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February 22, 2018

VIA E-MAIL

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**Re: Do Not Undervalue Wildlife Refuge Water Supplies**

Dear Chair Quintero, Members of the Water Commission, and Mr. Yun,

Grassland Water District and Grassland Resource Conservation District (GWD) submit this letter with concern that the initial Public Benefit Ratio (PBR) for the Los Vaqueros Reservoir Expansion Project (LVE Project) proposes an unrealistically low economic value for wildlife refuge water supplies in the San Joaquin Valley. The LVE Project, as described in Contra Costa Water District's Water Storage Investment Program (WSIP) application, would provide the largest dedication of water to Central Valley wildlife refuges in the last 25 years. The ecological value of this water to Californians should be made evident by the support received from environmental groups, wildlife managers, and state and federal legislators.

Contra Costa Water District (Applicant) retained a well-known economist who conducted an analysis of thousands of water transfers in order to place a value on refuge water supplies for each water year type (above normal, dry, critical, etc.). These values were modeled to predict the

“alternative cost” of purchasing water on the open market over time. Instead of accepting the Applicant’s refuge water values, WSIP staff and consultants have recommended that the Water Commission use the default water values set forth in Appendix D of the WSIP Technical Reference document. As a result, refuge water supplies would be assigned a value that is less than half of the Applicant’s modeled value, and the PBR for the LVE Project would be significantly lower than the Applicant’s calculated PBR, making the project less competitive for an award of WSIP funding by the Commission.

We strongly object to the use of Appendix D from the Technical Reference document in order to value refuge water supplies for the LVE Project. The water values in Appendix D do not reflect the value of transfer water on the west side of the San Joaquin Valley, where the natural flow of the San Joaquin River is no longer available and water users (including wildlife refuges) rely almost exclusively on the limited water supply that can be physically imported from the Delta. The Appendix D water values also do not take into account the economic benefits that wildlife refuge recreation provides to local economies in the San Joaquin Valley. Appendix D states that the Technical Reference water values *could* be used to determine ecosystem benefits, if it can be explained why those values apply to a project. This letter explains why the Technical Reference values do *not* apply to the refuge water supplies proposed for the LVE Project.

**1. Refuges and Farmers Pay More for Water Today Than the 2030 Technical Reference Values**

The Technical Reference document estimates a range of water values by hydrologic year type, predicting that in 2030 the value of transfer water exported from the Delta will range from \$205 per acre-foot (AF) in a wet year to \$360 per AF in a critically dry year (in 2015 dollars). (Technical Reference [“TR”] Appx. D, p. 11.) This estimated range does not even approach the actual current value or the price trajectory for water that is transferred to agricultural users on the west side of the San Joaquin Valley, nor does it reflect the actual value and price trajectory for water that is transferred to San Joaquin Valley wildlife refuges.

GWD received permission to use actual water transfer pricing data for the past ten years from San Luis Water District (SLWD), a CVP contractor located in close proximity to most of the San Joaquin Valley wildlife refuges. Like the refuges, SLWD is a Central Valley Project contractor and is very reliant on surface water exported from the Delta. The past ten years (2009 to 2018) included a range of water year types, with two wet years, four below-normal years, two dry years, and two critically dry years. On average during this period, SLWD paid \$369 per AF for transfer water. (*See* Attachment 1 and Figure 1 below.) This average value is higher than the Technical Reference document’s value for transfer water in *critically dry* years in 2030.

