

July 27, 2018

Via Electronic and U.S. Mail

Ms. Jeanine Townsend
Clerk to the Board
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814
LSJR-SD-Comments@waterboards.ca.gov

RE: *San Francisco's Comments to Plan Amendment and Final SED.*

Dear Ms. Townsend,

This office represents the San Francisco Public Utilities Commission ("SFPUC"), operator of the Hetch Hetchy Regional Water System ("RWS"), which provides water to over 2.6 million people throughout the Bay Area. On behalf of the SFPUC and the City and County of San Francisco ("San Francisco"), we respectfully request that the State Water Resources Control Board's ("Board") consider our comments to the proposed updates to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary ("Plan Amendment") and reconsider its decision to preclude any additional comments on the Final Substitute Environmental Document for the Plan Amendment ("Final SED").

On July 18, 2018, San Francisco requested that the Board recirculate the Final SED, or, at the very least, expand the scope of permissible comments to include comments on the Final SED, extend the comment deadline by 30 days, and postpone the public hearing ("San Francisco's Letter"). By letter dated July 19, 2018, the Board denied San Francisco's request in its entirety, stating that recirculation is not required under the California Environmental Quality Act ("CEQA") or the CEQA Guidelines because the changes in the Final SED "do not result in any new potentially significant adverse impacts on the environment, any substantial increase in the severity of potentially significant adverse impacts on the environment, or establish any new feasible project alternatives or mitigation measures."¹ But San Francisco never asserted that recirculation was required under those bases.

Instead, as noted in San Francisco's Letter, Title 14, California Code of Regulations, section 15088.5(a)(4) provides that recirculation is also required if "[t]he draft [Environmental

¹ Letter from Eileen Sobeck, Executive Director, State Water Resources Control Board, to Dennis Herrera, City Attorney, and Jonathan Knapp, Deputy City Attorney, San Francisco City Attorney's Office, July 19, 2018, at 2.

Impact Report (“EIR”)] was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.” (*See also* Cal. Code Regs., tit. 23, § 3779(e).) The Board’s analysis in the Final SED of San Francisco’s potential actions in response to implementation of the Plan Amendment is “fundamentally and basically inadequate and conclusory in nature” because, among other reasons, it excludes any consideration of increased water supply rationing. The Board’s July 18, 2018 letter did not respond to this argument at all.

Under protest, and without waiving any legal claims that the Board has violated, among other things, its obligation to recirculate the Final SED under the CEQA Guidelines and California Code of Regulations, Title 23, California Code of Regulations, section 3779(e), San Francisco submits the following comments and urges the Board not to adopt the Plan Amendment or the Final SED.

San Francisco’s Comments on the Plan Amendment

1. The Board Is Not Authorized to Require Implementation of the Water Quality Objectives Through the Adoption of Regulations.

The Plan Amendment states—we believe for the first time since the Board’s Plan Amendment process began over six years ago—that “the State Water Board may implement the [water quality] objectives by conducting water right proceedings, *which may include adopting regulations*, conducting adjudicative proceedings, or both, that take into consideration the requirements of the Public Trust Doctrine and the California Constitution, article X, section 2.”² The Board states that the addition of the phrase “including adopting regulations” is intended to clarify the “implementation measures within the State Water Board’s authority.”³ However, the Board has no authority to implement the Plan Amendment through such quasi-legislative means.

This newly stated implementation authority—*i.e.*, conducting water rights proceedings by rulemaking—appears to be a continuation and expansion of the Board’s recent flawed proposal to adopt a Regulation on Waste and Unreasonable Water Uses to implement conservation measures by rulemaking. As the SFPUC informed the Board in a letter dated December 22, 2017, in the context of the waste and unreasonable use regulations, the Board does not have authority to restrict or limit the exercise of water rights without due process of law.⁴ Water rights are real property that can be restricted only after the opportunity for a hearing and the presentation of evidence. To do otherwise would constitute an unlawful confiscation of property without due process of law. The Board’s exercise of authorities under the Public Trust Doctrine and article X section 2 of the California Constitution is adjudicative in nature, and demands fact-finding and balancing of numerous factors and consideration of the water rights of other diverters. This can only be accomplished by conducting comprehensive water right adjudicative proceedings. The Board’s rulemaking authority simply does not extend to restrictions on the otherwise lawful exercise of water rights.

² Appendix K at 26 (emphasis added).

³ Master Response 2.1 at 4. *See also id.* at 12

⁴ Comment Letter – Proposed “Prohibiting Wasteful Water Use Practices” Regulation, jointly submitted by the San Francisco Public Utilities Commission and the Bay Area Water Supply & Conservation Agency, December 22, 2017, attached hereto as Exhibit 1.

