UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814-4700

JUL 10 2015

Stacey Cepello
FloodSAFE Environmental Stewardship and Statewide Resources Office
Floodway Ecosystem Sustainability Branch
P. O. Box 942836
Sacramento, CA 94236-0001

Re: Technical Assistance Letter for commenting and guidance purposes for the development of the Department of Water Resources' 2015 Public Draft Central Valley Flood System Conservation Strategy document and its accompanying attachments

Dear Mr. Cepello:

This letter is in response to the California Department of Water Resources' (DWR) request that NOAA's National Marine Fisheries Service (NMFS) review and provide written comments regarding the release of the January 2015, Public Draft Central Valley Flood System Conservation Strategy (Conservation Strategy) document and its accompanying attachments.

The Conservation Strategy and the Central Valley Flood Protection Plan (CVFPP) were developed by DWR and in part fulfills terms of the State of California's 2008 Central Valley Flood Protection Act. The Conservation Strategy and the CVFPP are scheduled to be updated every five years with the next update occurring in 2017. By 2017, a more comprehensive Conservation Strategy will be updated and will replace the 2012 Conservation Framework. The Conservation Strategy and the CVFPP geographical range encompasses the State Plan of Flood Control (SPFC) which contains most river channels and floodplains of the Sacramento and San Joaquin rivers and their major tributaries.

The main objective of the CVFPP is to provide protection to high risk communities from flood events by meeting a 200 year flood protection in urban areas and small communities.
As a companion effort to the CVFPP, DWR has been developing the Conservation Strategy through an iterative inter-agency collaborative effort. The Conservation Strategy is a long-term strategic approach which will consist of achieving the environmental goals and objectives of the Central Valley Flood Protection Act, FloodSAFE Initiative and the CVFPP. The Conservation Plan will also implement DWR's Environmental Stewardship Policy and address broad ecological goals.

NMFS recognizes the importance of the goals of the Conservation Strategy as well as the ultimate goal of implementing the Conservation Strategy. NMFS acknowledges that the strategy objectives will play a vital role in the sustainability and recovery of federally-listed fish species and ecosystem protection and restoration within the Central Valley. NMFS also realizes the importance of the objectives set by DWR to integrate environmental stewardship into the flood system planning and ongoing operation and maintenance activities. This can ultimately reduce potential flood project regulatory delays, lower permitting costs and associated mitigation expenses, lower long-term operational costs, provide greater benefits to the public and native species, thoughtful planning for key restoration efforts, restore ecological functions, create ecosystem continuity, and assist in the recovery of listed species. In

particular, "NMFS' 2014 Recovery Plan for the evolutionarily significant units of the Sacramento River winter-run Chinook salmon *(Oncorhynchus tshawytscha)*, Central Valley spring-run Chinook salmon *(0. tshawytscha)*, and the distinct population segment of California Central Valley steelhead *(0. mykiss)*", discusses and emphasizes the need for improving riverine hydrologic functions and meander potential and restoring and reconnecting existing riparian corridors as priority recovery actions within the SPFC and are main objectives identified within the Conservation Strategy.

As part of the public review process for the 2015 Public Draft Conservation Strategy, NMFS is providing comments to be included as part of the administrative record and for consideration by DWR. NMFS recommends as part of DWR's adaptive management process for further developing the draft document, the Conservation Strategy should be revised accordingly prior to the adoption of the Conservation Strategy and the CVFPP in 2017 by the Central Valley Protection Board.

NMFS comments to the 2015 Public Draft Conservation Strategy and its accompanying appendices are attached. Some comments are general in nature and are broadly focused, addressing the entirety of the document, while others are more detailed in nature and relate to specific language in the draft document and appendices.

We look forward to continuing to work with DWR and assisting with the development of the Conservation Strategy.

Please contact Julie Wolford at (916) 930-3710, or via e-mail at Julie.Wolford@noaa.gov for further information.

Sincerely,

for Maria Rea
Assistant Regional Administrator
California Central Valley Office

cc: Copy to File ARN # 151422WCR2015SA00130

Attachment: NMFS Comments to DWR's 2015 Public Draft Central Valley Flood System Conservation Strategy document and its accompanying attachments

National Marine Fisheries Service. 2014. NMFS' Recovery Plan for the Evolutionarily Significant Units of the Sacramento River Winter-Run Chinook Salmon, Central Valley Spring-Run Chinook Salmon, and the Distinct Population Segment of California Central Valley Steelhead, Sacramento, California. www.westcoast.fisheries.noaa.gov. July, 2014.