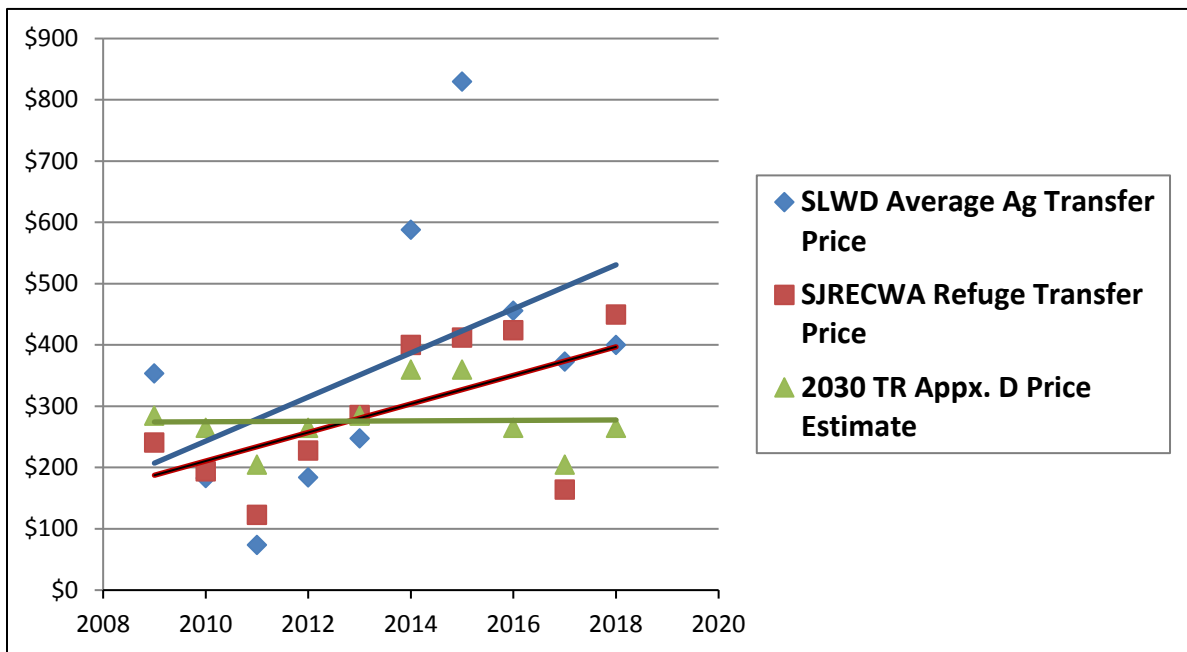
Similarly, the most reliable and important source of transfer water for San Joaquin Valley wildlife refuges is a longstanding series of water transfer agreements with the San Joaquin River Exchange Contractors Water Authority (SJRECWA). Executed in 2006, extended by amendment in 2010, and renewed in 2014, the SJRECWA transfer agreements provide a very accurate picture of the economic value of water transferred to the refuges over time. (*See* Attachment 2 and Figure 1 below.) On average for the past ten years, the value of refuge transfer water was \$294 per AF, which is higher than the Technical Reference document’s estimated values for

2030 transfer water in four out of five water year types (wet, above normal, below normal, and dry). (See Attachment 3; TR Appx. D, p. 11.) For critical water years, the current cost of refuge transfer water is \$450 per AF, which is significantly higher than the 2030 Technical Reference estimate of \$360 per AF. (*Id.*)

The SLWD data and the SJRECWA agreements also reflect a steady upward trajectory in water transfer prices over the past decade. This trajectory is caused by restrictions on Delta water pumping capacity (which limit water allocations and also water transfers), instream flow and water temperature requirements, and greater competition for water supplies. There is no reason to expect that these pressures will abate in the future, as regulatory proposals for new Delta outflow standards, water temperature standards, and other species protection measures are currently under review. Notably, the SJRECWA agreements contain a fixed price increase of 3% annually, regardless of hydrologic year type. Presuming this trajectory will continue, the cost for water transfers in 2030 will likely be 36% higher than in 2018.

Figure 1 shows the SLWD (blue) and SJRECWA refuge (red) water values for the past ten years, based on water year types, along with their linear trajectories over time, compared with the 2030 water values from Appendix D of the Technical Reference document (green) for the same water year types.

**Figure 1**



Clearly the 2030 water transfer values estimated in Appendix D of the Technical Reference document do not apply to the refuge water supplies proposed for the LVE Project, because those values are inconsistent with the most relevant 10-year records of recent water prices that agricultural and refuge water users pay for water transfers in the San Joaquin Valley. Moreover, the 2030 values in Appendix D do not reflect the increasing trajectory of water prices, which are on track to add more than 30% to the current transfer values by 2030.

## **2. The Water Transfer Data Analysis in Appendix D Is Not Comprehensive**

Appendix D provides an estimate of water values based on “a statistical analysis of recent water transfers,” and predicts that future water values in the year 2030 will range from \$228 (wet year) to \$393 (critical dry year) per acre-foot (AF) in the San Joaquin Valley (in 2015 dollars). (TR Appx. D, pp. 1, 6.) These values are then combined with the results of an analysis from an agricultural production model, which reduces the estimated water values even further. (*Id.*, p. 11.) Even though Appendix D does not provide many details, a closer look at the “350 individual transfer prices and quantities from 1992 to 2015” that formed the data set for Appendix D reveals that most of the data is outdated and incomplete.

There are three periods of water transfer data described in Appendix D: 1992-2009, 2010-2011, and 2012-2015. For the first period, the analysis relies on data from Water Strategist©, a water marketing publication from which a database was created that lists water transfers from all over the western United States between 1992 and 2009. For the second period, there was apparently no water transfer data analyzed for 2010 or 2011. For the third period, the analysis relies on undisclosed “newspaper articles, water board minutes, and district publications,” plus a graduate thesis on Sacramento Valley water transfers from 2012 to 2015. (TR Appx. D, pp. 2-3.)