Further, even if the Board had the authority to implement the Plan Amendment through rulemaking, the Final SED fails to analyze the exercise of such authority as required by CEQA. This new proposed basis of implementation authority was not described in the Draft SED or prior versions of the proposed program of implementation and the public and affected parties have not had an opportunity to comment on the potentially significant environmental impacts of a rulemaking implementation approach. Moreover, the Final SED does not fully describe the proposed action and does not analyze the potential environmental impacts from a rulemaking approach such as might be the case if the Board does not take water rights priorities into account when it allocates responsibilities to water users to meet the flow requirements in the Plan Amendment. By not describing a known potential implementation action in the Final SED, the Final SED inappropriately segments environmental review of the proposed action. As a result, the Final SED fails to identify potentially significant impacts that may result from the proposed action and the potential effects of the action as a whole. The Board must recirculate the proposed program of implementation to more fully describe how the Board might “conduct water right proceedings [by] adopting regulations,” revise the Final SED to analyze the potential environmental impacts associated with that approach, and recirculate the Final SED.

San Francisco’s Comments on the Final SED

1. The Board Failed to Analyze Impacts to the Bay Area from Increased Water Supply Rationing.

In its Responses to Comments, the Board recognizes that if it implements the Plan Amendment and a sequential-year drought occurs, San Francisco’s diversions from the Tuolumne River—on which the SFPUC relies to meet approximately 85% of demand for drinking water throughout the Bay Area—could be severely reduced.⁵ For example, assuming a reoccurrence of the historical hydrological conditions preceding and including the 1987-92 drought, under a 40% unimpaired flow (“UIF”) objective San Francisco would, on average, be responsible for contributing approximately 116 million gallons per day (“mgd”) per year for each year of the six-year drought period, or more than 43% of the water needed in the Bay Area.⁶ San Francisco has repeatedly explained to the Board that faced with such severe reductions it would be compelled to increase water supply rationing throughout the RWS service area.⁷ Yet the

⁵ See *e.g.*, Board’s Responses to Comments, Master Response 8.5, at 17 (where the Board incorrectly, as explained below, identifies the potential deficit to San Francisco’s water supply as 119,000 acre-feet/year or approximately 106 million gallons per day (“mgd”)).

⁶ See Declaration of Matt Moses in Support of Comments by the City and County of San Francisco to the Draft Substitute Environmental Document in Support of Potential Changes to the Bay-Delta Plan, *see* Attachment 1 to the Moses Decl., SFPUC Analysis of Proposed Changes to Tuolumne River Flow Criteria, March 14, 2017 (“2017 SFPUC Water Supply Analysis”), at 17, Table 9 (showing that the reduction would be 129,884 acre-feet (“AF”)/year for each of the 6 years; 129,884 AF = 116 mgd.) This analysis assumes an RWS demand of 265 mgd, which is San Francisco’s contract obligation and consistent with projected 2040 RWS demand.

⁷ The analysis in these Comments assumes a 51.7% flow contribution by San Francisco. As a water supply provider to over 2.6 million people throughout the Bay Area, San Francisco must utilize worst-case scenarios for water supply planning purposes. In presenting the potential water supply, environmental, and socioeconomic effects from certain interpretations of the Raker Act and the Fourth Agreement San Francisco does not waive arguments it may have about how the Raker Act or Fourth

Board's analysis of San Francisco's potential actions in response to implementation of the Plan Amendment entirely excludes consideration of *any* increase in water supply rationing over the 20% level allowed by the SFPUC's current drought management plan.⁸ Instead, the Board has based its entire analysis of San Francisco's potential actions in response to the Plan Amendment on the unsupported assumption that San Francisco will be able to develop sufficient replacement water supplies in approximately four years, *i.e.*, prior to the Board's intended implementation of the Plan Amendment in 2022.⁹ It is patently unreasonable for the Final SED to omit consideration of even the *possibility* that San Francisco would need to increase water supply rationing in these circumstances. And as we explained in our July 17, 2018 letter, this critical omission precludes meaningful public review of and comment on the most reasonably foreseeable water supply, environmental, and economic effects of the Plan Amendment on the Bay Area.

2. The Board Failed to Use San Francisco's Eight-and-a-Half-Year Design Drought in its Modeling of Water Supply Impacts.

Following the 1987-92 drought, the SFPUC implemented the "design drought," which is a water supply planning methodology that ensures the SFPUC will retain adequate storage to withstand an eight-and-a-half year drought without imposing more than 20% system-wide rationing.¹⁰ The SFPUC subsequently approved the design drought as part of its adoption of the goals and objectives for the Water System Improvement Program ("WSIP").¹¹ The Final SED rejects use of San Francisco's design drought because it represents hydrological conditions more severe than historically experienced by the RWS.¹² CEQA requires, however, that the Board

Agreement should or will be interpreted in future proceedings before the Board, the Federal Energy Regulatory Commission, courts of competent jurisdiction, or in any other context.

⁸ See *e.g.*, Board's Responses to Comments, Master Response 1.1: General Comments ("Master Response 1.1"), at 47 (where the Board states it intends to implement the Plan Amendment by 2022); *see also* Master Response 8.5 at 49 (where the Board explains that rationing by the SFPUC throughout the RWS service area in response to the Plan Amendment would not exceed 20%, the maximum level of system-wide rationing that the SFPUC allows in its current drought management plan).

⁹ See *e.g.* Board's Responses to Comments, Master Response 1.1 at 47.

