Sea Level Rise, Saltwater Intrusion and Endangered Fisheries – Shifting Baselines for the Bay Delta Conservation Plan

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I. WHEN IS A FUTURE BASELINE REQUIRED?

UC Davis School of Law's March 2015 symposium on *The Future of CEQA*, out of which this article evolved, focused on how the substantive law governing the operation of the California Environmental Quality Act might change in the coming decades. In my presentation for the symposium's final panel, I suggested that certain changes in CEQA substantive law may well be driven by the increasing recognition that the background conditions against which projects will operate will themselves change significantly in the future.

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The basic environmental impact assessment paradigm, under the federal National Environmental Policy Act (NEPA)[1] and state laws such as the California Environmental Quality Act (CEQA)[2], is as follows: set forth an accurate project description[3], describe baseline environmental conditions at the time the project is being considered for approval[4], assess the impacts of the proposed project on baseline environmental conditions[5], and then present a reasonable range of alternatives and feasible mitigation to reduce the significant adverse impacts of the project on baseline environmental conditions.[6] The critical temporal assumption to this basic environmental impact assessment paradigm is that appropriate alternatives and mitigation will be determined in reference to a set of baseline environmental conditions at a fixed point in time when the environmental impact assessment document is being prepared.

At the time NEPA and CEQA were adopted, around 1970, this temporal assumption made sense. In 1970, it was perhaps difficult to envision a situation where a lead agency could credibly predict future changes in background conditions that would occur independent of the project being considered or similar nearby proposed projects. Grounding environmental impact assessment on a comparison of project impacts against existing conditions was a logical approach.

The effects of climate change, however, present a challenge to the viability of this basic environmental impact assessment paradigm, particularly for projects that will operate many decades into the future.[7] With climate change, the background environmental conditions against which long-term projects operate will change: air and water temperatures will be higher, the snowpack will be smaller, sea levels will rise. As these background environmental conditions shift during the project's operation, the project's impacts on the environment will also change and may become more severe. Yet, if the environmental impact assessment remains tethered to the baseline conditions when the environmental impact assessment was prepared, and disregards the ways such baseline conditions will shift as a result of climate change, the assessment will fail to identify the true impacts of the project during its anticipated lifetime. Thus, effective alternatives and mitigation to address these true impacts will not be considered or incorporated into the project.

In 2013, the California Supreme Court issued a landmark CEQA holding that

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[1] 42 U.S.C. §§ 4321-4347.

[2] CAL. PUB. RES. CODE §§ 21000-21189.3.

[3] MICHAEL REMY, TINA THOMAS, JAMES MOOSE & WHITMAN MANLEY, GUIDE TO CEQA/CALIFORNIA ENVIRONMENTAL QUALITY ACT 414-432 (11th ed. 2007).

[4] *Id.* at 433-439.

[5] *Id.* at 439-455.

[6] *Id.* at 455-58, 458-65.

[7] *See generally* Paul Stanton Kibel, *A Salmon Eye Lens on Climate Adaptation*, 19 OCEAN & COASTAL L.J. 65 (2013).

authorized state and local agencies in California to depart from the basic environmental impact assessment paradigm to more effectively address changes in baseline conditions that are expected to occur during the lifetime of a proposed project.[8] In its decision in *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (*Smart Rail*), the Court reviewed an environmental impact report ("EIR") for a Los Angeles urban light rail project which considered air quality and traffic impacts against a future environmental baseline that included anticipated population increases in the vicinity of the project.[9] The use of this future baseline had been affirmed by the California Court of Appeal, which held: "[t]he important point, in our view, is the reliability of the projections and the inevitability of the changes on which those projections are based. . .Population growth, with its concomitant effects on traffic and air quality, is not hypothetical in Los Angeles County; it is inevitable."[10]

On review, the issue was presented to the California Supreme Court in *Smart Rail* as an "either/or" question: when is it appropriate to use a future baseline for CEQA analysis instead of, in lieu of, an existing conditions baseline? A key aspect of the Court's 2013 *Smart Rail* decision was its rejection of this proposed "either/or" framework for evaluating the relationship between existing and future baselines.[11] Instead, the Court focused on the appropriate use of "multiple" baselines in CEQA documents.[12]

That is, in *Smart Rail*, the Court held that it is permissible for a lead agency to use a future baseline when there are inevitable changes in the environmental setting that will occur during the duration of the project.[13] But, and this is a very important but, the Court made clear that while there may be situations where it is permissible or even advisable for a lead CEQA agency to use a future baseline in its environmental impact analysis, this does not mean that the lead agency is generally allowed to forgo analysis of the project's impact as compared to existing conditions.[14]

As the Court explained in *Smart Rail*, "nothing in CEQA law precludes an agency. . .from considering both types of baselines – existing and future conditions – in its primary analysis of the project's significant adverse impact."[15] The California Supreme Court then further elaborated:

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[8] Neighbors for Smart Rail v. Exposition Metro Line Construct. Auth., 57 Cal. 4th 439 (2013).

