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July 29, 2014

Mr. Ryan Wulff
National Marine Fisheries Service
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814
BDCP.Comments@noaa.gov

Re: Supplemental comments of Friends of the River to the BDCP DEIRS

Dear Mr. Wulff:

These are the supplemental comments of Friends of the River to the BDCP DEIRS with a particular focus on the need to consider a reduced export alternative in light of climate change and BDCP operational impacts on existing surface storage and in regard to the likely development of new surface storage to feed additional water to the BDCP.

1. Climate Change Impacts On Surface Storage Reservoirs Documented In The DEIRS Support The Need To Develop And Adopt A Reduced Exports Plan.

Friends of the River's existing comments already discuss at length the failure of the BDCP DEIRS to seriously consider as a BDCP alternative the Environmental Water Caucus' Responsible Exports Plan or any alternative that significantly reduces Delta water exports. In fact, information in the DEIRS supports the need for serious consideration of the Responsible Exports Plan or a reduced exports alternative.

A remarkable finding buried in the BDCP is the fact that climate change under all alternatives considered in the DEIRS will result in major federal and state surface storage reservoirs upstream of the Delta being drawn down to dead pool storage by the end of the irrigation season. The BDCP claims that this is mostly due to climate change. However, several BDCP alternatives also contribute to this annual catastrophic drawn-down. According to the DEIRS:

> In comparison to Existing Conditions, there would be a decrease in carryover storage at the end of September for Lake Oroville, Trinity Lake, Shasta Lake, and Folsom Lake in all years. Lake Oroville storage would decrease by 646 TAF (31%) in September average end of month storage. Trinity, Shasta, and Folsom lakes September carryover would decrease by 230 TAF (17%), 481 TAF (18%), and 146 TAF (28%), respectively under No Action Alternative as compared to Existing Conditions. The frequency of Trinity, Shasta, and Folsom Lakes dropping to dead pool storage would increase by about 10% under the No Action Alternative as compared to Existing Conditions. These changes in storage would reduce the ability of the CVP and SWP to meet system water demands and environmental water needs. Adaption measures would need to be implemented on upstream operations to manage coldwater pool storage levels under future sea level rise and climate change conditions. As described in the methods section, model results when storages are at or near dead pool may not be representative of actual future conditions because changes in assumed operations may be implemented to avoid these conditions. (BDCP DEIRS pg. 5-61)

What is truly astounding about this statement is that it doesn't apparently result in the federal and state agencies involved in the BDCP to recognize that the BDCP goals as currently stated are inadequate to deal with the very real impacts of climate change documented in the DEIRS.

The state and federal water projects in California, and their use of the Delta to export large quantities of fresh water south of the Delta, can no longer be operated as they have been. A serious change in operations is needed to prevent the severe impacts that annual reductions to dead pool storage in major reservoirs would entail (including significant water supply shortages for senior water rights holders and the environment). The only operational change that would likely avoid these catastrophic storage reductions is an alternative the significantly reduces Delta exports. Therefore the BDCP must fully consider, adopt, and implement a plan that reduces the statewide reliance on Delta exports, but it fails to do so.

The DEIRS' simple characterization of the dead storage issue as "model results [that] may not be representative of actual future conditions because changes in assumed operations may be implemented to avoid these conditions" brings into question whether any result or impact documented in the BDCP will represent actual conditions. Since virtually every result and impact in the DEIRS are based on computer models, perhaps they can all be individually tweaked to produced different and perhaps more desirable results. Are we to assume based on this statement that nothing in the DEIRS is definitive?

The DEIRS clearly shows that business as usual, which includes all the alternatives considered in the DEIRS, will no longer be acceptable. California must come to grips with climate change and how it will affect our water supply and management. The best place to start should be with the BDCP and that entails serious consideration and adoption of the Responsible Exports Plan or other alternatives that significantly reduce Delta exports.

2. New Surface Storage Is A Reasonably Foreseeable Impact Of The BDCP But The Likely Impacts Of New Storage Are Not Considered.

The DEIRS chapters about Water Storage and Surface Water (Chapter 5 and 6) fail to mention any projects currently under active study and environmental review to increase surface storage upstream of the Delta. These projects include a proposed raise of Shasta Dam and expansion of its reservoir on the Sacramento River, the Sites Offstream Storage Reservoir in the Sacramento Valley (which would be fed by major diversions from the Sacramento River), an additional proposed expansion of the Los Vaqueros Reservoir near the Delta, and the proposed Temperance Flat Dam on the San Joaquin River Gorge. Dam proponents have also been promoting expansion of the existing San Luis Reservoir in the San Joaquin Valley.

New surface storage projects are only mentioned and briefly examined in DEIRS Appendix 1B – Water Storage. But the Appendix is quick to disavow any connection between new surface storage projects and the BDCP:

> While water storage is a critically important tool for managing California's water resources, it is not a topic that must be addressed in the EIR/EIS for the BDCP. This is because the BDCP, as a proposed habitat conservation plan and natural community conservation plan, does not, and need not propose storage as a project component. Although the physical facilities contemplated by the BDCP, once up and running, would be part of an overall statewide water system of which new storage could someday also be a part, the BDCP is a stand-alone project for purposes of CEQA and NEPA, just as future storage projects would be. (Appendix pg. 1b-1)

This carefully worded statement fails the validity test in a number of ways. The state legislation that created the BDCP process had two "coequal" goals: to restore the ecological functions of the Delta and to improve water supply reliability in the state of California. Legislators who established the coequal goals, state and federal water agencies, and water pundits alike (many of whom work for or represent water agencies and contractors) extoll the virtues of building additional surface storage as a crucial component of California's water management.

In truth, the HCP/NCCP aspects of the BDCP are needed to implement the water supply reliability goal. The Delta could (and many believe it should) be restored without "improving" water supply reliability by continuing or even increasing Delta exports. Federal and state law prohibits the government from continuing or increasing fresh water exports from the Delta without authorizing take of endangered and fully protected species. And take permits would not be allowed without the restoration component.

Another fact that directly connects the BDCP and upstream surface storage projects is that most of these projects – particularly those located north of the Delta – would contribute water to the Delta for export. For example, the proposed raise of Shasta

Dam and enlargement of its reservoir would increase firm water supplies from 47,000 to up to 113,000 acre feet per year, depending on the dam raise alternative chosen. From 44% up to 90% of this firm yield would be exported south of the Delta.[1]

Similarly, the proposed Sites Offstream Storage Reservoir could increase water supplies from 213,000 to 246,000 acre feet per year depending on the alternative. Of this amount, about 54-55% would be exported south of the Delta. Sites could also provide dedicated water releases to improve Delta water quality and provide a downstream shift in X2, as well as provide an emergency pulse of water in response to catastrophic Delta levee collapse.[2] In fact, most of the potential benefits of the Sites project appear to be Delta oriented and would fit quite well into the BDCP operations and purposes.

It's important to understand that the Shasta Dam raise and North of Delta Offstream Storage (including Sites) were under active study when voters rejected the Peripheral Canal in 1982. The studies were subsequently shelved and were only revived in the CALFED process and reinvigorated with the advent of the BDCP. In addition, the state water bond on the November 2014 general ballot earmarks $3 billion for these projects, along with millions for Delta restoration, which increases both their connection and certainty.

The proposed Temperance Flat Dam on the San Joaquin River Gorge is located south of the Delta. But it too would provide direct benefits to the BDCP, including an emergency water supply ranging from 194,000-203,000 acre feet of water available during a "Delta Export Disruption" (a Delta levee break). In addition, the draft feasibility study for this dam project examines the potential to operate Temperance Flat in conjunction with Delta exports and San Luis Reservoir operations.[3]

There is an undeniable connection between these proposed surface storage projects and the BDCP. And the failure of the DEIRS to admit this connection and disclose the reasonably foreseeable impacts of these surface storage projects on the environment is a major violation of both CEQA and NEPA.

Attached with these supplemental comments are comments prepared by Friends of the River in response to the Shasta Dam raise DEIS and the Temperance Flat Dam Draft Feasibility Study. The comments raise serious concerns about the impacts of these projects on biologically sensitive river segments, fish and wildlife habitat, aquatic and riparian ecosystems, and protected areas such as the Sacramento River

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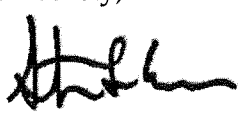
[1] Shasta Lake Water Resources Investigation DEIS Table S-2, U.S. Bureau of Reclamation, June 2013.
[2] North of Delta Offstream Storage Preliminary Administrative DEIR, Table ES-5, California Dept. of Water Resources, May 2014
[3] Upper San Joaquin River Basin Storage Investigation Draft Feasibility Report, Table ES-1, U.S. Bureau of Reclamation, January 2014.

National Wildlife Refuge, the BLM proposed San Joaquin River Gorge Wild & Scenic River, the proposed Sacramento River National Recreation Area, and various river segments determined eligible by federal agencies for Wild & Scenic River protection. All of these potential impacts should be considered in the BDCP DEIRS since the surface storage projects have a direct and undeniable connection to the BDCP.

3. **Conclusion**

The BDCP DEIRS must be revised to include a reduced exports plan in response to the climate change impacts on upstream storage. The DEIRS must also be revised to disclose the true connection between upstream storage projects and the BDCP and the potential impacts of these storage projects on the environment.

Sincerely,



Steven L. Evans
Wild Rivers Consultant

Attachments:

Comments of Friends of the River and the California Wilderness Coalition on the Shasta Lake Water Resources Investigation DEIS, Oct. 1, 2013.

Comments of Friends of the River on the Upper San Joaquin River Basin Storage Investigation Draft Feasibility Report, April 21, 2014.

CALIFORNIA
WILDERNESS
COALITION
The Voice for Wild California

Comments of
Friends of the River
California Wilderness Coalition
Shasta Lake Water Resources
Investigation Draft Environmental Impact
Statement

FRIENDS
OF THE
RIVER

September 30, 2013

Ms. Katrina Chow
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Dear Ms. Chow:

Thank you for soliciting public comments in response to the Shasta Lake Water Resources Investigation (SLWRI) Draft Environmental Impact Report (DEIS). Below are the joint comments of Friends of the River and the California Wilderness Coalition. Friends of the River's Executive Director, Bob Center, will be submitting separate comments before the deadline. In addition, Friends of the River contributed to and hereby incorporate by reference the joint comments to be submitted by the California Environmental Water Caucus. We also hereby incorporate by reference the joint comments of Friends of the River and the California Wilderness Coalition to the SLWRI Draft Feasibility Study and Preliminary DEIS, dated January 28, 2013. We also hereby incorporate by reference verbal comments made for Friends of the River by Steven Evans at the public hearings held in Redding and Sacramento on September 10 and 11, 2013.

