



June 28, 2012

VIA E-MAIL AND U.S. MAIL

Janice Pinero
U.S. Bureau of Reclamation
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Re: Notice of Intent to Prepare an EIS

Dear Ms. Pinero,

The Coalition for a Sustainable Delta is a California nonprofit corporation comprised of agricultural, municipal, and industrial water users, as well as individuals in the San Joaquin Valley. The Coalition and its members depend on water from the Sacramento-San Joaquin Delta (Delta) for their continued livelihood. Individual Coalition members frequently use the Delta for environmental, aesthetic and recreational purposes; thus, the economic and non-economic interests of the Coalition and its members are dependent on a healthy and sustainable Delta ecosystem.

The Coalition is a plaintiff-appellee in the two sets of consolidated lawsuits described in the Notice, 77 Fed. Reg. 18,858, 18,859 (Mar. 28, 2012), which overturned the Fish and Wildlife Service's (FWS) 2008 biological opinion for continued Central Valley Project (CVP) and State Water Project (SWP) operations and the National Marine Fisheries Service's (NMFS) 2009 biological opinion for continued CVP and SWP operations.

I. Requirement to Comply with NEPA.

In the lawsuits challenging the FWS 2008 biological opinion and NMFS 2009 biological opinion, certain plaintiffs alleged that those agencies and the Bureau of Reclamation (Bureau) violated the National Environmental Policy Act (NEPA) by issuing and accepting the reasonable and prudent alternatives (RPAs) that accompanied the biological opinions. In a November 13, 2009, ruling on cross-motions for summary judgment limited to NEPA issues, the court concluded that the Bureau violated NEPA by provisionally adopting and implementing the FWS 2008 biological opinion and the RPA without conducting a NEPA analysis. And in a March 5, 2010, ruling on cross-motions for summary judgment limited to NEPA issues, the court concluded that the Bureau and NMFS violated NEPA by provisionally adopting and implementing the NMFS 2009 biological opinion and the RPA without conducting a NEPA analysis.

In both sets of consolidated lawsuits, the court issued final judgments that set forth a timetable for the federal government to comply with NEPA. In the *Delta Smelt Consolidated Cases*, the court required the Bureau to comply with NEPA within 25 months of receiving the draft Biological Opinion and RPA from the USFWS, but not later than November 1, 2013. Thus, the Bureau must issue a finding of no significant impact or record of decision by November 1, 2013. In the *Salmonid Consolidated Cases*, the court required the Bureau to issue a draft Environmental Impact Statement (EIS) by April 1, 2015, a final EIS by February 1, 2016, and a record of decision by April 29, 2016.

II. Bureau Efforts to Date.

A. Requirement to consult, coordinate, and cooperate.

The Bureau is obliged, pursuant to Department of the Interior regulations, “to consult, coordinate, and cooperate with relevant State, local, and tribal governments and other bureaus and Federal agencies concerning the environmental effects of any Federal action within the jurisdictions or related to the interests of these entities.” 43 C.F.R. § 46.155. This obligation requires the Bureau to consult, coordinate, and cooperate with Kern County Water Agency and other public water agencies that have contracts with the Bureau or the Department of Water Resources (DWR) for the delivery of water via the CVP or SWP.

B. Early identification of the preferred alternative suggests that Bureau has prejudged the outcome and intends to pursue a course of action that is unlawful and based on misinterpretation or mischaracterization of data and analyses.

1. The Notice provides evidence that the Bureau has prejudged the outcome.

The preferred alternative, described in the Notice as the proposed action, is implementation of “operational components of the 2008 USFWS and the 2009 NMFS Reasonable and Prudent Alternatives.” 77 Fed. Reg. at 18,860. The Bureau explains that “we will develop and consider a proposed action and a reasonable range of alternatives, including a No Action Alternative.” *Id.*

The Coalition is very concerned that the Bureau has prejudged the options available to the agency based on the notice and the federal government’s conduct. Pursuant to NEPA, the Bureau must take a hard look at the environmental consequences of its action. “If NEPA mandates anything, it mandates this: a federal agency cannot ram through a project before first weighing the pros and cons of the alternatives.” *Simmons v. U.S. Army Corps of Eng’rs*, 120 F.3d 664, 670 (7th Cir. 1997). The Ninth Circuit explains that the environmental review process “must be timely, and it must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made.” *Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000). When a federal agency, such as the Bureau, prejudges the outcome when complying with NEPA, it does so in violation of federal law. *E.g., Davis v. Mineta*, 302 F.3d 1104, 1118-20 (10th Cir. 2002); *Simmons v. U.S. Army*

Corps of Eng'rs, 120 F.3d at 670; *Int'l Snowmobile Manufacturers Assoc. v. Wyoming*, 304 F. Supp. 2d 1278 (D. Wyo. 2004).

Here, the preferred alternative is implementation of RPAs that the federal government appears committed to defend and implement, even in the face of adverse federal district court decisions declaring those RPAs arbitrary and capricious and significant criticism by the National Research Council. *Delta Smelt Consol. Cases*, 760 F. Supp. 2d 855 (E.D. Cal. 2010); *Consolidated Salmonid Cases*, 791 F. Supp. 2d 802 (E.D. Cal. 2011); National Research Council, *A Scientific Assessment of Alternatives for Reducing Water Management Effects on Threatened and Endangered Fishes in California's Bay Delta* (2009).

The federal government has already gone to great lengths to defend the RPAs. For example, the federal government attempted to scuttle a motion by the Coalition and other parties to enjoin the Fall X2 component of the USFWS RPA that dictates a specific location for the low-salinity zone in the estuary. *Delta Smelt Consol. Cases*, 2011 U.S. Dist. LEXIS 68252 (E.D. Cal. June 24, 2011). And, when it failed to do so, the federal government vigorously opposed a motion to enjoin the Fall X2 Action. *Delta Smelt Consol. Cases*, 812 F. Supp. 2d 1133 (E.D. Cal. 2011). In their zeal to defend the RPA, the government's witnesses even attempted to deceive the court. After they failed to do so, and were found to have acted in bad faith, the federal government manufactured an "independent" review process that vindicated its witnesses. Atkins, *Science Review of Testimony in the Delta Smelt Cases: Summary Report* (2011). Specifically, the Department of the Interior contracted directly with an engineering and designing consulting firm, Atkins, to oversee a review of the finding of bad faith. The decision to contract directly with an outside organization to conduct the review allowed the Service to control the scope of the review including the questions posed to the reviewers, determine what materials the reviewers would be provided, and limit the panel to communicating only with the Department of the Interior during the course of the review.

