outstanding questions and circulate to USST members prior to the April 14 meeting.

#### Key Discussion Topics with Summary of Perspectives, Outcomes, and Agreements

##### *Meeting Objectives*

1. Share Operations update
2. Present the spring pulse flow scenarios development process to full-group and discuss next steps/outstanding questions
3. Confirm content for April Spring Pulse Flow Operations Plan and USST meeting schedule

##### *USST Guidance Documents Revisions*

Reclamation noted that revisions to the guidance document are being considered at the weekly LTO coordination group meetings and invited USST members to send any suggested guidance document revisions to Kearns & West regarding fall flows or spring flows coordination. Kearns & West will compile the suggested revisions for Reclamation to act as a starting point when the USST guidance document revisions are being considered this summer.

## *Operations Update*

Reclamation provided an update on operations.

- Conditions are still really dry; Keswick releases increased to 4,500 cfs last week to help with dry conditions and are scheduled to increase to 5,000 cfs on April 8 to help with demands on the river.
- Growers have not started diverting a lot of water yet; demands are expected to ramp up significantly in late April and May.
- Shasta storage is around 2.4 MAF and Reclamation does not expect there to be a significant change in storage; storage will likely increase with snowmelt in the next couple of weeks but there will be increased releases as well, so Shasta might be at its peak storage for the year.
- Since the May 1 projection is well below the 4 MAF target, a spring pulse flow is unlikely unless there is a really large storm, but things are forecasted to be dry; the USST spring flows subgroup has been walking through the process of implementing a pulse flow using hypothetical years.

## *Spring Pulse Flow Scenarios Presentation*

Reclamation presented the spring pulse flow scenarios analysis that the spring pulse flow subgroup developed.

Perspectives and questions shared by USST members included:

- NMFS asked what runs of fish (e.g., juvenile spring-run) were incorporated into the analysis and what the reasoning was for using 2018 data.
  - NMFS said 2018 was an ideal year for a pulse flow since storage was sufficient enough to implement one, while river conditions were not very good so a pulse flow would have provided benefits to fish. The 2018 hydrograph was used along with fish passage numbers at Red Bluff Diversion Dam. NMFS noted that most fish that pass Red Bluff Diversion Dam in the spring are likely fall-run and that there is not a great long-term data set for spring-run passage in the upper system. Although the fish are not spring-run, fish passage at Red Bluff Diversion Dam may be a better representation of fish in the system.
- NMFS asked if the same 2018 dataset would be used if the USST were to consider a spring pulse flow next year or if the USST would try to match the hydrology to apply in real time.
  - Reclamation said the 2018 dataset was used to start the conversation. If the hydrology looked favorable for a spring pulse flow, the data would need to be analyzed on a finer scale. The historic record utilized monthly averages for flows and accretions and depletions, but in real time, the exact day that the pulse would be implemented would be important. The USST will also want to consider taking advantage of meteorological events and pulses happening elsewhere.
  - NMFS indicated that Reclamation purportedly used the resolution of the hydrograph that the USST would have when trying to make a forecast and implement a pulse flow in real time. NMFS noted that the USST will need to decide on which data set

to use for fish passage moving forward and suggested using the long-term daily mean or daily median.

- Reclamation described the spreadsheet they created as a tool for pulse flow management decisions. The spreadsheet would start with monthly data and would be updated with the most real time information available as time progressed. The spreadsheet includes information for Clear Creek so that a Clear Creek pulse flow could be piggybacked off of and includes information on accretions and depletions so that the USST can do some trial and error of placing pulse flows at Keswick to see what the resulting flows at Wilkins Slough would be with storm events.
- NMFS asked what the volumes for the top 3 pulse flow scenarios were.
  - Reclamation said the volumes were 125 TAF over base (M3), 101 TAF over base (M5), and 125 TAF over base (M6).
- NMFS asked if the subgroup had analyzed impacts on storage and potential fish survival benefits.
  - Reclamation said that they are having conversations about further examining the 2018 scenarios for interaction between cold water pool and temperature dependent mortality modeling.
- DWR highlighted the tremendous amount of work that Reclamation has done and noted that there will be tight turnaround times when this process happens in real time. DWR reminded that the USST will always be trying to use the most recent information and projections available but will always be a step behind. DWR thanked Reclamation and NMFS for walking through the exercise with the group and noted it was a great effort and good to see how complicated the process can get.
  - Reclamation agreed and noted that there is flexibility in operations to synchronize a pulse flow with a storm event if there is a storm 3-4 days out.

### *Outstanding Questions and USST Meeting Scheduling*

Kearns & West noted that they are developing a Gantt chart to display when certain pieces of information will become available and important timelines for the USST to review. Kearns & West also said that the subgroup proposed having full-group USST meetings twice a month in April and May to work through some of the outstanding questions and asked for feedback from the full-group USST on meeting scheduling.

Perspectives and questions shared by USST members included:

- Reclamation noted that the subgroup iteratively reviewed the Spring Pulse Flow Study Plan more than once and asked if there was a need to further refine it.
  - Kearns & West said that the subgroup identified outstanding questions currently not included in the Spring Pulse Flow Study Plan that would be important to know if a pulse flow were to be implemented.
  - Reclamation asked what the outstanding questions related to.
  - Kearns & West indicated that there are outstanding questions that should be considered for inclusion in the Spring Pulse Flow Study Plan and guidance document, as well as some operational questions.

- Reclamation suggested that the full-group USST could review the list of questions and help decide where they should be resolved as a next step.
  - Kearns & West will compile the list of outstanding questions for discussion at the next USST meeting.
- Kearns & West suggested that there could be one more full-group USST meeting to review the list of outstanding questions and that future meetings could be scheduled after on an as-needed basis.
  - Reclamation said they think it would be good to get a broad perspective from the full-group USST and to minimize meetings given that a pulse flow is unlikely and that it is a busy time for everyone.
  - Kearns & West will plan for one more full-group USST meeting and will send out the list of outstanding questions beforehand.

### ***April Spring Pulse Flow Operations Plan***

Reclamation noted that the April Spring Pulse Flow Operations Plan that will be presented at the April 22 SRTTG meeting will be largely the same as the March Spring Pulse Flow Operations Plan that was presented at the March 25 SRTTG meeting since conditions have not changed.

### ***Next Steps***

- The full-group USST will meet on April 14 to go through the list of outstanding questions; the frequency of USST meetings will be decided at the April 14 meeting.

***Next Meeting:*** Wednesday, April 14, 9:00-10:30 a.m.