Reviewing Agency	Reviewer Office	Comment #	Section #	Page #	location	Comment: Importance	Comment: Issue	Comment: Solution
NMFS	CCVO	1				general	Overall, the draft is a huge improvement over earlier efforts. It reads fairly well and has eliminated most of the redundancies that characterized earlier drafts.	
NMFS	CCVO	2				minor	This statement: "This Strategy updates and expands upon that Conservation Framework as part of the 2017 update to the CVFPP." Is this saying that the 2017 update will be the mechanism to include the CS or will it still be a stand-alone document? This is unclear.	
NMFS	CCVO	3	2	2-2	Figure 2-1	moderate	This figure is a bit confusing. Some towns are titled, others just shown as dots. Is that Chico or Oroville? I note that in other Figures (e.g. 4-2) all the dots (towns) have names. At first glance highway 99 appears to be a creek. Also, it appears that existing steelhead distribution in northern tribs (Deer, Mill, Antelope, Battle, Butte Crks) is not properly displayed.	
NMFS	CCVO	4	2	2-3	1st para	moderate	See also next comment. When I read this section, I wondered why the species weren't listed here. They are listed in Chapter 4. You might refer to that table here.	
NMFS	CCVO	5	2	2-3	3rd para	minor	in bullet that follows, it is stated that removal of LWM has ceased. In this paragraph, in addition to loss of LWM due to loss of natural riverbank, you might also mention that ecological value of LWM was not recognized in past, and much was removed.	
NMFS	CCVO	6	2	2-4	2nd para	minor	the paragraph is fine, but lacks context that historically, most spawning (for Spring Run and Steelhead) occurred in habitat currently blocked by dams. Connectivity and loss of habitat is mentioned earlier, but it might be worthwhile to provide context for spawning here, as well.	
NMFS	CCVO	7	2	2-4	5th para	minor	You might also mention that target species are listed in Table 4.2.	

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NMFS	CCVO	8	2	2-4	last para	moderate	"managed properly" is value laden. Managing for maximum economic output could be consider proper.	reword to reflect they can be managed to provide habitat value
NMFS	CCVO	9	2	2-7	3rd para	moderate	Flow alteration is mentioned only in regard to temperature. As stressor, it is important to channel maintenance, bedload movement, floodplain inundation, etc. And will probably become more important as stressor with changing climate.	
NMFS	CCVO	10	2	2-7-8	last paras	moderate	This section is " 2.0 Need for Improved Conservation of Rivers and Floodplains" it is hard to see how the permitting discussion fits here. It properly belongs in section 7	
NMFS	CCVO	11	4	4-1	1st para	moderate	While the CS does focus on habitats and processes most likely to benefit, the species discussed are those that are listed or otherwise of concern. Other, non-listed species (say willows) may benefit greatly as well. Point is, species were not picked because they would benefit most.	
NMFS	CCVO	12	4	4-3	3rd para	minor	"from side to side across the landscape"	consider from side to side across the floodplain
NMFS	CCVO	13	4	4-3	last para	minor	Infrastructure (levees) is mentioned, but the lead in with roads and farms and bothered me a tad. Seems like in Sac SJ, revetments primarily objective has been to protect levees.	
NMFS	CCVO	14	4.12	4-4	1st para	minor	It's implied that restoring process will restore habitat, but it might be clearer to the reader if that were states (that is, if processes are restored, habitat will be created (and maintained))	
NMFS	CCVO	15	4.12	4-4	3rd para	minor	The use of "species" following fish and wildlife redundant?	

Reviewing Agency	Reviewer Office	Comment #	Section #	Page #	location	Comment: Importance	Comment: Issue	Comment: Solution
NMFS	CCVO	16	4.2	4-8	1st para	minor	"However, some sensitive species that could benefit from the restoration of ecosystem processes and habitats have specialized needs that may not be met without focused conservation measures, implemented as part of flood improvement projects." "Specialized needs" is awkward. The need is for more habitat, it could be argued that that habitat is "specialized", but that's not really the problem.	Rewrite to convey that restoration of processes and habitats will provide more habitat for the targeted species which are declining at least in part due to loss of historic habitat.
NMFS	CCVO	17	4.3	4-11	1st para	minor	Use of "more" here made me as a reader want a "than" statement somewhere in the sentence or paragraph.	Perhaps replace "more" with "most" or similar term, or rewrite sentence to better convey the thought.
NMFS	CCVO	18	4.3	4-11		minor	levee also disconnected habitats, and caused loss of habitat	expand description of effects
NMFS	CCVO	19		4-11	revetment paragraph	minor	"creation of new lands elsewhere" is awkward	suggest "results in bank retreat and building" or "bank retreat in some areas and bank building, usually on the opposite channel meander" or, get a better description from a geomorhpologist
NMFS	CCVO	20	5	5-1	4th para	major	It is stated that current funding "allows spending for mitigation, but not for ecosystem enhancement and restoration. In addition, neither DWR nor CVFPB was given direct authority to direct that habitat and ecosystem improvements be undertaken by others."	
NMFS	CCVO	21	5.1	5-2	moderate		It is stated, "objectives also were not developed for levees and revetment. Various amounts of levee and revetment modification, combined with other actions, could provide comparable benefits to ecosystem processes, habitats, and species. Therefore, needed changes to levees and revetment would be determined during project planning as means to enhance ecosystems, not as objectives in and of themselves".	This paragraph and the lack of discussion regarding potential for revetment removal in locations where it is not functioning as a flood control feature makes it sound like this will not be achieved. Further discussion on revetment removal should be expanded upon as DWR has stated that it is a goal of the CS to reduce the total amount of revetment in the system. This would mean that the amount of revetment removed from the system would need to be greater than the amount of revetment installed, in order to have a net decrease as has been stated as a goal.