¹⁰ See *e.g.*, Comments by the City and County of San Francisco to the Draft Substitute Environmental Document in Support of Potential Changes to the Bay-Delta Plan ("San Francisco's 2017 Comments"), March 17, 2017, at 18-19, n.26 (explaining that the SFPUC's design drought is based on the hydrology of the six years of the worst sequential historical drought, 1987-1992, plus the two and a half years of the 1976 1977 drought, for a combined total of an eight-and-a-half-year design drought sequence).

¹¹ San Francisco Public Utilities Commission, Resolution No. 08-0200, attached hereto as Exhibit 2 (where the SFPUC approved the performance objective to "[m]eet dry-year delivery needs through 2018 while limiting rationing to a maximum 20 percent system-wide reduction in water service during extended droughts," which incorporates the eight-and-a-half year design drought methodology).

¹² Master Response 8.5 at 15, 18.

consider impacts to San Francisco from implementation of the Plan Amendment in accordance with the SFPUC's existing, adopted policies, such as its design drought.¹³

San Francisco developed its design drought after having lived through the consequences of basing the SFPUC's water supply operations "in accordance with rules based only on historical data."¹⁴ Prior to the 1987-1992 drought, the SFPUC had based its water supply planning on "the experience of many years of historical operation, including the knowledge of previous drought events such as had occurred in 1976-1977."¹⁵ It was therefore inadequately prepared when the 1987-1992 drought broke new records. As explained by the General Manager of the SFPUC during that drought, San Francisco "learned the painful lesson as to the adverse impacts that are caused by not planning for a drought worse than any experienced to date when the hydrology of the Tuolumne River and the City's operations through 1990 and early 1991 had created a situation where a 45 percent rationing program among City customers was initiated – a level of rationing that was found to be intolerable and not achievable."¹⁶ "[G]iven the dire consequences of just being wrong in the forecasting of the length of drought that may hit the City" San Francisco responsibly relies on its water supply planning methodology to ensure it retains adequate water supplies during sequential-year droughts.¹⁷ CEQA requires that the Board must take into account San Francisco's design drought when assessing impacts to the Bay Area from implementation of the Plan Amendment.

3. Although the Board Concedes that the SFPUC's Hydrological Model is More Precise than the Board's Model, it Refuses to Use the SFPUC's Modeling Results.

The Board concedes that the SFPUC's Hetch Hetchy and Local System Model ("HHLSM") model is more precise than the Board's Water Supply Effects ("WSE") model for calculating water supply effects to the RWS service area, yet the Board fails to use the HHLSM modeling results in the Final SED.¹⁸ For example, instead of using the correct HHLSM figure

¹³ Master Response at 52 (emphasis added) (where Board mischaracterizes San Francisco's adherence to the approved design drought methodology, the SFPUC's associated modeling of water rationing that would be required under a 40% UIF objective across the historical hydrology, and San Francisco's other supporting evidentiary submissions and related comments as a mere "statement of intent" that the Board may disregard at its own discretion: "*a statement of intent regarding future extreme water rationing is not sufficient and reliable information on which to base an environmental analysis of related impacts.*")

¹⁴ Affidavit of Anson B. Moran ¶¶ 7, 16 Project No. 2299, January 26, 1994 (referred to below as "Moran Decl."), attached to San Francisco's 2017 Comments as Exhibit 7.

¹⁵ Moran Decl. ¶ 7.

¹⁶ *Id.* ¶ 8.

¹⁷ *Id.* ¶ 16.

¹⁸ Master Response 8.5 at 16 (explaining, [w]hile the HH/LSM is a more detailed model that simulates operation of the RWS service area, the WSE model and water bank balance provide similar water supply effects as the HH/LSM under the SFPUC middle demand level and SED Scenario 2"); *id.* at 18 (where the Board acknowledges, "[t]he SED uses a simple method to assess potential water supply reductions in the absence of having access to a model that simulates the operation of the entire RWS service area.").

for potential annual reductions to the SFPUC's water supply under a 40% UIF objective, assuming San Francisco's contract obligation of 265 mgd and a reoccurrence of the historical hydrological conditions preceding and including the 1987-92 drought, *i.e.*, 116 mgd or 129 thousand acre-feet/year ("TAF"), the Board continues to use 106 mgd or 119 TAF.¹⁹ Similarly, although HHLSM shows significant impacts to San Francisco under a 40% UIF objective across the historical hydrological record, including years other than the 1987-1992 drought period, the Board continues to assert, "in all other years [outside of the 1987-92 drought period], SFPUC's water supply would not be affected and would be replenished."²⁰

The Board's flawed analysis of water supply impacts to San Francisco from implementation of the Plan Amendment is attributable to two primary factors. First, the Board ignores San Francisco's dry-year management operations, including use of the design drought, and thus does not begin counting water supply impacts to the RWS until later in a drought sequence. This means that "shorter dry periods in which SFPUC experiences water supply shortages are not captured" in the Board's modeling.²¹ Instead, the Board employs an "arbitrary" method of counting impacts to San Francisco that "is not based on SFPUC practices or explained logically in the [Board's] analysis."²²

Second, the Board applies an incorrect percentage for determining the level of San Francisco's contribution to flow requirements on the Tuolumne River under the 1966 Fourth Agreement ("Fourth Agreement"), and thus over counts impacts to the RWS for the dry years in which the Board acknowledges that the SFPUC's water supply would be reduced under implementation of the Plan Amendment. Specifically, instead of using 51.7%, the percentage of increased Tuolumne River flows that San Francisco may be responsible for contributing under the Fourth Agreement,²³ the Board's analysis incorrectly applies 57.1% to calculate San

¹⁹ *Id.* at 17 (where the Board identifies—but does not correct—the discrepancy).

