Trinity River Restoration Program (TRRP)

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TECHNICAL MEMORANDUM

TO: ERIC PETERSON, SCIENCE COORDINATOR, BUREAU OF RECLAMATION, IDT CO-COORDINATOR

TY WALLIN, SCIENCE LIAISON, US FISH AND WILDLIFE SERVICE, IDT CO-COORDINATOR

FROM: PATRICK FLYNN, FLOW WORKGROUP COORDINATOR

CC: MIKE DIXON, EXECUTIVE DIRECTOR, TRINITY RIVER RESTORATION PROGRAM

SUBJECT: RECOMMENDATION FROM FLOW WORK GROUP TO IDT FOR FLOWS FROM THE PERIOD OF APRIL 15, 2025 TO DECEMBER 14, 2025

DATE: MARCH 4, 2025

ATTACHMENT: DSS TABLE (DSS WY25_collated.pdf); SELECTED HYDROGRAPHS WITH FLOW TABLES (WY 25_hydrographs for modeling_geomorph_fixed.xlsx); 2021 MEMO TO TMC FROM IDT (20211202_flowwg_memo-1.pdf)

The Flow Work Group (FWG) met on February 6, February 13, February 19, and March 3, 2025 to decide upon an approach to flow planning for Water Year 2025 (WY2025). Flow planning for WY2025 required consideration of Safety of Dams (SOD) releases that were ongoing throughout the flow planning process. Additionally, the Program saw the first implementation of the whole and complete Winter Flow Variability (WFV) project for the first time. The FWG considered these circumstances when making a WY2025 flow recommendation. The volume of water considered for release during the period from April 15, 2025 to September 30, 2025 was the amount remaining after implementation of the Winter Flow Variability Project during the period from October 1, 2024 until April 14, 2025 per the WFV project ruleset.

The WFV ruleset dictates a synchronized release if a threshold value is predicted between December 15 and February 14, and specific volumes of water to be released above baseflow based on the Bulletin 120 (B120) forecasting tool provided by CA Department of Water Resources (CA DWR). The ruleset utilizes the B120 forecasts issued for the month of February and the month of March to determine volumes to be released during the period of February 16 to April 14, and March 16 to April 14, respectively. A synchronized release was implemented starting December 23 and used 60,000 acre-feet (af). The February B120 was released on February 11, 2025, and forecasted a Normal year, which allocated 60,000 af for release during the period of February 16 to April 14.

Because the flow planning process was ongoing through the month of February and into early March, the FWG did not have the information provided by the March B120 (usually issued around the 10th or 11th of the month)

and therefore did not know exactly how much water volume would be released during the period of March 15 to April 14. Additionally, flow planning for the release of ROD volumes during the spring period is always, by necessity, done before the April B120 is issued. Since the WY2025 planning process took place before these two forecasts were issued, a series of likely scenarios was envisioned and planned for. The FWG reached a consensus recommendation to implement a series of hydrographs, one per possible water year scenario, as described below. Only one of these hydrographs would be implemented, depending on which water year scenario materializes and contingent on IDT and TMC support.

The FWG envisioned two scenarios that release 180,000 af during the period from December 15 to April 14 (the "winter period") and one scenario which releases 120,000 af during the same period, based on the WFV ruleset. These volumes result from the implementation of the synchronization peak flow in late December (60,000 af released), the Normal February B120 90% forecast (60,000 af released from February 15 to April 14), and a Wet March B120 90% forecast (which would allocate an additional 60,000 af from March 15 to April 14). This would result in 180,000 af released above baseflow prior to April 15. A Normal March B120 90% forecast would not allocate additional water and would result in 120,000 af released above baseflow during the same period. The uncertainty surrounding the March B120 dictates the need to plan for two scenarios depending on volume released in the winter period. The FWG also planned for the chance of both a Wet and Extremely Wet water year type based on the April B120. In total, hydrographs were developed and modeled for three scenarios (Table 1).