Water transfer data from 2000 and earlier predates the State Water Resources Control Board’s decision D-1641, which set flow requirements that reduced Delta water exports. Transfer data from before 2009 also predates two biological opinions that imposed further limits on Delta pumping. Although the Technical Reference document made a minor adjustment in an attempt to address these discrepancies for pre-2009 transfers (Appx. D, p. 5), the Appendix D water values were nevertheless estimated using a data set that is skewed heavily toward the past. The only cited transfer data that is recent, from a graduate thesis that analyzed water transfers from the Sacramento Valley in 2012 to 2015, makes clear that water users on the west side of the San Joaquin Valley pay close to the highest prices in the state for water transfers. (*See* Attachment 4.) The Technical Reference document underestimates the value of water exported from the Delta because the analysis is not based on recent, specific, or comprehensive data.

## **3. Economic Benefits from Wildlife Refuge Recreation Support Higher Water Values**

In 2001, GWD commissioned an economic study which found that wildlife-refuge recreation generates direct expenditures and related indirect economic benefits totaling \$41 million annually for the local economies that surround the Grasslands Ecological Area (GEA) in the San Joaquin Valley. (*See* Attachment 5.) In today’s dollars that annual benefit is \$58 million. The LVE Project proposes to provide an average of 46,000 AF of refuge water per year, and all wildlife refuges in the GEA would receive increased supplies. Optimal water use for refuge managers is approximately three AF per acre, which means the LVE Project will provide approximately 15,333 acres of wetland habitat. The GEA totals 178,000 acres, thus the LVE Project will provide water to 8.6% of the entire GEA. Using the analysis from the 2001 GEA economic study, this will provide a \$5 million annual increase in benefit to the local economy (in today’s dollars). Moreover, because the total wetland footprint within the GEA is approximately 100,000 acres, the LVE Project will provide water to 15% of the most ecologically productive habitat within the GEA, likely providing an even higher economic benefit.

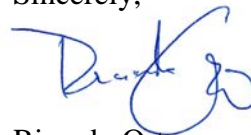
In 2015, the U.S. Fish and Wildlife Service (USFWS) conducted an economic study that included the San Luis National Wildlife Refuge (NWR). (See Attachment 6.) The San Luis NWR makes up approximately 15% of the GEA and uses 15% of refuge water supplies. The USFWS study found that recreational visitors to San Luis NWR contribute \$3.8 million annually in direct expenditures and \$5.8 million annually in indirect benefits to the local economy, in addition to \$1.4 million in annual benefits from spending by USFWS itself. The total estimated annual benefit of \$10.9 million from 15% of the GEA habitat is similar to the results of the 2001 GWD study, which found that the entire GEA generates approximately \$58 million in economic value (today's dollars). The GWD and USFWS studies support the use of a higher value for refuge water supplies proposed by the LVE Project, because those supplies not only have a value on the water market, they will also generate at least \$5 million annually for the local economy from increased refuge habitat and associated recreation.

Beyond the numbers, we must emphasize what the USFWS describes as the difficult-to-measure value of wetlands to society:

To understand the economics of refuges, we need to ask not only "What would a region's economy be like if the Refuge System did not exist?" but also "What would life be like if the Refuge System did not exist?" The last question refers to many aspects of refuges and wetland management districts. As land is preserved in its natural state, a refuge provides services to the ecosystem of which it is a part. Wetlands mitigate flooding, improve water quality, and provide healthy fish and wildlife habitat. Trees provide nesting and roosting sites for birds. Many refuges maintain habitat critical for the survival of endangered species. An economic value may be placed on these ecosystem services by considering the cost of providing substitutes for them, such as building diversion dams, artificial settling ponds, and nest sites. *However, such an approach can provide only a partial value assessment because it does not account for the value people place on the ecosystem in its natural state. Endangered species are especially valued because of the possibility of their permanent loss. Some people gain value simply from knowing that wild places and unique species still exist. These existence values are difficult to measure empirically.* (Attachment E, p. 4.)

Thank you for taking this information into consideration when reviewing the initial PBR for the LVE Project. We urge the Water Commission to undertake a more careful analysis of the proposed valuation for refuge water supplies, and to err on the side of placing a higher value on those supplies. After dedicating more than half a century of effort to securing water for wetlands in the San Joaquin Valley, GWD fully understands just how precious that water is.

Sincerely,



Ricardo Ortega  
General Manager and Director of  
Policy & Governmental Affairs