²⁰ *Id.* at 13; *cf.* 2017 SFPUC Water Supply Analysis at 11 (showing that, assuming San Francisco's contract obligation of 265 mgd, under a 40% UIF objective on the Tuolumne River San Francisco would also be compelled to impose water supply rationing of 40% or more if the historical hydrological conditions experienced in the following fiscal years were to reoccur: fiscal years 1924-25, 1929-32, 1933-35, 1948-49, 1955-56, 1960-63, 1964-65, 1972-73, 1976-78, 1987-88, 1994-95, and 2007-09). Although FY 1987-88 is included in the Board's description of the 6-year drought, the Board does not assign any impacts for that year under its methodology. Memorandum from Matt Moses, Water Resources Engineer, San Francisco Public Utilities Commission, July 26, 2018 ("2018 Moses Memo"), attached hereto as Exhibit 3, at 2 n.2.

²¹ 2018 Moses Memo at 3.

²² *Id.* at 1-2 (where Mr. Moses generally describes the method used by the Board to calculate water supply impacts to San Francisco from implementation of the Plan Amendment).

²³ *See* San Francisco's 2017 Comments, at 3-5 (providing detailed explanation of San Francisco's obligations under the Fourth Agreement).

Francisco's flow contribution.²⁴ Accordingly, the Board's analysis under estimates, or completely ignores, water supply impacts to the RWS in shorter drought sequences, and over estimates impacts to the RWS in longer drought sequences.²⁵

4. The Board Failed to Substantively Consider the SFPUC's Methodology for Estimating Socioeconomic Impacts from Increased Rationing.

The Board acknowledges that if sufficient alternative water supplies are not available to San Francisco to replace the reductions required by implementation of the Plan Amendment, "water rationing measures that would negatively affect commercial and industrial enterprises in CCSF's service area" would have severe economic effects "more than 100 times greater . . . than [the Board's purported] water supply planning approach."²⁶ But the Board nevertheless fails to substantively analyze *any* economic effects of increased rationing. In fact, the Board draws this comparison solely to support its summary dismissal of San Francisco's socioeconomic analysis by remarkably concluding that the Board's approach is more cost-effective.²⁷ The Board states that its economic analysis presented in Appendix L—which only considers rate impacts attributable to the cost of purchasing the requisite volume of replacement water—"is based on the *logical assumption* that additional water supplies are available, and these supplies could be developed to address potential shortages associated with implementing the plan amendments."²⁸ As San Francisco has repeatedly explained, however, our socioeconomic analysis is based on the *practical reality* that the SFPUC would not be able to obtain or develop sufficient alternative water supplies in the near term to make up for the unprecedented reduction in San Francisco's water supply, *i.e.*, 43% of the drinking water needed to serve the Bay Area for each year of a sequential-year drought, and thus the SFPUC would be compelled to increase rationing throughout the RWS service area by more than 20%. Further, because the Board does not analyze *any* rate impacts associated with constructing one (or more) large-scale desalination facilities, or other critical infrastructure, that would likely be necessary to make up for the substantial reduction in water supply, its economic analysis of the "mix of different water supply sources" is woefully inadequate and fails to disclose to the public the actual costs and economic impacts of the Plan Amendment.²⁹ This is hardly a good faith, reasoned analysis in response to

²⁴ *Id.* at 2 (explaining that this appears to be "a simple typographical error in the spreadsheet" the Board used for its analysis).

²⁵ *Id.* at 2-3, Table 1.

²⁶ Master Response 8.5 at 44, 51-52.

²⁷ *Id.* at 44; see also *id.* at 5 (where Board rationalizes its decision to omit any substantive consideration of San Francisco's economic analysis by arguing that its "water supply planning approach" is "economically justified.").

²⁸ *Id.* at 44 (emphasis added).

²⁹ *Id.* Significantly, the model the Board relied on to estimate rate impacts associated with the cost of purchasing water in the Final SED, IMPLAN, would have been equally appropriate for assessing rate impacts associated with constructing facilities and infrastructure, such as a large-scale desalination plant.

San Francisco's prior comments regarding the Plan Amendment's detrimental effects on the Bay Area's economy.³⁰

5. San Francisco's Socioeconomic Analysis Appropriately Relies on the Best Available Price Elasticity Data.

In the Final SED, the Board criticizes San Francisco's economic expert, Dr. David Sunding, for using commercial/industrial/institutional employment and output multipliers from a 1994 study by MHB Consultants, Inc. ("MHB Study") in his 2014 draft report on socioeconomic impacts of water shortages within the RWS service area, and his 2017 report on socioeconomic impacts to the Bay Area from instream flow requirements on the Tuolumne River.³¹ The MHB Study presented the results of a survey of commercial, industrial and institutional water customers to assess the responsiveness of their level of production to a reduction in water deliveries. The Board asserts that: (1) the MHB survey is outdated; (2) the MHB survey reflects an "upward bias" because it was conducted shortly after the 1987-92 drought, and MHB Consultants, Inc. used marginal coefficients to estimate the response of businesses to water shortages; and, (3) the response rates, *i.e.*, 13% for commercial and 30% for industrial businesses "are considered very low," raising the question as to whether the sample is representative of the larger population.³²