1. Unavailability Of Hard Copies Of The DEIS Made Public Review Of This Massive And Complicated Document Difficult.

Friends of the River must protest the failure of the Bureau of Reclamation to provide hard copies of the SLWRI DEIS to the interested public. It is almost impossible to thoroughly review such a massive document online or via disc. Failing to provide printed copies of this document to those interested in conducting a thorough public review is a "penny wise, but pound foolish" approach to NEPA. We believe that a revised DEIS will be necessary and hereby request a hard copy of any future SLWRI documents.

2. The DEIS Fails To Admit The Connection Between The SLWRI And The Bay Delta Conservation Plan.

The SLWRI draft Feasibility Report clearly documents that every additional drop of water stored by a raised dam and expanded reservoir will be sold to federal water contractors. This not only refutes the Bureau's claim that the primary benefit of the dam raise is improved fisheries, it also underscores a direction connection to the SLWRI with the Bay-Delta Conservation Plan (BDCP). The current version of the BDCP proposes construction of two giant tunnels beneath the Delta to facilitate export of Sacramento River water south. The DEIS's and Feasibility Study's summary of benefits from the dam raise clearly show that 77% of the water stored behind a raised Shasta Dam will be sold to water contractors south of the Delta (the remainder will be sold to north of Delta contractors). The DEIS fails to document this important connection and is violation of the public disclosure mandate of the National Environmental Policy Act.

A revised DEIS must clearly document the connection between the SLWRI and BDCP and fully disclose the role this connection plays in the cost-benefits of the SLWRI.

3. Raising Shasta Dam Will Not Significantly Increase Anadromous Fish Survival As Claimed In The DEIS.

The DEIS predicts that the dam raise alternatives will increase juvenile anadromous fish survival by 61,000 to 813,000 fish annually. (DEIS Table S-2, pg. ES-26) This is a misleading way to present the alleged benefits of the proposed dam raise. Although increasing juvenile salmon survival by up to 813,000 fish sounds significant, the less than 1% return rate of juveniles as adults three years later means that this billion dollar or more project may produce fewer than 813 additional adult salmon in any one year, and in most years, considerably less than that number.

It is questionable as to whether the Bureau will operate the raised dam and expanded reservoir in a way that guarantees that the cold water pool will be available during the dry and critically dry years when water temperatures are a major factor in juvenile salmon survival. Sadly, there are no hard or firm standards that the Bureau is apparently required to follow. When the Bureau finds it inconvenient to meet temperature standards for juvenile salmon survival, it simply "coordinates" (a polite way of saying it pressures) state and federal regulatory agencies to agree to move the temperature control point on the Sacramento River to a spot more convenient for the Bureau's dam and reservoir operations. The Sacramento Basin Water Quality Control Plan unequivocally sets the salmon temperature control point at Red Bluff. Over the years, the Bureau has found it convenient to move this control point further upstream to Bend, Balls Ferry, and in 2013, even further upstream to a point near Anderson.

In its draft Fish and Wildlife Coordination Report (June 2013), the U.S. Fish and Wildlife Service (USFWS) found the dam raise/expanded reservoir benefits of the

dam raise to be "negligible". According to the USFWS, in 90% of the years, the dam raise/expanded reservoir will provide no benefits for juvenile salmon. In addition, the USFWS found that most of the fish benefits identified in the SLWRI are from spawning gravel augmentation and side channel rearing habitat restoration – mitigation measures that are not dependent on the dam raise/reservoir expansion and that can be implemented regardless whether the dam is raised.

It is important to recognize that the existing dam and reservoir can be operated to maintain an abundant population of endangered winter-run Chinook salmon. The completion of Shasta Dam in 1945 should have doomed this fish to quick extinction since access to its primary spawning grounds on the McCloud and upper Sacramento Rivers were permanently blocked by the dam. But once the reservoir was filled, operations of the dam in its first two decades "provided in-river conditions that sustained the winter-run Chinook population. Abundance estimates for winter-run Chinook in the 1960s ranged form a high of 125,000 in 1962 to a low of 49,000 in 1965." (National Marine Fisheries Service 1997 Proposed Winter-Run Recovery Plan, pg. II-12) Essentially, the winter-run became dependent on cold water releases from Shasta Dam for its survival. But since 1970 to the present, dam operations have consistently failed to provide cold water to the river in order to meet federal water contract commitments in the Sacramento-San Joaquin Delta.

The question is: If the existing dam and reservoir can be operated in a manner that can provide the needed cold water for improved juvenile salmon survival, why is this not an alternative under serious consideration in the SLWRI? The answer is found on DEIS page 2-49, where the Bureau states:

> The adaptive management plan (for the proposed cold water pool created by the raised dam/enlarged reservoir) *may* include operational changes to the timing and magnitude of releases from Shasta Dam to benefit anadromous fish, *as long as there are no conflicts with operational guidelines or adverse impacts on water supply reliability.* (*Emphasis* ours)

This simple statement clearly demonstrates the Bureau's lack of commitment to operate Shasta Dam and Reservoir to benefit endangered salmon regardless of whether the SLWRI is implemented or not. It reveals that the true purpose of the SLWRI is to increase the water supply for water contractors.

4. Key Recovery Actions In The 2009 Central Valley Salmon and Steelhead Recovery Plan Are Not Considered In the SLWRI DEIS.

The National Marine Fisheries Service's (NMFS) 2009 Central Valley Salmon and Steelhead Recovery Plan proposed a number of actions to protect and restore all runs of salmon and steelhead in the Sacramento River and its tributaries. Just a few of these actions include regulating pollution discharges from agricultural and urban sources, setting back and maintaining riparian vegetation on flood control levees,

restoring 185 miles of continuous riparian habitat between Red Bluff and Sacramento, screening water diversions that have substantial fishery impacts, curtailing development in flood plains, negotiating additional instream flows or purchasing water rights, remediating acid mine pollution, and restoring the former footprint of Lake Red Bluff to riparian habitat.

The DEIS ignores most of these actions and only obliquely refers to others. For example, it is unclear that adaptive management flows mentioned in the DEIS are the same thing as this specific recovery action proposed by the NMFS:

> Implement a river flow management plan that balances carryover storage needs with instream flow needs for winter-run Chinook salmon based on runoff and storage conditions, including flow fluctuation and ramping criteria (USFWS 2001).

A revised SLWRI DEIS should include sufficient detail and information to make it clear whether adaptive management flows proposed in the DEIS meet the intent of the recovery action proposed in the Recovery Plan.
The Recovery Plan also calls for the restoration of 185 miles of continuous riparian habitat along the Sacramento River between Red Bluff and Sacramento. It is important to note that the USFWS clearly believes that "the reduction in winter flows with the raising of Shasta Dam would result in adverse effects to riparian habitat along the Sacramento River..." (USFWS Coordination Report pg. 176) The SLWRI proposes as a specific restoration measure to restore riparian habitat in the upper and lower Sacramento Rivers (upstream and downstream of Red Bluff respectively) the development and implementation of a Riverine Ecosystem Mitigation and Adaptive Management Plan (REMAMP). The plan will supposedly avoid and compensate for the impact of altered flow regimes on the river's riparian and wetland communities. But little information is provided in regard to the REMAMP, which apparently does not exist even in draft or outline form, nor does it seem to apply to the Delta (as recommended in the Recovery Plan). There is no assurance that the REMAMP will actually meet the riparian habitat restoration objective found in the Recovery Plan.

In addition, some impacts identified in the DEIS imply that conditions for fish populations targeted for recovery may worsen. For example, remediation efforts at Iron Mountain Mine now controls 95% of the mine pollution that formerly flowed into the river. But the USFWS in its coordination report notes that the SLWRI reservoir expansion may exacerbate acid mine pollution by inundating additional abandoned mines and mine tailings that could leach additional metals into the river. The DEIS notes that "In addition to runoff from the historic workings (i.e., adits and portals), a number of large mine tailing deposits are currently leaching various metals into tributaries of Shasta Lake." (DEIS pg. 7-15) The Bureau apparently eliminated reducing acid mine and metal pollution as a recovery objective from the SLWRI "due to numerous implementation issues." It proposes to prepare and implement a site-specific Remediation Plan for historic mine features subject to

inundation but its not clear if this will be completed in time to allow for the completion of the dam raise and filling of the enlarged reservoir, nor is it clear whether this mitigation meets the intent of the Recovery Plan.

The Recovery Plan recommends minimum instream flows and ramping rates to benefit salmon. The DEIS notes that the 1993 NMFS Biological Opinion (BO) set minimum flows in the river, but it is unclear whether these are the same minimum flows recommended in the Recovery Plan, nor does the BO address ramping rates. Interestingly, the primary fish recovery goal of SLWRI alternative CP4 is to provide a more "fish-friendly" environment with "reservoir storage dedicated to fish, *to either improve flows or water temperatures.*" (DEIS pg. 11-54, *emphasis* ours) This is hardly the firm recovery objective outlined in the Recovery Plan. Apparently, the Bureau believes it can either improve flows or temperatures but not both. The primary constraint is the reservation of much of the existing storage, as well as the additional water provided by the raise, to meet water contract commitments.

Another recovery action virtually ignored in the DEIS is the reduction of agricultural and urban pollution into the Sacramento River and Delta. Although there are a number of mitigation measures in the DEIS to reduce pollution from construction and other upland activities into Shasta Reservoir, there is little assessment of the need to reduce agricultural, municipal, and industrial pollution into the Sacramento River downstream of the Dam, in order to reduce adverse impacts on salmon. For example, one of the specific recovery actions outlined by NMFS in its original 1997 winter run recovery plan is to control contaminant input from the Colusa Basin Drain, which visibly degrades the water quality of the Sacramento River. The Drain is the largest source of agricultural pollution to the river and is a major source of pesticides, turbidity, sediments, nutrients, dissolved solids, trace metals, and warm water into the river. Exposure of juvenile salmon to this kind of pollution is suspected to be detrimental. And yet, there is no effort in the SLWRI to consider pollution remediation in the river downstream of Shasta Dam as yet another action that could be taken to improve juvenile salmon survival.