In light of the federal government's unwavering adherence to a failed and indefensible set of RPAs to date, its identification of those RPAs as the preferred alternative at the outset of the NEPA process raises the specter that the process will be an exercise in form over substance designed to rationalize a decision already made by the federal bureaucracy behind closed doors.

2. The preferred alternative is arbitrary and unlawful.

The Bureau is required to rigorously explore and objectively evaluate a range of "reasonable alternatives." 40 C.F.R. § 1502.14. An alternative that is arbitrary or unlawful is *per se* unreasonable. Therefore, it is improper to include any such alternative among those under consideration. Here, the Bureau is proposing an alternative that includes implementation of RPAs held to be unlawful by the United States District Court for the Eastern District of California.

With respect to the 2008 USFWS RPA, the court held that RPA Actions 1, 2, 3, and 4, which are operational components of the RPA, were unlawful. *Delta Smelt Consol. Cases*, 760 F. Supp. 2d 855 (E.D. Cal. 2010). Actions 1 and 2 restrict Old and Middle River flows to protect adult delta smelt. Action 3 restricts Old and Middle River flows to protect larval and juvenile delta smelt.

The court held it was improper for USFWS to use raw salvage data rather than scaled salvage data to justify these flow restrictions. The court opined that “[t]his was arbitrary, capricious, and represents a failure to utilize the best available science in light of universal recognition that salvage data must be normalized.” *Id.* at 890.

Action 4, the Fall X2 Action, is triggered in “wet” and “above normal” years. It requires the monthly average location of X2 to be no further upstream from the Golden Gate Bridge in September and October than 74 kilometers (km) in wet years and 81 km in above normal years. In November, Action 4 does not set a specific X2 target, but requires that reservoir inflow be allowed to pass through upstream reservoirs to provide additional outflow in the Delta up to the 74 km or 81 km marker, depending on the water year. The court held that there was a “total lack of explanation” for the requirement in Action 4 to hold X2 at certain locations. Further, Action 4 is based, in part, on a comparison of data derived from two different models and compared by USFWS. The court held that USFWS erred by comparing the output from the two models “without attempting to calibrate the two models or otherwise address the bias created.” *Id.* at 907.

With respect to the 2009 NMFS RPA, the court held that RPA Actions IV.2.1 and IV.2.3, which are operational components of the RPA, were unlawful. *Consolidated Salmonid Cases*, 791 F. Supp. 2d 802 (E.D. Cal. 2011). Action IV.2.1, which implements the San Joaquin River Import to Export Ratio (the “I:E Action”), imposes water export restrictions from April 1 through May 31 of each year. These restrictions consist of a 4:1 inflow to export ratio of San Joaquin River flows as measured at Vernalis to combined State Water Project and Central Valley Project water exports. The court concluded that there was “weak (arguably equivocal) evidence supporting the imposition of any ratios at all.” *Id.* at 898. The court went on to hold that NMFS did not provide a satisfactory explanation for the ratio imposed pursuant to the I:E Action. Action IV.2.3 restricts Old and Middle River flows to protect juvenile Chinook salmon and steelhead. The court held that “[t]here is nominal record support for the imposition of some form of [Old and Middle River] flow restriction, but the Action must be remanded for further explanation of the necessity the specific flow prescriptions imposed, which are derived primarily from [particle tracking model] simulations, a method that is undisputedly an imperfect predictor of salmon behavior. *Id.* at 909.

These holdings are especially significant in light of the deferential standard of review set forth in the Administrative Procedure Act that the court applied when reviewing each RPA Action described above. That standard requires a reviewing court to set aside a federal agency action only if it is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” 5 U.S.C. § 706(2)(A). Therefore, such RPA Actions, which the Bureau intends to analyze as part of the preferred alternative, are indefensible. For that reason, it is imperative that the Bureau conducts an objective and good faith analysis of reasonable alternatives rather than plow forward with an alternative that should not even be among those considered.

3. The preferred alternative is based on misinterpretation or mischaracterization of data and analyses or reliance on data and analyses that are demonstrably improper.

The purpose of NEPA is “to force federal officials to consider the possible consequences of decisions having major implications for the quality of the human environment.” Lynton K. Caldwell, *Science and the National Environmental Policy Act* (1982). *Accord* 42 U.S.C. § 4321. The means to achieve this purpose is the imposition of a procedural requirement – environmental impact assessment – rather than the imposition of substantive standards. *Strycker’s Bay Neighborhood Council v. Karlen*, 444 U.S. 223 (1980). NEPA is premised on the notion that if federal agencies analyze and disclose the environmental impacts of their decisions, then agency decision-makers will stop and think before acting, which will improve the quality of agency decision-making.

NEPA does not contain a standard akin to the ESA’s requirement that federal agencies “use the best scientific and commercial data available.” 16 U.S.C. § 1536(a)(2); see also 16 U.S.C. § 1533(b)(1)(A), (b)(2). Nonetheless, federal agencies cannot simply opt to use models and data of their choosing without considering the appropriateness of such models and data in the context of the proposed agency action.