As explained in the attached memorandum from Dr. Sunding, dated July 26, 2018, the Board's critiques of the MHB Study is unwarranted. First, the MHB Study remains the "best available evidence of its kind" to date, and thus "is a standard reference commonly utilized by water agencies and consultants when analyzing planning and resource allocation decisions."³³ Second, in survey research it is preferable to query survey respondents about actions that they recently undertook. Surveying shortly after the 1987-92 drought did not result in a bias but rather likely produced more accurate results.³⁴ Finally, the 30% and 13% response rates for the

See Memorandum from David Sunding, The Brattle Group, Inc., to San Francisco Public Utilities Commission, July 26, 2018 ("2018 Sunding Memo"), attached hereto as Exhibit 4, at 2.

³⁰ San Francisco's 2017 Comments, 27-32; see e.g., *Santa Clarita Organization for Planning the Environment v. County of Los Angeles* (2003) 106 Cal.App.4th 715, 723 (citing *Cleary v. County of Stanislaus* (1981) 118 Cal.App.3d 348, 357 (emphasis added) [explaining that "[i]t is not enough for the EIR simply to contain information submitted by the public and experts. Problems raised by the public and responsible experts require a good faith reasoned analysis in response. The requirement of a detailed analysis in response ensures that stubborn problems or serious criticism are not 'swept under the rug.'"]).

³¹ Master Response 8.5 at 20-21; *Bay Area Socioeconomic Impacts Resulting from Instream Flow Requirements for the Tuolumne River*, The Brattle Group, prepared by David Sunding, Ph.D., March 15, 2017, attached to San Francisco's 2017 Comments as Appendix 3.

³² Master Response 8.5 at 20.

³³ 2018 Sunding Memo at 1.

³⁴ *Id.*

industrial and commercial sectors, respectively, are not very low but in fact are “typical of mail surveys that appear in the scientific literature.”³⁵

6. The Board Erroneously Relies on the SFPUC’s Long-Term Planning Documents to Establish the Alleged Availability of Alternative Water Supplies in the Near Term.

The Board asserts that the “common water strategies” it proposes are “viable and economically feasible options for SFPUC and other local agencies because they are identified as potential components of drought contingency plans.”³⁶ But the alternative water supply projects identified in the SFPUC’s long-term planning efforts, such as the 2015 Urban Water Management Plan (“2015 UWMP”), are intended to meet existing dry-year demand and projected 2040 demand in the RWS service area. The projects are not intended to provide replacement supplies to make up for the additional, unanticipated reductions caused by implementation of the Plan Amendment.³⁷

Further, the Board mischaracterizes San Francisco’s “approach” to analyzing impacts to the RWS service area that would result from implementation of the Plan Amendment as relying on the premise that the SFPUC would not even *attempt* to obtain or develop alternative water supplies.³⁸ The SFPUC is actively involved in efforts to diversify the sources of its water supply, as reflected in the SFPUC’s long-term planning efforts. But alternative water supply projects are difficult to fund, require many years to develop, and often represent limited

³⁵ *Id.* at 2.

³⁶ Master Response at 23. See also *id.* at 49 (where Board argues that its “water supply planning approach” is consistent with San Francisco’s 2015 Urban Water Management Plan and the “SFPUC’s own management actions and those typically taken by other water suppliers.”).

³⁷ Significantly, in San Francisco’s 2017 Comments, we previously explained that any additional yield San Francisco may be able to obtain from potential, future projects identified in the SFPUC’s long-term planning efforts, *e.g.*, water transfers or some portion of yield from a regional desalination plant located in the Delta, would be used to meet existing dry-year demand and/or 2040 demand. See San Francisco’s 2017 Comments at 84-86, 94-95.

³⁸ Board’s Comment Response Letter 1166, Table 4-1. Response to Comments, Response to Comment 1166-10 (emphasis added) (where the Board states that its analysis of potential actions in response by San Francisco to implementation of the Plan Amendment did not include “the severe mandatory rationing described by SFPUC because it was not reasonably foreseeable that a water supplier would impose drastic mandatory rationing on its customers *without first attempting other actions to replace any reductions in water supplies with alternative sources of water*, such as through water transfers.”); see also Master Response 8.5 at 49 (emphasis added) (where Board states that under San Francisco’s “water-rationing only approach” the “SFPUC would not pursue opportunities to supplement current water supplies or to replace any of the potential water supply reductions” because the “intent” of San Francisco’s approach “is to deliver the limited available supplies *without expanding yields from existing sources of water or without developing water supplies from new sources.*”).

additional yield.³⁹ Here, these obstacles are especially challenging given that the Board intends to implement the Plan Amendment by 2022. As the third largest municipal water provider in California, the SFPUC must responsibly plan for the pragmatic, worst case scenario, which is that notwithstanding the SFPUC's efforts to obtain and develop alternative supplies by 2022, no significant additional yield may be available within the next four years.⁴⁰