In addition, the Recovery Plan proposes to restore key populations to former habitat that has become inaccessible due to dams, including Shasta Dam. The DEIS pays short shrift to this proposal, which is particularly inexcusable given the alleged focus of the SLWRI.

If the Bureau is truly serious about improving salmon survival, a revised SLWRI should incorporate more of the Recovery Actions outlined in the NMFS Recovery Plan. In addition, the SLWRI should seriously consider an alternative that re-operates the existing dam/reservoir in order to fully meet downstream temperature needs and flow requirements (for salmon as well as riparian habitat). A revised DEIS must connect the key objectives and recovery actions in the 2009 Recovery Plan to the mitigation measures proposed in the SLWRI DEIS. Further, the revised DEIS should evaluate and determine the feasibility and role of the Bureau in

implementing all recovery actions, particularly in restoring populations upstream of Shasta Dam.

A revised SLWRI should include an alternative that focuses on the salmon improvement measures recommended in the USFWS Coordination Report, including restoration of spawning and rearing habitat, improving fish passage, increasing minimum flows, and screening water diversions. (USFWS Coordination Report pg. v), as well as other specific management measures initially considered in the SLWRI but removed from further analysis (as outlined in the USFWS Report pg. vi).

5. The Project's Impacts On Sensitive, Threatened, And Endangered Species Are Underestimated In The DEIS.

The DEIS admits that there will be significant and unavoidable impacts on a number of sensitive, threatened, and endangered wildlife species and their habitat, including the Shasta salamander, foothill yellow-legged frog, tailed frog, northwestern pond turtle, bald eagle, northern spotted owl, purple martin, willow flycatcher, Vaux's swift, yellow warbler, yellow-breasted chat, long-eared owl, northern goshawk, Cooper's hawk, great blue heron, osprey, red-tailed hawk, red-shouldered hawk, American robin, Anna's hummingbird, Pacific fisher, American marten, ringtails, eight special status bat species, and four special status mollusks.

The DEIS also admits to significant and unavoidable permanent loss of general wildlife habitat and critical deer winter and fawning range. According to the DEIS, impacts associated with the take and loss of the endangered California red-tailed frog are still to be determined. And also according to the DEIS, impacts on riparian associated special status wildlife species may be potentially significant but are supposedly reduced to less than significant by the development and implementation of the previously mentioned but amorphous Riverine Ecosystem Mitigation and Adaptive Management Plan.

Despite the fact these significant and unavoidable impacts on these many sensitive and special status wildlife species are documented in the DEIS, the document fails to adequately reveal the serious nature of these impacts, particularly on the seven rare but not federally listed species endemic (found nowhere else) to the Shasta Reservoir vicinity, including the Shasta salamander, two rare plant species, and three rare snails (mollusks).

Some species are particularly susceptible to inundation by the expanded reservoir. For example, tree snags in the Pit River Arm of Shasta Reservoir appear to support a stable population of 18 breeding pairs of purple martin, a migratory bird that is generally uncommon in California and is considered by the California Department of Fish and Wildlife to be a species of special concern. The Pacific Coast population of purple martin has substantially declined in the last 50 years. Raising Shasta Dam will completely submerge the martin's existing nesting habitat and it would take decades for new nesting snags to become available to replace the lost habitat.

A revised DEIS should better document significant and unavoidable impacts on endemic and other special status species and more fully consider alternatives that reduce the impacts to insignificant levels.

6. The DEIS Underestimates Impacts Of Modified Flows From A Raised Shasta Dam On The Sacramento River And The Proposed Mitigation Measure Is Too Vague And Incomplete.

The DEIS claims that potentially significant impacts on riparian associated aquatic and terrestrial special status wildlife due to modifications of the existing flow regime caused by the dam raise will be reduced to less than significant levels by the development and implementation of a Riverine Ecosystem Mitigation and Adaptive Management Plan (REMAMP). The DEIS also recognizes that the impacts of flow modification on riparian habitat and ecosystem processes is inconsistent with local and regional plans and goals promoting riparian habitat on the Sacramento River. The DEIS notes that these are potentially significant impacts reduced to less than significant levels by the proposed REMAMP.

The USFWS unequivocally states that reduced winter flows caused by the raising of Shasta Dam will result in adverse effects to riparian habitat along the Sacramento River. So these are real issues but unfortunately, the proposed mitigation (the REMAMP) does not yet exist, so there is no way for the public to understand just how the proposed mitigation will truly reduce these impacts to insignificance.

Flow modification impacts to the Sacramento River's riparian and aquatic ecosystems, and the many sensitive, threatened, and endangered fish and wildlife species that depend on these dynamic ecosystems, are generally given short shrift throughout the DEIS. These impacts were well documented in Sacramento River Ecological Flows Study Final Report (CALFED Ecosystem Restoration Program, March 2008). Just a few of the more pertinent facts from this report include:

- Dam-related alterations of river flow regimes have been identified as one of the three leading causes of declines in imperiled aquatic ecosystems.

- Available data support the hypothesis that the reduced frequency and duration of floodplain inundation in the post-dam era may have contributed to the decline of the winter-run Chinook population.

- The Shasta Dam raise will reduce the "stream power" of the Sac by 16% and reduce the amount of floodplain area reworked by high flows by 8%. Diversions from the river to fill the proposed Sites Offstream Storage Reservoir (another CALFED water storage project under study) will further reduce the river's stream power by up to 15%.

- Fremont cottonwood initiation success, Chinook and steelhead rearing WUA

(weighted useable area), and Chinook and steelhead redd scour risk are the indicators most sensitive to flows.

- The altered hydrograph of the Sac River appears to limit cottonwood seedling survival.

- Maintaining natural channel migration and cutoff processes is necessary for providing new patches for seedling recruitment and for periodical resetting of riparian vegetation succession, which are both critical for maintaining the diverse, dynamic, and functional riparian-floodplain ecosystem.

- Reductions in peak flow magnitude will likely reduce bank erosion and thus have potential impacts on spawning gravel availability, and might also affect lateral channel migration, which is essential for creating off-channel habitats important to many Sacramento River species.

- The flow impacts of the Shasta Raise and Sites combined are expected to reduce progressive channel migration by approximately 10%.

- As flows recede below 8,500 cfs, the inlets of secondary channels (which provide crucial habitat for juvenile salmon) become increasingly disconnected from the main stem.

- Removing rip-rap (bank revetment) may mitigate the floodplain impacts of the Shasta Raise (note: this is not a proposed mitigation in the DEIS).

- Revetment removal plus flow management that allows occasional high flows are both necessary and sufficient for habitat creation and persistence.

- The importance of fish passage improvements is strongly suggested by past studies; assessment of benefits only possible through implementation and monitoring.

- The CALSIM II model, which is used in the DEIS to assess the flow impacts of the dam raise, functions at a monthly time-step, which is a recognized shortcoming. Daily flow disaggregations below Red Bluff used in our study are known to be flawed and do not remain consistent with monthly time-step totals. (Note: Development and use of a true daily flow model is also a NMFS recommended recovery action).

These findings clearly underscore the potential severity of flow modification impacts on the Sacramento River ecosystems, the sensitivity of the river to multiple impacts caused by current projects under study (SLWRI and Sites), and the need for a well defined, detailed, and permanent plan that assures true mitigation of these impacts. A revised DEIS should fully assess flow modification impacts on the river, its ecosystems, and fish and wildlife species, and include at least a draft Riverine

Ecosystem Mitigation and Adaptive Management Plan for review and comment by the public. In addition, this plan should fulfill the role of the Sacramento River and Delta Riparian Habitat Restoration and Management Plan outlined in the NMFS Recovery Plan and noted as a needed mitigation measure in the USFWS Coordination Report. The Adaptive Management Plan should also fully comply with all local and regional plans to protect and restore riparian habitat along the river.

It is even more important that this Adaptive Management Plan be completed and available for public review in the revised DEIS because it will determine the future health of riparian and aquatic ecosystems on more than 31,000 acres of federal, state, and other public lands that support some of the most important riparian and aquatic habitat on the Sacramento River (including the BLM's Sacramento River Bend Outstanding Natural Area, the USFWS' Sacramento River National Wildlife Refuge, State Wildlife Areas managed by the California Department of Fish and Game, four State Parks and Recreation Areas, and several local parks and recreation areas).

It is unclear whether the adaptive management plan intended to benefit salmon is the same adaptive management plan intended to benefit the downstream riparian and aquatic ecosystems. The term "adaptive management plan" seems to be interchangeable throughout the DEIS. If they are the same plan, then we assume that the Bureau's qualification about the timing and magnitude of releases from Shasta Dam to benefit downstream ecosystems will be applied – "*as long as there are no conflicts with operational guidelines or adverse impacts on water supply reliability.*" (DEIS pg. 2-49) If this is the case, it is clear that this proposed Adaptive Management Plan will not reduce the flow modification impacts on riparian and aquatic ecosystems to less than significant levels simply because water contracts will always trump well meaning but relatively toothless mitigation measures.

7. Impacts Of Reservoir Enlargement On Potential Wild & Scenic Rivers

Enlarging Shasta Reservoir by raising the dam from 6.5 to 18.5 feet will flood public lands managed by the Forest Service encompassing segments of the upper Sacramento, McCloud, and Pit Rivers, Salt Creek, and several small tributary streams. This flooding, however minor it may seem to the Bureau, triggers several requirements and mandates in the National Wild & Scenic Rivers Act. Although the DEIS attempts to address Wild & Scenic River issues in Chapter 25, it fails to recognize the actual requirements of the Act and the true implications of the reservoir enlargement in regard to previous Forest Service studies and commitments made in the 1994 Shasta-Trinity National Forests Plan. Nor does the DEIS adequately address the impacts of reservoir enlargement and the legal implications of violating the California Public Resources Code.

8. The National Wild & Scenic Rivers Act requires consideration by all federal agencies of federal Wild & Scenic River protection for the McCloud, upper

Sacramento, and Pit Rivers, and other reservoir tributaries as an alternative to the federal proposal to raise the dam and expand the reservoir.

