



Tuolumne River Trust

SMOKE AND MIRRORS

**Voluntary Agreements Purport to Add Water and Habitat,
But Might Actually Worsen Conditions for the
Bay-Delta Estuary, Rivers, and Native Fish and Wildlife**

March 6, 2019

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California's Bay-Delta estuary is in crisis. Climate change and unsustainable water diversions from the watershed are leading toward the extinction of winter-run Chinook salmon, Delta Smelt, orcas, and other endangered species. This crisis threatens thousands of fishing jobs and decreases water supply reliability. The best available science makes clear that significant increases in water flowing into and through the Delta in most years are necessary to restore our native fish and wildlife. The time to act is now.

Saving the Delta will require a Portfolio Approach that pairs state investments in new water supply projects outside of the Delta to improve water supply reliability, floodplain habitat restoration projects, and significant increases in flow through the estuary and into San Francisco Bay. Many environmental and fishing organizations believe that voluntary agreements (VA's) can be effective tools to implement new water quality standards and help restore the Bay-Delta. But any durable solution, regulatory or voluntary, must be supported by scientifically credible analysis that it will prevent extinction and achieve the salmon doubling objective required by state and federal law.

The VA's outlined by the Brown Administration in December 2018, and the additional partial project descriptions presented to state regulators on March 1, 2019, purport to be a package of flows, habitat and other measures that will protect the estuary without the need for new regulations. Unfortunately, these VA's will not protect and restore the Delta. Our organizations strongly oppose these VA outlines because they:

1. Double-count habitat restoration projects that are already required or planned using existing funds, and that would occur without such an agreement;
2. Fail to provide sufficient flow increases to protect and restore the Bay-Delta estuary, its native fish and wildlife, and the thousands of jobs that depend on it;
3. Fail to include any restrictions on Delta pumping and other operations of the Central Valley Project (CVP) and State Water Project (SWP); such restrictions are necessary to prevent the water projects from diverting any additional flow provided from upstream farms and cities and to prevent the Trump Administration from gutting Endangered Species Act (ESA) protections for the Bay-Delta;
4. Fail to include carryover storage requirements in upstream reservoirs to ensure water supplies for future droughts and adequate water temperatures for salmon;
5. Fail to use the transparent approach of flow standards based on a percentage of unimpaired flows, and instead uses the failed approach of State Water Board Decision 1641;
6. Fail to ensure that Bay-Delta standards will be enforced and will respond to new scientific information; and
7. Fail to include investments in water supply reliability and economic development projects that will help cities and farms adapt to a future with less water diverted from the Bay-Delta.

BACKGROUND: California's Bay-Delta watershed is formed by the Sacramento River, the San Joaquin River, and the Bay-Delta estuary where these rivers meet and flow into San Francisco Bay. This is the largest estuary on the West Coast and the most important salmon-producing system south of the Columbia River. The State Water Resources Control Board last updated water quality and flow standards for the Bay-Delta estuary in 1995. Since then, unsustainable water diversions have helped drive winter-run Chinook salmon, Delta Smelt, and other native fish populations to the brink of extinction.

The federal government adopted new Endangered Species Act protections that limited operations of the Central Valley project and State Water Project in 2008 and 2009, because the State's inadequate existing standards would lead to extinction. But it's not just fish at stake: in 2008 and 2009 the state's salmon fishery was completely closed, costing thousands of fishermen their jobs and livelihoods.

In 2009 the State Water Resources Control Board began its review and update of these standards. In the summer of 2018 the State Water Board released a Framework for new Bay-Delta water quality standards that would cover the Sacramento River, its tributaries, and the Bay-Delta estuary. This Framework included: minimum Delta outflow requirements equivalent to 55% of unimpaired flow; new reservoir storage requirements to ensure that dams carryover water to protect people and fish in case of droughts; and existing Endangered Species Act protections that limit pumping in the Delta at certain times of year.