7. The Three Methods of Compliance for San Francisco Identified in the Final SED Rely on Unsupported Assumptions.

A. The Board's Assumptions Regarding a Large-Scale Water Transfer Are Unsupported.

In the Final SED, the Board included several charts from a Pacific Institute Report in an apparent effort to support its assumption that a massive volume of water will be available for transfer from the Central Valley to San Francisco during future, sequential-year droughts to replace the reduction in the Bay Area's water supply following implementation of the Plan Amendment.⁴¹ Specifically, the Board includes a chart excerpted from the Pacific Institute Report which shows that a substantial volume of transfer water was purchased by municipalities from the agricultural sector between 2009 and 2014.⁴² But the Pacific Institute Report includes a subsequent chart, excerpted below, that the Board did not include in the Final SED, which clarifies that the vast majority of the water transferred during that period went to the "South Coast," *i.e.*, southern California, not the Bay Area.⁴³

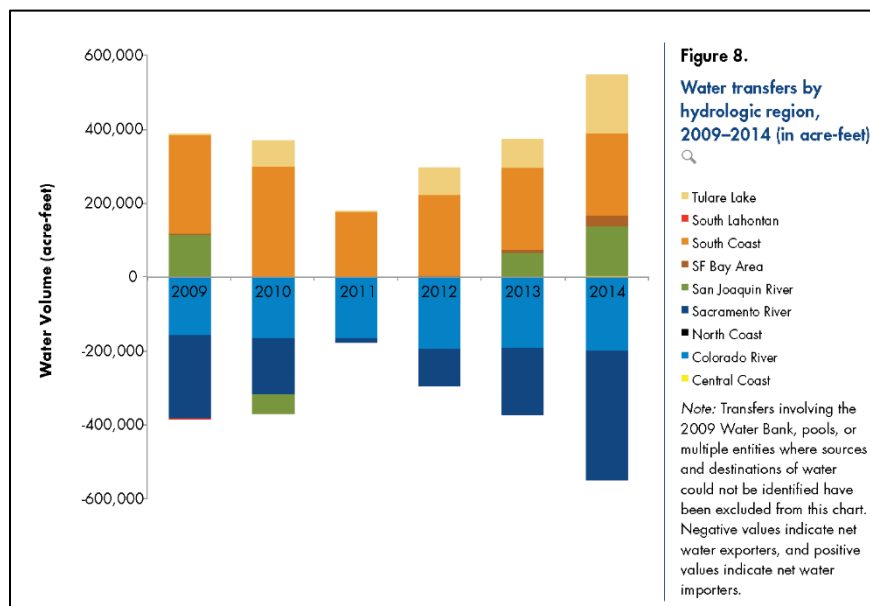
³⁹ See *e.g.*, 2018 Sunding Memo at 3 (where Dr. Sunding explains that "many potential water transfers may look attractive in theory but are never implemented due to a host of political, technical, or legal reasons.").

⁴⁰ The Final SED also rejects San Francisco's analysis of impacts from rationing because, according to the Board, it is "an unproven approach that has not been implemented at the suggested scale described by SFPUC." Master Response 8.5 at 19. Of course, at its core, the Board's "water supply planning approach" relies on nothing more than the convenient "assumption" that beginning in 2022 an unprecedented volume of dry-year supplies will be available to the SFPUC throughout subsequent sequential-year droughts of potentially increasing severity and duration.

⁴¹ See *e.g.*, Master Response 8.5 at 28 (*citing* "Impacts of California's Ongoing Drought: Agriculture," Pacific Institute, August 2015 7 [referred to below as "Pacific Institute Report"], at 14, Figure 7) (where Board excerpts chart from Pacific Institute Report showing total volume of water transfers between 2009 and 2014 by buyer sector).

⁴² Master Response at 28.

⁴³ Pacific Institute Report, at 15, Figure 8.



In fact, Figure 8 shows that transfers from agriculture to the Bay Area during the recent drought comprised a relatively meager share of the overall volume of water transferred. This dynamic occurred during the 1987-92 drought as well, where the Metropolitan Water District of Southern California purchased the lion's share of water available through the now-defunct state administered drought water bank.⁴⁴ As Figure 8 above demonstrates, it is reasonable to assume there will be significant competition from Southern California for any agricultural water that may be available to transfer to the Bay Area in future sequential-year droughts.

Further, as noted by the authors of the Pacific Institute Report, as the drought intensified "a large volume of water [was] transferred to the Tulare Lake and San Joaquin River regions, the nation's leading agriculture areas."⁴⁵ Given the accelerating trend of farmers shifting to higher-value crops such as fruits and nuts that require water year around and cannot be fallowed during drought periods,⁴⁶ it is reasonable to assume that there will also be significant competition from the San Joaquin Valley for any future water available for transfers from the North Coast.

Finally, it is improper for the Board to continue to rely on the environmental analysis in the WSIP for a potential 2 mgd transfer between San Francisco and the Modesto Irrigation District and Turlock Irrigation District ("Districts") implemented through conservation to analyze impacts that would result from a an exponentially larger transfer of water to be made up

⁴⁴ See San Francisco's 2017 Comments, at 68, n.185 (citation omitted) (noting that of the 389,970 AF in total water purchases from the 1991 state water bank by twelve entities, the Metropolitan Water District of Southern California accounted for 55% of purchases).