Table 1: Water year scenarios envisioned for WY2025

Scenario	Sync	Feb B120	Mar B120	Apr B120	Total released from Dec 16-Apr 15
1	60kaf	Norm-60kaf	Wet-60kf	Wet	180kaf
2	60kaf	Norm-60kaf	Norm-0kaf	Wet	120kaf
3	60kaf	Norm-60kaf	Wet-60kaf	Ex. Wet	180kaf

Safety of Dams (SOD) releases began on January 1, 2025, when the recession limb of the synchronization peak flow was superseded by a static 1,500 cfs flow. SOD releases were increased to 3,500 cfs on February 7. The FWG met on February 6 to discuss options to account for flow volumes given the SOD releases superseded WVF releases during the elevated baseflow period (February 16-April 14). The FWG recommended accounting for flow volumes as approved by the Trinity Management Council (TMC) for the WY2025, thus removing those volumes from releases scheduled after April 15. However, for modeling purposes during flow planning, the FWG elected to model the actual flow volumes released at Lewiston, including SOD releases, through February 28, then assumed static releases of 1,500 cfs through March 14, then approved elevated baseflow schedules based on two possible March B120 90% forecasts (Table 1). This schedule attempted to mimic actual hydrologic and biological conditions to the degree possible given uncertainty in SOD releases moving forward.

Three sets of hydrographs were developed for consideration. The FWG chose to model two of the sets presented, one that included a steep geomorphic peak, and one that included a lesser peak with a broad swell of water which was intended to benefit riparian plants and to potentially allow tributary inflows to overtake the temperature regime of the mainstem river, rather than the cold hypolimnic releases from the dam. The FWG used the Decision Support System (DSS) to determine which hydrographs of those chosen were most beneficial to the ecology of the Trinity River. The DSS collates numerical outputs from various models into a single spreadsheet that is used to inform decision-making by the FWG in a quantitative fashion. DSS model results indicated that the hydrograph that focused on a relatively steep geomorphic peak was most beneficial, including greater benefit to woody riparian plants. The Trinity River Flow Evaluation Study prioritizes geomorphic and riparian scour objectives in Wet and wetter water year types and fish objectives in all years. As such the FWG recommends, by consensus, the hydrographs shown below (see figures 1-3). The hydrographs include two small pulse peaks in July, which are intended to encourage spring Chinook Salmon migration. The FWG made a small change to these peaks after the DSS results were reviewed to create better ecological conditions for Foothill yellow-legged frogs as indicated by the Foothill yellow-legged frog Assessment Model (FYFAM).

As stated above, only one of these hydrographs would be implemented this year, depending on which water year scenario materializes. The FWG is providing one recommended hydrograph for each scenario that could occur depending on March and April B120 forecasts. The FWG recommends that the IDT forward the recommendation to TMC for their consideration during the March quarterly meeting.

Note: the hydrographs below do not reflect the change stated above to create better ecological conditions for Foothill yellow-legged frogs as indicated by the Foothill yellow-legged frog Assessment Model (FYFAM). The change is very minor and consists generally of swapping the positions of the two small peak flows in July.