Section 5(d)(1) of the National Wild & Scenic Rivers Act states:

> In all planning for the use and development of water and related land resources, consideration shall be given by all Federal agencies involved to potential national wild, scenic, and recreational river areas, and all river basin and project plan reports submitted to the Congress shall consider and discuss any such potentials. The Secretary of the Interior and the Secretary of Agriculture shall make specific studies and investigations to determine which additional wild, scenic, and recreational river areas within the United States shall be evaluated in planning reports by all Federal agencies as potential alternative uses of the water and related land resources involved.

This section of federal law clearly requires the Bureau of Reclamation to go beyond the simple reporting of past state and federal considerations of Wild & Scenic protection for the river segments affected by the SLWRI. It specifically requires consideration of Wild & Scenic protection in the context of and as an alternative to the proposed dam raise and reservoir enlargement, not only for the McCloud, but also for the upper Sacramento and Pit Rivers, and all other streams on public lands tributary to Shasta Reservoir. No such comprehensive assessment of Wild & Scenic Rivers is provided in the DEIS.

The Bureau should work with the Forest Service to include in a revised DEIS a comprehensive assessment specifically addressing the impacts of the dam raise and reservoir enlargement on the free flowing character and outstanding values of all rivers and streams tributary to the reservoir and include a range of alternatives that proposes Wild & Scenic protection with and without various reservoir enlargement alternatives.

For example, the Forest Service in the 1994 Shasta-Trinity National Forests Draft Plan found the upper Sacramento River from Box Canyon Dam to the Whiskeytown-Shasta-Trinity National Recreation Area to be eligible for federal protection, but the agency did not recommend it because of land ownership patterns along the river. But the river was also not actively threatened by reservoir expansion at that time. The Wild & Scenic Rivers Act requires the Forest Service and the Bureau to revisit potential Wild & Scenic protection of the upper Sacramento River in the context of the project outlined in the revised DEIS, as well as for other rivers and streams that may be affected by reservoir expansion.

The Bureau of Reclamation has previously recognized the clear mandate of the National Wild & Scenic Rivers Act to consider and evaluate potential Wild & Scenic Rivers as potential alternative uses to water and related land resources in the planning for water development. As part of its planning and study of the Auburn

Dam project on the North and Middle Forks of the American River, the Bureau convened a multi-agency interdisciplinary team that determined segments of the river that would be flooded by the dam proposal to be eligible for Wild & Scenic protection in 1993 (letter dated March 17, 1993 from Susan E. Hoffman, Division of Planning and Technical Services Chief, U.S. Bureau of Reclamation Mid-Pacific Region). The study to determine if the eligible segments were suitable for designation was scheduled for Phase II and III of the American River Water Resources Investigation. This part of the study was never completed because soon after the eligibility finding, Congress rejected authorization of the Auburn Dam project.

9. The National Wild & Scenic Rivers Act requires consideration of federal Wild & Scenic River protection for the segments of the lower Sacramento River with significant federal lands downstream of Shasta Dam as an alternative to the federal proposal to raise the dam and expand the reservoir.

The lower Sacramento River between Anderson and Colusa has several segments with substantial federal public lands managed by the Bureau of Land Management (BLM) and the U.S. Fish and Wildlife service (USFWS). In its draft Fish and Wildlife Coordination Report, the USFWS stated "Riparian and floodplain habitat along the Sacramento River and in the Yolo and Sutter Bypasses would be adversely affected by further changes in the timing, duration, and frequency of flood flows due to an enlarged Shasta Dam." (USFWS Draft Coordination Report, pg. viii, June 2013) Even the SLWRI DEIS admits that flow modification from the dam raise may have potentially significant impacts on the river's riparian and aquatic ecosystems and fish and wildlife. These agency findings clearly trigger the section 5(d)(1) requirement that the federal segments of the lower river be studied and considered for potential federal protection as an alternative to the proposed water resources project.

The BLM manages nearly 18,000 acres of federal public lands as the Sacramento River Bend Outstanding Natural Area (SRBONA), which encompasses a 25-mile stretch of the Sacramento River between Balls Ferry and Red Bluff. The BLM found the federal portions of this segment to be eligible for National Wild & Scenic River protection in recognition of its free flowing character and outstandingly remarkable scenic quality, recreation opportunities, cultural/historic values, anadromous and resident trout fisheries, and vegetation. The outstandingly remarkable vegetation value was specifically defined as the river's Great Valley oak riparian forests. (BLM Redding Resource Management Plan and ROD, and BLM Redding RMP FEIS, June 1993 and July 1992 respectively)

In addition to the Wild & Scenic finding, BLM management direction designated the river as an Outstanding Natural Area and requires protection and enhancement of the river's riparian vegetation, wetlands, and anadromous fisheries. BLM management direction for the SRBONA also included the long-term survival of special status species, maintenance and improvement (if feasible) of scenic quality,

conserving archeological resources, and providing for semi-primitive recreation opportunities. In addition, general policy and program direction in the BLM Manual and the Redding RMP require the BLM to protect the free flowing character and specific outstandingly remarkable values of all eligible rivers.

Determining the suitability of the eligible Sacramento River segment was deferred by BLM due to budgetary and personnel constraints (BLM Redding RMP pg. 28, June 1993) The BLM Manual specifically states in regard to water resources projects that may affect eligible or suitable Wild & Scenic Rivers:

> The BLM should, within its authority, consider protecting the river values that make the river eligible or suitable through the land use plan and activity-level NEPA analysis. If a river is listed in the Nationwide Rivers Inventory, the Federal agency involved with the proposed action must consult with the land-management agency in an attempt to avoid or mitigate adverse effects. (BLM Manual 6400-WILD AND SCENIC RIVERS—POLICY AND PROGRAM DIRECTION FOR THE IDENTIFICATION, EVALUATION, PLANNING, AND MANAGEMENT, Sec. 3.8(D), pg. 3-14 7/13/2012)

The SLWRI DEIS mentions BLM management responsibility for public lands along the Sacramento River in several sections. It also mentions the BLM's Wild & Scenic eligibility finding for the Sacramento River between Balls Ferry and Iron Canyon and notes that BLM management direction requires its public lands along the river to be "managed to protect the outstandingly remarkable values and free-flowing character..." However, the documentation of BLM's responsibilities ends there in the SLWRI. There is no connection made between the Sec. 5(d)(1) mandate to consider potential Wild & Scenic protection of the river as an alternative to the SLWRI nor is there any substantive discussion about how the dam raise could modify flows and adversely affect the river's outstandingly remarkable anadromous fisheries and riparian forests, which make the river eligible for Wild & Scenic protection.

The SLWRI DEIS fails to connect the Bureau's proposed alternatives with the BLM's mandate to protect the river's eligible segment. The SLWRI is also inconsistent with the BLM's current management direction for this part of the Sacramento River. As part of a revised DEIS, the Bureau must consult with the BLM and pursuant to Sec. 5(d)(1) of the Act the BLM must initiate a Wild & Scenic River suitability study for the segment of the Sacramento River identified as eligible by the BLM as an alternative to the SLWRI.

10. The DEIS fails to recognize that Sec. 5(d)(1) of the National Wild & Scenic Rivers Act also applies to federal public lands that comprise the Sacramento River National Wildlife Refuge.

The USFWS manages more than 10,300 acres of federal public lands along the Sacramento River between Red Bluff and Colusa as the Sacramento River National Wildlife Refuge. These lands were acquired by the USFWS and incorporated in the Refuge in order to protect and restore riparian and aquatic habitats and the many sensitive, threatened and endangered species that depend on these habitats. As far as we know, none of the Refuge lands along the river have been studied for their Wild & Scenic eligibility or suitability per sec. 5(D)(1) of the Act. Nor does the DEIS make any mention of potential Wild & Scenic eligibility and suitability of these segments.

A revised DEIS, the Bureau must consult with the USFWS and pursuant to Sec. 5(d)(1) of the Act, the USFWS must initiate a Wild & Scenic River suitability study for the Refuge segments of the Sacramento River as an alternative to the SLWRI.

11. The DEIS admits that all alternatives to raise the Shasta Dam and expand its reservoir will adversely affect the McCloud River's eligibility as a National Wild & Scenic River and will specifically harm the river's free flowing character, water quality, and outstandingly remarkable values.

In Chapter 25, the DEIS documents that raising Shasta Day by 6.5-18.5 feet will flood from 1,470 feet to 3,550 feet of the segment of the McCloud River eligible for National Wild & Scenic River protection. The DEIS also admits that this flooding will adversely affect the McCloud's free flowing character, water quality, and outstandingly remarkable Native American cultural, wild trout fishery, and scenic values.

Conservationists believe that even more of the eligible segment of the McCloud River will be harmed by the dam raise alternatives because the Bureau incorrectly identifies elevation 1,070 feet as the terminus of the McCloud segment identified by the Forest Service. In fact, the terminus of the eligible McCloud segment is simply defined by the Forest Service as "Shasta Lake". (LRMP FEIS, Appendix pgs. E-4, E-13) The Forest Service's map depicting the eligible segment of the McCloud shows that eligible segment ends at the McCloud River Bridge (FEIS Appendix E pg. 3-36). There is no mention of elevation 1,070 as the terminus of the eligible segment and there is no reference in the LRMP to the McCloud's so called "transition reach". Hence, the impact of the dam raise and reservoir expansion is greater than what is documented in the DEIS.

12. Flooding the McCloud River violates the 1995 Shasta-Trinity National Forests Land and Resource Management Plan and Record of Decision in regard to protecting the McCloud River's eligibility as a potential National Wild & Scenic River.