Reviewing Agency	Reviewer Office	Comment #	Section #	Page #	location	Comment: Importance	Comment: Issue	Comment: Solution
NMFS	CCVO	22	5	5-1	3rd para	minor	"size of" has a connotation of physical dimensions	replace with "amount" or "number and amount" or something similar
NMFS	CCVO	23	5.1	5-2	3rd para	minor	"comparable" to what?	
NMFS	CCVO	24	5.1	5-2	3rd para	major	The discussion of levees and revetment should be strengthened. There is a strong negative correlation between several of the ecological objectives (riparian, SRA, natural bank) and L&R. Planners need to appreciate this connection, and know that at project level, removal or "eco treatment" will contribute to reaching objectives at the larger scale	strengthen the discussion of levees and revetment relative to the ecological objectives.
NMFS	CCVO	25	5.1.2	5-3	4th para	minor	"the size" of conservation needs. Again awkward	I think "regarding the conservation needs", would read better. It is already explained that the need is an amount (or size)
NMFS	CCVO	26		5-5	2nd para	moderate	This paragraph goes around in circles. Just say that in some cases, flood projects will not be able to meet the ecological need. To meet the objective, other actions will be necessary.	Rewrite, simplify
NMFS	CCVO	27	5.2.1	5-13	2nd para	minor	As much as I would like to agree with the following statement, "Thus, revetment directly contributes to the decline of these species", it is an overstatement. Revetment has degraded habitat, and may conflict with restoring habitat.	
NMFS	CCVO	28	5.2.1	5-14	3rd para	minor	"could potentially" is weak	replace with "would"
NMFS	CCVO	29			various	minor	same comment as above in other CPA sections	
NMFS	CCVO	30		5-15	Table 5-3	minor	Note also applies to corresponding tables in other CPA sections. The "Objective Amount" is redundant. The Objective is an amount.	
NMFS	CCVO	31	5		general	moderate	I can see why you took the approach you did to displaying information (tables vs figures) because there was so much information to convey. With that said, display of the historic, existing and need information in a chart, as in Box 5.2, is really effective, and compelling. I wonder if it would make sense to pick one metric for each CPA and display it as an example.	

Reviewing Agency	Reviewer Office	Comment #	Section #	Page #	location	Comment: Importance	Comment: Issue	Comment: Solution
NMFS	CCVO	32	5		general	moderate	Discussion of needs and opportunities for each CPA is appropriate and well done. But these are management constructs. Several of the anadromous fishes were once distributed Sac-SJ valleywide. The resulting system-wide ecology was an important component of their success (genetic diversity, resilience to natural disasters, etc.). For this reason, I think it makes sense to provide a short description of system wide conditions. That a total of the historic, current and needed values from the CPAs. This would provide a picture of system wide conditions, and provide context for the value each CPA was providing to the total system.	
NMFS	CCVO	33	6.1.1	6-2	4th para	minor	"more intensive" than?	maybe say "have a range of intensities"
NMFS	CCVO	34	6.1.1	6-2	5th para	minor	"land cover"	do you mean vegetation?
NMFS	CCVO	35	6.1.1	6-3	2nd para	minor	It is stated, "Also, for several targeted species, the amount of restored habitat is important."	Please clarify, as the amount is important to all species. I think the statedment was meant to read that some species have specific requirements for habitat patch size.
NMFS	CCVO	36	6.1.2	6-3	last para	minor	"narrowly confining" is used here and elsewhere. Confining is probably sufficient	
NMFS	CCVO	37		6-7	paras 3-4	moderate	Bank protection is discussed in these two paragraphs. They are out of place in a section about facility removal.	
NMFS	CCVO	38	6.1.2	6-10	3rd para	minor	"flow split" is an awkward term	suggest dropping "flow split, and the" from the sentence. It reads fine without it.
NMFS	CCVO	39	6.1.2	6-11	last bullet	minor	"The amount of additional habitat created, if any." is confusing. Do you mean the amount of habitat accessed? Or the amount of habitat in areas that would be accessed by flows that needs to be treated pre-inundation? Or both?	clarify
NMFS	CCVO	40	6.1.2	6-11	3rd para	minor	"but" is used as a qualifier. The entire CS is complex and challenging.	drop the word
NMFS	CCVO	41	6.1.2	6-11	last para	moderate	A "but" is needed at the end of this paragraph. Something like, "But storage has fundamentally altered natural hydrographs (or flow regimes).	
NMFS	CCVO	42	6.1.2	6-13	5th bullet	minor	why the "or"?	