[9] *Id.* at 445.

[10] Neighbors for Smart Rail v. Exposition Metro Line Construct. Auth., 141 Cal. Rptr. 3d 1, 17-19 (Cal. Ct. App. 2012).

[11] *Smart Rail,* 57 Cal. 4th at 452-457.

[12] *Id.* at 449-456.

[13] *Id.* at 453.

[14] *Id.* at 454-456.

[15] *Id.* at 454.

> Even when a project is intended and expected to improve conditions in the long term – 20 or 30 years after an EIR is prepared – decision makers and members of the public are entitled under CEQA to know the short- and medium-term environmental costs of achieving that desirable improvement. . .Though we might rationally choose to endure short- or medium-term hardship for a long-term, permanent benefit, deciding to make that tradeoff requires some knowledge about the severity and duration of the near-term hardship. An EIR stating that in 20 or 30 years the project will improve the environment, but neglecting, without justification, to provide any evaluation of the project's impacts in the meantime, does not give due consideration of both the short-term and long-term effects of the project.[16]

The Court cautioned that allowing CEQA lead agencies to ignore near-term effects on existing conditions "would sanction the unwarranted omission of information on years or decades of a project's environmental impacts and open the door to gamesmanship in the choice of baselines."[17]

From this holding, we understand that the Court's multiple baselines approach is grounded in CEQA's requirement that both short-term and long-term project impacts must be evaluated. Otherwise, if a CEQA lead agency were allowed only to focus on a distant point in time in the future with changed baseline conditions, it would be allowed to bypass analysis of the more immediate effects of the project on existing conditions.[18] With *Smart Rail*, it is now generally permissible for a lead CEQA agency to employ a future baseline in addition to an existing baseline. The anticipated and inevitable shifts in environmental conditions (e.g. rising temperatures, snowpack reduction, sea level rise) resulting from climate change, due to their inevitable nature, appear to fall within *Smart Rail's* bounds of when the use of such where multiple baselines would be permissible.[19]

The question left open by *Smart Rail* is whether there are situations where CEQA not only *permits* the use of a future baseline but *requires* it. Although in one sense this is a CEQA-specific question, the answer to this question may also have implications for how climate change is addressed under NEPA and other non-California state environmental impact assessment laws. As such, these other jurisdictions may look to California's answer and approach as guidance and persuasive precedent.

This article suggests that this open question may soon be addressed in

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[16] *Id.* at 455.

[17] *Id.* at 456.

[18] The CEQA obligation to assess both short-term and long-term impacts is set forth in the CEQA Guidelines. *See* CAL. CODE REGS., tit. 14, § 15126.2 (West 2015).

[19] THE LAW OF ADAPTATION TO CLIMATE CHANGE: U.S. AND INTERNATIONAL ASPECTS 5-6, 95, 109-11 (Michael B. Gerrard and Katrina Fischer Kuh eds., 2012).

subsequent litigation challenging the CEQA climate change analysis for the Bay Delta Conservation Plan ("BDCP"), a fishery restoration-water supply project proposed in California.[20] To understand the relevant CEQA climate change issues related to the BDCP, our starting point is the 2008 Biological Opinion issued by the United States Fish & Wildlife Service for the delta smelt, a fish species protected under the federal Endangered Species Act.[21]

II. NEXUS BETWEEN X2 AND DELTA FISHERIES – 2008 USFWS BIOLOGICAL OPINION FOR THE DELTA SMELT

In 2008, pursuant to the Endangered Species Act ("ESA"), the United States Fish & Wildlife Service ("USFWS") issued its biological opinion ("Bi-Op") for the delta smelt in connection with the proposed "coordinated operations" of the federal Central Valley Project ("CVP") and California's State Water Project ("SWP").[22] The CVP and SWP, which deliver water to agricultural and urban water users throughout the state, both divert significant amounts of water from and upstream of the Delta where the fresh water of the Sacramento and San Joaquin Rivers flow into San Francisco Bay (hereinafter the "Delta" or "Bay Delta").[23] In this 2008 Bi-Op, the USFWS determined that it could not issue an incidental take permit for the proposed CVP-SWP coordinated operations unless these operations ensured adequate fresh water flows into the Delta.[24] According to the USFWS, adequate fresh water flows would be met if "X2," which represents the distance salt water has traveled into the Delta by measuring "the intrusion of water with a salinity level of two parts per thousand,"[25] was located at a distance of 74-81 kilometers eastward of the Golden Gate Bridge.[26]