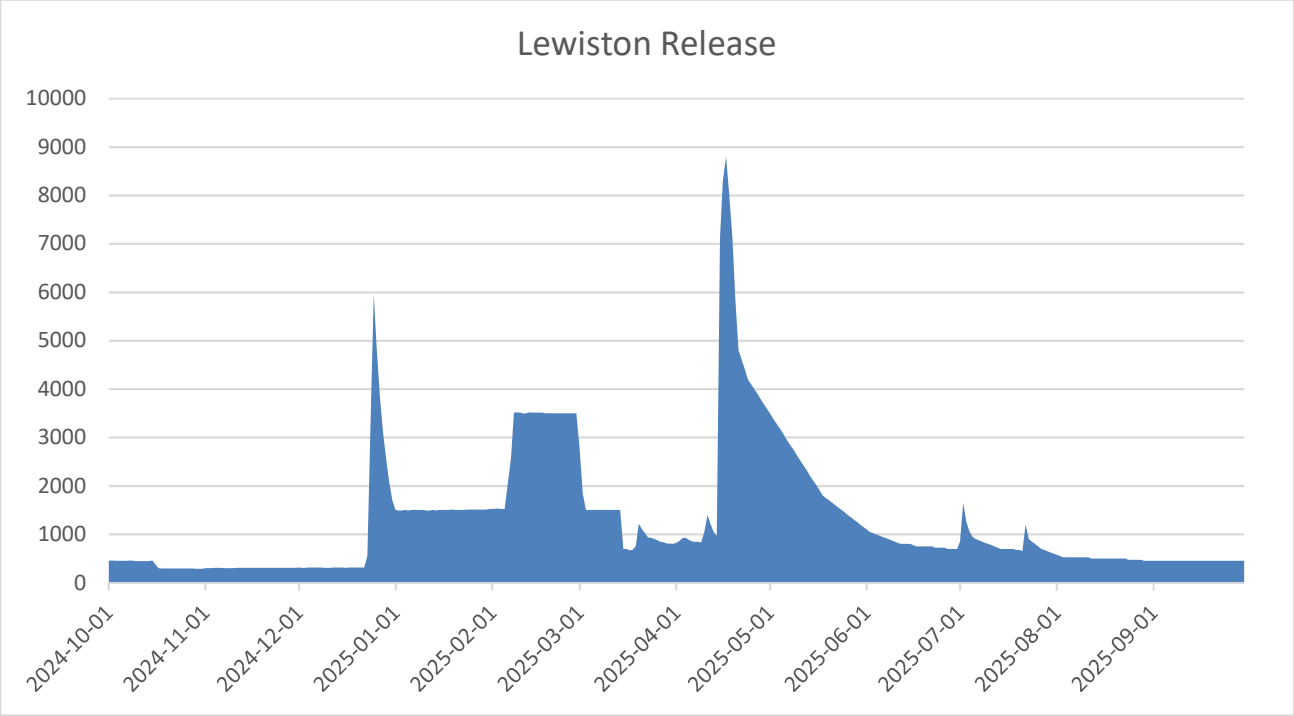

Figure 1: Normal February – Normal March – Wet April Hydrograph

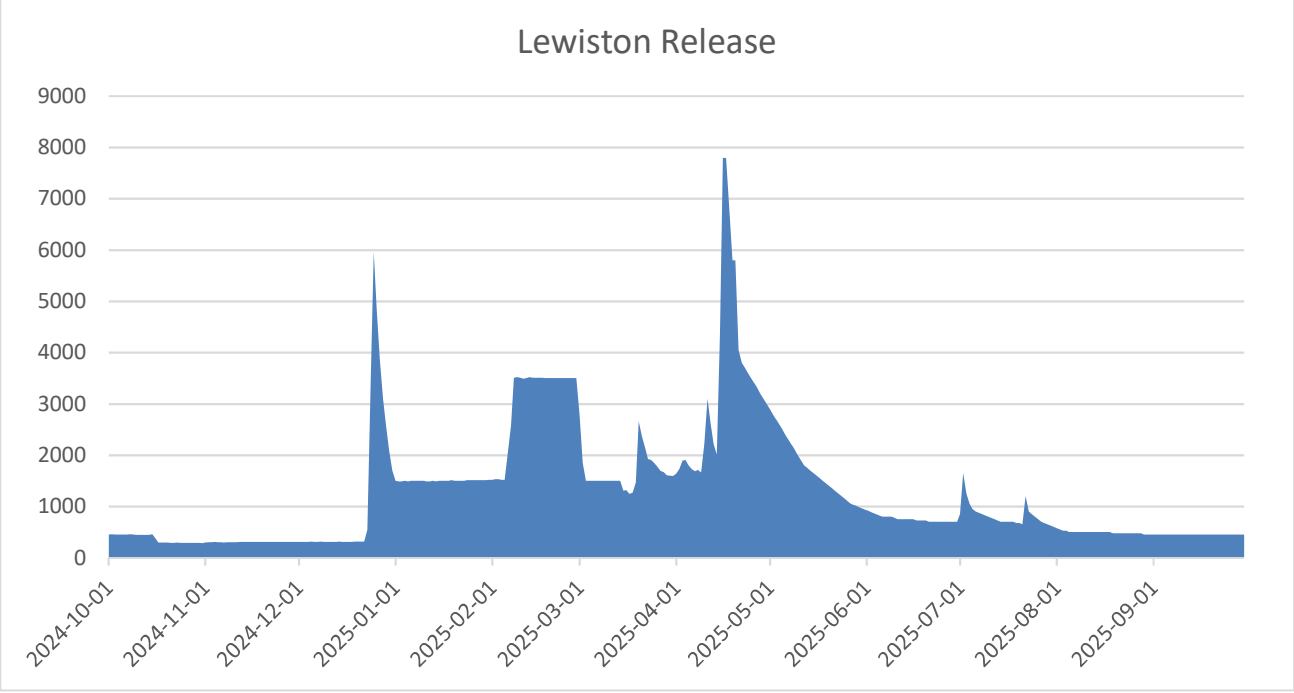

Figure 2: Normal February – Wet March – Wet April Hydrograph