Federal courts, including the Ninth Circuit, have held that federal agencies violated NEPA where, for example, an agency utilized a model that the record demonstrated was flawed. *South Fork Band Council of W. Shoshone of Nev. v. Department of the Interior*, 588 F.3d 718 (9th Cir. 2009); *Greater Yellowstone Coalition v. Kempthorne*, 577 F. Supp. 2d 183 (D.D.C. 2008). Courts defer to federal agencies in the first instance so that the burden is on a party challenging the agency decision. They also defer to federal agencies in circumstances where there is simply an unresolved disagreement among experts. Nonetheless, the judiciary is still obliged to take a hard look at agency action. Misapplication of a model, or misuse or misinterpretation of data, undermines NEPA’s penultimate mandate that federal agencies analyze and disclose the environmental impacts of their decisions. For this reason, federal agencies must act consistent with prevailing norms and practice in the various fields of scientific inquiry when using models and data in the environmental impact assessment process.

In this light, the preferred alternative should be disregarded because it includes components that are out of step with prevailing norms and practice in the fields of ecology, quantitative biology, and statistics.

a. The Fall X2 Component of the Preferred Action.

For example, the Fall X2 Action, which was included in the USFWS RPA is based on data and analysis drawn directly from a journal article by Feyrer et al. (2007) and from a then in-manuscript predecessor to an article subsequently published as Feyrer et al. (2011). Neither of the articles supports the Fall X2 Action, and both have significant shortcomings that fully compromise their application in water and ecosystem management.

Feyrer et al. (2007) investigated patterns of delta smelt distribution across gradients of three physical environmental factors that vary in the estuary – water temperature, Secchi depth (turbidity), and conductivity (salinity). Using time-series population data for delta smelt derived from the Fall Midwater Trawl (FMWT) and environmental data from the fish survey stations, the study matched the presence of delta smelt with abiotic conditions to infer the preference of the fish for conditions across the ranges of those three variables. Feyrer et al. (2007) found that salinity and turbidity explained slightly more than a quarter of the variance in delta smelt presence/absence across the estuary in the autumn.

In the companion paper, Feyrer et al. (2011) drew from the previous work in developing a “habitat index,” that “accounted for both the quantity and quality of abiotic habitat,” and used it “to model the index as a function of estuarine outflow.” The model used “general additive modeling to identify habitat suitability based on combinations of water temperature, clarity, and salinity from surveys conducted during fall,” applying it “using outflow predictions under future development and climate change scenarios.” The habitat index is the basis for the assertion in the USFWS biological opinion that prescribed locations of the low-salinity zone in the estuary in the fall can be used to benefit delta smelt. By reducing water exports from the estuary and/or increasing upstream reservoir releases, the areal extent of the low-salinity zone is increased, therefore Feyrer et al. (2011) asserts, the extent of habitat for delta smelt is increased.

Conceptual missteps in the logic sequence connecting the location of X2 to delta smelt habitat, and then to delta smelt performance, as well as multiple analytical errors combine to compromise ecological conclusions drawn in the USFWS biological opinion and RPA. First, and of primary concern, is that the biological opinion recapitulates Feyrer et al.’s (2007) investigation of environmental correlates of delta smelt occupancy in the estuary, which was limited to just three physical variables; it ignored other physical variables that appear in the agency’s own conceptual models that link delta smelt population responses to environmental attributes, and disregarded biotic variables, such as food availability and the presence of predators, altogether. Accordingly, the three variables combined could explain just a quarter of the variance in patterns of delta smelt presence and absence in the estuary. The parsimonious conclusion from the Feyrer et al. (2007) study should have been that the better predictor of delta smelt presence and absence across the estuary would undoubtedly be found among variables that were not investigated, which should combine to explain the other 75% of the variance in the fish’s distribution.

Second, the biological opinion makes two fundamental analytical mistakes that contribute to mischaracterizing the relationship between the locations of X2 in the estuary to delta smelt abundance. The opinion used a linear additive stock-recruitment model. In contrast a multiplicative model, which determines the fraction of the population that survives as a product of daily survival, is necessary in such applications to avoid producing an absolute population response irrespective of the size demographic unit. A multiplicative model produces a proportional effect from environmental influences, not a fixed one, and avoids spurious and unrealistic outcomes, such as generating a positive population response when one factor equals zero. Another analytical misstep was made because the opinion characterized demographic change as abundance of delta smelt in the autumn to abundance of the fish in the subsequent fall.

Considering only a portion of the smelt's annual life cycle serves to discount environmental factors acting on not-considered life-stage(s).

Third, the characterization of delta smelt as preferentially inhabiting just a portion of the estuary's low-salinity zone is drawn at least in part from a mischaracterization of that distributional relationship as presented in Feyrer et al. (2007) and perpetuated in Feyrer et al. (2011). Feyrer et al. (2007) and the USFWS biological opinion fail to correct for the fact that many more FMWT survey stations in the Delta are located in areas that typically experience a circumscribed range of low-salinity conditions. Correcting for the bias in sampling in the FMWT survey frame produces a nearly even distribution for delta smelt across a wide and continuous range of salinity conditions. Exacerbating that sampling bias, Feyrer et al.'s (2007) study did not consider the entire geographic range of the fish, nor did it employ returns from the full geographic extent of available survey stations. It used just 75 of 100 FMWT sampling locations. Among the sites missing from the analysis are those proximate to Cache Slough in the northeast estuary, where an apparent demographic unit that has contributed as much as a third of the total numbers of delta smelt in recent years apparently resides year-round in near freshwater circumstances. That sub-sampling design flaw in Feyrer et al.'s (2007) study assures that inter-annual patterns of delta smelt occupancy in the estuary are incorrectly biased to produce mean catches of delta smelt in downstream circumstances.

Fourth, the biological opinion failed to relate explicitly the various adverse effects from environmental factors to population effects on delta smelt. That is the purview of population viability analysis, which determines the probability that a population will go extinct within a given time period under varying management with varying environmental stressor inputs. In passing on the obligatory assessment step provided by population viability analysis, the opinion neglected to consider the impacts on delta smelt population dynamics from alternative water export scenarios, "baseline" conditions that contribute to determining inter-year delta smelt population responses, and the influences of the management action on delta smelt under future environmental regimes.