In December 2018 the Brown Administration announced that it had agreed to the outline of a series of voluntary agreements with the Trump Administration and water districts, part of a series of agreements between Brown and Trump relating to the Delta Tunnels (California WaterFix) and the Bay-Delta. That month, after numerous delays, public hearings, and several rounds of environmental review and public comment, the Board voted to adopt new water quality standards that generally require that 40% of unimpaired flow remains in the Tuolumne, Merced, and Stanislaus Rivers during the February to June period. But the Board also announced that it would review proposed voluntary agreements as part of its environmental review for updating standards for the Sacramento River, its tributaries, and standards in the Bay-Delta estuary. On March 1 the VA parties submitted a draft Project Description and Planning Agreement to the Board that still omit critical details and leave key questions unanswered.

1. The VA's double-count habitat restoration projects that are already required or planned using existing funds and that would be implemented without this agreement.

Habitat restoration, particularly the restoration of floodplain habitats, can be an important tool that complements increased Bay-Delta flows. Scientific studies suggest that periodic inundation of floodplains is an important component of a healthy ecosystem, for salmon and other species. However, levee construction in the Central Valley has separated

historic floodplains from their rivers, and unsustainable water diversions reduce the flows needed to inundate existing floodplains at the right time, duration, and frequency.

The voluntary agreement outline identifies a list of proposed habitat restoration measures in the Bay-Delta, and on tributary rivers. However, a large number of the projects identified in the outline are already required by existing permits and agreements, already planned with existing funds, or have already been constructed. For instance, the Hamilton City Levee Setback & Floodplain/ Riparian Enhancement project was completed several years ago, and the CVP and SWP are required to implement the Fremont Weir fish passage project pursuant to the 2009 NMFS biological opinion. Similarly, the VA outline includes habitat restoration projects on the Feather River that DWR has already committed to in a proposed agreement for the renewal of its FERC license for Oroville Dam, a process that did not address the needs of the Bay-Delta estuary.

These proposed habitat restoration projects would be implemented in the absence of this agreement. They would be implemented even if the Board adopts new standards rather than VAs; therefore, they should be included in the State Water Board's baseline for analysis. A working draft listing the habitat restoration measures and whether they are already required or planned using existing public funds is available online at: https://www.nrdc.org/sites/default/files/media-uploads/vsa_habitat_restoration_project_list_2-19-19.pdf

The outline inappropriately double-counts these as new habitat projects. In addition, the Program Description proposes to dedicate \$832 million in public funding to VA implementation. The vast majority of these public funds would be expended for habitat restoration without the agreement. Therefore, these funds should be considered part of the baseline, not a contribution of the VA.

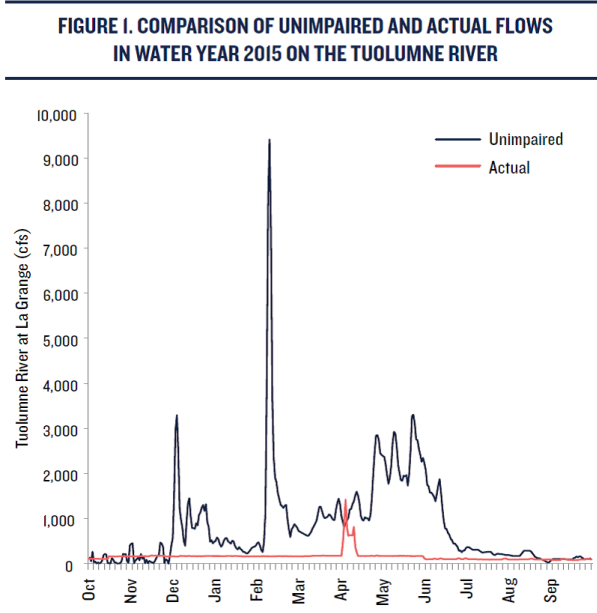
This double counting, and the lack of clarity in some areas regarding whether habitat restoration proposals are existing or proposed new projects, prevent an accurate evaluation of the habitat benefits of the VA framework.