This Bi-Op determined that maintaining X2 at this particular locational range was needed to ensure the survival and recovery of the endangered delta smelt.[27] This decision was based on data showing a strong correlation between increases in salinity levels beyond X2 levels and decreases in suitable abiotic habitat for

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[20] *See generally* CAL. DEPT. OF WATER RES., BAY DELTA CONSERVATION PLAN ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT HIGHLIGHTS (December 2013), http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Highlights_of_the_Draft_EIR-EIS_12-9-13.sflb.ashx [hereinafter BDCP HIGHLIGHTS].

[21] U.S. FISH AND WILDLIFE SERV., FORMAL ENDANGERED SPECIES ACT CONSULTATION ON THE COORDINATED OPERATIONS OF THE CENTRAL VALLEY PROJECT AND STATE WATER PROJECT (Dec. 15, 2008), http://www.fws.gov/sfbaydelta/documents/SWP-CVP_OPs_BO_12-15_final_signed.pdf [hereinafter REVISED DELTA SMELT BI-OP].

[22] *Id.*

[23] *See generally id.*

[24] *Id.* at 285-293.

[25] Westlands Water District v. U.S. Dept. of Int., 376 F.3d 853, 876 (9th Cir. 2004).

[26] REVISED DELTA SMELT BI-OP, *supra* note 21, at 282.

[27] *Id.*

delta smelt.[28] The Bi-Op explained that the location of "X2 is largely determined by Delta outflow, which in turn is largely determined by the difference between total Delta inflow and the total amount of water exported,"[29] and that the effects of the proposed CVP-SWP coordinated operation on X2 will have "significant adverse direct and indirect effects on delta smelt."[30]

The Bi-Op contained a graph indicating that the proposed CVP-SWP coordinated operations would cause X2 to shift upstream to approximately 90 kilometers east of the Golden Gate Bridge.[31] The USFWS found that a shift of X2 upstream to this location, which was nearly 15% farther upstream than the current average location of X2, could cause the delta smelt to go extinct.[32]

The 2008 USFWS Bi-Op for the delta smelt was challenged in federal court, and in April 2014, this Bi-Op was upheld by the Ninth Circuit Court of Appeals.[33] In its ruling in *San Luis v. Jewell*, the Ninth Circuit found that "[a]s the combined pumping operations of the SWP/CVP remove hundreds of gallons of fresh water from the Bay Delta, X2. . .shifts eastward towards the Delta….The Bi-Op determined that the 'long-term upstream shift in X2. . .has caused a long-term decrease in habitat area availability for the delta smelt' and it set forth an adaptive management program to minimize the effect of project pumping on X2."[34] In November 2014, the United States Supreme Court denied cert to review the Ninth Circuit Court of Appeal's decision in *San Luis v. Jewell*.[35]

III. NEXUS BETWEEN X2 AND SEA LEVEL RISE – 2014 RECLAMATION *CLIMATE IMPACT ASSESSMENT*

In September 2014, the Bureau of Reclamation released a report titled Climate Impact Assessment for the Sacramento and San Joaquin Basin ("Reclamation *Climate Impact Assessment*").[36] Reclamation prepared the Climate Impact Assessment in connection with the operations of its Central Valley Project (CVP), which diverts, stores, and delivers waters from the Sacramento River and San Joaquin River watersheds and includes such

[28] *Id.* at 233-38.

[29] *Id.* at 236.

[30] *Id.* at 237.

[31] *Id.* at 265, fig. E-19.

[32] *Id.* at 235, 237.

[33] *See* San Luis & Delta-Mendota Water Authority v. Jewell, 747 F.3d 581 (9th Cir. 2014).

[34] *Id.* at 622.

[35] San Luis & Delta-Mendota Water Authority v. Jewell, 747 F.3d 581 (9th Cir. 2014), *cert denied sub nom.*, 135 S.Ct 948 (Jan. 12, 2015).