Fifth, eschewing analysis of the effects of water exports on the demographic condition of delta smelt as required, the biological opinion adopts a "habitat index" (from Feyrer et al. 2011) that incorporated data generated by the above sampling shortcomings to make predictions regarding the availability of habitat under different flows scenarios. The index provided the conceptual basis for the managed flows prescriptions in the USFWS biological opinion. The habitat index improperly links several statistical models without accounting for the attending uncertainty in each, with the uncertainties multiplied with the addition of each model link. The index is predicated on a series of weak correlations that, combined, freight it with overwhelming unacknowledged variance. More compromising yet, a putative relationship identified between the habitat index and delta smelt abundance suffers from induced correlation, with delta smelt abundance data (derived from FMWT survey returns) appearing on both axes of a graph presented to illustrate the relationship (Figure 2c, Feyrer et al. 2011). The habitat index that is essential to the determination in the biological opinion is statistically invalid and ecologically meaningless.

Any of the five technical errors above render the Fall X2 action not consistent with best available science as required by law. Furthermore, the flows-management prescription that is set forth as the Fall X2 Action is premised on an incorrect definition of delta smelt habitat and an inappropriate interpretation of habitat in the context of resource management. Referencing the Feyrer et al. studies, USFWS contends that X2: (1) accurately defines the habitat space that is occupied by delta smelt, (2) therefore, can serve as a “surrogate indicator” for the extent of delta smelt habitat, and (3) in its two-dimensional extent, measures habitat quality and the availability of habitat for the species, therefore (4) is a reliable predictor of delta smelt population dynamics. However, not one of those four assertions is supported by available data.

The lack of a defensible ecological connection between the location of X2 in the estuary and the extent and quality of delta smelt habitat, and, in turn, any connection of both to the distribution and abundance of delta smelt has been called out in a report on the biology by a National Research Council report, which found that the “weak statistical relationship between the location of X2 and the size of smelt populations makes the justification for this action [the prescribed locations for X2 in the Delta in wet and above-normal years] difficult to understand. In addition, although the position of X2 is correlated with the distribution of salinity and turbidity regimes (Feyrer et al. 2007), the relationship of that distribution and smelt abundance indices is unclear” (NRC 2010). In other words, a fundamental misunderstanding of the multi-dimensional complexity of habitat and concomitant misrepresentation of it as “abiotic habitat” -- that is, as one or just a few physical variables -- led to the conservation prescription in the USFWS biological opinion. As the federal district court held, the precise 74 and 81 km requirements imposed by USFWS find no support in available data and analyses.

Following both the release of the USFWS biological opinion and the NRC committee review of it, four separate multivariate modeling exercises investigated the potential causes of recent decline of delta smelt. All, like the Feyrer et al. studies, used delta smelt data from the FMWT. In contrast to the Feyrer et al. studies, each considered a breadth of both physical and biotic attributes of the estuary. None found evidence of the location of X2 in the autumn as a substantive determinant of the decline of delta smelt or its population dynamics (Thomson et al. 2010, MacNally et al. 2010, Maunder and Deriso 2011, Miller et al. 2012). There simply is no evidence to support the link made in the USFWS biological opinion and RPA between the location of X2 in the estuary in the autumn, and either the extent (or quality) of delta smelt habitat or trend in population numbers of the fish.

b. The I:E Component of the Preferred Action.

Another component of the preferred alternative that cannot be reconciled with prevailing norms and practice in the fields of ecology, quantitative biology, and statistics is implementation of the I:E Action. The I:E Action is intended to reduce the likelihood that outmigrating steelhead will be diverted into the channels of the south Delta and entrained at the State Water Project and Central Valley Project water export facilities. It is based on the Vernalis Adaptive Management Plan (or VAMP) studies. These studies involve the release and tracking of tagged hatchery fall-run Chinook salmon smolts during a 31-day period during April and May when a pulse flow of water was released at Vernalis. NMFS states that the VAMP studies provide support for the proposition that increasing flows increases survival of outmigrating salmon smolts. They then

reason that wild steelhead would likely benefit in the same way as hatchery fall-run Chinook salmon.

Flaws in NMFS's interpretation of the VAMP studies and other pertinent studies, a break in the logic chain that links its interpretation to the purpose of the I:E Action, and a fundamental flaw in the underlying VAMP studies that use acoustic tags all combine to compromise the conclusions drawn by NMFS. Continued adherence to the I:E Action is inconsistent with norms and practice in the fields of ecology, quantitative biology, and statistics.

First, a close review of the VAMP studies and other pertinent studies discloses that, notwithstanding 20 years of scientific research and investigation directly focused on the effects of water exports on hatchery fall-run Chinook salmon survival, pertinent studies have not produced any statistical evidence showing a negative relationship between survival and exports (for example, Newman 2008, San Joaquin River Group Authority 2005, Brandes and McLain 2001, Kjelson, Loudermilk, Hood, and Brandes 1990). While there are studies – including certain of the VAMP studies – that provide evidence of a correlation between San Joaquin River flows at Vernalis and hatchery fall-run Chinook salmon survival, these do not provide support for the imposition of the inflow to export ratio.

Federal agencies have consistently asserted that there is a correlation between hatchery fall-run Chinook salmon smolt survival (and, by extension, juvenile steelhead survival) and the I:E ratio, but this correlation arises from the fact that there is a correlation with inflow alone; given that correlation, any other variable, such as exports, that is unrelated to survival, if divided into inflow, would likely produce a correlation with survival. This statistical slight-of-hand provides no evidence that exports have an effect on survival of outmigrating hatchery fall-run Chinook salmon smolts.

Given the lack of empirical evidence for export restrictions, it is inconsistent with prevailing norms in the scientific community to simply impose such restrictions. To the extent NMFS (and the Bureau) contends that the VAMP studies and other studies support the imposition of export restrictions, they are misinterpreting (or mischaracterizing) the results of those studies. Furthermore, as the federal district court held, there are no data or analyses that support the four-to-one ratio imposed by NMFS.