2. The VA's fail to provide sufficient increases in flows to protect and restore the health of the Bay-Delta estuary, its native fish and wildlife, and the thousands of jobs that depend on its health.

BACKGROUND:

Numerous scientific studies and agency reviews have found that increased flow into and through the Delta is needed to protect and restore the health of the Bay-Delta ecosystem, salmon and other native fish species, and the fishing jobs that depend on healthy salmon runs. Increasing the amount of flow through the Delta into San Francisco Bay (known as Delta outflow) at certain times of year is a key driver of the survival and abundance of many endangered species, including Longfin Smelt and Delta Smelt.

Similarly, the timing and amount of flow in rivers and into the Delta is an important driver of salmon survival, including inundating floodplains, increasing turbidity, and reducing water temperatures. Numerous studies have concluded that higher flows result in higher survival of migrating juvenile salmon, including recent studies in the Sacramento River and Stanislaus River.



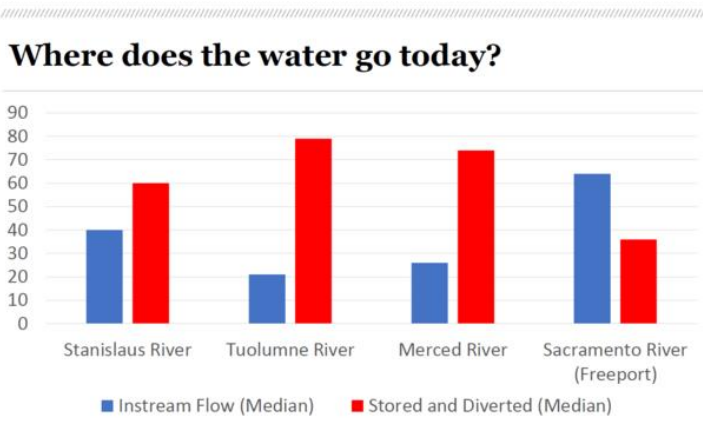
Graph courtesy of The Bay Institute (2015).

Today, dams and water diversions greatly reduce the amount of water flowing in our rivers and through the Delta. One way to measure these effects is by comparing current flows to unimpaired flow -- the amount of water that would flow in a river without dams or water diversions. On some rivers, like the Tuolumne, nearly 80% of this unimpaired flow is diverted in an average year, and more than 90% is diverted in very dry years.

In 2010, the State Water Board concluded a nine-month hearing to evaluate the best scientific information on the flows needed to protect the Delta.

The Board’s final report recommended that Delta outflow in the February to June period be a minimum of 75% of unimpaired flows, that Delta inflows from the Sacramento River be 75% of unimpaired flows, and inflows from the San Joaquin River be 60% of unimpaired flows. Although this report only considered Delta environmental needs

and did not attempt to balance these needs with other beneficial uses of water, it represented the Board’s best estimate based on the testimony of state and federal agencies and all stakeholders in a public and transparent process.



Data Source: State Water Board, San Joaquin flow SED

More recent analyses also concluded that significant increases in flow were needed. In 2013, the California Department of Fish and Wildlife recommended that the Board adopt a minimum standard for the Stanislaus, Tuolumne, and Merced River equal to 50% of unimpaired flow from February to June, and in December of 2018 the Board adopted a 40% of unimpaired flow standard for these three rivers.

For the Sacramento River and Delta outflow, the Board’s July 2018 Framework recommended 55% of unimpaired flow as the standard for February to June, with additional outflow requirements in other months. The Board estimated that the increased outflow proposed in the Framework would be approximately 1.5 million acre feet per year.

Proponents of the VA’s claim that the VA’s could increase Delta outflows by as much as 740,000-1,040,000 acre-feet per year in certain water-year types. These claims, however, are inaccurate, as demonstrated by modeling completed by the Bureau of Reclamation in the table below. That modeling indicates that the combination of the VA’s and proposed Trump Administration rollbacks of Endangered Species Act protections would result in reductions of more than three quarters of a million acre-feet of flows through the Delta compared to today, in the key fall/spring months. (The red numbers in the table below show the key months when Bay-Delta environmental flows would be lower than they are today).