[36] U.S. BUREAU OF RECLAMATION, U.S. DEPT. OF INT., SACRAMENTO AND SAN JOAQUIN BASINS CLIMATE IMPACT ASSESSMENT (September 2014), http://www.usbr.gov/WaterSMART/wcra/docs/ssjbia/ssjbia.pdf [hereinafter CLIMATE IMPACT ASSESSMENT].

structures as Shasta Dam on the Sacramento and Friant Dam on the San Joaquin.[37] The report focused on how projected salinity increases induced by sea level rise would impact CVP agricultural and urban water supplies, rather than impacts on smelt or fisheries.[38]

On page 39 of the 2014 Reclamation *Climate Impact Assessment* there is a section titled "Delta Salinity" that contains a table showing salinity measurements and projections, see Figure 1 below.

					Percent Change from CT_NoCC	
Metric	**Period**	**CT_NoCC**	**CT_Q5**	**CAT12**	**CT_Q5**	**CAT12**
Delta Salinity – Emmaton (average annual EC in µS/cm)	2012-2040	1,782	1,985	2,198	11%	23%
	2041-2070	1,768	2,268	2,751	28%	56%
	2071-2099	2,151	3,940	4,036	83%	88%
Delta Salinity – Jersey Point (average annual EC in µS/cm)	2012-2040	1,536	1,654	1,807	8%	18%
	2041-2070	1,600	1,885	2,211	18%	38%
	2071-2099	1,718	2,629	2,837	53%	65%

Figure 1. Summary of Salinity Monitoring, Climate Impact Assessment for the Sacramento and San Joaquin Basin[39]

Figure 1 focuses on two salinity monitoring locations in the Delta, one at a location called Emmaton and the other at a location upstream called Jersey Point.[40] The table shows the anticipated twenty-first century increases in salinity levels at these locations resulting from climate change-induced sea level rise and saltwater intrusion.[41]

For the period from 2041-2070, Table 7 projects a 28%-56% increase in salinity levels at Emmaton and an 18%-38% increase in salinity levels at Jersey Point. For the period from 2071-2099, Table 7 projects an 83%-88% increase in salinity at Emmaton and a 53%-65% increase in salinity at Jersey Point. Taken together, this data indicates that, as a result of climate induced sea level rise, salinity levels in these two Delta locations are expected to rise by 53-88% over the coming century.[42] Keep in mind, these are not the projections of environmental groups or the United States Environmental Protection Agency or

[37] *Central Valley Project*, U. S. DEPT. OF INT., https://www.usbr.gov/projects/Project.jsp?proj_Name=Central+Valley+Project (last visited April 16, 2015).

[38] Climate Impact Assessment, *supra* note 36, at 39 ("Delta salinity conditions provide a measure of the risk to in-Delta and export water users that their water supplies will have a higher salinity than what is required to be in compliance with the standards for urban and agricultural beneficial uses set by the [State Water Resources Control Board].").

[39] *Id.* at 40, tbl. 7.

[40] *Id.*

[41] *Id.*

[42] *Id.*

the USFWS. These are the projections of the Bureau of Reclamation, which operates the CVP.

While there was no mention in Table 7 of the 2014 Reclamation *Climate Impact Assessment* of the current location of X2 or of the upstream location where X2 is projected to shift as a result of climate change induced sea level rise, the implications of Table 7 for X2 are plain to see. If sea level rise will cause salinity levels in the Delta to increase by 53-88% in the coming century, then it follows that sea level rise will also cause X2 to shift much further upstream.

The information presented in Table 7 of the 2014 Reclamation *Climate Impact Assessment* is therefore quite bad news for the delta smelt.

IV. 2013 DRAFT EIR-EIS FOR THE BAY DELTA CONSERVATION PLAN

A. Overview of BDCP

There are two underlying purposes of the BDCP, which are often referred to as the co-equal goals of the BDCP.[43] These co-equal goals are: (i) to restore the Delta's ecosystem and fisheries; and (ii) to improve water supply reliability.[44]

The BDCP was drafted as a multi-species habitat conservation plan (HCP) to satisfy the requirements of Section 10 of the federal Endangered Species Act.[45] As an HCP, the focus of the BDCP was on the restoration of several ESA-listed fisheries in the Delta, namely the endangered delta smelt and several endangered salmon and steelhead trout runs.[46]

Additionally, the BDCP proposed a series of components that would guide the activities of the Bureau of Reclamation's CVP and the California Department of Water Resources' SWP for many decades, perhaps as long as 50 years out.[47] The components of the BDCP (as presented in the last draft environmental impact assessment documented issued in late 2013) include the following main three items. First, the BDCP proposes moving the main point of Delta diversion for the CVP and SWP from the south Delta to the north Delta and construction of two new tunnels to transport water from the new north point of diversion to agricultural and urban water users south of the Delta.[48] Second, the BDCP outlines a series of riparian enhancement projects designed to improve spawning

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[43] *See* Rita Schmidt Sudman, *Meeting the Co-Equal Goals? The Bay Delta Conservation Plan*, WESTERN WATER, May/June 2013, *available at* http://www.watereducation.org/western-water-excerpt/meeting-co-equal-goals-bay-delta-conservation-plan.