Reviewing Agency	Reviewer Office	Comment #	Section #	Page #	location	Comment: Importance	Comment: Issue	Comment: Solution
NMFS	CCVO	43	6.3	6-18		minor	"Many productive agricultural lands encompass the SPFC facilities" this seems backwards, should probably read, "SPFC facilities include many productive agricultural lands"?	
NMFS	CCVO	44	8.1.2	8-4	general	high	It is not clear what is included in "compliance" monitoring, but it appears that a major monitoring need has not been included, and this is implementation and effectiveness monitoring at the site or project scale. Implementation at this scale would assess not only if the project was completed, but whether it had been completed to standard. Perhaps this is implied by "compliance" but it is not clear. Effectiveness at the site scale would address if the site scale objectives had been met. For instance, grading on a floodplain newly accessed by flood flows would be designed to prevent stranding. An effectiveness question would be to assess if stranding had occurred. Without this scale and type of monitoring, there is no adaptive feedback into design and implementation of similar actions. It doesn't matter what this type of monitoring it is called (compliance vs implementation vs on-site effectiveness), but the need must be articulated here.	
NMFS	CCVO	45	8.1.3	8-7	2nd para	moderate	"Data on the Central Valley's habitats, processes, species, and stressors are extensive and have generally been sufficient for the planning and analyses conducted for the CVFPP document, CVFPP PEIR, and this Conservation Strategy." Is this true? The discussion of measureable objectives talked about the high level of uncertainty in estimates of need, due to the lack of specificity in some recovery plans.	

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NMFS	CCVO	46	8.1.6	8-13		high	The five year reports described here are fine, but there is a need for additional reporting at greater frequency. That is reporting of implementation and effectiveness commented on above (and for "compliance" monitoring as well).	
NMFS	CCVO	47	8.1	8-1		minor	I don't think that "to the extent that funding and personnel are available" makes sense. Adaptive Management is an approach. Funding may increase the amount of monitoring and information, but not having a certain level of funding should not preclude use of the approach.	
NMFS	CCVO	48	8.1	8-2	Figure 8-1	minor	Successful implementation results should also feed back into design of actions and future actions (not just the "no's" or "don'ts").	
NMFS	CCVO	49	8.1.1	8-3	list	moderate	in addition to determining effectiveness in avoiding, mitigating, etc in bullet #3, we also need to know if actions were effective in meeting their on site objectives.	
NMFS	CCVO	50				general	Not a big deal, but you may want to review usage of "would" and "should" throughout the document. There were a number of times when I though "would" might not be the best word choice.	

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NMFS	CCVO	1	general				Verbiage in the summary is repeated in the document body. Comments on the summary are also applicable to the document body. They are not repeated.	**For almost all comments, solutions are included in discussion of the issue.**
NMFS	CCVO	2	Summary	1	3rd Par	minor	perhaps substitute will "include" in place of will "identify"	
NMFS	CCVO	3	Summary	2	bullets	moderate	The other technical task was estimation of historic condition. As this is a key element of the information that follows, you might want to include a paragraph that discusses estimation of the historic values	
NMFS	CCVO	4	Summary	3	Par that begins "For each"	moderate	This paragraph needs rewrite. For each habitat attribute, recovery needs were estimated for numerous species. The objective is based the species with the greatest recovery need.	
NMFS	CCVO	5	Summary	3	Par that begins "For each"	minor	Recommend a change to "Graphs are presented that compare each need with historical and existing conditions"	
NMFS	CCVO	6	general	3	same	major	It is unclear why "need" is translated to "target". I think I understand why you chose not to term these as "objectives" (because of potential confusion with the broad objectives of the CS. I would point out though, that the document includes the term "measurable objectives". Which these are. Also, I associate "target" with "target species", though I am not proposing changing terminology for that reason.	If the needs need to remain as targets, then I think it would be worthwhile to include a box that provides definitions of the terms used in the document. If nothing else, I think this would serve as a logic check.
NMFS	CCVO	7	Summary	3	2nd to last	minor	For high, moderate, low categories, you might consider referencing the table on pg 3-5 here. My first read made me wonder why such a description wasn't here.	
NMFS	CCVO	8	Summary	6	5th bullet	minor	Consider adding "salmon" to winter run.	