The Forest Service recommended Wild & Scenic River protection for the McCloud River in its 1990 draft of the Shasta-Trinity National Forests Land and Resource Management Plan (LRMP). In response to concerns expressed by river-side

landowners, the Forest Service chose to pursue protection of the McCloud River's free flowing character and outstandingly remarkable values through a Coordinated Resource Management Plan (CRMP) developed by the Forest Service and other federal and state agencies and the riverside landowners. This decision is reflected in the 1995 final Shasta-Trinity National Forests LRMP and Record of Decision (ROD), which state:

> A Coordinated Resource Management Plan (CRMP) has been adopted for long term management of the Lower and Upper McCloud River and Squaw Valley Creek. This agreement is between private land owners, the Forest Service, Pacific Gas & Electric, Nature Conservancy, CalTrout, and the DFG. This plan will effectively maintain the outstandingly remarkable values of this potential wild and scenic river. If for any reason the terms of the CRMP are not followed and the wild and scenic river eligibility is threatened, the Forest Service will recommend these segments for Federal Wild and Scenic designation. (1995 Final LRMP, page 3-23)
>
> If, after a period of good faith effort at implementation, the CRMP fails to protect the values which render the river suitable for designation then the Forest Service will consider recommendation to the national Wild and Scenic River System. (1995 ROD page 17)

The DEIS admits that raising the dam will periodically flood 1,470 feet of the eligible segment of the McCloud River, which would make the flooded segment ineligible for federal Wild & Scenic protection. (DEIS pg. 25-26) Conservation groups believe that more of the eligible river would be flooded (see discussion below about the actual terminus of the eligible McCloud). Regardless, it is clear that the Bureau's proposal to raise Shasta Dam and expand its reservoir directly violates the intent and constitutes failure of the CRMP, and it also violates the protective management proposed in the LRMP. Therefore, the Forest Service is bound by its own ROD to consider and recommend federal protection for the river. This requirement is not reflected in the DEIS and it should be included in the revised DEIS.

The Bureau is misleading the public when it claims that raising the dam and expanding the reservoir will not conflict with the Shasta-Trinity National Forests LRMP because the portion of the McCloud that would be flooded is private land and not National Forest land. The Forest Service has the authority to study and recommend the river within its reservation boundary, as it did so in the 1990 draft LRMP. It has the authority to determine that reservoir expansion and flooding of the eligible segment of the McCloud reflect a de-facto failure of the CRMP and therefore triggers Forest Service reconsideration of its Wild & Scenic River recommendation for the McCloud. This important protection is a fundamental component of the LRMP, which means that the Bureau's proposal violates the LRMP.

13. All dam raise/reservoir enlargement alternatives violate the California Public Resources Code 5093.542 prohibiting the construction of a reservoir that would harm the McCloud's free flowing condition and extraordinary wild trout fishery upstream of the McCloud River Bridge.

In 1989, the California Legislature passed and the Governor signed legislation declaring that the McCloud River possesses extraordinary resources, including one the of the finest wild trout fisheries in the state, and that continued management of river resources in their existing natural condition represents the best way to protect the unique fishery of the McCloud, and that maintaining the McCloud in its free-flowing condition to protect its fishery is the highest and most beneficial use of the waters of the river.

The legislation specifically prohibited any dam, reservoir, diversion, or other water impoundment on the McCloud River upstream of the McCloud River Bridge. It also prohibited any state agency cooperation, participation, or support for any dam, reservoir, diversion, or other water impoundment facility that could have an adverse effect on the free flowing condition of the McCloud River or on its wild trout fishery. These prohibitions and conditions are now memorialized in the California Public Resources Code (PRC) 5093.542.

The DEIS admits that all dam raise alternatives will have a significant unmitigated impact on the McCloud's free flowing condition and will have a potentially significant impact on the river's wild trout fishery (DEIS pg. 25-40). The DEIS suggests that the wild trout fishery impacts could be mitigated to less than significant levels but these mitigations have yet to be identified. Regardless, all the dam alternatives in the DEIS clearly violate state law. To ensure compliance with PRC 5093.542, the California Legislature and the Governor passed and signed statewide water bond legislation prohibiting use of the bond funds to raise Shasta Dam.

Clearly, the SLWRI's proposal to raise Shasta Dam and expand its reservoir violates state law. So why is the Bureau continuing to study this illegal project? Does the Bureau intend to cite federal preemption over state law in regard to this matter? If so, the DEIS should admit this.

14. The DEIS fails to mention that the Sacramento River between Anderson and Colusa is in the Nationwide Rivers Inventory and is protected by Presidential Directive.

A segment of the Sacramento River from the I-5 bridge crossing in Anderson to Arnold Bend upstream of Colusa was included in the National Park Service's 1982 Nationwide Rivers Inventory (NRI). The NRI was created by a directive from President Carter. The directive requires each federal agency, as part of its normal planning and environmental review process, to take care to avoid or mitigate adverse effects on rivers identified in the NRI. Further, all agencies are required to

consult with the National Park Service prior to taking actions which could effectively foreclose wild, scenic or recreational stats for rivers on the inventory.

The NRI describes this segment of the Sacramento River as a swift moving river isolated from surrounding civilization by a narrow band of dense riparian vegetation that meanders over a wide area with numerous islands and oxbow lakes. It also notes that the river flows through scenic Iron Canyon with a stretch of rapids, supports important anadromous fish populations and the state's most important salmon spawning grounds, includes outstanding riparian habitat for the yellow-billed cuckoo and giant garder snake, provides excellent rafting and boating opportunities, receives intense recreational use with fishing as the most popular activity, and is an important popular recreation resource for nearby urban areas.

There is no mention in the SLWRI of the NRI segment of the Sacramento River, the mandate to avoid or mitigate adverse effects on the NRI segment and its specific outstanding values, or the requirement to consult with the National Park Service. A revised DEIS should substantively address these issues.

15. The DEIS fails to adequately identify potential project effects on protected National Forest roadless areas and the Whiskeytown-Shasta-Trinity National Recreation Area.

A portion of the boundaries of the Backbone and Devil's Rock roadless areas on the Shasta-Trinity National Forests parallel the existing reservoir's high water line. The action alternatives could flood a portion of the roadless areas, which are protected under the Roadless Area Conservation Rule. While the DEIS admits to significant unavoidable impacts on National Forest lands and resources, as well as non-compliance with existing Forest Service management, it fails to describe the adverse impacts on federally protected roadless areas. The revised DEIS should include consideration of these impacts.

The DEIS fails to adequately consider the impacts of the dam raise alternatives on the Whiskeytown-Shasta-Trinity National Recreation Area (WSTNRA). The WSTNRA was established by Congress and President Kennedy in 1963 to:

> ...provide, in a manner coordinated with the other purposes of the Central Valley project, for the public outdoor recreation use and enjoyment of the Whiskeytown, Shasta, Clair Engle, and Lewiston reservoirs and surrounding lands in the State of California by present and future generations and the conservation of scenic, scientific, historic, and other values contributing to public enjoyment of such lands and waters... (16 USC Sec. 460q)

The DEIS documents the impact on recreation facilities, but fails to adequately identify the impacts on scenic, scientific, historic and other public land values the WSTNRA was established to conserve. Further, it is not clear that the impacts on

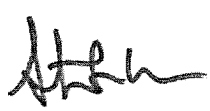
recreation and recreation infrastructure will be fully mitigated. Although owners of private resorts and other recreation facilities will be reimbursed for the fair market values of their property, they will not be reimbursed for the loss of income nor is there any guarantee that these owners will be able to replace their facilities to provide comparable services in the future.

In addition, the DEIS fails to assess the impacts of moving existing facilities elsewhere on undeveloped National Forest lands. A revised DEIS must fully assess the impacts of the proposed dam raise on the all the purposes of the WSTNRA, as well as the actual impacts on private recreation facilities, and the impacts of proposed relocation of public and private facilities.

16. Summary

In summary, there are numerous deficiencies in the SLWRI DEIS. Friends of the River and the California Wilderness Coalition believe that a revised DEIS is required to correct these deficiencies and to allow for full disclosure to the public.

Sincerely,



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BDCP1743

April 21, 2014

Ms. Sharon McHale
Project Manager
U.S. Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95825-1893
Via Email: smchale@usbr.gov

Re: Upper San Joaquin River Basin Storage Investigation
Draft Feasibility Report

Dear Ms. McHale:

Thank you for soliciting public comments in response to the Upper San Joaquin River Basin Storage Investigation Draft Feasibility Report (the Report), published by the U.S. Bureau of Reclamation (Reclamation) and dated January 2014.

These Friends of the River comments are in addition to joint comments submitted separately in response to this Report by the Natural Resources Defense Council and Friends of the River. The joint comments are hereby incorporated by reference.

The focus of the Report is on the proposed Temperance Flat Dam (TFD), which would be constructed on the San Joaquin River Gorge upstream of the existing Friant Dam and Millerton Reservoir. As described in the report, the TFD would be 665 feet high, with a storage capacity of more than 1.3 million acre feet of water. Despite its size, the dam would produce a paltry 76,000 acre-feet of water annually for use by downstream farms and cities. Reclamation claims that the TFD would also provide significant ecosystem and emergency water supply benefits. Reclamation estimates that the dam would cost nearly $2.6 billion to build and incur annual operating costs of up to $121 million.

To place the TFD in perspective, other existing dams of similar heights in California, including Oroville, New Bullards Bar, New Melones, and Shasta, produce far more water. The TFD's average additional water supply contribution of 76,000 acre feet represents about 1% of what the Central Valley Project currently delivers annually on average and about 4% of the amount of water historically being over-drafted annually from San Joaquin Valley groundwater basins. A private investor would

never consider building this extremely marginal dam project. It is only feasible as a public project with highly inflated and entirely speculative non-water supply benefits.

The importance of providing the public and government decision makers accurate information concerning the economic feasibility and cost of constructing and operating the TFD cannot be understated. Federal and state agencies have adopted a beneficiary pays protocol in regard to large water infrastructure projects like the TFD and correctly identifying the real costs and benefits of such projects is crucial to a sound decision-making process. Congress is currently considering legislation to authorize the TFD, and the California Legislature is currently considering legislation to revise a state-funded water bond that could help cover the public costs of the TFD. An accurate and factual feasibility report is essential to ensuring that prospective legislation is truly in the public interest.

Friends of the River commissioned Dr. Jeffrey Michael, Associate Professor of the Eberhardt School of Business and Director of the Business Forecasting Center at the University of the Pacific (Stockton, CA) to conduct an economic analysis of the Report. His findings are attached (Review of Economic Benefits and Costs in the January 2014 Draft Upper San Joaquin River Storage Investigation Feasibility Report, April 15, 2014).

Dr. Michael found that the Report's conclusion that the TFD is economically justified and financially feasible is based on "extremely exaggerated" estimates of the TFD's hypothetical ecosystem and emergency water supply benefits. Dr. Michael concludes that the proposed TFD will provide little or no economic benefits in these categories and after making reasonable adjustments to the largest benefit categories, the TFD has a benefit-cost ratio below one and is not economically justified.

Below is a summary of Dr. Michael's key findings and conclusions.