[44] BDCP HIGHLIGHTS, *supra* note 20, at 2 ("The plan would help restore fish and wildlife species in the Delta and to improve reliability of water supplies…").

[45] *Id.* at 2.

[46] *Id.* at 28-31.

[47] *Id.* at 2 ("It is a planning document, to be implemented over 50 years…").

[48] *Id.* at 3, 7-10.

habitat for fisheries.[49] Third, the BDCP anticipates a potential 18% increase in the amount of fresh water diverted out of or upstream of the Delta – diversions sometimes called Delta exports.[50] An 18% increase in fresh water diversions out of the Delta would result in a significant decrease in the amount of fresh water flowing both into and through the Delta.

There are four lead agencies for the BDCP – the federal Bureau of Reclamation, USFWS, and National Marine Fisheries Service, as well as California's Department of Water Resources ("DWR").[51] Because the BDCP is a joint undertaking of these agencies, a joint EIR-EIS is being prepared pursuant to the NEPA and CEQA. The analysis below focuses on the CEQA-specific analysis in the December 2013 Draft EIR-EIS for the BDCP ("Draft EIR-EIS") rather than the NEPA-specific analysis in this document.

B. Appendix 2.C of the BDCP

Appendix 2.C of the BDCP was titled "Climate Change Implications and Assumptions" and reports: "Scenarios modeled by the California Climate Action Team project sea level rise increases along the California coast of 1.0 to 1.5 feet by 2050, and 1.8. to 4.6 feet by 2100. However, if California's sea level continues to mirror global trends, increases in sea level during this century could be considerably greater."[52] So in Appendix 2.C. of the BDCP DWR acknowledges that the best available evidence indicates that by the end of the century sea level rise could be 4.6 feet (54 inches) and possibly higher.[53]

C. Appendix 29A of the Draft EIR-EIS for the BDCP

Appendix 29A of the Draft EIR-EIS for the BDCP is titled "Effects of Sea Level Rise on Delta Tidal Flows and Salinity."[54] Figure 29A-13 (shown below in Figure 2) presents a graph showing how projected increases in sea level rise

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[49] *Id.*

[50] U.S. BUREAU OF RECLAMATION, U.S. FISH & WILDLIFE SERV., NAT'L MARINE FISHERIES SERV., CAL. DEPT. OF WATER RES., DRAFT ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT FOR THE BAY DELTA CONSERVATION PLAN, fig. 5-17. [hereinafter DRAFT EIR/EIS], *available at* http://baydeltaconservationplan.com/PublicReview/2013PublicReview DraftEIR-EIS.aspx.Figure 5-17 compares annual delta water exports under the No Action alternative and under BDCP alternative 4H1. Figure 5-17 annual shows delta water exports under the No Action alternative to be 4,441 AF and annual delta water exports under BDCP alternative 4H1 to be 5,455 AF (which is an increase of 18%).

[51] *Id.* at ES-6.

[52] U.S. BUREAU OF RECLAMATION, U.S. FISH & WILDLIFE SERV., NAT'L MARINE FISHERIES SERV., CAL. DEPT. OF WATER RES., 2013 PUBLIC DRAFT BAY DELTA CONSERVATION PLAN, 2.C-12 [hereinafter DRAFT BDCP], *available at* http://baydeltaconservationplan.com/PublicReview/ 2013PublicReviewDraftBDCP.aspx.

[53] *Id.*

[54] DRAFT EIR/EIS, *supra* note 50, at Appendix 29A.

are expected to shift the location of X2.