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NMFS	CCVO	9	Summary	7	bullets 1-2	moderate	The discussion of permitting seems out of place- note the paragraph it follows at the end of pg 6. Also- is permitting within the scope of the measurable objectives? Finally, the measurable objectives should aide in the development of HCPs- which is probably the permitting approach that will be take, though many parties don't want to hear or except that. If objectives were established for each HCP, then the contribution of multi-benefit flood projects would be considered in "bulk" with projects with adverse effects, and other non-flood conservation projects.	
NMFS	CCVO	10	Summary	7	1st para	major	"solving ecosystem problems" seems a bit overstated. I think it might be more accurate to drop that verbiage and say something like: An objective of the CS is to contribute to the recovery of threatened and endangered species"	
NMFS	CCVO	11	Summary	7	2nd para	minor	note "target species" is used here (last sentence)	
NMFS	CCVO	12	Summary	8	1st para	moderate	objectives might also be revised based on improved understanding of species/habitat relationships from monitoring and research.	
NMFS	CCVO	13	Summary	8	1st of 2nd bullets	minor	Single purpose restoration actions with would, or should provide habitat improvements (vs could)	
NMFS	CCVO	14	Summary	9		question	Did we ever discuss displaying system wide conditions? This would be relevant for salmon and steelhead, and assuming we get to the HCP stage, would help each planning area see the relative importance of the area to overall condition.	
NMFS	CCVO	15	Methods	3-1	bullets	moderate	as above- there is a lot included in "identifying conservation needs". I see the process as including more than 3 steps, namely, also: estimating historic condition, estimating existing condition, etc.	

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NMFS	CCVO	16	Methods	3-5	1st para	moderate	This paragraph needs rewrite.	
NMFS	CCVO	17	Res & Disc	5-1	1st para	minor	In tables ___	
NMFS	CCVO	18	Reccomm	6-1	1st bullet	minor	given above comments, perhaps consider replacing "targets" with "includes".	
NMFS	CCVO	19	Reccomm	6-1	1st bullet	question	last sentence- greater contributions from flood control projects are unlikely, or from all efforts?	
NMFS	CCVO	20	Reccomm	6-1	3rd bullet	minor	consider something like: "thus the estimated need may not be accurate"	
NMFS	CCVO	21	Reccomm	6-1	last bullet	minor	is this accuracy or predictability?	
NMFS	CCVO	22	App 2	A2-3	1st para	moderate	The term "recover target species" (note "target" used again here) might need to be revised. The goal of the strategy is to contribute to recovery. It does that by improving habitat. Measurable objectives are used to track progress toward meeting the habitat goals. Unfortunately, meeting habitat goals does not necessarily equate to species recovery, which (in the case of salmon and steelhead) is determined by the number of viable populations. This does not mean the habitat contribution is not important, just that other factors are at play (water, climate, harvest, etc.)	
NMFS	CCVO	23	App 2	A2-3	1st para	moderate	last sentence- I think the metric "floodplain inundation" should be "inundated floodplain" the fist is a process, the second can be measured in acres.	
NMFS	CCVO	24	App 2	A2-3	2nd para	moderate	I hope I'm not getting too nit-picky here, but the fact that an attribute can be quantified does not necessarily mean that the level of confidence in the result is high. I think it means that one element of error is reduced.	
NMFS	CCVO	25	App 2	A2-11	Notes	moderate	revise to something like "December-May by a flood with a recurrence interval..."	
NMFS	CCVO	26	App 2	A2-11	Notes	moderate	unclear from this description if Sutter by-pass is included in the existing estimate or not.	

Reviewing Agency	Reviewing Office	Comment Number	Section #	Page #	location	Comment: Importance	Comment: Issue	Comment: Solution
NMFS	CCVO	27	App 2	A2-25	Notes	moderate	We had much discussion about the inundated floodplain in the bypasses- I wonder if it would be worthwhile to add a paragraph or two (not here, but perhaps in methods) that explains how they were handled.	
NMFS	CCVO	28	general				Overall, a really good handling of some pretty complex material.	