Ecosystem Benefits –

The economic valuation of ecosystem benefits – particularly supposed benefits to salmon – is "deeply flawed" and reasonable adjustments to this one category of benefits would result in a benefit-cost ratio of less than one.

The maximum plausible value for ecosystem benefits is $7 million annually (compared to the Bureau's postulated $75.6 million in benefits under Alternative 4), and a strong case can be made for zero benefits.

The salmon benefits of the project should be valued as the costs of reasonable alternatives that would achieve comparable increases in salmon abundance and/or

reductions in water temperatures in the San Joaquin River in the absence of a the new dam.[1]

The benefits transfer approach used for valuing ecological benefits overstates benefits by choosing a single study of a non-comparable scenario on the Klamath River and incorrectly scaling the benefits to cold water benefits from Temperance Flat.

The feasibility study ignores the ecosystem loss from permanently inundating habitat with the new dam.

Emergency Water Supply Benefits –

Emergency water supply benefits – the second largest category of benefits – are "grossly overstated" and a strong argument can be made that these benefits are zero due to other actions that are likely to be taken to reduce the risk of loss of water exports and supply.

The no-action scenario incorrectly ignores hundreds of millions of dollars in levee improvements (in the Delta) that have already been implemented, as well as likely future actions to improve levees or build tunnel conveyance under the Delta to reduce the risk.

Recent Bay-Delta Conservation Plan (BDCP) studies of the emergency water supply benefits of the proposed Delta tunnels show much smaller benefits. Simply scaling the estimated emergency water supply benefits to be proportional to similar assessments in the BDCP would reduce this benefit by 90%, from roughly $25 billion to less than $4 million annually. Thus, the maximum plausible value for this benefit is $4 million.

Delta Risk Management Strategy (DRMS) data on levees from the California Department of Water Resources is outdated and inaccurate, and the flood probability predicted by DRMS have been repeatedly criticized as overstated.

Costs allocated to emergency water supply benefits should be allocated to water users, not the state or the general public.

The opportunity cost of using the water for emergency purposes does not appear to be accounted for in the study. TFD water will be unavailable for ecosystem and other uses if it is used as an emergency supply.

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[1] Dr. Michael suggests comparing the costs of supposed TFD salmon benefits with the cost and benefits of building a temperature control device on Friant Dam. The joint NRDC/FOR comments note that isolating gravel pits, restoring riparian habitat, and fully funding and implementing other key San Joaquin River Restoration Project actions will improve conditions for salmon more than the TFD. Both options cost considerably less and provide more ecosystem benefits than the TFD.

Agricultural Water Supply Benefits –

The Report uses an unconventional approach to valuing agricultural water supply benefits that greatly inflates the value of agricultural water and is at odds with other studies that values agricultural water reliability with the same models.

The vast majority of National Economic Development benefits associated with the very modest amount of additional agricultural water provided by the TFD are not the result of increased crop production but are the result of an entirely hypothetical decrease in groundwater pumping, the regulation of which to date has eluded state policy makers.

Exaggerated Need For Water –

The feasibility study greatly exaggerates the purpose and need for Temperance Flat dam by relying on outdated and exaggerated predictions of water supply shortages, water demand, and projected population growth from the 2005 California Water Plan Update.

Discount Rate –

The combination of a 100-year life span for dam benefits and relatively low 3.75% discount rate are generous assumptions that support building the TFD. There is considerable uncertainty surrounding many of the TFD's alleged benefits, which would make a higher discount rate appropriate.

Conclusion –

After adjusting the highest three categories of benefits (ecosystem, emergency water supply, and agricultural water supply) to their maximum reasonable values, the benefits of the TFD drops from $141-$157 million annually to $52.5 million annually and the benefit-cost ratio drops from 1.21-1.35 to .045. The results would be even worse if the considerable ecosystem costs to the flooded area were included.

In addition to Dr. Michael's findings and the issues raised in the joint comments submitted by NRDC and FOR, below are some additional comments on the Report.

The San Joaquin River Gorge – A Recommended Wild & Scenic River

The TFD reservoir would flood the San Joaquin River Gorge, an area made up largely of public land managed by the Bureau of Land Management (BLM) for public recreation and preservation of wildlife habitat, botanical resources, and cultural values.

According to the BLM, the San Joaquin River Gorge is an exemplary example of a low elevation (2,000 feet) major drainage originating from the southern Sierra Nevada. The BLM found 10.75 miles of the San Joaquin River Gorge between Kerkhoff Dam and Millerton Reservoir to be eligible for National Wild & Scenic River protection.

To protect the river's outstandingly remarkable scenic, wildlife, and cultural values, the BLM has made a preliminary recommendation to Congress that 5.4 miles of the upper segment of the river (from Kerkhoff Dam to the upper Kerkhoff powerhouse) be protected in the National Wild & Scenic Rivers System.[2] This makes the San Joaquin River Gorge a very special river. Only about 6% (by mileage) of California rivers are eligible for or protected in the National Wild & Scenic Rivers System and only about 1% of American rivers are protected in the System.

The Report at least acknowledges the special status of the San Joaquin River Gorge with this somewhat tortured statement:

> BLM concluded a preliminary determination to suggest that the San Joaquin River segment from Kerckhoff Dam to Kerckhoff Powerhouse is suitable for inclusion in the NWSRS. (Report pg. 6-35)

According to the BLM Manual for Wild & Scenic Rivers Policy and Program Direction (Chapter 6400, July 13, 2012), the agency has made a preliminary recommendation for Wild & Scenic River protection that will move up through the BLM chain of command to the Interior Secretary, who then transmits the recommendation to Congress. In the meantime, the BLM is required to protect the free flowing condition and outstandingly remarkable values of the suitable river, "...which will not be altered by the construction or development of stream impoundments, diversions, or other water resources projects." (BLM Manual, Chap. 6400, pg. 3-8)

Reclamation considers the BLM's Wild & Scenic River protection recommendation for the San Joaquin River Gorge to be an unresolved issue "...that will need to be addressed and resolved...during upcoming phases of the Investigation."

In fact, there is an unambiguous national policy requirement that must be addressed in Reclamation's Investigation of the TFD and the BLM's study and recommendation for Wild & Scenic River protection for the San Joaquin River Gorge. In establishing the National Wild & Scenic Rivers System in 1968, Congress declared:

> ...that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the

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[2] Bakersfield BLM Proposed Resource Management Plan & FEIS, Vol. 1, pg. 95, USDI BLM, August 2012.

> benefit and enjoyment of present and future generations. (16 USC Sec. 1271)

Congress further declared:

> ...that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.

To help fulfill this declared intent, Congress established a study process:

> In all planning for the use and development of water and related land resources, consideration shall be given by all Federal agencies involved to potential national wild, scenic and recreational river areas, and *all river basin and project plan reports submitted to the Congress shall consider and discuss any such potentials.* The Secretary of the Interior and the Secretary of Agriculture shall make specific studies and investigations to determine which additional wild, scenic and recreational river areas within the United States *shall be evaluated in planning reports by all Federal agencies as potential alternative uses of the water and related land resources involved.* (16 USC Sec. 1276(d)(1)

The Wild & Scenic suitability is not an "unresolved issue" as characterized by Reclamation. USC Sec. 1276(d)(1) makes it clear that Wild & Scenic protection for the San Joaquin River Gorge is an alternative to the proposed TFD that must be considered by Reclamation in the Investigation and as a formal alternative in the upcoming Environmental Impact Statement.

Loss Of Ecosystem Benefits

The Report acknowledges that the TFD reservoir footprint will flood and therefore create long term, adverse, and unavoidable effects on riverine habitat, aquatic ecosystems, fisheries, biological resources (including botanical and wetlands), wildlife and wildlife habitat. (Report pg. 5-16, Table 5-10) But the Report fails to adequately quantify the ecosystem benefits that would be lost beneath the TFD reservoir. Many of the ecosystem benefits that would drown beneath the reservoir are unique or rare, which makes their quantification even more important in terms of providing a realistic benefit-cost assessment of the TFD.

According to the BLM, wildlife and the habitat that supports wildlife in the Gorge is one of the outstandingly remarkable values that make the river eligible for Wild & Scenic protection. The Gorge supports diverse habitats, including oak woodlands,

chaparral, and karst cave ecosystems that support common as well as threatened and endangered wildlife species. One state-listed endangered species (bald eagle) and one federally listed threatened species (vernal pool fairy shrimp) are known to occur in the area. The federally listed endangered valley elderberry longhorn beetle is likely to occur in the area. Several other listed species could also occur in the area, including the federally threatened California tiger salamander and the state listed and federally endangered least Bell's vireo. Seven additional BLM and state-listed special status species are known to occur within the area, with potential habitat for several more.

The Gorge also supports at least one state threatened plant species, the tree anemone. There is potential habitat for ten additional special status plant species, including the state federally listed Hartweg's golden sunburst, the state listed endangered and federally listed threatened San Joaquin Valley orcutt grass, the federally listed threatened Mariposa pussypaws, and the state listed endangered and federally listed threatened succulent owl's clover.

Little is known about the possible unique ecosystem values of the Millerton Cave. Unlike most karst caves, the Millerton Cave was carved out of granite by a running stream. It's likely that the cave may be home to many endemic species but surveys are needed to inventory its biological values.

The permanent loss of these rare and unique aspects of the Gorge ecosystems must be fully considered as a cost in the Report's assessment of ecosystem benefits.

Loss of Recreation and Scenic Benefits

Oddly, the Report claims a beneficial effect on recreation, perhaps because it focuses largely on reservoir-based recreation and fails to adequately quantify the non-reservoir based recreation benefits that would be lost beneath the reservoir footprint.

The San Joaquin River Gorge serves as a "community backyard" that is accessible year-round to well over 1,000,000 people in the Fresno-Clovis-Madera area, as well as local rural communities and is readily available for spending time in nature with families and friends, getting outdoor exercise and enjoying increased levels of personal fitness and wellness, and escaping workplace or school stress. Active management of these public lands enhances the quality of life for the local and regional communities by protecting cultural and natural resources, including watersheds that supply a large portion of the state's drinking water and offering easy access to recreation, health, fitness and open space opportunities.