⁴⁵ Pacific Institute Report at 15.

⁴⁶ *Id.* at 8.

through groundwater substitution.⁴⁷ The Board needs to identify a legitimately comparable environmental analysis, *i.e.*, for a project that involved the transfer of a large volume of surface water from an agricultural water district to a municipality in which the water district then replaced the exported water through increased groundwater pumping.⁴⁸

B. The Board Has Failed to Support its Assumptions Regarding a Large-Scale Desalination Plant at Mallard Slough.

The Board's passing references in the Final SED to a 12 mgd desalination plant in Newark and a planned 6 mgd desalination plant in Antioch fail to support the Board's assumption that San Francisco will be able to develop a large-scale desalination plant at Mallard Slough, especially by 2022.⁴⁹ The Board conducted no substantive analysis of either the Newark or Antioch projects, and fails to provide a good faith, reasoned explanation for why these projects are comparable to the large-scale desalination plant in Mallard Slough envisioned in the Final SED.⁵⁰ In fact, each of these projects reflects a fraction of the total production capacity of the Poseidon Desalination Facility in Carlsbad, *i.e.*, 56,000 AF/year or approximately 50 mgd.

Further, the Newark Desalination Facility was placed into service in 2003,⁵¹ over a decade prior to enactment of the 2015 Ocean Plan Amendments, which, as San Francisco has previously explained, applied new regulatory requirements to all new desalination projects.⁵²

⁴⁷ See San Francisco's 2017 Comments at 80-82.

⁴⁸ Master Response at 31-32 (where the Board confusingly asserts, among other things, that "the SED, however, does not limit its transfer discussion to a particular type of transfer, such as a conserved water transfer."). In fact, the Final SED assumes that reductions in surface water under the Plan Amendment would be replaced by increased groundwater substitution. See Chapter 16 at 16-14 (emphasis added) (where the Final SED explains, "[c]hapter 9 assumes that reductions in surface supply would be replaced with groundwater pumping up to a maximum amount. Based on this analysis, significant impacts would occur on four primary subbasins [Eastern San Joaquin, *Turlock*, *Modesto*, and the extended Merced].").

⁴⁹ Master Response 8.5 and 32-33 (where the Board generally discusses brackish water desalination projects in the state and specifically identifies the Newark plant and planned Antioch project).

⁵⁰ See *e.g.*, Chapter 16 at 16-71 (emphasis added) (where the Board explains that "[a] desalination project would likely need to be larger than analyzed in the WSO report, or the BARDP feasibility studies, for LSJR Alternatives 3 and 4. *Therefore, costs and environmental impacts associated with the larger Poseidon Desalination Facility in Carlsbad are also provided below.*"). Notwithstanding the Board's reliance on "costs and environmental impacts" associated with the Poseidon Desalination Facility in its analysis of a potential desalination plant at Mallard Slough, in its responses to San Francisco's 2017 Comments the Board remarkably states "[t]he SED does not assume that a 56,000 AF/y [sic] would be required or considered at Mallard Slough or [sic] any other location." Table 4.1. Responses to Comments, Response to Comment Letter 1166-69.

⁵¹ Alameda County Water District website, available at <http://www.acwd.org/index.aspx?NID=383> (providing description of Newark Desalination Facility).

⁵² San Francisco's 2017 Comments at 91.

The Board's analysis in the Final SED continues to fail to take into consideration these new regulatory requirements.

C. The Board Has Failed to Support its Assumptions Regarding an In-Delta Diversion Project.

The Board's supplemental analysis in support of its in-Delta diversion proposal is not only "fundamentally and basically inadequate and conclusory in nature," it is also nonsensical. The Board states:

Therefore, an agency determination that an in-Delta diversion was infeasible under one set of circumstances does not render it infeasible in all future circumstances. Thus, in light of changed circumstances since 2008 and increasing awareness of the need to prepare for a variety of hydrologic and water supply conditions in the future, *it is reasonable to identify an in-Delta diversion as one potential action in a suite of actions to augment water supplies regardless of whether SFPUC ultimately concludes in the future that an in-Delta diversion remains infeasible.*"⁵³

The Board not only acknowledges that the SFPUC has already analyzed the possibility of a new in-Delta diversion project and determined that it was infeasible, but also concedes that the project may well remain infeasible. In fact, the referenced "changed circumstances since 2008,"⁵⁴ *i.e.*, "Pelagic Organism Decline, climate change, California WaterFix, and the State Water Board's Final Report on the Development of Flow Criteria for the Sacramento Delta Flow Criteria,"⁵⁵ indicate there will be stricter regulation and/or more restrictive environmental conditions in the Delta that would likely make a new in-Delta diversion even less feasible.⁵⁶ Nevertheless, the Board continues to insist that it is reasonable to include this project as one of San Francisco's potential responsive actions to implementation of the Plan Amendment.

8. The Board's Assumption that Implementation of the Plan Amendment Would Result in Minimal Effects to Economic Growth and Housing Starts in the Bay Area is Unsupported.