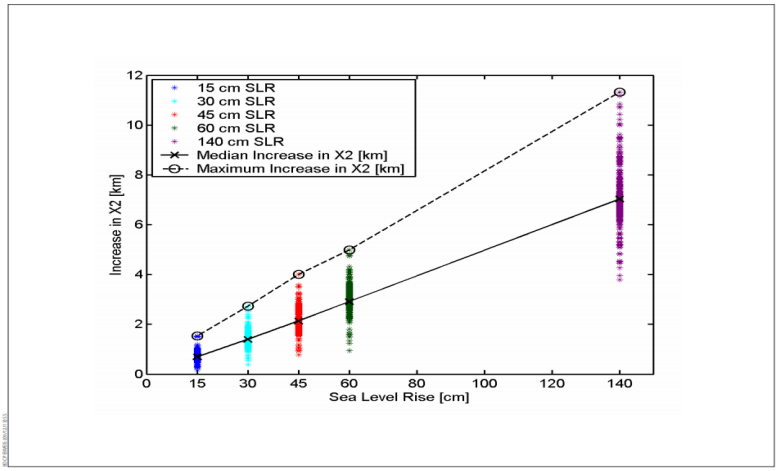

Figure 2. Simulated Daily Increases in X2 (Draft BDCP EIR-EIS)[55]

According to this chart, a 30 centimeter sea level rise would cause X2 to shift approximately 1-2 kilometers upstream, a 45 centimeter sea level rise would cause X2 to shift 2-4 kilometers upstream, and a 140 centimeter sea level rise would cause X2 to shift 6-11 kilometers upstream.[56] As noted above, Appendix 2.C of the Draft BDCP acknowledged that sea level may rise more than 4.5 feet (or 140 centimeters).[57] Reading Appendix 2.C and Appendix 29A together, the Draft BDCP and EIR-EIS concede that climate change-induced sea level rise may cause the location of X2 to shift as much as 11 kilometers upstream from its current location.[58]

Yet, pursuant to the analysis and methodology in the 2008 USWFWS Bi-Op, if X2 were to shift 11 kilometers upstream (to a location approximately 90 kilometers east from the Golden Gate Bridge), the delta smelt faces the likelihood of extinction.[59] The projected upstream shift in X2 due to sea level rise places X2 close to the location where the USFWS has determined that delta smelt cannot survive, and the only way to counteract this anticipated upstream shift in X2 would be to ensure that additional fresh water flows into the Delta.[60]

Appendix 2.C and Appendix 29A of the Draft BDCP and EIR-EIS, respectively, therefore disclose the effect that climate change-induced sea level

55 *Id.* at App. 29A, fig. 29A-13.

56 *Id.*

57 DRAFT BDCP, *supra* note 52, at Appendix 2.C.

58 *Id.*; DRAFT EIR/EIS, *supra* note 50, at Appendix 29A.

59 REVISED DELTA SMELT BI-OP, *supra* note 21, at 237.

60 *Id.* at 235-38, 282-83.

rise will have on salinity levels and the location of X2.[61] These appendices, however, do not then contain subsequent analysis of how these expected changes in salinity levels and the location of X2 will impact the recovery and survival of the endangered delta smelt.

D. CEQA Baseline in the Draft EIR-EIS and BDCP

As noted above, DWR (which operates California's State Water Project) was the lead CEQA agency in connection with the Draft EIR-EIS prepared for the BDCP. In Appendix 3D of the BDCP EIR-EIS, DWR explains the baseline conditions it would be using in connection with its CEQA environmental impact analysis.[62]

In Appendix 3D, DWR states: "The CEQA baseline for assessing the significance of impacts of any proposed project is normally the environmental setting, or existing conditions, at the time the NOP [Notice of Preparation] is issued (State CEQA Guidelines Section 15125). . .This directive was recently interpreted and applied by the California Supreme Court (*Neighbors for Smart Rail*)…. According to the Court [in *Smart Rail*], the CEQA Guidelines establish the default of an existing conditions baseline even for projects expected to be in operation for many years or decades. . .[A]ny sole reliance on such a future baseline is only permissible where a CEQA lead agency can show, based on substantial evidence, that an existing conditions analysis would be misleading or without informational value. . .The CEQA baseline [for the BDCP] is existing conditions at the time of the NOP [February 2009]."[63]

This characterization of the *Smart Rail* holding is not wholly inaccurate but is certainly an incomplete and arguably misleading description of the decision. More specifically, the characterization of *Smart Rail* in Appendix 3D of the EIR-EIS fails to mention the California Supreme Court's express endorsement of the use of multiple baselines (that include future as well as existing conditions baselines) as a preferred approach to sole reliance on a future baseline.[64] Appendix 3D's characterization of *Smart Rail* suggests that CEQA would somehow prohibit or preclude DWR from using a future baseline to consider the effects of climate change-induced sea level rise on Delta fisheries, and this is erroneous. The California Supreme Court's decision in *Smart Rail* lends no support to this characterization and in fact contradicts it.[65] In *Smart Rail*, the California Supreme Court expressed reservations about the use of a future

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[61] DRAFT BDCP, *supra* note 52, at Appendix 2.C; DRAFT EIR/EIS, *supra* note 50, at Appendix 29A.