Second, setting aside the first error made by NMFS when prescribing the I:E Action, NMFS assumes for the purpose of the RPA that hatchery fall-run Chinook salmon and wild steelhead will benefit identically from imposition of the I:E Action. This assumption is improper and inconsistent with prevailing norms in the field of conservation biology. In its BiOp, NMFS conceded that hatchery Chinook salmon differ from wild steelhead. (See, e.g., BiOp at 62.) Nonetheless and without adequate explanation for its action, NMFS insisted on using hatchery Chinook salmon as a surrogate species for wild steelhead. The life history differences between the two are substantial; for example, the size difference between juvenile Chinook salmon and steelhead during outmigration is so substantial that steelhead have been known to prey on salmon. Noting the striking differences between the two species, an independent panel convened by CALFED concluded that performance of acoustic tagged juvenile Chinook salmon does not

provide a reliable basis for inference concerning the potential relations between San Joaquin flow and downstream migration survival of steelhead (Hankin et al. 2010).

This is not to say that hatchery-generated fall-run Chinook cannot under any circumstances be used as a surrogate for wild steelhead. Rather, it should do so only after ascertaining whether the surrogate (here, fall-run Chinook) and the target species (here, steelhead) would respond in the same manner to the environmental condition of concern (Murphy et al. 2011, , Caro et al. 2005, Andelman & Fagan 2000, Landres et al. 1988).

Third, the underlying VAMP studies that use acoustic tags to gather data on hatchery fall-run Chinook salmon themselves are flawed to such a degree that it is highly questionable whether the results should be afforded any weight at all. As Vogel (2011) reports, acoustic tags are detected by an array of fixed station receivers deployed in the Delta. Those receivers cannot differentiate live juvenile salmon from juvenile salmon inside predatory fish. Thus, data gathered on dispersal-route selection and through-Delta survival frequently track juvenile salmon in predators, such as black bass, striped bass, white catfish, and steelhead. To better understand the challenge, in 2010 both juvenile salmon and predatory fish were tagged. Vogel (2011) estimated that 65 percent of the tags detected in the telemetry array were in predators at the last time of detection. He concluded that during the 2010 and 2009 VAMP studies, researchers “were frequently tracking dead salmon (or the transmitters) inside predatory fish” rather than live salmon.

There is no question that the preferred alternative is premised on faulty assumptions and misinterpretation or mischaracterization of data and analyses. This is not a close call so that the agency can use the shield of agency deference to defend costly and ineffective decisions. Rather, the preferred alternative includes multiple components that have already been declared arbitrary and capricious by a court of law.

- C. The Bureau must avoid narrowly defining the purpose and need, and consider a range of potentially feasible alternatives, including alternatives outside the Bureau’s control.**
 - 1. The purpose and need should not be to implement the “operational components” of the Services’ respective RPAs, but to avoid jeopardy of listed species and destruction or adverse modification of critical habitat while supplying sufficient water to meet the agricultural, municipal, and industrial needs of millions of Californians in the CVP and SWP service areas.**

The Bureau appears to understand the purpose and need of the action so narrowly that it will make implementing the operational aspects of the RPAs a foregone conclusion in violation of NEPA.

The NOI states:

The purpose of the action is to continue the operations of the CVP, in coordination with the SWP, as described in the 2008 Biological Assessment (as modified) to meet its authorized purposes, in a manner that:

- Is consistent with Federal Reclamation law, applicable statutes, previous agreements and permits, and contractual obligations;
- Avoids jeopardizing the continued existence of federally listed species; and
- Does not result in destruction or adverse modification of designated critical habitat.

77 Fed. Reg. at 18,859. However, the Bureau appears to construe the purpose more narrowly, stating that “[t]he proposed action for the purposes of NEPA will consider operational components of the 2008 USFWS and the 2009 NMFS Reasonable and Prudent Alternatives.” *Id.* at 18,860. And the Bureau “will not consider: [¶] • Structural changes prescribed in the NMFS 2009 [RPA] that would require future evaluations, environmental documentation, and permitting; and [¶] • [RPA] actions that would require future studies.”

Such a narrow understanding of the purpose and need based on implementation of the “operational components” of the Services’ RPAs would be legal error.

An EIS must “briefly specify the underlying purpose and need to which the agency is responding.” 40 C.F.R. § 1502.13 (emphasis added). While agencies enjoy broad discretion to specify the purpose and need of an action, that discretion is not unlimited. It is an abuse of discretion to define the project objectives in unreasonably narrow terms because “[t]he stated goal of a project necessarily dictates the range of ‘reasonable’ alternatives and an agency cannot define its objectives in unreasonably narrow terms.” *City of Carmel-By-The-Sea v. U.S. Dept. of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997) (citation omitted).

In *National Parks & Conservation Association v. Bureau of Land Management*, 606 F.3d 1058 (9th Cir. 2010), the Ninth Circuit held that the Bureau of Land Management (BLM) abused its discretion by defining the purpose and need of a land exchange to make possible a private landfill so narrowly that it “necessarily and unreasonably constrain[ed] the possible range of alternatives[,]” thus “foreordain[ing] approval of the land exchange.” *Id.* at 1072; *see also Davis v. Mineta*, 302 F.3d 1104, 1118-20 (10th Cir. 2002) (concluding that “if the purposes and needs of the Project were so narrowly construed as to mandate the extra capacity only at 11400 South, we would conclude that such a narrow definition would be contrary to the mandates of NEPA.”); *Simmons v. U.S. Army Corps of Eng’rs*, 120 F.3d 664, 669 (7th Cir. 1997) (Army Corps abused its discretion by defining the purpose and need of water supply in terms so narrow that only a single-reservoir option could fulfill the underlying purpose).

The underlying purpose of the Bureau's action is to continue to supply its share of the water needed by tens of millions of Californians and over 1.5 million hectares of irrigated agriculture in the CVP and SWP service areas without jeopardizing listed species or adversely modifying designated critical habitat. This underlying purpose and need is also consistent with the California Legislature's stated goal for the Delta, namely, to achieve the two coequal goals of providing a more reliable water supply for California and protect, restore, and enhance the Delta ecosystem. Public Resources Code § 29702; *see also* Water Code § 85001(c); *id.* § 85054 (“‘Coequal goals’ means the two goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem.”).