The Final SED asserts, "[a]s demonstrated during the recent drought, limited water supplies and increases in water rates to encourage conservation do not appear to have materially affected current levels of economic growth in the Bay Area."⁵⁷ This statement ignores the critical fact that the reduction in RWS system deliveries in fiscal year 2015-16 of approximately 20% did not exceed the "tipping point" that would require rationing in the commercial and

⁵³ Master Response at 8.5 at 33 (emphasis added).

⁵⁴ *Id.*

⁵⁵ Appendix L at 24.

⁵⁶ *See* San Francisco's 2017 Comments at 96.

⁵⁷ *Id.* at 47.

industrial sectors.⁵⁸ As San Francisco has previously explained, the first 20% to 30% of RWS water supply reductions can generally be borne by the residential sector and dedicated irrigation alone.⁵⁹ Therefore, one would not expect to see significant losses in business sales or jobs in the Bay Area attributable to the recent drought. The magnitude of the reductions that San Francisco could be required to impose if the Plan Amendment is implemented and a sequential-year drought occurs, would result in much higher rationing levels that exceed the 20-30% tipping point, and thus would directly affect the commercial and industrial sectors.⁶⁰ By ignoring entirely the possibility of such higher rationing levels, the Board fails to acknowledge, much less analyze, the potential economic impacts to the Bay Area of the Plan Amendment.

Further, the fact that housing starts in some parts of the Bay Area may have increased between 2009 and 2017 does not mean that severe reduction of the Bay Area's dry year and future water supply would not pose a risk to regional growth.⁶¹ Contrary to the Board's contention, the Plan Amendment could also "alter the existing condition" of development in the lower-cost Central Valley, as opposed to the Bay Area, by significantly accelerating it as people migrate outward to areas with more reliable dry year and future water supplies.⁶²

9. The Board Failed to Analyze the SFPUC Alternative as a Reasonable Alternative to the Plan Amendment.

In San Francisco's 2017 Comments, we included a reasonable, science-based alternative for Tuolumne River ecosystem improvements that would meet fish and wildlife beneficial uses on the river without the significant environmental and economic impacts to the Bay Area that

⁵⁸ 2017 SFPUC Water Supply Analysis at 1-2 (noting that in fiscal year 2015-16 system-wide deliveries were reduced by 21.5% as compared to RWS deliveries prior to the recent drought, in fiscal year 2012-13); see *id.* (where Mr. Moses explains, "[i]n response to drought conditions, SFPUC requested rationing within the retail wholesale service area during this period, and the State of California also mandated rationing for all municipal water agencies during this period. The reduced demand relative to fiscal year 2012-2013 is attributed to these calls for rationing.").

⁵⁹ San Francisco's 2017 Comments at 28 (this assumes a pre-drought level of water supply demand of 223 mgd within the RWS service area). See also Declaration of David L. Sunding in Support of Reply Comments of the City and County of San Francisco, Don Pedro Hydroelectric Project Relicensing Proceeding, Federal Energy Regulatory Commission Project No. 2299, March 13, 2018, attached hereto as Exhibit 5, at ¶ 9.

⁶⁰ For example, assuming 1987-1992 hydrology and maximum SFPUC contract deliveries of 265 mgd, the additional reduction in water supply San Francisco would experience under a 40 percent unimpaired flow objective on the Tuolumne River, *i.e.*, 129,884 AF/year for each of the 6 years, would result in a 40% reduction in deliveries for the first year of the drought, and a 54% reduction in deliveries in each of the subsequent 5 years. 2017 SFPUC Water Supply Analysis at 16, Table 9; *id.* at 10, Table 2.

⁶¹ See Master Response 8.5 at 48.

⁶² See Master Response 6.1 at 13.

would result under the Plan Amendment (“SFPUC Alternative”).⁶³ The Board neither analyzed the SFPUC Alternative in detail, nor analyzed the relative merits of the SFPUC Alternative as compared to other alternatives, based on the Board’s conclusion that the SFPUC Alternative “fails to meet the fundamental purpose and goal to establish flow objectives for the reasonable protection of fish and wildlife beneficial uses in the [Lower San Joaquin River] watershed.”⁶⁴ Modeling results presented as part of the SFPUC Alternative predict a significant relative increase in fall-run Chinook salmon smolt productivity on the Tuolumne River compared to current conditions while remaining reasonably protective of water supply reliability. Based on the Board’s conclusory analysis of the SFPUC Alternative, however, it appears that the Board entirely ignored the fishery benefits of San Francisco’s proposal.

Thank you for your consideration of our comments.

Very truly yours,

DENNIS J. HERRERA
City Attorney

-s-

Jonathan P. Knapp
Deputy City Attorney

cc: Via Electronic Mail Only
Michael Carlin, Deputy General Manager and Chief Operating Officer, SFPUC

⁶³ San Francisco’s 2017 Comments, Attachment 2, Alternative to promote expansion of fall-run Chinook salmon and *Oncorhynchus mykiss* populations in the lower Tuolumne River while maintaining water supply reliability (“SFPUC Alternative”), at 1.

⁶⁴ Master Response 2.4 at 21.

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