Critically, the VA outline states that “new” environmental flows would be in addition to the State Board’s D-1641 requirements. But the reality is that current actual Delta inflows and outflow are significantly higher than the minimum requirements of D-1641, because of Endangered Species Act protections imposed in 2008 and 2009 and other factors. By failing to establish a clear baseline for comparison that includes all current conditions, the VA outline appears to set the stage for ESA rollbacks, a large increase in Delta diversions, and further environmental harm.

Proposed Action 122318 minus Current Operations 122118												
Statistic	Monthly Outflow (CFS)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance												
10%	-2,456	526	16,329	904	-1,159	5,124	-5,630	-5,852	8	-1,825	408	-14,554
20%	-4,832	-4,646	6,406	1,913	236	1,322	-4,411	-2,950	2,991	-2,006	211	-15,066
30%	-4,819	-7,355	4,399	-1,021	-611	-2,336	-3,743	-2,872	3,087	-1,392	22	-11,182
40%	-2,605	-6,053	1,401	-282	3,069	-2,438	-3,718	-2,155	3,663	0	0	-6,903
50%	-1,285	-4,594	1,201	986	1,495	-925	-2,886	-1,543	3,556	-1,286	0	-34
60%	0	-1,426	3,036	245	-120	966	-1,180	-462	2,473	0	0	427
70%	0	200	1,655	315	190	-890	-1,447	-84	2,048	1	-179	196
80%	0	6	1,136	205	-217	606	-398	810	2,034	0	-141	10
90%	0	84	537	-116	709	-1,017	258	75	1,763	0	1	0
Long Term												
Full Simulation Period ^a	-1,503	-2,411	2,975	55	191	-41	-2,175	-1,676	2,090	-705	39	-5,245
Water Year Types^{b,c}												
Wet (32%)	-3,527	-5,776	7,656	699	525	626	-4,178	-4,187	1,229	-751	28	-13,273
Above Normal (16%)	-2,136	-2,993	3,358	-845	1,881	870	-3,030	-1,532	3,734	-1,796	96	-7,042
Below Normal (13%)	-160	-548	160	90	1,328	846	-1,352	-282	3,498	-1,478	396	185
Dry (24%)	-103	-97	-24	188	-825	-1,463	-503	-108	2,495	23	-148	210
Critical (15%)	0	-55	0	-624	-1,716	-916	-452	-279	206	67	-14	26

a Based on the 82-year simulation period.
 b As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999).
 c These results are displayed with calendar year - year type sorting.
 d All scenarios are simulated at ELT (Early Long-Term) Q5 with 2025 climate change and 15 cm sea level rise.
 e These are draft results meant for qualitative analysis and are subject to revision.

Source: Administrative Draft Biological Assessment for Long-Term Operations of the CVP and SWP, modeling appendix, Jan. 2019. The public draft (Feb 4, 2019) does not analyze the VA’s.

The proposed tributary flows under the VA outline are also inadequate. For example, VA flows for the Tuolumne River are far less than flows recommended by state and federal agency biologists. The Tuolumne VA appears to result in flows that are approximately 20% of the unimpaired flow. This is half of what the State Water Board's new standards would require and far less than the 2013 recommendations of the California Department of Fish and Wildlife. In addition, loopholes in the Tuolumne agreement would further reduce flow requirements in a third of all years.

Systemwide, the VA outline appears to contend that ecosystem restoration will be made possible through a dramatic increase in diversions from the estuary. Simply put, there is no credible scientific foundation for this assumption.