Thus, consistent with NEPA and California law, the Coalition urges the Bureau to state the purpose and need of the proposed action in terms broad enough to capture the underlying purpose. The Bureau should not frame the purpose and need so narrowly that it undermines the ability of Project operators to provide sufficient water to meet the needs of tens of millions of Californians, inflicting widespread and grave economic harm across a large swath of the state.

2. The Bureau must consider a reasonable range of potentially feasible alternatives, including alternatives outside the Bureau's control.

The breadth of the range of reasonable alternatives should be commensurate with the breadth of the action's underlying purpose and need. *E.g., Friends of Yosemite Valley v. Kempthorne*, 520 F.3d 1024, 1038 (the range of reasonable alternatives is “dictated by the nature and scope of the proposed action”); *Illio ‘ulaokaokalani Coalition v. Rumsfeld*, 464 F.3d 1083, 1097-98 (9th Cir. 2006).

Under NEPA, a federal agency proposing a major action “significantly affecting the quality of the human environment” must prepare an EIS that includes a “detailed” account of the “alternatives to the proposed action.” 42 U.S.C. § 4332(2)(C)(iii). Under CEQ's NEPA regulations, an EIS must “[r]igorously explore and objectively evaluate **all reasonable alternatives**” 40 C.F.R. § 1502.14(a) (emphasis added). Indeed, such an analysis is the “heart” of an EIS. *Id.*

As the Ninth Circuit explained in *Alaska Wilderness Recreation and Tourism Ass'n v. Morrison*, 67 F.3d 723 (9th Cir. 1995):

The goal of the statute is to ensure that federal agencies infuse in project planning a thorough consideration of environmental values. The consideration of alternatives requirement furthers that goal by guaranteeing that agency decisionmakers have before them and take into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact and the cost-benefit balance Informed and meaningful consideration of alternatives—including the no action alternative—is . . . an integral part of the statutory scheme.

Id. at 729 (quoting *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1988) (internal citations, quotations and alterations omitted)).

Thus, it is error not to consider a reasonable range of feasible alternatives. “A ‘viable but unexamined alternative renders [the] environmental impact statement inadequate.’” *Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 814 (9th Cir. 1999) (quoting *Citizens for a Better Henderson v. Hodel*, 768 F.2d 1051, 1057 (9th Cir. 1985)).

Moreover, NEPA regulations state that agencies shall also “include reasonable alternatives not within the jurisdiction of the lead agency.” 40 C.F.R. § 1502.14(c); *Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d at 814; CEQ, Forty Most Asked Question About NEPA, No. 2b. In *Muckleshoot Indian Tribe*, the U.S. Forest Service failed to consider an alternative that would have involved obtaining funds from another agency that could be used to purchase land from a lumber company because the Forest Service deemed the funds, and therefore the alternative, to be “remote and speculative.” *Id.* at 814. The Ninth Circuit rejected this rationale, holding that the alternative was feasible, and should have been considered in the EIS, even if the funding was not within the jurisdiction of the U.S. Forest Service itself. *Id.*

The Coalition urges the Bureau to consider a broad range of feasible alternatives, commensurate in breadth with the broad purpose of the action discussed above, including alternatives that are not within the Bureau’s jurisdiction.

D. The Bureau has failed to fulfill its scoping obligations.

Although the Bureau has begun the scoping process, based on the NOI, it appears that the Bureau will not proceed in a manner consistent with the scoping requirements set forth in the NEPA regulations.

Under 40 C.F.R. § 1501.7(a), the Bureau must:

- (1) Invite the participation of affected Federal, State, and local agencies, any affected Indian tribe, the proponent of the action, and other interested persons (including those who might not be in accord with the action on environmental grounds), unless there is a limited exception under § 1507.3(c). An agency may give notice in accordance with § 1506.6.
- (2) Determine the scope (§ 1508.25) and the significant issues to be analyzed in depth in the environmental impact statement.
- (3) Identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (§ 1506.3), narrowing the discussion of these issues in the statement to a brief presentation of why they will not have a significant effect on the human environment or providing a reference to their coverage elsewhere.

(4) Allocate assignments for preparation of the environmental impact statement among the lead and cooperating agencies, with the lead agency retaining responsibility for the statement.

(5) Indicate any public environmental assessments and other environmental impact statements which are being or will be prepared that are related to but are not part of the scope of the impact statement under consideration.

(6) Identify other environmental review and consultation requirements so the lead and cooperating agencies may prepare other required analyses and studies concurrently with, and integrated with, the environmental impact statement as provided in § 1502.25.

(7) Indicate the relationship between the timing of the preparation of environmental analyses and the agency's tentative planning and decisionmaking schedule.

First, in its Notice, the Bureau indicated its intent to invite the State and Federal Contractors Water Agency to participate as a cooperating agency, but it did not indicate an intent to invite the state and federal water contractors themselves despite the fact that they are “affected local agencies.” 40 C.F.R. § 1501.7(a)(1). This omission should be corrected. Not only are the state and federal contractors directly affected by the Bureau’s decisions, and not only do the contractors have a manifest and sustained commitment to improving the health of the Delta ecosystem, they have also developed considerable expertise on the Delta and Delta ecosystem over the decades, and especially in the last decade or more. Their expertise can assist the Bureau in identifying and analyzing feasible alternatives.

In addition, the Coalition requests that the Bureau invite the Federal Emergency Management Agency (FEMA) to participate as a cooperating agency. Among other things, Executive Order 11988 requires federal agencies to take action to reduce the risk of flood loss, and restore the natural and beneficial values of floodplains. Moreover, FEMA’s implementation of the National Flood Insurance Program in communities in the Delta may affect listed species and their designated critical habitat. Indeed, FEMA has recently agreed to request consultation with the Services regarding the potential impacts of its implementation of the National Flood Insurance Program in Delta communities to settle litigation brought by the Coalition under the Endangered Species Act. See *Coalition for a Sustainable Delta v. Federal Emergency Management Agency, et al.*, No. 1-09-cv-02024 LJO –BAM (Mar. 9, 2012).