[62] DRAFT EIR/EIS, *supra* note 50, at Appendix 3D.

[63] *Id.* at 3D-1.

[64] *See* discussion *supra* Part I & notes 8-19; Neighbors for Smart Rail v. Exposition Metro Line Const. Auth., 57 Cal. 4th 439, 452-456 (2013).

[65] *Id.*

conditions baseline *in lieu of* an existing conditions baseline, not the use of a future conditions baseline *in addition* to an existing conditions baseline.

The definition of the CEQA baseline presented in Appendix 3D of the BDCP EIR-EIS was also set forth in a December 2013 document co-prepared by DWR titled *Highlights of Bay Delta Conservation Plan Environmental Impact Report/Environmental Impact Statement* ("*BDCP Highlights*").[66] The section of *BDCP Highlights* on "Water Supply" explained that "[s]ea level rise will push salt water further east into the Delta, requiring upstream water releases to push sea water out of the Delta and achieve in-Delta water quality standards. These operational changes, would in turn, decrease available water supply for south of Delta users."[67] The section of the *BDCP Highlights* on "Water Quality" then finds that "seawater intrusion caused by sea level rise or decreased Delta outflow. . .can increase the concentration of salts. Conversely, Delta outflow can decrease the effects of seawater intrusion."[68] *BDCP Highlights* thus explicitly and repeatedly notes how sea level rise will impact Delta salinity levels and how increasing fresh water flows in the Delta would help counter this seawater intrusion.

However, after noting that sea level rise will require additional instream flow to push saltwater intrusion back, the section of *BDCP Highlights* labeled "Environmental Baseline" provides: "In order to measure the magnitude of any impact, agencies must first identify a baseline condition to serve as a point of impact comparison. . .The CEQA baseline standard normally requires a project to review its impacts relative to 'change from existing conditions.'"[69] The section of *BDCP Highlights* on "Water Quality" also goes on to clarify: "Existing conditions. . . are the conditions at the time the NOP [CEQA Notice of Preparation] was issued – that is, 2009. These conditions do not include projections of future sea level rise and climate change. . ."[70] Again, this characterization of CEQA baseline conditions does not take into account the California Supreme Court's endorsement of multiple baselines in *Smart Rail*, which permits CEQA lead agencies to use a future conditions baseline, in addition to an existing conditions baseline.[71]

Similar to Appendix 2.C of the BDCP and Appendix 29A of the Draft EIR-EIS, the *BDCP Highlights* document acknowledges the ways sea level rise will impact Delta salinity and how this will require increased instream fresh water flow into the Delta, while simultaneously taking the position that this information regarding sea level rise will not be considered in the CEQA

66 BDCP HIGHLIGHTS, *supra* note 20.

67 *Id.* at 19.

68 *Id.* at 24.

69 *Id.* at 11.

70 *Id.* at 19 (emphasis added).

71 *See* citations *supra* note 64.

environmental impact assessment analysis of the BDCP.

As a result of DWR's exclusive reliance on an existing conditions baseline for its CEQA analysis in the Draft EIR-EIS, notwithstanding the disclosure in Appendix 2.C. of the BDCP and Appendix 29A of the Draft EIR-EIS that confirm the impacts of sea level rise on salinity levels and X2, the CEQA analysis in the Draft EIR-EIS does not factor the information on sea level rise and salinity levels into its significance determinations, alternatives analysis or mitigation analysis.[72] That is, the information in Appendix 2C and Appendix 29A is not then integrated into the rest of the CEQA analysis. This information is, so to speak, left out in the cold of the appendices. More to the point, the CEQA analysis does not consider (in the context of severity of projects impacts, alternatives or mitigation) how additional fresh water flows into the Delta (and a corresponding reduction in the amount of fresh water diversion) would be needed to prevent the upstream shift of X2 resulting from sea level rise.

