SOLANO COUNTY WATER AGENCY

December 16, 2016

The Honorable Felicia Marcus, Chair
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-2000

Subject: Comment Letter – Bay-Delta Phase II Working Draft Science Report

Dear Chair Marcus:

The Solano County Water Agency (SCWA) appreciates the opportunity to comment on the State Water Resources Control Board's (SWRCB) Bay-Delta Phase II Working Draft Science Report, dated October 2016 (draft report). SCWA holds rights to water held in Lake Berryessa, which is located on Putah Creek, in the southwestern portion of the Sacramento River drainage. Putah Creek is nominally tributary to the Yolo Bypass, which in turn empties into the Sacramento River near the City of Rio Vista.

Lake Berryessa is the central component of the U.S. Bureau of Reclamation's (Reclamation) Solano Project and the primary source of agricultural and municipal water for Solano County. SCWA operates the Solano Project on behalf of Reclamation and in this role is responsible for stream flow releases to Lower Putah Creek. During the 1990's the Putah Creek drainage was the subject of extensive litigation – the Putah Creek Water Cases – that cumulated in the Condition 12 Settlement Agreement among appropriative water right holders upstream of Lake Berryessa, and the Putah Creek Accord, which addressed instream flow requirements downstream of the Solano Project and ultimately transformed Lower Putah Creek (downstream of the Solano Project) into a perennial stream. SCWA is well versed in the hydrology and aquatic biology of Putah Creek.

The Putah Creek drainage exhibits significant physiographic features that are atypical of the Sacramento River tributaries and warrant further discussion in the final Bay-Delta Phase II Science Report. The hydrology of the Sacramento River's west side tributaries, particularly the tributaries of the "Northern Coast Range, Southern" portion of the Sacramento River drainage (Putah and Cache creeks) are rainfall dominated, in contrast to the east side tributaries that drain the snow-capped Sierra mountains. As a result, the west side tributaries tend to be "flashy", flowing torrentially for relatively short durations in the winter, with little or no flow in the summer and fall.

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The flashy nature of the west side tributaries is obscured by the draft report's presentation of monthly as opposed to daily stream flow data. However, even the bar charts depicting monthly average unimpaired flow in Appendix A of the draft report are sufficient to illustrate the fact that during the summer and fall, the total unimpaired flow of the Sacramento River is overwhelmingly derived from the snow-melt dominated tributaries on the east side of the Sacramento River drainage. **Historically, much of Lower Putah Creek was typically dry in the summer and fall, and therefore, provided no surface runoff to the Yolo Bypass or the Sacramento River during those seasons.**

The Putah Creek drainage is atypical of Sacramento River tributaries in that it empties into the Yolo Bypass, rather than directly to the Sacramento River. Historically, hydraulic continuity between Lower Putah Creek and the Sacramento River was generally limited to the winter and spring of wet years, when the Yolo Bypass was at least partially flooded. As demonstrated by the average annual runoff estimates presented in Appendix A of the draft report, unimpaired Putah Creek outflow historically accounted for a relatively small fraction of the total Yolo Bypass outflow to the Sacramento River – as little as 7 percent in wet years and up to as much as 22 percent in critically dry years.

Under present day conditions, stream flows in the Yolo Bypass are largely controlled by the Fremont Weir, which restricts Sacramento River stream flows – when stream flows are less than 55,000 cubic feet per second - from entering the Yolo Bypass, thereby minimizing the frequency with which the Yolo Bypass is partially if not entirely inundated. **Under present day conditions, Putah Creek's ability to provide significant outflow to the Sacramento River is largely dependent upon the operation of the Fremont Weir and more specifically, the frequency with which the Yolo Bypass is at least partially flooded, rather than Putah Creek itself.**

While we understand the primary focus of the draft report and ultimately, the Bay-Delta Plan Update, is to address Bay-Delta inflow/outflow vis-à-vis Sacramento River tributary contributions, in the case of Putah Creek an important point has been glossed over – historically, much of Lower Putah Creek was dry in the summer and fall of most years, but **through implementation of the Putah Creek Accord, Lower Putah Creek has been transformed into a perennial stream with significant ecological benefits.**

Two clarifications with respect to the Putah Creek Accord; the minimum flow requirements originally specified in the appropriative water rights pertaining to the Solano Project were not "supplemented" by the Putah Creek Accord, but rather, the

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stream flow requirements set forth in the Putah Creek Accord replaced the original minimum flow requirements specified in the water rights pertaining to the Solano Project.

Since implementation of the Putah Creek Accord in 2000, summer and fall stream flow releases to Lower Putah Creek have and will continue to exceed the corresponding "pre-2000" stream flow releases. Pursuant to the Putah Creek Accord, the Solano Project is obligated to release sufficient water to at all times maintain a continuous wetted stream channel along the entire length of Lower Putah Creek – to its confluence with the Toe Drain on the east side of the Yolo Bypass. The fact that Lower Putah Creek is now a perennial stream – even in critically dry years – is obscured by the statistical data presented in the draft report, which largely characterize stream flow conditions prior to implementation of the Putah Creek Accord.

The significance of the Putah Creek Accord cannot be overstated. **Through implementation of the Putah Creek Accord, Lower Putah Creek is now recognized as a model for the management of native fish populations in California.** As discussed in one of the technical papers cited in chapter 3 of the draft report (Kiernan et al., 2012), prior to the Putah Creek Accord, native fish populations were largely restricted to a one-kilometer segment of Lower Putah Creek, immediately downstream of the Solano Project. Following implementation of the Putah Creek Accord in 2000, native fishes regained population dominance across more than 20 kilometers of Lower Putah Creek (the entire length of Lower Putah Creek is approximately 30 kilometers). With regard to Lower Putah Creek, Kiernan et al., (2012) observed that "…restoration of native fishes was achieved by manipulating stream flows at biologically important times of the year and only required a small increase in the total volume of water delivered downstream (i.e., water that was not diverted for other uses) during most water years".

As noted in the draft report, within recent years anadromous fish – Chinook salmon - have returned to Putah Creek in increasing numbers. Last fall and winter approximately 800 adult Chinook salmon were reportedly observed in Lower Putah Creek. This fall and to date an estimated 1800 adult Chinook salmon have arrived in Lower Putah Creek. Whether or not a self-sustaining population of Chinook salmon has been established in Lower Putah Creek remains unclear and is currently under study by the University of California – Davis. A self-sustaining population or not, the numbers of successfully spawning salmon in Lower Putah Creek is now limited by the availability of suitable spawning gravels, rather than available stream flows. Accordingly, SCWA and its partners have initiated large scale projects to restore spawning gravels and increase salmonid spawning habitat availability in Lower Putah Creek.

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The transformation of Lower Putah Creek through implementation of the Putah Creek Accord has been remarkable and illustrates how ecological goals can be achieved efficiently through judicious stream flow management in tandem with physical habitat modification – particularly in highly altered environments where it is physically impossible or at least highly impractical to restore the physical/biological setting to pre European settlement conditions.

Once again, we appreciate the opportunity to comment on the draft Bay-Delta Phase II Working Draft Science Report dated October 2016. Please do not hesitate to contact me if you have any questions or simply need more information.

Sincerely,

Roland A. Sanford
General Manager

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