According to the BLM, the scenic quality of the recreational setting in the Gorge is one of the outstandingly remarkable values that make the river eligible for Wild & Scenic protection. The entire Gorge area is available for a wide variety of outdoor recreational pursuits, including fishing, hiking, backpacking, swimming, camping,

nature study, mountain biking, and horseback riding. The lower segment of the Gorge is accessible by vehicle on a maintained paved road, with developed facilities that provide group and individual camping, trailheads, an equestrian staging area, and a small museum used for interpretive and environmental education programs.

The Gorge hosts 22 miles of hiking, equestrian, and mountain biking trails, including a segment of the San Joaquin River National Recreation Trail. The construction of trail bridges over the San Joaquin River and Big Sandy Creek substantially expanded access to the trail system. Access to the upper reaches of the Gorge is by primitive trail or kayak only. American Whitewater, the nationwide organization of whitewater boating enthusiasts, considers the Gorge to be a class II-V kayak run with outstanding scenery and interesting geology, with rock types not seen on other sections of the San Joaquin.

The BLM has a highly successful, nationally recognized interpretive and educational program at the Gorge, which has been presenting programs to schools and groups within the central California region since 1996. These programs are part of the national network of public lands as outdoor classrooms and are operated under the umbrellas of "Hands on the Land" and "Project Archaeology." The Gorge programs serve an average of 6,000 students per year, with a projected demand of up to 12,500 students within the next ten years.

Overall outdoor recreation use of the San Joaquin River Gorge area has increased dramatically in the last few years. Visitation increased from 6,450 people reported in 2002 to more than 86,577 visitors in 2008. The approximate ethnicity of visitors to the Gorge based on BLM observations is 50% Caucasian and 50% Hispanic/Latino, Native American, Asian, and African American. The diverse nature of recreational opportunities in the area supports use by families with young children, school children, church groups and other organizations, and senior citizens, as well as class V kayakers, rock climbers, gorge scramblers, and other hearty adventurers.

As previously noted, there is no attempt in the Report to quantify the real value of these existing recreational assets. But Reclamation does inventory the BLM's educational and recreational facilities in the Gorge that will need to be demolished and relocated. (Eng. App. Table 4-7, pg. 4-24) These include 11,225 square feet of educational facilities (the museum, learning center, wildlife pond, and the replica Native American village), more than 6.6 miles of trails (including segments of the San Joaquin River National Recreation Trail, Wuk-ki'o Trail, and the Pa'san Ridge Trail, and the trailhead campgrounds.

Reclamation also estimates that demolishing and relocating these facilities will cost up to $195.8 million. (Eng. App. Table 6-4, pg. 6-13) Required land acquisition costs of $15.9 million are also listed, but this does not include the cost of replacing existing public lands that will be inundated, including the BLM lands in the Gorge. Not mentioned in the list of BLM educational and recreational facilities to be

demolished and relocated is the group campground and equestrian staging area, which are located near the other facilities slated for removal/relocation.

One of the facilities that would be demolished but not relocated is the iconic green footbridge that crosses the San Joaquin River Gorge. Because the TFD reservoir will be too wide to feasibly construct a replacement bridge, Reclamation proposes to replace the bridge, which is currently used year-round, with a seasonal water taxi. The cost of operating the seasonal water taxi and which agency would cover this cost is not specified.

Reclamation assumes recreational participation levels will be unchanged or possibly increased with the relocation or replacement of existing recreational facilities. (Econ. App. Pg. 9-5) Reclamation claims it would seek to maintain the quality of visitor experiences by replacing affected recreational facility capacity with facilities providing equivalent visual resource quality, amenities, and access. (Eng. App. Pg. 4-23) But this will be difficult if not impossible to do in regard to providing the equivalent visual resource quality of the San Joaquin River Gorge.

Elsewhere in the Report, Reclamation admits "Aesthetic features associated with the visual landscape are among the most prominent attributes potentially affected by the project" and that the TFD "will change the aesthetic nature of the Upper San Joaquin River area (the Gorge)." According to the Report:

> Instead of a free-flowing river with adjacent upland, there will be a regulated reservoir that will change in elevation during year. The visual landscape associated with all of the alternative plans – on a nearly equal basis among them – is generally considered to be adversely affected compared to the No-Action Alternative of a free-flowing river. However, the area is somewhat inaccessible at present, and not widely visited. The four alternative plans will include an unimproved road that provides greater access for recreationists. In summary, the aesthetic attributes of the Upper San Joaquin River above Friant Dam are adversely affected by each of the alternative plans. (Econ. App. Pg. 13-3)

Even when it admits to adverse and unavoidable aesthetic impacts, Reclamation gets important facts wrong. Approximately 1/3 of the BLM's San Joaquin River Gorge is easily accessible by paved road and well-maintained hiking, mountain biking, and equestrian trails. The Gorge is in fact heavily used for recreation even when compared with the adjacent Millerton State Recreation Area, which encompasses a larger area (including Millerton Reservoir) and offers more developed facilities. The Gorge hosted 86,577 visitors in 2008, an amount equal to a quarter of the 338,000 visitors to the Millerton State Recreation Area in the same year. Reclamation claims that the TFD will support up to 96,400 new visitor days, only slightly more than the recreation use of the Gorge that would be lost or degraded.

The San Joaquin River Gorge possesses the highest scenic quality rating provided BLM lands, because landforms, vegetation, water, and related factors within the Gorge offer notable and exemplary visual features that attract visitors from throughout the geographic region. BLM considers the scenery of the San Joaquin River Gorge to be an outstandingly remarkable value that makes the river eligible and suitable for Wild & Scenic protection. Although Reclamation admits that replacing a free flowing river with a reservoir that will change in elevation during the year will adversely affect the visual landscape, the significance of this change is understated.

Although the TFD will be capable of storing 1.3 million acre feet of water, even Reclamation admits that much of the time the reservoir will be partially empty. Under past climatic conditions, the average end of the month storage behind TFD ranges from 400,000 to 600,000 acre feet (depending on the month) – that's 30-45% of the reservoir's total capacity (Modeling Appendix, Attachment C, Figure 3, pg. 13). The result will be a substantial bathtub ring that replaces scenic canyon slopes currently clothed in oak woodlands, grasslands, chaparral, and spectacular granite rock formations. Even under Reclamation's predicted climate change conditions, the TFD reservoir will be at 45-65% capacity at the end of each month, so the loss of scenic quality will still be substantial. Given the extensive degradation of the scenic setting, it's doubtful that Reclamation's plans to replace recreational facilities will provide the same high quality experience that is available today.

The permanent loss of the scenic quality of the Gorge and the degradation of recreational benefits associated with the loss, as well as the not-quite-equal replacement of recreational facilities offered by the Bureau must be adequately quantified and fully considered in the cost-benefit ratio of the project.

Loss of Cultural Benefits

According to the BLM, cultural resources in the Gorge are one of the outstandingly remarkable values that make the river eligible for Wild & Scenic protection. The Gorge is located within the ethnographic region of several Foothill Yokuts groups and the North Fork Mono. The Kechayi and Dumna Yokuts were known to have used this area. Archeological sites left behind by the Yokuts and the Mono in this region includes pictograph rock art, bedrock mortar and milling stone food processing stations, lithic scatters, and village sites. Several of the Native American and prehistoric archeological sites in the Gorge are eligible for listing in the National Register of Historic Places. These cultural resources contribute significantly to public visitation and the use of the Gorge as an environmental education and interpretive site.

There is little information in the Report on the TFD's impact to cultural resources, perhaps because the simple fact is that all cultural resources below the reservoir take line will be lost or degraded. Interestingly, "Native American and Cultural

Resources" is listed as an unresolved issue, but Reclamation treats the issue as a simple matter of consistency with National Historic Preservation Act and providing Tribal groups the opportunity to participate in the EIS/EIR process. (Report pg. 6-34) Given the significant cultural resources of the Gorge, Reclamation should clarify the "unresolved" nature of this issue and attempt to fully quantify the loss of cultural values and associated interpretive and environmental education opportunities.

Cost

In the Report, Reclamation estimates that constructing the TFD will cost $2.6 billion. Reclamation previously estimated the cost of the TFD at $3.36 billion in its Plan Formulation Report (October 2008). This represents more than a 30% decrease in the estimated cost of the project. The organization of the Report makes it extremely difficult to identify what factor or factors have contributed to this astounding decrease in cost (astounding because the true costs of Reclamation projects tend to be significantly underestimated). A few years ago, Reclamation estimated the cost of the proposed Auburn Dam, a dam of similar size but not design as the TFD, at nearly $9.6 billion. As with the TFD, the construction of the Auburn Dam would risk the loss of significant upstream ecosystem and recreation benefits beneath its reservoir. Even accounting for Auburn's more costly design and construction costs, it seems likely that the TFD cost estimate is wildly underestimated.

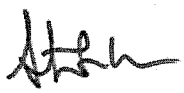
Conclusion

As summarized above, the Report greatly exaggerates ecosystem and emergency water supply benefits from the TFD and overestimates the value of its agricultural water supply benefits. The Report also fails to consider cheaper but more effective alternatives for supplying ecosystem and emergency water supply benefits. And the Report overestimates the true costs of building the TFD, particularly in regard to applying reasonable values to the existing ecosystem, recreation, scenic, and cultural benefits of the San Joaquin River Gorge that would be entirely lost or degraded beneath the TFD reservoir.

The Report depends on over-inflated population and water supply projections that are out of date. The Report should use a higher discount rate given the uncertainty over TFD benefits. In addition, the Report fails to adequately assess the need to consider Wild & Scenic River protection of the San Joaquin River Gorge as a viable alternative in the environmental review, as required by the National Wild & Scenic Rivers Act. The estimated overall cost of the TFD seems vastly underestimated given the issues outlined above and in comparison to previous cost estimates of this and other similar sized projects.

Given these problems, Friends of the River recommends that Reclamation withdraw the draft Report, revise it to address these several critical issues, and re-issue the revised Report in draft form to solicit additional public comment.

Sincerely,



Steven L. Evans

Consultant, Friends of the River
1583 3rd Avenue, Sacramento, CA 95818
Phone: 916-708-3155
Email: sevans@friendsoftheriver.org

Attached:

Review of Economic Benefits and Costs in the January 2014 Draft Upper San Joaquin River Storage Investigation Feasibility Report, April 15, 2014, by Dr. Jeffrey Michaels, Associate Professor of the Eberhardt School of Business and Director of the Business Forecasting Center at the University of the Pacific (Stockton, CA),

BDCP1743

From: Steve Evans <SEvans@friendsoftheriver.org>
Sent: Wednesday, July 30, 2014 8:51 AM
To: BDCP.Comments@noaa.gov
Subject: FOR comments with minor typos and format problems corrected
Attachments: FOR Supplemental BDCP DEIRS Comments FINAL.pdf; FOR-CWC SLWRI DEIS Comments.pdf; FOR USJRBSI DFR Comments.pdf

Attached and below, along with additional attachments cited in the comments.