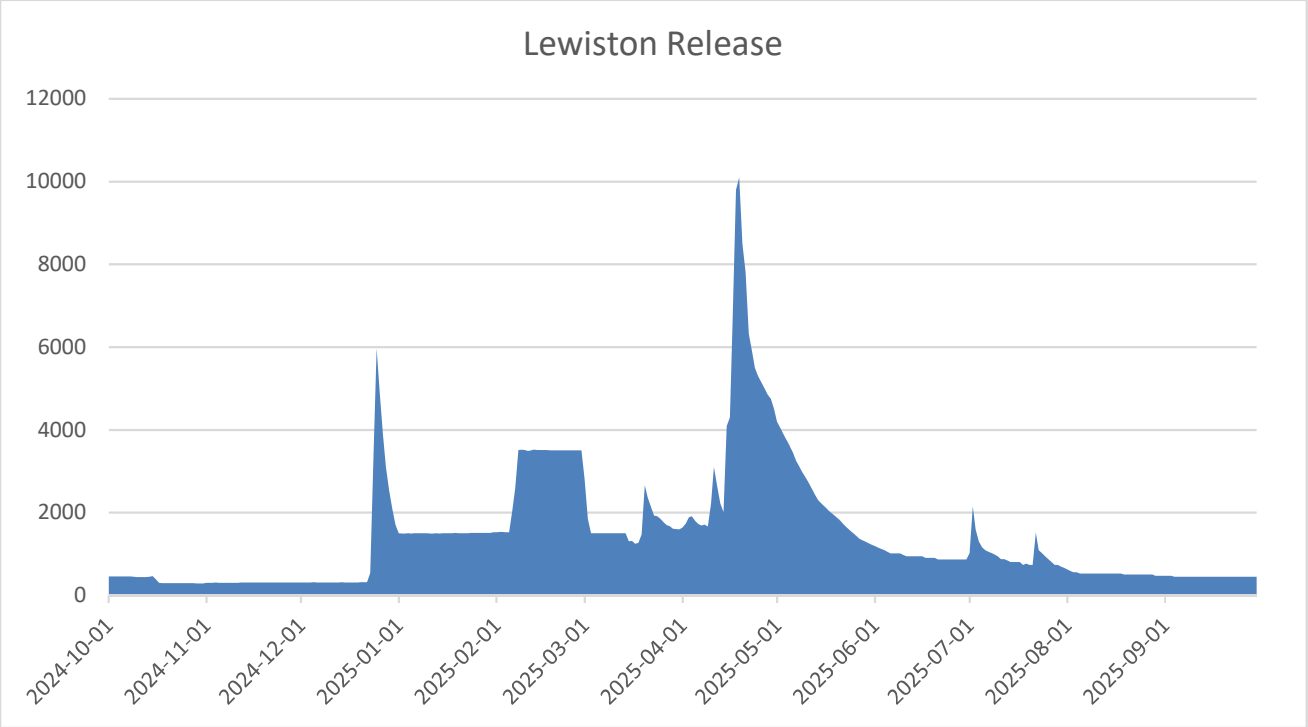

Figure 3: Normal February – Wet March – Extremely Wet April Hydrograph

Patrick Flynn
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