Second, the Bureau should engage with the federal and state water contractors in developing the proposed action and alternatives. However, according to the NOI, the Bureau “[w]ill engage with the Department of Water Resources in developing the proposed action and alternatives. . . . [and] also consider including in the alternative analysis reasonable alternatives to the proposed action identified through the scoping process.” 77 Fed. Reg. at 18,860.

Third, the Bureau should “[i]ndicate any public environmental assessments and other environmental impact statements which are being or will be prepared that are related to but are not part of the scope of the impact statement under consideration.” 40 C.F.R. § 1501.7(a)(5). At this time, the Bureau and the Department of Water Resources have re-initiated formal consultation with the Services under section 7 of the Endangered Species Act on the impacts of coordinated long-term operation of the CVP and SWP. In addition, the Bay Delta Conservation Plan (BDCP) and BDCP EIR/EIS are being developed, as are the Delta Plan and Delta Plan EIR/EIS. The State Water Resources Control Board is in the process of developing revisions to the 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (2006 Bay-Delta Plan) and preparing a Supplemental Environmental Document to analyze the potentially significant impacts of the project under the California Environmental Quality Act.¹

The NOI fails to mention these other consultations, plans, and environmental review documents despite their potential to inform scoping and subsequent environmental analysis of the Bureau’s proposed action. The Bureau is undoubtedly aware of these other consultations, plans, and related environmental analyses, but the public should be informed of the relationships between them and the Bureau’s proposed action to foster the goals of the scoping process and subsequent NEPA analysis.

Fourth, the Bureau has not “[i]ndicate[d] the relationship between the timing of the preparation of environmental analyses and the agency’s tentative planning and decisionmaking schedule.” 40 C.F.R. § 1501.7(a)(7). Indeed, it has not published a schedule for the environmental review process or the Bureau’s decisionmaking schedule.

Because the proposed action has profound implications for millions of Californians, the Bureau should scrupulously follow the NEPA procedures, including scoping at the outset to identify a reasonable range of feasible alternatives, and to identify the issues to be analyzed in the EIS.

III. Next Steps.

As the Bureau proceeds to comply with NEPA by analyzing the effects of the proposed action and a reasonable range of alternatives, there are a number of steps it should take to comply with the spirit and letter of the law.

A. Engage meaningfully with cooperating agencies.

The Bureau should engage meaningfully with cooperating agencies, including the individual federal and state water contractors. These agencies have special expertise. Further, they represent tens of millions of water users and citizens across the State of California.

¹ The full title of the project is Update to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary: Water Quality Objectives for the Protection of Southern Delta Agricultural Beneficial Uses; San Joaquin River Flow Objectives for the Protection of Fish and Wildlife Beneficial Uses; and the Program of Implementation for Those Objectives.

The CEQ regulations require the Bureau to “[u]se the environmental analysis and proposals of cooperating agencies with jurisdiction by law or special expertise, to the maximum extent possible. . .,” and meet with each cooperating agency. 40 C.F.R. § 1501.6. In addition, as mentioned above, the Department of the Interior’s NEPA regulations require the Bureau “to consult, coordinate, and cooperate with relevant State, local, and tribal governments. . .” 43 C.F.R. § 46.155. Furthermore, CEQ guidance encourages the Bureau and other lead agencies to go beyond the minimum requirements in engaging the cooperative agencies and interested stakeholders in the process. Council on Environmental Quality, *Collaboration in NEPA: A Handbook for NEPA Practitioners* (2007).

The Bureau should follow relevant regulatory requirements and guidance and seek to work collaboratively with the federal and state water contractors rather than pay lip service to those public agencies and plow forward with a proposed action opposed by the State of California and numerous public water agencies and already deemed by a federal court to be arbitrary and capricious.

B. Develop a purpose and need that are legally adequate and reflect the reality facing the people of California.

As demonstrated in Section III.C.1., above, the Bureau’s stated purpose and need are too narrow to satisfy the requirements of NEPA. In addition, the stated purpose and need conflict with California’s state policy mandating that the Delta be managed in a way that achieves the coequal goals of a reliable supply of water to meet the needs for the people of California while protecting, restoring, and enhancing the Delta ecosystem.

The Bureau must state the purpose and need of the proposed action in terms broad enough to capture the underlying purpose of protecting listed species in a manner consistent with federal law that will not, even in dry years, lead to a failure to provide sufficient water to meet the needs of tens of millions of Californians as has happened in the recent past.

C. Conduct a thorough and even-handed analysis of the preferred and other alternatives.

The alternatives analysis is the heart of an EIS. 40 C.F.R. § 1502.14. As was mentioned earlier, the Bureau must “[r]igorously explore and objectively evaluate all reasonable alternatives” *Id.* In Section III.B.2, we demonstrated why the proposed action should not be among the alternatives the Bureau analyzes. In short, the proposed action is *per se* unreasonable. At the same time, the Bureau cannot give alternatives to its preferred course of action short shrift, which is equivalent to putting a thumb on the scale when weighing options. Instead, each alternative must be evaluated in its own right.

With the above considered, we offer two alternatives, each of which merits careful consideration by the Bureau during the environmental review process. Importantly, each of these alternatives is consistent with the true underlying purpose and need of the action. In addition, we believe an alternatives analysis will demonstrate that they will result in benefits for the pertinent listed species that are equal to or greater than the preferred alternative.