1420 20th Street, Suite 100, Sacramento, CA 95811 ~ sevans@friendsoftheriver.org ~ (916) 708-3155

July 29, 2014

Mr. Ryan Wulff

National Marine Fisheries Service

650 Capitol Mall, Suite 5-100

Sacramento, CA 95814

BDCP.Comments@noaa.gov

Re: Supplemental comments of Friends of the River to the BDCP DEIRS

Dear Mr. Wulff:

These are the supplemental comments of Friends of the River to the BDCP DEIRS with a particular focus on the need to consider a reduced export alternative in light of climate change and BDCP operational impacts on existing surface storage and in regard to the likely development of new surface storage to feed additional water to the BDCP.

1. Climate Change Impacts On Surface Storage Reservoirs Documented In The DEIRS Support The Need To Develop And Adopt A Reduced Exports Plan.

Friends of the River's existing comments already discuss at length the failure of the BDCP DEIRS to seriously consider as a BDCP alternative the Environmental Water Caucus' Responsible Exports Plan or any alternative that significantly reduces Delta water exports. In fact, information in the DEIRS supports the need for serious consideration of the Responsible Exports Plan or a reduced exports alternative.

A remarkable finding buried in the BDCP is the fact that climate change under all alternatives considered in the DEIRS will result in major federal and state surface storage reservoirs upstream of the Delta being drawn down to dead pool storage by the end of the irrigation season. The BDCP claims that this is mostly due to climate change. However, several BDCP alternatives also contribute to this annual catastrophic drawn-down. According to the DEIRS:

> In comparison to Existing Conditions, there would be a decrease in carryover storage at the end of September for Lake Oroville, Trinity Lake, Shasta Lake, and Folsom Lake in all years. Lake Oroville storage would decrease by 646 TAF (31%) in September average end of month storage. Trinity, Shasta, and Folsom lakes September carryover would decrease by 230 TAF (17%), 481 TAF (18%), and 146 TAF (28%), respectively under No Action Alternative as compared to Existing Conditions. The frequency of Trinity, Shasta, and Folsom Lakes dropping to dead pool storage would increase by about 10% under the No Action Alternative as compared to Existing Conditions. These changes in storage would reduce the ability of the CVP and SWP to meet system water demands and environmental water needs. Adaption measures would need to be implemented on upstream operations to manage coldwater pool storage levels under future sea level rise and climate change conditions. As described in the methods section, model results when storages are at or near dead pool may not be representative of actual future conditions because changes in assumed operations may be implemented to avoid these conditions. (BDCP DEIRS pg. 5-61)

What is truly astounding about this statement is that it doesn't apparently result in the federal and state agencies involved in the BDCP to recognize that the BDCP goals as currently stated are inadequate to deal with the very real impacts of climate change documented in the DEIRS.

The state and federal water projects in California, and their use of the Delta to export large quantities of fresh water south of the Delta, can no longer be operated as they have been. A serious change in operations is needed to prevent the severe impacts that annual reductions to dead pool storage in major reservoirs would entail (including significant water supply shortages for senior water rights holders and the environment). The only operational change that would likely avoid these catastrophic storage reductions is an alternative the significantly reduces Delta exports. Therefore the BDCP must fully consider, adopt, and implement a plan that reduces the statewide reliance on Delta exports, but it fails to do so.

The DEIRS' simple characterization of the dead storage issue as "model results [that] may not be representative of actual future conditions because changes in assumed operations may be implemented to avoid these conditions" brings into question whether any result or impact documented in the BDCP will represent actual conditions. Since virtually every result and impact in the DEIRS are based on computer models, perhaps they can all be individually tweaked to produced different and perhaps more desirable results. Are we to assume based on this statement that nothing in the DEIRS is definitive?

The DEIRS clearly shows that business as usual, which includes all the alternatives considered in the DEIRS, will no longer be acceptable. California must come to grips with climate change and how it will affect our water supply and management. The best place to start should be with the BDCP and that entails serious consideration and adoption of the Responsible Exports Plan or other alternatives that significantly reduce Delta exports.

2. New Surface Storage Is A Reasonably Foreseeable Impact Of The BDCP But The Likely Impacts Of New Storage Are Not Considered.

The DEIRS chapters about Water Storage and Surface Water (Chapter 5 and 6) fail to mention any projects currently under active study and environmental review to increase surface storage upstream of the Delta. These projects include a proposed raise of Shasta Dam and expansion of its reservoir on the Sacramento River, the Sites Offstream Storage Reservoir in the Sacramento Valley (which would be fed by major diversions from the Sacramento River), an additional proposed expansion of the Los Vaqueros Reservoir near the Delta, and the proposed Temperance Flat Dam on the San Joaquin River Gorge. Dam proponents have also been promoting expansion of the existing San Luis Reservoir in the San Joaquin Valley.

New surface storage projects are only mentioned and briefly examined in DEIRS Appendix 1B – Water Storage. But the Appendix is quick to disavow any connection between new surface storage projects and the BDCP:

> While water storage is a critically important tool for managing California's water resources, it is not a topic that must be addressed in the EIR/EIS for the BDCP. This is because the BDCP, as a proposed habitat conservation plan and natural community conservation plan, does not, and need not propose storage as a project component. Although the physical facilities contemplated by the BDCP, once up and running, would be part of an overall statewide water system of which new storage could someday also be a part, the BDCP is a stand-alone project for purposes of CEQA and NEPA, just as future storage projects would be. (Appendix pg. 1b-1)

This carefully worded statement fails the validity test in a number of ways. The state legislation that created the BDCP process had two "coequal" goals: to restore the ecological functions of the Delta and to improve water supply reliability in the state of California. Legislators who established the coequal goals, state and federal water agencies, and water pundits alike (many of whom work for or represent water agencies and contractors)

extoll the virtues of building additional surface storage as a crucial component of California's water management.

In truth, the HCP/NCCP aspects of the BDCP are needed to implement the water supply reliability goal. The Delta could (and many believe it should) be restored without "improving" water supply reliability by continuing or even increasing Delta exports. Federal and state law prohibits the government from continuing or increasing fresh water exports from the Delta without authorizing take of endangered and fully protected species. And take permits would not be allowed without the restoration component.

Another fact that directly connects the BDCP and upstream surface storage projects is that most of these projects – particularly those located north of the Delta – would contribute water to the Delta for export. For example, the proposed raise of Shasta Dam and enlargement of its reservoir would increase firm water supplies from 47,000 to up to 113,000 acre feet per year, depending on the dam raise alternative chosen. From 44% up to 90% of this firm yield would be exported south of the Delta.[i]

Similarly, the proposed Sites Offstream Storage Reservoir could increase water supplies from 213,000 to 246,000 acre feet per year depending on the alternative. Of this amount, about 54-55% would be exported south of the Delta. Sites could also provide dedicated water releases to improve Delta water quality and provide a downstream shift in X2, as well as provide an emergency pulse of water in response to catastrophic Delta levee collapse.[ii] In fact, most of the potential benefits of the Sites project appear to be Delta oriented and would fit quite well into the BDCP operations and purposes.

It's important to understand that the Shasta Dam raise and North of Delta Offstream Storage (including Sites) were under active study when voters rejected the Peripheral Canal in 1982. The studies were subsequently shelved and were only revived in the CALFED process and reinvigorated with the advent of the BDCP. In addition, the state water bond on the November 2014 general ballot earmarks $3 billion for these projects, along with millions for Delta restoration, which increases both their connection and certainty.

The proposed Temperance Flat Dam on the San Joaquin River Gorge is located south of the Delta. But it too would provide direct benefits to the BDCP, including an emergency water supply ranging from 194,000-203,000 acre feet of water available during a "Delta Export Disruption" (a Delta levee break). In addition, the draft feasibility study for this dam project examines the potential to operate Temperance Flat in conjunction with Delta exports and San Luis Reservoir operations.[iii]

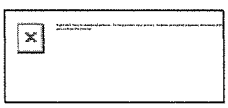
There is an undeniable connection between these proposed surface storage projects and the BDCP. And the failure of the DEIRS to admit this connection and disclose the reasonably foreseeable impacts of these surface storage projects on the environment is a major violation of both CEQA and NEPA.

Attached with these supplemental comments are comments prepared by Friends of the River in response to the Shasta Dam raise DEIS and the Temperance Flat Dam Draft Feasibility Study. The comments raise serious concerns about the impacts of these projects on biologically sensitive river segments, fish and wildlife habitat, aquatic and riparian ecosystems, and protected areas such as the Sacramento River National Wildlife Refuge, the BLM proposed San Joaquin River Gorge Wild & Scenic River, the proposed Sacramento River National Recreation Area, and various river segments determined eligible by federal agencies for Wild & Scenic River protection. All of these potential impacts should be considered in the BDCP DEIRS since the surface storage projects have a direct and undeniable connection to the BDCP.

3. Conclusion

The BDCP DEIRS must be revised to include a reduced exports plan in response to the climate change impacts on upstream storage. The DEIRS must also be revised to disclose the true connection between upstream storage projects and the BDCP and the potential impacts of these storage projects on the environment.

Sincerely,



Steven L. Evans

Wild Rivers Consultant

Attachments:

Comments of Friends of the River and the California Wilderness Coalition on the Shasta Lake Water Resources Investigation DEIS, Oct. 1, 2013.

Comments of Friends of the River on the Upper San Joaquin River Basin Storage Investigation Draft Feasibility Report, April 21, 2014.

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[i] Shasta Lake Water Resources Investigation DEIS Table S-2, U.S. Bureau of Reclamation, June 2013.

[ii] North of Delta Offstream Storage Preliminary Administrative DEIR, Table ES-5, California Dept. of Water Resources, May 2014

[iii] Upper San Joaquin River Basin Storage Investigation Draft Feasibility Report, Table ES-1, U.S. Bureau of Reclamation, January 2014.