One possible explanation for this disregard of the sea level rise impacts on delta smelt is hinted at in Appendix 3D of the Draft EIR-EIS. More specifically, Appendix 3D disclosed:

> DWR did not assume full implementation of a particular requirement of the [2008] delta smelt BiOp, known as the 'Fall X2' salinity standard, which in certain water year types can require large upstream reservoir releases in fall months for wet and above normal wet years to maintain the location of 'X2' as approximately 74-81 river kilometers inland from the Golden Gate Bridge. . .DWR determined that full implementation of the Fall X2 salinity standard was not certain to occur within a reasonable near-term time frame because of a recent court decision….As of [spring 2011], in litigation challenging the delta smelt BiOp filed by various water users, which DWR intervened, the United States District Court found that the USFWS failed to full explain the specific rationale used to determine the location for Fall X2 included in the RPA and remanded to the USFWS….This uncertainty, together with CEQA's focus on existing conditions, led to the decision to use a CEQA baseline without the implementation of the Fall X2 action in the draft EIR/EIS.[73]

Putting aside the question of the credibility of this explanation, with the 2014 reversal of the referenced federal district court decision by the Ninth Circuit Court of Appeals in *San Luis v. Jewell* and the United States Supreme Court's denial of review,[74] there is now no longer any uncertainty as to status of the X2 requirements in the 2008 USFWS delta smelt Bi-Op. The X2 requirements in the Bi-Op have now been upheld by the courts, so it would then follow that

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[72] BDCP HIGHLIGHTS, *supra* note 20, at 19.

[73] DRAFT EIR/EIS, *supra* note 50, at 3D-2.

[74] *See* discussion and citations *supra* Part II & notes 33-35.

DWR should now assume (in its CEQA analysis) that these X2 requirements will be fully implemented.

It is also perhaps understandable why DWR and the contractors that receive water from the State Water Project are reluctant to engage in environmental analysis which would demonstrate that more fresh water needs to be left instream to flow into the Delta, since this would result in reduced SWP water exports above and out of the Delta. However, the omission of this analysis renders the CEQA analysis in the Draft EIR-EIS legally vulnerable. Given that Appendix 2.C of the BDCP and Appendix 29A of the Draft EIR-EIS expressly concede and document the extent to which climate change-induced sea level rise will move X2 upstream, and given the well-established link between the position of X2 and the survival of the endangered delta smelt, DWR may have a difficult time convincing a court that there is substantial evidence to support the remainder of its CEQA fisheries impact analysis which assumes that X2 will remain in the same location. Such reliance on an assumption explicitly acknowledged by a lead CEQA agency to be incorrect may constitute an unlawful abuse of discretion.[75]

V. CONCLUSION – BDCP AS POTENTIAL TEST CASE ON SHIFTING BASELINES

As noted above, the effects of climate change present unique challenges to the basic environmental impact assessment paradigm, particularly for projects that will operate well into the future. This is because under the basic environmental impact assessment paradigm, the determination of significant adverse impacts and the identification of appropriate alternatives and mitigation to address such impacts are developed in reference to a single set of baseline conditions.[76] Yet, with climate change, the baseline conditions against which long-term projects operate will shift.[77] This means that the severity of the project's impacts and the measures needed to effectively counter these more severe project impacts will shift too.

In this context, the BDCP may serve as important test case to assess whether, under circumstances where climate change impacts are inevitable and quantifiable, the lack of consideration of future baseline conditions (alongside existing baseline conditions) may constitute a violation of CEQA. The BDCP may be the right test case on this question because the failure to consider the impacts of sea level rise on the survival of the endangered fisheries that are a primary focus of the BDCP arguably taints the remaining fisheries impact analysis of the project.

Without the use of such a future baseline, the CEQA analysis of how much

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75 *See* CAL. CODE CIV. PROC. § 1094.5(c) (West 2015).

76 REMY ET AL., *supra* note 3, at 414-465.

77 THE LAW OF ADAPTATION, *supra* note 19, at 5-6, 95, 109-11.

fresh water flow is needed to restore the delta smelt becomes delusional. The fisheries impact analysis remains tethered to long-term assumptions of saltwater intrusion and X2 that everyone (including the agencies that operate the CVP and SWP) knows to be incorrect.[78] More specifically, in this instance, the failure to use a future baseline results in fundamental flaws in the CEQA analysis of how the BDCP's proposed export of an additional 18% of fresh water from the Delta is likely to impact the endangered delta smelt.[79] Under these circumstances, a reviewing court may be persuaded that the use of a future baseline to address expected sea level rise is not merely permissible under CEQA but required.

The recognition of such a requirement under CEQA could in turn, help influence the way sea level rise specifically and climate change more generally, is factored into other non-California environmental impact assessment laws. This would help shift the standard environmental impact assessment paradigm to take full account of how the impacts of long-term projects will change as climate change alters the background conditions against which such projects operate.

[78] *See* DRAFT BDCP, *supra* note 52, at Appendix 2.C.; DRAFT EIR/EIS, *supra* note 50, at Appendix 29A; BDCP HIGHLIGHTS, *supra* note 20, at 19.

[79] *See* citation and discussion *supra* note 50.