The Project Description submitted to the Board on March 1 contains confusing and ambiguous language regarding the baseline from which "additional" water under the VAs would be measured. That document states that "the appropriate baseline is current existing conditions, which includes outflow resulting from all existing regulatory actions" (p. 4). This language does not include a specific date. It is unclear if the baseline is intended to be the date the Project Description was submitted to the Board, the date the Board staff analyzes it, or the date of prospective Board approval. Given the Trump Administration's ongoing effort to roll back ESA protections for the Bay-Delta, this lack of clarity is critically significant. The appropriate baseline for the State Water Board's analysis of the Project Description is current conditions as of March 1, 2019.

3. The VA's fail to include any restrictions on Delta pumping and other operations of the CVP and SWP.

Water proposed to be provided in the VA's by water users upstream of the Delta is intended to allow greater Delta outflow to the Bay. EBMUD, for instance, has adopted a policy stating in part: "(t)he additional flows provided under Exhibit I are intended to provide additional Delta outflow; such flows are not to be available for diversion by another party or result in a reduced Delta outflow obligation of another party." However, the VA outline provides no mechanism whatever to assure that increases in upstream flow pass all the way through the Delta to the Bay. Without such a mechanism, statements of intent to increase outflow have no practical meaning. And Trump Administration rollbacks of existing Endangered Species Act protections for the Bay-Delta would allow the CVP and SWP even greater opportunities to divert Delta inflows to San Joaquin Valley agriculture and Southern California.

4. The VA's fail to include carryover storage requirements in upstream reservoirs to ensure water supplies for future droughts and adequate water temperatures for salmon.

Carryover storage is the amount of water that is left in a reservoir at the end of the water year, which helps ensure that there is sufficient water in case the following year is dry.

Thus, carryover storage requirements help to protect future water supplies at the start of droughts. They are also critically important to protect native salmon and other fish runs. Historically, salmon would swim upstream to spawn in naturally cold river waters, but dams now block access to historic foothill and mountain spawning habitat. As a result, dams must maintain sufficient cold water in carryover storage to sustain spawning downstream of the dams.

As climate change increases air and water temperatures and the frequency of droughts, reservoir carryover storage requirements and water temperature standards will become increasingly important to protect people and the environment. For example, during the 2013-2015 drought, the Bureau of Reclamation's mismanagement of Shasta Dam resulted in lethal water temperatures below the dam, killing 78% of the endangered winter-run Chinook salmon in 2014 and 85% in 2015.

The State Water Board has proposed to adopt new reservoir carryover storage requirements and strengthen existing requirements, so that California is better prepared for drought and salmon are better protected. However, the VA's fail to include meaningful carryover storage requirements for existing reservoirs, threatening water supply for people and water temperatures for the environment.

5. The VA's fail to use the transparent approach of a percentage of unimpaired flows, instead continuing to use the failed approach of State Water Board Decision 1641.

The VA's use the outdated approach to environmental flows included in the Board's Decision 1641, which has utterly failed to protect the Bay-Delta ecosystem. D-1641 requirements are based primarily on minimum flows and salinity, and encourage CVP and SWP managers to operate to the minimum, making the minimum flow the target flow. However, on all rivers, there are times when flows exceed regulatory minimums. These unregulated flows are a key part of the existing flow regime in the Bay-Delta system and provide essential environmental benefits. Many key ecosystem functions – such as juvenile outmigration, riparian recruitment, spawning gravel mobilization and more – are usually provided by storms, “flood releases” and “spills,” rather than by regulatory requirements. The State Water Board's unimpaired flows approach is intended to systemically organize and maintain the high flows and variability that meet ecosystem needs.

The percent-of-unimpaired flow principle establishes a simple water budget that is scientifically sound and easy to understand. It is much less subject to gaming and manipulation by water operators and planners than are complicated formulae that rely on a wide range of constraints. With the percent-of unimpaired principle, you don't have to be an expert to know what the budget is or to evaluate compliance.

The flow objectives for the lower San Joaquin River that the Board adopted on December 12, 2018 require release of an adaptive range of 30%-50% of the February-June

unimpaired flows, with an initial starting point of 40%. The Board invited recommendations to modify this requirement during droughts and dry-year sequences. Rules for these periods could substantially reduce the effects of new States Board flow requirements on water supply.