RPA alternative 1

	Description	Trigger(s)	Time frame
Action 1	Triggers for OMR reductions for delta smelt	<ul style="list-style-type: none"> ▪ Delta smelt: <ul style="list-style-type: none"> ➤ adult action (Jan. 1 until onset of larval/juvenile action) – reduce OMR to a level between -5,000 cfs and -3,500 cfs only when appropriate in light of analysis of turbidity levels and normalized salvage data in the south Delta. ➤ larval/juvenile action (onset of spawning indicated by presence of spent females in IEP trawl or at either facility until June 15) – reduce OMR to no more negative than -5,000 cfs when more than 25% of the delta smelt collected in the spring kodiak or 20mm trawl are located in the south Delta or the adult cumulative salvage index immediately preceding spawning is high; lift this restriction if Qwest is >12,000 cfs and/or secchi depth in the south Delta is >85 cm. 	January 1 – June 15
Action 2	San Joaquin River inflow requirement for salmon	<ul style="list-style-type: none"> ▪ Flows at Vernalis (7-day running average shall not be less than 7 percent of the target requirement) shall be based on the New Melones Index as follows: <ul style="list-style-type: none"> ➤ if the Index is 999 TAF or less then there is no minimum ➤ if the Index is 1000-1399 TAF then the minimum is the greater of the D-1641 requirement or 1500 cfs ➤ if the Index is 1400-1999 TAF then the minimum is the greater of the D-1641 requirement or 3000 cfs ➤ if the Index is 2000-2499 TAF then the minimum is 4500 cfs ➤ if the Index is above 2499 TAF then the minimum is 6000 cfs 	April 1 – May 30
Action 3	Predation control program targeting black bass, striped bass, and pike minnows for salmon and delta smelt	<ul style="list-style-type: none"> ▪ Black bass: catch limit – 12 inches, bag limit – 10 ▪ Striped bass: catch limit – 12 inches, bag limit – 5 ▪ Pike minnow: sport-reward program - \$2/fish, 8-inch size limit 	year-round
Action 5	Floodplain habitat restoration for salmon and delta smelt	<ul style="list-style-type: none"> ▪ Restore or create at least 10,000 acres of tidally influenced seasonal or perennial wetlands 	year-round
Action 6	Trap and haul program for juvenile salmonids entering the Delta from the San Joaquin River	<ul style="list-style-type: none"> ▪ Begin operation of downstream migrant fish traps upstream of the Head of Old River on the San Joaquin River. ▪ “Barge” all captured juvenile salmonids through the Delta, release at Chipps Island. ▪ Tag subset of fish in order to quantify effectiveness of the program ▪ Such a program could capture 10% to 20% of outmigrating juvenile salmonids and improve their through-Delta survival by 900% (from 0.1 typical without transport, to 0.9 with transport), improving average through-Delta survival by 9% to 19% 	March - June
Action 7	Work with Pacific Fisheries Management Council, CDFG and NMFS Southwest Fishery Science Center to minimize harvest mortality of natural origin Central Valley Chinook salmon	<ul style="list-style-type: none"> ▪ Evaluate and modify ocean harvest for consistency with VSP standards ▪ In particular, quantitative analysis of proposed harvest management should show that abundance, productivity, and diversity (age-composition) are not appreciably reduce viability for natural origin CV Chinook salmon stocks ▪ Natural origin fall run Chinook should also be included. 	year-round

RPA alternative 2

	Description	Trigger(s)	Time frame
Action 1	Floodplain development limits for salmon and delta smelt	<ul style="list-style-type: none"> ▪ Incorporate guidance into flood hazard mapping to help communities comply with the ESA ▪ Require communities to demonstrate ESA compliance for all flood plain map revisions ▪ Prioritize consideration of ESA listed species and critical habitat when selecting flood insurance studies ▪ Develop and implement floodplain management criteria ▪ Refine community rating system to provide credits for natural and beneficial functions ▪ Prohibit new development and substantial improvements to existing development within any designated floodway or within 170 feet of the ordinary high water line of any floodway 	year-round
Action 2	Levee vegetation and armoring policy for salmon and delta smelt	<ul style="list-style-type: none"> ▪ Bar removal of vegetation from levees ▪ Require planting of trees and shrubs on levees ▪ Armor levees with vegetation, woody material, and root reinforcement material; phase out use of rip-rap 	year-round
Action 3	Predation control program targeting black bass, striped bass, and pike minnows for salmon and delta smelt	<ul style="list-style-type: none"> ▪ Black bass: catch limit – 12 inches, bag limit – 10 ▪ Striped bass: catch limit – 12 inches, bag limit – 5 ▪ Pike minnow: sport reward program - \$2/fish, 8-inch size limit 	year-round
Action 4	Water quality improvement program at the Sacramento Regional Wastewater Treatment Plant and the Fairfield-Suisun Sewer District treatment plant for salmon and delta smelt	<ul style="list-style-type: none"> ▪ Advance timing of upgrades at the Sacramento Regional Wastewater Treatment Plant to 2017 ▪ Implement advanced treatment technologies at the Fairfield-Suisun Sewer District treatment plant to reduce the localized nutrient imbalances 	year-round
Action 5	Floodplain habitat restoration for salmon and delta smelt	<ul style="list-style-type: none"> ▪ Restore or create at least 10,000 acres of tidally influenced seasonal or perennial wetlands 	year-round
Action 6	Trap and haul program for juvenile salmonids entering the Delta from the San Joaquin River	<ul style="list-style-type: none"> ▪ Begin operation of downstream migrant fish traps upstream of the Head of Old River on the San Joaquin River. ▪ “Barge” all captured juvenile salmonids through the Delta, release at Chipps Island. ▪ Tag subset of fish in order to quantify effectiveness of the program ▪ Such a program could capture 10% to 20% of outmigrating juvenile salmonids and improve their through-Delta survival by 900% (from 0.1 typical without transport, to 0.9 with transport), improving average through-Delta survival by 9% to 19% 	March - June
Action 7	Harvest restrictions for salmon	<ul style="list-style-type: none"> ▪ Impose salmon harvest restrictions to reduce by-catch of winter-run and spring-run Chinook to less than 10 percent of age-3 cohort in all years 	salmon fishing season

V. Conclusion

The Bureau has an opportunity to correct past mistakes of both the Bureau and the federal fisheries agencies. The NEPA process was designed precisely to make federal agencies stop and think about the consequences of their conduct before they act. We urge you to do so rather than to simply view the NEPA process as a hurdle to an action the Bureau is already committed to take.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. D. Phillimore', written in a cursive style.

William D. Phillimore
Board Member

Encl.

Exhibit 1 – References

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