6. The VA's fail to ensure that Bay-Delta standards will be enforced and will respond to new scientific information.

The State Water Board is responsible for the administration and enforcement of laws and regulations relating to water rights and water quality. The VA's framework would create several problems by creating parallel authorities that would weaken those of the State Water Board.

First, the VA's would preclude the State Water Board from enforcing funding commitments that VA advocates propose to substitute for flow requirements. Without a clear State Board enforcement mechanism to ensure that funding commitments are met, any such commitments in a VA could fail to deliver promised environmental benefits.

Second, the VA's would create a poorly-defined adaptive management framework outside that of the State Water Board. If water users and the water projects have a significant role in this new adaptive management framework, this approach could undermine any certainty that shortcomings in VA implementation and new scientific information would be addressed.

Third, the VA's would seek to prohibit the State Water Board from updating Bay-Delta standards as new scientific information becomes available. By locking in inadequate standards for 15 years, the VA outline proposes to override the Board's legally required triennial reviews – and if necessary revisions – of Bay-Delta standards.

Fourth, the VA Project Description submitted on March 1 is unclear about what flow standards would be in effect after the 15-year term of the agreement. Absent such clarity, the existing and inadequate D-1641 State Water Board standards could go back into effect upon the agreement's expiration, thus discarding the scientific work completed by the Board over the past decade. The problem this would create is highlighted by the experience after the expiration of the Vernalis Adaptive Management Program in 2010. The VAMP program was intended to provide additional flow protections for the San Joaquin River. However, the agreement made no provision for new State Water Board flow standards following its expiration. As a result, nearly a decade after the VAMP agreement expired, the State Water Board has still not implemented new science-based flow standards on the San Joaquin. Reverting back to existing failed standards is unacceptable.

Fifth, it is unclear that the terms of the VA's would become standards that the State Water Board could enforce at all, against both signatories as well as non-signatories to the VA's.

7. The VA's fail to use a Portfolio Approach that includes meaningful State investments in water supply reliability and economic development to help cities and farms adapt to a future with less water diverted from the Bay-Delta.

In his 2019 State of the State address, Governor Newsom called for a “portfolio” approach to water issues. The VA negotiations failed to adopt such an approach.

Instead, the December 2018 VA outline represents an effort by water users to forestall new, science-based State Water Board flow standards that would reduce their current water supplies. This approach treats the available water in the Bay-Delta as a zero-sum game. This does not need to be the case. Indeed, many communities have clearly indicated their strong desire to reduce reliance on the Bay-Delta, a direction that is entirely compatible with stronger flow standards for the estuary. San Diego and the Santa Clara Valley Water District are planning ambitious water recycling programs. Just recently, the mayor of Los Angeles declared that the City will recycle 100% of its wastewater by 2035. Santa Monica has indicated its intent to eliminate entirely its use of Bay-Delta water. These communities and others are also making large investments in efficiency and stormwater capture. All of these efforts advance the state's requirement to reduce reliance on the Delta, pursuant to the Delta Reform Act.

In the agricultural sector, strides are being made to increase water use efficiency. Water agencies are exploring options to increase groundwater recharge using peak river flows that are truly surplus to ecosystem needs. Land owners in the Westlands Water District have formed the Westlands Solar Park, to explore the potential for large scale solar power generation, thus transitioning to a new business model that is dramatically less water intensive than agricultural uses.

Yet the VA's ignore the potential of these tools to provide stable water supplies while facilitating ecosystem restoration and protection.

The VA's assume state support for habitat restoration efforts, but make no provision for alternative water supply development. State leadership, support, and the necessary large-scale funding for alternative water supply investments, such as those described here, could help develop outcomes that are both acceptable to water users and that provide legally and scientifically credible protections for the Bay-Delta and its tributaries, and their fish and wildlife.